



Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM
FAYETTE COUNTY
HMA RESURFACING WITH MILLING

On US 018 from east of IA 150 in West Union to Golden Avenue (B-64)

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.
 Value Engineering Saves. Refer to Article 1105.14 of the Specifications.



MILEAGE SUMMARY		
Location	Lin. Ft.	Miles
(Urban Section) Sta. 373+55.2 to Sta. 374+89.6 Eq: Sta. 374+89.6 BK= Sta. 719+29.4 AH Sta. 719+29.4 to Sta. 732+22.64 Eq: Sta. 732+22.64 to Sta. 100+00.00 Sta. 100+00 to Sta. 115+60	134.40 1293.24 1560.00	0.025 0.245 0.296
(Rural Section) Sta. 115+60 to Sta. 144+75	2915.00	0.552
Total:	5902.64	1.118

REVISIONS

TOTAL

24

PROJECT IDENTIFICATION NUMBER

15-33-0018-010

PROJECT NUMBER

NHSN-018-8(42)--2R-33

R.O.W. PROJECT NUMBER

INDEX OF SHEETS

No.	DESCRIPTION
A Sheets	Title Sheet
A.1	Title Sheet
A.1	Location Map Sheet
B Sheets	Typical Cross Sections and Details
B.1 - B.2	Typical Cross Sections and Details
C Sheets	Quantities and General Information
C.1	Project Description
C.1	Estimated Project Quantities
C.1 - C.3	Estimate Reference Information
C.3	Index of Tabulations
C.4	Standard Road Plans
C.4	General Notes
C.3 - C.12	Tabulations
G Sheets	Survey Sheet
G.1	Superelevation Data
J Sheets	Traffic Control and Staging Sheet
J.1	Traffic Control Plan
J.1	Staging Notes Stage
* J.2 - J.5	Pavement Marking Details
U Sheets	Modified Standards and Detail Sheets
* U.1 - U.3	Silt Fence Installation For Shallow Or No Ditch
	* Color Plan Sheets

EQUATION:

Sta. 372+22.64 BK=
Sta. 100+00.00 AH

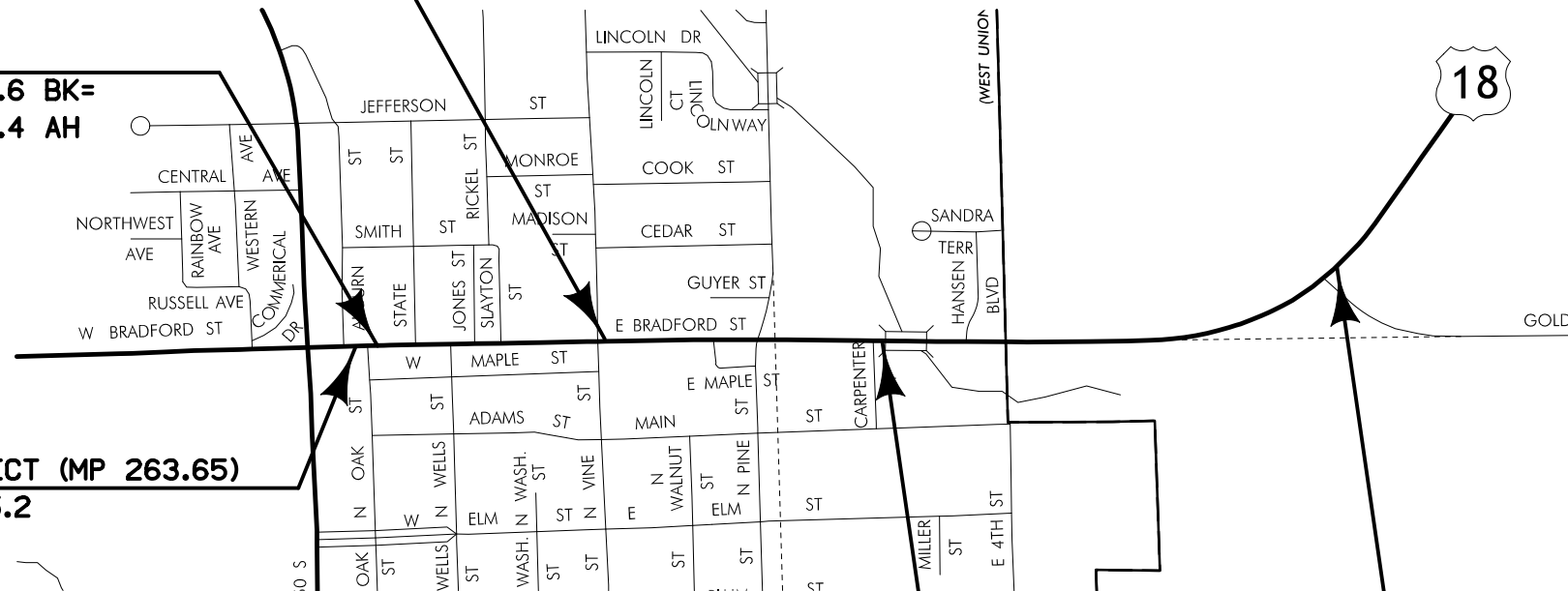
EQUATION:

Sta. 374+89.6 BK=
Sta. 719+29.4 AH

BEGIN PROJECT (MP 263.65)
Sta. 373+55.2

URBAN/RURAL (MP 264.20)
Sta. 115+60.0

END PROJECT (MP 264.77)
Sta. 144+75.0



DESIGN DATA URBAN

2017 AADT	4600	V.P.D.
2037 AADT	5000	V.P.D.
2037 DHV	520	V.P.H.
TRUCKS	11	%
Total Design ESALs	1,500,000	

DESIGN DATA RURAL

2017 AADT	4000	V.P.D.
2037 AADT	4300	V.P.D.
2037 DHV	450	V.P.H.
TRUCKS	12	%
Total Design ESALs	1,400,000	



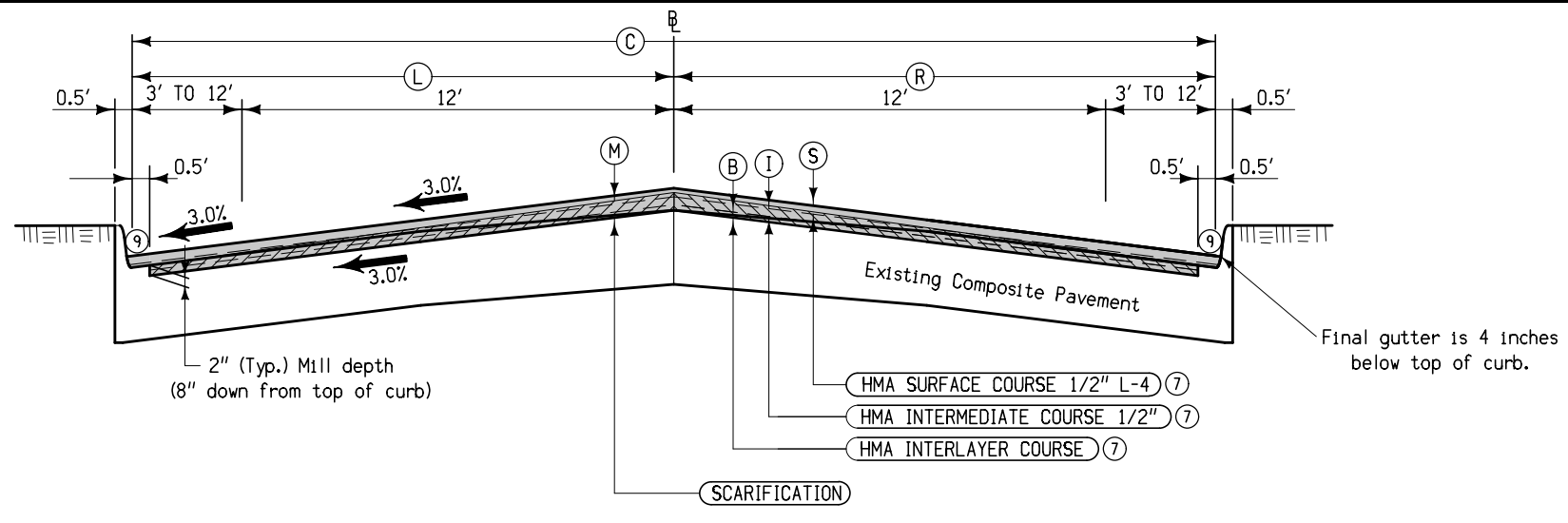
I hereby certify that this plan was prepared under my supervision and that engineering decisions with regard to the design were made by me or by other duly licensed Professional Engineers under the laws of the State of Iowa.

Signature _____ Date _____

MARK R. CALLAHAN

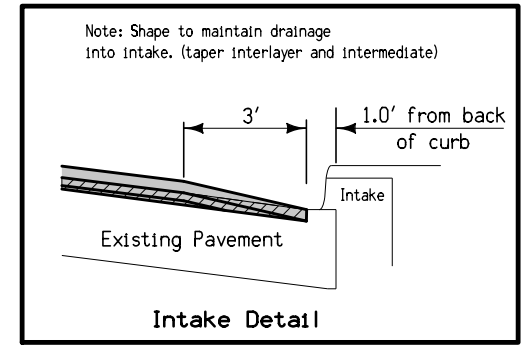
My license renewal date is December 31, 2017

Pages or sheets covered by this seal: A.1, B.1-B.2, C.1-C.12, G.1, J.1-J.5 & U.1-U.3



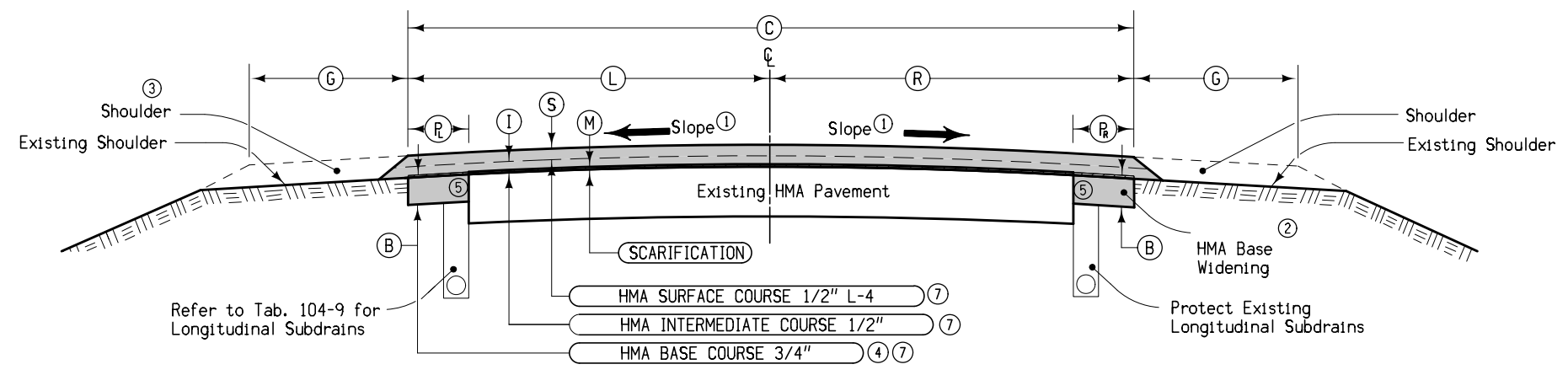
HMA Paving
 Pavement Scarification

- Notes:
- ① Existing typical pavement cross slope varies 2% to 4% on westbound lane and 1% to 3.4% on the eastbound lane.
 - ② Section may be modified as directed by the Engineer through areas of special shaping.
 - ③ Tack Coat estimated for 2 applications. Includes vertical edge at 0.15 Gal/SY.
 - ④ Pavement scarification shall continue through intersections.
 - ⑤ Contractor shall use care when scarifying near intakes. Any damage to the structures as a result of contractor negligence shall be replaced or repaired by the contractor at no cost to the DOT.
 - ⑥ Quantities are shown in Tabulation 100-25.
 - ⑦ PG 58-28S binder shall be used for surface and intermediate courses. PG 58-34S binder shall be used for Interlayer courses only.
 - ⑧ Milling to vary from 3 inches to 4 inches at centerline to 2 inches to 3 inches at curb, more or less.
 - ⑨ Contractor to mill as close to gutterline as possible. Any existing HMA remaining after milling shall be removed by other methods.



**TYPICAL CROSS SECTION
2 LANE HMA RESURFACING
CURB AND GUTTER SECTION**

Location		S	I	B	C	L	R	M	Remarks
Station To Station		Inches	Inches	Inches	Feet	Feet	Feet	Inches	
373+55.2	374+00.0	1.5	1.5	0	48	24	24	3	Runout Type 'N4'
374+00.0	719+45.0	1.5	1.5	0	48-30	24-15	24-15	3	EQ. Sta. 374+89.6 BK= Sta. 719+29.4 AH
719+45.0	732+22.6	1.5	1.5	1	30	15	15	3	EQ. Sta. 732+22.6 BK= Sta. 100+00.0 AH
100+00.0	115+60.0	1.5	1.5	1	30	15	15	3	
115+60.0	116+10.0	1.5-2	1.5-2	1	30	15	15	3-0.5	Transition Type 'R4'



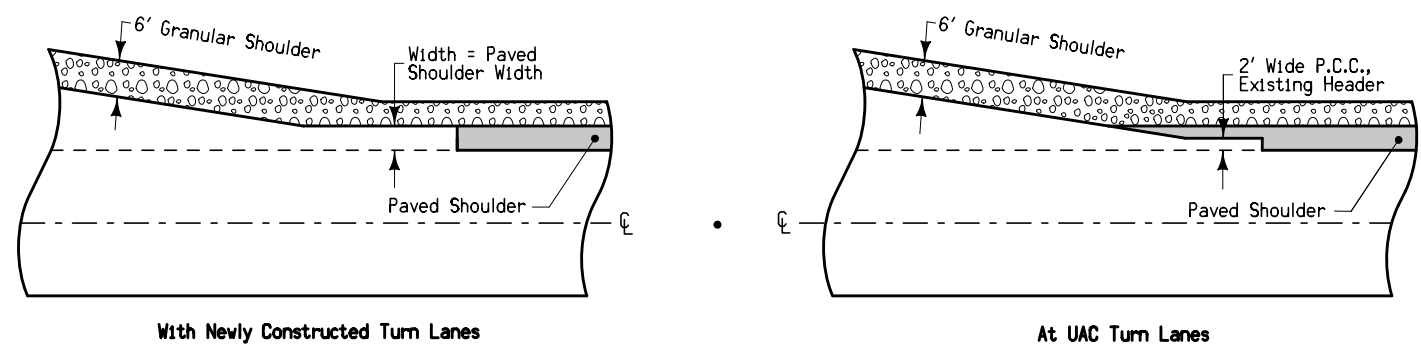
HMA Paving
 Pavement Scarification

- Notes:
- ① Match finished slope to existing pavement, except that the maximum allowable slope is 3.0%, minimum allowable slope is 2.0%. Section may be modified as directed by the Engineer through areas of special shaping or superelevated curves. Refer to Typical 2013 for cross slope of Auxiliary Lane.
 - ② Surface and Intermediate quantities quantities are shown in Tabulation 100-25. Base quantities for widening are shown in Tabulation 112-9.
 - ③ Refer to shoulder Typical 7135 and Standard Road Plan PV-203 for additional information.
 - ④ Depth of (B) is equal to the depth of Class 13 Excavation used in Tabulation 112-9.
 - ⑤ Provide a clean vertical surface similar to what can be achieved with a milling machine. Incidental to Class 13 Excavation.
 - ⑥ Tack Coat estimated for 2 applications. Includes vertical edge at 0.15 Gal/SY.
 - ⑦ Asphalt Binder for Surface, Intermediate and Base Courses shall be PG 58-28S.

Location		S	I	B	M	C	L	R	P	R	G	Remarks
Station To Station		Inches	Inches	Inches	Inches	Feet	Feet	Feet	Feet	Feet	Feet	
116+10.0	134+55.0	2	2	2.5	0.5	32	16	16	4	4	4	
134+55.0	136+51.9	2	2	2.5	0.5	32-40	16	16-24	4	4-0	4	RIGHT TURN LANE TAPER (1)
136+51.9	140+83.3	2	2	2.5	0.5	40	16	24	4	4-0	4	RIGHT TURN LANE (1)
140+83.3	142+23.5	2	2	2.5	0.5	40	16	24	4	0	0	THRU INTERSECTION ON RT
142+23.5	142+70.2	2	2	2.5	0.5	40-32	16	24-16	4	0-4	4	
142+70.2	143+00.0	2	2	2.5	0.5	32	16	16	4	4	4	
143+00.0	144+75.0	2	2-0	2.5-6	0.5-2	32	16	16	4	4	4	Runout Type 'N3'

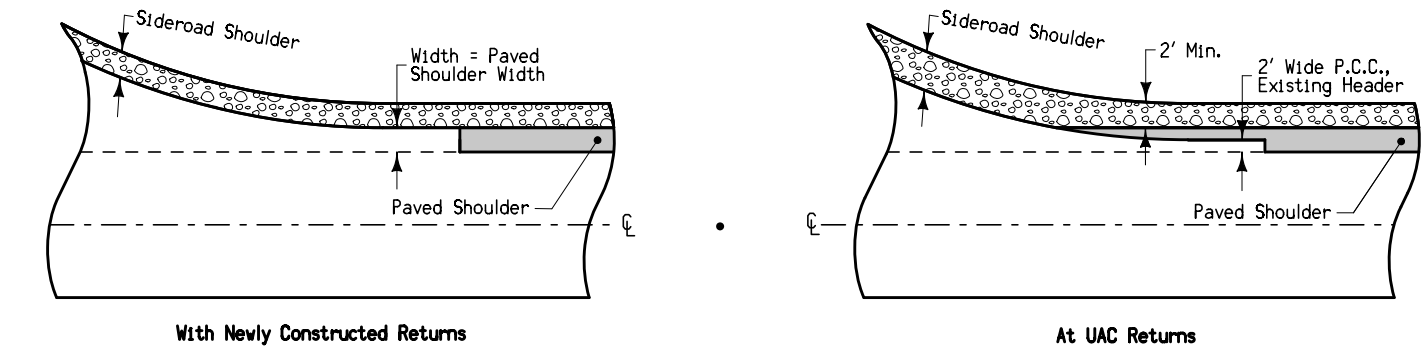
**TYPICAL CROSS SECTION
HMA RESURFACING WITH
BASE WIDENING**

7154A
10-20-09



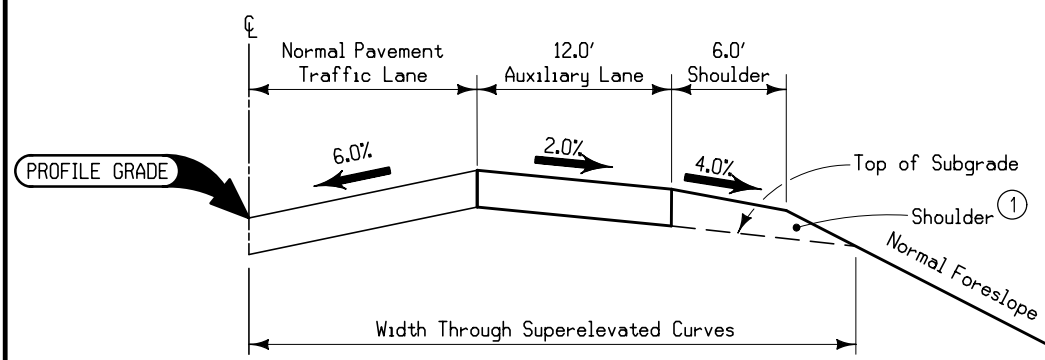
**PAVED SHOULDER
DETAIL AT
TURN LANES**

7154B
10-20-09



**PAVED SHOULDER
DETAIL AT RETURNS**

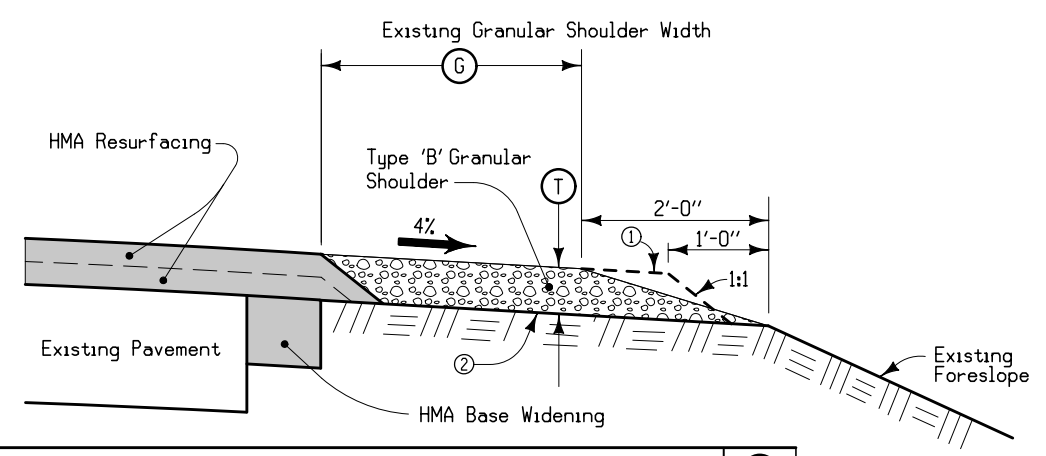
2013
MODIFIED



Notes:
On the high side of superelevated curves, the surface of auxiliary lane pavement shall be maintained at the same slope as the adjacent traffic lane until the superelevation reaches 4.0%. When the traffic lane pavement slope is greater than 4.0%, the auxiliary slope will remain constant at 4.0%.
On the low side of superelevated curves, the surface of auxiliary lane pavement shall slope the same as the adjacent lane pavement.
① Refer to other drawings for details of shoulder design and construction.

**TYPICAL HALF SECTION OF AUXILIARY LANE
THROUGH AREAS OF SUPERELEVATION**

7135
MODIFIED

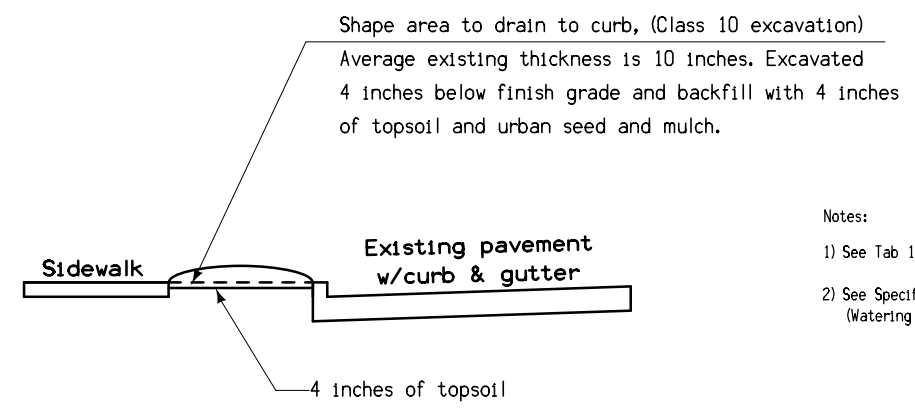


Notes:
Quantities have been determined on the basis of a design weight of 140 lbs. per cubic foot.
① Place and compact material to the dashed lines; then blade and shape to foreslope that portion above the solid line in the outer 2' and roll with loaded truck tire.
② Existing shoulder surface to be shaped to a uniform cross slope prior to placing granular shoulder material. Shape to ensure the thickness of the granular shoulder material is not less than the thickness of the resurfacing. See Tab. 112-9 for Shoulder Shaping & Blading Quantities.
④ Nominal thickness adjusted to account for existing slopes.
⑤ See Tabulation 112-9 for G and Quantities.

LOCATION			① Inches
SECTION IDENTIFICATION	STATION TO STATION	SIDE	
SEE TYPICAL MC-2	115+60	144+75	BOTH
			6

**TYPICAL SECTION FOR TYPE 'B'
GRANULAR SHOULDER
ADJACENT TO HOT MIX ASPHALT RESURFACING**

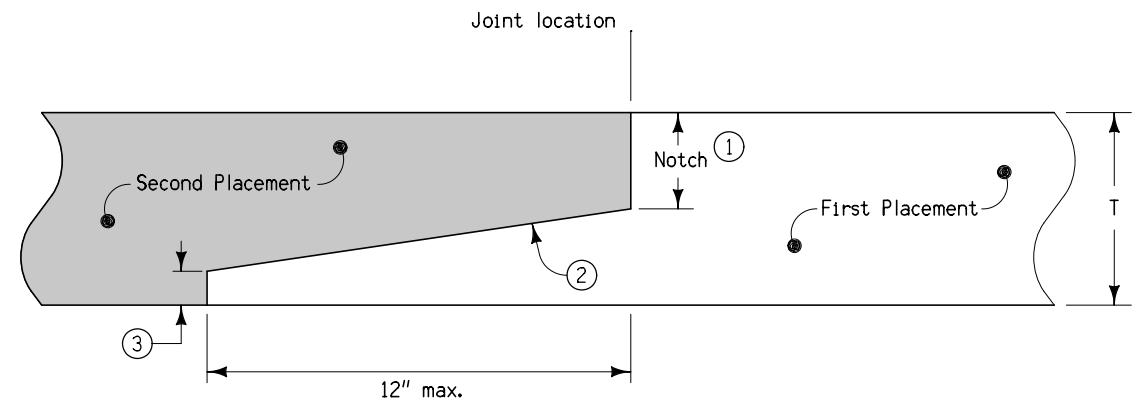
MC-3



Notes:
1) See Tab 104-10U for utility contact information.
2) See Specification 2601 for details on watering requirements, (Watering is considered incidental to urban seeding).

BOULEVARD SHAPING DETAIL

7315
10-20-09



Notes:
① Notch: Min = nominal maximum aggregate size + 1/4". Max = T/2.
② 12:1 Slope
③ Optional step at toe of slope: Max = 1".

**LONGITUDINAL HMA
NOTCHED WEDGE JOINT
T = 2" OR GREATER**

100-1D
10-18-05

PROJECT DESCRIPTION

In the urban section of U.S. 18 in West Union mill 3.0 inches of existing HMA and resurface with 1.0 inch interlayer and 3.0 inches of HMA. Perform full and partial depth patching after milling and prior to placement of the interlayer.

In the rural section of U.S. 18 mill 0.5 inches of existing HMA, add 4-foot base widening then resurface with 4.0 inches of HMA, 32 feet wide. Install subdrains and rumble strips. Extend one roadway pipe and address foreslopes steeper than 3:1. Flatten transverse slopes, extend side road and entrance pipes.

