LETTING DATE 12-17-2019

PAVEMENT PLANING/GROOVING
HMA PAVED SHOULDER - NEW
NHSX-002-9(38)--3H-56/
HSIPX-002-9(39)--3L-56

LEE Co.

IOWA DOT

Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM

LEE COUNTY

PAVEMENT PLANING/GROOVING - HMA PAVED SHOULDER-NEW

US 218 to US 61

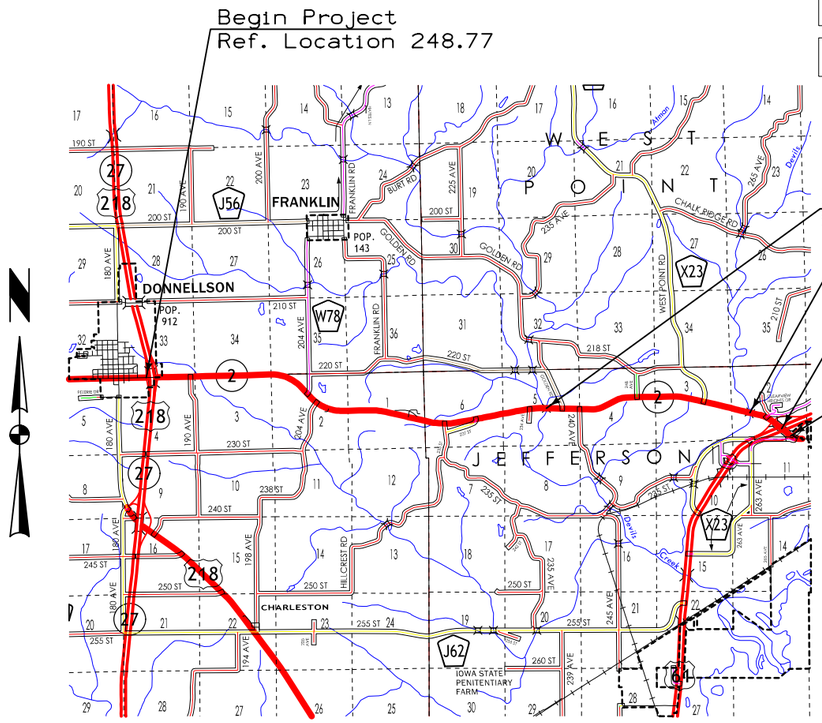
SCALES: As Noted

REVISIONS

TOTAL 43
PROJECT IDENTIFICATION NUMBER
19-56-002-010
PROJECT NUMBER
NHSX-002-9(38)--3H-56 HSIPX-002-9(39)--3L-56
R.O.W. PROJECT NUMBER
--

Refer to the Proposal Form for list of applicable specifications.

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



INDEX OF SHEETS

No.	DESCRIPTION
A Sheets	**Title Sheets**
A.1	Title Sheet
* A.2	Strip Map Sheet
B Sheets	**Typical Cross Sections and Details**
B.1 - 8	Typical Cross Sections and Details
C Sheets	**Quantities and General Information**
C.1	Project Description
C.1	Estimated Project Quantities - NHSX-002-9(38)--3H-56
C.1 - 2	Estimate Reference Information - NHSX-002-9(38)--3H-56
C.2	Estimated Project Quantities - HSIPX-002-9(39)--3L-56
C.2	Estimate Reference Information - HSIPX-002-9(39)--3L-56
C.3	Standard Road Plans
C.3	Index of Tabulations
C.3	General Notes
C.3	Tab. of Incidentals
C.4 - 15	Tabulations (beg. with tab. of incidentals if needed)
J Sheets	**Traffic Control and Staging Sheets**
J.1	Traffic Control Plan
U Sheets	**500 Series, Mod.Stds. and Detail Sheets**
U.1	500 Series, Modified Standards and Detail Sheets

* Color Plan Sheets

Project Event Dates:
D7 PLAN – Date: 10–01–2019

PRELIMINARY PLANS

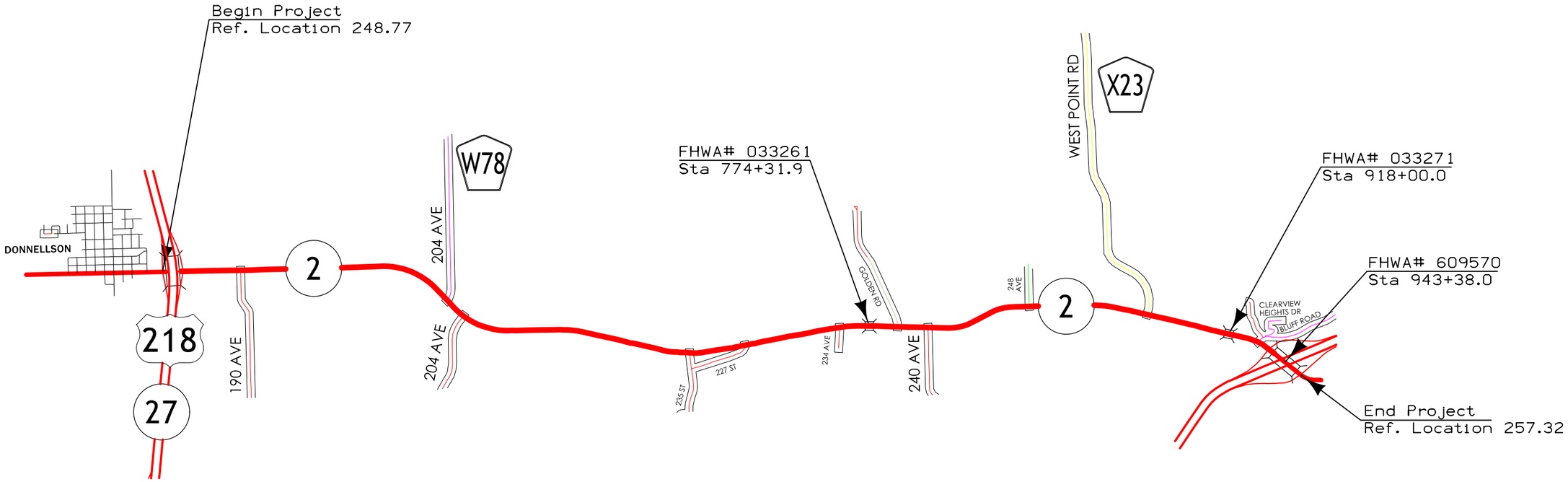
Subject to change by final design.

DM5 PLAN – Date: 8–29–2019

DESIGN DATA RURAL		
2018 AADT	3346	V.P.D.
2020 AADT	3500	V.P.D.
20-- DHV	--	V.P.H.
TRUCKS	10	%
Total Design ESALs	--	

INDEX OF SEALS

SHEET NO.	NAME	TYPE
A.1	Jonathan W. Bahr	Primary Signature Block



FILE NO.	ENGLISH	DESIGN TEAM HOLST \ BAHR \ CAMPBELL	LEE COUNTY	PROJECT NUMBER NHSX-002-9(38)--3H-56/HSIPX-002-9(39)--3L-56	SHEET NUMBER A.2

2:37:27 PM 8/29/2019 dcampbe pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5600201019\Design\56002038_A01_A02.dgn

Combination Shoulder

Shoulder Jointing:
Longitudinal joint: B

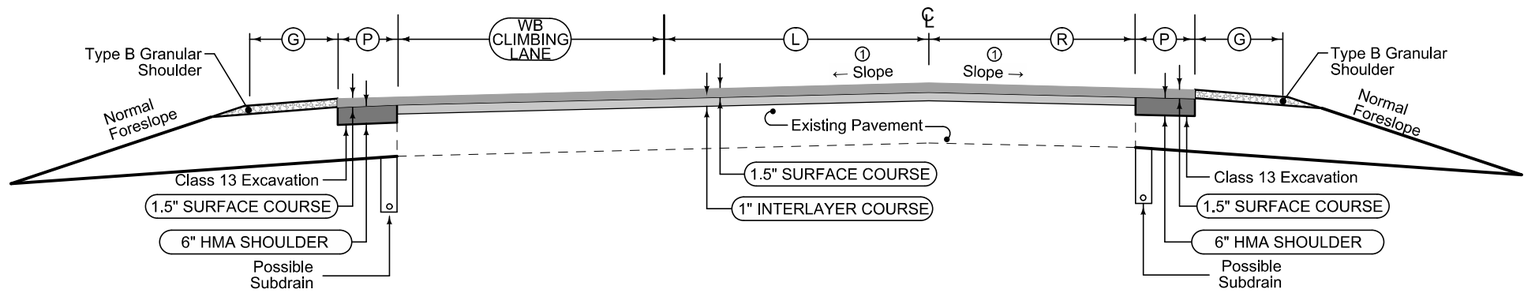
3R_Shldr_Paved_ Modified					
STATION TO STATION		(P) Feet	(G) Feet	Length Feet	REMARKS
887+74.8	910+98.0	4	6	2323.2	

Combination Shoulder

Shoulder Jointing:
Longitudinal joint: B

3R_Shldr_Paved_ Modified					
STATION TO STATION		(P) Feet	(G) Feet	Length Feet	REMARKS
887+74.8	910+98.0	4	6	2323.2	

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.



3R_HIR_Overlay Modified				
STATION TO STATION		WB CLIMBING LANE Feet	(L) Feet	Length Feet
887+74.8	908+38.7	12	12	2063.9
908+38.7	910+98.0	12-0	12	259.3

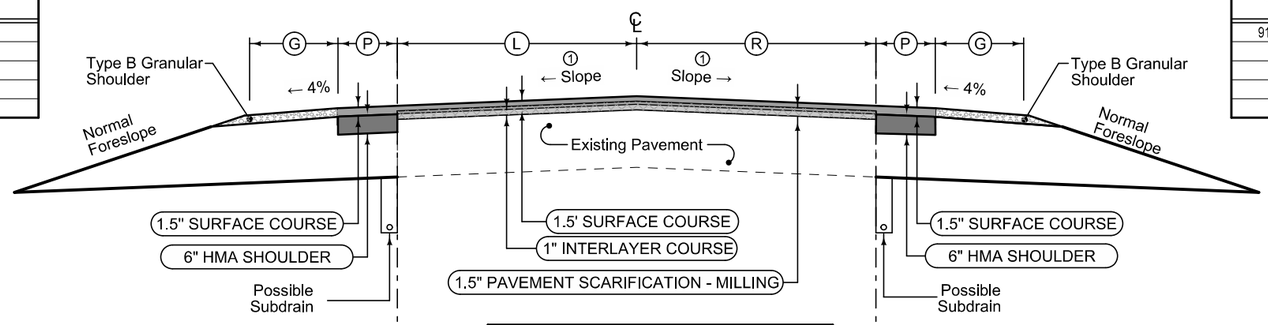
3R_HIR_Overlay Modified			
STATION TO STATION		(R) Feet	Length Feet
887+74.8	910+98.0	12	2323.2

Shoulder Jointing:
Longitudinal joint: B

Combination Shoulder

3R_Shldr_Paved_ Modified					
STATION TO STATION		(P) Feet	(G) Feet	Length Feet	REMARKS
910+98.0	913+27.6	4	6	2323.2	

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.



Shoulder Jointing:
Longitudinal joint: B

Combination Shoulder

3R_Shldr_Paved_ Modified					
STATION TO STATION		(P) Feet	(G) Feet	Length Feet	REMARKS
910+98.0	913+27.6	4	6	2323.2	

3R_HIR_Overlay Modified				
STATION TO STATION		(L) Feet	(R) Feet	Length Feet
910+98.0	916+13.5	12	12	560.8

Shoulder Jointing:
Longitudinal joint: B

Combination Shoulder

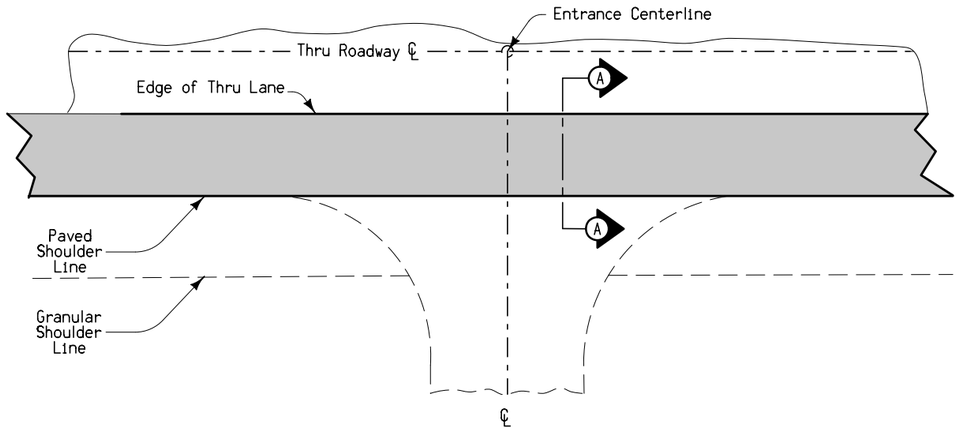
3R_Shldr_Paved_ Modified					
STATION TO STATION		(P) Feet	(G) Feet	Length Feet	REMARKS
913+30.4	915+36.0	8 - UAC	2	205.6	

Shoulder Jointing:
Longitudinal joint: B

Combination Shoulder

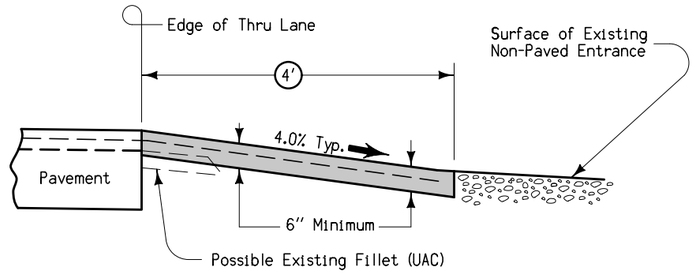
3R_Shldr_Paved_ Modified					
STATION TO STATION		(P) Feet	(G) Feet	Length Feet	REMARKS
913+27.6	915+36.0	8 - UAC	2	205.6	

7148
Modified



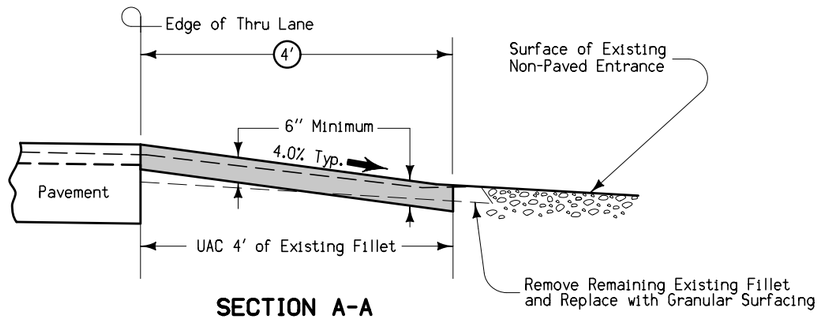
PLAN

CASE 'A' - Existing Fillet Less Than 4'



SECTION A-A

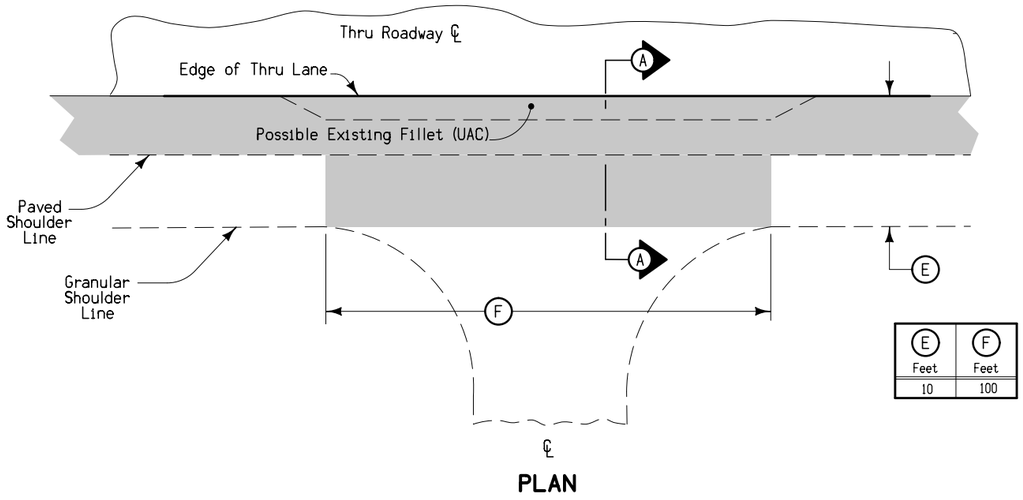
CASE 'B' - Existing Fillet Greater Than 4'



SECTION A-A

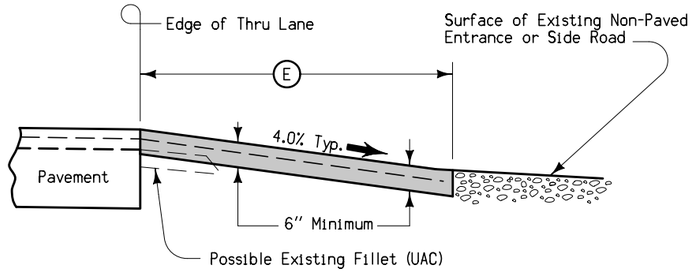
FILLET FOR NON-PAVED ENTRANCES

7148
Modified



E	F
Feet	Feet
10	100

PLAN

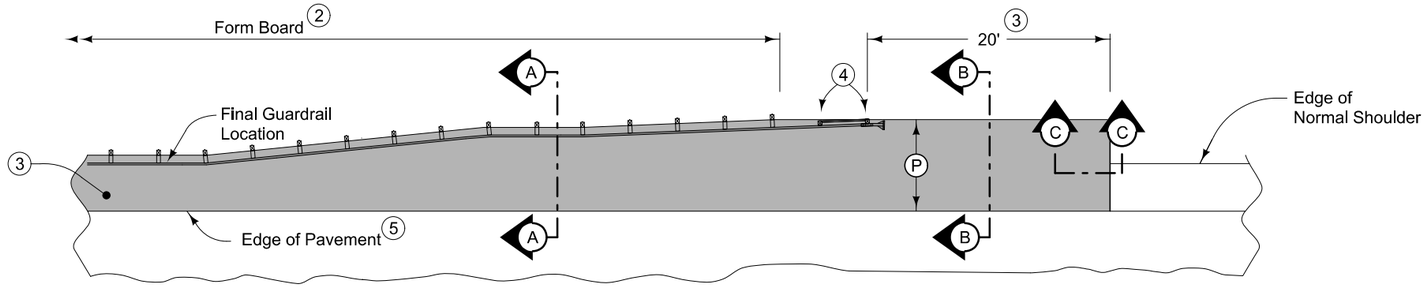


SECTION A-A

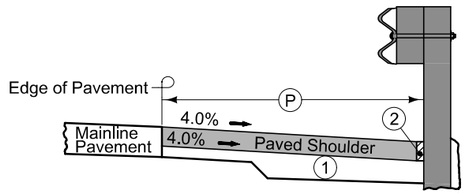
Special shaping of existing surface prior to placement of fillet may be required by the Engineer and is incidental to other work on the project.

Quantites included with mainline quantities.

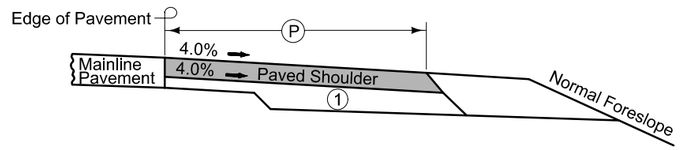
FILLET FOR NON-PAVED SIDE ROADS



PLAN VIEW

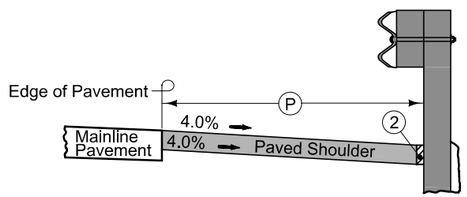


Section A-A

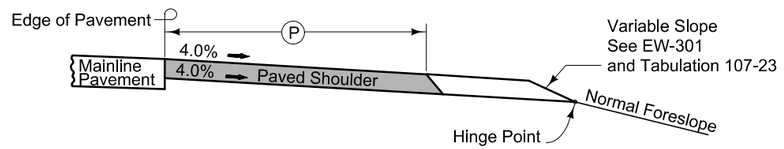


Section B-B

NEW CONSTRUCTION



Section A-A



Section B-B

EXISTING SHOULDER

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

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

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

Refer to Tabulation 112-9 for shoulder quantities.

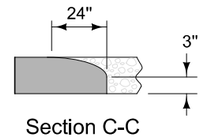
(1) For subgrade treatment, refer to other details in the plan.

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

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

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

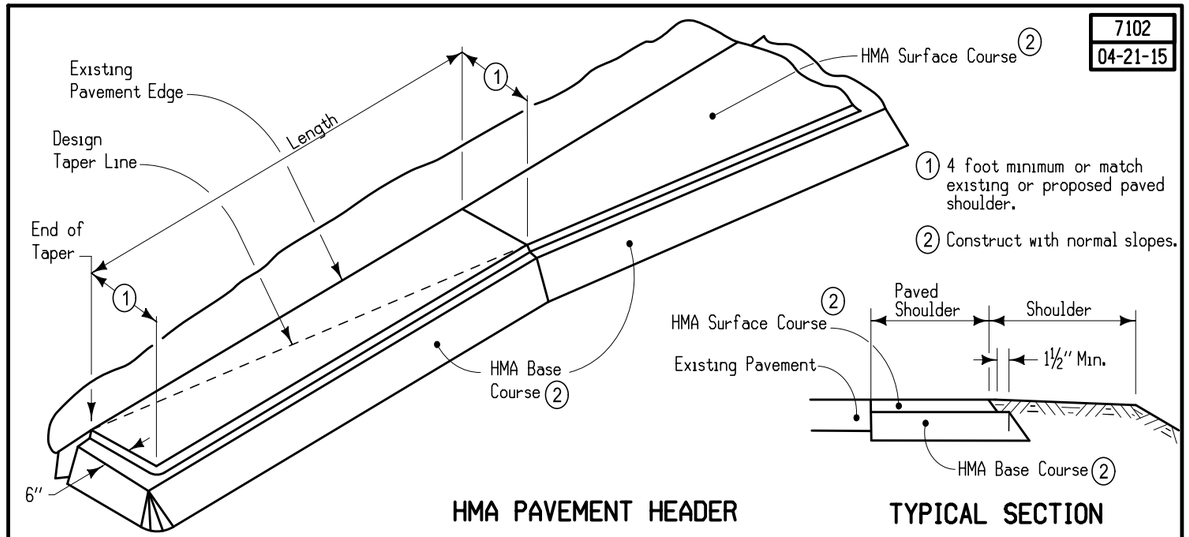
(5) 'KT-1 joint for PCC shoulder.
'B' joint for HMA shoulder.



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

PAVED SHOULDER AT GUARDRAIL

7102
04-21-15



1 4 foot minimum or match existing or proposed paved shoulder.

