



**ESTIMATED PROJECT QUANTITIES  
(UP TO A 5 DIVISION PROJECT)**

Division 1: Rural  
Division 2: 100% City of Dyersville Participation

Item No.	Item Code	Item	Unit	Quantities																
				Estimated					Total	As Built										
				Division 1	Division 2	Division 3	Division 4	Division 5		Division 1	Division 2	Division 3	Division 4	Division 5						
72	2518-6891810	PERMANENT ROAD CLOSURE, RURAL, SI-181	LF	102							102									
73	2518-6891820	PERMANENT ROAD CLOSURE, URBAN, SI-182	EACH	1							1									
74	2518-6910000	SAFETY CLOSURE	EACH	19							19									
75	2520-3350015	FIELD OFFICE	EACH	1							1									
76	2523-0000100	LIGHTING POLES	EACH	6							6									
77	2523-0000200	ELECTRICAL CIRCUITS	LF	1837							1837									
78	2523-0000310	HANDHOLES AND JUNCTION BOXES	EACH	12							12									
79	2523-0000400	CONTROL CABINET	EACH	1							1									
80	2526-8285000	CONSTRUCTION SURVEY	LS	1							1									
81	2527-9263109	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED	STA	845.64							845.64									
82	2527-9263131	WET RETROREFLECTIVE REMOVABLE TAPE MARKINGS	STA	181.28							181.28									
83	2527-9263137	PAINTED SYMBOLS AND LEGENDS, WATERBORNE OR SOLVENT-BASED	EACH	30							30									
84	2527-9263180	PAVEMENT MARKINGS REMOVED	STA	282.55							282.55									
85	2527-9263190	SYMBOLS AND LEGENDS REMOVED	EACH	16							16									
86	2528-8400048	TEMPORARY BARRIER RAIL, CONCRETE	LF	8210							8210									
87	2528-8400157	TEMPORARY FLOODLIGHTING LUMINAIRE	EACH	8							8									
88	2528-8445110	TRAFFIC CONTROL	LS	1							1									
89	2528-8445113	FLAGGERS	EACH	6							6									
90	2528-9109020	TEMPORARY LANE SEPARATOR SYSTEM	LF	2860							2860									
91	2533-4980005	MOBILIZATION	LS	1							1									
92	2551-0000130	TEMP CRASH CUSHION, SEVERE USE (SU)	EACH	8							8									
93	2552-0000300	TRENCH COMPACTION TESTING	LS						1		1									
94	2554-0114012	WATER MAIN, TRENCHED, PVC, 12 IN.	LF						2704		2704									
95	2554-0134012	WATER MAIN WITH CASING PIPE, TRENCHED, PVC, 12 IN.	LF						162		162									
96	2554-0202200	FITTINGS BY COUNT, DUCTILE IRON, BEND, 12 IN., 11 1/4 DEGREE	EACH						3		3									
97	2554-0202200	FITTINGS BY COUNT, DUCTILE IRON, BEND, 12 IN., 22 1/2 DEGREE	EACH						3		3									
98	2554-0202200	FITTINGS BY COUNT, DUCTILE IRON, BEND, 12 IN., 90 DEGREE	EACH						1		1									
99	2554-0202200	FITTINGS BY COUNT, DUCTILE IRON, REDUCER, 12 IN. X 12 IN.	EACH						1		1									
100	2554-0202200	FITTINGS BY COUNT, DUCTILE IRON, TEE, 12 IN. X 12 IN.	EACH						1		1									
101	2554-0202200	FITTINGS BY COUNT, DUCTILE IRON, TEE, 12 IN. X 6 IN.	EACH						2		2									
102	2554-0207012	VALVE, GATE, DIP, 12 IN.	EACH						2		2									
103	2599-9999005	REMOVE AND REINSTALL EXISTING FIRE HYDRANT ASSEMBLY	EACH						3		3									
104	2599-9999009	REMOVAL OF EXISTING WATER MAIN AND FITTINGS	LF						2595		2595									
105	2601-2634100	MULCHING	ACRE	64.5							64.5									
106	2601-2634105	MULCHING, BONDED FIBER MATRIX	ACRE	1							1									
107	2601-2636043	SEEDING AND FERTILIZING (RURAL)	ACRE	64.5							64.5									
108	2601-2636044	SEEDING AND FERTILIZING (URBAN)	ACRE	1							1									
109	2601-2639010	SODDING	SQ	3							3									
110	2601-2640350	SPECIAL DITCH CONTROL, WOOD EXCELSTOR MAT	SQ	1150.4							1150.4									
111	2601-2642100	STABILIZING CROP - SEEDING AND FERTILIZING	ACRE	64.5							64.5									
112	2601-2642120	STABILIZING CROP - SEEDING AND FERTILIZING (URBAN)	ACRE	1							1									
113	2601-2643110	WATERING FOR SOD, SPECIAL DITCH CONTROL, OR SLOPE PROTECTION	MGAL	251.9							251.9									
114	2601-2643300	MOBILIZATION FOR WATERING	EACH	3							3									
115	2601-2643412	TURF REINFORCEMENT MAT, TYPE 2	SQ	108.8							108.8									
116	2602-0000020	SILT FENCE	LF	66300							66300									
117	2602-0000030	SILT FENCE FOR DITCH CHECKS	LF	6621							6621									
118	2602-0000050	SILT BASINS	EACH	11							11									
119	2602-0000071	REMOVAL OF SILT FENCE OR SILT FENCE FOR DITCH CHECKS	LF	72921							72921									
120	2602-0000101	MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECK	LF	72921							72921									
121	2602-0000312	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 12 IN. DIA.	LF	2000							2000									
122	2602-0000320	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 20 IN. DIA.	LF	2000							2000									
123	2602-0000350	REMOVAL OF PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE	LF	4000							4000									
124	2602-0010010	MOBILIZATIONS, EROSION CONTROL	EACH	17							17									
125	2602-0010020	MOBILIZATIONS, EMERGENCY EROSION CONTROL	EACH	1							1									

This sheet didn't change.