100-1A
07-15-97

ESTIMATED PROJECT QUANTITIES (1 DIVISION PROJECT)

Item No.	Item Code	Item	Unit	Total	As Built Qty.
1	2102-2625000	EMBANKMENT-IN-PLACE	CY	24.0	
2	2102-2710090	EXCAVATION, CLASS 10, WASTE	CY	630.0	
3	2105-8425005	TOPSOIL, FURNISH AND SPREAD	CY	240.0	
4	2121-7425020	GRANULAR SHOULDERS, TYPE B	TON	2,480.0	
5	2125-2225050	RESHAPING DITCHES	STA	1.50	
6	2212-0475095	CLEANING AND PREPARATION OF BASE	MILE	1.2	
7	2212-5070310	PATCHES, FULL-DEPTH REPAIR	SY	1,300.0	
8	2212-5070330	PATCHES BY COUNT (REPAIR)	EACH	130	
9	2212-5075001	HOT MIX ASPHALT SURFACE PATCHES	TON	5.0	
10	2213-2713300	EXCAVATION, CLASS 13, FOR WIDENING	CY	155.0	
11	2213-6745500	REMOVAL OF CURB	STA	7.80	
12	2213-8200000	BASE WIDENING, HOT MIX ASPHALT MIXTURE	TON	323.0	
13	2214-5145150	PAVEMENT SCARIFICATION	SY	21,904.0	
14	2214-7450050	BLADING AND SHAPING SHOULDER MATERIAL	STA	56.90	
15	2303-0001000	HOT MIX ASPHALT MIXTURE, WEDGE, LEVELING OR STRENGTHENING COURSE	TON	860.0	
16	2303-0002380	HOT MIX ASPHALT MIXTURE INTERLAYER BASE COURSE, 3/8 IN. MIX	TON	550.000	
17	2303-1032500	HOT MIX ASPHALT STANDARD TRAFFIC, INTERMEDIATE COURSE, 1/2 IN. MIX	TON	2,060.00	
18	2303-1033504	HOT MIX ASPHALT STANDARD TRAFFIC, SURFACE COURSE, 1/2 IN. MIX, FRICTION L-4	TON	2,200.00	
19	2303-1258283	ASPHALT BINDER, PG 58-28S, STANDARD TRAFFIC	TON	326.60	
20	2303-1258343	ASPHALT BINDER, PG 58-34S, STANDARD TRAFFIC	TON	33.00	
21	2303-6911000	HOT MIX ASPHALT PAVEMENT SAMPLES	LS	1.00	
22	2303-7000610	PAYMENT ADJUSTMENT INCENTIVE/DISINCENTIVE FOR HMA MIXTURE LABORATORY VOIDS (FORMULA - BY PAY FACTOR)	EACH	2800	
23	2303-7000630	PAYMENT ADJUSTMENT INCENTIVE/DISINCENTIVE FOR HMA MIXTURE LONGITUDINAL JOINT DENSITY (FORMULA - BY PAY FACTOR)	EACH	2800	
24	2315-8275025	SURFACING, DRIVEWAY, CLASS A CRUSHED STONE	TON	56.0	
25	2317-7000120	PAYMENT ADJUSTMENT INCENTIVE/DISINCENTIVE FOR HMA PAVEMENT SMOOTHNESS (BY SCHEDULE)	EACH	5500	
26	2401-6745650	REMOVAL OF EXISTING STRUCTURES	LS	1.00	
27	2402-2720100	EXCAVATION, CLASS 20, FOR ROADWAY PIPE CULVERT	CY	56.0	
28	2416-0100030	APRONS, CONCRETE, 30 IN. DIA.	EACH	2	
29	2416-0100036	APRONS, CONCRETE, 36 IN. DIA.	EACH	1	
30	2416-0101036	REMOVE AND REINSTALL CONCRETE PIPE APRONS LESS THAN OR EQUAL TO 36 IN.	EACH	2	
31	2416-1180024	CULVERT, CONCRETE ROADWAY PIPE, 24 IN. DIA.	LF	6	
32	2416-1541036	REMOVE AND REINSTALL RIGID PIPE CULVERT LESS THAN OR EQUAL TO 36 IN.	LF	18	
33	2417-0225018	APRONS, METAL, 18 IN. DIA.	EACH	10	
34	2435-0140148	MANHOLE, STORM SEWER, SW-401, 48 IN.	EACH	1	
35	2435-0600010	MANHOLE ADJUSTMENT, MINOR	EACH	7	
36	2499-6000100	CLEAN OUT PIPE CULVERT	LF	120.0	
37	2502-8212036	SUBDRAIN, LONGITUDINAL, (SHOULDER) 6 IN. DIA.	LF	550.0	
38	2502-8221304	SUBDRAIN OUTLET, DR-304	EACH	10	
39	2507-3250005	ENGINEERING FABRIC	SY	53.3	
40	2507-8029000	EROSION STONE	TON	31.7	
41	2512-1725356	CURB AND GUTTER, P.C. CONCRETE, 3.5 FT.	LF	780.0	
42	2525-0000200	LOOP DETECTORS (ADDITION OR REPLACEMENT TO AN EXISTING TRAFFIC SIGNAL SYSTEM)	EACH	14	
43	2526-8285000	CONSTRUCTION SURVEY	LS	1.00	
44	2527-9263109	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED	STA	764.29	
45	2527-9263146	PAINTED SYMBOLS AND LEGENDS, WATERBORNE OR SOLVENT-BASED	EACH	32	
46	2527-9270111	GROOVES CUT FOR PAVEMENT MARKINGS	STA	163.48	
47	2527-9270120	GROOVES CUT FOR SYMBOLS AND LEGENDS	EACH	7	
48	2528-8445110	TRAFFIC CONTROL	LS	1.00	
49	2528-8445113	FLAGGERS	EACH	See Proposal	
50	2528-8445115	PILOT CARS	EACH	See Proposal	
51	2533-4980005	MOBILIZATION	LS	1.00	
52	2548-0000100	MILLED SHOULDER RUMBLE STRIPS, HMA SURFACE	STA	43.5	
53	2548-0000110	ASPHALT EMULSION FOR FOG SEAL (SHOULDER RUMBLE STRIPS)	GAL	47.1	
54	2548-0000310	MILLED CENTERLINE RUMBLE STRIPS, HMA SURFACE	STA	21.8	
55	2601-2634100	MULCHING	ACRE	0.2	
56	2601-2634105	MULCHING, BONDED FIBER MATRIX	ACRE	0.1	
57	2601-2636015	NATIVE GRASS SEEDING	ACRE	0.1	
58	2601-2636043	SEEDING AND FERTILIZING (RURAL)	ACRE	0.1	
59	2601-2636044	SEEDING AND FERTILIZING (URBAN)	ACRE	0.5	
60	2601-2642100	STABILIZING CROP - SEEDING AND FERTILIZING	ACRE	0.2	
61	2601-2642120	STABILIZING CROP - SEEDING AND FERTILIZING (URBAN)	ACRE	0.5	

100-1A
07-15-97

ESTIMATED PROJECT QUANTITIES (1 DIVISION PROJECT)

Item No.	Item Code	Item	Unit	Total	As Built Qty.
62	2602-0000020	SILT FENCE	LF	220.0	
63	2602-0000030	SILT FENCE FOR DITCH CHECKS	LF	165.0	
64	2602-0000071	REMOVAL OF SILT FENCE OR SILT FENCE FOR DITCH CHECKS	LF	350.0	
65	2602-0000101	MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECK	LF	35.0	
66	2602-0000309	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 9 IN. DIA.	LF	1,610.0	
67	2602-0000350	REMOVAL OF PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE	LF	1,610.0	
68	2602-0010010	MOBILIZATIONS, EROSION CONTROL	EACH	1	
69	2602-0010020	MOBILIZATIONS, EMERGENCY EROSION CONTROL	EACH	1	

100-4A
10-29-02

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
1	2102-2625000	EMBANKMENT-IN-PLACE Refer to Tabulation 104-13 for additional information. Quantity is for fill for pipe extensions. The Contractor shall supply all fill material needed. Any removal of small brush or debris in these areas shall be incidental to this bid item. Material obtained from item "Excavation, Class 13, for Widening" may be used for this work. Overhaul will not be paid for this item.
-	-	-
2	2102-2710090	EXCAVATION, CLASS 10, WASTE Refer to Typical M-3 for additional information. This quantity is for the remove of material and grading of the areas between the sidewalk and curb for placement of topsoil. Excavation not used on the project shall become property of the Contractor and removed from the project. Care shall be taken to not damage any utilities. Overhaul will not be paid for this item.
-	-	-
3	2105-8425005	TOPSOIL, FURNISH AND SPREAD Refer to Typical M-3 and Tabulation 103-4 for additional information. All disturbed areas not covered by concrete, asphalt or gravel shall have a minimum of 4 inches of topsoil. The Contractor shall provide all the required topsoil. Topsoil from stripping and approved by the Engineer for placement, may also be used. Stripping of topsoil for placement of fill is considered incidental to this bid item.
-	-	-
4	2121-7425020	GRANULAR SHOULDERS, TYPE B Refer to Typical MC-2 and 7135 and Tabulation 112-9 for additional information. Estimated project quantity includes an additional 5% for irregularities.
-	-	-
5	2125-2225050	RESHAPING DITCHES Refer to Tabulation 300-1 for additional information. The actual length of ditch reshaping may be modified by the Engineer to obtain proper drainage at culverts.
-	-	-
6	2212-0475095	CLEANING AND PREPARATION OF BASE This item shall include the additional width for the turn lane.
-	-	-
7	2212-5070310	PATCHES, FULL-DEPTH REPAIR
8	2212-5070330	PATCHES BY COUNT (REPAIR) Refer to Tabulation 102-6C for additional information.
-	-	-
9	2212-5075001	HOT MIX ASPHALT SURFACE PATCHES This item is for patching the HMA surface prior to placement of HMA.
-	-	-
10	2213-2713300	EXCAVATION, CLASS 13, FOR WIDENING Refer to Typical MC-2 and Tabulation 112-9 for additional information. Excavation not used on the project shall become property of the Contractor and removed from the project. Overhaul will not be paid for this item.
-	-	-
11	2213-6745500	REMOVAL OF CURB Refer to Tabulation 110-4 for additional information. Remove curb and gutter to the nearest joint. Saw cutting is considered incidental.
-	-	-
12	2213-8200000	BASE WIDENING, HOT MIX ASPHALT MIXTURE Refer to Typical MC-1, MC-2, 2013, 7154A, 7154B and 7315 and Tabulations 100-25, 102-16 and 112-9 for additional information. Estimated project quantities include an additional 5% for irregularities.
-	-	-

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
13	2214-5145150	PAVEMENT SCARIFICATION Refer to Typical MC-1 and MC-2 and Tabulation 100-25 for additional information.
14	2214-7450050	BLADING AND SHAPING SHOULDER MATERIAL Refer to Typical 7135 and Tabulation 112-9 for additional information. This item is for building up the existing granular shoulders prior to placement of HMA base widening along ramps. Granular Shoulders, Type B material may be used for this bid item as necessary.
15	2303-0001000	HOT MIX ASPHALT MIXTURE, WEDGE, LEVELING OR STRENGTHENING COURSE Refer to Tabulation 106-2 for additional information.
16	2303-0002380	HOT MIX ASPHALT MIXTURE INTERLAYER BASE COURSE, 3/8 IN. MIX
17	2303-1032500	HOT MIX ASPHALT STANDARD TRAFFIC, INTERMEDIATE COURSE, 1/2 IN. MIX
18	2303-1033504	HOT MIX ASPHALT STANDARD TRAFFIC, SURFACE COURSE, 1/2 IN. MIX, FRICTION L-4
19	2303-1258283	ASPHALT BINDER, PG 58-28S, STANDARD TRAFFIC
20	2303-1258343	ASPHALT BINDER, PG 58-34S, STANDARD TRAFFIC
21	2303-6911000	HOT MIX ASPHALT PAVEMENT SAMPLES Refer to Typical MC-1, MC-2, 2013, 7154A, 7154B and 7315 and Tabulations 100-25, 102-16 and 112-9 for additional information. Estimated project quantities include an additional 5% for irregularities.
22	2303-7000610	PAYMENT ADJUSTMENT INCENTIVE/DISINCENTIVE FOR HMA MIXTURE LABORATORY VOIDS (FORMULA - BY PAY FACTOR)
23	2303-7000630	PAYMENT ADJUSTMENT INCENTIVE/DISINCENTIVE FOR HMA MIXTURE LONGITUDINAL JOINT DENSITY (FORMULA - BY PAY FACTOR) Estimated at 0.50 times the tons of HMA.
24	2315-8275025	SURFACING, DRIVEWAY, CLASS A CRUSHED STONE Refer to Tabulation 102-3 for additional information.
25	2317-7000120	PAYMENT ADJUSTMENT INCENTIVE/DISINCENTIVE FOR HMA PAVEMENT SMOOTHNESS (BY SCHEDULE) Estimated at 0.24 times the square yards of surface paving.
26	2401-6745650	REMOVAL OF EXISTING STRUCTURES Refer to Tabulation 110-2 for additional information.
27	2402-2720100	EXCAVATION, CLASS 20, FOR ROADWAY PIPE CULVERT Refer to Tabulations 104-13 and 104-13A for additional information.
28	2416-0100030	APRONS, CONCRETE, 30 IN. DIA.
29	2416-0100036	APRONS, CONCRETE, 36 IN. DIA.
30	2416-0101036	REMOVE AND REINSTALL CONCRETE PIPE APRONS LESS THAN OR EQUAL TO 36 IN.
31	2416-1180024	CULVERT, CONCRETE ROADWAY PIPE, 24 IN. DIA.
32	2416-1541036	REMOVE AND REINSTALL RIGID PIPE CULVERT LESS THAN OR EQUAL TO 36 IN.
33	2417-0225018	APRONS, METAL, 18 IN. DIA. Refer to Tabulations 104-13, 104-13A and 110-2 for additional information. All work is to be performed within DOT right-of-way.
34	2435-0140148	MANHOLE, STORM SEWER, SW-401, 48 IN. Refer to Tabulation 104-5A for additional information.
35	2435-0600010	MANHOLE ADJUSTMENT, MINOR Refer to Tabulation 104-10 for additional information.
36	2499-6000100	CLEAN OUT PIPE CULVERT Refer to Tabulation 104-13A for additional information. This item is for the removal of sediment inside existing pipes. Contractor shall supply all equipment and material needed to remove sediment from culverts without damaging the culverts. Verify method with Engineer prior to cleaning. Prevent sediment from leaving the project in accordance with the Pollution Prevention Plan. METHOD OF MEASUREMENT: The Engineer will measure the length of pipe satisfactorily cleaned to the nearest foot. BASIS OF PAYMENT: The Contractor will be paid the unit price bid for the lineal feet of pipe satisfactorily cleaned.
37	2502-8212036	SUBDRAIN, LONGITUDINAL, (SHOULDER) 6 IN. DIA.
38	2502-8221304	SUBDRAIN OUTLET, DR-304 Refer to Typical MC-2 and Tabulation 104-9 for additional information.
39	2507-3250005	ENGINEERING FABRIC
40	2507-8029000	EROSION STONE Refer to Tabulation 100-23 for additional information.
41	2512-1725356	CURB AND GUTTER, P.C. CONCRETE, 3.5 FT. Refer to Typical MC-1 and Tabulation 112-4 for additional information.
42	2525-0000200	LOOP DETECTORS (ADDITION OR REPLACEMENT TO AN EXISTING TRAFFIC SIGNAL SYSTEM) Refer to Sheets J.2 and J.3 for additional information. All traffic loops effected by the resurfacing shall be replaced in there original location. METHOD OF MEASUREMENT: The Engineer will count each traffic loop satisfactorily installed. BASIS OF PAYMENT: The Contractor will be paid the unit price bid for each loop satisfactorily installed. All materials and labor needed for the the placement and connections sahl be included in this item.
43	2526-8285000	CONSTRUCTION SURVEY

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
44	2527-9263109	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED
45	2527-9263146	PAINTED SYMBOLS AND LEGENDS, WATERBORNE OR SOLVENT-BASED
46	2527-9270111	GROOVES CUT FOR PAVEMENT MARKINGS
47	2527-9270120	GROOVES CUT FOR SYMBOLS AND LEGENDS Refer to Tabulations 108-22 and 108-29 for additional information. Grooving depth shall be 0.08 inches to 0.10 inches. Grooving and final pavement markings shall be placed a minimum of 30 days after final HMA lift placement.
48	2528-8445110	TRAFFIC CONTROL Refer to Sheet J.1 for additional information.
49	2528-8445113	FLAGGERS
50	2528-8445115	PILOT CARS
51	2533-4980005	MOBILIZATION
52	2548-0000100	MILLED SHOULDER RUMBLE STRIPS, HMA SURFACE
53	2548-0000110	ASPHALT EMULSION FOR FOG SEAL (SHOULDER RUMBLE STRIPS)
54	2548-0000310	MILLED CENTERLINE RUMBLE STRIPS, HMA SURFACE Refer to Tabulation 112-10 for additional information.
55	2601-2634100	MULCHING Mulch per Article 2601.03. E. 2. Anchor mulch into the soil using mulch anchoring equipment with a minimum of two passes. This item also includes areas requiring reshaping and seedbed preparation. Mulch shall be Certified Noxious Weed Seed Free Mulch as certified by the Iowa Crop Improvement Association or adjacent states' Crop Improvement Associations. Mulch Rate: 1 1/2 tons of dry cereal straw or native grass straw per acre.
56	2601-2634105	MULCHING, BONDED FIBER MATRIX To be installed in all urban areas and other areas designated by the Engineer. A Bonded Fibre Matrix shall be applied as the mulch for all areas designated as "Stabilizing Crop-Seeding and Fertilizing (Urban)". The seed and fertilizer for the area to be covered shall be applied before the Bonded Fibre Matrix Hydraulic Mulch application. Application rate shall be a minimum of 3000 lbs per acre.
57	2601-2636015	NATIVE GRASS SEEDING All areas outside eight feet adjacent to shoulder shall be seeded with "Native Grass Seeding". All seed for "Native Grass Seeding" will be supplied and mixed by the contractor according to Article 2601.03, B, 4, c and installed according to Article 2601.03, C, 5. All forb seed will be applied through the native grass drill wildflower or small seed box. Forb seed will not be allowed to be mixed and applied with the native grass seed. Cover crop will be required to be applied through the cool season or cover crop seed box. The cover crop seed will not be allowed to be mixed and applied with the native grass seed. Drill shall be calibrated prior to operation at the project site to the specified seeding rate for the project and witnessed by the contracting authority. The Engineer will review the limits prior to seeding with the Contractor.
58	2601-2636043	SEEDING AND FERTILIZING (RURAL) Refer to Tabulations 103-4, 104-13, 104-13A and 300-1 for additional information. Included for all areas designated by the Engineer. All disturbed areas shall be seeded and fertilized per Article 2601.03. C. 3 of the Standard Specifications. Use ground driven equipment.
59	2601-2636044	SEEDING AND FERTILIZING (URBAN) Refer to Tabulations 103-4 and 112-9 for additional information. Included for all areas designated by the Engineer. Prepare seedbed, fertilize, and seed according to Article 2601.03. C. 4 of the Standard Specifications. Use ground driven equipment.
60	2601-2642100	STABILIZING CROP - SEEDING AND FERTILIZING This item includes disturbed areas as directed by the Engineer. Seed and fertilize all disturbed areas according to Article 2601.03. C. 1 of the Standard Specifications.

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
61	2601-2642120	STABILIZING CROP - SEEDING AND FERTILIZING (URBAN) This item includes disturbed areas as directed by the Engineer. Seed and fertilize all urban disturbed areas according to Article 2601.03. C. 2 of the Standard Specifications.
62	2602-0000020	SILT FENCE Refer to Tabulation 100-17 and Sheets U.1 to U.3 for additional information. Verify specific locations with the Engineer prior to placement. Estimated quantity includes an additional 10% for other areas as directed by the Engineer.
63	2602-0000030	SILT FENCE FOR DITCH CHECKS Refer to Tabulation 100-18 and Sheets U.1 to U.3 for additional information. Verify specific locations with the Engineer prior to placement. Estimated quantity includes an additional 10% for other areas as directed by the Engineer.
64	2602-0000071	REMOVAL OF SILT FENCE OR SILT FENCE FOR DITCH CHECKS This item is included for silt fence and silt fence for ditch check removal when slopes have been mulched and the Engineer has determined that fencing is no longer needed or for areas that have achieved 70% permanent growth.
65	2602-0000101	MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECK This item is included for maintaining silt fence and silt fence ditch checks installed for the project. Estimated at 10% of the silt fence installed.
66	2602-0000309	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 9 IN. DIA. Refer to Tabulation 100-19 for additional information. The tabulation includes estimated locations for placement of "Perimeter and Slope Sediment Control Device, 9 in. dia." to address erosion to be encountered during construction. Verify the specific locations with the Engineer prior to beginning placement. Use Perimeter and Slope Sediment Control Devices fabricated using wood excelsior only.
67	2602-0000350	REMOVAL OF PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE This item is included for perimeter and slope sediment control device removal when slopes have been mulched and the Engineer has determined that the devices are no longer needed or for areas that have achieved 70% permanent growth.
68	2602-0010010	MOBILIZATIONS, EROSION CONTROL
69	2602-0010020	MOBILIZATIONS, EMERGENCY EROSION CONTROL

INDEX OF TABULATIONS

Tabulation	Tabulation Title	Sheet No.
C Sheets		
100-1A	ESTIMATED PROJECT QUANTITIES (1 DIVISION PROJECT)	C.1 - C.1
100-1D	PROJECT DESCRIPTION	C.1
100-1U	UTILITIES	C.8
100-4A	ESTIMATE REFERENCE INFORMATION	C.1 - C.3
100-17	TABULATION OF SILT FENCES	C.5
100-18	SILT FENCES FOR DITCH CHECKS	C.5
100-19	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE	C.5
100-23	ROCK EROSION CONTROL	C.5
100-25	HMA PAVEMENT	C.9
100-27	PAVEMENT SMOOTHNESS + PCC TEXTURE	C.3
100-34	STORMWATER DRAINAGE BASIN	C.5
100-35	SUMMARY OF STORMWATER STORAGE	C.5
102-3	ACCESS POINTS AND SAFETY RAMPS	C.6
102-5	EXISTING PAVEMENT	C.3
102-5A	EXISTING HMA PAVEMENT FOR RECYCLING	C.4
102-6C	FULL-DEPTH REPAIR PATCHES	C.8
102-16	NOTCHES AND RUNOUTS FOR RESURFACING	C.8
103-4	TABULATION OF SPREADING TOPSOIL	C.4
104-5A	INTAKES AND UTILITY ACCESSES	C.7
104-9	LONGITUDINAL SUBDRAIN SHOULDER AND BACKSLOPE	C.6
104-10	ADJUSTMENT OF FIXTURES	C.8
104-13A	FORESLOPE FLATTENING AND DRAINAGE STRUCTURES BY ROAD CONTRACTOR (SIDEROAD & ENTRANCE PIPES)	C.7
104-13	FORESLOPE FLATTENING AND DRAINAGE STRUCTURES BY ROAD CONTRACTOR (MAINLINE PIPES)	C.7
105-4	STANDARD ROAD PLANS	C.4
106-2	TABULATION OF LEVELING COURSES	C.8
108-22	PAVEMENT MARKING LINE TYPES	C.11 - C.12
108-29	PAVEMENT MARKING SYMBOLS AND LEGENDS	C.10
110-2	REMOVAL OF EXISTING STRUCTURES	C.7
110-4	CURB REMOVAL	C.8
111-25	INDEX OF TABULATIONS	C.3
112-4	CURBS AND RAISED ISLANDS	C.8
112-9	SHOULDERS	C.10
112-10	MILLED RUMBLE STRIPS	C.10
300-1	RESHAPING DITCHES	C.8

PAVEMENT SMOOTHNESS + PCC TEXTURE

Road Identification	Begin Station	End Station	Proposed Posted Speed			Remarks
			35 or less	40 - 45	over 45	
US 18	BOP	122+00	X			
	122+00	135+50		X		
	135+50	EOP			X	

EXISTING PAVEMENT

No.	Location					Year	Type	Project Number	Surface		Base		Subbase		Removal		Coarse Aggregate			Reinforcement	Remarks
	County	Route	Dir. of Travel	Begin Milepost	End Milepost				Type	Depth IN	Type	Depth IN	Type	Depth IN	Type	Depth IN	Type	Depth IN	Source		
	33	US 18	Both	263.65	263.92	1991		F-18-8(29)--20-33	AAC	2					MILL	2	GREEN QRY	C. LST.			6.5' PCC WIDENING
						1964		FN-863	AAC	3							HOUQ	C. LST.			SPOT 9" PCC RECONSTRUCTION
						1930		P-639	PC7	7							MARQUETTE	C. LST.	I		
			Both	263.92	264.23	1991		F-18-8(29)--20-33	AAC	2					MILL	2	GREEN QRY	C. LST.			
						1975		FN-18-8(13)--21-33	AAC	1.5	TBB	1.5					PATTISON QRY	C. LST.			VL FDEP AC & 4' PCC WIDENING
						1964		FN-863	AAC	3							HOUQ	C. LST.			
						1930		P-639	PC7	7							MARQUETTE	C. LST.	I		
			Both	264.23	264.77	1991		F-18-8(29)--20-33	AAC	4							GREEN QRY	C. LST.			
						1975		FN-18-8(13)--21-33	AAC	3	ATB	8	SAS	6			PATTISON QRY	C. LST.			VL FDEP AC

EXISTING HMA PAVEMENT FOR RECYCLING

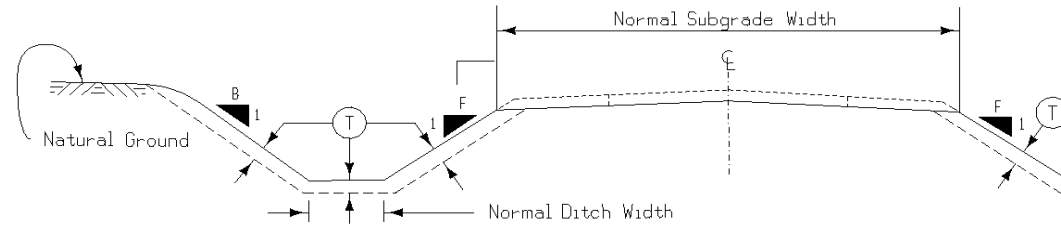
For informational purposes only. When designed RAP is specified, process the RAP to control the uniformity of the final mixture.