2 Construct with normal slopes.

HMA PAVEMENT HEADER

TYPICAL SECTION

Refer to project plans for exact details of pavement requirements.

100-1D
10-18-05

PROJECT DESCRIPTION

This project include PCC pavement Diamond Grinding and HMA and granular combination shoulders along with milled PCC centerline rumble strips and milled HMA shoulder rumble strips. There is an area of HMA Resurfacing and an area of HMA Milling and Resurfacing.

Also included is PCC patching, pipe repairs, clearing and grubbing, cable guard rail and guardrail at one bridge.

100-0A
10-28-97

ESTIMATED ROADWAY QUANTITIES - NHSX-002-9(38)-3H-56
(1 DIVISION PROJECT)

Item No.	Item Code	Item	Unit	Total	As Built Qty.
1	2101-0850001	CLEARING AND GRUBBING	ACRE	0.2	
2	2101-0850002	CLEARING AND GRUBBING	UNIT	115	
3	2102-2713090	EXCAVATION, CLASS 13, WASTE	CY	1,013.3	
4	2102-4560000	LOCATING TILE LINES	STA	2.00	
5	2122-5500090	PAVED SHOULDER, HOT MIX ASPHALT MIXTURE, 9 IN.	SY	4,053.3	
6	2125-2225050	RESHAPING DITCHES	STA	72.20	
7	2212-5070310	PATCHES, FULL-DEPTH REPAIR	SY	2,172.2	
8	2212-5070330	PATCHES BY COUNT (REPAIR)	EACH	83	
9	2214-5145150	PAVEMENT SCARIFICATION	SY	1,885.9	
10	2303-1032500	HOT MIX ASPHALT STANDARD TRAFFIC, INTERMEDIATE COURSE, 1/2 I N. MIX	TON	566.00	
11	2303-1033504	HOT MIX ASPHALT STANDARD TRAFFIC, SURFACE COURSE, 1/2 IN. MI X, FRICTION L-4	TON	1,111.80	
12	2303-1258283	ASPHALT BINDER, PG 58-28S, STANDARD TRAFFIC	TON	100.60	
13	2312-8260250	GRANULAR SURFACING ON ROAD, CRUSHED STONE	TON	65.0	
14	2402-0425040	FLOODED BACKFILL	CY	30.0	
15	2402-2720000	EXCAVATION, CLASS 20	CY	2907	
16	2416-0100024	APRONS, CONCRETE, 24 IN. DIA.	EACH	2	
17	2416-0101036	REMOVE AND REINSTALL CONCRETE PIPE APRONS LESS THAN OR EQUAL TO 36 IN.	EACH	14	
18	2416-0101136	REMOVE AND REINSTALL CONCRETE PIPE APRONS GREATER THAN 36 IN .	EACH	1	
19	2416-1180024	CULVERT, CONCRETE ROADWAY PIPE, 24 IN. DIA.	LF	50	
20	2416-1541036	REMOVE AND REINSTALL RIGID PIPE CULVERT LESS THAN OR EQUAL T O 36 IN.	LF	60	
21	2416-1541136	REMOVE AND REINSTALL RIGID PIPE CULVERT GREATER THAN 36 IN.	LF	12	
22	2422-0360018	APRONS, UNCLASSIFIED, 18 IN. DIA.	EACH	12	
23	2422-0360024	APRONS, UNCLASSIFIED, 24 IN. DIA.	EACH	30	
24	2422-0360030	APRONS, UNCLASSIFIED, 30 IN. DIA.	EACH	2	
25	2422-1722018	CULVERT, UNCLASSIFIED ENTRANCE PIPE, 18 IN. DIA.	LF	690	
26	2422-1722024	CULVERT, UNCLASSIFIED ENTRANCE PIPE, 24 IN. DIA.	LF	1067	
27	2422-1722030	CULVERT, UNCLASSIFIED ENTRANCE PIPE, 30 IN. DIA.	LF	216	
28	2503-0111018	STORM SEWER GRAVITY MAIN, TRENCHED, HIGH DENSITY POLYETHYLEN E PIPE (HDPE), 18 IN.	LF	94.0	
29	2505-4008130	REMOVAL OF CABLE GUARDRAIL	LF	3,170.0	
30	2505-6000111	HIGH TENSION CABLE GUARDRAIL	LF	3,170.0	
31	2505-6000121	HIGH TENSION CABLE GUARDRAIL, END ANCHOR	EACH	8	
32	2506-4984000	FLOWABLE MORTAR	CY	7.4	
33	2507-3250005	ENGINEERING FABRIC	SY	365.0	
34	2507-6800061	REVETMENT, CLASS E	TON	95.5	
35	2507-8029000	EROSION STONE	TON	123.0	
36	2527-9263109	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED	STA	42.44	
37	2527-9263112	PAINTED PAVEMENT MARKINGS, HIGH-BUILD WATERBORNE	STA	1,249.31	
38	2527-9263138	PAINTED SYMBOLS AND LEGENDS, HIGH-BUILD WATERBORNE	EACH	4	
39	2528-8400256	TEMPORARY TRAFFIC SIGNALS	EACH	8	
40	2528-8445110	TRAFFIC CONTROL	LS	1.00	
41	2528-8445113	FLAGGERS	EACH	See Proposal	
42	2528-8445115	PILOT CARS	EACH	See Proposal	
43	2529-5070110	PATCHES, FULL-DEPTH FINISH, BY AREA	SY	10.7	
44	2529-5070120	PATCHES, FULL-DEPTH FINISH, BY COUNT	EACH	1	
45	2529-8174010	SUBBASE (PATCHES)	SY	26.7	
46	2532-5200001	PAVEMENT SURFACE REPAIR (GRINDING LIMESTONE)	SY	148,851.5	
47	2533-4980005	MOBILIZATION	LS	1.00	
48	2548-0000310	MILLED CENTERLINE RUMBLE STRIPS, HMA SURFACE	STA	28.4	
49	2548-0000320	MILLED CENTERLINE RUMBLE STRIPS, PCC SURFACE	STA	434.1	
50	2602-0000020	SILT FENCE	LF	825.0	
51	2602-0000050	SILT BASINS	EACH	73	
52	2602-0000071	REMOVAL OF SILT FENCE OR SILT FENCE FOR DITCH CHECKS	LF	825.0	
53	2602-0000080	REMOVAL OF SILT BASINS	EACH	29	
54	2602-0000101	MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECK	LF	82.5	

100-4A
10-29-02

ESTIMATE REFERENCE INFORMATION - NHSX-002-9(38)-3H-56

Item No.	Item Code	Description
1	2101-0850001	**CLEARING AND GRUBBING**
2	2101-0850002	**CLEARING AND GRUBBING**
		Refer to Tab. 110-17on C Sheets.
3	2102-2713090	**EXCAVATION, CLASS 13, WASTE**
		Refer to Tab. 112-9 on C Sheets.
4	2102-4560000	**LOCATING TILE LINES**
		Refer to Tab 3R_Culv.
5	2122-5500090	**PAVED SHOULDER, HOT MIX ASPHALT MIXTURE, 9 IN.**
		Refer to Tab. 112-9 on C Sheets.
6	2125-2225050	**RESHAPING DITCHES**
		Refer to Tab. 3R-CULV on C. Sheets.
7	2212-5070310	**PATCHES, FULL-DEPTH REPAIR**
8	2212-5070330	**PATCHES BY COUNT (REPAIR)**
		Refer to Tab. 102-6C for locations and details.
		Calcium chloride shall not be used in the patch concrete.
		From April 15th to October 15th, Class C concrete may be used.
		Otherwise, Class M concrete shall be used. For Class M concrete, cure time required prior to opening shall be a minimum flexural strength of 300 psi determined from beam specimens made during the progress of the work. With prior approval, the Engineer may waive the restriction of calcium chloride use at identified patches located in intersections or other areas that require early opening due to anticipated traffic movements.
9	2214-5145150	**PAVEMENT SCARIFICATION**
		Refer to Tab. 100-25 and Tab. 102-16 on C Sheets.
10	2303-1032500	**HOT MIX ASPHALT STANDARD TRAFFIC, INTERMEDIATE COURSE, 1/2 I N. MIX**
11	2303-1033504	**HOT MIX ASPHALT STANDARD TRAFFIC, SURFACE COURSE, 1/2 IN. MI X, FRICTION L-4**
12	2303-1258283	**ASPHALT BINDER, PG 58-28S, STANDARD TRAFFIC**
		Refer to Tab. 100-25 on C Sheets.
13	2312-8260250	**GRANULAR SURFACING ON ROAD, CRUSHED STONE**
14	2402-0425040	**FLOODED BACKFILL**
15	2402-2720000	**EXCAVATION, CLASS 20**
16	2416-0100024	**APRONS, CONCRETE, 24 IN. DIA.**
		Refer to Tab. 3R-CULV on C. Sheets.
17	2416-0101036	**REMOVE AND REINSTALL CONCRETE PIPE APRONS LESS THAN OR EQUAL TO 36 IN.**
18	2416-0101136	**REMOVE AND REINSTALL CONCRETE PIPE APRONS GREATER THAN 36 IN .**
		Refer to Tab. 3R-CULV on C. Sheets.
		Excavation for removal and reinstallation of pipe is incidental to this item.
19	2416-1180024	**CULVERT, CONCRETE ROADWAY PIPE, 24 IN. DIA.**
		Refer to Tab. 3R-CULV on C. Sheets.
20	2416-1541036	**REMOVE AND REINSTALL RIGID PIPE CULVERT LESS THAN OR EQUAL T O 36 IN.**
21	2416-1541136	**REMOVE AND REINSTALL RIGID PIPE CULVERT GREATER THAN 36 IN.**
		Refer to Tab. 3R-CULV on C. Sheets.
		Excavation for removal and reinstallation of pipe is incidental to this item.
22	2422-0360018	**APRONS, UNCLASSIFIED, 18 IN. DIA.**
23	2422-0360024	**APRONS, UNCLASSIFIED, 24 IN. DIA.**
24	2422-0360030	**APRONS, UNCLASSIFIED, 30 IN. DIA.**
25	2422-1722018	**CULVERT, UNCLASSIFIED ENTRANCE PIPE, 18 IN. DIA.**
26	2422-1722024	**CULVERT, UNCLASSIFIED ENTRANCE PIPE, 24 IN. DIA.**
27	2422-1722030	**CULVERT, UNCLASSIFIED ENTRANCE PIPE, 30 IN. DIA.**
28	2503-0111018	**STORM SEWER GRAVITY MAIN, TRENCHED, HIGH DENSITY POLYETHYLEN E PIPE (HDPE), 18 IN.**
		Refer to Tab. 3R-CULV on C. Sheets.
29	2505-4008130	**REMOVAL OF CABLE GUARDRAIL**
		Refer to Tab. 110-7b on C Sheets.
30	2505-6000111	**HIGH TENSION CABLE GUARDRAIL**
31	2505-6000121	**HIGH TENSION CABLE GUARDRAIL, END ANCHOR**
		Refer to Tab. 108-9A on C Sheets.
32	2506-4984000	**FLOWABLE MORTAR**
		Refer to Tab. 3R-CULV on C. Sheets.
33	2507-3250005	**ENGINEERING FABRIC**
34	2507-6800061	**REVETMENT, CLASS E**
35	2507-8029000	**EROSION STONE**
		Refer to Tab. 100-23 and Tab. 3R_CULV on C Sheets.
36	2527-9263109	**PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED**
37	2527-9263112	**PAINTED PAVEMENT MARKINGS, HIGH-BUILD WATERBORNE**
		Refer to Tab. 108-22 on C Sheets.

100-4A
10-29-02

ESTIMATE REFERENCE INFORMATION - NHSX-002-9(38)-3H-56

Item No.	Item Code	Description
38	2527-9263138	**PAINTED SYMBOLS AND LEGENDS, HIGH-BUILD WATERBORNE**
		Refer to Tab 108-29 on C Sheets.
39	2528-8400256	**TEMPORARY TRAFFIC SIGNALS**
		Refer to Tab. 108-28 on C Sheets.
40	2528-8445110	**TRAFFIC CONTROL**
41	2528-8445113	**FLAGGERS**
42	2528-8445115	**PILOT CARS**
43	2529-5070110	**PATCHES, FULL-DEPTH FINISH, BY AREA**
44	2529-5070120	**PATCHES, FULL-DEPTH FINISH, BY COUNT**
		Refer to Tab. 102-6C for locations and details.
		Calcium chloride shall not be used in the patch concrete.
		From April 15th to October 15th, Class C concrete may be used.
		Otherwise, Class M concrete shall be used. For Class M concrete, cure time required prior to opening shall be a minimum flexural strength of 300 psi determined from beam specimens made during the progress of the work. With prior approval, the Engineer may waive the restriction of calcium chloride use at identified patches located in intersections or other areas that require early opening due to anticipated traffic movements.
45	2529-8174010	**SUBBASE (PATCHES)**
		Refer to Tab. 102-6C on C Sheets.
46	2532-5200001	**PAVEMENT SURFACE REPAIR (GRINDING LIMESTONE)**
		Quantity includes 2 - 12 ft wide ft through lanes for the full project length, including repair patches, and auxiliary lanes.
		Quantity computed at the full length of the project and 24 ft. - varies, mainline width.
		The profilometer runs beginning at the west end, IA 27, and includes both the existing HMA and PCC surfaces going east to US 61.
		The CalPro Inventory average international roughness index (IRI) values are:
		EBL lane, 182.98 in/mi (from pg. 196 of report)
		WBL lane, 185.69 in/mi (from pg. 196 of report)
		Electronic files of the high speed testing of the existing profile bumps are available from the Office of Contracts.
47	2533-4980005	**MOBILIZATION**
48	2548-0000310	**MILLED CENTERLINE RUMBLE STRIPS, HMA SURFACE**
49	2548-0000320	**MILLED CENTERLINE RUMBLE STRIPS, PCC SURFACE**
		Refer to Tab. 112-10 on C Sheets.
50	2602-0000020	**SILT FENCE**
		Refer to Tab. 100-17. The tabulation includes estimated locations for placement of Silt Fence to address erosion to be encountered during construction. Verify the specific locations with the Engineer prior to beginning placement. Bid item includes 25% additional quantity for field adjustments and replacements.
51	2602-0000050	**SILT BASINS**
		Refer to Tab. 100-14 and Tab. 3R_CULV on C Sheets.
		The tabulation includes estimated locations for placement of "Silt Basins" to address erosion to be encountered during construction. Verify the specific locations with the Engineer prior to beginning placement. Bid item includes 150% additional quantity for the paving project for field adjustment and maintenance.
52	2602-0000071	**REMOVAL OF SILT FENCE OR SILT FENCE FOR DITCH CHECKS**
		This item is included for silt fence removal required for replacement (replacement to be paid separately), or for areas that have achieved 70% permanent growth.
53	2602-0000080	**REMOVAL OF SILT BASINS**
		Refer to Tab. 100-14 on C Sheets.
54	2602-0000101	**MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECK**
		This item is included for clean-out and repair of the silt fence and silt fence for ditch checks during the project.

100-0A
10-28-97

ESTIMATED ROADWAY QUANTITIES - HSIPX-002-9(39)--3L-56
(1 DIVISION PROJECT)

Item No.	Item Code	Item	Unit	Total	As Built Qty.
1	2102-2713090	EXCAVATION, CLASS 13, WASTE	CY	6,312.0	
2	2121-7425020	GRANULAR SHOULDERS, TYPE B	TON	3,302.5	
3	2122-5500060	PAVED SHOULDER, HOT MIX ASPHALT MIXTURE, 6 IN.	SY	35,872.6	
4	2122-5500090	PAVED SHOULDER, HOT MIX ASPHALT MIXTURE, 9 IN.	SY	1,333.2	
5	2505-4008120	REMOVAL OF STEEL BEAM GUARDRAIL	LF	250.0	
6	2505-4008300	STEEL BEAM GUARDRAIL	LF	150.0	
7	2505-4008410	STEEL BEAM GUARDRAIL BARRIER TRANSITION SECTION, BA-201	EACH	4	
8	2505-4021010	STEEL BEAM GUARDRAIL END ANCHOR, BOLTED	EACH	4	
9	2505-4021720	STEEL BEAM GUARDRAIL TANGENT END TERMINAL, BA-205	EACH	4	
10	2505-6000111	HIGH TENSION CABLE GUARDRAIL	LF	3,170.0	
11	2505-6000121	HIGH TENSION CABLE GUARDRAIL, END ANCHOR	EACH	8	
12	2548-0000100	MILLED SHOULDER RUMBLE STRIPS, HMA SURFACE	STA	909.6	
13	2548-0000110	ASPHALT EMULSION FOR FOG SEAL (SHOULDER RUMBLE STRIPS)	GAL	985.6	
14	2548-0000200	MILLED SHOULDER RUMBLE STRIPS, PCC SURFACE	STA	15.4	

100-4A
10-29-02

ESTIMATE REFERENCE INFORMATION - HSIPX-002-9(39)--3L-56

Item No.	Item Code	Description
1	2102-2713090	**EXCAVATION, CLASS 13, WASTE**
		Refer to Tab. 112-9 on C Sheets.
2	2121-7425020	**GRANULAR SHOULDERS, TYPE B**
		Refer to Tab. 112-9 on C Sheets.
		Item includes 431 tons (15%) for existing shoulder slope correction.
3	2122-5500060	**PAVED SHOULDER, HOT MIX ASPHALT MIXTURE, 6 IN.**
4	2122-5500090	**PAVED SHOULDER, HOT MIX ASPHALT MIXTURE, 9 IN.**
		Refer to Tab. 112-9 on C Sheets.
5	2505-4008120	**REMOVAL OF STEEL BEAM GUARDRAIL**
		Refer to Tab. 110-7A on C Sheets.
6	2505-4008300	**STEEL BEAM GUARDRAIL**
7	2505-4008410	**STEEL BEAM GUARDRAIL BARRIER TRANSITION SECTION, BA-201**
8	2505-4021010	**STEEL BEAM GUARDRAIL END ANCHOR, BOLTED**
9	2505-4021720	**STEEL BEAM GUARDRAIL TANGENT END TERMINAL, BA-205**
		Refer to Tab. 108-8A on C Sheets.
10	2505-6000111	**HIGH TENSION CABLE GUARDRAIL**
11	2505-6000121	**HIGH TENSION CABLE GUARDRAIL, END ANCHOR**
		Refer to Tab. 108-9A on C Sheets.
12	2548-0000100	**MILLED SHOULDER RUMBLE STRIPS, HMA SURFACE**
13	2548-0000110	**ASPHALT EMULSION FOR FOG SEAL (SHOULDER RUMBLE STRIPS)**
14	2548-0000200	**MILLED SHOULDER RUMBLE STRIPS, PCC SURFACE**
		Refer to Tab. 112-10 on C Sheets.

105-4
10-18-11

STANDARD ROAD PLANS

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

Number	Date	Title
BA-200	04-16-19	Steel Beam Guardrail Components
BA-201	04-18-17	Steel Beam Guardrail Barrier Transition Section (MASH TL-3)
BA-202	10-20-15	Steel Beam Guardrail Bolted End Anchor
BA-205	04-19-16	Steel Beam Guardrail Tangent End Terminal (MASH TL-3)
BA-351	10-15-19	High Tension Cable Guardrail
DR-101	04-18-17	Pipe Culvert (Bedding and Backfill)
DR-103	04-21-15	Pipe Culvert (Installation Details)
DR-104	04-19-16	Depth of Cover Tables for Concrete and Corrugated Pipe
DR-122	10-18-16	Construction of Type "C" Concrete Adaptors for Pipe Culvert Connections
DR-201	10-16-18	Concrete Aprons
EC-201	10-15-19	Silt Fence
EC-301	10-18-16	Rock Erosion Control (REC)
EW-105	04-21-15	Reshaping Slopes and Ditches
EW-301	10-20-15	Guardrail Grading
EW-403	04-18-17	Temporary Erosion Control Measures
PM-110	10-16-18	Line Types
PM-111	04-21-15	Symbols and Legends
PM-120	10-21-14	Stop Lines and Islands
PM-221	10-18-16	Climbing Lane
PM-521	10-15-19	Two-Lane Roadway with Right Turn Lanes
PR-103	10-21-14	Full Depth PCC Patch with Dowels
PR-140	04-21-15	Subbase Patches
PR-202	10-21-14	Notches for Resurfacing (with or without Runout)
PV-12	04-19-16	Milled Shoulder Rumble Strips
PV-13	10-17-17	Milled Centerline Rumble Strips
PV-202	04-16-13	Hot Mix Asphalt Resurfacing
SI-173	04-19-16	Object Markers
SI-211	10-18-16	Object Marker and Delineator Placement with Guardrail
SI-881	04-16-19	Special Signs for Workzones
TC-1	10-15-19	Work Not Affecting Traffic (Two-Lane or Multi-Lane)
TC-202	04-21-15	Work Within 15 ft of Traveled Way
TC-212	10-15-19	Spot Location Lane Closure with Flaggers
TC-213	10-15-19	Lane Closure with Flaggers
TC-214	10-15-19	Lane Closure with Flaggers for use with Pilot Car
TC-218	10-15-19	Lane Closure with Pilot Car and Flagger Operated Signals
TC-231	10-15-19	Slow Moving Vehicle Operating in the Traffic Lane
TC-232	10-21-14	Shoulder Rumble Strip Operations
TC-233	10-17-17	Pavement Marking Operations Two-Lane
TC-432	10-17-17	Shoulder Rumble Strip Operations

100-26
10-15-13

INCIDENTAL ITEMS

Special or unique items where method of measurement / basis of payment is not indicated in the specifications or other contract documents.

No.	Incidental Item	Unit	Quantity	Incidental To		Remarks
				Item Code	Item	
	Culvert Cleaning	CY	78.3	2402-2720100	Class 20 Excavation	Note (1)
	(1) See Tab 3R_CULV, Note 1 for culvert interior flushing.					

111-25
10-18-11

INDEX OF TABULATIONS

Tabulation	Tabulation Title	Sheet No.
C Sheets		
100-0A38	ESTIMATED ROADWAY QUANTITIES - NHSX-002-9(38)-3L-56 (1 DIVISION PROJECT)	C.1
100-0A39	ESTIMATED ROADWAY QUANTITIES - HSIPX-002-9(39)--3L-56 (1 DIVISION PROJECT)	C.2
100-1D	PROJECT DESCRIPTION	C.1
100-4A38	ESTIMATE REFERENCE INFORMATION - NHSX-002-9(38)-3L-56	C.1 - C.2
100-4A39	ESTIMATE REFERENCE INFORMATION - HSIPX-002-9(39)--3L-56	C.2
100-14	SILT BASINS	C.5
100-17	TABULATION OF SILT FENCES	C.4
100-23	ROCK EROSION CONTROL	C.4
100-25	HMA PAVEMENT	C.13
100-26	INCIDENTAL ITEMS	C.3
102-5	EXISTING PAVEMENT	C.5
102-6C	FULL-DEPTH PATCHES	C.7 - C.8
102-16	NOTCHES AND RUNOUTS FOR RESURFACING	C.13
105-4	STANDARD ROAD PLANS	C.3
107-23	GRADING FOR GUARDRAIL INSTALLATIONS	C.11
108-8A	STEEL BEAM GUARDRAIL AT CONCRETE BARRIER OR BRIDGE RAIL END SECTION	C.11
108-9A	HIGH TENSION CABLE GUARDRAIL	C.11
108-22	PAVEMENT MARKING LINE TYPES	C.15
108-28	TEMPORARY TRAFFIC SIGNALS	C.6
108-29	PAVEMENT MARKING SYMBOLS AND LEGENDS	C.14
108-30	CRASH CUSHIONS	No Sheet No.
108-33	TEMPORARY BARRIER RAIL	No Sheet No.
110-7A	REMOVAL OF STEEL BEAM GUARDRAIL	C.11
110-7B	REMOVAL OF CABLE GUARDRAIL	C.11
110-17	CLEARING AND GRUBBING	C.6
111-25	INDEX OF TABULATIONS	C.3
112-9	SHOULDERS	C.12
112-10	MILLED RUMBLE STRIPS	C.14
3R-CULV	DRAINAGE STRUCTURE REPAIR WORK	C.8 - C.10

262-6
10-18-05

UTILITIES
(NOT A POINT 25 PROJECT)

This is NOT a POINT 25 project and is not subject to the provisions of IAC 761-115.25.