Quantities for Class 10, Roadway and Borrow updated.  
 New bid item for Class 10, Waste added.  
 Quantities for Class 12, Roadway and Borrow updated.  
 Bid item for Class 13, Waste deleted.

100-4A  
10-29-02

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
1	2101-0850001	CLEARING AND GRUBBING
2	2102-0425071	SPECIAL BACKFILL A. Refer to Tabs. 100-24, 112-8, and 112-9 in the C Sheets. B. Includes 1338.6 cu. yds. used for constructing the median crossovers at Sta. 1025+00.00 and 1084+00.00. C. Refer to Typical Sections in the B Sheets. D. Existing HMA and PCC from Pavement removal may be used on the project as special backfill.
3	2102-2624980	CONTRACTOR FURNISHED SELECT TREATMENT A. See Typical 'G 4D Grade' on Sheet B.1 and Tab. 100-24 and Tab. 112-9 in the C sheets for mainline grading locations. The quantity for CONTRACTOR FURNISH SELECT TREATMENT is based upon the volume of Special Backfill placed in accordance with Option A shown on Typical 'SELECT' in the B sheets. The contractor may place select soil as shown in Option B. Payment of CONTRACTOR FURNISH SELECT TREATMENT and EMBANKMENT-IN-PLACE, CONTRACTOR FURNISHED will be plan quantity and will not be adjusted based upon use of Option B.
4	2102-2625001	EMBANKMENT-IN-PLACE, CONTRACTOR FURNISHED A. Shrinkage will not be included in Embankment-in-Place, Contractor Furnished quantity.
5	2102-2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW A. Includes 220,423 cu. yds. of suitable material to be used in the roadway fill. Refer to Tab. 107-29 in the T sheets for locations and details. B. Includes 1,400 cu. yds. of unsuitable material to be used in the roadway fill. Refer to Tab. 112-8 in the C sheets for locations and details. D. Overhaul will not be measured or paid for, but shall be considered incidental to roadway excavation on this project.
6	2102-2710090	EXCAVATION, CLASS 10, WASTE A. Refer to Tab. 107-29 in the T sheets for locations and details.
7	2102-2712015	EXCAVATION, CLASS 12, BOULDERS OR ROCK FRAGMENTS A. Refer to Tab. 103-7 on Sheet CS.1. B. Dispose of excess material according to Article 1186.07 of the Standard Specifications.
8	2102-2712070	EXCAVATION, CLASS 12, ROADWAY AND BORROW A. Includes 61,411 cu. yds. of unsuitable material to be used in the roadway fill. B. Refer to Section 2107 of the Standard Specifications for Rock Fill placement details. C. Production blasting is allowed with approval from the Engineer and if used will be considered incidental to Class 12 Excavation. Refer to Standard Specification Section 2103. If production blasting is used, US 20 shall be closed to traffic in both directions during the blasting. The Contractor shall be responsible for any damages to adjacent structures caused by production blasting.
9	2102-5020010	OBLITERATE OLD ROADBED A. The work consists of obliterating 320th Avenue, 330th Avenue, 332nd Avenue, 221st Street, and 7th Street SW as shown on Typical 4302. B. Method of measurement will be in stations measured along centerline of old roadbed. C. Basis of payment will be the contract unit price for the number of stations of old roadbed obliterated. Payment is full compensation for construction as shown on Typical 4302. Excavation will not be paid separately. Pavement removal is bid separately.
10	2105-8425015	TOPSOIL, STRIP, SALVAGE AND SPREAD
11	2107-0875100	COMPACTION WITH MOISTURE CONTROL A. Refer to Tab. 103-6 on Sheet CS.1.
12	2111-8174100	GRANULAR SUBBASE A. Refer to Typical Sections in the B Sheets and Tab. 100-24 in the C Sheets.
13	2115-0100000	MODIFIED SUBBASE A. Refer to Typical Sections in the B Sheets and Tab. 100-24 and Tab. 112-9 in the C Sheets.
14	2121-7425010	GRANULAR SHOULDERS, TYPE A A. Includes 3888 tons for mainline shoulders, 4930 tons for ramps, and 5317.5 tons for sideroads. B. Refer to Tab. 112-9 in the C Sheets.
15	2122-5190105	PAVED SHOULDER, P.C. CONCRETE, 10.5 IN.
16	2122-5500060	PAVED SHOULDER, HOT MIX ASPHALT MIXTURE, 6 IN. A. Refer to Tab. 112-9 in the C Sheets.
17	2123-7450000	SHOULDER CONSTRUCTION, EARTH A. Includes 74.6 Sta. of 6 ft wide shoulders on mainline, 83.6 Sta. of 8 ft shoulders on mainline, and 86.1 Sta. of 8 ft wide shoulders on sideroads. B. Refer to Typical Sections in the B Sheets and Tab. 112-9 in the C Sheets. C. Requires 20348.3 cu. yds. of Class 10 for Earth Shoulder Fill. D. No payment for overhaul allowed for this material.
18	2123-7450020	SHOULDER FINISHING, EARTH A. Includes 33.1 stations of nominal 3 ft. wide shoulder. B. Material for the earth shoulders is included in the template quantities.
19	2301-1032095	STD/S-F PCC PAVEMENT, CLASS C, CLASS 2 DURABILITY, 9.5 IN.
20	2301-1034095	STD/S-F PCC PAVEMENT, CLASS C, CLASS 3I DURABILITY, 9.5 IN.
21	2301-1034105	STD/S-F PCC PAVEMENT, CLASS C, CLASS 3I DURABILITY, 10.5 IN. A. Refer to Typical Sections in the B Sheets.