Route No.	Location	Year Placed	Layer	Thickness	Asphalt Binder		Description	Quality Type	Size	Content	Mix				% Crushed	% Limestone
					Grade	Content					% of -4 that is Type 2	% of +4 that is Type 2	% of +4 that is Type 3	% of +4 that is Type 4		
US 18	From MP 263.65 to MP 264.77	1991	Surface	2"	AC-10	5.2		A	3/4"					95	75	75
US 18	From MP 263.65 to MP 264.77	1991	Binder	2"	AC-10	5.2		A	3/4"					84	60	60

**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.

TABULATION OF SPREADING TOPSOIL



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

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

Area No.	Quantity CY	Placement Description					Remarks	Topsoil Excavation Available From		Remarks
		Location Station to Station	Side L. or R.	Slope B. or F.	T IN	Amount Reserved CY		Station to Station		
	15.0	BOP	721+30	L.			4.0		Between BOP and State St.	
	30.0	721+30	724+71	L.			4.0		Between State St. and Jones St.	
	15.0	724+71	726+23.5	L.			4.0		Between Jones St. and Slaton St.	
	50.0	726+23.5	731+76	L.			4.0		Between Slaton St. and Vine St.	
	100.0	731+76	108+60.5	L.			4.0		Between Vine St. and Pine St.	
	30.0						4.0		Misc. for pipe work	
	240.0	Total:								

STANDARD ROAD PLANS

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

Number	Date	Title
DR-101	04-19-16	Pipe Culvert (Bedding and Backfill)
DR-103	04-21-15	Pipe Culvert (Installation Details)
DR-121	10-20-15	Connected Pipe Joints
DR-201	04-21-15	Concrete Aprons
DR-203	04-21-15	Metal Pipe Aprons and Beveled Ends
DR-303	10-18-16	Subdrains (Longitudinal)
DR-304	10-18-16	Outlets for Longitudinal, Transverse and Backslope Subdrains
DR-621	04-21-15	Pipe Extension
EC-201	10-18-16	Silt Fence
EC-204	04-19-16	Perimeter and Slope Sediment Control Devices
EC-301	10-18-16	Rock Erosion Control (REC)
EW-105	04-21-15	Reshaping Slopes and Ditches
EW-501	10-20-15	Rural Entrance
EW-503	10-20-15	Side Road Grading
PM-110	04-16-13	Line Types
PM-111	04-21-15	Symbols and Legends
PM-120	10-21-14	Stop Lines and Islands
PM-210	10-18-11	Separation in Two-Lane Roadway
PM-521	04-19-11	Two-Lane Roadway with Right Turn Lanes
PR-103	10-21-14	Full Depth PCC Patch with Dowels
PR-201	10-21-14	Runouts for Resurfacing
PR-202	10-21-14	Notches for Resurfacing (with or without Runout)
PV-12	04-19-16	Milled Shoulder Rumble Strips
PV-20	10-21-14	Paved Islands
PV-101	04-19-16	Joints
PV-102	10-18-16	PCC Curb Details
PV-201	04-19-11	Manhole Boxouts in HMA Pavement and HMA Overlays
PV-202	04-16-13	Hot Mix Asphalt Resurfacing
PV-203	10-15-13	HMA Base Widening
PV-301	04-19-11	Superelevation Details Two Lane Roadway
SW-401	04-21-09	Circular Storm Sewer Manhole
SW-602	04-21-15	Castings for Storm Sewer Manholes
TC-1	04-16-13	Work Not Affecting Traffic (Two-Lane or Multi-Lane)

STANDARD ROAD PLANS

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

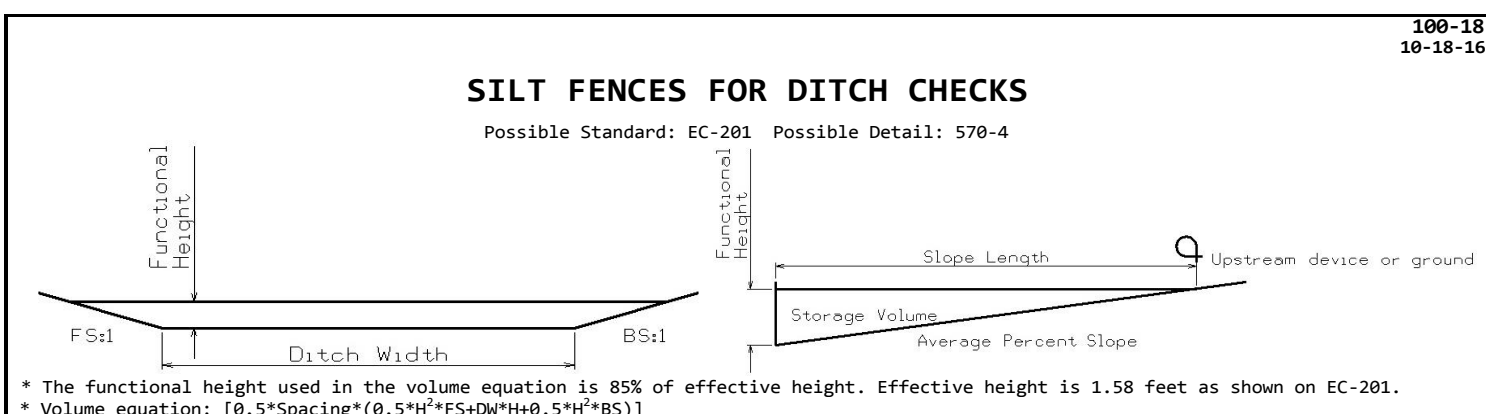
Number	Date	Title
TC-61	04-21-15	Two-Lane, Two-way Operation
TC-202	04-21-15	Work Within 15 ft of Traveled Way
TC-212	04-16-13	Spot Location Lane Closure with Flaggers
TC-214	04-16-13	Lane Closure with Flaggers for use with Pilot Car
TC-232	10-21-14	Shoulder Rumble Strip Operations
TC-273	04-20-10	Construction Site Entrance

100-19
04-19-16

PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE

Possible Standards: EC-204

Location			Length of Installation			Remarks
Begin Station	End Station	Side	9 inch Dia	12 inch Dia	20 inch Dia	
			LF	LF	LF	
BOP	721+30	L	180.0			Between BOP and State St.
721+30	724+71	L	260.0			Between State St. and Jones St.
724+71	726+23.5	L	130.0			Between Jones St. and Slaton St.
726+23.5	731+76	L	390.0			Between Slaton St. and Vine St.
731+76	108+60.5	L	650.0			Between Vine St. and Pine St.
			1610.0			Total:



100-17
04-20-10

TABULATION OF SILT FENCES

Refer to EC-201

Location				Length LF	Remarks
Begin Station	End Station	Side			
BOP	EOP	Both	200.0	Misc.	

Basin No.	Type	Location		Bid Items			Stormwater Storage Volume Summary					Remarks
		Station	Side	Installation LF	Maintenance LF	Removal LF	Foreslope FS:1	Backslope BS:1	Ditch Width FT	Avg. % Slope	Volume* CF	
1	1	116+30	LT	30.0	3.0	30.0	3.0	3.0	10.0	2.0%	706.5	
2	1	116+60	RT	30.0	3.0	30.0	3.0	3.0	10.0	2.0%	706.5	
3	1	117+10	LT	30.0	3.0	30.0	3.0	3.0	10.0	2.0%	706.5	
4a	1	117+40	RT	30.0	3.0	30.0	3.0	3.0	10.0	2.0%	706.5	
4b	1	118+00	RT	30.0	3.0	30.0	3.0	3.0	10.0	2.0%	706.5	
Totals:				150.0	15.0	150.0						3532.7

100-23
04-21-15

ROCK EROSION CONTROL

Refer to EC-301

Road Identification	Begin Station	End Station	Side Lt./Rt.	Rock Erosion Control (REC)		Material Bid Quantities					Remarks				
				L FT	W FT	Type 1	Type 2	Type 3	Type 4	Type 5		Erosion Stone	Class E Revetment	Eng. Fabric	
						Rock Ditch Check	Rock Ditch	Rock Flume	Rock Splash Basin	Rock Slope Protection		TON	TON	SY	
US 18 Mainline Pipe	115+10	Outlet	Lt.	12	10					X		14.4		24.9	
US 18 Storm Sewer Outlet	116+65	Outlet	Rt.	12	12					X		17.3		28.4	
												31.7		53.3	Totals:

100-34
04-19-16

STORMWATER DRAINAGE BASIN

Basin No.	Station to Station	Side	Disturbed Area Acres	Discharge Point		Required Storage Volume CF	Remarks	
				Station	Side			
5	BOP	727+00	RT	0.10	727+00	RT	360.0	STORM SEWER SYSTEM/SEE TAB 100-19
1	727+00	116+30	LT	0.30	116+30	LT	1080.0	STORM SEWER SYSTEM & SEE TAB 100-19
2	727+00	116+60	RT	0.05	116+60	RT	180.0	STORM SEWER SYSTEM & SEE TAB 100-19
3	117+10	EOP	LT	0.05	117+10	LT	180.0	
4	117+40	EOP	RT	0.05	117+40	RT	180.0	
				0.55			1980.0	totals:

100-35
04-19-16

SUMMARY OF STORMWATER STORAGE

Basin No.	Item	Total Storage Volume Provided	Total Storage Volume Required	Remarks
		CF	CF	
5	Erosion Control Devices	0	360	"Possible intake device"
1	Silt Fence Ditch Check & Erosion Control Devices	707	1800	
2	Silt Fence Ditch Check	707	180	
3	Silt Fence Ditch Check & Erosion Control Devices	707	180	
4	Silt Fence Ditch Checks	1413	180	
Totals:		3533	2340	

LONGITUDINAL SUBDRAIN SHOULDER AND BACKSLOPE

Refer to Soils Sheets

① Refer to EW-203, EW-204, or EW-211.
*Not a bid item

Line No.	Location				Longitudinal Subdrain (DR-303)							Subdrain Outlet		Porous* Backfill	Class "A"* Crushed Stone	Remarks	
	Road or Lane Ident.	Station to Station		Side	Shoulder		Backslope		Bridge Berm ①			DR-303, DR-304, or DR-305					
					Depth	Size	Length	Size	Length	Size	Type	Length	Station				Standard Road Plan and Type
1	WBL	117+00.00	120+50.00	LT	36.0	4.0	390.0						117+00.00	DR-304	30.1	0.2	Replace outlet
	WBL	120+50.00	124+25.00	LT	36.0	4.0	40.0						120+50.00	DR-304	3.1	0.2	Replace outlet
	WBL	124+25.00	128+00.00	LT	36.0	4.0	40.0						124+25.00	DR-304	3.1	0.2	Install Outlet
	WBL	128+00.00	132+00.00	LT	48.0	4.0	0.0						128+00.00	DR-304	0.0	0.2	Install Outlet
	WBL	132+00.00	136+90.00	LT	48.0	4.0	20.0						132+00.00		2.2	0.2	U.A.C.
	WBL	137+00.00	141+00.00	LT	48.0	4.0	20.0						136+90.00	DR-304	0.2	0.2	Install Outlet
	WBL	141+00.00	145+00.00	LT	48.0	4.0	40.0						137+00.00		2.2	0.2	U.A.C.
													141+00.00	DR-304	4.3	0.2	Install Outlet
													141+00.00	DR-304	4.3	0.2	Install Outlet
													145+00.00	DR-304	0.2	0.2	Install Outlet
	Totals:						550.0							DR-304 = 10	45.0	2.8	

NOTE: ALL LONGITUDINAL SUBDRAINS ARE TYPE 8 WITH HMA (ACC) UNLESS OTHERWISE NOTED IN REMARKS COLUMN.

NOTE: ALL ASPHALT PRODUCTS ARE TO BE REMOVED SEPARATELY. THIS IS TO BE DISPOSED OF PER THE SPECIFICATIONS.

NOTE: IN FILLET REPLACEMENT AREAS THE TRENCH SHALL BE FINISHED WITH A MINIMUM OF 6 INCHES OF HMA (ACC) BASE MATERIAL (MIX TO BE SUBMITTED TO ENGINEER).

ACCESS POINTS AND SAFETY RAMPS

Refer to Cross-Sections

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

① Refer to MI-210
② Refer to EW-501.
③ Refer to EW-501 or EW-502.

*Predetermined for access point not constructed with this project.

Location		Type	Length of Opening ①			Pipe Culvert ③			Aprons		Driveway Surface Area		Driveway Surfacing Material	Remarks					
Station	Side	A, B, C, Safety Ramp, or Predetermined*	Case	1½" Dropped Curb	3" Dropped Curb	W	PR	SR	H	Size	Pipe Length	Lt.	Rt.						
															No.		HMA	PCC	TON
															1 or 2	LF	LF	FT	
120+34	RT	Predetermined												8.000					
121+80	RT	Predetermined												8.000					
122+76	RT	Predetermined												16.000	Double Driveway				
124+95	RT	Predetermined												12.000					
127+25	RT	Predetermined												12.000					
127+50	LT	Safety Ramp													UAC & FIELD ENTRANCE				
														56.000	Total:				

INTAKES AND UTILITY ACCESSES							104-5A 10-15-13
No.	Location Station	Type or Standard Road Plan*	Form Grade Elev.	Bottom Well Elev.	Extension Length** FT	Notes	
1	105+14-18'RT	SW-401	1148.5	1144.5		Replace RA-29, includes SW-602, reconnect 2-24" RCP's & 12" CMP	

REMOVAL OF EXISTING STRUCTURES			110-2 04-16-13
Location	Description	Remarks	
105+14-18'RT	RA-29 Storm Sewer Manhole	To be replaced by new structure, see Tabulation 104-5A	
Incidental Items			
119+10-RT	DAMAGED 18" CMP	Remove 2 LF of pipe from each end, before placing aprons.	
122+76-RT	DAMAGED 18" CMP	Remove 1 LF of pipe from each end, before placing aprons.	
124+95 RT	DAMAGED 18" CMP	Remove 1 LF of pipe from each end, before placing aprons.	
127+25-RT	DAMAGED 18" CMP	Remove 3 LF of pipe from each end, before placing aprons.	

FORESLOPE FLATTENING AND DRAINAGE STRUCTURES BY ROAD CONTRACTOR (MAINLINE PIPES)																												104-13 04-21-15
Refer to Standard Road Plans DR-121, DR-122, and DR-213.																												
Existing Information		New Information		Length of New Const.	Flow Line Elevations			Dimensions				Removal and Reinstallation of Culvert Aprons and Pipes				New Apron No.		Apron Guard (DR-213)	Type 'C' Connections* (DR-122)		Connected Pipe Joint* (DR-121)	Embank.- In-Place	Class 20	Remarks				
Location	Size and Type of Culvert	Size	Type of Culvert		LEFT	RIGHT	Total (LF)		Extensions (LF)		Aprons		Culvert Sections		IN	OUT	NO.		TYPE	NO.					TYPE	CY	CY	
							IN	RIGHT	LEFT	RIGHT	LEFT	RIGHT	NO.*	FT														NO.*
109+10	36" RCP																								U.A.C.			
111+75	15" RCP																								U.A.C.			
114+65	30" RCP																								U.A.C.			
115+10	30" RCP																								SEE TAB. 100-23			
128+50	TWIN 8' X 8' RCB																								U.A.C.			
136+95	24" RCP	24"	RCP	6					6					1	1			3	18			Type 3	24.0	24.0				

FORESLOPE FLATTENING AND DRAINAGE STRUCTURES BY ROAD CONTRACTOR (SIDEROAD & ENTRANCE PIPES)																												104-13A Modified
Refer to Standard Road Plans DR-121, DR-122, and DR-213.																												
Existing Information		New Information		Length of New Const.	Flow Line Elevations			Dimensions				Removal and Reinstallation of Culvert Aprons and Pipes				New Apron No.		Apron Guard (DR-213)	Type 'C' Connections* (DR-122)		Connected Pipe Joint* (DR-121)	Embank.- In-Place	Class 20	Remarks				
Location	Size and Type of Culvert	Size	Type of Culvert		LEFT	RIGHT	Total (LF)		Extensions (LF)		Aprons		Culvert Sections		IN	OUT	NO.		TYPE	NO.					TYPE	CY	CY	
							IN	OUTLET	INLET	OUTLET	IN	OUT	NO.*	FT														NO.*
116+65-Rt	36" RCP	36	RCP												1							Type 3	4.0		(a)			
119+10-Rt	18" CMP	18	CMP											1	1							Type 3	4.0		(b)			
120+34-Lt	30" RCP	30	RCP											1	1							Type 3	8.0		(c)			
120+34-Rt	18" CMP	18	CMP											1	1								4.0					
121+80-Rt	18" HDPE																								U.A.C.			
122+76-Rt	18" CMP	18	CMP											1	1								4.0		(b)			
124+95-Rt	18" CMP	18	CMP											1	1								4.0		(b)(c)			
127+25-Rt	18" HDPE	18	CMP											1	1								4.0		(b)			
																							32.0		Total:			
																									(a)-See Tab. 100-23			
																									(b)-See Tab. 110-2			
																									(c)-60 L.F. of Pipe Cleaning			

FULL-DEPTH REPAIR PATCHES

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

Count	Location		Dimension			PCC Patches				HMA Patches	Composite HMA	Subbase Patches	Subbase Patch w/ 'EF' Joint	Patch Subdrain	'CD' Joints	'CT' Joints	'EF' Joints	Anchor Lugs Removal	Remarks
	Milepost	Lane	Length	Width	Patch Thickness	With Dowels	Without Dowels	C R C	Ramp with Dowels										
		L, R, or B	FT	FT	IN	PR-103 SY	PR-102 SY	PR-104 SY	PR-105 SY										
60	2+36.65 to 263.92	Both	6.0	15.0	14.0	600.0													Final location to be determined after milling.
70	2+63.92 to 264.23	Both	6.0	15.0	17.0	700.0													Final location to be determined after milling.
130	Total:					1300.0													

106-2
08-01-08

TABULATION OF LEVELING COURSES

Location				Hot Mix Asphalt Pavement	
Milepost		Station		Average Thickness	Tons
From	To	From	To	Inches	
		122+62	124+85	2.6	83.9
		130+70	146+11	3.5	772.2
				Total:	856.1

104-10
08-01-08

ADJUSTMENT OF FIXTURES

No.	Location Station	Type of Fixture	Adjustment
1	374+37	Manhole	Minor Manhole Adjustment, adjust to finished surface grade with PV-201
2	721+40	Manhole	Minor Manhole Adjustment, adjust to finished surface grade with PV-201
3	723+35	Manhole	Minor Manhole Adjustment, adjust to finished surface grade with PV-201
4	724+77	Manhole	Minor Manhole Adjustment, adjust to finished surface grade with PV-201
5	731+73	Manhole	Minor Manhole Adjustment, adjust to finished surface grade with PV-201
6	104+37	Manhole	Minor Manhole Adjustment, adjust to finished surface grade with PV-201
7	106+31	Manhole	Minor Manhole Adjustment, adjust to finished surface grade with PV-201
	724+63	Water Valve	Incident to HMA Surface
	731+46	Water Valve	Incident to HMA Surface

100-1U
Modified

UTILITIES

Paul Foxwell
Allamakee-Clayton Electric Cooperative, Inc. (Electric)
563-864-7611
pfoxwell@acrec.coop

Jason A. Hogan
Alliant Energy (Electric, Gas & Electric Distribution)
608-458-4871 Cell: 608-395-7395
jasonhogan@alliantenergy.com

Brad Fleming
Black Hills Energy (Gas)
402-221-2714 Cell: 402-660-0812
brad.fleming@blackhillscorp.com

Steven Parker
CenturyLink (Telephone)
515-265-0968 Cell: 507-358-1978
Steven.Parker4@CenturyLink.com

Tom Mayo
Hawkeye Telephone Company (Telephone)
563-427-3222 Cell: 563-518-1012
hawkte13@netins.net

Mike Broderick
Iowa Communications Network (Local Fiber Optic)
515-725-4610
mike.broderick@iowa.gov

Mike Broderick
Iowa Hospital Association (Local Fiber Optic)
515-725-4610
mike.broderick@iowa.gov

Kevin Parker
MediaCom (Cable TV)
319-235-2197 Cell: 319-240-4987
kparker@mediacomcc.com

Bruce Ehler
North Fayette Comm. School District (Local Fiber Optic)
563-422-3853
behler@nfv.k12.ia.us

Clark Lundy
United Private Networks (Long Distance Fiber Optic)
515-321-3336
clark.lundy@upnfiber.com

Teresa Pape
West Union, City of (Sanitary Sewer)
563-422-3908
cityofwestunionadmin@alpinecom.net

Terry Burke
Windstream Communications of Iowa (Local Fiber Optic)
641-787-2259
Terry.R.Burke@windstream.com

110-4
08-01-08

CURB REMOVAL

Begin Station	End Station	Side	Length STA	Remarks
100+00.00	115+60.00	Lt	3.9	As directed by the Engineer
100+00.00	115+60.00	Rt.	3.9	As directed by the Engineer
			7.8	Total:

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 Scarification	Remarks
		IN	IN	IN	FT	IN		
373+55.2	Type 'N4'	1.5	1.5			3.0	Tab. 100-25	
115+60.0	Type 'R4'	1.5-2.0	1.5-2.0	2.5	50.0	Var.	Tab. 100-25	
144+75.0	Type 'N3'	2.0	2.0		175.0	1.5	Tab. 100-25	

300-1
Modified

RESHAPING DITCHES

Refer to EW-105

Location			Length	Remarks
Begin Station	End Station	Side	STA	
119+10	INLET	RT	0.25	18" CMP
120+34	INLET	LT	0.25	30" RCP
120+34	OUTLET	LT	0.25	30" RCP
120+34	INLET	RT	0.25	18" CMP
124+95	INLET	RT	0.25	18" CMP
124+95	OUTLET	RT	0.25	18" CMP
			1.50	Total:

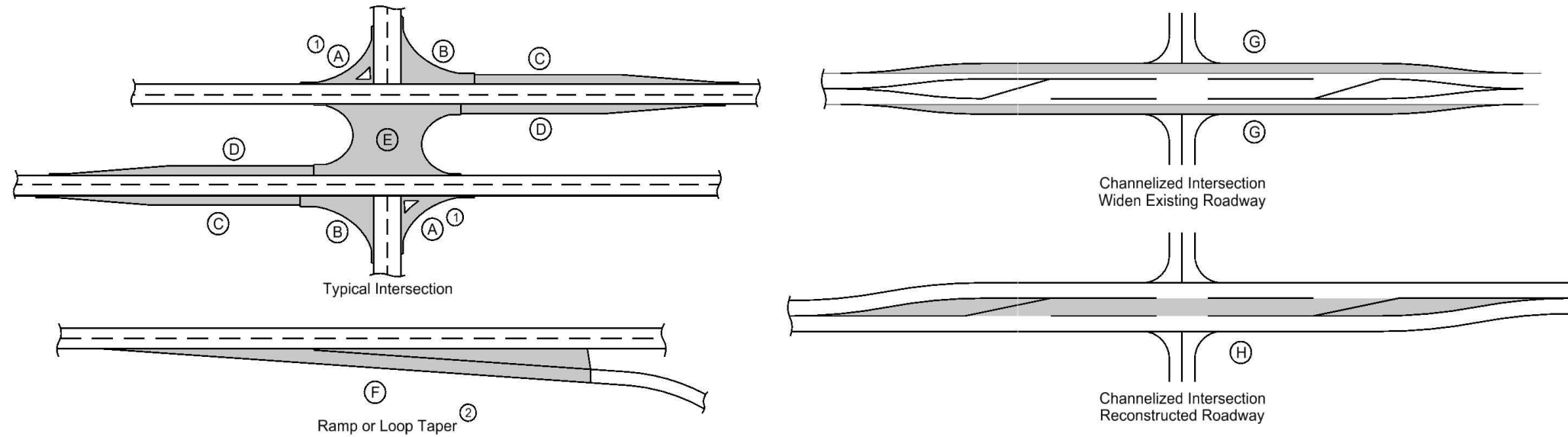
112-4
Modified

CURBS AND RAISED ISLANDS

Refer to PV-20, PV-102, and 6000s Detail Series.
① Bid Item

Station	Station	Offset	Island Interior	Curb and Gutter			Remarks
			Area SY	Curb Type	Gutter Width FT	Length LF	
100+00	115+60			6" Standard PCC	3.0	780.0	As directed by the Engineer

HMA PAVEMENT



- 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 interlayer course unit weight (lbs/cf) of 150, and a special backfill unit weight (lbs/cf) of 140.

Road Identification	Direction of Travel	Location		Mainline			Area ③								Hot Mix Asphalt Pavement										Remarks	
		Station to Station	Width	Length	Area	A ①	B	C	D	E	F ②	G	H	Bid Items						Special Backfill	Modified Subbase	Granular Subbase	Pavement Scarification			
														Surface	Intermediate	Interlayer	Surface PG 58-28S	Intermediate PG 58-28S	Interlayer PG 58-34S					TONS		SY
FT	FT	SY	SY	SY	SY	SY	SY	SY	SY	SY	SY	SY	TONS	SY	TONS	SY	TONS	SY	TONS	TONS	TONS	CY	SY	SY		
US 18	EB	373+55.20	374+00.00	48.0	44.8	238.9								19.8	239	19.3				1.2	1.2				234	
		374+00.00	374+89.60	40.3	89.6	401.2								33.2	401	32.4				2.0	1.9				391	
Equation:		719+29.40	719+45.00	31.8	15.6	55.1							4.6	55	4.4				0.3	0.3				53		
		719+45.00	732+22.60	30.0	1277.6	4258.7							352.1	4259	340.4		231.6		21.1	20.4	13.9				4117	
Equation:		100+00.00	115+60.00	30.0	1560.0	5200.0							430.0	5200	415.6		282.8		25.8	24.9	17.0				5027	
		115+60.00	116+10.00	30.0	50.0	166.7							13.8	167	13.3		9.1		0.8	0.8	0.5				161	
		116+10.00	134+55.00	32.0	1845.0	6560.0							632.8	6560	632.8				38.0	38.0					6355	
		134+55.00	136+51.90	36.0	196.9	787.6							86.8	788	86.8				5.2	5.2					766	
		136+51.90	140+83.30	40.0	431.4	1917.3							211.4	1917	211.4				12.7	12.7					1869	
		140+83.30	142+23.50	40.0	140.2	623.1							68.7	623	68.7				4.1	4.1					608	
		142+23.50	142+70.20	36.0	46.7	186.8							20.6	187	20.6				1.2	1.2					182	
		142+70.20	143+00.00	32.0	29.8	106.0							11.7	106	11.7				0.7	0.7					103	
		143+00.00	144+75.00	32.0	175.0	622.2							68.6	622	34.3				4.1	2.1					603	
	Sideroads																									
	No. Oak St.	Runout			18.0	56.9								4.7	57	2.4				0.3	0.1				57	
	State St.	Runout			10.0	44.1								3.6	44	1.8				0.2	0.1				44	
	Wells St.	Runout			15.0	53.0								4.4	53	2.2				0.3	0.1				53	
Jones St.	Runout			10.0	38.0								3.1	38	1.6				0.2	0.1				38		
Slayton St.	Runout			10.0	36.9								3.1	37	1.5				0.2	0.1				37		
N. Vine St.	Runout			10.0	56.9								4.7	57	2.4				0.3	0.1				57		
S. Vine St.	Runout			2.5	22.6								1.9	23	0.9				0.1	0.1				23		
Alley	Runout			15.0	47.7								3.9	48	2.0				0.2	0.1				48		
S. Pine St.	Runout			27.0	124.9								10.3	125	5.2				0.6	0.3				125		
N. Pine St.	Runout			38.0	196.4								16.2	196	8.1				1.0	0.5				196		
Carpenter St.	Runout			22.0	91.4								7.6	91	3.8				0.5	0.2				91		
Hansen Blvd.	Runout			25.0	96.4								10.6	96	5.3				0.6	0.3				96		
Easy St.	Runout			34.0	125.9								13.9	126	6.9				0.8	0.4				126		
B-64	Runout			72.0	444.9								49.0	445	24.5				2.9	1.5				445		
Totals:													2091.1	22560	1960.4		523.4		125.5	117.6	31.4				21904	

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.