232-10
04-18-17

EMERALD ASH BORER

Any living, dead, cut or fallen material of the ash (Fraxinus spp.) including trees, nursery stock, logs, firewood, stumps, roots, branches, and composted or uncomposted ash chips can be freely moved within the yellow areas of the most recent Federal EAB Quarantine & Authorized Transit.

https://www.aphis.usda.gov/plant_health/plant_pest_info/emerald_ash_b/downloads/eab_quarantine_map.pdf.

Obtain appropriate Compliance Agreements from USDA APHIS PPQ prior to moving any of the above listed ash articles to areas outside the yellow zone on the map.

For questions, concerns, and general assistance, contact:

USDA APHIS PPQ, Iowa office, 515-414-3295

Or

Iowa Department of Agriculture & Land Stewardship
515-725-1470
Entomology@IowaAgriculture.gov

100-23
04-17-18

ROCK EROSION CONTROL

Refer to EC-301 and Detail 570-8

Location						Rock Erosion Control (REC)					Material Bid Quantities			Remarks
Road Identification	Begin Station	End Station	Side	(L)	(W)	Type 1 Rock Ditch Check	Type 2 Rock Ditch	Type 3 Rock Flume	Type 4 Rock Splash Basin	Type 5 Rock Slope Protection	Eng. Fabric	Class E Revetment	Erosion Stone	
			Lt./Rt.	FT	FT						SY	TON	TON	
IA 2, Entrance LT, place stone at inlet	516+26.70		LT						1		10.0		0.5	See 3R-CULV
IA 2, Entrance LT	520+54.00		LT				1				10.0		0.5	See 3R-CULV
IA 2, Entrance Dike RT	523+00.00		RT				1				15.0	5.0		See 3R-CULV
IA 2, Entrance RT	524+70.00		RT										0.5	See 3R-CULV
IA 2, Entrance RT, inlet erosion	539+23.00		RT						1		10.0	0.5		See 3R-CULV
IA 2, Entrance LT	539+90.00		LT				1				10.0		0.5	See 3R-CULV
IA 2, Type F Dike RT, inlet erosion	542+08.00		RT						1					See 3R-CULV
IA 2, Type F Dike RT	543+00.00		RT						1		10.0	20.0		See 3R-CULV
IA 2, Cross Road pipe	561+83.00		LT				1				15.0		3.0	See 3R-CULV
IA 2, Cross Road pipe	581+40.00		LT				1				15.0		3.0	See 3R-CULV
IA 2, Cross Road pipe	629+20.00		RT										5.0	See 3R-CULV
IA 2, Entrance LT	691+36.00		LT				1				25.0		15.0	See 3R-CULV
IA 2, Cross Road RCB	718+46.00		LT						1		20.0		10.0	See 3R-CULV
IA 2, Cross Road RCB	722+02.00		LT				1				25.0		15.0	See 3R-CULV
IA 2, Cross Road RCB	751+02.00		LT				1				20.0		10.0	See 3R-CULV
IA 2, Cross Road pipe	782+80.00		RT				1				10.0		5.0	See 3R-CULV
IA 2, Cross Road pipe	821+28.00		LT				1				20.0		10.0	See 3R-CULV
IA 2, Entrance RT	834+65.00		RT				1				20.0		10.0	See 3R-CULV
IA 2, Cross Road pipe	835+30.00		LT						1		20.0		15.0	See 3R-CULV
IA 2, Cross Road RCB	881+45.00		RT						1		50.0	30.0		See 3R-CULV
IA 2, Cross Road pipe	902+50.00		LT				1				20.0		10.0	See 3R-CULV
IA 2, Cross Road RCB	908+40.00		LT						1		40.0	20.0		See 3R-CULV
IA 2, Cross Road pipe	942+80.00		RT				1					20.0	10.0	See 3R-CULV
Totals											**365.0**	**95.5**	**123.0**	

100-17
04-20-10

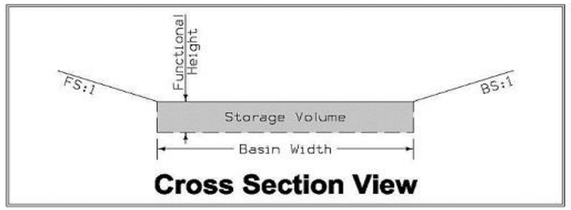
TABULATION OF SILT FENCES

Refer to EC-201

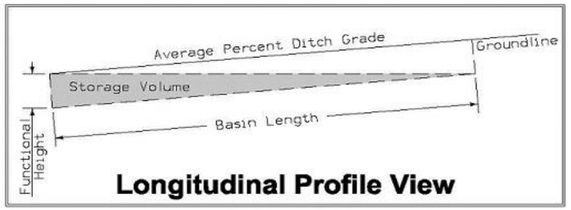
Location			Length	Remarks
Begin Station	End Station	Side	LF	
499+65.00		LT	20.0	See 3R-CULV
502+50.00		LT	20.0	See 3R-CULV
508+18.00		RT	20.0	See 3R-CULV
513+95.00		RT	10.0	See 3R-CULV
522+10.00		LT	20.0	See 3R-CULV
543+00.00		RT	10.0	See 3R-CULV
MP 249.886		RT	20.0	See 3R-CULV
MP 250.071		RT	20.0	See 3R-CULV
561+83.00		LT	10.0	See 3R-CULV
594+78.00		LT	20.0	See 3R-CULV
607+00.00		LT	20.0	See 3R-CULV
610+73.00		LT	20.0	See 3R-CULV
610+72.00		RT	10.0	See 3R-CULV
610+72.00		LT	20.0	See 3R-CULV
621+60.00		LT	10.0	See 3R-CULV
622+75.00		LT	20.0	See 3R-CULV
629+20.00		RT	10.0	See 3R-CULV
634+00.00		LT	10.0	See 3R-CULV
634+80.00		RT	20.0	See 3R-CULV
656+00.00		LT	10.0	See 3R-CULV
665+64.00		RT	10.0	See 3R-CULV
680+00.00		LT	10.0	See 3R-CULV
683+30.00		LT	20.0	See 3R-CULV
685+88.00		LT	20.0	See 3R-CULV
691+36.00		LT	20.0	See 3R-CULV
696+98.00		RT	20.0	See 3R-CULV
784+87.30		RT	20.0	See 3R-CULV
792+95.00		LT	20.0	See 3R-CULV
793+90.00		RT	20.0	See 3R-CULV
816+50.00		RT	20.0	See 3R-CULV
824+10.00		RT	20.0	See 3R-CULV
834+65.00		RT	20.0	See 3R-CULV
862+00.00		RT	20.0	See 3R-CULV
872+88.00		RT	20.0	See 3R-CULV
898+50.00		LT	20.0	See 3R-CULV
902+65.00		RT	20.0	See 3R-CULV
906+53.00		LT	20.0	See 3R-CULV
907+15.00		LT	20.0	See 3R-CULV
	Total		**660.0**	
	Bid		**825.0**	**125% Tab.**
	Maintenance		**82.5**	**10% Bid**
	Removal		**825.0**	**100% Bid**

SILT BASINS

Possible Standard: EW-403



Cross Section View



Longitudinal Profile View

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

Basin No.	Location		Bid Items		Stormwater Storage Volume Summary					Remarks
	Station	Side	Installation EACH	Removal EACH	Basin Width FT	Basin Length FT	Height FT	Avg. % Slope	Volume* CF	
1	499+65.00	LT	1		10.0	50.0	2.85		1425.0	See 3R-CULV
2	502+50.00	LT	1		10.0	50.0	2.85		1425.0	See 3R-CULV
3	508+18.00	RT	1		10.0	50.0	2.85		1425.0	See 3R-CULV
4	522+10.00	LT	1		10.0	50.0	2.85		1425.0	See 3R-CULV
5	MP 249.886	RT	1		10.0	50.0	2.85		1425.0	See 3R-CULV
6	MP 250.071	RT	1		10.0	50.0	2.85		1425.0	See 3R-CULV
7	594+78.00	LT	1		10.0	50.0	2.85		1425.0	See 3R-CULV
8	607+00.00	LT	1		10.0	50.0	2.85		1425.0	See 3R-CULV
9	610+73.00	LT	1		10.0	50.0	2.85		1425.0	See 3R-CULV
10	610+72.00	LT	1		10.0	50.0	2.85		1425.0	See 3R-CULV
11	622+75.00	LT	1		10.0	50.0	2.85		1425.0	See 3R-CULV
12	629+20.00	RT	1		10.0	50.0	2.85		1425.0	See 3R-CULV
13	634+80.00	RT	1		10.0	50.0	2.85		1425.0	See 3R-CULV
14	683+30.00	LT	1		10.0	50.0	2.85		1425.0	See 3R-CULV
15	685+88.00	LT	1		10.0	50.0	2.85		1425.0	See 3R-CULV
16	691+36.00	LT	1		10.0	50.0	2.85		1425.0	See 3R-CULV
17	696+98.00	RT	1		10.0	50.0	2.85		1425.0	See 3R-CULV
18	784+87.30	RT	1		10.0	50.0	2.85		1425.0	See 3R-CULV
19	792+95.00	LT	1		10.0	50.0	2.85		1425.0	See 3R-CULV
20	793+90.00	RT	1		10.0	50.0	2.85		1425.0	See 3R-CULV
21	816+50.00	RT	1		10.0	50.0	2.85		1425.0	See 3R-CULV
22	824+10.00	RT	1		10.0	50.0	2.85		1425.0	See 3R-CULV
23	834+65.00	RT	1		10.0	50.0	2.85		1425.0	See 3R-CULV
24	862+00.00	RT	1		10.0	50.0	2.85		1425.0	See 3R-CULV
25	872+88.00	RT	1		10.0	50.0	2.85		1425.0	See 3R-CULV
26	898+50.00	LT	1		10.0	50.0	2.85		1425.0	See 3R-CULV
27	902+65.00	RT	1		10.0	50.0	2.85		1425.0	See 3R-CULV
28	906+53.00	LT	1		10.0	50.0	2.85		1425.0	See 3R-CULV
29	907+15.00	LT	1		10.0	50.0	2.85		1425.0	See 3R-CULV
		Total	**29**							
		Bid	**73**	**250% Tab**						
		Removal	**29**	**100% Tab**						

EXISTING PAVEMENT

No.	Location					Year	Type	Project Number	Surface		Base		Subbase		Removal		Coarse Aggregate			Reinforcement	Remarks
	County	Route	Dir. of Travel	Begin Ref. Loc. Sign	End Ref. Loc. Sign				Type	Depth IN	Type	Depth IN	Type	Depth IN	Type	Depth IN	Source	Type	Durability Class	Type	
	Lee	IA 2	WB-EB	248.77	254.18	1979		F-2-9(11)--20-56	PCC	8							FARMINGTON-COM	C. LST.	1		
				254.18	257.57	1979		FN-2-9(17)--20-56	PCC	8							FARMINGTON-COM	C. LST.	1		
				257.57	257.95	2011		NHSX-061-1(117)--3H-56	PCC	10											

110-17
04-18-17

CLEARING AND GRUBBING

Location		Work and Material Type	Trees, Stumps, and Logs and Down Timber Material Diameters												All Other Materials		Estimated Quantities			Remarks
Station to Station or Ref. Loc. Sign to Ref. Loc. Sign or Description	Direction of Travel		3"-6"	>6"-9"	>9"-12"	>12"-15"	>15"-18"	>18"-24"	>24"-30"	>30"-36"	>36"-42"	>42"-48"	>48"-60"	>60"-72"	>72"	Length	Width	Units	Area	Herbicide Application	
																FT	FT	Units	Acres	Each	
MP 251.145 RT		Trees - Clearing and Grubbing						1										22			1
MP 251.206 RT		Logs and Down Timber - Clearing	1		2			1										13			2
MP 251.240 RT		Logs and Down Timber - Clearing	2															1			2
MP 251.590 RT		Trees - Clearing and Grubbing														40.0	40.0		0.0		3
MP 252.949 RT		Logs and Down Timber - Clearing						1										8			2
MP 252.992 RT		Logs and Down Timber - Clearing	2	3														4			2
MP 252.997 RT		Logs and Down Timber - Clearing		1														1			2
MP 253.014 LT		Logs and Down Timber - Clearing		1														1			2
MP 253.016 LT		Logs and Down Timber - Clearing			1													2			2
MP 253.018 LT		Logs and Down Timber - Clearing	2															1			2
MP 253.023 LT		Logs and Down Timber - Clearing				1												3			2
MP 253.029 LT		Logs and Down Timber - Clearing	1															1			2
MP 253.033 RT		Logs and Down Timber - Clearing				1												3			2
MP 253.060 LT		Logs and Down Timber - Clearing		1														1			2
MP 253.500 LT		Logs and Down Timber - Clearing	6															3			2
MP 253.523 LT		Logs and Down Timber - Clearing	1	1														2			2
MP 253.610 LT		Logs and Down Timber - Clearing						1										8			2
MP 254.177 - MP 254.186 LT		Logs and Down Timber - Clearing														50.0	20.0		0.0		4
MP 254.184 - MP 254.189 RT		Logs and Down Timber - Clearing														25.0	20.0		0.0		4
MP 254.209 - MP 254.240 LT		Logs and Down Timber - Clearing														166.0	20.0		0.1		4
MP 254.217 - MP 254.229 RT		Logs and Down Timber - Clearing														68.0	20.0		0.0		4
MP 256.055 RT		Logs and Down Timber - Clearing					1											5			2
MP 256.321 RT		Logs and Down Timber - Clearing						1										8			2
MP 256.416 RT		Logs and Down Timber - Clearing					1											5			2
MP 256.521 RT		Logs and Down Timber - Clearing				1												3			2
MP 256.523 RT		Logs and Down Timber - Clearing			1													2			2
MP 256.930 LT		Logs and Down Timber - Clearing	3															2			5
MP 256.952 RT		Logs and Down Timber - Clearing	2															1			5
MP 256.961 RT		Logs and Down Timber - Clearing	2															1			5
MP 256.968 LT		Logs and Down Timber - Clearing	3															2			5
MP 257.125 - MP 257.140 LT		Logs and Down Timber - Clearing	19		2													13			2
Totals																		**115**	**0.2**		

1 - Cedar Tree at inlet
2 - Dead Trees
3 - Around driveway culvert
4 - Sugar Creek Bridge
5 - Devil's Creek Bridge

108-28
08-01-08

TEMPORARY TRAFFIC SIGNALS

No.	Location Station	Type			Remarks
		One Lane Traffic	Haul Road	Intersection	
1	482+00.00	X			
2	535+00.00	X			
3	561+00.00	X			
4	628+50.00	X			
5	718+00.00	X			
6	798+50.00	X			
7	877+80.00	X			
8	928+00.00	X			

FULL-DEPTH PATCHES

Possible Standards: PR-101, PR-102, PR-103, PR-104, PR-105 and PR-140.

Location				Dimension			PCC Patches													
Count	Station	Reference Location Sign	Lane	Length	Width	Patch Thickness	With Dowels	Without Dowels	C R C	Ramp with Dowels	HMA Patches	Composite HMA	Subbase Patches	Subbase Patch w/ 'EF' Joint	Patch Subdrain	'CD' Joints	'CT' Joints	'EF' Joints	Anchor Lugs Removal	Remarks
							PR-103	PR-102	PR-104	PR-105			PR-140	PR-101	PR-101 or PR-140			PR-101		
			L, R, or B	FT	FT	IN	SY	SY	SY	SY	SY	TON	SY	SY	No.	No.	No.	No.	No.	
Repair																				
1	482+50		RT	13.0	4.0	8.0	5.8													
2	499+52		RT	40.0	12.0	8.0	53.3									1	2			
3	502+40		RT	91.0	12.0	8.0	121.3									3	4			
4	503+30		LT	80.0	12.0	8.0	106.7									3	4			
5	531+48		LT	20.0	12.0	8.0	26.7										1			
6	531+95		LT	74.0	12.0	8.0	98.7									4	3			
7	533+38		RT	17.0	4.0	8.0	7.6									1				
8	533+80		RT	40.0	4.0	8.0	17.8									1	2			
9	534+80		RT	40.0	6.0	8.0	26.7									1	2			
9	548+00		RT	40.0	5.0	8.0	22.2									1	2			
10	553+30		LT	40.0	12.0	8.0	53.3									1	2			
11	561+65		LT	8.0	12.0	8.0	10.7													
12	561+65		RT	6.0	12.0	8.0	8.0													
13	583+51		LT	4.0	4.0	8.0	1.8													
14	621+35		LT	18.0	4.0	8.0	8.0									1				
15	621+48		LT	6.0	12.0	8.0	8.0													
16	621+48		RT	40.0	5.0	8.0	22.2									1	2			
17	622+75.00	Entrance	L	12.0	15.0	6.0					340.0									See Tab 3R-CULV
18	622+90		RT	40.0	6.0	8.0	26.7									1	2			
19	624+40		RT	32.0	5.0	8.0	17.8									1	1			
20	628+40		LT	6.0	12.0	8.0	8.0													
21	656+11		LT	18.0	12.0	8.0	24.0									1				
22	656+11		RT	18.0	12.0	8.0	24.0									1				
23	661+24		LT	8.0	4.0	8.0	3.6													
24	663+37		LT	20.0	6.0	8.0	13.3													
25	663+52		LT	6.0	12.0	8.0	8.0													
26	663+70		LT	4.0	5.0	8.0	2.2													
27	666+05		RT	14.0	4.0	8.0	6.2													
28	666+33		RT	6.0	12.0	8.0	8.0													
29	666+80		RT	122.0	6.0	8.0	81.3									6	6			
30	669+20		RT	30.0	5.0	8.0	16.7									1	1			
31	670+40		RT	20.0	6.0	8.0	13.3										1			
32	670+74		RT	20.0	12.0	8.0	26.7									1				
33	671+56		RT	8.0	4.0	8.0	3.6													
34	678+00		LT	23.0	12.0	8.0	30.7													
35	680+00		LT	38.0	12.0	8.0	50.7										1			
36	680+00		RT	38.0	12.0	8.0	50.7									1	2			
37	696+98.00	IA 2	B	12.0	10.0	8.0	493.3						493.3							See Tab 3R-CULV Note 3, and TC-218
38	718+00		LT	6.0	12.0	8.0	8.0									1	2			
39	718+00		RT	6.0	12.0	8.0	8.0													
40	724+52		RT	4.0	4.0	8.0	1.8													
41	726+85		RT	24.0	12.0	8.0	32.0									1				
42	726+93		RT	6.0	12.0	8.0	8.0													
43	727+00		RT	6.0	12.0	8.0	8.0													
44	727+20		RT	6.0	12.0	8.0	8.0													
45	730+30		LT	12.0	4.0	8.0	5.3													
46	733+36		LT	40.0	12.0	8.0	53.3									1	2			
47	736+60		LT	40.0	7.0	8.0	31.1									1	2			
48	745+70		RT	40.0	6.0	8.0	26.7									1	2			
50	756+03		RT	40.0	5.0	8.0	22.2									1	2			
51	766+77		LT	12.0	6.0	8.0	8.0													
52	775+36		LT	6.0	12.0	8.0	8.0													
53	775+97		RT	6.0	12.0	8.0	8.0													
54	796+50		LT	40.0	12.0	8.0	53.3									1	2			
55	839+54		RT	8.0	12.0	8.0	10.7													
56	839+68		LT	6.0	12.0	8.0	8.0													
57	862+40		LT	40.0	5.0	8.0	22.2									1	2			
58	868+90		LT	20.0	6.0	8.0	13.3													
59	870+60		LT	6.0	12.0	8.0	8.0													
60	874+20		LT	40.0	12.0	8.0	53.3									1	2			
61	879+66		LTO	6.0	2.0	8.0	1.3													Climbing lane
62	888+77		LTO	4.0	4.0	8.0	1.8													Climbing lane
63	890+20		LTO	4.0	4.0	8.0	1.8													Climbing lane
64	892+40		LTO	9.0	12.0	8.0	12.0													Climbing lane
65	898+40		LT	21.0	12.0	8.0	28.0									1				
66	898+40		RT	21.0	2.0	8.0	4.7									1				
67	899+80		RT	40.0	12.0	8.0	53.3									1	2			
68	903+85		RT	29.0	4.0	8.0	12.9									1	1			
69	904+60		LTO	8.0	6.0	8.0	5.3													Climbing lane
70	905+20		LT	9.0	6.0	8.0	6.0													
71	911+10		LT	12.0	12.0	10.0	16.0													
72	911+10		RT	12.0	12.0	10.0	16.0													
73	911+23		RT	6.0	12.0	10.0	8.0													
74	920+26		LT	10.0	12.0	10.0	13.3													
75	920+45		RT	6.0	12.0	10.0	8.0													
76	920+95		RT	6.0	12.0	10.0	8.0													
77	921+19		RT	6.0	12.0	10.0	8.0													
78	921+58		LT	6.0	12.0	10.0	8.0													

FULL-DEPTH PATCHES

Possible Standards: PR-101, PR-102, PR-103, PR-104, PR-105 and PR-140.

Location				Dimension			PCC Patches												
Count	Station	Reference Location Sign	Lane	Length	Width	Patch Thickness	With Dowels	Without Dowels	C R C	Ramp with Dowels	HMA Patches	Composite HMA	Subbase Patches	Subbase Patch w/ 'EF' Joint	Patch Subdrain	'CD' Joints	'CT' Joints	'EF' Joints	Anchor Lugs Removal	Remarks
							PR-103	PR-102	PR-104	PR-105			PR-140	PR-101	PR-101 or PR-140			PR-101		
			L, R, or B	FT	FT	IN	SY	SY	SY	SY	SY	TON	SY	SY	No.	No.	No.	No.	No.	
79	922+00		RT	10.0	4.0	10.0	4.4													
80	922+60		RT	6.0	12.0	10.0	8.0													
81	922+75		RT	6.0	12.0	10.0	8.0													
82	927+05		LT	6.0	12.0	10.0	8.0													
83	**927+05**		**RT**	**6.0**	**12.0**	**10.0**	**8.0**													
					Total		**2161.6**													
Finish																				
1	**771+65**		**LT**	**8.0**	**12.0**	**12.0**	**10.7**													
					Total		**10.7**													
																				In Br. App.