100-4A  
10-29-02

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
		B. Refer to Tab. 100-24 in the C Sheets. C. Pavement smoothness shall apply to these bid items. Refer to Sections 2316 and 2317 of the Standard Specifications.
22	2301-6911722	PORTLAND CEMENT CONCRETE PAVEMENT SAMPLES
23	2304-0100000	DETOUR PAVEMENT A. Refer to Tab. 112-8 in the C Sheets.
24	2312-8260051	GRANULAR SURFACING ON ROAD, CLASS A CRUSHED STONE A. See Typical 'G 2 GradeGran' for side road surfacing details B. Includes cul-de-sac at 320th Avenue. Refer to Sheet E.15 and Sheet L.29.
25	2315-8275025	SURFACING, DRIVEWAY, CLASS A CRUSHED STONE A. Refer to Tab. 102-3 in the C Sheets.
26	2401-6745650	REMOVAL OF EXISTING STRUCTURES A. Refer to Tab. 110-2 in the C Sheets.
27	2402-2720100	EXCAVATION, CLASS 20, FOR ROADWAY PIPE CULVERT A. Refer to Tab. 104-3 in the C Sheets.
28	2416-0100018	APRONS, CONCRETE, 18 IN. DIA.
29	2416-0100024	APRONS, CONCRETE, 24 IN. DIA.
30	2416-0100030	APRONS, CONCRETE, 30 IN. DIA.
31	2416-0100042	APRONS, CONCRETE, 42 IN. DIA.
32	2416-0101136	REMOVE AND REINSTALL CONCRETE PIPE APRONS GREATER THAN 36 IN. A. Refer to Tab. 104-3 in the C Sheets and Tab. 104-5B on Sheet M.1.
33	2416-1180024	CULVERT, CONCRETE ROADWAY PIPE, 24 IN. DIA.
34	2416-1180030	CULVERT, CONCRETE ROADWAY PIPE, 30 IN. DIA.
35	2416-1180042	CULVERT, CONCRETE ROADWAY PIPE, 42 IN. DIA.
36	2416-1240030	CULVERT, 3000D CONCRETE ROADWAY PIPE, 30 IN. DIA. A. Refer to Tab. 104-3 in the C Sheets.
37	2417-2307036	DRAIN, CORRUGATED METAL SLOTTED PIPE, 36 IN., W/6 IN. GRATE
38	2417-5895018	BEVELED PIPE AND GUARD, 18 INCH A. Refer to Tab. 112-8 in the C Sheets.
39	2422-0360018	APRONS, UNCLASSIFIED, 18 IN. DIA.
40	2422-0360024	APRONS, UNCLASSIFIED, 24 IN. DIA. A. Refer to Tabs. 102-3 and 104-3 in the C Sheets.
41	2422-1722018	CULVERT, UNCLASSIFIED ENTRANCE PIPE, 18 IN. DIA. A. Refer to Tab. 102-3 in the C Sheets.
42	2422-1723018	CULVERT, UNCLASSIFIED ROADWAY PIPE, 18 IN. DIA. A. Refer to Tab. 112-8 in the C Sheets.
43	2422-1723024	CULVERT, UNCLASSIFIED ROADWAY PIPE, 24 IN. DIA. A. Refer to Tab. 104-3 in the C Sheets.
44	2435-0140148	MANHOLE, STORM SEWER, SW-401, 48 IN.
45	2435-0140172	MANHOLE, STORM SEWER, SW-401, 72 IN.
46	2435-0250100	INTAKE, SW-501
47	2435-0250500	INTAKE, SW-505
48	2435-0251100	INTAKE, SW-511 A. Refer to Tab. 104-5B on Sheet M.1.
49	2435-0700010	INTAKE, SW-512, 30 IN. A. Refer to Tab. 104-3 in the C Sheets. Use SW-604 Type 4C Casting.
50	2435-0700010	CONNECTION TO EXISTING MANHOLE A. Refer to Sheet U.7 for location and details of connection to existing sanitary sewer manhole. B. Plugging of existing hole shall be considered incidental.
51	2502-8212034	SUBDRAIN, LONGITUDINAL, (SHOULDER) 4 IN. DIA.
52	2502-8221304	SUBDRAIN OUTLET, DR-304 A. Refer to Tab. 104-9 on Sheets CS.1 and CS.2.
53	2503-0114218	STORM SEWER GRAVITY MAIN, TRENCHED, RCP, 2000D (CLASS III), 18 IN.
54	2503-0114415	STORM SEWER GRAVITY MAIN, TRENCHED, RCP, 3000D (CLASS IV), 15 IN.
55	2503-0114418	STORM SEWER GRAVITY MAIN, TRENCHED, RCP, 3000D (CLASS IV), 18 IN. A. Refer to Tab. 104-5B on Sheet M.1.
56	2504-0150408	SANITARY SEWER FORCE MAIN, TRENCHED, PVC, 8 IN.
57	2504-0170408	SANITARY SEWER FORCE MAIN WITH CASING PIPE, TRENCHED, PVC, 8 IN. A. Refer to Sheets U.5 thru U.8. B. Requires installation of underground warning tape. To be buried 12" deep directly above the sanitary sewer force main for the entire length of pipe. Type: green, 6" wide, polyethylene, with detectable metallic core for ease of locating buried pipe. Printed wording shall read "Caution Buried Sewer Line Below".
58	2504-0230000	SEWAGE AIR RELEASE VALVE AND PIT A. Requires wastewater combination air release/vacuum valve from one of the following approved manufacturers:

Sheet changed due to new rows added on C.3.