Road Identification	Direction Of Traffic	Location			P Width FT	G Width FT	L Length FT	Class 13 Excavation CY ②	Base Hot Mix Asphalt TON ②	Binder PG 58-28S TONS ②	Paved Shoulder SY ②	Reinforced Paved Shoulder SY ②	Quantities								Remarks						
		Station to Station	Side	Special Backfill									Modified Subbase CY ②	Granular Shoulder		Shoulder Shaping & Blading											
				HMA Alternate										PCC Alternate		TON ②	TON/STA	STA ②	HMA CY ④	PCC CY ④							
				TON ②										TON/STA	TON ②							TON/STA					
US 18	EB	115+60.00	117+00.00	Rt	1 to 4	4.0	140.0	2.7	5.4	3.8	0.3					88.2	63.0	1.4									
		117+00.00	134+55.00	Rt	4.0	4.0	1755.0	54.2	107.5	6.1	6.4					1105.7	63.0	17.6									
		134+55.00	136+51.90	Rt	4 to 0	4.0	196.9	3.0	6.0	3.1	0.4					124.0	63.0	2.0									
		136+51.90	140+83.30	Rt		4.0	431.4									271.8	63.0	4.3									
		140+83.30	142+23.50	Rt																							
		142+23.50	142+70.20	Rt	0 to 4	4.0	46.7	0.7	1.4	3.1	0.1					29.4	63.0	0.5									
		142+70.20	143+00.00	Rt	4.0	4.0	29.8	0.9	1.8	6.1	0.1					18.8	63.0	0.3									
143+00.00	144+75.00	Rt	4.0	4.0	175.0	5.4	10.7	6.1	0.6					110.3	63.0	1.8									Runout		
US 18	WB	144+75.00	143+00.00	Lt	4.0	4.0	175.0	5.4	10.7	6.1	0.6				36.8	21.0	1.8										
		143+00.00	117+30.00	Lt	4.0	4.0	2570.0	79.3	157.4	6.1	9.4				539.7	21.0	25.7										
		117+30.00	115+60.00	Lt	4 to 1	4.0	170.0	3.3	6.5	3.8	0.4				35.7	21.0	1.7									Runout	
								154.9		307.5		18.4				2360.3		56.9								Totals:	

MILLED RUMBLE STRIPS

See PV-12 and PV-13.

* Calculated at 18" width for Shoulder.

Road Identification	Location		Length		Type (Centerline, Rt or Lt Shoulder)	Fog Seal* (Milled Rumble Strip) Shoulder GAL	Effective Shoulder Width			Remarks		
	Station to Station	STA	PCC STA	HMA STA			PCC Paved FT	HMA Paved FT	Granular\ Earth FT			
											PCC	HMA
US 18	123+00.00	144+75.00		21.75	Centerline	0.0		4.0	4.0			
US 18	123+00.00	144+75.00		21.75	Right Shoulder	23.6		4.0	4.0			
US 18	144+75.00	123+00.00		21.75	Left Shoulder	23.6		4.0	4.0			
				43.50	Shoulders	47.1				Totals:		

PAVEMENT MARKING SYMBOLS AND LEGENDS

Refer to PM-111

Road Identification	Location		Refer to PM-111																								Remarks
	Station	Side	↑	↶	↷	↸	↹	↻	↺	↻	↑	↗	↘	⊗	⚠	♿	♿	SCHOOL	XING	STOP	AHEAD	ONLY	BIKE	LANE	EXIT	Groove Cuts	
			STAW	RTAW	LTAW	CSRW	CSLW	CSTW	CRLW	FERW	LLRW	RLRW	RRCW	BLSW	WCSW	WPSB	SCLW	XNGW	STPW	AHDW	ONLW	BIKW	LANW	XITW	EACH		
US 18 Eastbound	730+00	RT																5									1
	730+50	RT																	5								1
US 18 Westbound	100+75	LT																	5								1
	101+25	LT																									1
US 18 Eastbound	140+10	RT		4																							1
	140+47.5	RT																				4					1
	140+85	RT																									1
			8																10	10						7	Totals:

PAVEMENT MARKING LINE TYPES

See PM-110

***MNY4 - Factor of 1.00 as value includes number of 4-inch passes to cover median nose area.

*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.

BCY4: Broken Centerline (Yellow) @ 0.25 DCY4: Double Centerline (Yellow) @ 2.00
ELY4: Edge Line Left (Yellow) @ 1.00 SLW4: Solid Lane Line (White) @ 1.00
DLW4: Dotted Line (White) @ 0.33 CHW8: Channelizing Line (White) @ 2.00

NPY4: No Passing Zone Line (Yellow) @ 1.25 BLW4: Broken Lane Line (White) @ 0.25
CBW6: Crosswalk Bar (White) @ 15.00 SLW2: Stop Line (White) @ 6.00

ELW4: Edge Line Right (White) @ 1.00
CLW6: Crosswalk Line (White) @ 3.00

Road ID	Station to Station		Dir. of Travel	Marking Type	Side			Length by Line Type (Unfactored)											Remarks									
					L	C	R	BCY4*	DCY4	NPY4**	BLW4	ELW4	ELY4	SLW4	CBW6	SLW2	CLW6	DLW4		CHW8	STA	STA	STA					
								STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA		STA	STA	STA	STA	STA	STA			
US 18	373+55.00	374+89.60	BOTH	Waterborne/Solvent Paint	X	X	X		1.35					0.90														After Milling
Equation	719+29.40	721+30.00	BOTH	Waterborne/Solvent Paint				X	1.65					0.30														
	721+30.00	723+32.00	BOTH	Waterborne/Solvent Paint				X	1.62																			
	723+32.00	724+71.00	BOTH	Waterborne/Solvent Paint				X	0.99																			
	724+71.00	726+23.50	BOTH	Waterborne/Solvent Paint				X	1.13																			
	726+23.50	731+76.00	BOTH	Waterborne/Solvent Paint	X	X	X		4.70							0.15	0.60											
	731+76.00	732+22.60	BOTH	Waterborne/Solvent Paint																								
Equation	100+00.00	106+12.00	BOTH	Waterborne/Solvent Paint	X	X	X		5.83							0.15	0.60											
	106+12.00	108+42.00	BOTH	Waterborne/Solvent Paint	X	X	X		1.71							0.15	0.69											
Pine St.	108+42.00	108+60.50		Waterborne/Solvent Paint	X		X								0.33	0.83												Side Streets
	108+60.50	115+14.00	BOTH	Waterborne/Solvent Paint	X	X			5.76																			
	115+14.00	120+34.00	BOTH	Waterborne/Solvent Paint	X	X	X		2.74	2.26																		
	120+34.00	135+50.00	BOTH	Waterborne/Solvent Paint	X	X	X		6.26		8.90												9.50					
	135+50.00	141+63.90	BOTH	Waterborne/Solvent Paint	X	X	X		4.97	1.02													30.32			0.98		
	141+63.90	144+75.00	BOTH	Waterborne/Solvent Paint	X	X	X		2.91																			
Co Rd. B-64				Waterborne/Solvent Paint				X	0.72																			Side Road
																		0.52								0.45		After Interlayer Lift
	719+45.00	721+30.00	BOTH	Waterborne/Solvent Paint				X	1.49																			
	721+30.00	723+32.00	BOTH	Waterborne/Solvent Paint				X	1.62					0.30														
	723+32.00	724+71.00	BOTH	Waterborne/Solvent Paint				X	0.99																			
	724+71.00	726+23.50	BOTH	Waterborne/Solvent Paint				X	1.13																			
	726+23.50	731+76.00	BOTH	Waterborne/Solvent Paint	X	X	X		4.70								0.15	0.60										
	731+76.00	732+22.60	BOTH	Waterborne/Solvent Paint																								
Equation	100+00.00	106+12.00	BOTH	Waterborne/Solvent Paint	X	X	X		5.83							0.15	0.60											
	106+12.00	108+42.00	BOTH	Waterborne/Solvent Paint	X	X	X		1.71							0.15	0.69											
Pine St.	108+42.00	108+60.50		Waterborne/Solvent Paint	X		X								0.33	0.83												Side Streets
	108+60.50	115+14.00	BOTH	Waterborne/Solvent Paint	X	X			5.76																			
	115+14.00	120+34.00	BOTH	Waterborne/Solvent Paint	X	X	X		2.74	2.26																		
	120+34.00	135+50.00	BOTH	Waterborne/Solvent Paint	X	X	X		6.26		8.90																	
	135+50.00	141+63.90	BOTH	Waterborne/Solvent Paint	X	X	X		4.97	1.02																		
	141+63.90	144+75.00	BOTH	Waterborne/Solvent Paint	X	X	X		2.91																			
Co Rd. B-64				Waterborne/Solvent Paint				X	0.72																			Side Road
																		0.52								0.45		After Surface Lift
	373+55.00	374+89.60	BOTH	Waterborne/Solvent Paint	X	X	X		1.35					0.90														
Equation	719+29.40	721+30.00	BOTH	Waterborne/Solvent Paint				X	1.65																			
	721+30.00	723+32.00	BOTH	Waterborne/Solvent Paint				X	1.62					0.30														
	723+32.00	724+71.00	BOTH	Waterborne/Solvent Paint				X	0.99																			
	724+71.00	726+23.50	BOTH	Waterborne/Solvent Paint				X	1.13																			
	726+23.50	731+76.00	BOTH	Waterborne/Solvent Paint	X	X	X		4.70								0.15	0.60										
	731+76.00	732+22.60	BOTH	Waterborne/Solvent Paint																								
Equation	100+00.00	106+12.00	BOTH	Waterborne/Solvent Paint	X	X	X		5.83							0.15	0.60											
	106+12.00	108+42.00	BOTH	Waterborne/Solvent Paint	X	X	X		1.71							0.15	0.69											
Pine St.	108+42.00	108+60.50		Waterborne/Solvent Paint	X		X								0.33	0.83												Side Streets
	108+60.50	115+14.00	BOTH	Waterborne/Solvent Paint	X	X			5.76																			
	115+14.00	120+34.00	BOTH	Waterborne/Solvent Paint	X	X	X		2.74	2.26																		
	120+34.00	135+50.00	BOTH	Waterborne/Solvent Paint	X	X	X		6.26		8.90																	
	135+50.00	141+63.90	BOTH	Waterborne/Solvent Paint	X	X	X		4.97	1.02																		
	141+63.90	144+75.00	BOTH	Waterborne/Solvent Paint	X	X	X		2.91																			
Co Rd. B-64				Waterborne/Solvent Paint				X	0.72																			Side Road
																		0.52								0.45		
	373+55.00	374+89.60	BOTH	Grooves Cut for Pavement Markings	X	X	X		1.35					0.90														
Equation																												

PAVEMENT MARKING LINE TYPES

See PM-110

***MNY4 - Factor of 1.00 as value includes number of 4-inch passes to cover median nose area.

*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.

BCY4: Broken Centerline (Yellow) @ 0.25
ELY4: Edge Line Left (Yellow) @ 1.00
DLW4: Dotted Line (White) @ 0.33

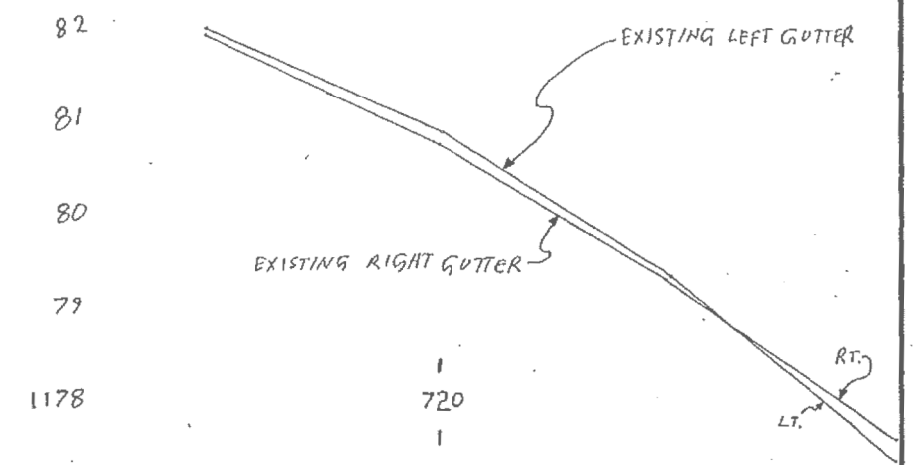
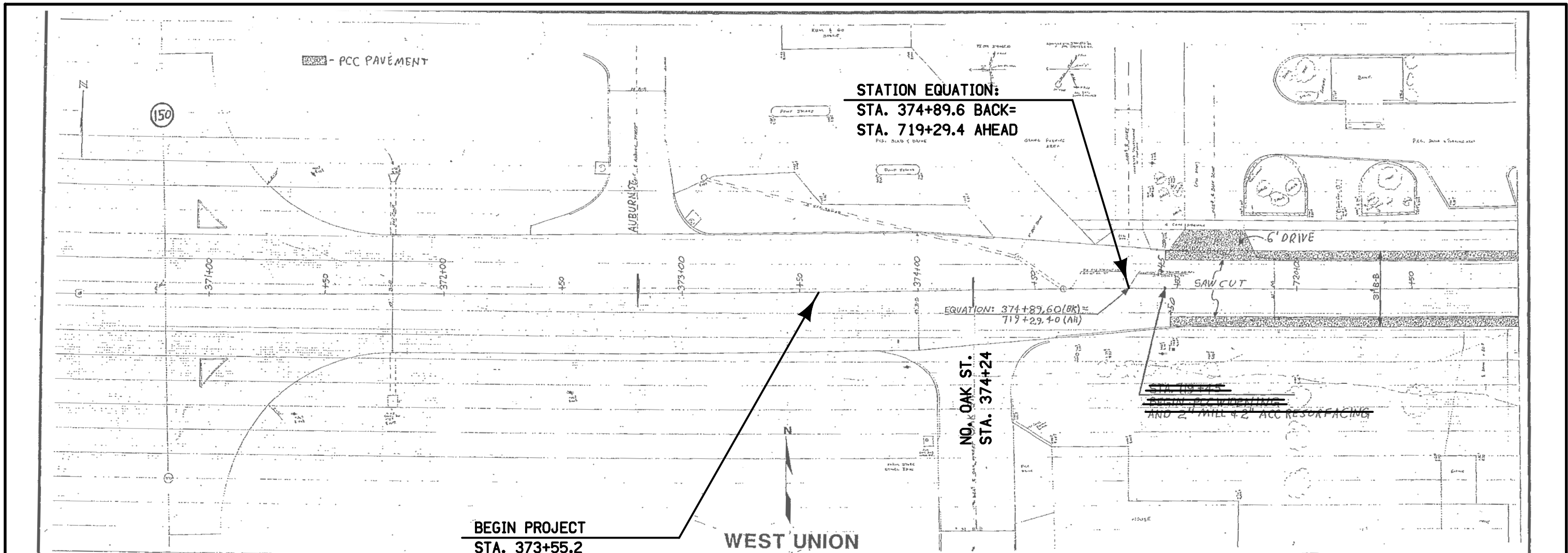
DCY4: Double Centerline (Yellow) @ 2.00
SLW4: Solid Lane Line (White) @ 1.00
CHW8: Channelizing Line (White) @ 2.00

NPY4: No Passing Zone Line (Yellow) @ 1.25
CBW6: Crosswalk Bar (White) @ 15.00

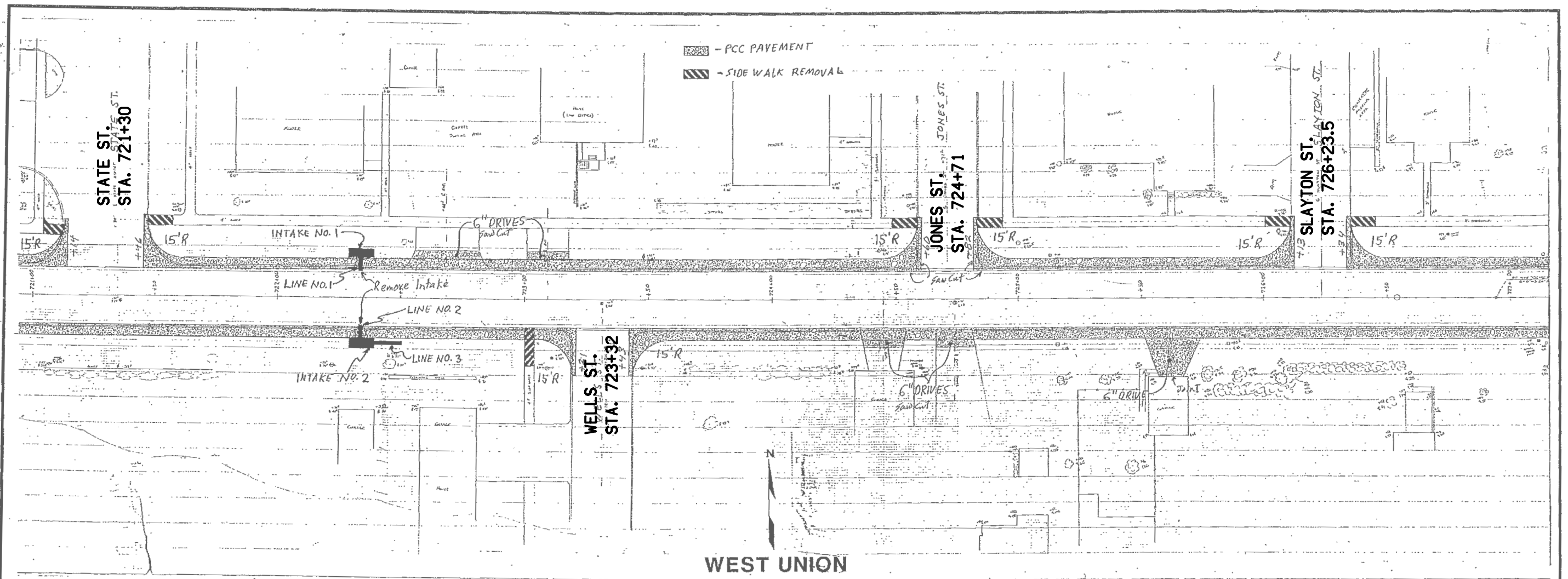
BLW4: Broken Lane Line (White) @ 0.25
SLW2: Stop Line (White) @ 6.00

ELW4: Edge Line Right (White) @ 1.00
CLW6: Crosswalk Line (White) @ 3.00

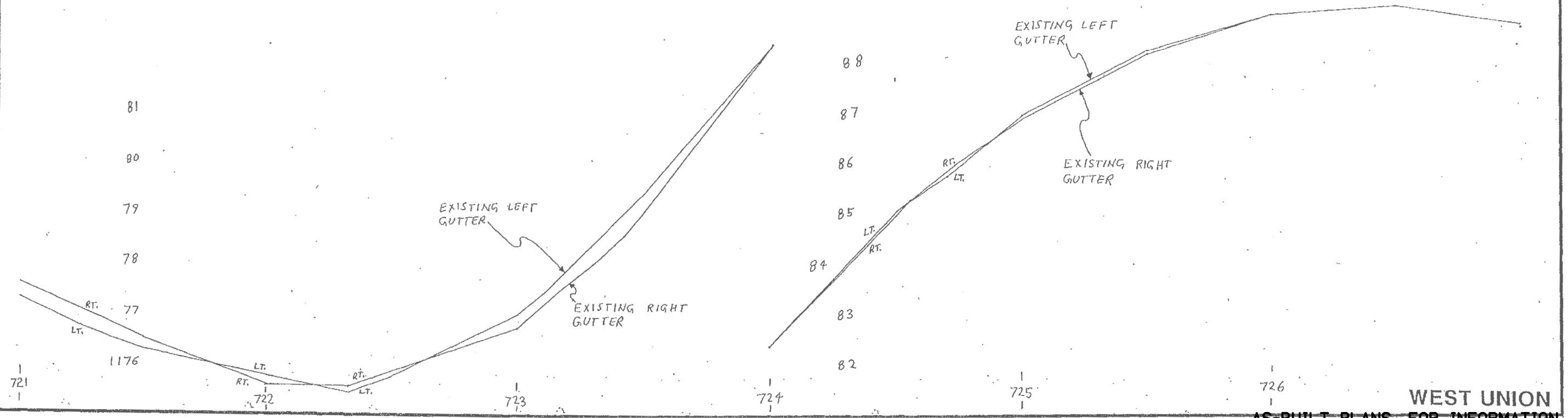
Table with columns: Road ID, Station to Station, Dir. of Travel, Marking Type, Side (L, C, R), BCY4*, DCY4, NPY4**, BLW4, ELW4, ELY4, SLW4, CBW6, SLW2, CLW6, DLW4, CHW8, Length by Line Type (Unfactored) (STA columns), Remarks. Rows include various pavement markings like Grooves Cut and Waterborne/Solvent Paint across different road segments.



WEST UNION
AS-BUILT PLANS, FOR INFORMATION ONLY

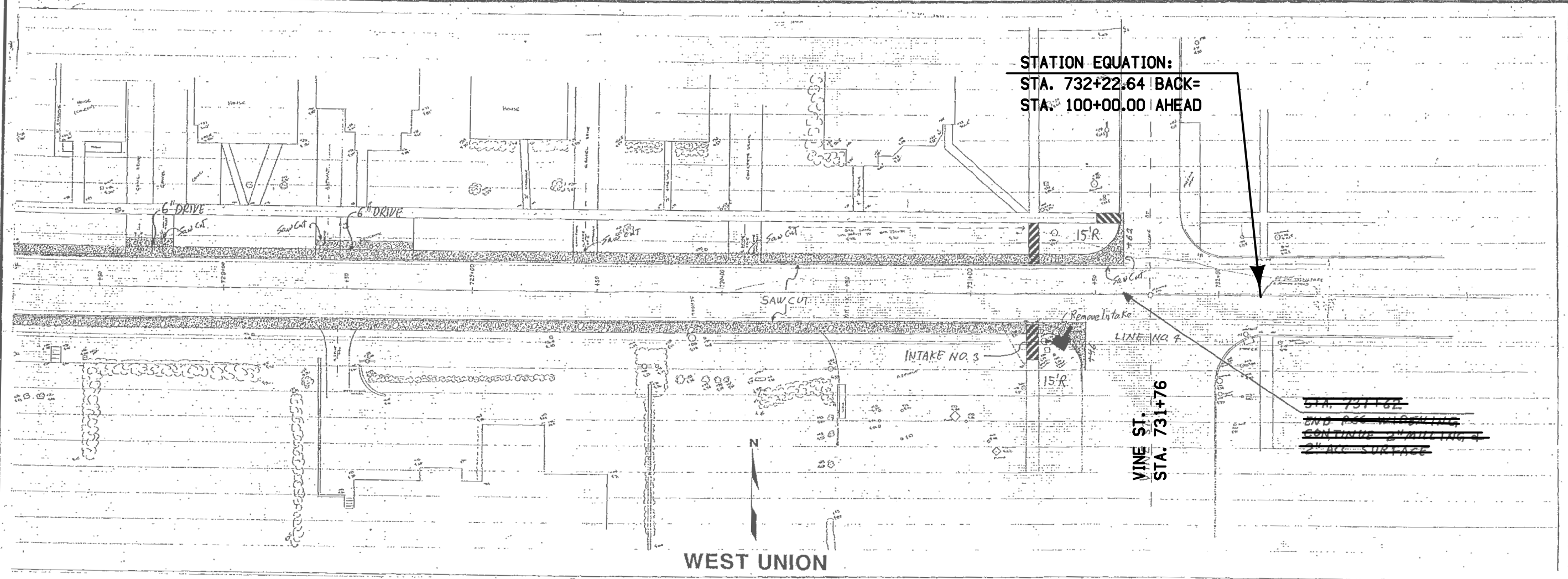


WEST UNION



WEST UNION

AS-BUILT PLANS, FOR INFORMATION ONLY

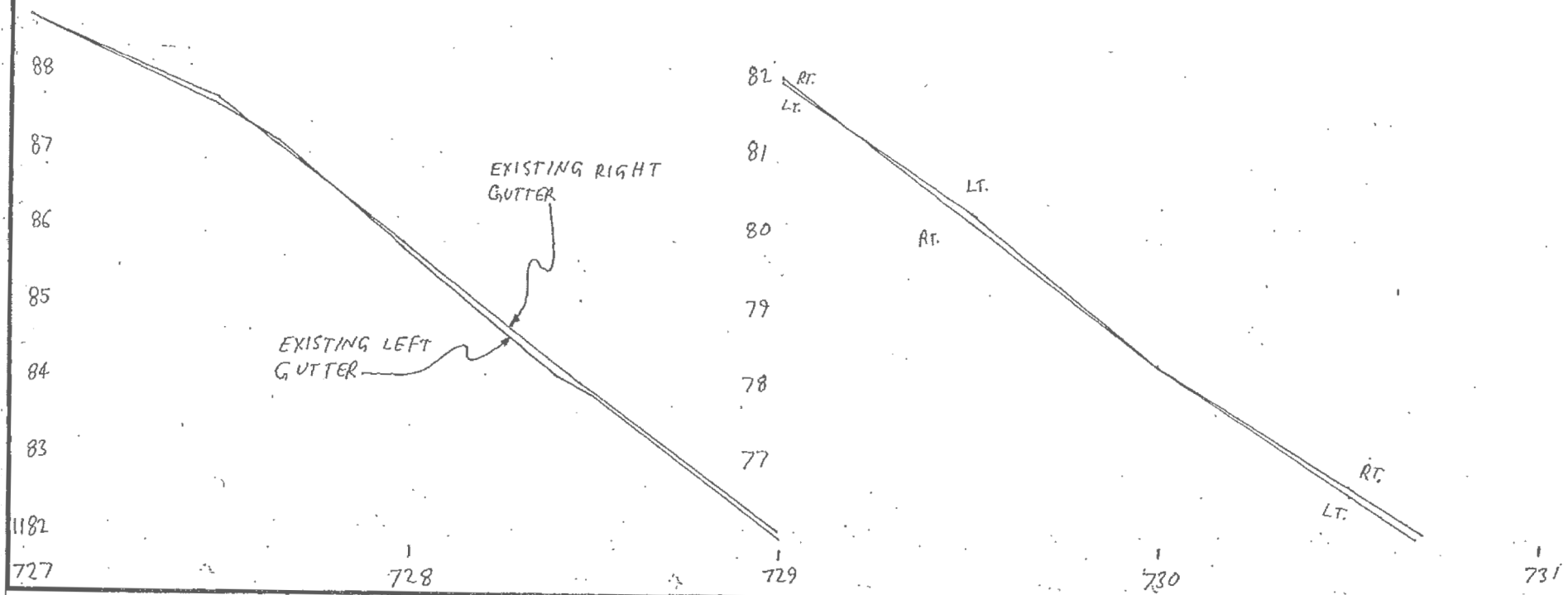


STATION EQUATION:
 STA. 732+22.64 BACK=
 STA. 100+00.00 AHEAD

VINE ST.
 STA. 731+76

~~STA. 731+62~~
~~END PCC INTERLOCK~~
~~FOR 12\"/>~~

WEST UNION

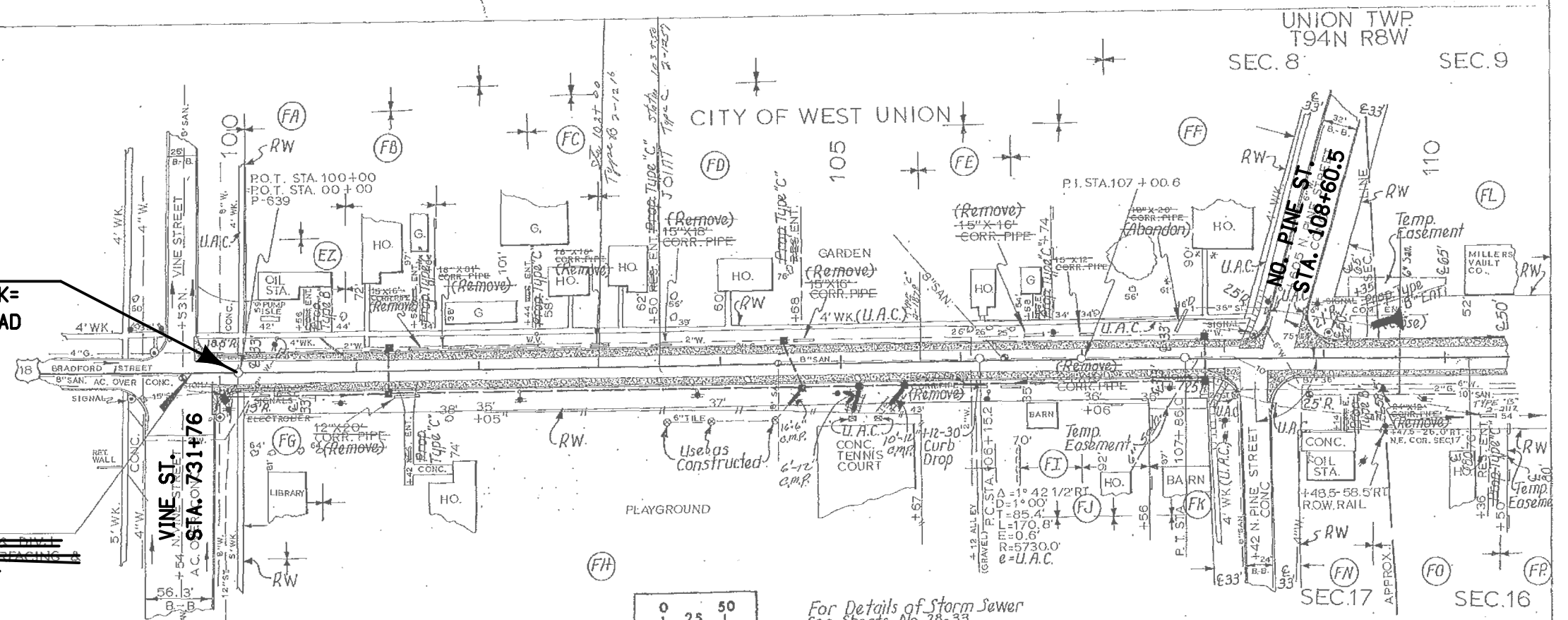
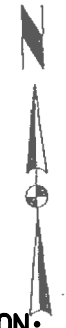