DRAINAGE STRUCTURE REPAIR WORK

Length of unclassified pipe calculated is based on using Reinforced Concrete Pipe.

* Not a bid item
(1) Diameter or equivalent diameter
(2) UNCL = Unclassified Pipe CMP = Corrugated Metal Pipe RCP = Reinforced Concrete Pipe LCP = Arch or Elliptical Low Clearance Pipe SARC = Steel Arch Pipe
(3) Backfill according to DR-101

No.	Location	Size (1)	Kind Of Pipe (2)	Length New Const.		New Apron		Type 'C' Connections* (DR-122)		Connected Pipe Joint* (DR-121)	Flow Line Elevations Note 6		Remove and Reinstall Pipe Culvert Note 5				Remove and Reinstall Apron Note 5				Class 20 Excavation (Culvert Cleaning) Note 1		Class 20 Excavation		Granular Surfacing Note 4		Reshaping Ditch Std Rd. Plan EW-105		Flowable Backfill Note 3	Flowable Mortar Note 3	Tile Repair	Remarks
				Lin. Ft.		Each							Left Side		Right Side		Left Side		Right Side		CY		CY		TON		STA					
		IN		Lt.	Rt.	Lt.	Rt.	Type	No.	Type	Lt.	Rt.	≤ 36"	>36"	≤ 36"	>36"	≤ 36"	>36"	≤ 36"	>36"	Lt.	Rt.	Lt.	Rt.	Lt.	Rt.	Lt.	Rt.	C.Y.	C.Y.	LF	
1	499+65.00	18	CMP	48		2							48.0												3.0		2.2					Entrance, ditch to east and west, remove pipe, place new pipe
2	501+75.00	18	CMP																									0.5				Entrance RT, reshape ditch,See Note 2
3	502+50.00	18	CMP	56		2							56.0										9.0		3.0		3.0					Entrance, ditch to east and west, remove pipe, place new pipe
4	MP 249.1 Tile																														20.0	Tile repair
5	504+80.00	18	CMP																			2.4										Entrance RT, clean pipe, see Note 1
6	505+95.00	18	CMP																			2.4										Entrance RT, clean pipe, see Note 1
7	508+18.00	18	CMP		64		2								64.0									17.0		3.0		2.0				Entrance, reshape ditch to east and west, remove pipe, place new pipe
8	MP 249.245	24	CMP																			8.8						2.0				Entrance RT, clean pipe, see Note 1
9	513+95.00	24	RCP																1			9.3						1.5				Cross Road, Rt reset inlet, clean pipe, see Note 1
10	516+26.70	24	CMP																		10.7						1.0					Entrance LT, clean pipe, see Note 1, place stone at inlet, see 100-23
11	520+54.00	24	CMP																								1.0					Entrance LT, shape ditch, place stone, see 100-23
12	522+10.00	30	CMP	40		2							40.0										60.0									Dike, remove pipe, place new pipe
13	523+00.00	24	CMP																													Entrance RT, dike, see 100-23
14	524+70.00	18	CMP																			9.8						1.0				Entrance RT, see 100-23, clean pipe, see Note 1
15	539+23.00	18	CMP																			1.0						0.5				Entrance RT, inlet erosion, see 100-23, clean outlet, see Note 1
16	539+90.00	18	CMP																								2.0					Entrance LT, see 100-23
17	542+08.00	24	CMP																													Type F dike RT, erosion at inlet, see 100-23
18	543+00.00	24	CMP				1												1													Type F dike RT, remove, place new apron East end, see 100-23
19	MP 249.886	24	CMP		75		2								75.0									222.0		3.0						Entrance RT, remove and place new pipe
20	MP 250.071	18	CMP		60										60.0									16.0								Grass Entrance RT, remove and place new pipe
21	555+70.00	18	CMP																			3.1						1.0				Entrance RT, clean inlet and outlet, see Note 1
22	560+70.00		CMP																								1.0					Entrance LT, reshape ditch
23	561+83.00	24	RCP												12.0				1								0.3					Cross Road, erosion LT, separation RT, see 100-23
24	564+90.00	18	CMP																								2.0					Entrance LT, reshape ditch

DRAINAGE STRUCTURE REPAIR WORK

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(1) Diameter or equivalent diameter
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(3) Backfill according to DR-101

No.	Location	Size (1)	Kind Of Pipe (2)	Length New Const.		New Apron		Type 'C' Connections* (DR-122)		Connected Pipe Joint* (DR-121)	Flow Line Elevations Note 6		Remove and Reinstall Pipe Culvert Note 5				Remove and Reinstall Apron Note 5				Class 20 Excavation (Culvert Cleaning) Note 1		Class 20 Excavation		Granular Surfacing Note 4		Reshaping Ditch Std Rd. Plan EW-105		Flowable Backfill Note 3	Flowable Mortar Note 3	Tile Repair	Remarks
				Lin. Ft.		Each							Left Side		Right Side		Left Side		Right Side		CY		CY		TON		STA					
		IN		Lt.	Rt.	Lt.	Rt.	Type	No.	Type	Lt.	Rt.	≤ 36"	>36"	≤ 36"	>36"	≤ 36"	>36"	≤ 36"	>36"	Lt.	Rt.	Lt.	Rt.	Lt.	Rt.	Lt.	Rt.	C.Y.	C.Y.	LF	
25	567+29.00	24	RCP																									0.3				Cross Road, reshape ditch
26	573+55.00	18	CMP																									1.0				Entrance RT, reshape ditch
27	574+50.00	15	CMP																								1.8					Entrance LT, reshape ditch
28	581+40.00	24	RCP																								0.3					Cross Road, LT reshape ditch, see 100-23
29	594+78.00	18	CMP	94		2							94.0										73.0		5.0		2.5					Entrance LT, remove and replace pipe with plastic, reshape ditch to east
30	602+25.00	24	CMP																									1.0				Entrance RT, reshape ditch
31	607+00.00	24	CMP	120		1							120.0										116.0				1.0					LT 100', remove and place new
32	610+73.00	24	CMP	62		2							62.0										92.0		3.0		0.3					Entrance LT, remove and place new
33	610+72.00	24	RCP				1												1					2.0								Apron reset, 204th RT, remove tree
34	610+72.00	24	CMP	62		2							62.0										92.0		3.0							Entrance LT, remove and place new
35	621+60.00	24	CMP														1						5.0					1.5				Cross Road, ditch reshape RT to south, inlet LT apron reset
36	622+75.00	18	CMP	75									75.0										68.0									12' Asphalt entrance LT (HMA patch), remove and place new pipe, see 102-6C
37	627+60.00	18	CMP																								2.5					Entrance LT, reshape ditch 50' to west & 200' to east
38	629+20.00	24	CMP														1															Cross Road pipe to pond, RT place erosion stone, silt basin, Remove tree, LT reset inlet, see 100-23
39	634+00.00	48	RCP											12.0					1				32.0									Cross Road, LT remove and replace 2 sections, inlet
40	634+80.00	24	RCP		124		2								124.0									266.0		3.0						Entrance RT, remove and place new
41	635+40.00	24	RCP																								1.0					Entrance LT, reshape inlet and outlet
42	644+20.00	18	CMP																								1.0					Entrance LT, reshape inlet and outlet
43	647+10.00	18	CMP																								1.0					Entrance LT, reshape inlet and outlet
44	648+00.00	18	CMP																									1.0				Entrance RT, reshape to west
45	651+00.00	18	CMP																									1.0				Entrance RT, reshape inlet and outlet
46	656+00.00	24	RCP										12.0				1						9.0				1.0					Cross Road, LT 2 separations remove and replace
47	665+64.00	24	RCP												6.0		1		1					5.0								Cross Road , Lt inlet reset, RT outlet and 1 Section separated
48	676+28.00	24	CMP																					3.0				0.3				Entrance RT, add fill
49	680+00.00	36	RCP														1						5.0									Cross Road LT, reset apron
50	683+30.00	24	RCP																													Cross Road UAC, see tree clearing RT
51	683+30.00	24	CMP	62		2							62.0										18.0									LT, Let Down w/30 degree elbow, remove and place new
52	685+88.00	18	CMP	45		2							45.0										12.0		3.0							Entrance LT, remove and place new
53	689+68.00	18	CMP																													Entrance UAC RT, see tree clearing
54	691+36.00	24	CMP	76		2							76.0										23.0		3.0		0.5					Entrance LT, 2 20 degree elbows, remove and place new, see 100-23
55	692+85.00																															Cross Road, 6' X 5' RCB, see tree clearing
56	696+98.00	24	CMP	25	25	1	1			Type 3			25.0		25.0								7.5	7.5					30.0	7.4		Cross Road, replace w/RCP, see 102-6C and Road Standard TC-217
57	697+00.00	24	RCP																		9.3						1.0					Cross Road, reshape outlet, clean inlet and reshape
58	697+25.00	18	CMP																						3.0			1.0				Entrance RT, reshape ditch
59	705+00.00	30	RCP												6.0				1					5.0								Cross Road, LT separation
60	707+00.00	24	CMP												6.0				1					30.0								Entrance RT, fill sink hole, separation
61	715+00.00	18	CMP																								2.0					Entrance LT, reshape ditch
62	718+46.00																															Cross Road 2' X 3' RCB, LT erosion, see 100-23
63	722+02.00																															Cross Road 2' X 3' RCB, LT erosion, see 100-23
64	724+28.90	18	CMP																									0.5				227th St RT, reshape to west
65	737+75.00	18	CMP																									0.5				Entrance RT, reshape to east
66	751+02.00																										1.0					Cross Road 4'X 5.5' RCB stockpass, erosion to LT and west, see 100-23
67	762+41.00	36	RCP														1						5.0									Cross Road, LT reset inlet
68	781+00.00	18	CMP																								1.0					Entrance LT, reshape ditch east and west
69	782+80.00	24	RCP												6.0				1					4.0				1.0				Cross Road, RT reset 1 section inlet, see 100-23
70	784+87.30	24	CMP		34		2								34.0									5.0		3.0						Entrance RT, remove and place new
71	792+95.00	24	CMP	60		2							60.0										18.0		3.0			1.0				Entrance LT, remove and place new
72	793+90.00	18	CMP		56		2								56.0									15.0		3.0						Entrance RT, remove and place new
73	796+79.30	18	CMP																								2.0					Entrance LT, reshape ditch

DRAINAGE STRUCTURE REPAIR WORK

Length of unclassified pipe calculated is based on using Reinforced Concrete Pipe.
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(1) Diameter or equivalent diameter
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(3) Backfill according to DR-101

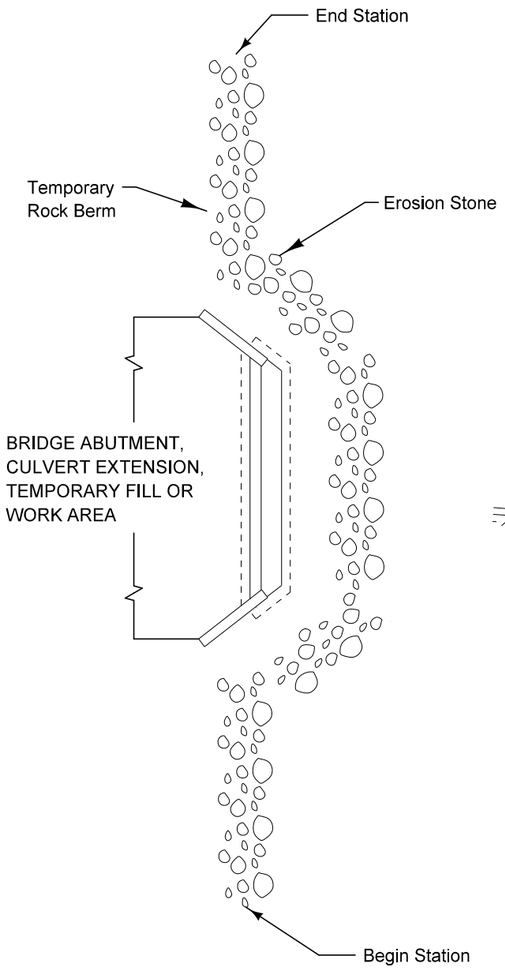
No.	Location	Size (1)	Kind Of Pipe (2)	Length New Const.		New Apron		Type 'C' Connections* (DR-122)		Connected Pipe Joint* (DR-121)	Flow Line Elevations Note 6		Remove and Reinstall Pipe Culvert Note 5				Remove and Reinstall Apron Note 5				Class 20 Excavation (Culvert Cleaning) Note 1		Class 20 Excavation		Granular Surfacing Note 4		Reshaping Ditch Std Rd. Plan EW-105		Flowable Backfill Note 3	Flowable Mortar Note 3	Tile Repair	Remarks
				Lin. Ft.		Each							Left Side		Right Side		Left Side		Right Side		CY		CY		TON		STA					
		IN		Lt.	Rt.	Lt.	Rt.	Type	No.	Type	Lt.	Rt.	≤ 36"	>36"	≤ 36"	>36"	≤ 36"	>36"	≤ 36"	>36"	Lt.	Rt.	Lt.	Rt.	Lt.	Rt.	Lt.	Rt.	C.Y.	C.Y.	LF	
74	804+11.00	18	CMP																								1.0				Entrance RT, reshape ditch
75	804+27.00	18	CMP																								1.0				Entrance RT, reshape ditch
76	806+46.00	24	RCP															1								1.0					Cross Road, RT reset apron, LT reshape ditch
77	810+28.00	18	CMP																							3.0					Entrance LT, reshape ditch both ends
78	816+50.00	18	CMP		136		2								136.0								176.0		3.0						Entrance RT, remove and place new
79	821+28.00	36	RCP										12.0				1						53.0								Cross Road, LT reset inlet, see 100-23
80	823+80.00	18	CMP																							0.5					Entrance LT, reshape ditch to west
81	824+10.00	18	CMP		150										150.0								292.0		3.0						Entrance RT, remove and replace
82	829+50.00	18	CMP																								1.0				Entrance RT, see Note 2 for inlet, reshape ditch
83	834+65.00	24	CMP		20		1								20.0																Entrance RT, remove and place new, see 100-23
84	835+30.00	48	RCP																												Cross Road, see 100-23
85	835+30.00	24	CMP																		7.0						1.0				Entrance RT, reshape ditch, see Note 1
86	838+17.80	24	CMP																		5.6						1.0				Entrance RT, reshape ditch, see Note 1
87	840+63.00	18	CMP																								2.0				Entrance RT, reshape ditch both ends
88	848+00.00	18	CMP																							2.0					Entrance LT, reshape ditch both ends
89	862+00.00	24	CMP		120		2								120.0								89.0		3.0						Entrance RT, remove and place new
90	871+23.00	24	CMP														1						5.0				1.0				Entrance LT, reset inlet reshape ditch
91	872+88.00	24	CMP		134		2								134.0								437.0		3.0						Entrance RT, remove and place new
92	881+45.00		RCB																				20.0								Cross Road 3' X 3' RCB, erosion, see 100-23
93	888+00.00	18	CMP																		8.9						1.0				Entrance LT, reshape ditch, see Note 1
94	888+00.00	18	CMP																									4.0			Entrance RT, reshape ditch both ends
95	898+50.00	24	CMP	29		2							29.0										21.0		3.0						Entrance LT, remove and place new
96	902+50.00	30	RCP														1										1.0				Cross Road, LT reset inlet, see 100-23
97	902+65.00	30	CMP		176										176.0								440.0								RT Type F dyke, remove and place new, see tree romoval
98	906+53.00	24	CMP	40		2							40.0										24.0		3.0						Entrance LT, remove and place new
99	907+15.00	24	CMP	49		2							49.0										29.0		3.0						Entrance LT, remove and place new, letdown
100	908+40.00																														Cross Road 5' X 5' RCB, LT outlet, see 100-23
101	942+80.00	36	CMP																								1.0				Cross Road, LT reshape ditch, see 100-23
	Totals			**2117**		**48**							**2177.0**	**12.0**			**18**	**1**			**78.3**		**2828.0**		**65.0**		**72.2**		**30.0**	**7.4**	**20.0**	

Unclassified	**18**	**690**	**12**
Unclassified	**24**	**1067**	**30**
Unclassified	**30**	**216**	**2**
RCP	**24**	**50**	**2**
HDPE (Plastic)		**94**	**2**
Tile Repair		**20**	

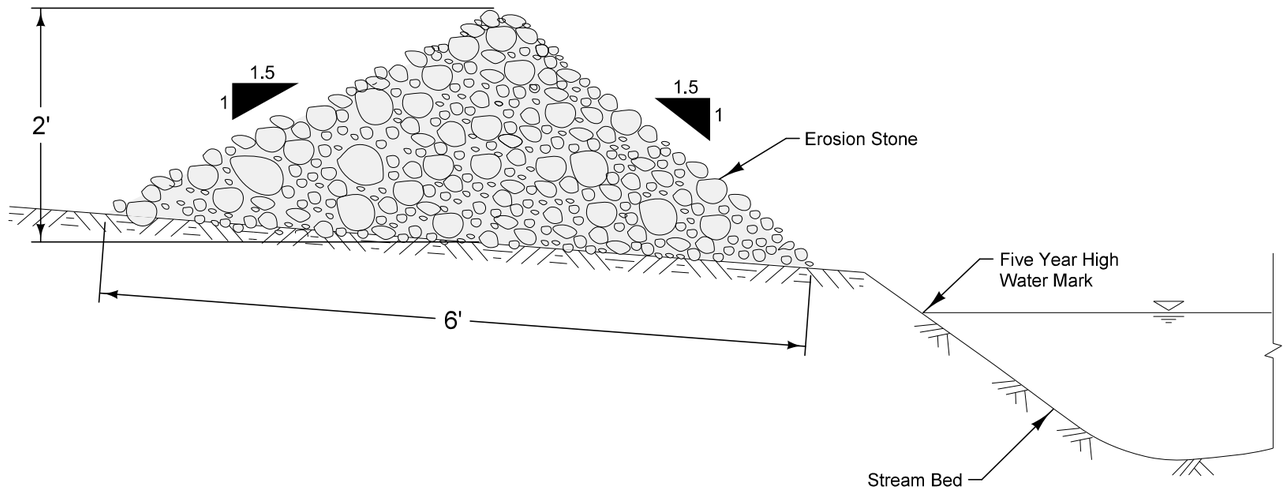
Remove & Reinstall Apron ≤ 36"	**14**
Remove & Reinstall Apron > 36"	**1**
Remove & Reinstall Pipe Culvert ≤ 36"	**60**
Remove & Reinstall Pipe Culvert > 36"	**12**

Note 1: Class 20 Excavation for cleaning is approximated to equal to the volume of the culvert. The interior of the culvert is to be flushed clean with water. Flushing of the culvert will be considered incidental to Class 20 Exc., See Tab 100-26.
Note 2: Iowa DOT Maintenance to bevel, cut off, the existing bent pipe end.
Note 3: Iowa 2 to be closed to one lane. Pipe to be installed 1/2 at a time. Other bid Items and tabs apply for Rd. Std. TC-218 bid items, flowable mortar backfill for pipe backfill, Std. DR-101, subbase patch, PCC patch Tab 102-6C.
Note 4: Pipe trenching through Entrances are to replace granular surfacing.
Note 5: Remove and Replace. Bid Item is to remove the existing pipe or apron and is to replace with new pipe or apron, if pipe is also itemized as Length New Construction or New Apron. Otherwise, reset the existing pipe or apron to grade by using the existing pipe and/or apron.
Note 6: For pipe flowlines, see Record Drawings FN-2-9(11)--21-56 & FN-2-9(17)--21-56.

Place Erosion Stone as near to the five year high water mark as possible while not allowing it to enter the stream bed. Remove Erosion Stone after project completion.



PLAN



PROFILE

Possible Contract Item:
Erosion Stone

Possible Tabulation:
100-23

REVISION	
NEW	10-17-17

ROAD DESIGN DETAIL

570-8

SHEET 1 of 1

REVISIONS: NEW

TEMPORARY ROCK BERM FOR SEDIMENT CONTROL

FILE NO.	ENGLISH	DESIGN TEAM HOLST \ BAHR \ CAMPBELL	LEE COUNTY	PROJECT NUMBER NHSX-002-9(38)--3H-56/HSIPX-002-9(39)--3L-56	SHEET NUMBER U.1

3:56:11 PM 8/29/2019 dcampbe pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5600201019\Design\56002038_U01.dgn

110-7B
10-19-10

REMOVAL OF CABLE GUARDRAIL

* Not a bid item
(1) Lane(s) to which the installation is adjacent

Location					Type	Cable	Post * Footings, Concrete	End Terminal*	Remarks
No.	(1) Direction of Traffic	Station to Station		Side	(High/Low Tension)	Remove	Remove	Remove	
						LF	Yes/No	No.	
	WB	540+32.00	547+12.00	LT	Low Tension	680.0	Yes	2	
	EB	703+40.00	708+20.00	RT	Low Tension	480.0	Yes	2	
	WB	849+75.00	859+25.00	LT	Low Tension	950.0	Yes	2	
	WB	870+30.00	880+90.00	LT	Low Tension	1060.0	Yes	2	
					Total	**3170.0**		**8**	

108-9A
04-20-10

HIGH TENSION CABLE GUARDRAIL

(1) Lane(s) to which the installation is adjacent.
Refer to BA-351.

Location				Dimensions				Bid Items		Remarks
No.	Direction of (1) Traffic	Station	Side	Offset D_0	Approach C_A	Obstacle C_O	Trailing C_T	Protection Length (C_A+C_0+C_T)	End Anchor	
				FT	FT	FT	FT	FT	No.	
	WB	540+32.00	LT	UAC	0.0	680.0	0.0	680.0	2	Replace Existing
	EB	703+40.00	RT	UAC	0.0	480.0	0.0	480.0	2	Replace Existing
	WB	849+75.00	LT	UAC	0.0	950.0	0.0	950.0	2	Replace Existing
	WB	870+30.00	LT	UAC	0.0	1060.0	0.0	1060.0	2	Replace Existing
							Total	**3170.0**	**8**	

107-23
10-18-11

GRADING FOR GUARDRAIL INSTALLATIONS

(1) Lane(s) to which the installation is adjacent. Refer to EW-301

Location				Foreslope at Guardrail	Dimensions (Feet)									Earthwork		Remarks
No.	(1) Direction of Traffic	Station	Side		X1	Y1	X2	Y2	X3	Y3	X4	Y4	Z	Excavation Class 10	Embankment In Place	
														CY	CY	
1	WB	772+86.50	LT	6:1	40.6	13.9	--	--	--	--	95.5	15.9	80.0			
2	EB	772+86.50	Rt	6:1	53.1	13.9	106.9	18.8	--	--	157.2	25.9	95.0			
3	WB	775+77.50	Lt	6:1	53.1	13.9	106.9	18.8	--	--	157.2	25.9	95.0			
4	EB	775+77.50	Rt	6:1	40.6	13.9	--	--	--	--	95.5	15.9	80.0			

110-7A
04-17-12

REMOVAL OF STEEL BEAM GUARDRAIL

(1) Lane(s) to which the installation is adjacent.
(2) Includes length of End Terminals and End Anchors.