100-4A  
10-29-02

**ESTIMATE REFERENCE INFORMATION**

Item No.	Item Code	Description
		ValMatic (Model 881A), APCO (Model 443), or A.R.I. (Model D-025, 2" nominal), or approved equal. B. Recommend 1" outlet, 2" inlet, and internal orifice greater than or equal to 1/8".
59	2504-0240036	REMOVE SANITARY SEWER PIPE LESS THAN OR EQUAL TO 36 IN. A. Refer to Tab. 110-14 in the C sheets.
60	2505-4008400	STEEL BEAM GUARDRAIL BARRIER TRANSITION SECTION
61	2505-4021010	STEEL BEAM GUARDRAIL END ANCHOR, BOLTED
62	2505-4021700	STEEL BEAM GUARDRAIL END TERMINAL A. Refer to Tabs. 108-8A and 107-23 in the C Sheets.
63	2505-6000111	HIGH TENSION CABLE GUARDRAIL
64	2505-6000121	HIGH TENSION CABLE GUARDRAIL, END ANCHOR A. Refer to Tabs. 108-9A and 107-24 in the C Sheets.
65	2507-3250005	ENGINEERING FABRIC A. Refer to Tab. 100-23 in the C Sheets. B. Engineering fabric shall be material as specified for embankment erosion control, Article 4196.01C. Material shall be measured in sq. yds. of actual area covered.
66	2507-8029000	EROSION STONE A. Refer to Tab. 100-23 in the C Sheets.
67	2510-6745850	REMOVAL OF PAVEMENT A. Refer to Tabs. 102-5 and 110-1 in the C Sheets.
68	2510-6750600	REMOVAL OF INTAKES AND UTILITY ACCESSSES A. Refer to Tab. 110-15 in the C Sheets.
69	2512-1750006	CURB AND GUTTER, P.C. CONCRETE, AS PER PLAN A. Refer to Tab. 112-4 in the C Sheets and Sheet E.15.
70	2515-2475006	DRIVEWAY, P.C. CONCRETE, 6 IN. A. Refer to Tab. 102-3 in the C Sheets.
71	2515-6745600	REMOVAL OF PAVED DRIVEWAY A. Refer to Tab. 110-8 in the C Sheets. B. Requires 84 linear foot of full depth saw cut.
72	2518-6891810	PERMANENT ROAD CLOSURE, RURAL, SI-181
73	2518-6891820	PERMANENT ROAD CLOSURE, URBAN, SI-182 A. Refer to Tab. 102-4 in the C Sheets.
74	2518-6910000	SAFETY CLOSURE A. Refer to Tab. 108-13A in the C Sheets.
75	2520-3350015	FIELD OFFICE
76	2523-0000100	LIGHTING POLES
77	2523-0000200	ELECTRICAL CIRCUITS
78	2523-0000310	HANDHOLES AND JUNCTION BOXES
79	2523-0000400	CONTROL CABINET A. Refer to P Sheets.
80	2526-8285000	CONSTRUCTION SURVEY
81	2527-9263109	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED
82	2527-9263131	WET RETROREFLECTIVE REMOVABLE TAPE MARKINGS
83	2527-9263137	PAINTED SYMBOLS AND LEGENDS, WATERBORNE OR SOLVENT-BASED
84	2527-9263180	PAVEMENT MARKINGS REMOVED
85	2527-9263190	SYMBOLS AND LEGENDS REMOVED A. Refer to Tabs. 108-22 and 108-29 in the C Sheets and Sheet J.1.
86	2528-8400048	TEMPORARY BARRIER RAIL, CONCRETE A. Refer to Tab. 108-33 in the C Sheets and Sheet J.1.
87	2528-8400157	TEMPORARY FLOODLIGHTING LUMINAIRE A. Refer to Tab. 108-27 in the C Sheets.
88	2528-8445110	TRAFFIC CONTROL A. Refer to Traffic Control Plan on Sheet J.1.
89	2528-8445113	FLAGGERS A. Refer to Tab. 108-26A on Sheet J.1. Flaggers to be used at ramp terminals while EB and WB US 20 traffic shifted to the ramps.
90	2528-9109020	TEMPORARY LANE SEPARATOR SYSTEM A. Refer to Tab. 108-35 in the C Sheets and Sheet J.1.
91	2533-4980005	MOBILIZATION
92	2551-0000130	TEMP CRASH CUSHION, SEVERE USE (SU) A. Refer to Tab. 108-30 in the C Sheets and Sheet J.1.