WEST UNION

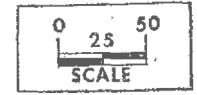
AS-BUILT PLANS, FOR INFORMATION ONLY

- Property Owners:
- EZ - Kenneth G. & Gloria Sue Shatz
 - FA - Maude Bullard
 - FB - Roy C. J. & Margaret Welzel
 - FC - Arthur G. & Agnes Erickson
 - FD - Letha V. Ott & Mary H. Meyers
 - FE - Martha Homewood
 - FF - Barney & Colleen B. Morris
 - FG - Public Library of West Union
 - FH - Independent School District of West Union
 - FI - Signa A. & Dagga M. Johnson
 - FJ - Kenneth M. & Ellen Hallverson
 - FK - Darold A. & Elya Martin
 - FL - Devine L. Miller
 - FN - Edward C. Dahl
 - FO - Richard Kelly
 - FP - Robert D. & Eva V. Reeder

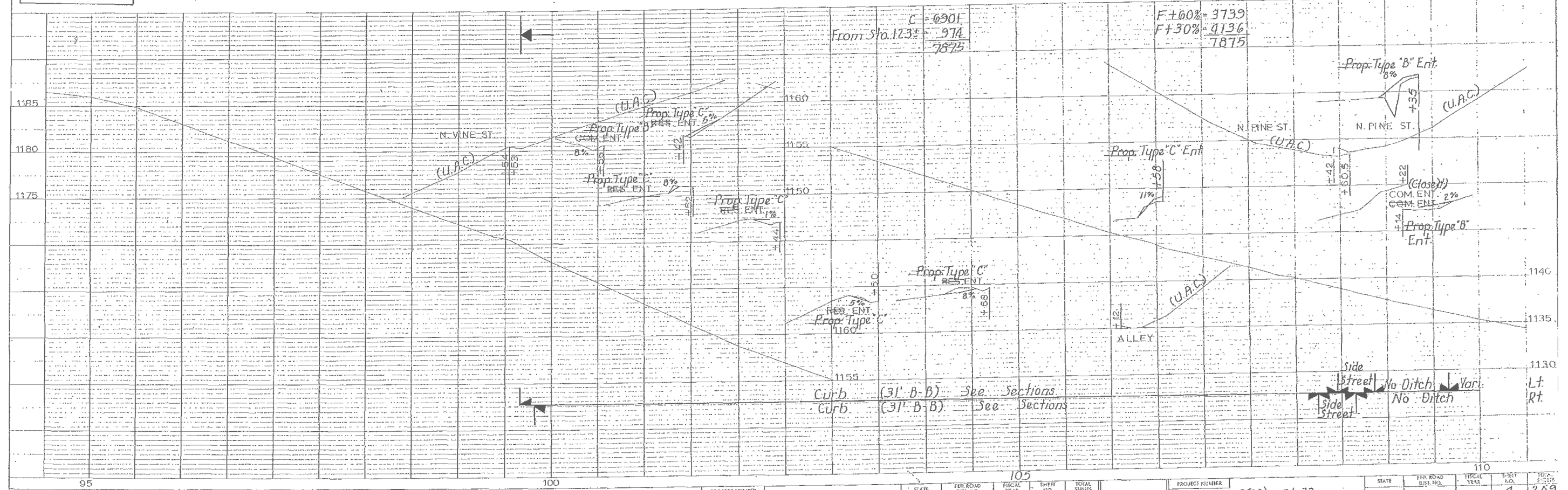
STATION EQUATION:
 STA. 732+22.64 BACK=
 STA. 100+00.00 AHEAD



- LEGEND
- N.W. BELL TEL. CO.
 - INTERSTATE PO. CO.

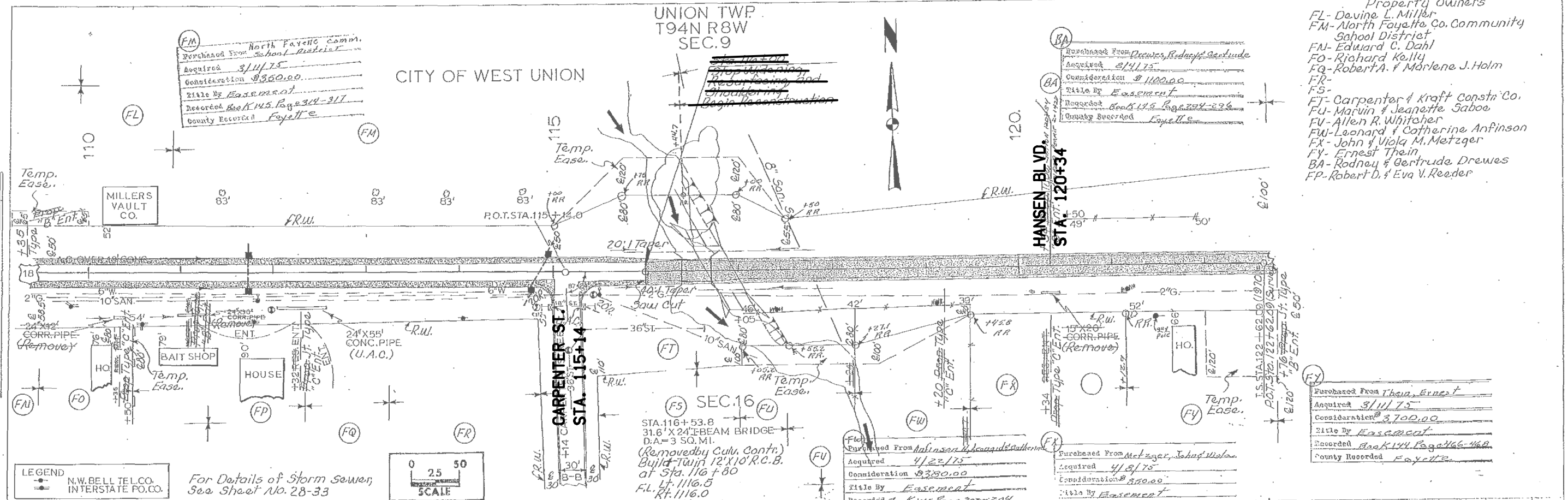


For Details of Storm Sewer
 See Sheets No. 28-33



95	100	105	110
STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.
PROJECT NUMBER	STATE	FED. ROAD DIST. NO.	FISCAL YEAR
PROJECT NUMBER	STATE	FED. ROAD DIST. NO.	FISCAL YEAR

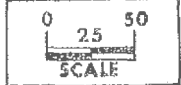
AS-BUILT PLANS, FOR INFORMATION ONLY



- Property Owners
- FL- Devine L. Miller
 - FM- North Fayette Co. Community School District
 - FN- Edward C. Dahl
 - FO- Richard Kelly
 - FQ- Robert A. & Marlene J. Holm
 - FR-
 - FS-
 - FT- Carpenter & Kraft Constr. Co.
 - FU- Marvin & Jeanette Sabo
 - FW- Allen R. Whitcher
 - FX- Leonard & Catherine Anfinson
 - FY- John & Viola M. Metzger
 - FZ- Ernest Thein
 - BA- Rodney & Gertrude Drewes
 - BP- Robert D. & Eva V. Reeder

LEGEND
 N.W. BELL TEL. CO.
 INTERSTATE P.O. CO.

For Details of Storm Sewer,
 See Sheet No. 28-33



1140	1135	1130	1125	1120	1115	1110	1105	1100	1095	1090	1085	1080	1075	1070	1065	1060	1055	1050	1045	1040	1035	1030	1025	1020	1015	1010	1005	1000	995	990	985	980	975	970	965	960	955	950	945	940	935	930	925	920	915	910	905	900	895	890	885	880	875	870	865	860	855	850	845	840	835	830	825	820	815	810	805	800	795	790	785	780	775	770	765	760	755	750	745	740	735	730	725	720	715	710	705	700	695	690	685	680	675	670	665	660	655	650	645	640	635	630	625	620	615	610	605	600	595	590	585	580	575	570	565	560	555	550	545	540	535	530	525	520	515	510	505	500	495	490	485	480	475	470	465	460	455	450	445	440	435	430	425	420	415	410	405	400	395	390	385	380	375	370	365	360	355	350	345	340	335	330	325	320	315	310	305	300	295	290	285	280	275	270	265	260	255	250	245	240	235	230	225	220	215	210	205	200	195	190	185	180	175	170	165	160	155	150	145	140	135	130	125	120	115	110
------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

AS-BUILT PLANS, FOR INFORMATION ONLY

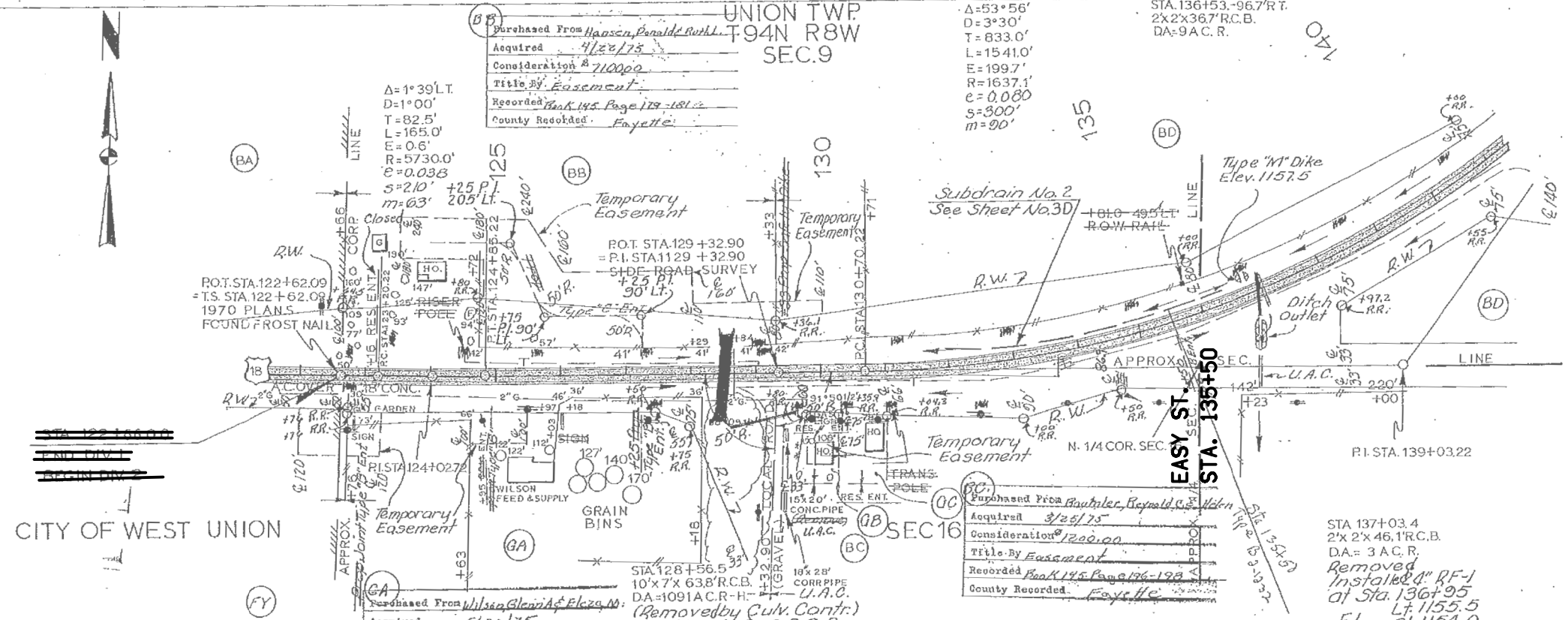
PROPERTY OWNERS:
 BA - ROONEY DREWES
 BE - Viva A. Drewes
 BC - REYOLD C. BAUMLER
 BD - HENRY L. GROSS
 FY - Ernest Thein
 GA - Glenn A. Wilson
 GB - Margaret S. Robinson
 GC - Dale A. & Linda L. Kienhaus

UNION TWP
 T94N R8W
 SEC. 9

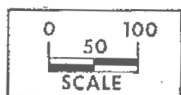
Purchased From Haas, Ronald
 Acquired 4/22/75
 Consideration \$7100.00
 Title By Easement
 Recorded Book 145 Page 179-181
 County Recorded Fayette

△=53°56'
 D=3°30'
 T=833.0'
 L=1541.0'
 E=199.7'
 R=1637.1'
 C=0.080
 S=300'
 m=90'

STA. 136+53.96.7' R.T.
 2'x2'x36.7' R.C.B.
 DA=9 A.C.R.



CITY OF WEST UNION



LEGEND
 ● NW BELL TEL. CO.
 ● INTERSTATE PO. CO.
 — NW BELL TEL. CO.

Purchased From Wilson, Glenn A. & Elizabeth W.
 Acquired 5/20/75
 Consideration \$10,000.00
 Title By Easement
 Recorded Book 145 Page 239-241
 County Recorded Fayette

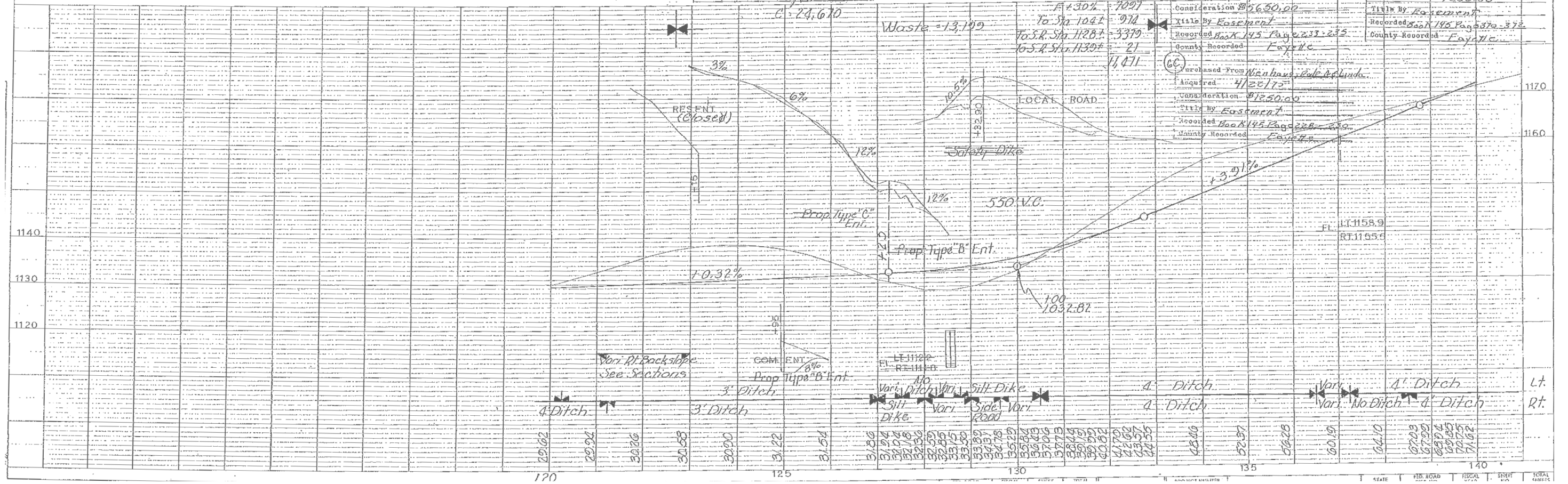
STA. 128+56.5
 10'x7'x638' R.C.B.
 DA=1091 A.C.R.-H
 (Removed by Culv. Contr.)
 Built Twin 8'x8' R.C.B.
 at Sta. 128+50
 Ft. 1114.0
 Rt. 1111.0
 Design No. 274

Purchased From Baubler, Raymond C. & Helen
 Acquired 3/25/75
 Consideration \$1200.00
 Title By Easement
 Recorded Book 145 Page 196-198
 County Recorded Fayette

STA 137+03.4
 2'x2'x46.1' R.C.B.
 DA= 3 A.C.R.
 Removed
 Installed 4" R.F.-1
 at Sta. 136+95
 Lt. 1155.5
 Ft. 1154.0

Purchased From Grass, Henry Isaac E.
 Acquired 5/20/75
 Consideration \$7600.00
 Title By Easement
 Recorded Book 145 Page 370-372
 County Recorded Fayette

For Details of Side Road
 See Sheet No. 22.

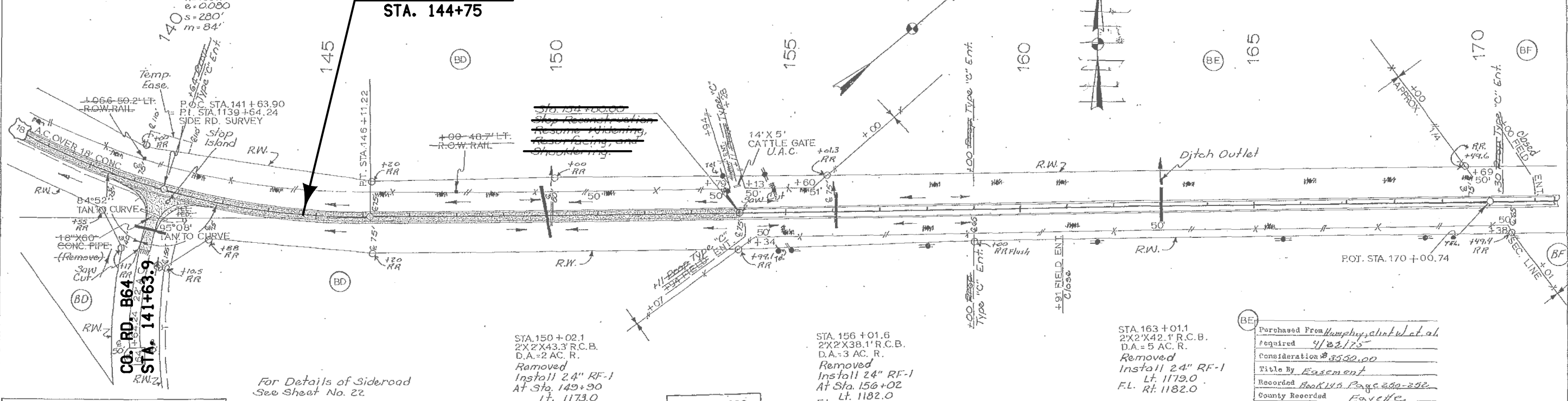


AS-BUILT PLANS, FOR INFORMATION ONLY

PROPERTY OWNERS
 RD- HENRY L. GROSS
 BE- Kenneth R. & Evelyn Askelson
 BF- Theodore G. Doshier
 BE- Humphry, et al w.

END PROJECT
 STA. 144+75

UNION TWP.
 T94N R8W
 SEC. 9

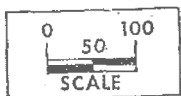


LEGEND
 • N.W. BELL TEL. CO.
 • ALLAMAKEE-CLAYTON ELEC. CO-OP.
 T- N.W. BELL TEL. CO.

For Details of Sideroad
 See Sheet No. 22

For Details of Intersection
 See Sheet No. 34-35

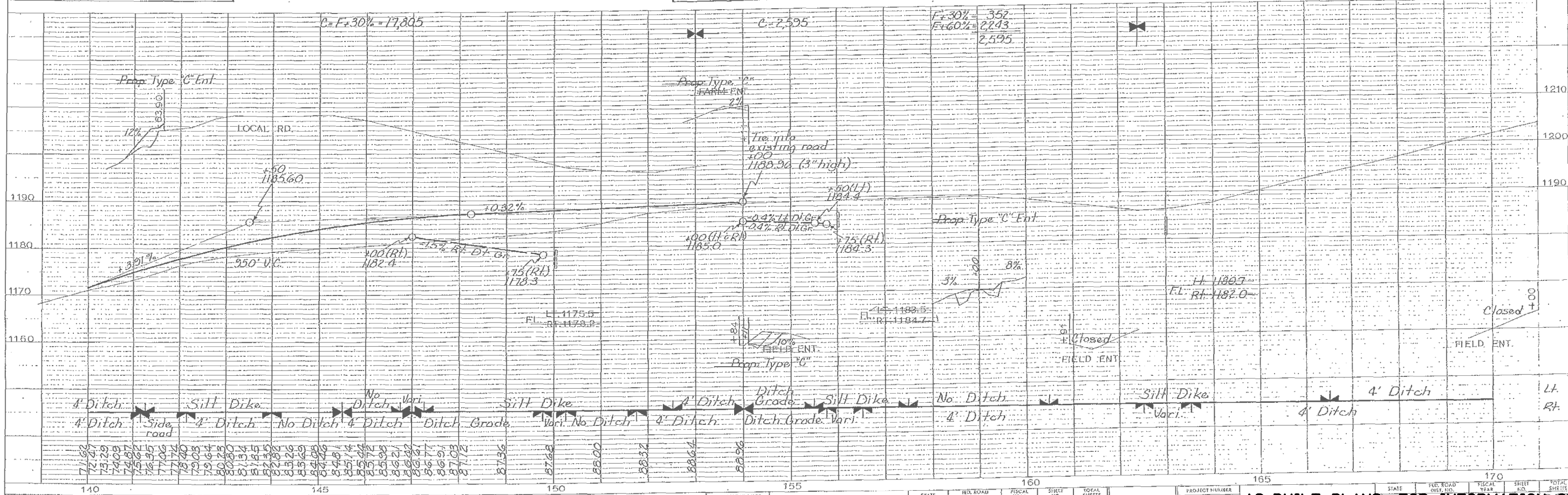
STA. 150+02.1
 2'x2'x43.3' R.C.B.
 D.A.=2 AC. R.
 Removed
 Install 24" RF-1
 At Sta. 149+90
 Lt. 1173.0
 Fl. Rt. 1178.0



STA. 156+01.6
 2'x2'x38.1' R.C.B.
 D.A.=3 AC. R.
 Removed
 Install 24" RF-1
 At Sta. 156+02
 Lt. 1182.0
 Fl. Rt. 1184.0

STA. 163+01.1
 2'x2'x42.1' R.C.B.
 D.A.=5 AC. R.
 Removed
 Install 24" RF-1
 Lt. 1179.0
 Fl. Rt. 1182.0

Purchased From Humphry, et al. w.
 Required 4/22/75
 Consideration \$3550.00
 Title By Easement
 Recorded Book 145 Page 280-282
 County Recorded Fayette



AS-BUILT PLANS, FOR INFORMATION ONLY

SUPERELEVATION DATA

See PV-300 Series

Road Identification	Circular Curve or Spiral Curve Name	Radius	Superelevation Data			Standard Road Plan	Section A-A	Section B-B	Section C-C	Section D-D	Section E-E	Section F-F	Case A	Case B	Case C	Case S	Case T	Case U	Remarks
			e	L	x														
			FT	%	FT														
US 18	124+02.72	5730	3.8	114	60	PV-301	121+22.29	121+82.29	122+42.29	122+96.29			122+62.09						70 mph 8% design
	139+03.22	1637.1	8.0	224	56	PV-301	128+57.42	129+13.42	129+69.42	131+37.42			130+70.22			130+25.42	130+25.42	131+09.42	65 mph 8% design (should be Spiral)
							148+24.00	147+68.00	147+12.00	145+44.00			146+11.20			146+56.00	146+56.00	145+72.00	65 mph 8% design (should be Spiral)
	124+02.72	5730	2.0	48	48	PV-301	121+80.49	122+28.49	122+76.49	122+76.49				122+62.09					50 mph 6% design
															124+85.22				
	139+03.22	1637.1	5.6	140	51	PV-301	129+21.22	129+72.22	130+23.22	131+12.22			130+70.22			130+72.22	130+72.22		55 mph 6% design (60 mph Spiral)
							147+60.20	147+09.20	146+58.20	145+69.20			146+11.20			146+09.20	146+09.20		55 mph 6% design (60 mph Spiral)



Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM FAYETTE COUNTY PCC SIDEWALK

West Union, IA (ADA Compliance)

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

Value Engineering Saves. Refer to Article 1105.15 of the Specifications.