Location					Removal of Guardrail (2)
No.	(1) Direction of Traffic	Station to Station		Side	
					LF
	WB	772+19.20	772+81.70	LT	62.5
	WB	775+82.10	776+44.60	LT	62.5
	EB	772+19.20	772+81.70	RT	62.5
	EB	775+82.10	776+44.60	RT	62.5
			Total		**250.0**

108-8A
10-16-18

STEEL BEAM GUARDRAIL AT CONCRETE BARRIER OR BRIDGE RAIL END SECTION

Possible Standards: BA-200, BA-201, BA-202, BA-205, BA-206, BA-210, BA-211, BA-221, BA-225, BA-250, BA-260, LS-625, LS-626, LS-630, LS-635, SI-172, SI-173 and SI-211.

(1) Lane(s) to which the obstacle is adjacent.
(2) Not a bid item. Incidental to guardrail installation.

Location					Layout Lengths BA-250, BA-260, LS-630, or LS-635				Long-Span System		Delineators and Object Markers (2)					Bid Items											Remarks
No.	(1) Direction of Traffic	Side O = Outside M = Median	Station	Offset	VT1	VF	VT2	ET	BA-211		SI-211	Delineator SI-172	Object Marker SI-173			Bolted End Anchor		Post Adapter	Steel Beam Guardrail	BA-250 or LS-630 Barrier Transition Section	BA-250 or LS-630 End Terminal				BA-260 or LS-635 Barrier Transition Section	BA-260 or LS-635 End Terminal	
																					Tangent	Flared	Tangent	Flared		Tangent	
				FT	LF	LF	LF	LF	STATION	TYPE	TYPE	Type 1 White	Type 2 OM2-2	Type 3 OM3-L	Type 3 OM3-R	TYPE	EACH	EACH	LF	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	
	WB	O	772+81.70	10'Lt	53.125			47.7			3			1		C	1		12.5	1	1						
	WB	O	775+82.10	10'Lt	53.125	50.00		47.7			3				1	C	1		62.5	1	1						
	EB	O	772+81.70	10' Rt	53.125	50.00		47.7			3				1	C	1		62.5	1	1						
	EB	O	775+82.10	10' Rt	53.125			47.7			3			1		C	1		12.5	1	1						
											Total:			**2**	**2**		**4**		**150.0**	**4**	**4**						

SHOULDERS

(1) Lane(s) to which the shoulder is adjacent.
(2) Bid Item
(3) Applies only for Paved Shoulders constructed on project with existing granular shoulders.
(4) Does not include shrink.

Calculations assume a HMA unit weight (lbs/cf) of 147, a Special Backfill unit weight (lbs/cf) of 140, and a Granular Shoulder unit weight (lbs/cf) of 140.

Location					Quantities																	
Road Identification	(1) Direction Of Traffic	Station to Station		Side	(P) Width	(G) Width	(L) Length	(3) Class 13 Excavation	Hot Mix Asphalt		Binder	Paved Shoulder	Reinforced Paved Shoulder	Special Backfill				Modified Subbase	Granular Shoulder		Earth Shoulder Construction Alternates			Remarks
														HMA Alternate		PCC Alternate					(2) STA	HMA	PCC	
					FT	FT	FT	CY (2)	TON	TON/STA	TONS	SY (2)	SY (2)	TON (2)	TON/STA	TON (2)	TON/STA	CY (2)	TON (2)	TON/STA		CY (4)	CY (4)	
6" Shoulders																								
IA 2	EB	485+97.40	491+19.20	RT	4.0	6.0	521.8	38.7	76.705	14.700	4.602	231.9							18.3	3.500	5.2			
"	EB	492+59.20	500+66.20	RT	4.0	6.0	807.0	59.8	118.629	14.700	7.118	358.7							28.2	3.500	8.1			
"	EB	501+01.20	555+07.20	RT	4.0	6.0	5406.0	400.4	794.682	14.700	47.681	2402.7							189.2	3.500	54.1			
"	EB	555+55.20	610+16.40	RT	4.0	6.0	5461.2	404.5	802.796	14.700	48.168	2427.2							191.1	3.500	54.6			
"	EB	611+16.40	702+87.60	RT	4.0	6.0	9171.2	679.3	1348.166	14.700	80.890	4076.1							321.0	3.500	91.7			
"	EB	708+82.80	722+74.70	RT	4.0	6.0	1391.9	103.1	204.609	14.700	12.277	618.6							48.7	3.500	13.9			
"	EB	724+44.50	742+40.10	RT	4.0	6.0	1795.6	133.0	263.953	14.700	15.837	798.0							62.8	3.500	18.0			
"	EB	742+76.80	769+66.40	RT	4.0	6.0	2689.6	199.2	395.371	14.700	23.722	1195.4							94.1	3.500	26.9			
"	EB	778+97.40	913+27.60	RT	4.0	6.0	13430.2	994.8	1974.239	14.700	118.454	5969.0							470.1	3.500	134.3			
"	EB	922+77.60	937+54.60	RT	4.0	6.0	1477.0	109.4	217.119	14.700	13.027	656.4							51.7	3.500	14.8			
"	EB	938+99.30	940+57.00	RT	4.0	6.0	157.7	11.7	23.182	14.700	1.391	70.1							5.5	3.500	1.6			
"	EB	945+41.10	948+53.40	RT	4.0	6.0	312.3	23.1	45.908	14.700	2.754	138.8							10.9	3.500	3.1			
IA 2	WB	485+97.40	491+19.20	LT	4.0	6.0	521.8	38.7	76.705	14.700	4.602	231.9							18.3	3.500	5.2			
"	WB	492+59.20	539+72.40	LT	4.0	6.0	4713.2	349.1	692.840	14.700	41.570	2094.8							165.0	3.500	47.1			
"	WB	547+78.80	601+36.80	LT	4.0	6.0	5358.0	396.9	787.626	14.700	47.258	2381.3							187.5	3.500	53.6			
"	WB	602+62.80	742+40.10	LT	4.0	6.0	13977.3	1035.4	2054.663	14.700	123.280	6212.1							489.2	3.500	139.8			
"	WB	750+12.90	769+66.40	LT	4.0	6.0	1953.5	144.7	287.165	14.700	17.230	868.2							68.4	3.500	19.5			
"	WB	778+97.40	849+13.20	LT	4.0	6.0	7015.8	519.7	1031.323	14.700	61.879	3118.1							245.6	3.500	70.2			
"	WB	859+83.60	869+72.40	LT	4.0	6.0	988.8	73.2	145.354	14.700	8.721	439.5							34.6	3.500	9.9			
"	WB	881+48.40	883+71.10	LT	4.0	6.0	222.7	16.5	32.737	14.700	1.964	99.0							7.8	3.500	2.2			
"	WB	885+26.10	913+27.60	LT	4.0	6.0	2801.5	207.5	411.821	14.700	24.709	1245.1							98.1	3.500	28.0			
"	WB	922+77.60	929+53.80	LT	4.0	6.0	676.2	50.1	99.401	14.700	5.964	300.5							23.7	3.500	6.8			
"	WB	930+92.60	937+54.60	LT	4.0	6.0	662.0	49.0	97.314	14.700	5.839	294.2							23.2	3.500	6.6			
"	WB	938+10.10	941+18.30	LT	4.0	6.0	308.2	22.8	45.305	14.700	2.718	137.0							10.8	3.500	3.1			
"	WB	946+15.10	948+36.70	LT	4.0	6.0	221.6	16.4	32.575	14.700	1.955	98.5							7.8	3.500	2.2			
							Total 6"	**5978.8**				**35872.6**							**2871.5**					
44' x 291' Bridge Sta. 774+31.9 - 9" Shoulders																								
IA 2	EB	769+66.40	772+66.40	RT	10.0	0.0	300.0	83.3	165.375	55.125	9.923	333.3							0.0	0.000	3.0			
"	EB	775+97.40	778+97.40	RT	10.0	0.0	300.0	83.3	165.375	55.125	9.923	333.3							0.0	0.000	3.0			
"	WB	769+66.40	772+66.40	LT	10.0	0.0	300.0	83.3	165.375	55.125	9.923	333.3							0.0	0.000	3.0			
"	WB	775+97.40	778+97.40	LT	10.0	0.0	300.0	83.3	165.375	55.125	9.923	333.3							0.0	0.000	3.0			
							Total	**333.2**				**1333.2**							**0.0**					
High Tension Cable Guardrail - 9" Shoulders																								
IA 2	WB	849+13.20	859+83.60	LT	10.0	0.0	1070.4	297.3	590.058	55.125	35.403	1189.3							0.0	0.000	10.7			
"	WB	869+72.40	881+48.40	LT	10.0	0.0	1176.0	326.7	648.270	55.125	38.896	1306.7							0.0	0.000	11.8			
"	EB	702+87.60	708+82.80	RT	10.0	0.0	595.2	165.3	328.104	55.125	19.686	661.3							0.0	0.000	6.0			
"	WB	539+72.40	547+78.80	LT	10.0	0.0	806.4	224.0	444.528	55.125	26.672	896.0							0.0	0.000	8.1			
							Total	**1013.3**				**4053.3**							**0.0**					

102-16
10-21-14

NOTCHES AND RUNOUTS FOR RESURFACING

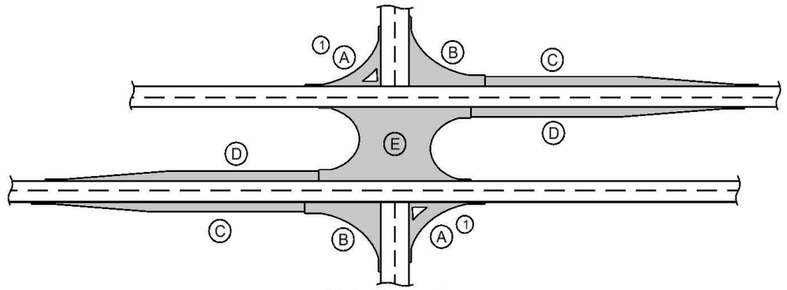
Refer to PR-201 and PR-202.

(1) Bid item. Applies only to Types 'N1' and 'N3' on PR-202. Refer to 100-25 for remaining values.

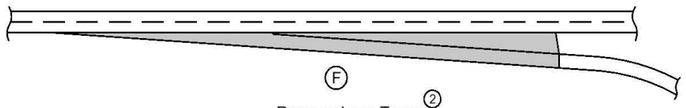
Location Station	Type of Notch or Runout	S	I	DI	L	M	Pavement (1) Scarification	Remarks
		IN	IN	IN	FT	IN	SY	
887+74.80	Type 'N3'	1.5	1.0	0.0	125.0		305.6	
910+98.00	Type 'N3'	1.5	1.0	0.0	125.0		305.6	

100-25
04-21-15

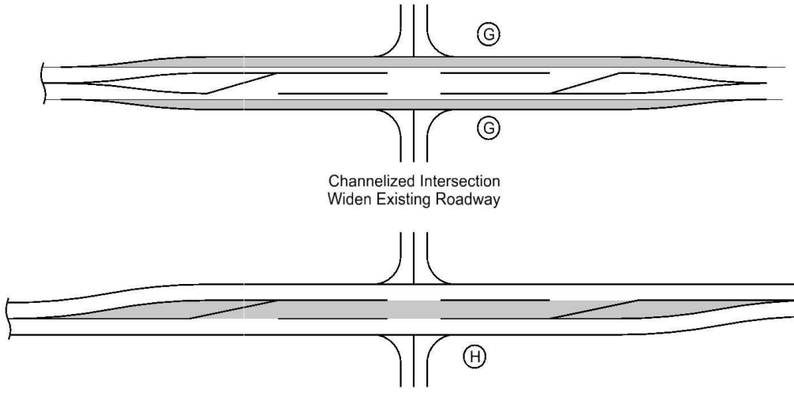
HMA PAVEMENT



Typical Intersection



Ramp or Loop Taper (2)



Channelized Intersection
Widen Existing Roadway

Channelized Intersection
Reconstructed Roadway

(1) Does not include raised island area or curb. Refer to tabulation 112-4 for quantities.

(2) Refer to PV-410, PV-411, PV-412, and PV-414.

(3) Quantity includes Pavement Header.

Calculations assume a surface course unit weight (lbs/cf) of 147, an intermediate course unit weight (lbs/cf) of 147, a base course unit weight (lbs/cf) of 145.

Location				Mainline			Area (3)								Bid Items											
															Hot Mix Asphalt Pavement						Binder						
Road Identification	Direction of Travel	Station to Station		Width	Length	Area	A (1)	B	C	D	E	F (2)	G	H	Surface		Intermediate		Base		Surface	Intermediate	Base	Special Backfill	Modified Subbase	Granular Subbase	Pavement Scarification	Remarks
				FT	FT	SY	SY	SY	SY	SY	SY	SY	SY	SY	TONS	SY	TONS	SY	TONS	SY	TONS	TONS	TONS	TONS	CY	SY	SY	
IA 2	Both	887+74.80	910+98.00	44.0	2323.2	11357.9									939	11357.9					56						611.2	(1)
IA 2	Both	888+12.30	910+60.50	36.0	2248.2	8992.8											496	8992.8				30						
IA 2	Both	911+35.50	916+13.50	24.0	478.0	1274.7											70	1274.7				4					1274.7	
IA 2	Both	910+98.00	913+27.60	32.0	229.6	816.4									68	816.4					4							
IA 2	Both	913+27.60	916+13.50	40.0	285.9	1270.7									105	1270.7					6							
													Total		**1112**	**13445.0**	**566**	**10267.5**			**67**	**34**					**1885.9**	
(1) See Tab 102-	16																											

112-10
04-16-19

MILLED RUMBLE STRIPS

See PV-12 and PV-13.

* Calculated at 18" width for Shoulder.

Location										
Road Identification	Station to Station		Shoulder Pavement Type	Rumble Strip Type (Centerline, Rt or Lt Shoulder)	Length PCC	Length HMA	Fog Seal* (Milled Rumble Strip) Shoulder	Effective Shoulder Width PCC Paved	Effective Shoulder Width HMA Paved	Effective Shoulder Width Granular\ Earth	Remarks
					STA	STA	GAL	FT	FT	FT	
IA 2	485+41.20	887+74.80	PCC	Centerline	402.3		0.0				
"	887+74.80	916+13.50	HMA	Centerline		28.4	0.0				
"	916+58.80	948+36.70	PCC	Centerline	31.8		0.0				
"	485+97.40	915+36.00	HMA	Left Shoulder		429.4	465.2				
"	915+36.00	923+04.60	PCC	Left Shoulder	7.7		0.0				
"	923+04.60	948+36.70	HMA	Left Shoulder		25.3	27.5				
"	485+97.40	915+36.00	HMA	Right Shoulder		429.4	465.2				
"	915+36.00	923+04.60	PCC	Right Shoulder	7.7		0.0				
"	923+04.60	948+53.40	HMA	Right Shoulder		25.5	27.7				
				Totals	**PCC**	**HMA**	**Fog Seal**				
				HMA Shoulders		**909.6**	**985.6**				
				PCC Shoulders	**15.4**						
				PCC or HMA Shoulders	**0.0**	**0.0**	**0.0**				
				HMA Centerlines		**28.4**					
				PCC Centerlines	**434.1**						
				PCC or HMA Centerlines	**0.0**	**0.0**					

108-29
04-21-15

PAVEMENT MARKING SYMBOLS AND LEGENDS

Refer to PM-111

Road Identification	Location Station	Location Side	STAW	RTAW	LTAW	CSRW	CSLW	CSTW	CRLW	FERW	LLRW	RLRW	RRCW	BLSW	WCSW	WPSB	SCLW	XNGW	STPW	AHDW	ONLW	BIKW	LANW	XITW	Groove Cuts EACH	Remarks
IA 2	487+33.40	LT			2																					
	490+11.90	RT			2																					
	Total				**4**																					

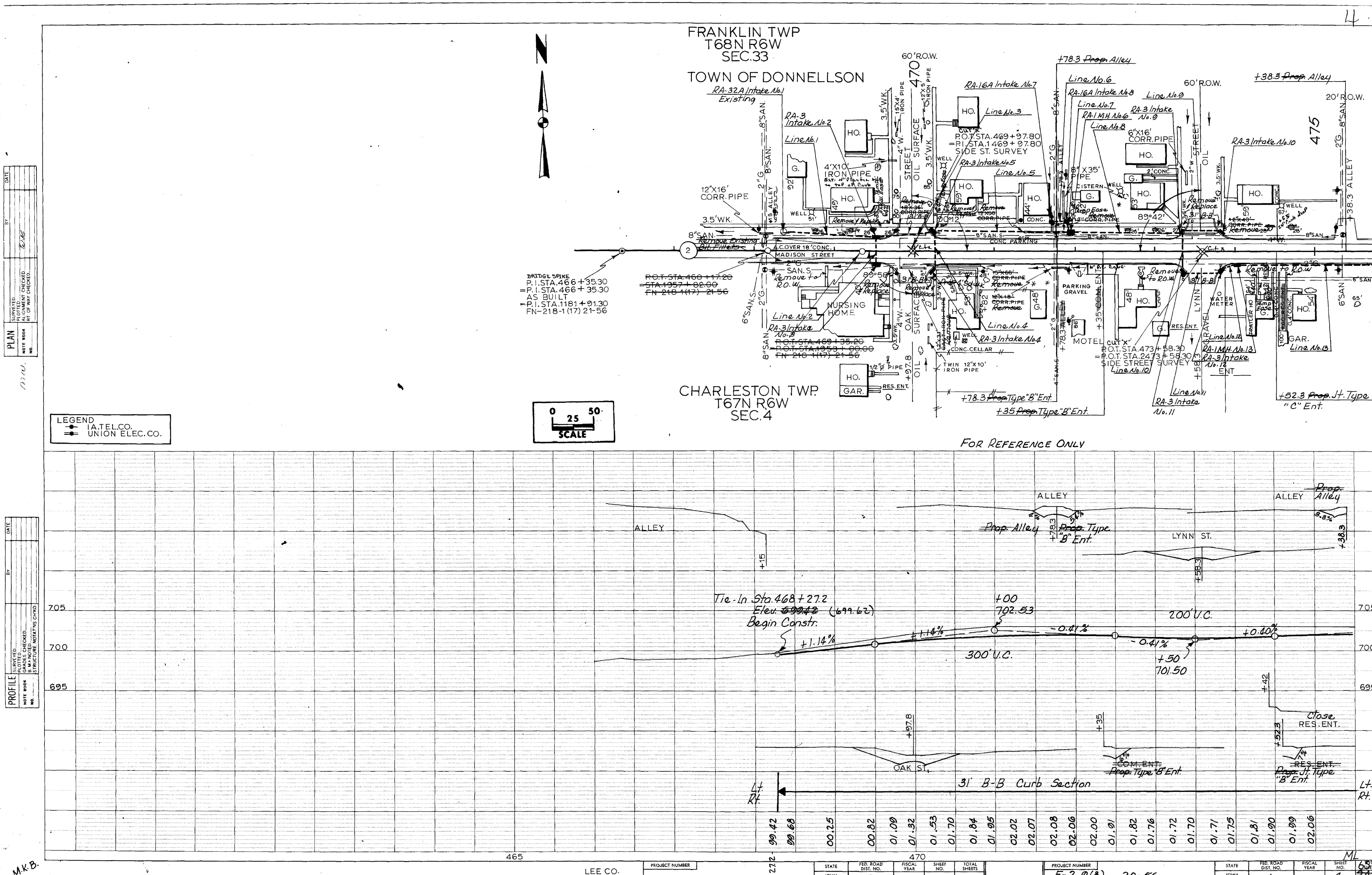
PAVEMENT MARKING LINE TYPES

See PM-110

*BCY4 - Place on the same side of the roadway to match existing markings near the project.
**NPY4 - For estimating purposes only. No Passing Zone Lines will be located in the field.
***MNY4 - Factor of 1.00 as value includes number of 4-inch passes to cover median nose area.