100-4A  
10-29-02

**ESTIMATE REFERENCE INFORMATION**

Item No.	Item Code	Description
93	2552-0000300	TRENCH COMPACTION TESTING
94	2554-0114012	WATER MAIN, TRENCHED, PVC, 12 IN.
95	2554-0134012	WATER MAIN WITH CASING PIPE, TRENCHED, PVC, 12 IN.
96	2554-0202200	FITTINGS BY COUNT, DUCTILE IRON, BEND, 12 IN., 11 1/4 DEGREE
97	2554-0202200	FITTINGS BY COUNT, DUCTILE IRON, BEND, 12 IN., 22 1/2 DEGREE
98	2554-0202200	FITTINGS BY COUNT, DUCTILE IRON, BEND, 12 IN., 90 DEGREE
99	2554-0202200	FITTINGS BY COUNT, DUCTILE IRON, REDUCER, 12 IN. X 12 IN.
100	2554-0202200	FITTINGS BY COUNT, DUCTILE IRON, TEE, 12 IN. X 12 IN.
101	2554-0202200	FITTINGS BY COUNT, DUCTILE IRON, TEE, 12 IN. X 6 IN.
102	2554-0207012	VALVE, GATE, DIP, 12 IN. A. Refer to Sheets U.1 thru U.4. B. Requires installation of underground warning tape. To be buried 12" deep directly above the water main for the entire length of pipe. Type: blue, 6" wide, polyethylene, with detectable metallic core for ease of locating buried pipe. Printed wording shall read "Caution Buried Water Line Below".
103	2599-9999005	REMOVE AND REINSTALL EXISTING FIRE HYDRANT ASSEMBLY A. Refer to Sheets U.1 thru U.4. B. Method of Measurement: Each existing fire hydrant assembly removed and relocated to the new water main will be counted. C. Basis of Payment: Payment will be the contract unit price for each fire hydrant assembly removed and relocated. Payment is full compensation for the fire hydrant, barrel extensions sufficient to achieve proper bury depth of anchoring pipe and height of fire hydrant above finished grade, and components to connect the fire hydrant to the water main, including anchoring pipe, fittings, thrust blocks, pea gravel or porous backfill material, and fire hydrant gate valve.
104	2599-9999009	REMOVAL OF EXISTING WATER MAIN AND FITTINGS A. Refer to Sheets U.1 thru U.4. B. Method of Measurement: Measurement for each type and size of pipe removed will be in linear feet (meters) from end to end. C. Basis of Payment: Payment will be at the contract unit price per linear foot (meter) for each type and size of pipe. Payment is full compensation for removal, disposal, and capping (if specified) of pipe.
105	2601-2634100	MULCHING A. Perform mulching according to Article 2601.03, E, 2, of the Standard Specifications. Anchor mulch into the soil using mulch anchoring equipment with a minimum of two passes. B. Item is included for areas requiring reshaping and seedbed preparation. Use mulch that is Certified Noxious Weed Seed Free Mulch as certified by the Iowa Crop Improvement Association or adjacent states Crop Improvement Associations. C. Mulch Rate: 1 1/2 tons of dry cereal straw or native grass straw per acre.
106	2601-2634105	MULCHING, BONDED FIBER MATRIX A. A Bonded Fiber Matrix shall be applied as the mulch for all areas designated as "Stabilizing Crop - Seeding and Fertilizing (Urban)". B. The seed and fertilizer for the area to be covered shall be applied before the Bonded Fiber Matrix Hydraulic Mulch application. C. Application rate shall be a minimum of 3000 lbs per acre.
107	2601-2636043	SEEDING AND FERTILIZING (RURAL) A. Seed and fertilize all areas 8 foot adjacent to the shoulder mainline, medians, and side according to Article 2601.03, C, 3, of the Standard Specifications. B. Use ground driven equipment.
108	2601-2636044	SEEDING AND FERTILIZING (URBAN) A. For all areas designated by the Engineer. B. Prepare seedbed, fertilize, and seed according to Article 2601.03, C, 4, of the Standard Specifications. ☐ C. Use ground driven equipment.
109	2601-2639010	SODDING A. Refer to Sheet E.13 for location. B. To be used as a sod letdown flume at the east end of Field of Dreams Way per Road Design Detail 6147.
110	2601-2640350	SPECIAL DITCH CONTROL, WOOD EXCELSIOR MAT A. Refer to Tab. 100-22 in the C Sheets. Refer to Standard Road Plan EC-101. B. Prepare seedbed according to Article 2601.03, B, 4, and install according to Article 2601.03, H, 2, of the Standard Specifications.
111	2601-2642100	STABILIZING CROP - SEEDING AND FERTILIZING A. Item is included for disturbed rural areas as directed by the Engineer. B. Prepare seedbed according to Article 2601.03, B, 4, of the Standard Specifications. C. Seed and fertilize all disturbed areas according to Article 2601.03, C, 1, of the Standard Specifications. D. Seed mixture shall be: Oats 50 lbs. per acre Grain Rye 50 lbs. per acre *Canada wildrye (Elymus canadensis) 5 lbs. PLS. per acre *Big bluestem (Andropogon gerardii) 3 lbs. PLS. per acre *Little bluestem (Schizachyrium scoparium) 3 lbs. PLS. per acre Side-oats grama (Bouteloua curtipendula) 3 lbs. PLS. per acre Switchgrass (Panicum virgatum) 1 lbs. PLS. per acre Partridge Pea (Chamaecrista fasciculata) 2 lbs. PLS. per acre  *Note: Canada wildrye, Big bluestem and Little bluestem shall be bearded or equal to facilitate the application of seed.

Sheet changed due to new rows added on C.3.