REVISIONS

TOTAL

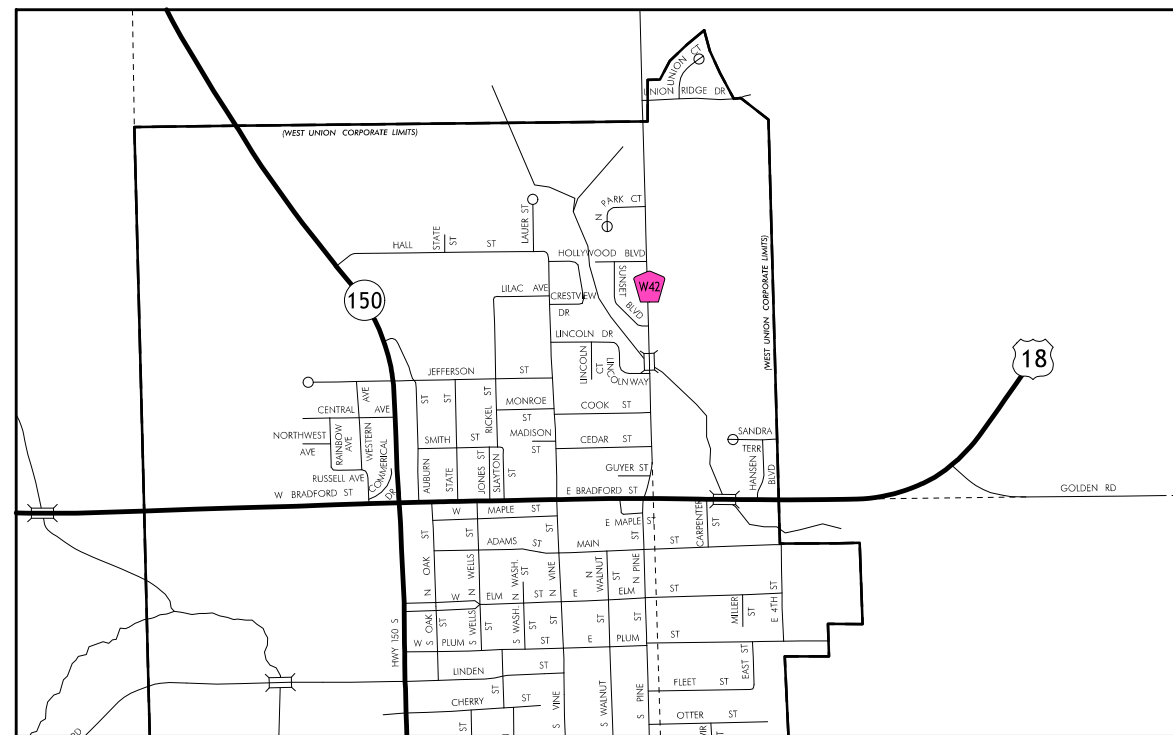
PROJECT IDENTIFICATION NUMBER

15-33-018-010

PROJECT NUMBER

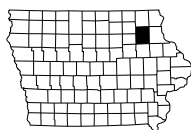
NHSN-018-8(44)--2R-33

No.	DESCRIPTION
A Sheets	Title Sheets
A.1	Title Sheet
B Sheets	Typical Cross Sections and Details
B.1	Typical Cross Sections and Details
C Sheets	Quantities and General Information
C.1	Project Description
C.1	Estimated Project Quantities
C.1	Estimate Reference Information
C.1	Standard Road Plans
C.1	Index of Tabulations
C.1	Pollution Prevention Plan
C.1	General Notes
C.1	Tabulations (beg. with tab. of incidentals if needed)
D Sheets	Mainline Plan and Profile Sheets
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2 - 10	Sidewalk Plan Sheets
G Sheets	Survey Sheets
G.1	Reference Ties and Bench Marks
G.2	Horizontal Control Tabulation
H Sheets	Right-of-Way Sheets
H.1 - 9	Right-of-Way Layout
U Sheets	500 Series, Mod.Stds. and Detail Sheets
U.1	500 Series, Modified Standards and Detail Sheets
	* Color Plan Sheets

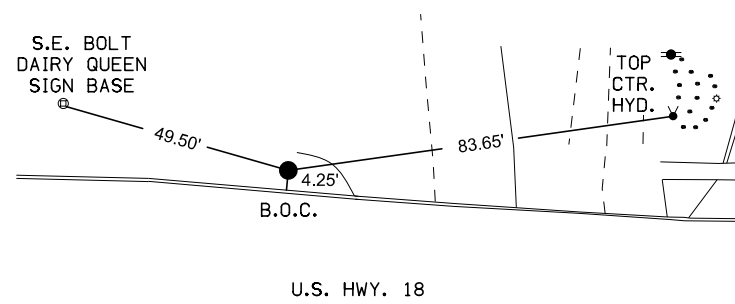


WEST UNION, IA

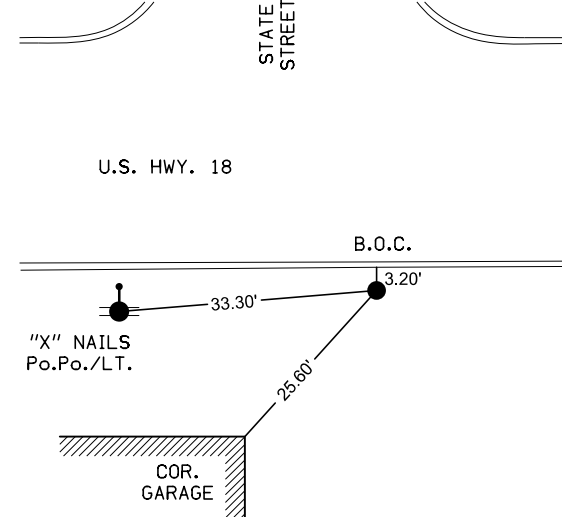
FAYETTE CO.



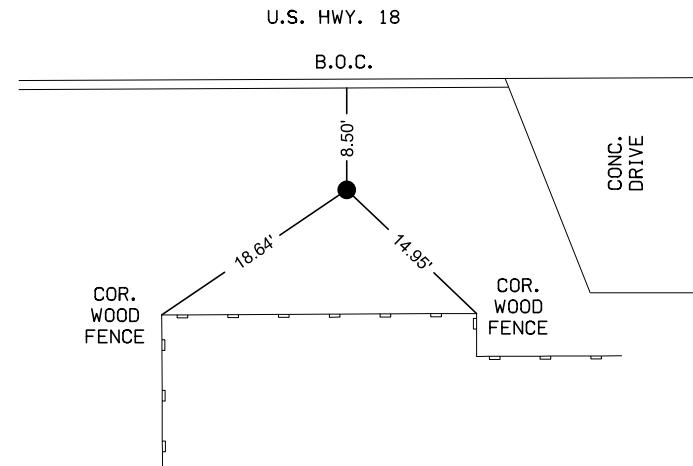
C.P. STA. 19+68.51, Lt. 26.46
 C.P. WU1, SET 1/2IN X 24IN REBAR
 N=9014852.913, E=15616949.710



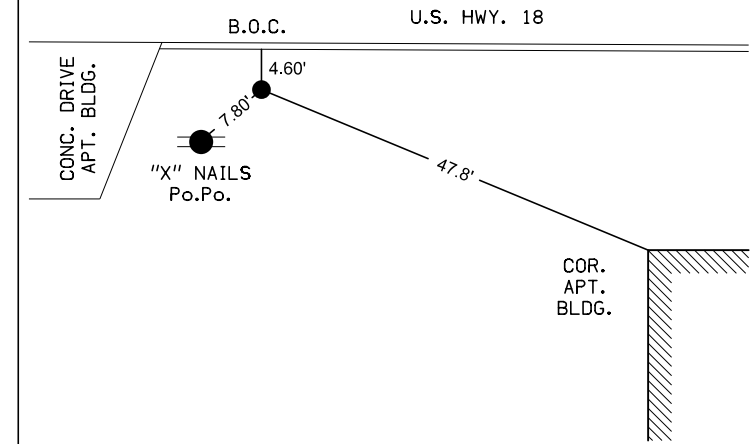
C.P. STA. 22+54.27, Rt. 19.31
 C.P. WU2, SET 1/2IN X 24IN REBAR
 N=9014808.092, E=15617235.620



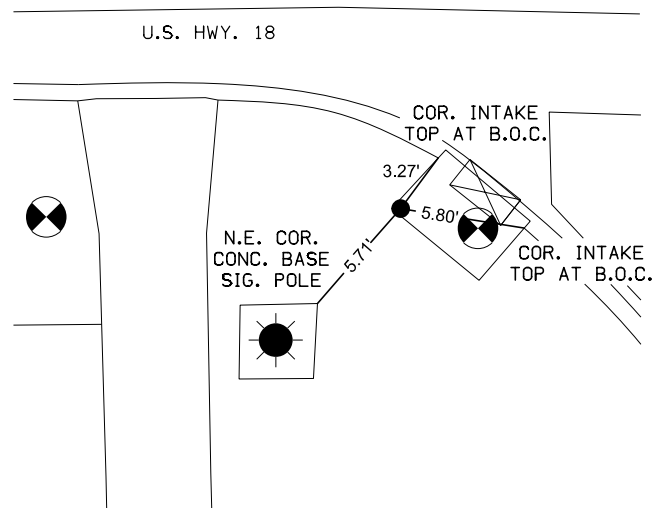
C.P. STA. 26+50.17, Rt. 24.5
 C.P. WU3, SET 1/2IN X 24IN REBAR
 N=9014804.218, E=15617631.530



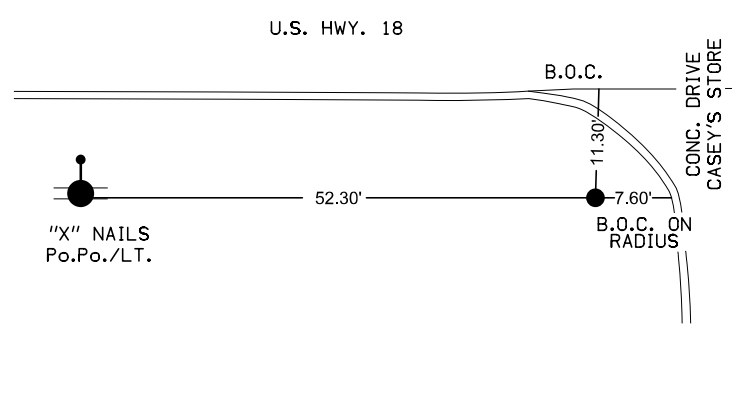
C.P. STA. 29+69.84, Rt. 20.55
 C.P. WU4, SET 1/2IN X 24IN REBAR
 N=9014809.238, E=15617951.190



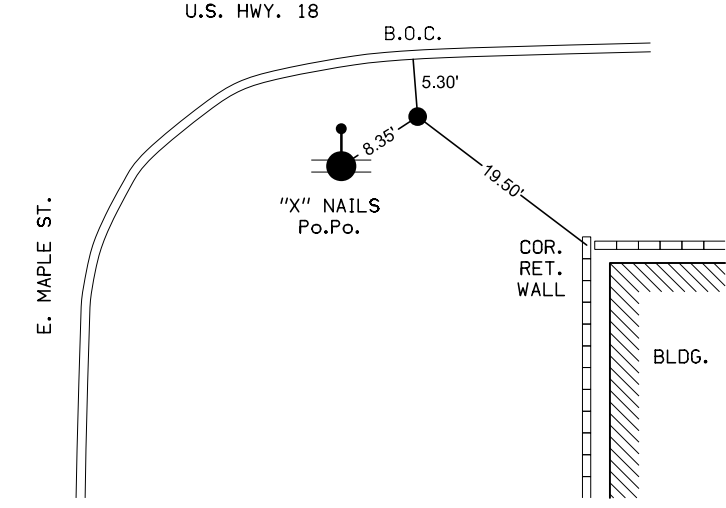
C.P. STA. 32+44.26, Rt. 21.31
 C.P. WU5, SET X CUT ON INTAKE
 N=9014809.392, E=15618225.610



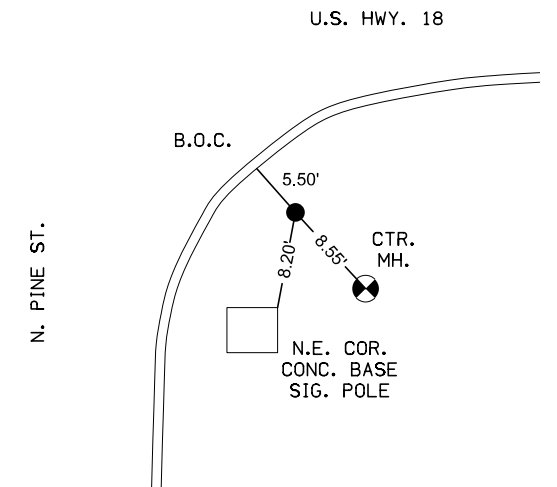
C.P. STA. 36+09.05, Rt. 27.01
 C.P. WU6, SET 1/2IN X 24IN REBAR
 N=9014804.887, E=15618590.410



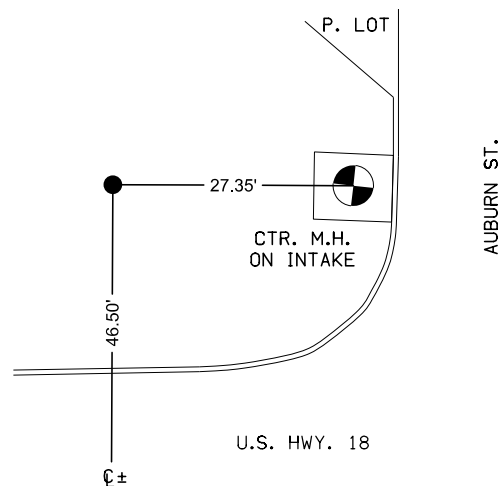
C.P. STA. 39+65.76, Rt. 21.2
 C.P. WU7, SET 1/2IN X 24IN REBAR
 N=9014811.857, E=15618947.100



C.P. STA. 42+05.90, Rt. 23.67
 C.P. WU8, SET 1/2IN X 24IN REBAR
 N=9014805.398, E=15619186.610



C.P. Off Stationing
 C.P. BASE1, SET 5/8IN X 30IN REBAR OPUS POINT
 N=9014869.083, E=15616771.350



ALIGNMENT COORDINATES

101-16
10-20-09

Name	Location	Point on Tangent			Begin Spiral			Begin Curve			Simple Curve PI or Master PI of SCS			End Curve			End Spiral		
		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates	
			Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)
US-18																			
2000		18+00.00	9,014,825.89	15,616,781.28															
2001		32+83.06	9,014,830.83	15,618,264.34															
2002		40+15.56	9,014,833.22	15,618,996.83															
2003		42+54.96	9,014,828.00	15,619,236.17															

WES022

0708455017
312 W. BRADFORD ST
LAHEY FAMILY
REVOCABLE TRUST
LAHEY, MERLE
AS TRUSTEE
TE: 130 SF

WES001

0708455014
BANK 1ST (AFF)
TE: 990 SF

Do not disturb
modular
block wall
sign base

Do not disturb
pavement or
curb and gutter

STATE ST.

20

21

22

165'

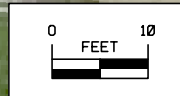
W. BRADFORD ST.

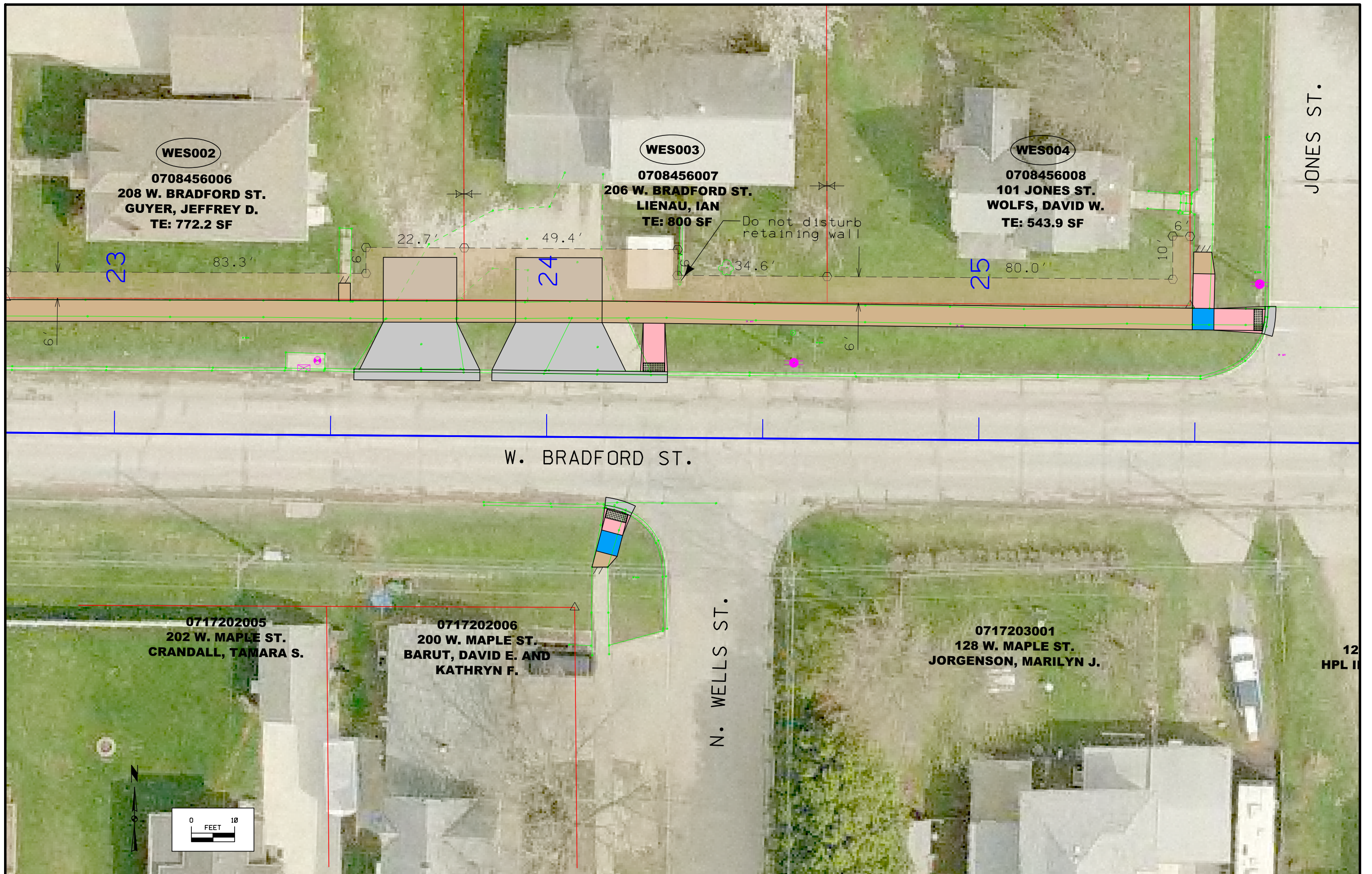
0717202001
214 W. MAPLE ST.
WOLVERTON, TODD F.
WOLVERTON, TAMARA S.

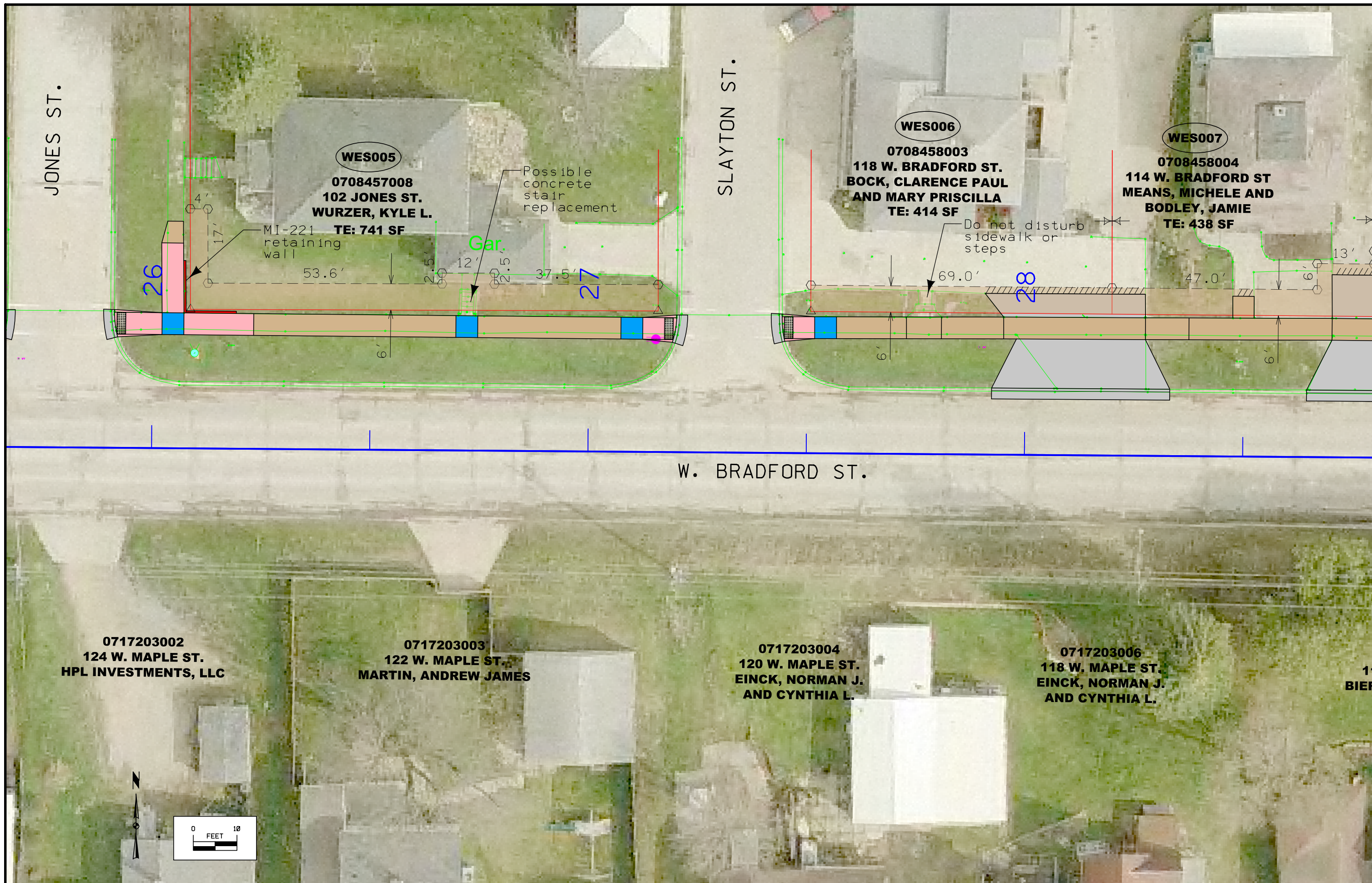
0717202002
210 W. MAPLE ST.
HOLTHAUS, CHAD

0717202003
208 W. MAPLE ST.
GERLEMAN, KENNETH E.

0717202004
206 W. MAPLE ST.
TURNER, JARED







JONES ST.

SLAYTON ST.

W. BRADFORD ST.

WES005
 0708457008
 102 JONES ST.
 WURZER, KYLE L.
 TE: 741 SF

WES006
 0708458003
 118 W. BRADFORD ST.
 BOCK, CLARENCE PAUL
 AND MARY PRISCILLA
 TE: 414 SF

WES007
 0708458004
 114 W. BRADFORD ST
 MEANS, MICHELE AND
 BODLEY, JAMIE
 TE: 438 SF

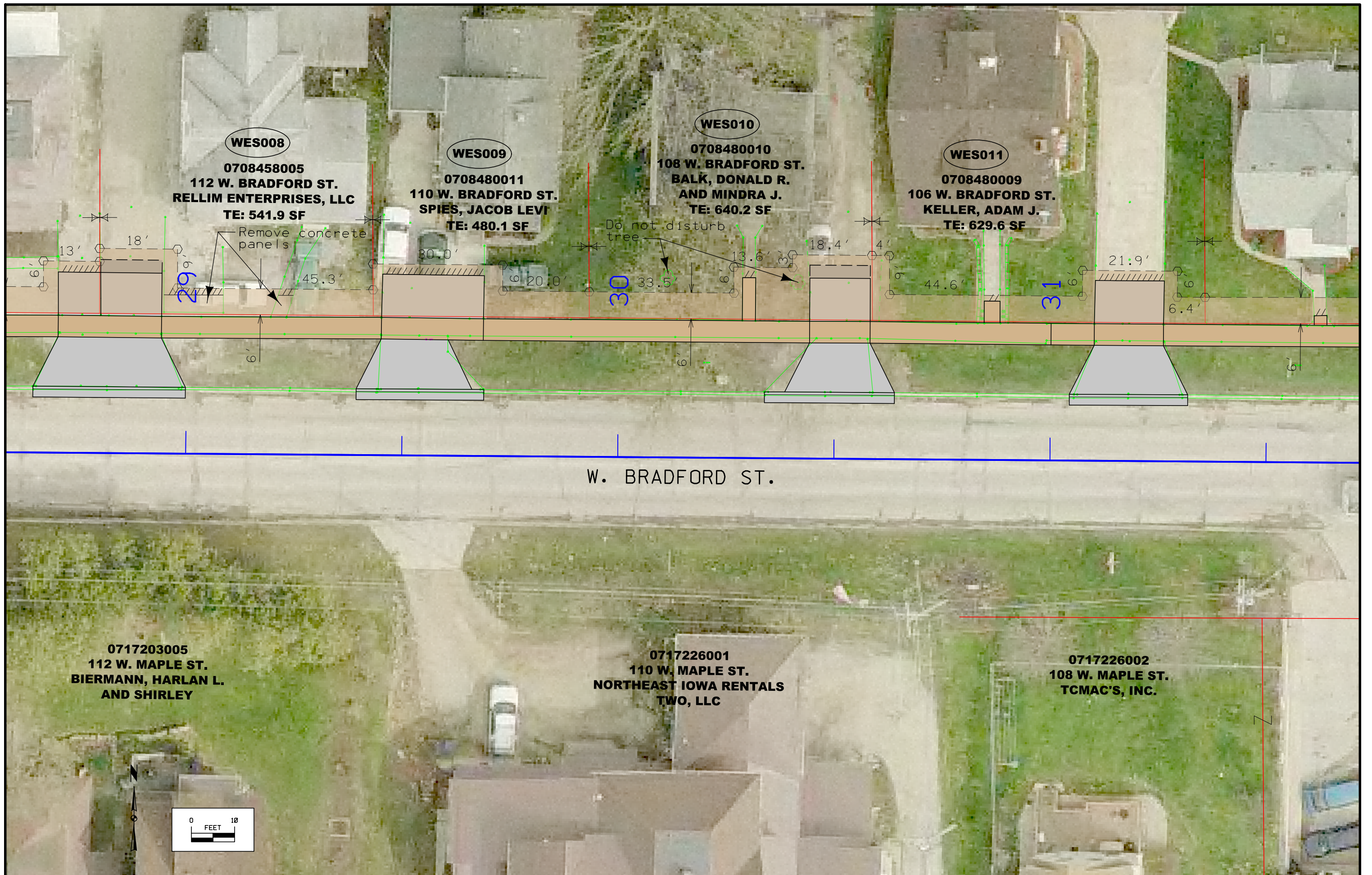
0717203002
 124 W. MAPLE ST.
 HPL INVESTMENTS, LLC

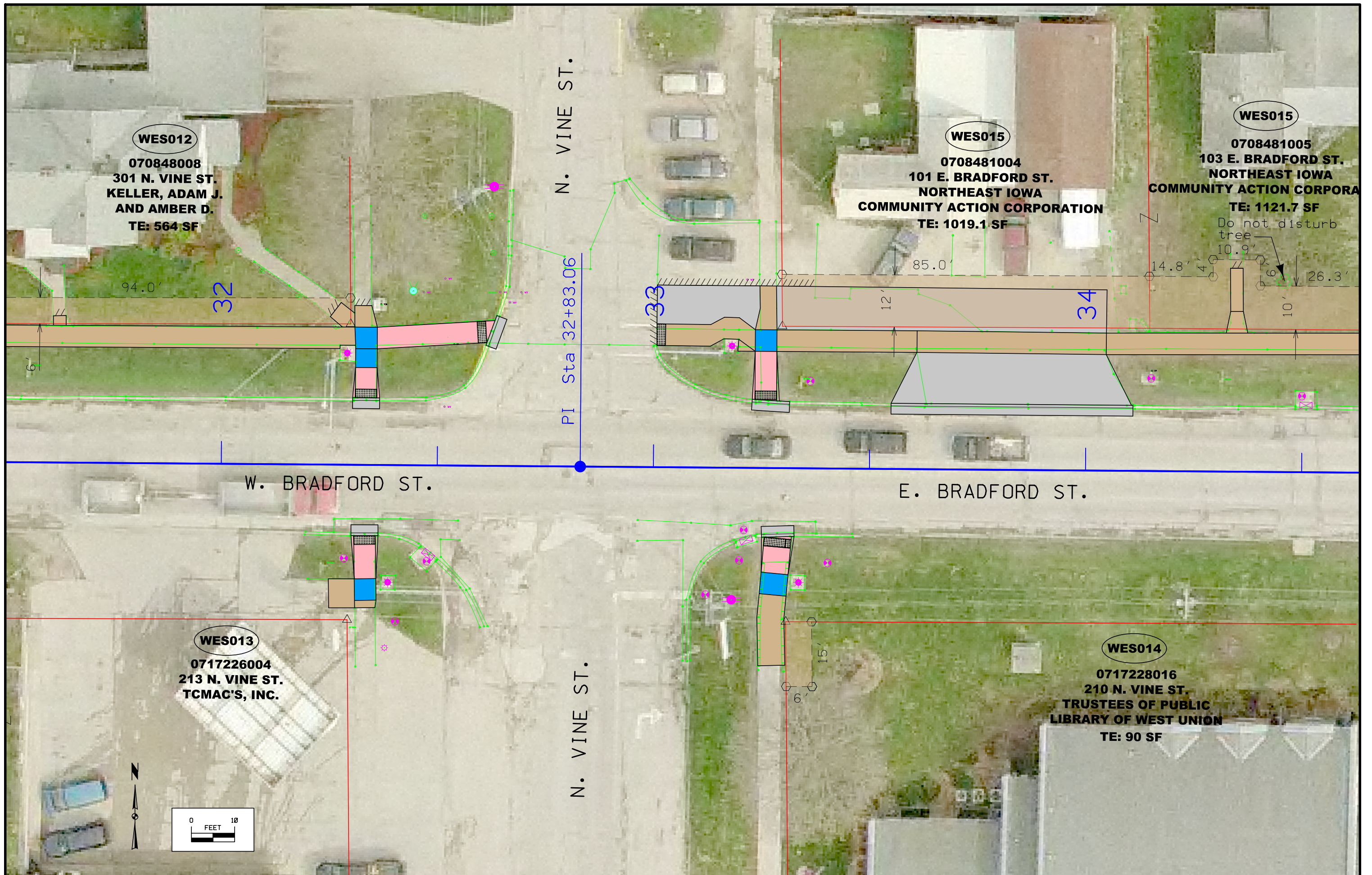
0717203003
 122 W. MAPLE ST.
 MARTIN, ANDREW JAMES

0717203004
 120 W. MAPLE ST.
 EINCK, NORMAN J.
 AND CYNTHIA L.