BCY4: Broken Centerline (Yellow) @ 0.25 | DCY4: Double Centerline (Yellow) @ 2.00 | NPY4: No Passing Zone Line (Yellow) @ 1.25 | BLW4: Broken Lane Line (White) @ 0.25 | ELW4: Edge Line Right (White) @ 1.00
ELY4: Edge Line Left (Yellow) @ 1.00 | SLW4: Solid Lane Line (White) @ 1.00 | CHY8: Channelizing Line (Yellow) @ 2.00

Location								Length by Line Type (Unfactored)													Remarks
Road ID	Station to Station		Dir. of Travel	Marking Type	Side			BCY4*	DCY4	NPY4**	BLW4	ELW4	ELY4	SLW4	CHY8						
					L	C	R	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	
IA 2	486+32.80	488+26.30	WB	Highbuild Waterborne Paint	x									1.94							
"	486+64.70	490+76.50	BOTH	Highbuild Waterborne Paint		x									4.12						
"	488+86.80	490+80.70	EB	Highbuild Waterborne Paint			x							1.94							
"	492+18.70	495+93.70	WB	Highbuild Waterborne Paint	x									3.75							
"	493+07.50	497+95.60	BOTH	Highbuild Waterborne Paint		x									4.88						
"	497+95.60	504+43.90	WB	Highbuild Waterborne Paint		x				6.48											
"	504+43.90	595+99.80	BOTH	Highbuild Waterborne Paint		x		91.56													
"	595+99.80	601+99.60	EB	Highbuild Waterborne Paint		x				6.00											
"	601+99.60	605+57.70	BOTH	Highbuild Waterborne Paint		x		3.58													
"	605+57.70	606+97.20	EB	Highbuild Waterborne Paint		x				1.40											
"	606+97.20	724+88.80	BOTH	Highbuild Waterborne Paint		x		117.92													
"	724+88.80	737+11.60	BOTH	Highbuild Waterborne Paint		x			12.23												
"	737+90.80	754+78.30	WB	Highbuild Waterborne Paint	x						18.88										
"	737+11.60	761+79.60	WB	Highbuild Waterborne Paint		x				24.68											
"	761+79.60	778+35.50	BOTH	Highbuild Waterborne Paint		x		16.56													
"	778+35.50	803+89.80	EB	Highbuild Waterborne Paint		x				25.54											
"	784+46.20	795+47.00	EB	Highbuild Waterborne Paint			x				11.01										
"	803+89.80	817+78.60	BOTH	Highbuild Waterborne Paint		x			13.89												
"	817+78.60	820+13.40	WB	Highbuild Waterborne Paint		x				2.35											
"	820+13.40	877+59.00	BOTH	Highbuild Waterborne Paint		x		57.46													
"	877+59.00	879+42.10	WB	Highbuild Waterborne Paint		x				1.83											
"	879+42.10	892+15.00	BOTH	Highbuild Waterborne Paint		x			12.73												
"	888+48.30	908+38.70	WB	Highbuild Waterborne Paint			x				19.90										
"	892+15.00	914+82.00	WB	Highbuild Waterborne Paint		x				22.67											
"	914+82.00	916+15.50	BOTH	Highbuild Waterborne Paint		x		1.34													
"	916+15.50	926+41.80	EB	Highbuild Waterborne Paint		x				10.26											
"	926+41.80	931+40.10	BOTH	Highbuild Waterborne Paint		x			4.98												
"	485+97.40	948+36.70	WB	Highbuild Waterborne Paint	x							462.39									
"	485+97.40	948+53.40	EB	Highbuild Waterborne Paint			x					462.56									
	887+74.80	892+14.60	BOTH	Waterborne/Solvent Paint		x			4.40												Markings for Interlayer paving
	888+48.30	908+38.70	WB	Waterborne/Solvent Paint			x				19.90										Markings for Interlayer paving
	892+15.00	914+82.00	WB	Waterborne/Solvent Paint		x				22.67											Markings for Interlayer paving
	914+82.00	916+13.50	BOTH	Waterborne/Solvent Paint		x		1.32													Markings for Interlayer paving
				Factored Total: Waterborne/Solvent Paint				0.33	8.80	28.34	4.98	-	-	-	-	-	-	-	-	-	-	
				Factored Total: Highbuild Waterborne Paint				72.11	87.66	126.51	12.45	924.95	-	7.63	18.00	-	-	-	-	-	-	-	
				Bid Quantity: Painted Pavement Markings, Waterborne or Solvent-Based							42.44												
				Bid Quantity: Painted Pavement Markings, Highbuild Waterborne							1249.31												



LEE CO.	PROJECT NUMBER	STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
		IOWA	5			

PROJECT NUMBER	STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
F-2-9(8)--20-56	IOWA	5		4	~~243~~ 65

ML 13

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For Information Only

FILE NO.	ENGLISH	DESIGN TEAM HOLST \ BAHR \ CAMPBELL		LEE COUNTY	PROJECT NUMBER NHSX-002-9(38)--3H-56/HSIPX-002-9(39)--3L-56	SHEET NUMBER D.1

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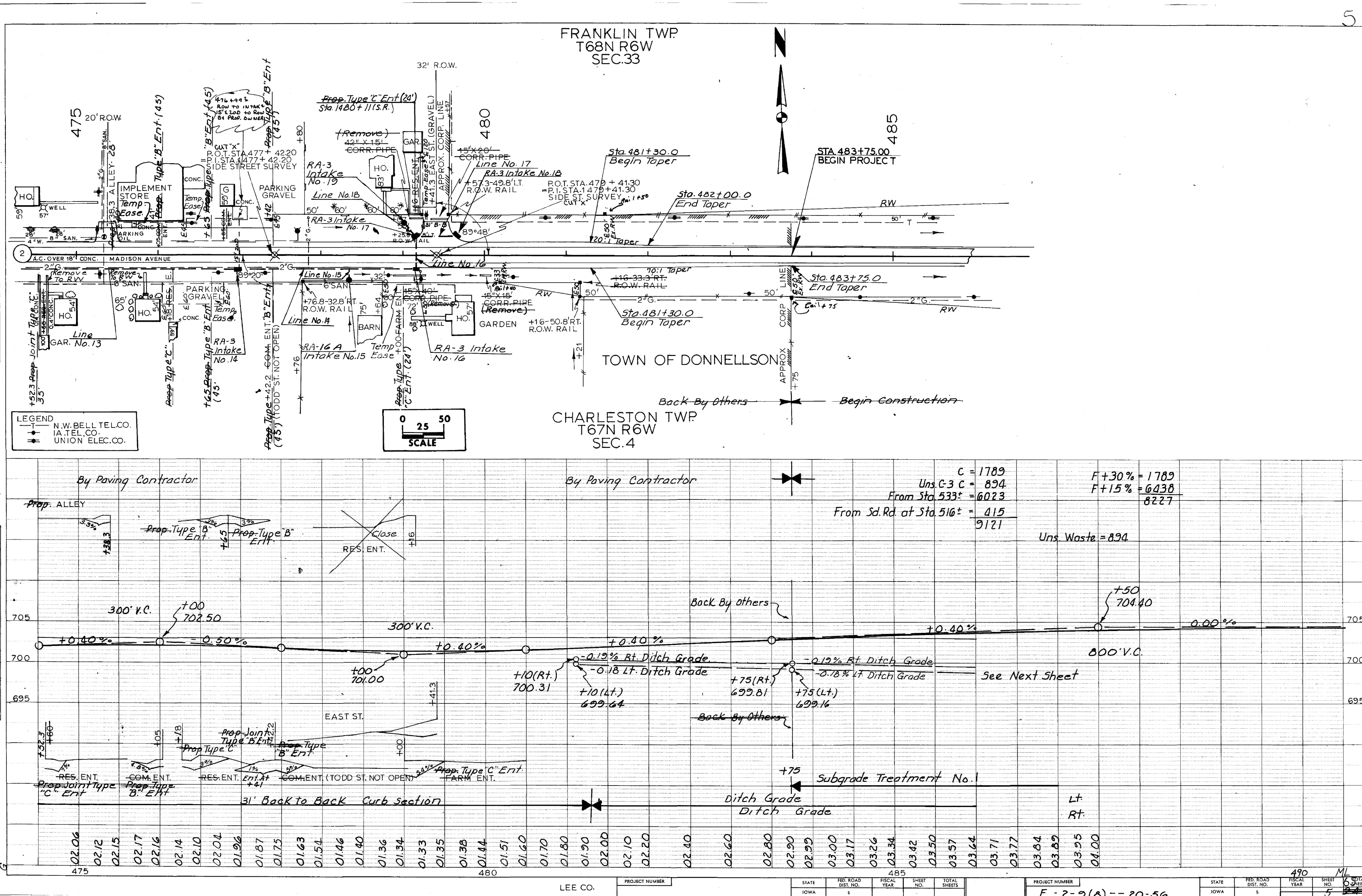

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FILE NO.	ENGLISH	DESIGN TEAM HOLST \ BAHR \ CAMPBELL	LEE COUNTY	PROJECT NUMBER NHSX-002-9(38)--3H-56/HSIPX-002-9(39)--3L-56	SHEET NUMBER D.2

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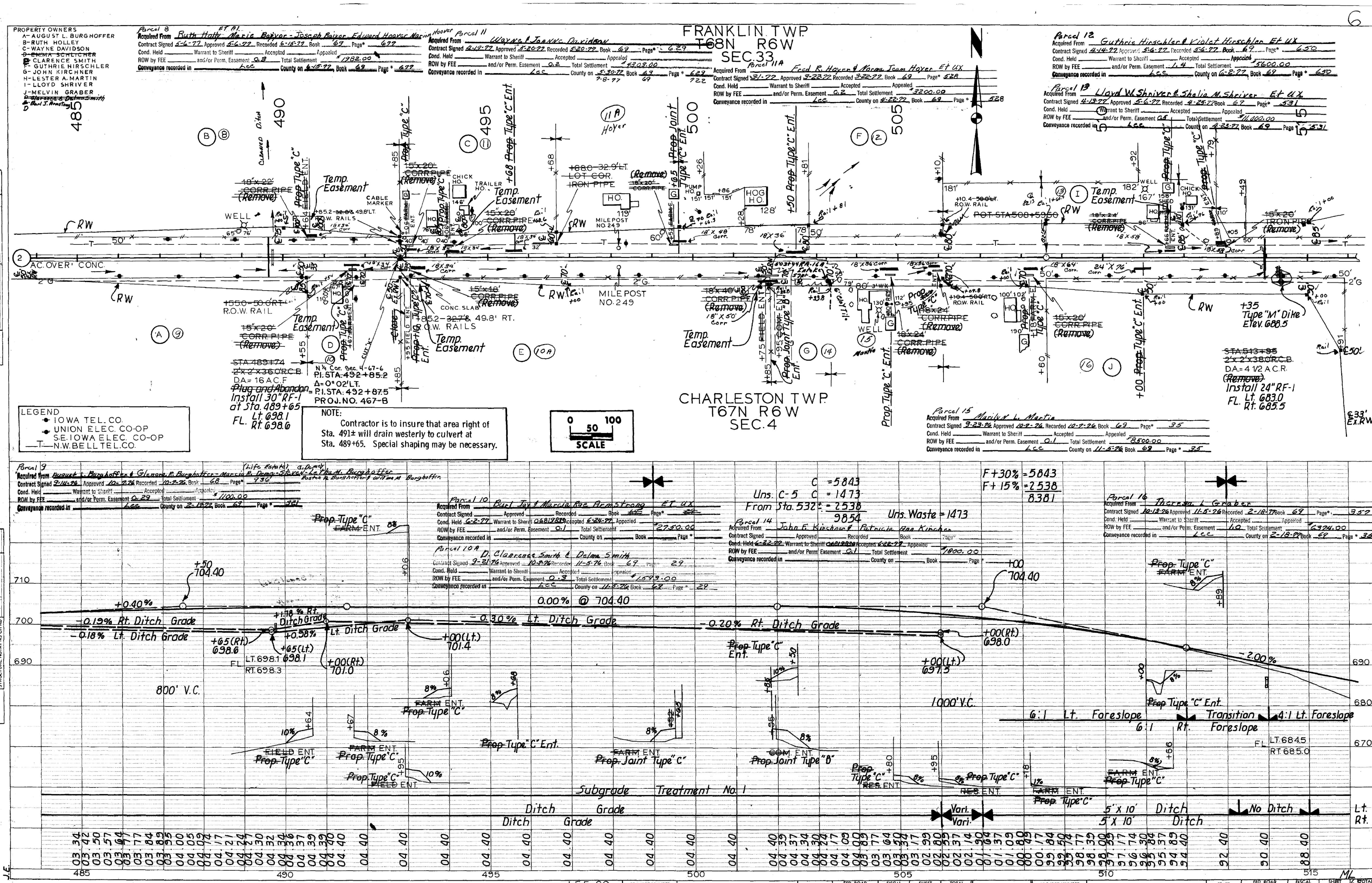

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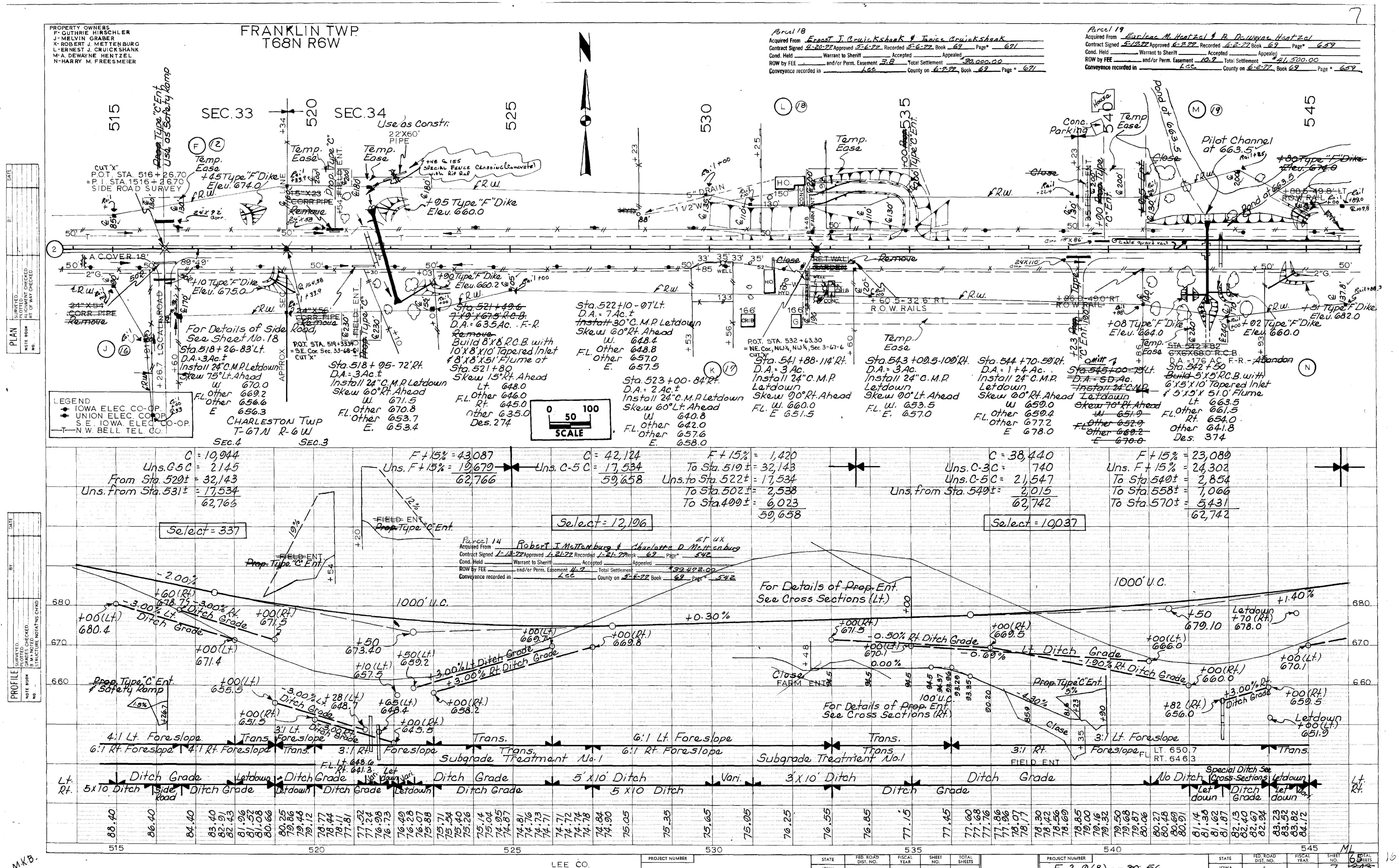

LEE CO.

PROJECT NUMBER	STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
F-2-9(8)--20-56	IOWA	5		7	243

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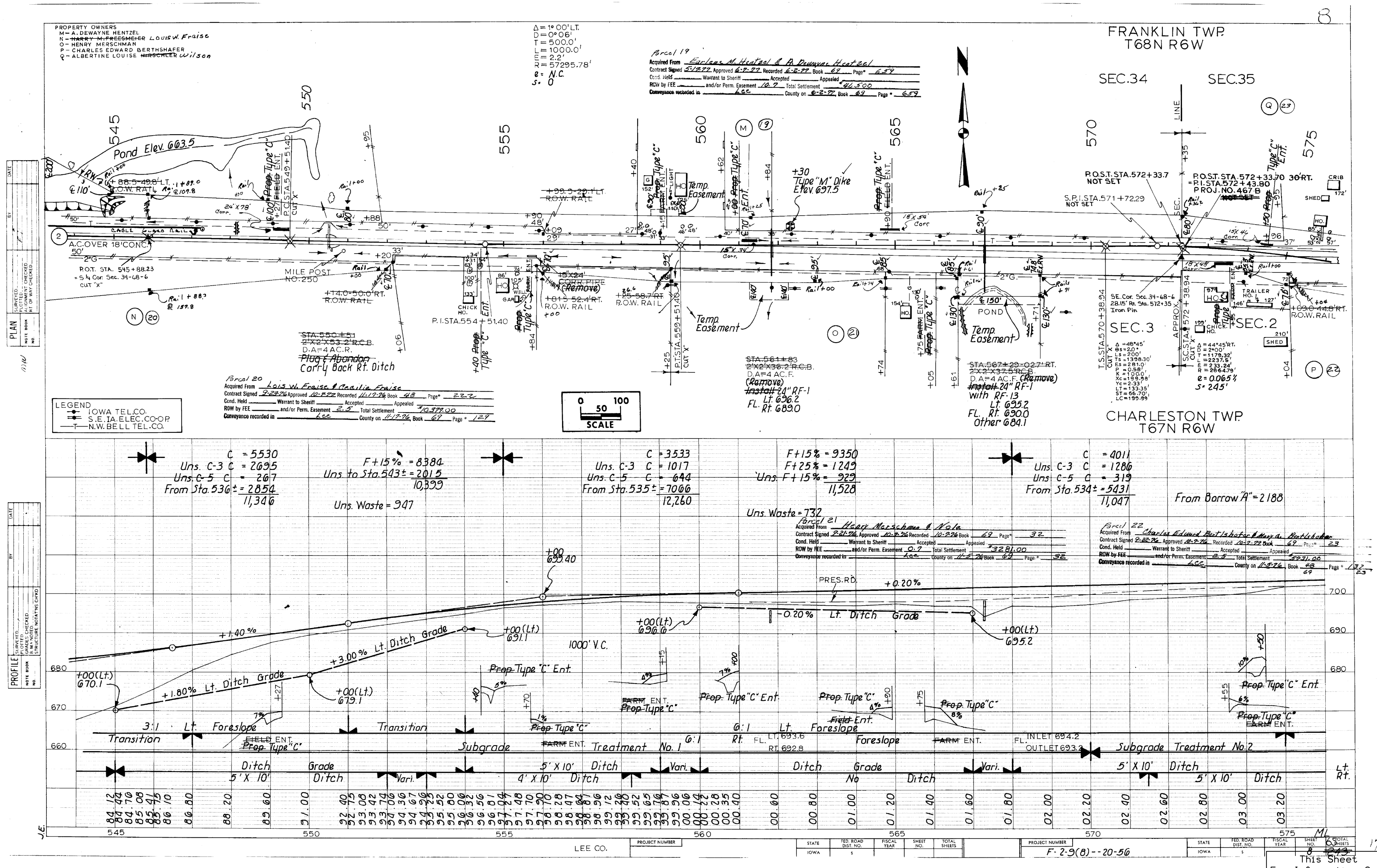
FILE NO.	ENGLISH	DESIGN TEAM HOLST \ BAHR \ CAMPBELL	LEE COUNTY	PROJECT NUMBER NHSX-002-9(38)--3H-56/HSIPX-002-9(39)--3L-56	SHEET NUMBER D.4



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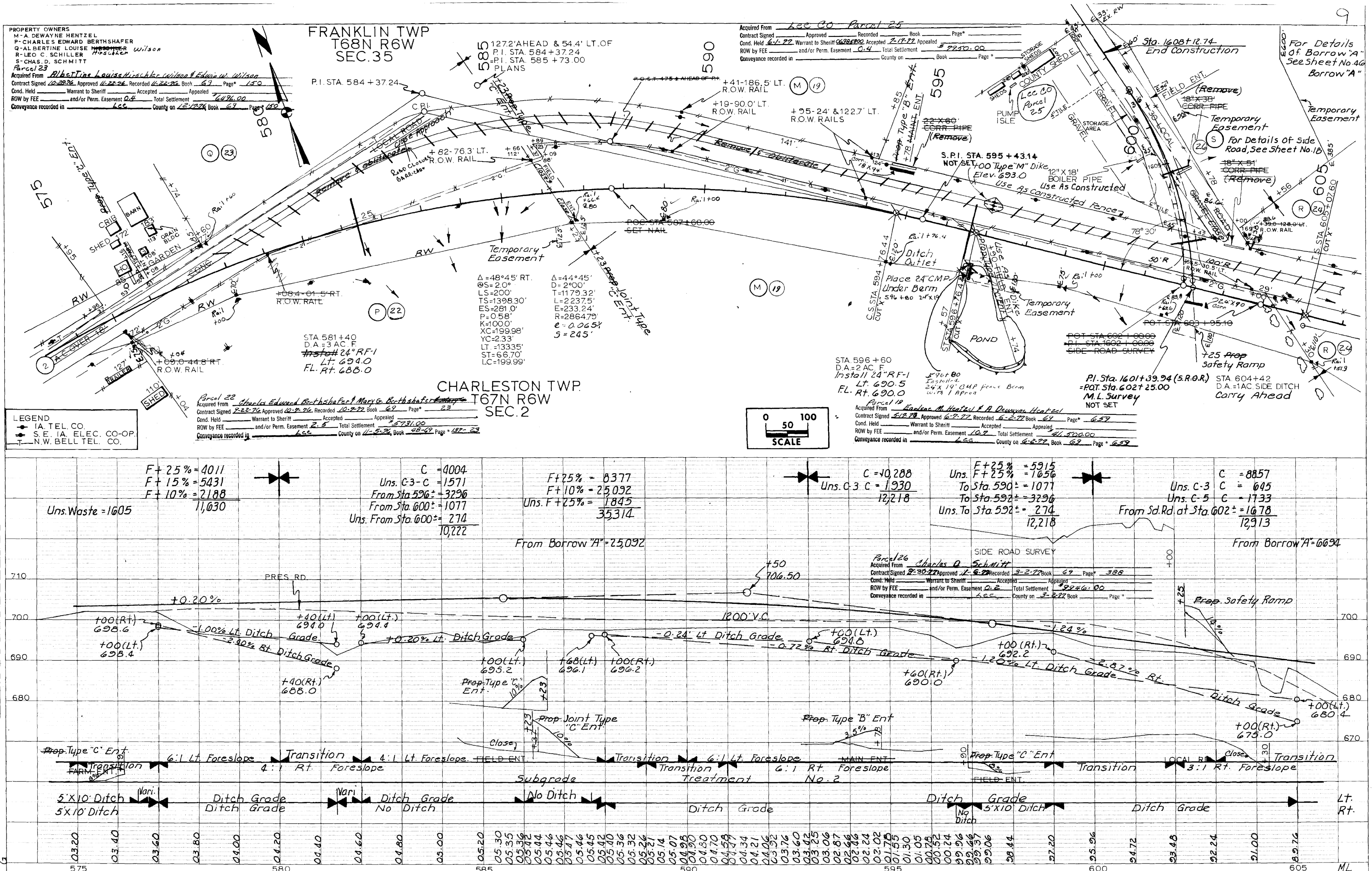

LEE CO.