100-4A  
10-29-02

**ESTIMATE REFERENCE INFORMATION**

Item No.	Item Code	Description
		1. For stabilizing crop only, seed will not be required to be certified as Source Identified Class (Yellow Tag) Source 60-Iowa.
		2. Seed may be applied by broadcasting or with a Native Grass Drill.
		3. Broadcasted seed will require one complete rolling of the area seeded with a cultipacker with 24 hours after seeding and prior to mulching or hydromulching.
		4. Native Grass Drilled seed must meet Article 2601.03, A, 11, and be completed per Article 2601.03, C, 5 of the Standard Specifications prior to mulching or hydromulching.
		5. All seed shall be mixed off-site by a seed conditioner approved by the Iowa Crop Improvement or other state's Crop Improvement Association. Bags shall arrive on-site from seed conditioner sealed/unopened.
112	2601-2642120	<b>STABILIZING CROP - SEEDING AND FERTILIZING (URBAN)</b> A. Item is included for disturbed urban areas as directed by the Engineer. B. Seed and fertilize all disturbed areas according to Article 2601.03, C, 2, of the Standard Specifications.
113	2601-2643110	<b>WATERING FOR SOD, SPECIAL DITCH CONTROL, OR SLOPE PROTECTION</b> A. Estimate based on four waterings of the TRM at a rate of 50 gallons per square. B. The Contractor shall water the required areas no later than the day following placement of the TRM. If the Contractor fails to water by the second day following placement, a price adjustment will be assessed at a rate of \$200.00 per calendar day until the watering has been completed. C. Additional waterings will be required at intervals of 5 to 8 calendar days. Perform all waterings unless notified by the Engineer in writing at least 1 calendar day prior to the day the watering is to occur. If the Contractor fails to complete the watering before the 8th calendar day has elapsed, a price adjustment will be assessed at a rate of \$200.00 per calendar day, beginning on the 9th say, until the watering is completed.
114	2601-2643300	<b>MOBILIZATION FOR WATERING</b>
115	2601-2643412	<b>TURF REINFORCEMENT MAT, TYPE 2</b> A. Refer to Tab. 100-22 in the C Sheets. Refer to Standard Road Plan EC-101. B. Install according to Article 2601.03, H, 3, of the Standard Specifications. C. The seed and rate for the TRM application shall be as described in Table 2601.03-7: Ditches - Outside Shoulder Adjacent to Native Grass Seedings.
116	2602-0000020	<b>SILT FENCE</b> A. Refer to Tab. 100-17 in the C Sheets. B. The tabulation includes estimated locations for placement of "Silt Fence" to address erosion to be encountered during construction. C. Verify the specific locations with the Engineer prior to beginning placement. D. Bid item includes 25% additional quantity for field adjustments and replacements.
117	2602-0000030	<b>SILT FENCE FOR DITCH CHECKS</b> A. Refer to Tab 100-18 in the C Sheets. B. The tabulation includes estimated locations for placement of "Silt Fence for Ditch Checks" to address erosion to be encountered during construction. C. Verify the specific locations with the Engineer prior to beginning placement. D. Bid item includes 50% additional quantity for field adjustments and replacements.
118	2602-0000050	<b>SILT BASINS</b> A. Refer to Tab. 100-14 in the C Sheets for locations and details.
119	2602-0000071	<b>REMOVAL OF SILT FENCE OR SILT FENCE FOR DITCH CHECKS</b> A. This item is included for silt fence and silt fence for ditch check removal required for staging reasons, removal to allow for replacement (replacement to be paid separately), or for areas that have achieved 70% permanent growth.
120	2602-0000101	<b>MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECK</b> A. This item is included for clean-out and repair of the silt fence and silt fence for ditch checks during the grading project.
121	2602-0000312	<b>PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 12 IN. DIA.</b>
122	2602-0000320	<b>PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 20 IN. DIA.</b> A. This item is included for temporary perimeter sediment control, inlet protection, and water velocity reduction on slopes or ditches at locations to be determined during construction. Verify specific locations with the Engineer prior to beginning placement. B. Perimeter and Slope Sediment Control Devices will be required to be constructed out of wood excelsior.
123	2602-0000350	<b>REMOVAL OF PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE</b> A. This item is included for removal of Perimeter and Slope Sediment Control Devices. All material shall become the property of the Contractor and removed from the project within 24 hours.
124	2602-0010010	<b>MOBILIZATIONS, EROSION CONTROL</b>
125	2602-0010020	<b>MOBILIZATIONS, EMERGENCY EROSION CONTROL</b>

Standard Road Plan TC-451 added.  
Tabulation 103-4 added.

STANDARD ROAD PLANS		
The following Standard Road Plans apply to construction work on this project.		
Number	Date	Title
BA-200	10-18-11	Steel Beam Guardrail Components
BA-201	10-19-10	Steel Beam Guardrail Barrier Transition Section
BA-202	10-15-14	Steel Beam Guardrail Bolted End Anchor
BA-205	10-18-11	Steel Beam Guardrail End Terminal
BA-250	10-21-14	Steel Beam Guardrail Installation at Concrete Barrier or Bridge End Post
BA-351	04-20-10	High Tension Cable Guardrail
BA-401	04-16-13	Temporary Barrier Rail (Precast Concrete)
BA-500	04-20-10	Temporary Crash Cushions Sand Barrel
DR-101	04-21-15	Pipe Culvert (Bedding and Backfill)
DR-102	04-21-15	Pipe Culvert (Cover and Camber)
DR-103	04-21-15	Pipe Culvert (Installation Details)
DR-104	04-21-15	Depth of Cover Tables for Concrete and Corrugated Pipe
DR-121	04-21-15	Connected Pipe Joints
DR-122	04-21-15	Construction of Type "C" Concrete Adaptors for Pipe Culvert Connections
DR-141	04-21-15	Pipe Bends and Half Pipe
DR-201	04-21-15	Concrete Aprons
DR-203	04-21-15	Metal Pipe Aprons and Beveled Ends
DR-205	04-21-15	Concrete Apron with End Wall
DR-212	04-21-15	Beveled Pipe and Guard
DR-213	04-21-15	Pipe Apron Guard
DR-303	04-21-15	Subdrains (Longitudinal)
DR-304	04-21-15	Outlets for Longitudinal, Transverse and Backslope Subdrains
DR-401	04-21-15	Scour Protection for Bridge End Drain
DR-501	04-21-15	Corrugated Metal Type "A" Diaphragm
DR-502	04-21-15	Slotted Drain for Median Crossovers
DR-601	04-21-15	Reinforced Concrete Pipe Culvert
DR-611	04-21-15	Reinforced Concrete Pipe Culvert Letdown Structure
DR-621	04-21-15	Pipe Extension
DR-651	04-21-15	Unclassified Pipe Culvert
DR-652	04-21-15	Unclassified Letdown Structure Single Elbow
EC-101	04-21-15	Wood Excelsior Mat for Ditch Protection
EC-201	04-21-15	Silt Fence
EC-204	04-21-15	Perimeter and Slope Sediment Control Devices
EW-101	04-19-11	Embankment and Rebuilding Embankments
EW-102	10-21-14	Allowable Placement of Unsuitable Soil in Embankments
EW-103	10-15-13	Embankment Subgrade Treatment, Moisture Density Control and Special Compaction
EW-203	04-21-15	Bridge Berm Grading with Recoverable Slope (Non-Barnroof Section)
EW-301	04-19-11	Guardrail Grading
EW-302	10-15-13	Special Shaping for High Tension Cable Guardrail at Median Obstacles
EW-403	10-15-13	Temporary Erosion Control Measures
EW-501	10-15-13	Rural Entrance
EW-503	04-15-14	Side Road Grading
LI-101	10-21-14	Light Pole Location
LI-103	10-21-14	Conduit and Precast Handholes
LI-141	10-21-14	Electrical Installation (Roadway Ducts)
LI-142	04-21-15	Electrical Installation (Bases)
LI-152	10-21-14	Control Cabinet (Psd-Mounted)
LI-201	10-21-14	Light Pole Foundation
LI-211	10-21-14	Slip-Base for Light Poles
MI-210	10-15-13	PCC Driveways and Alleys
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-310	04-16-13	Entrance and Exit Ramps
PM-520	04-19-11	Two-Lane Roadway with no Turn Lanes (Two-Way Stop Condition)
PM-521	04-19-11	Two-Lane Roadway with Right Turn Lanes
PM-550	04-19-11	Two-Lane Roadway with Two-Way Left Turn Lane
PV-101	04-21-15	Joints
PV-102	04-15-14	PCC Curb Details
PV-303	04-19-11	Superelevation Details Ramps
PV-410	10-18-11	Deceleration Taper for 16' Exit Ramp
PV-411	10-18-11	Acceleration Taper for 16' Entrance Ramp
PV-500	04-21-15	Median Crossover (50' Median)
SI-173	04-20-10	Object Markers
SI-181	10-18-11	Permanent Road Closure - Rural
SI-182	10-18-11	Permanent Road Closure - Urban
SI-211	10-19-10	Object Marker and Delineator Placement with Guardrail
SI-881	10-15-13	Special Signs for Workzones
SW-101	04-21-09	Trench Bedding and Backfill Zones
SW-102	04-21-09	Rigid Gravity Pipe Trench Bedding
SW-104	04-21-09	Pressure Pipe Trench Bedding
SW-202	04-21-09	Sewage Air Release Valve Pit
SW-211	10-16-12	Special Pipe Connections for Storm Sewer
SW-401	04-21-09	Circular Storm Sewer Manhole
SW-501	10-16-12	Single Grate Intake
SW-505	10-16-12	Double Grate Intake
SW-511	04-21-09	Rectangular Area Intake
SW-514	04-21-09	Boxouts for Grate Intakes
SW-602	04-21-15	Castings for Storm Sewer Manholes
SW-603	10-15-13	Castings for Grate Intakes
SW-604	10-20-09	Castings for Area Intakes
TC-1	04-16-13	Work Not Affecting Traffic (Two-Lane or Multi-Lane)
TC-61	04-21-15	Two-Lane, Two-way Operation
TC-202	04-21-15	Work Within 15 ft of Traveled Way
TC-251	04-17-12	Temporary Road Closure