0717203006
 118 W. MAPLE ST.
 EINCK, NORMAN J.
 AND CYNTHIA L.







WES012

070848008
301 N. VINE ST.
KELLER, ADAM J.
AND AMBER D.
TE: 564 SF

WES015

0708481004
101 E. BRADFORD ST.
NORTHEAST IOWA
COMMUNITY ACTION CORPORATION
TE: 1019.1 SF

WES015

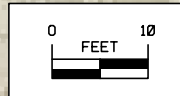
0708481005
103 E. BRADFORD ST.
NORTHEAST IOWA
COMMUNITY ACTION CORPORA
TE: 1121.7 SF

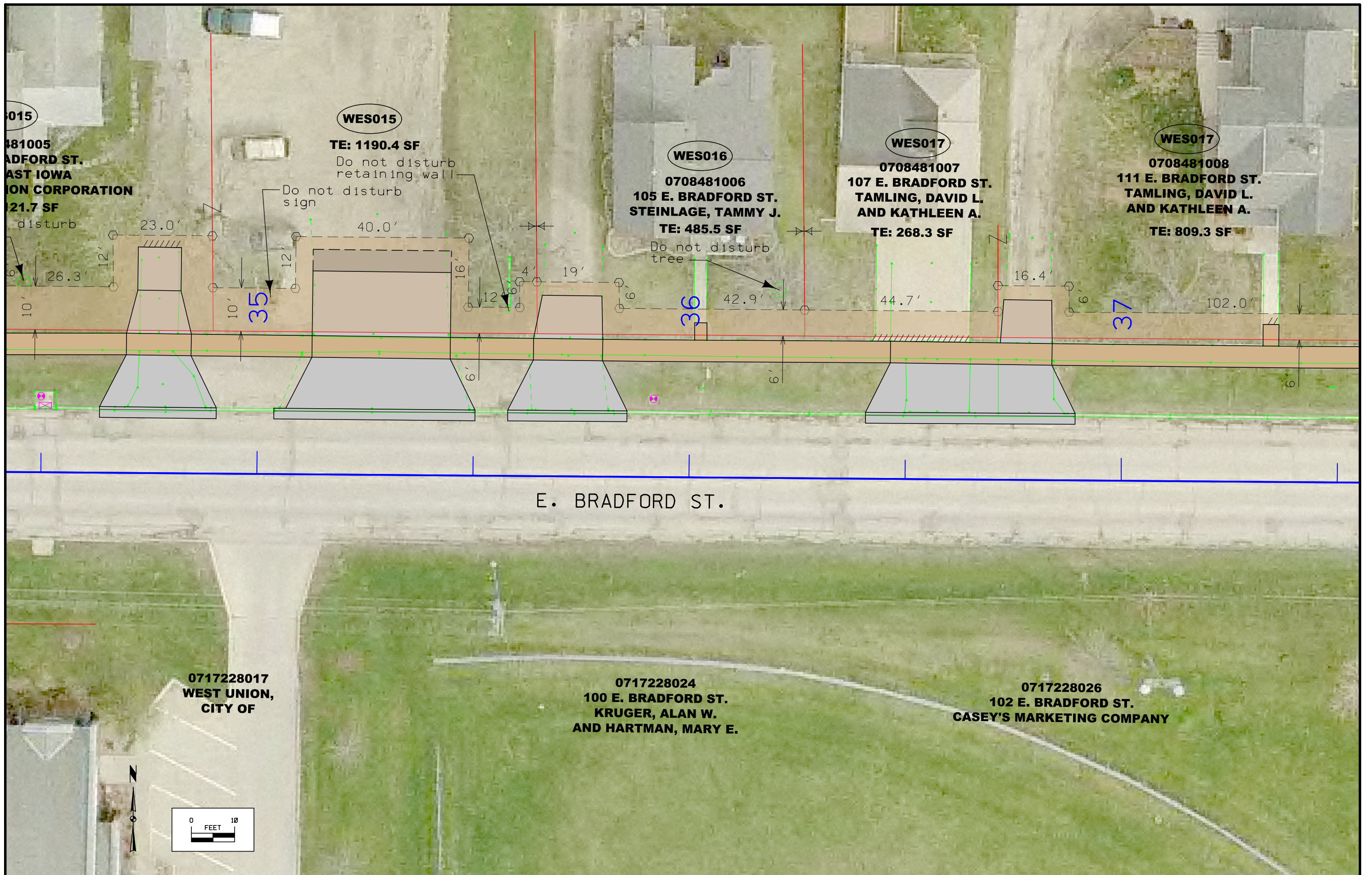
WES013

0717226004
213 N. VINE ST.
TCMAC'S, INC.

WES014

0717228016
210 N. VINE ST.
TRUSTEES OF PUBLIC
LIBRARY OF WEST UNION
TE: 90 SF





015

0708481005
 107 E. BRADFORD ST.
 WEST IOWA
 UTILITIES CORPORATION
 TE: 121.7 SF

WES015

TE: 1190.4 SF
 Do not disturb
 retaining wall

WES016

0708481006
 105 E. BRADFORD ST.
 STEINLAGE, TAMMY J.
 TE: 485.5 SF

WES017

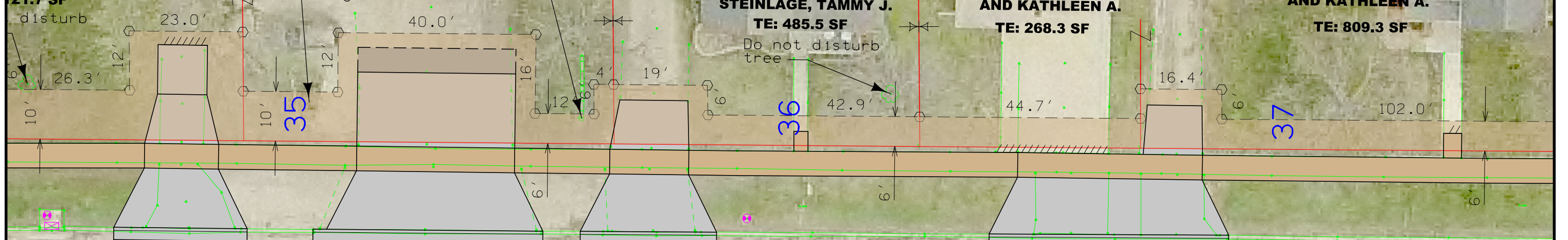
0708481007
 107 E. BRADFORD ST.
 TAMLING, DAVID L.
 AND KATHLEEN A.
 TE: 268.3 SF

WES017

0708481008
 111 E. BRADFORD ST.
 TAMLING, DAVID L.
 AND KATHLEEN A.
 TE: 809.3 SF

Do not disturb
 sign

Do not disturb
 tree

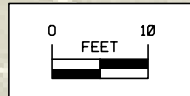


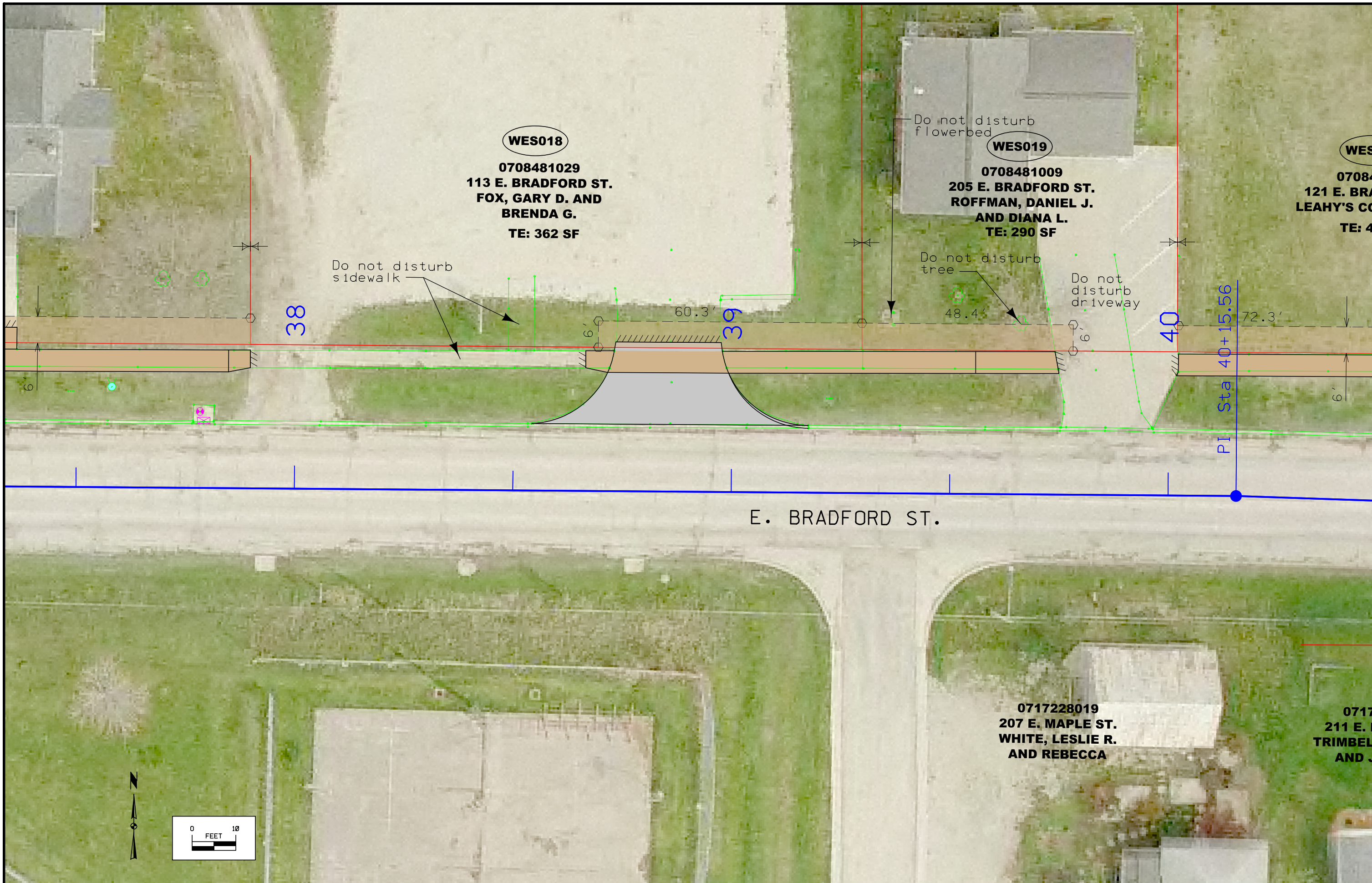
E. BRADFORD ST.

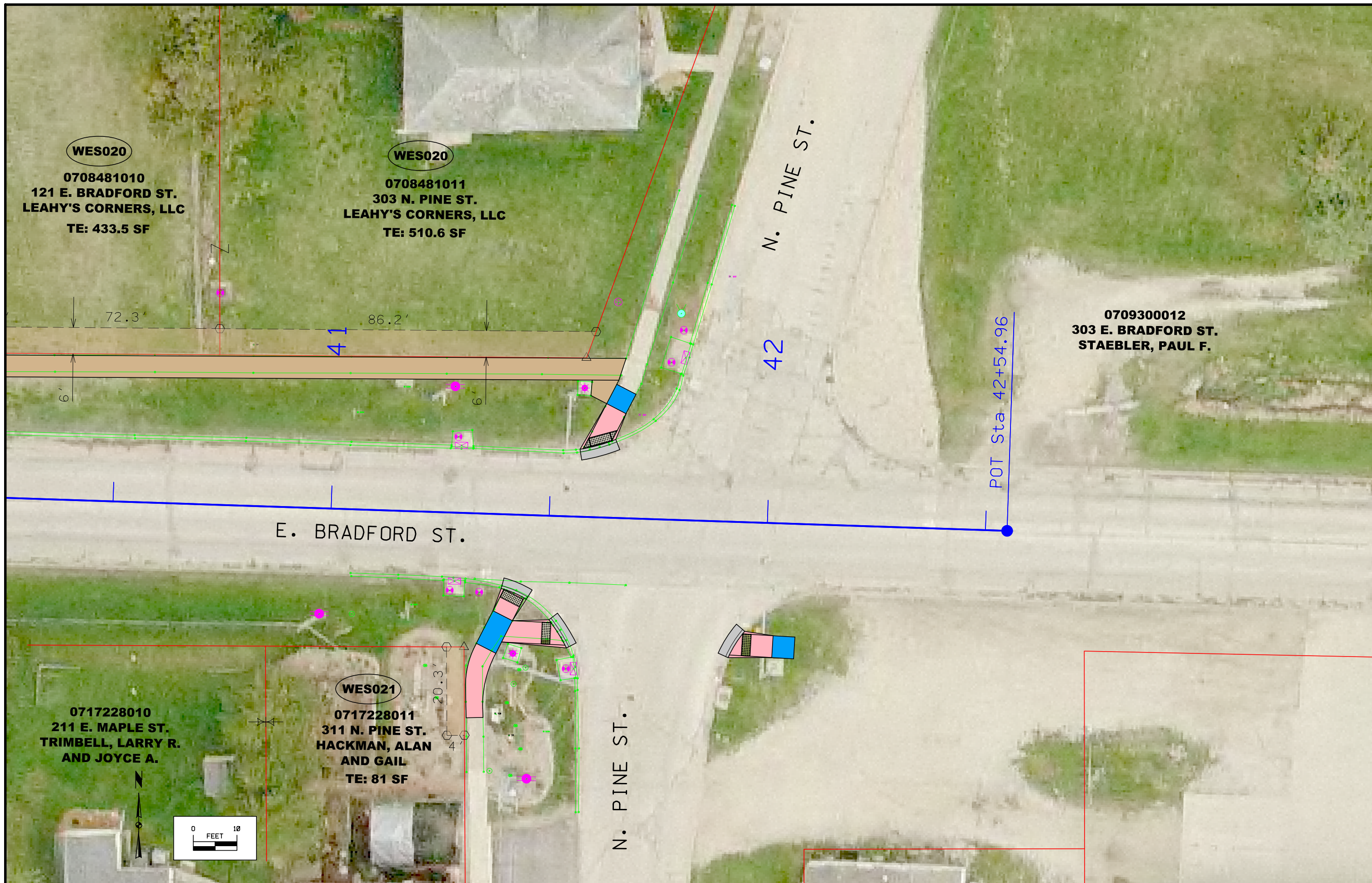
0717228017
 WEST UNION,
 CITY OF

0717228024
 100 E. BRADFORD ST.
 KRUGER, ALAN W.
 AND HARTMAN, MARY E.

0717228026
 102 E. BRADFORD ST.
 CASEY'S MARKETING COMPANY







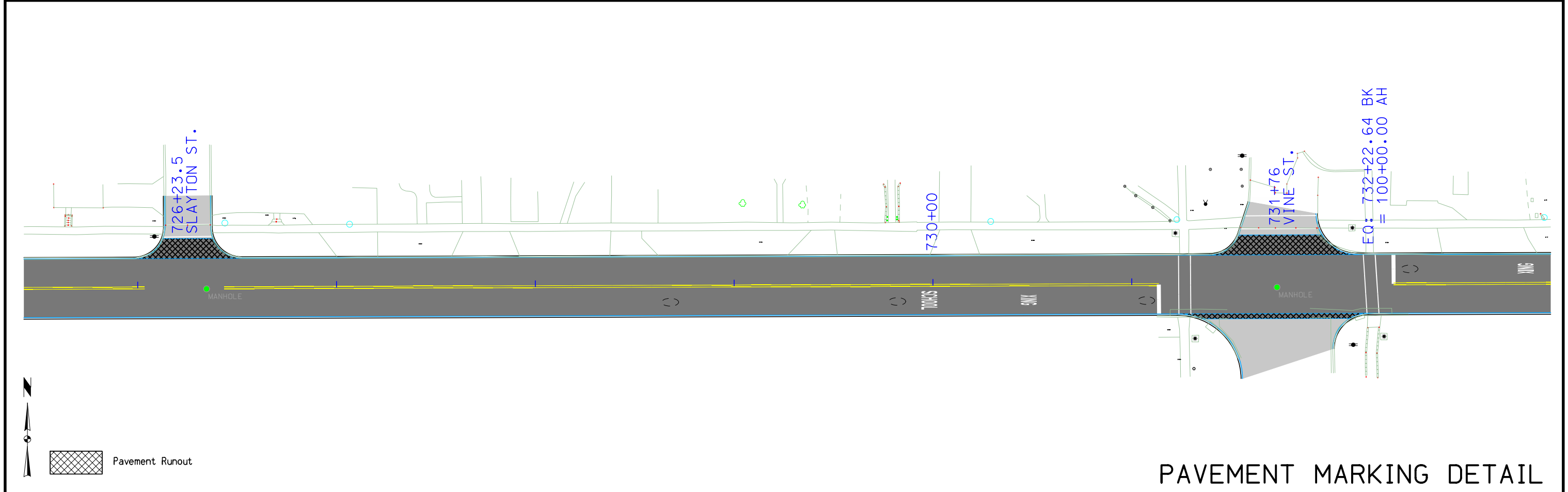
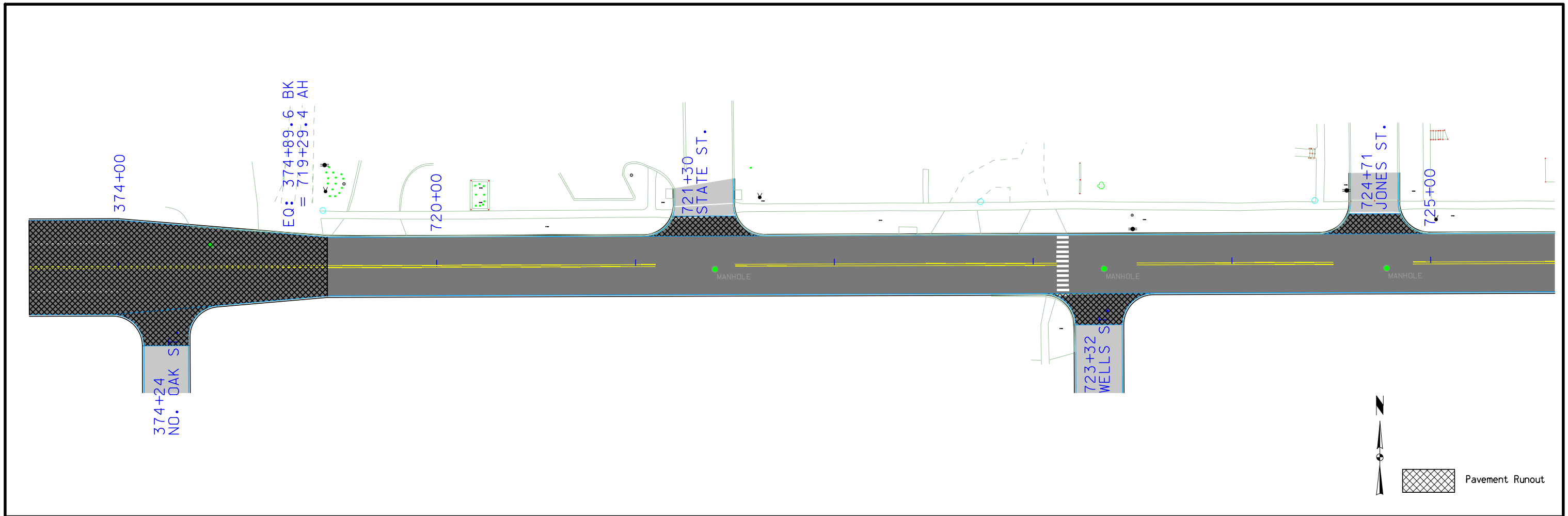
511 TRAVEL RESTRICTIONS

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
US 18	BOTH	FAYETTE	No Travel Restrictions Expected									

108-23A 08-01-08	
TRAFFIC CONTROL PLAN	
<p>1) Through traffic shall be maintained at all times during construction.</p> <p>2. Contractor shall coordinate traffic control with other projects in the area.</p>	

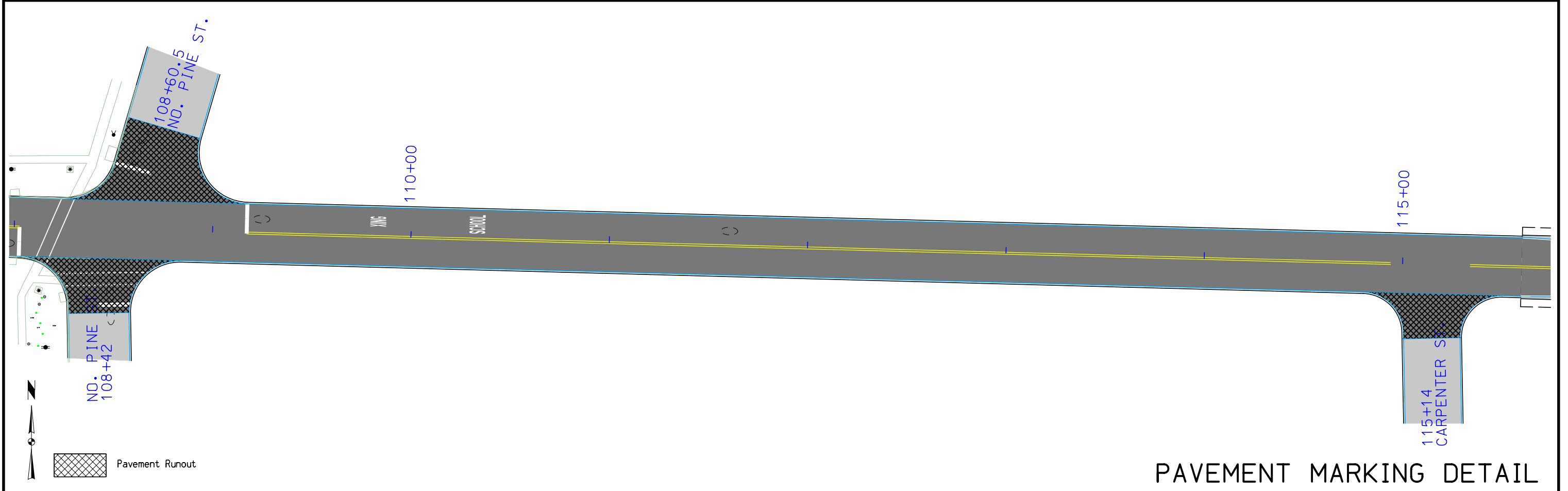
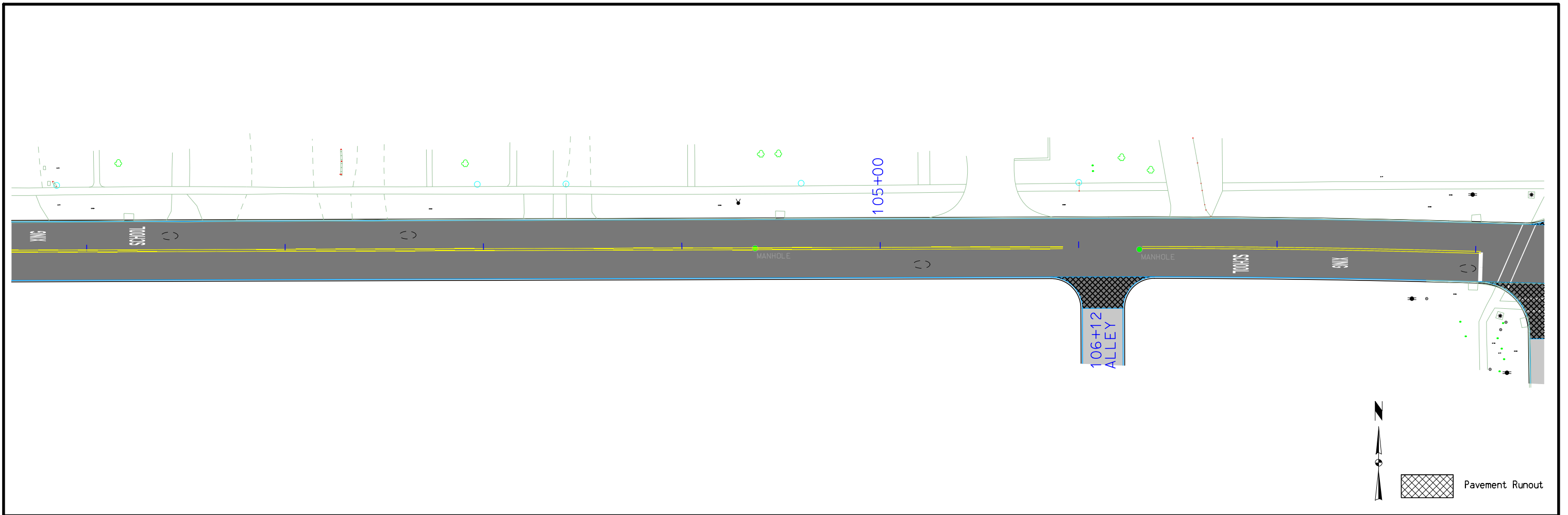
108-26A 08-01-08	
STAGING NOTES	
<p>1) Install subdrains/perform pipe work.</p> <p>2) Constructed base widening.</p> <p>3) Scarify pavement.</p> <p>4) Patch and replace curb and gutter as directed by the Engineer.</p> <p>5) Place surface HMA.</p> <p>6) Groove and place final pavement markings.</p>	