PROJECT NUMBER	STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	IOWA	5			

PROJECT NUMBER	STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
F-2-9(8)--20-56	IOWA	5		9	65

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FILE NO.	ENGLISH	DESIGN TEAM **HOLST \ BAHR \ CAMPBELL**	**LEE** COUNTY	PROJECT NUMBER **NHSX-002-9(38)--3H-56/HSIPX-002-9(39)--3L-56**	SHEET NUMBER **D.6**

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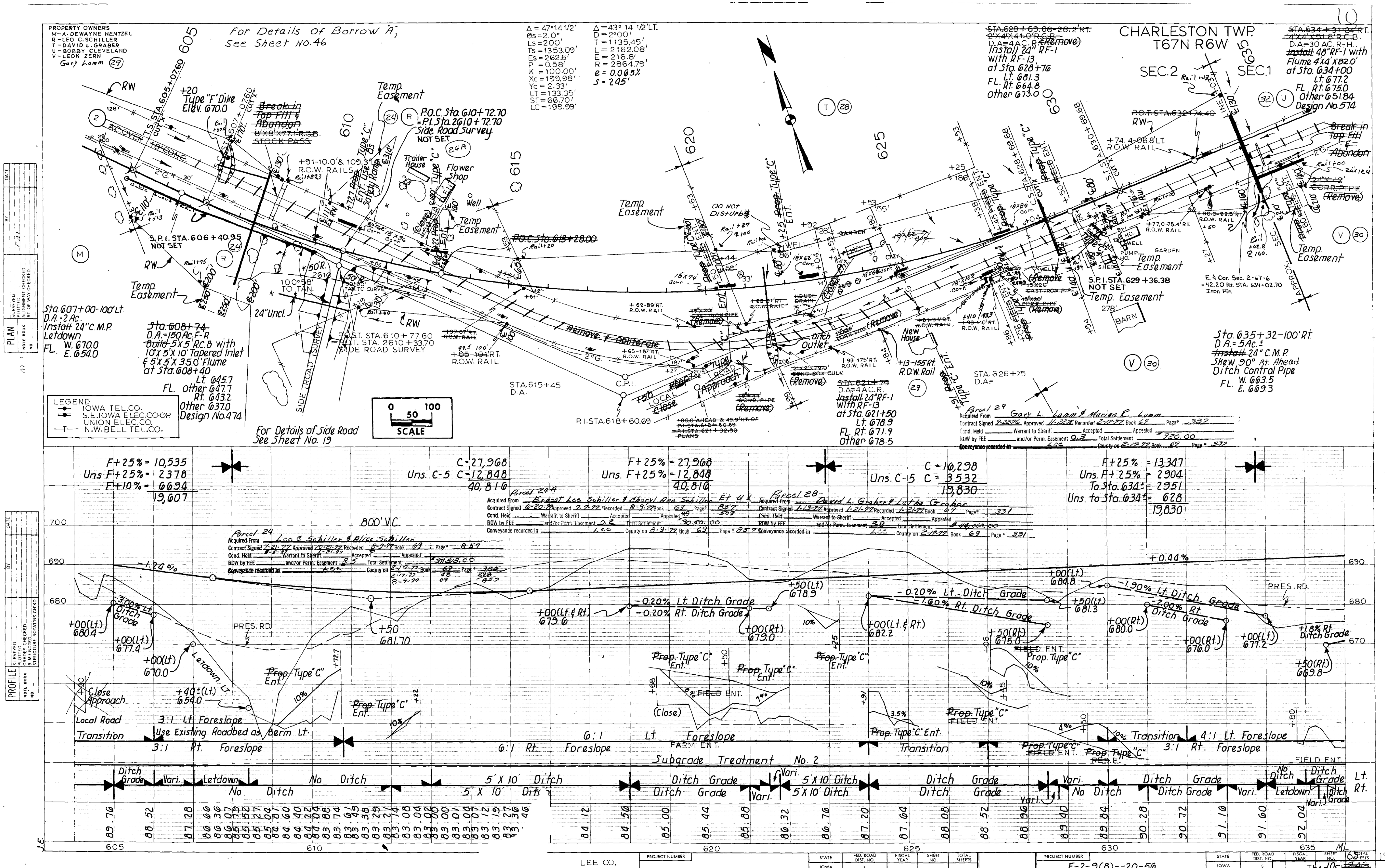

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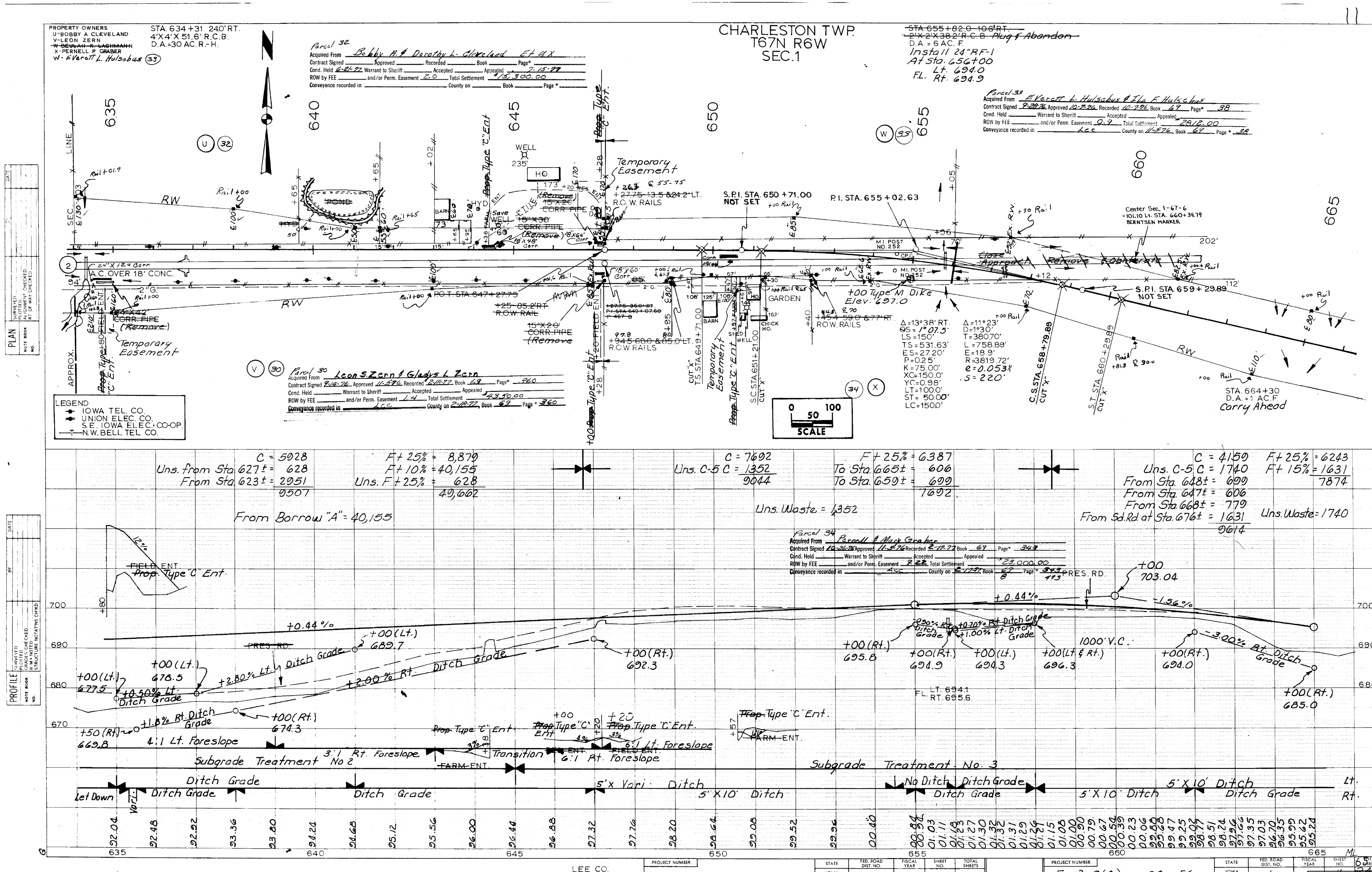

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FILE NO.	ENGLISH	DESIGN TEAM HOLST \ BAHR \ CAMPBELL	LEE COUNTY	PROJECT NUMBER NHSX-002-9(38)--3H-56/HSIPX-002-9(39)--3L-56	SHEET NUMBER D.8

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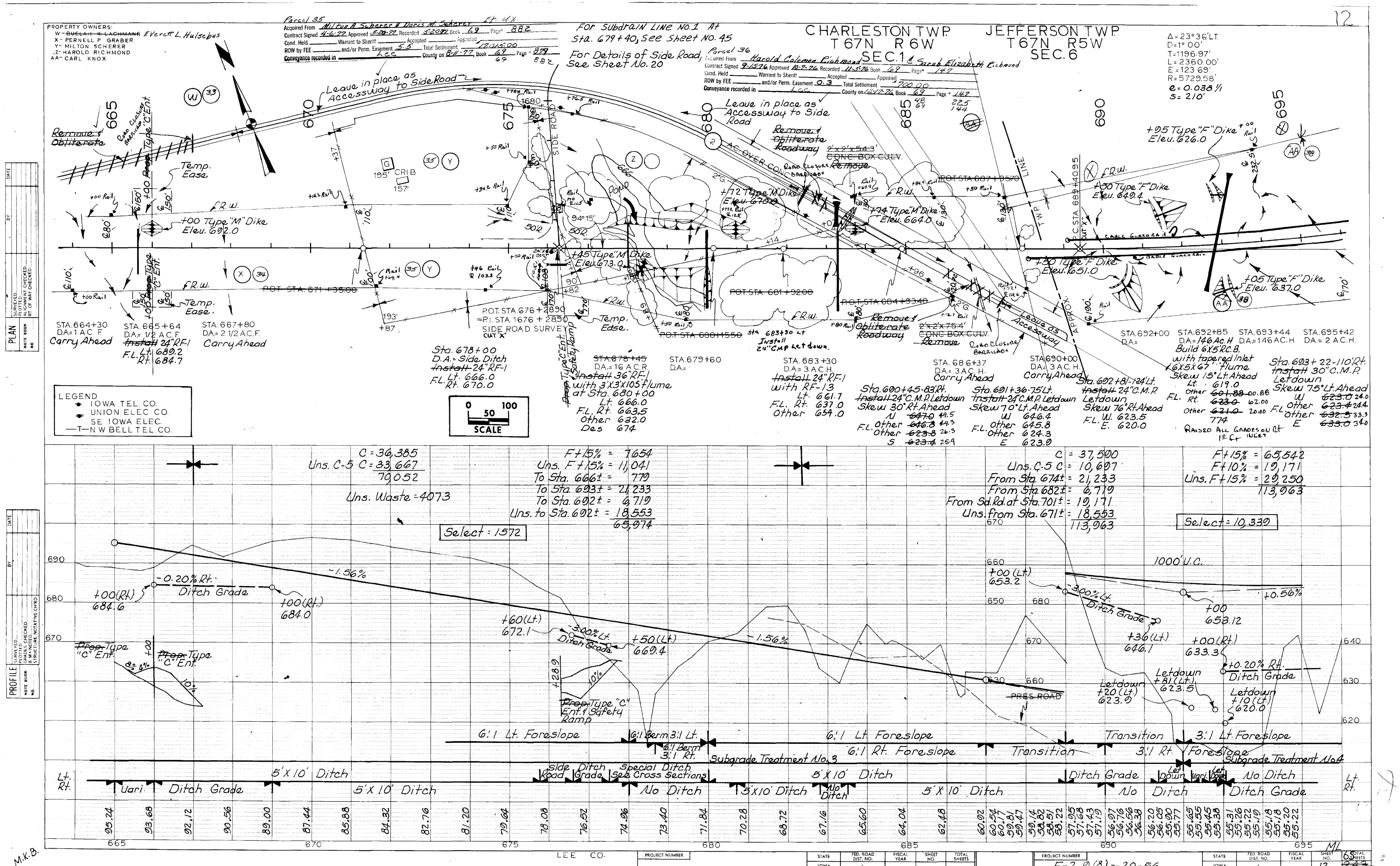

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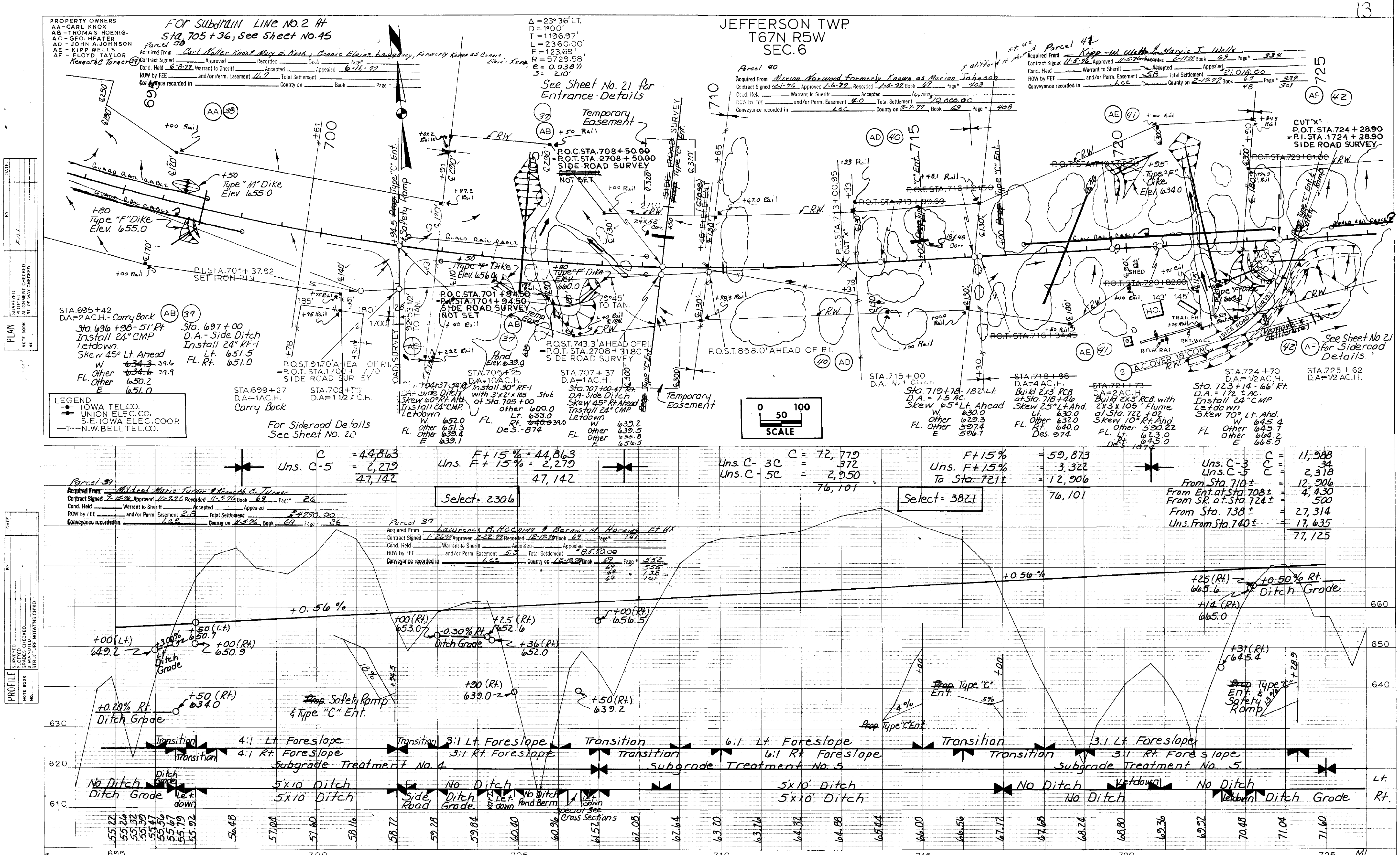
FILE NO.	ENGLISH	DESIGN TEAM HOLST \ BAHR \ CAMPBELL	LEE COUNTY	PROJECT NUMBER NHSX-002-9(38)--3H-56/HSIPX-002-9(39)--3L-56	SHEET NUMBER D.9



LEE CO.

PROJECT NUMBER	STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
F-2-9(8)--20-56	IOWA	5		13	65 ~~243~~

22

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FILE NO.	ENGLISH	DESIGN TEAM HOLST \ BAHR \ CAMPBELL	LEE COUNTY	PROJECT NUMBER NHSX-002-9(38)--3H-56/HSIPX-002-9(39)--3L-56	SHEET NUMBER D.10

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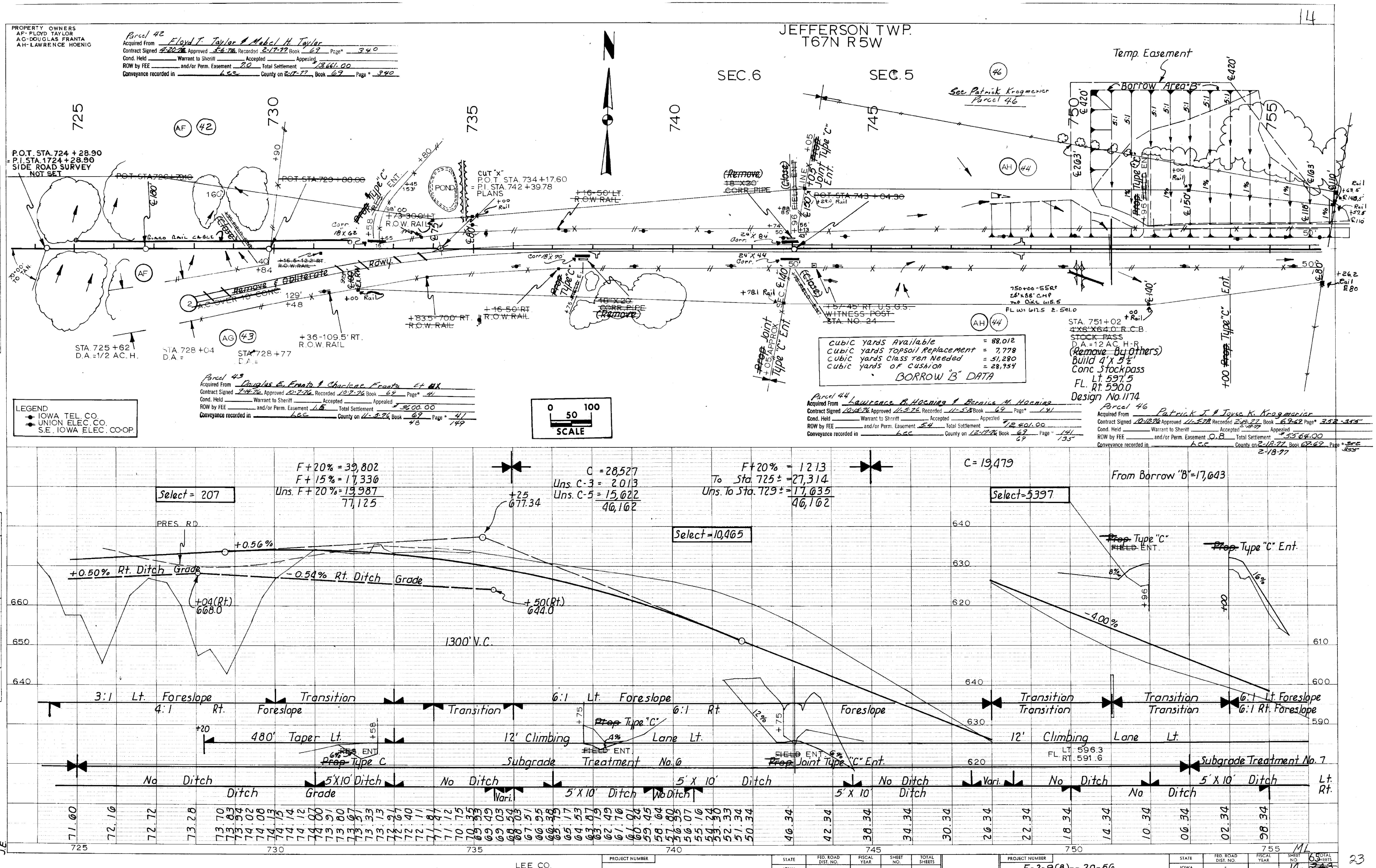

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FILE NO.	ENGLISH	DESIGN TEAM HOLST \ BAHR \ CAMPBELL	LEE COUNTY	PROJECT NUMBER NHSX-002-9(38)--3H-56/HSIPX-002-9(39)--3L-56	SHEET NUMBER D.11

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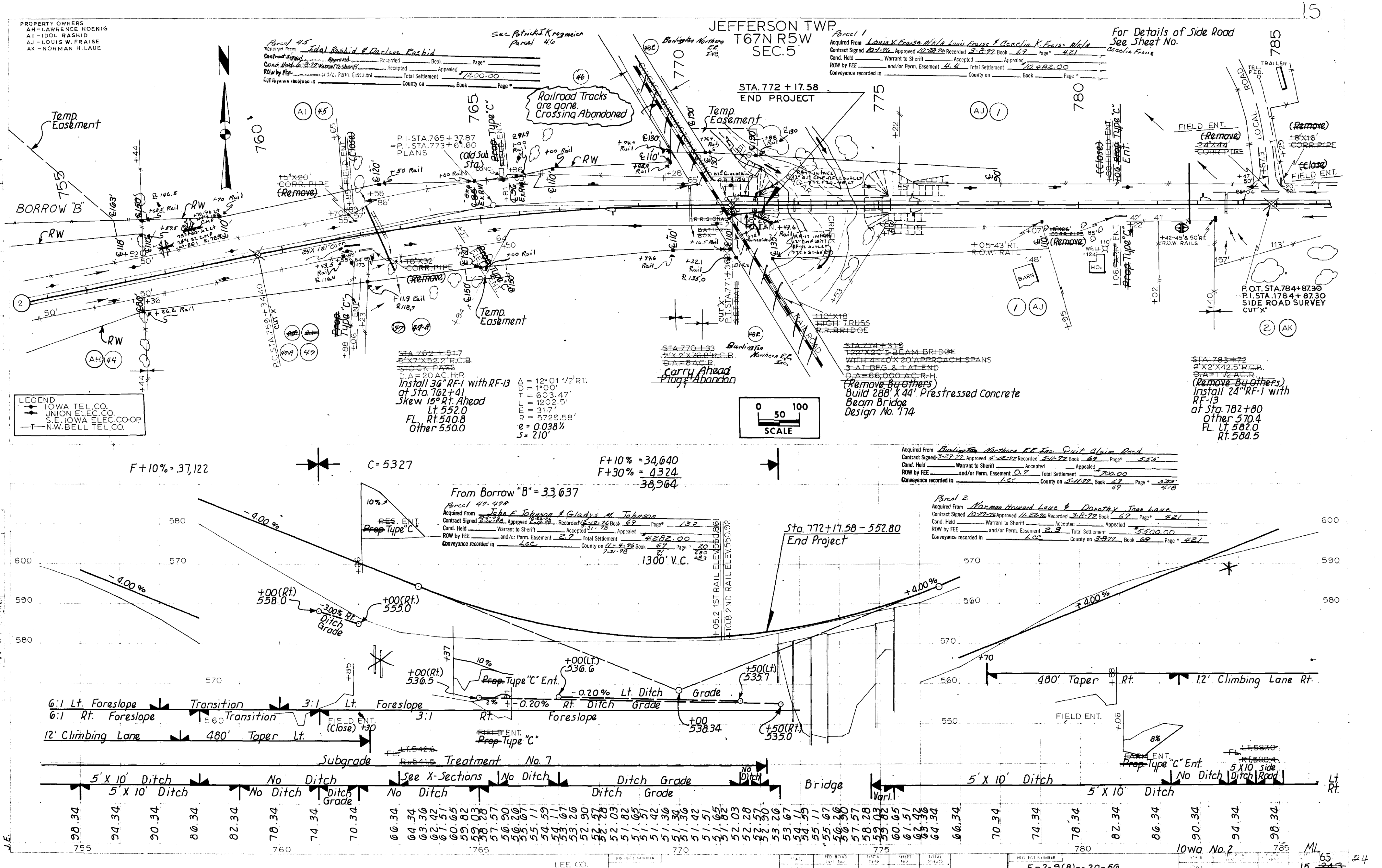

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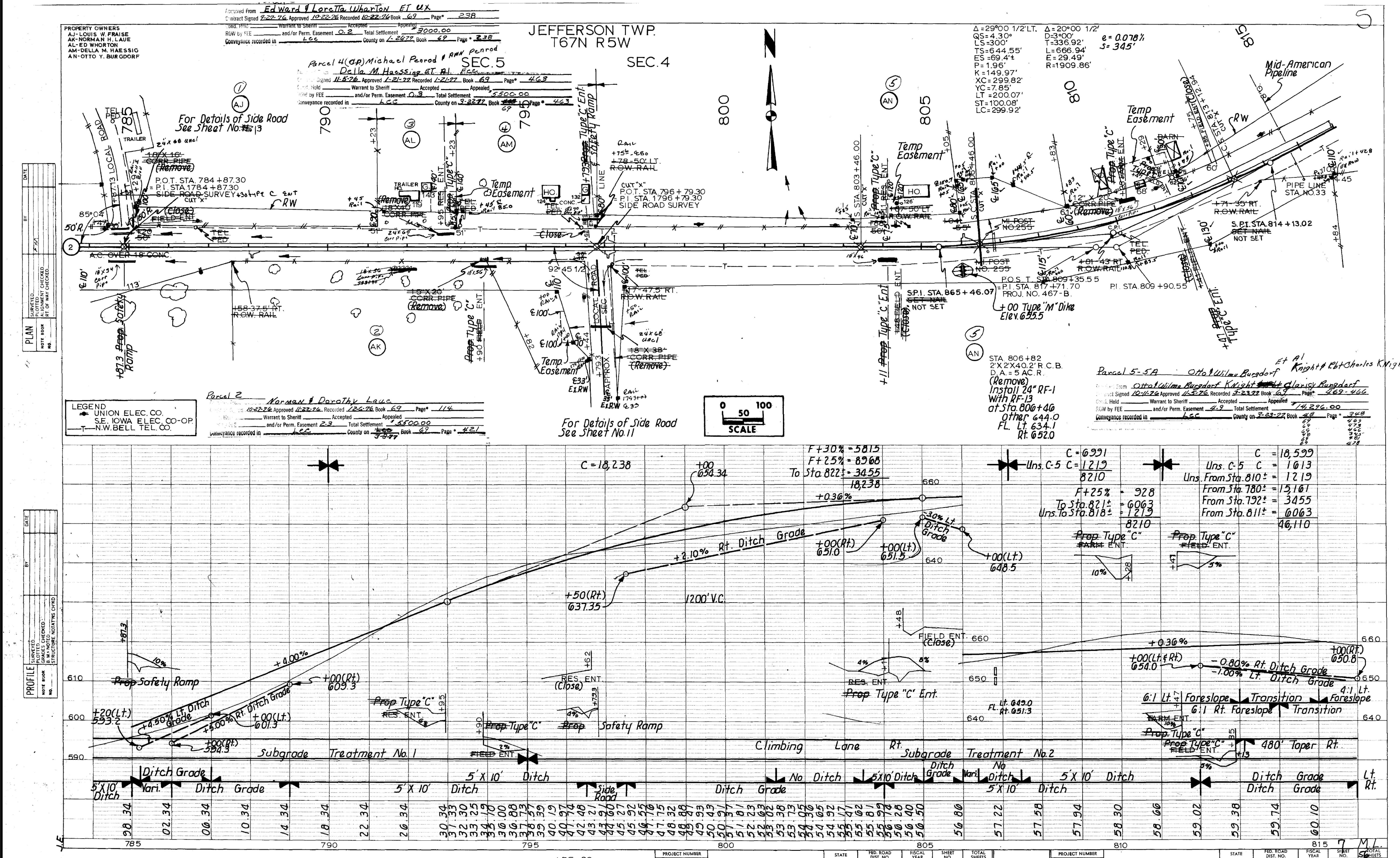

LEE CO.