105-4  
10-18-11

STANDARD ROAD PLANS		
The following Standard Road Plans apply to construction work on this project.		
Number	Date	Title
TC-252	04-21-15	Routes Closed to Traffic
TC-402	04-21-15	Work Within 15 ft of Traveled Way
TC-417	04-16-13	Ramp Closure
TC-418	10-15-13	Lane Closure on Divided Highway
TC-421	10-21-14	Lane Closure with TBR
TC-451	04-21-15	Temporary Road Closure on Divided Highway
TC-454	10-16-12	Temporary Detour Using Ramps on Divided Highway
WM-101	04-21-09	Thrust Blocks
WM-102	04-21-09	Tracer System
WM-201	04-19-11	Fire Hydrant Assembly

INDEX OF TABULATIONS		
Tabulation	Tabulation Title	Sheet No.
<b>C Sheets</b>		
100-1C	ESTIMATED PROJECT QUANTITIES (UP TO A 5 DIVISION PROJECT)	C.1 - C.2
100-1D	PROJECT DESCRIPTION	C.1
100-4A	ESTIMATE REFERENCE INFORMATION	C.3 - C.5
100-14	SILT BASINS	C.8
100-17	TABULATION OF SILT FENCES	C.14
100-18	TABULATION OF SILT FENCES FOR DITCH CHECKS	C.14
100-22	SPECIAL DITCH CONTROL AND SLOPE PROTECTION	C.8
100-23	ROCK DITCH CHECKS/DITCHES/FLUMES/SPLASH BASINS/SLOPE PROTECTION	C.8
100-24	PCC PAVEMENT	C.11
100-27	PAVEMENT SMOOTHNESS + PCC TEXTURE	C.11
102-3	ACCESS POINTS AND SAFETY RAMPS	C.12
102-4	LOCATIONS OF ROAD CLOSURE BARRICADES	C.15
102-5	EXISTING PAVEMENT	C.10
103-4	TABULATION OF SPREADING TOPSOIL	C.13
104-3	DRAINAGE STRUCTURE BY ROAD CONTRACTOR	C.9
104-9	LONGITUDINAL SUBDRAIN SHOULDER AND BACKSLOPE	C.9
105-4	STANDARD ROAD PLANS	C.6
107-23	GRADING FOR GUARDRAIL INSTALLATIONS	C.13
107-24	GRADING FOR HIGH TENSION CABLE GUARDRAIL INSTALLATIONS	C.13
108-8A	STEEL BEAM GUARDRAIL AT CONCRETE BARRIER OR BRIDGE RAIL END SECTION	C.13
108-9A	HIGH TENSION CABLE GUARDRAIL	C.13
108-13A	SAFETY CLOSURES	C.15
108-22	PAVEMENT MARKING LINE TYPES	C.16 - C.17
108-27	TEMPORARY FLOODLIGHTING LUMINAIRES	C.15
108-29	PAVEMENT MARKING SYMBOLS AND LEGENDS	C.10
108-30	CRASH CUSHIONS	C.15
108-33	TEMPORARY BARRIER RAIL	C.15
108-35	TEMPORARY LANE SEPARATOR SYSTEM	C.15
110-1	REMOVAL OF PAVEMENT	C.10
110-2	REMOVAL OF EXISTING STRUCTURES	C.10
110-8	REMOVAL OF CONCRETE DRIVES	C.10
110-12A	POLLUTION PREVENTION PLAN	C.7
110-14	SANITARY OR STORM SEWER ABANDONMENT OR REMOVAL	C.10
110-15	REMOVAL OF INTAKES AND UTILITY ACCESSES	C.10
111-25	INDEX OF TABULATIONS	C.6
112-4	CURBS AND RAISED ISLANDS	C.11
112-8	MEDIAN CROSSOVERS	C.15
112-9	SHOULDERS	C.12
213-3	SUBSOIL TILLAGE	C.8
213-4	TOPSOIL ON HAUL ROAD	C.8
232-10	EMERALD ASH BORER	C.8
252-1	TEMPORARY CROSSINGS AND DETOURS	C.8
253-1	MEDIAN CROSSOVER	C.8
254-1	INCIDENT MANAGEMENT	C.8
262-5	UTILITIES (POINT 25 PROJECT)	C.8
263-1	UTILITIES (SANITARY SEWER, WATER MAIN, AND APPURTENANCES)	C.8
<b>CS Sheets</b>		
103-6	EMBANKMENT WITH MOISTURE CONTROL	CS.1
103-7	SHRINKAGE DATA	CS.1
104-9	LONGITUDINAL SUBDRAIN SHOULDER AND BACKSLOPE	CS.1 - CS.2
107-31	PLOWING AND SHAPING	CS.1
<b>G Sheets</b>		
101-16	ALIGNMENT COORDINATES	G.4
101-17	SPIRAL OR CIRCULAR CURVE DATA	G.5
101-18	SUPERELEVATION DATA	G.6
<b>J Sheets</b>		
108-23A	TRAFFIC CONTROL PLAN	J.1
108-26A	STAGING NOTES	J.1
111-01	COORDINATED OPERATIONS	J.1
<b>M Sheets</b>		
104-5B	STORM SEWER	M.1
<b>P Sheets</b>		
100-1A	ESTIMATED LIGHTING QUANTITIES (1 DIVISION PROJECT)	P.1
100-4A	ESTIMATE REFERENCE INFORMATION	P.1
108-1	LIGHTING INSTALLATIONS	P.1
108-2	ELECTRICAL DUCTS	P.1
108-11A	HIGHWAY LIGHTING DATA	P.1
108-12	WIRE, CABLE AND CONNECTORS	P.1