111-01 04-17-12	
COORDINATED OPERATIONS	
<p>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.</p>	
Project	Type of Work
NHSN-018-8(44)--2R-33	Sidewalk-ADA



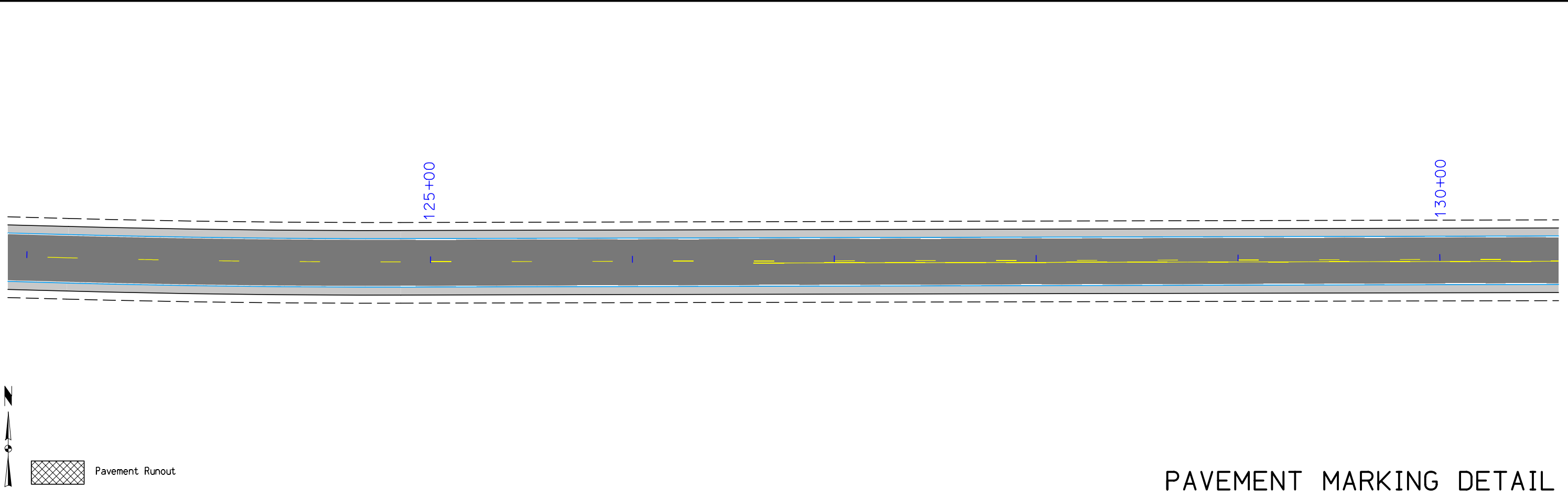
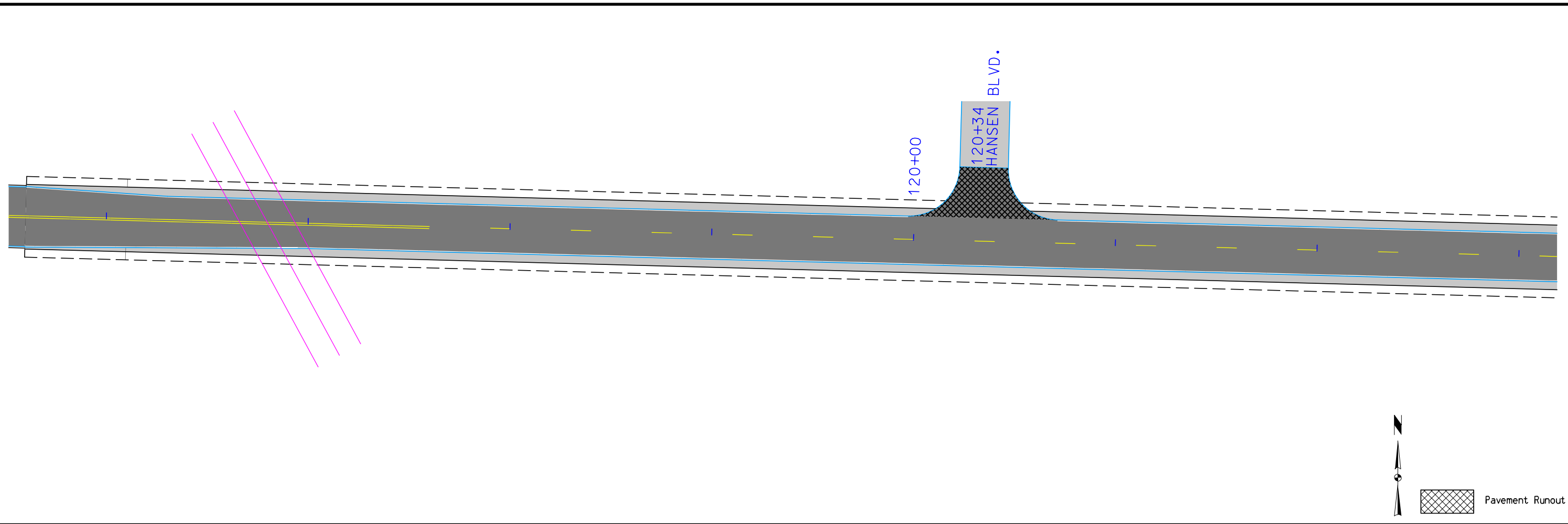
PAVEMENT MARKING DETAIL

FILE NO.	ENGLISH	DESIGN TEAM Callahan \ Coggins \ Meise	FAYETTE COUNTY	PROJECT NUMBER NHSN-018-8(42)--2R-33	SHEET NUMBER J.2
----------	---------	---	----------------	---	-------------------------

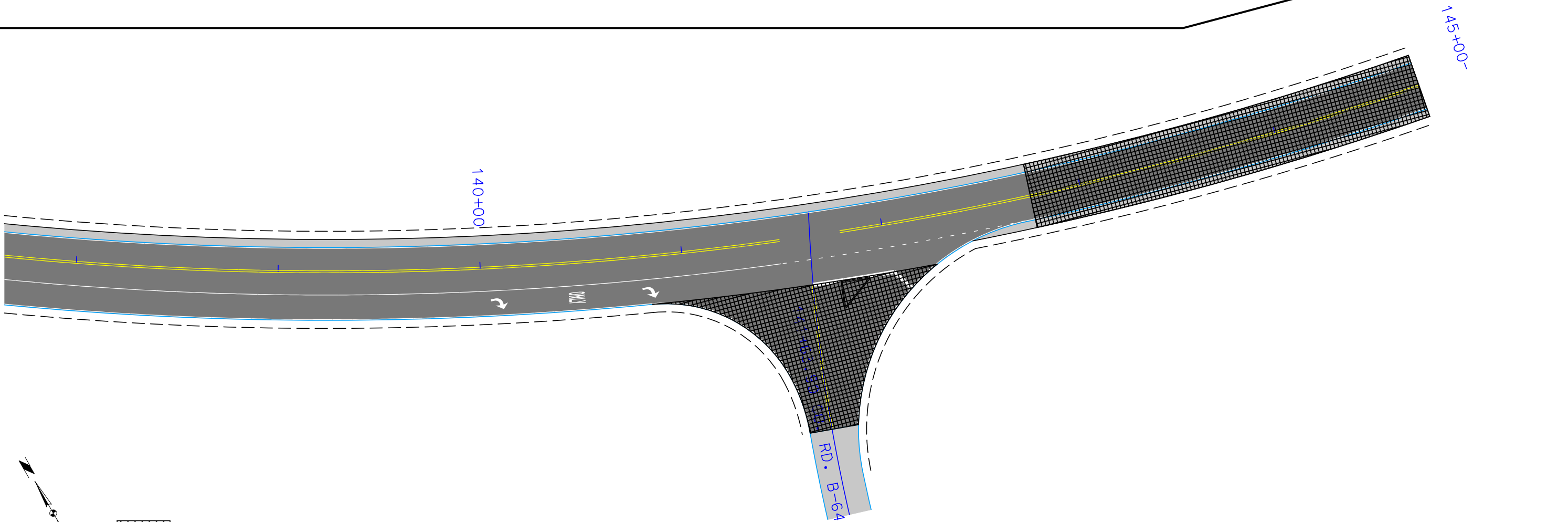
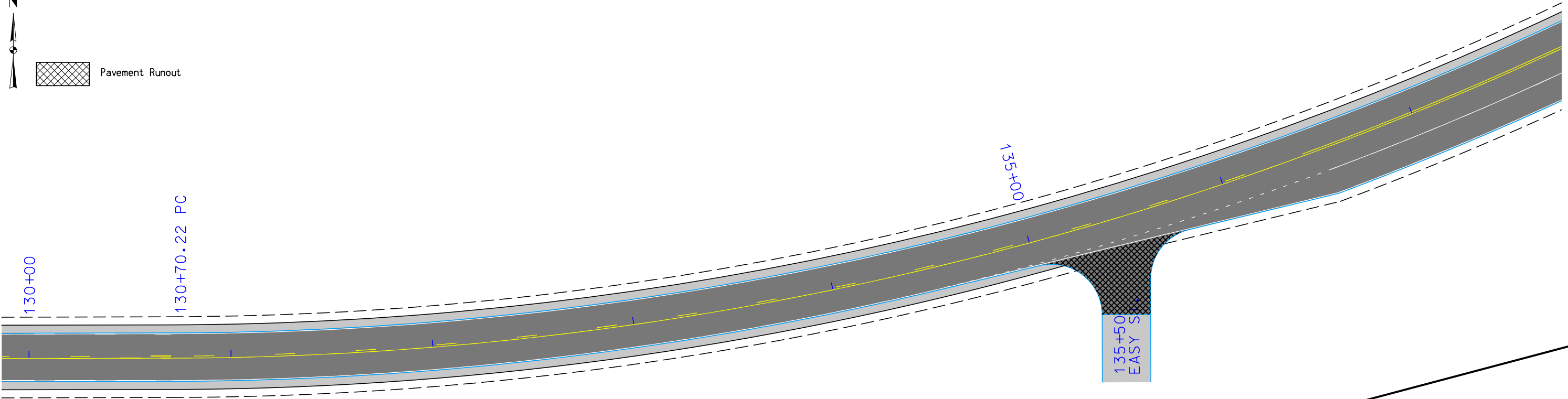
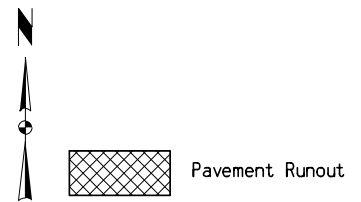


PAVEMENT MARKING DETAIL

FILE NO.	ENGLISH	DESIGN TEAM Callahan \ Coggins \ Meise	FAYETTE COUNTY	PROJECT NUMBER NHSN-018-8(42)--2R-33	SHEET NUMBER J.3
----------	---------	---	----------------	---	-------------------------

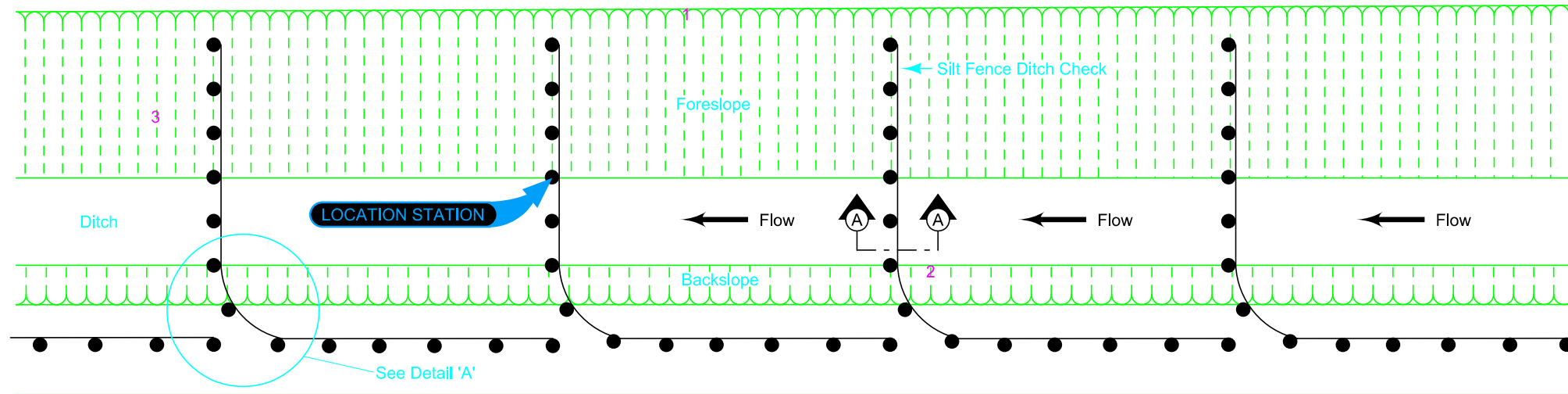


PAVEMENT MARKING DETAIL

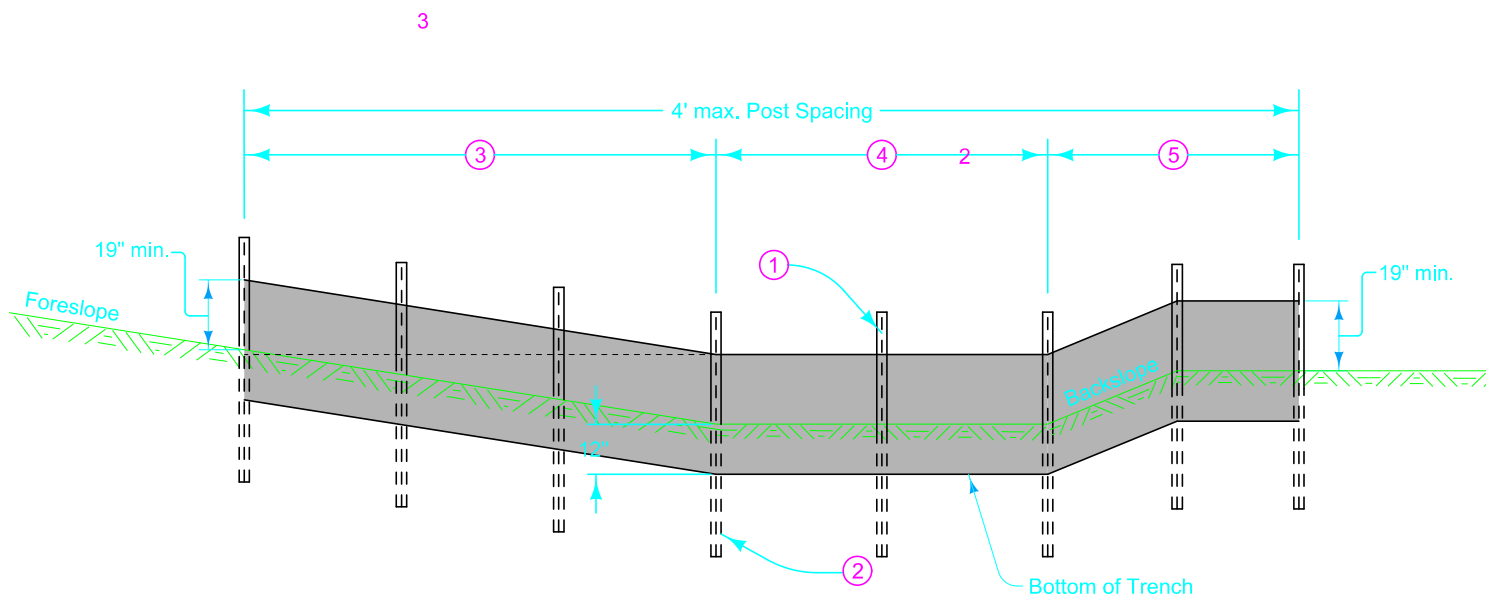


PAVEMENT MARKING DETAIL

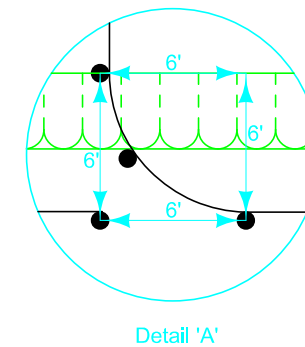
FILE NO.	ENGLISH	DESIGN TEAM Callahan \ Coggins \ Meise	FAYETTE COUNTY	PROJECT NUMBER NHSN-018-8(42)--2R-33	SHEET NUMBER J.5
----------	---------	---	----------------	---	-------------------------



PLAN FOR SILT DITCH (SHALLOW DITCH SECTION-TYPE 4) ⑥



FRONT VIEW



Install all silt fence using a silt fence machine. Use manual (trench) installation if physical conditions prohibit machine installation.

For machine installation, compact by driving over each side of silt fence at least two times with device exerting 60 p.s.i. or greater.

For manual installation, compact with a mechanical or pneumatic tamper.

- ① Secure top of engineering fabric to steel posts using cable ties (50 lb.) or wire. See attachment to post.
- ② Embed all posts 28 inches below the ground line.
- ③ The minimum end span (in feet) = 2 X Foreslope (H:V).
- ④ Locate posts at toe of foreslope and toe of backslope and space remaining posts equally.
- ⑤ Place posts as shown in Detail 'A' to transition from transverse to parallel installation. Place one post at the backslope intercept and the other beyond the intercept.
- ⑥ Refer to Tab. 100-18.

- 1 Ensure Riser Pipe remains vertical.
- 2 Dimensions shown are minimums.
- 3 When Temporary Sediment Control Basin is removed, if basin has not silted in to designed ditch grade, use topsoil to bring up to designed ditch grade.

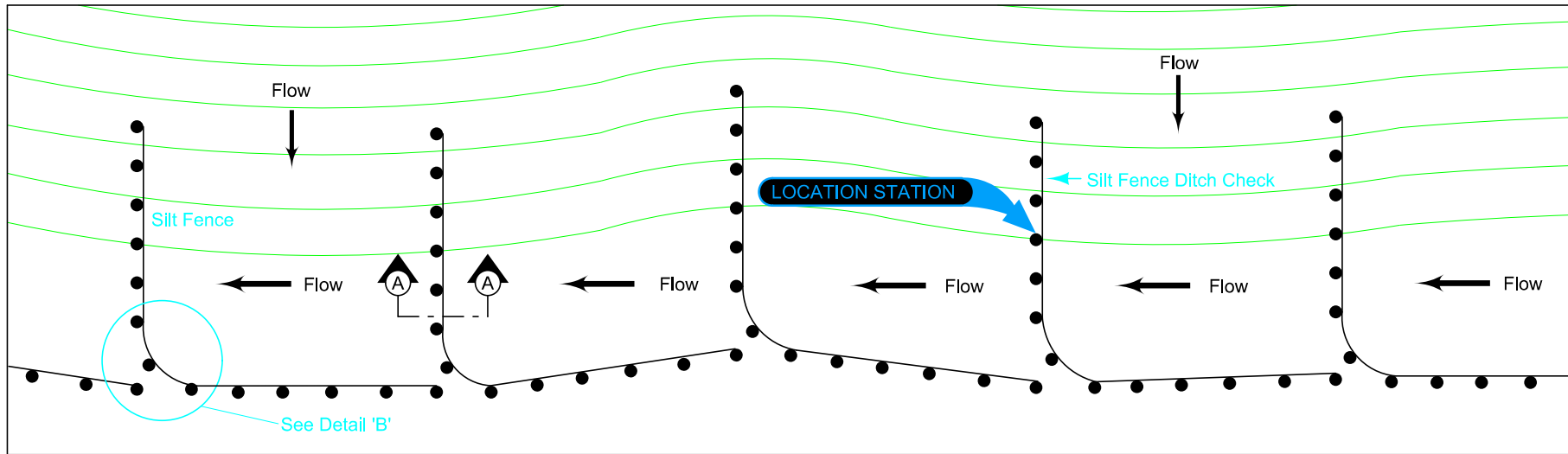
Possible Contract Items:
Silt Fence for Ditch Checks

Possible Tabulations:
100-18

IOWADOT	REVISION	
	NEW	10-18-16
ROAD DESIGN DETAIL		570-4
		SHEET 1 of 3

REVISIONS: NEW

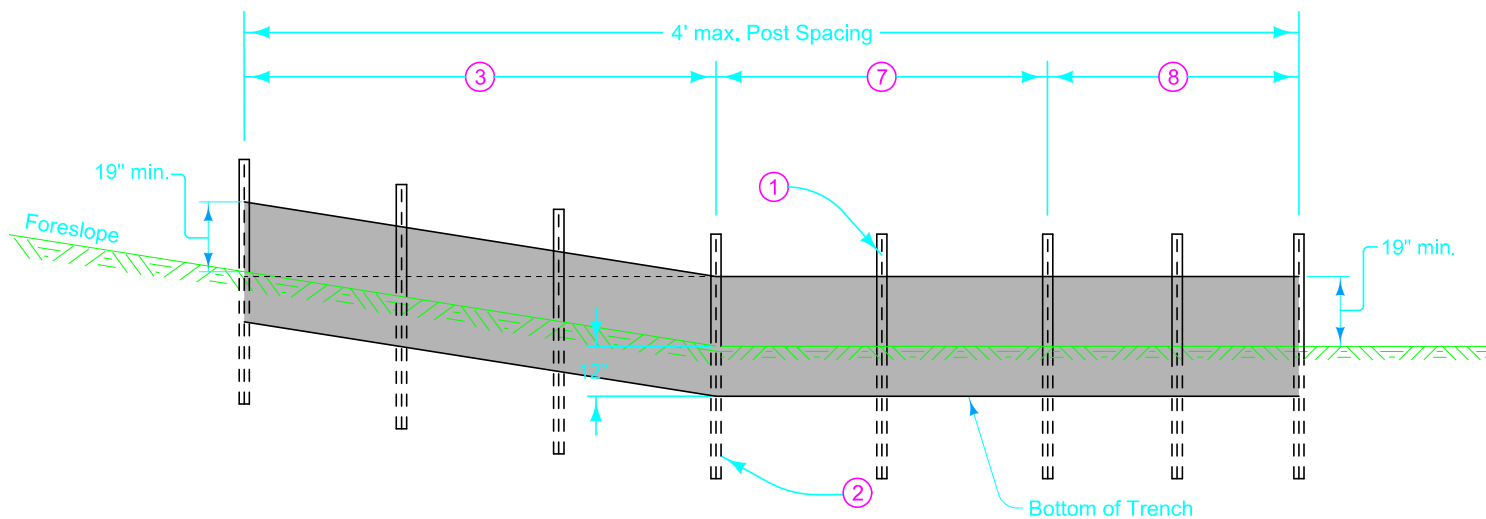
**SILT FENCE INSTALLATION
FOR SHALLOW OR NO DITCH**



PLAN FOR SILT FENCE (NO DITCH SECTION-TYPE 5) ⑥

- ① Secure top of engineering fabric to steel posts using cable ties (50 lb.) or wire. See attachment to post.
- ② Embed all posts 28 inches below the ground line.
- ③ The minimum end span (in feet) = 2 X Foreslope (H:V).
- ⑥ Refer to tabulation 100-18.
- ⑦ Locate post at toe of foreslope. Locate 2 additional posts at 4 foot spacing.
- ⑧ Place posts as shown in Detail 'B' to transition from transverse to parallel installation. The parallel portion of the installation should approximately parallel the intercept of the foreslope.

 Contour Lines

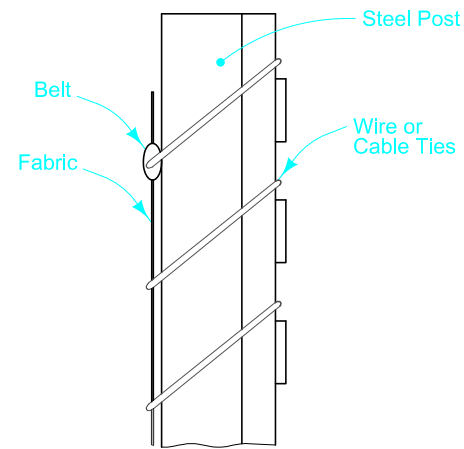


FRONT VIEW

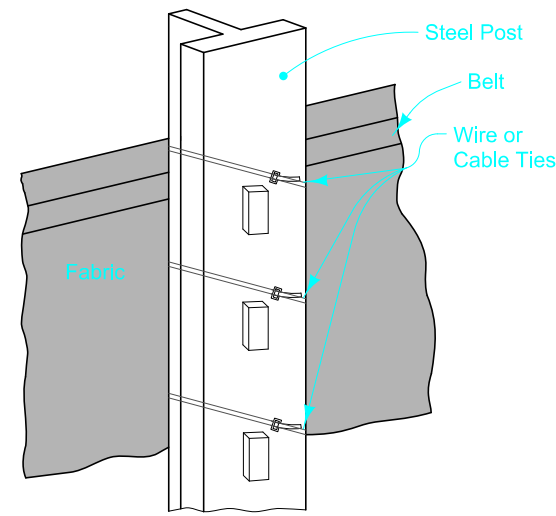
IOWADOT	REVISION	
	NEW	10-18-16
ROAD DESIGN DETAIL		570-4
		SHEET 2 of 3

REVISIONS: NEW

**SILT FENCE INSTALLATION
FOR SHALLOW OR NO DITCH**



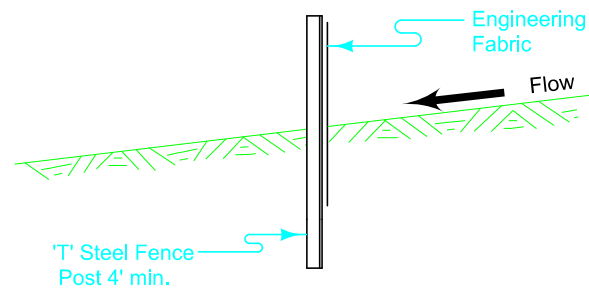
**PROFILE VIEW
ATTACHMENT TO POST**



**BACK VIEW
ATTACHMENT TO POST**

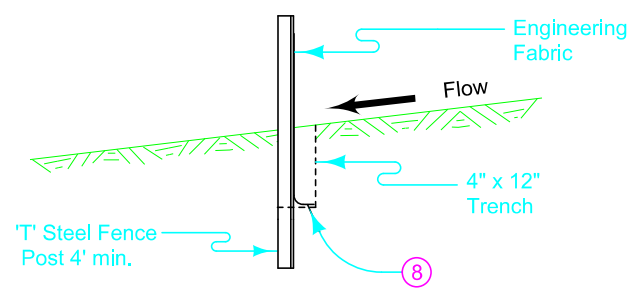
⑧ For manual installation only, fold engineering fabric along bottom of trench.

DITCH CHECK - MACHINE INSTALLATION



SECTION A-A

DITCH CHECK - MANUAL INSTALLATION



SECTION A-A

IOWADOT	REVISION	
	NEW	10-18-16
ROAD DESIGN DETAIL	570-4	
REVISIONS: NEW	SHEET 3 of 3	

**SILT FENCE INSTALLATION
FOR SHALLOW OR NO DITCH**