PROJECT NUMBER	STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
F-2-9(15)--20-56	IOWA	5		7	56

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FILE NO.	ENGLISH	DESIGN TEAM HOLST \ BAHR \ CAMPBELL	LEE COUNTY	PROJECT NUMBER NHSX-002-9(38)--3H-56/HSIPX-002-9(39)--3L-56	SHEET NUMBER D.13

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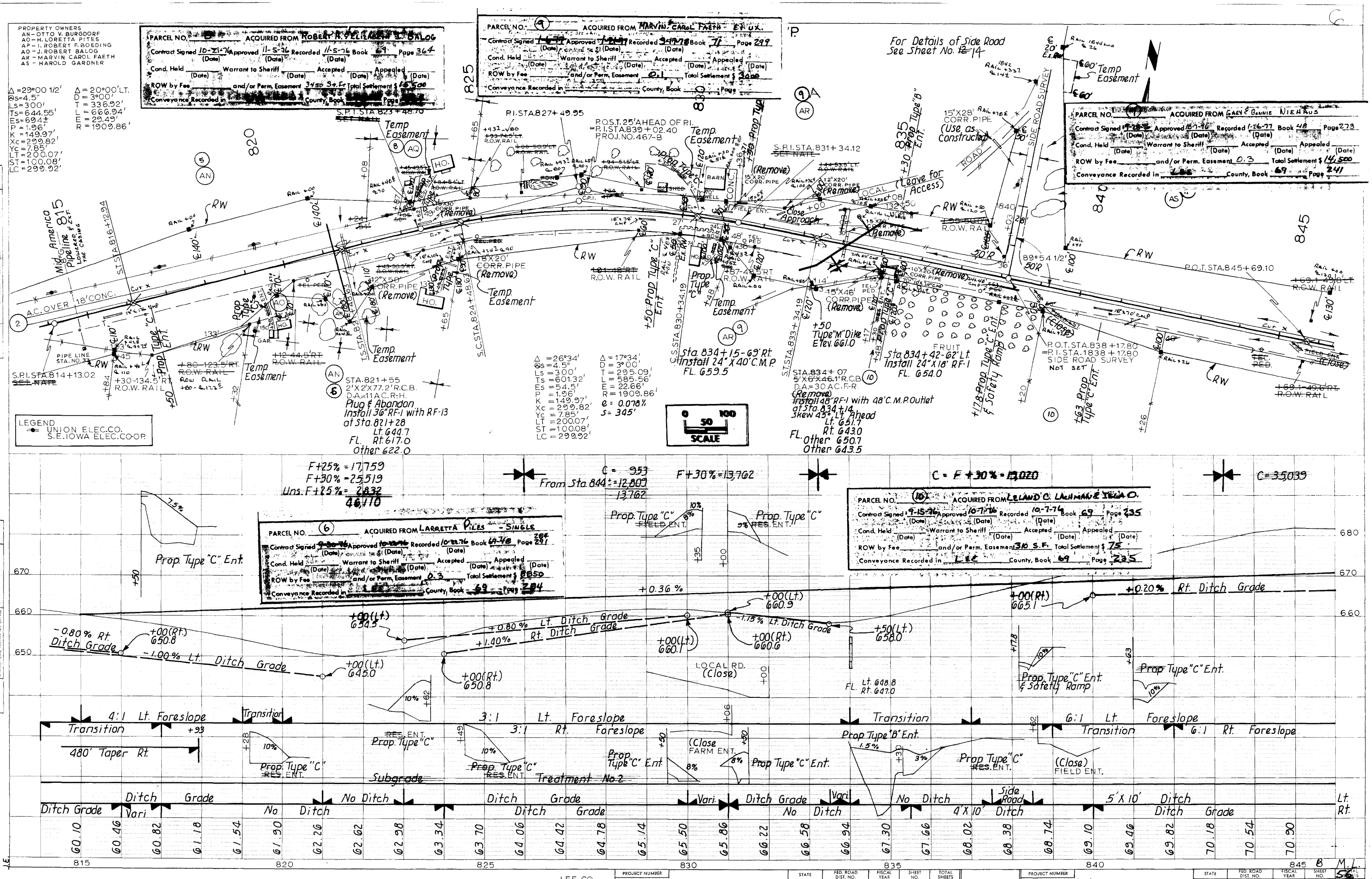

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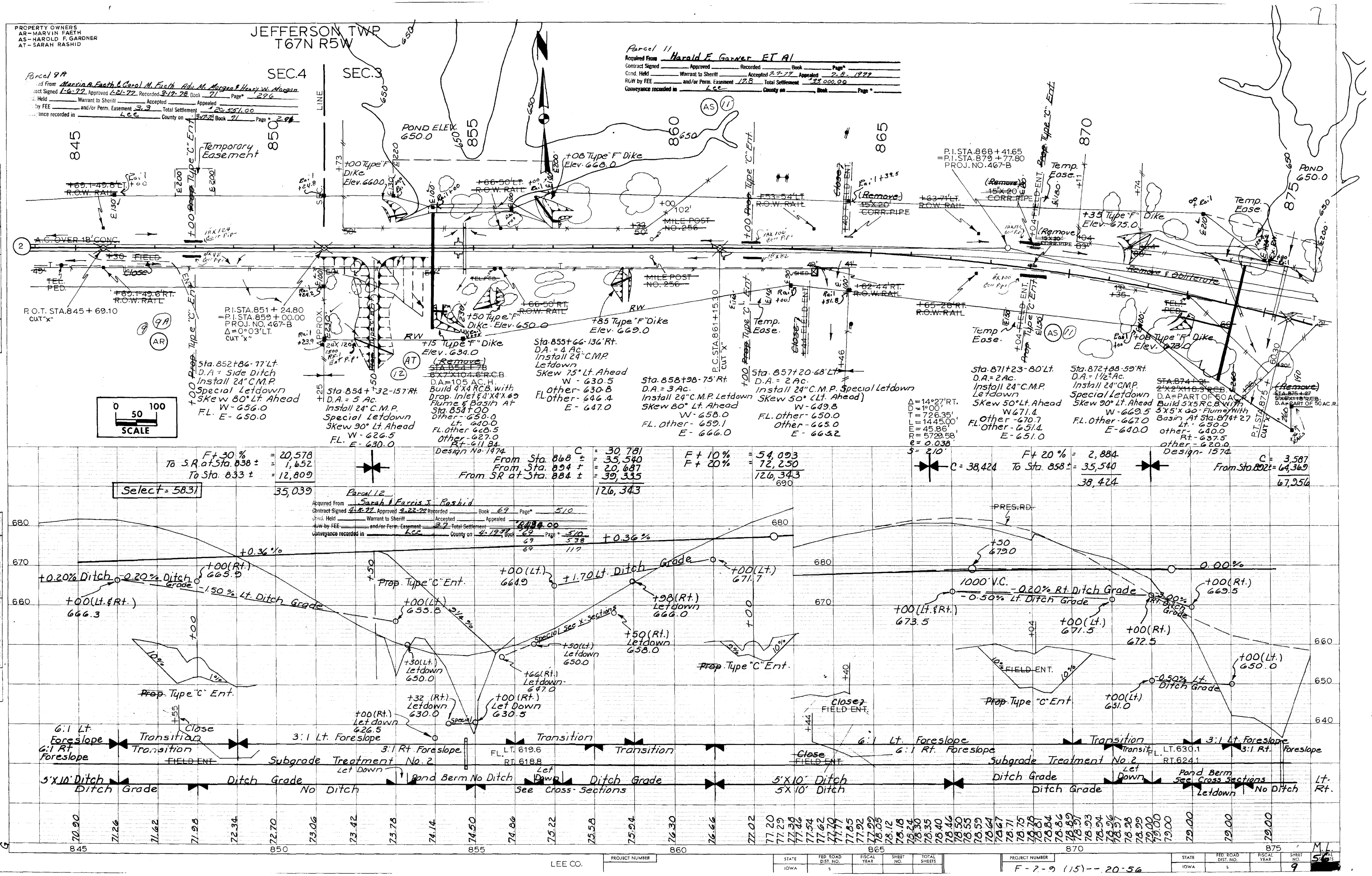

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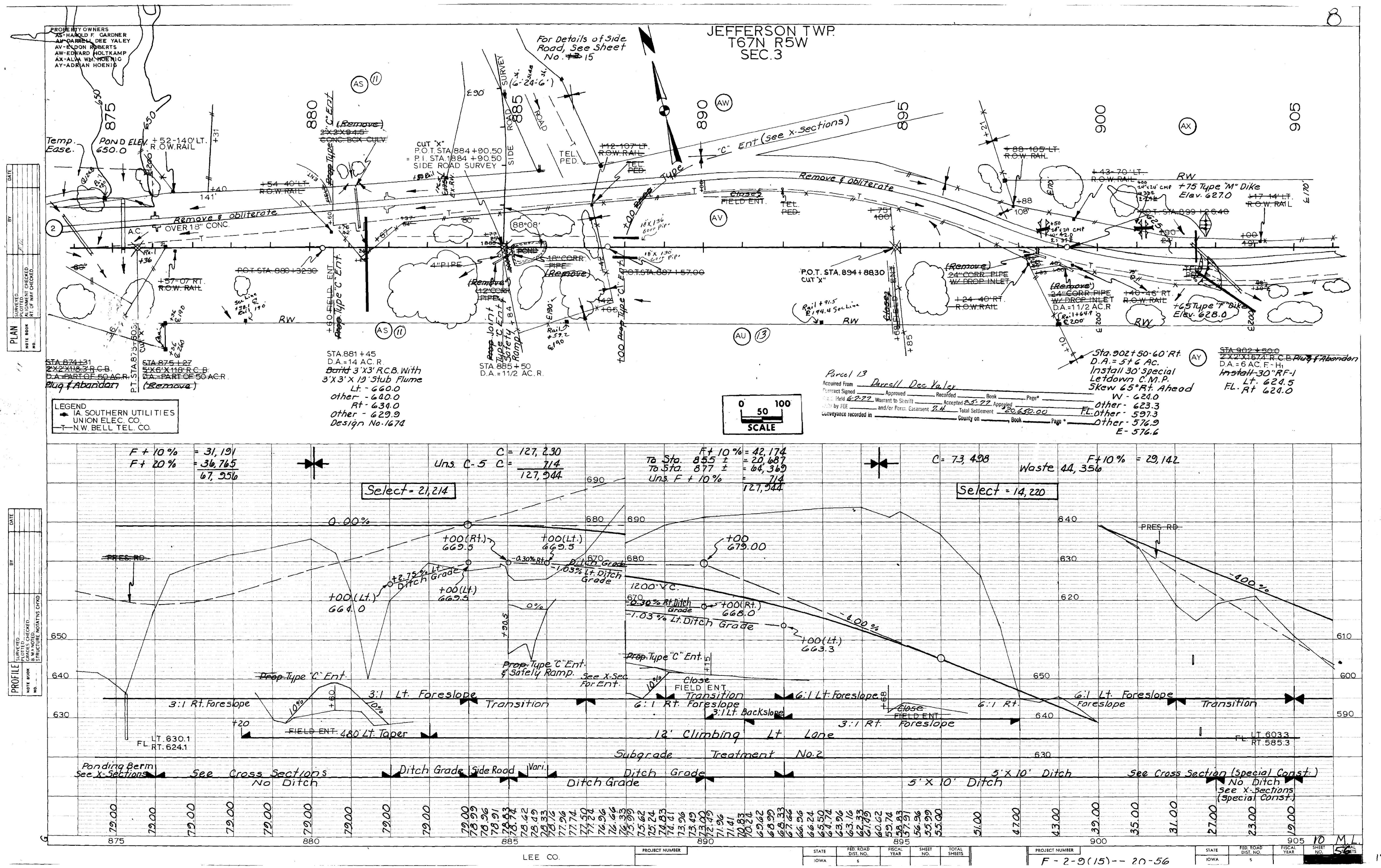

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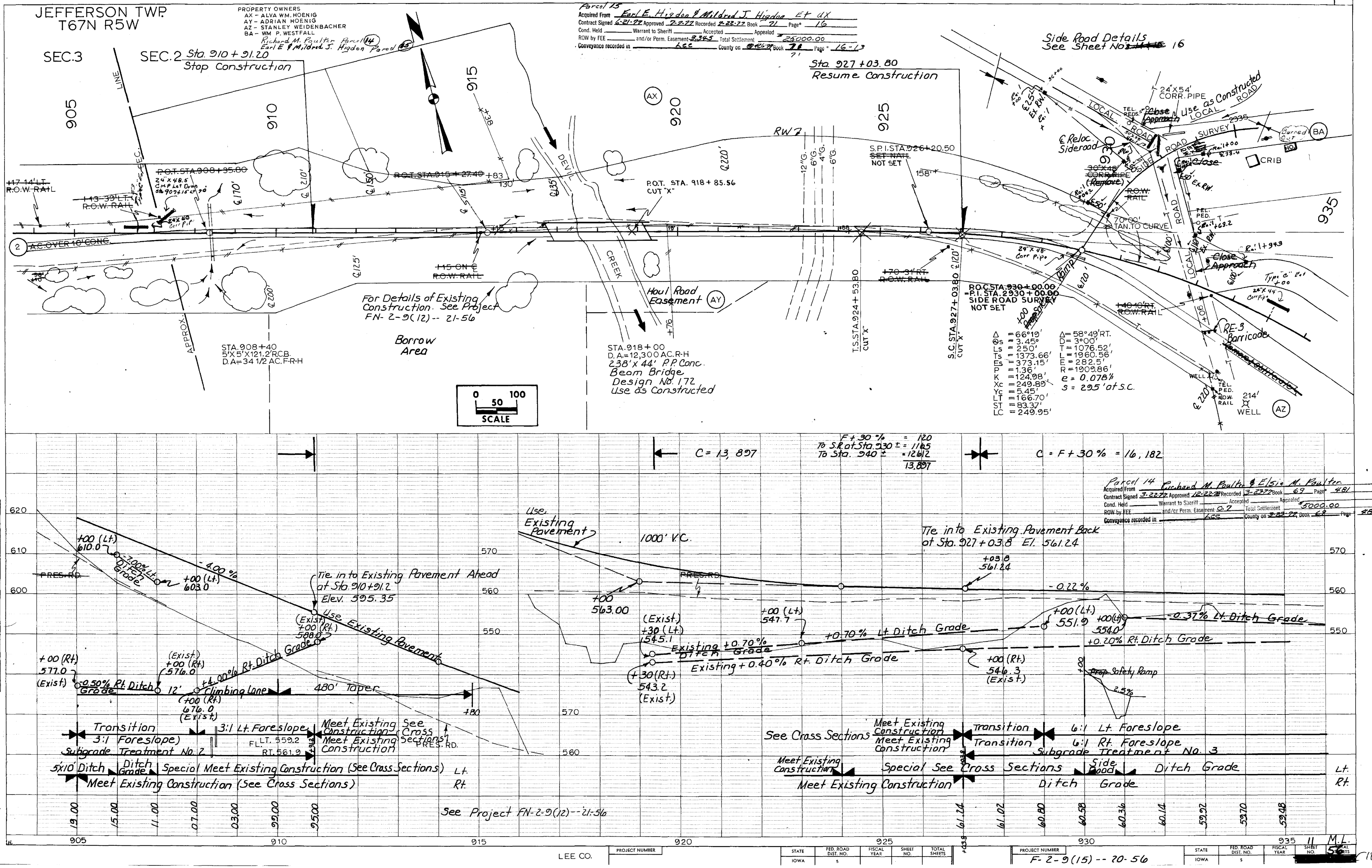

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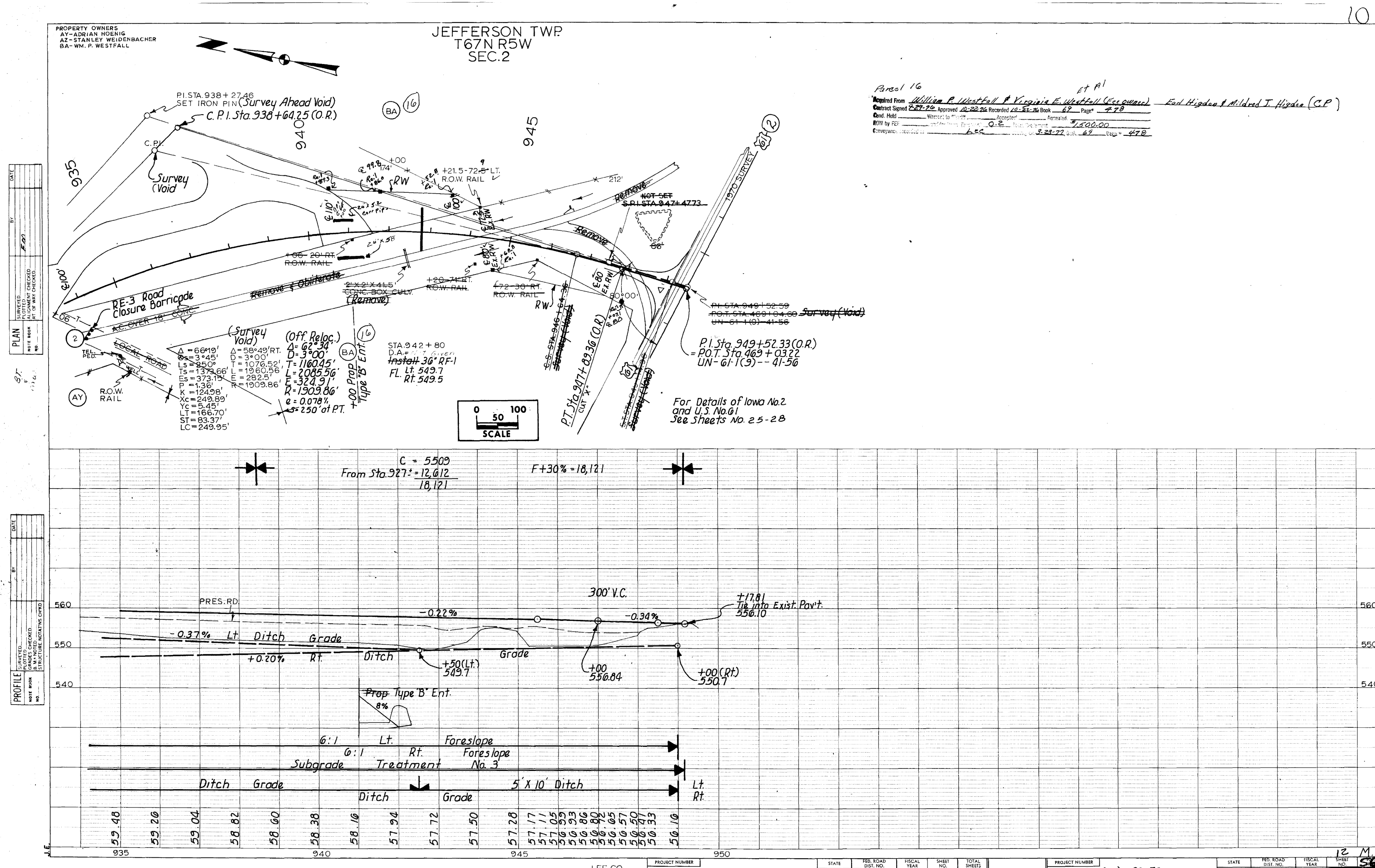

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FILE NO.	ENGLISH	DESIGN TEAM HOLST \ BAHR \ CAMPBELL	LEE COUNTY	PROJECT NUMBER NHSX-002-9(38)--3H-56/HSIPX-002-9(39)--3L-56	SHEET NUMBER D.18

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108-23A
08-01-08

TRAFFIC CONTROL PLAN

Thru traffic shal be maintained at all times.

108-25
10-21-14

511 TRAVEL RESTRICTIONS

Route	Direction	County	Location Description	Feature Crossed	Object Type	Maint. Bridge No., Structure ID, or FHWA No.	Type of Restriction	Existing Measurement	Construction Measurement	Construction Measurement as Signed	Projected As Built Measurement	Remarks
			No Restrictions Anticipated.									