105-4  
10-18-11

111-25  
10-18-11

**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 145, 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			Quantities														Remarks							
		Station to Station	Side	P Width FT	G Width FT	L Length FT	Class 13 Excavation CY ②	Hot Mix Asphalt		Binder TONS	Paved Shoulder SY ②	Reinforced Paved Shoulder SY ②	Special Backfill				Modified Subbase CY ②	Granular Shoulder		Earth Shoulder Construction Alternates						
								TON	TON/STA				HMA Alternate		PCC Alternate			TON		TON/STA	STA ②	HMA CY ④	PCC CY ④			
													CY ②	CY/STA	CY ②	CY/STA										
US 20	EB	1039+98.04	1077+25.00	L	4.0	2.0	3727.0	574.2	15.4	34.5	1656.4	1463.2	39.3				555.7	14.9	37.3	2559.2						
US 20	EB	1039+98.04	1045+79.51	R	4.0	4.0	581.5	89.6	15.4	5.4	1656.4	281.7	48.4				205.5	35.4	37.3	398.4						
US 20	EB	1045+79.51	1050+50.00	R		6.0	470.5					182.6	38.8				138.3	29.4	4.7	289.4						
US 20	EB	1050+50.00	1062+73.29	R	4.0	4.0	1223.3	188.5	15.4	11.3	543.7	592.6	48.4				432.4	35.4	12.2	838.2						
US 20	EB	1062+73.29	1064+51.57	R	15.0		178.3					87.6	49.1							1.8					10.5" PCC Paved Shld	
US 20	EB	1064+51.57	1075+39.92	R	4.0	4.0	1088.3	167.7	15.4	10.1	483.7	527.2	48.4				384.7	35.4	10.9	745.7						
US 20	EB	1077+69.92	1085+69.94	R		6.0	800.0					310.5	38.8				235.2	29.4	8.0	492.2						
US 20	EB	1085+69.94	1087+69.92	R	4 to 2	2 to 6	200.0	30.8	15.4	1.8	66.7	96.9	48.4				70.7	35.4	2.0	137.0						
US 20	WB	1039+98.04	1077+25.00	L	4.0	2.0	3727.0	574.2	15.4	34.5	1656.4	1463.2	39.3				555.7	14.9	37.3	2559.2						
US 20	WB	1039+98.04	1041+97.94	R	2 to 4	6 to 2	199.9	30.8	15.4	1.8	66.6	96.8	48.4				70.7	35.4	2.0	137.0						
US 20	WB	1041+97.94	1049+98.04	R		6.0	800.1					310.6	38.8				235.2	29.4	8.0	492.2						
US 20	WB	1052+28.04	1063+27.86	R	4.0	4.0	1099.8	169.4	15.4	10.2	488.8	532.8	48.4				388.8	35.4	11.0	753.6					10.5" PCC Paved Shld	
US 20	WB	1063+27.86	1065+06.14	R	15.0		178.3					107.4	60.2							1.8						
US 20	WB	1065+06.14	1077+25.00	R	4.0	4.0	1218.9	187.8	15.4	11.3	541.7	590.5	48.4				430.9	35.4	12.2	835.1						
US 20	WB	1077+25.00	1081+95.22	R		6.0	470.2					182.5	38.8				138.2	29.4	4.7	289.3						
US 20	WB	1081+95.22	1083+25.00	R	4 to 2	2 to 6	129.8	20.0	15.4	1.2	43.3	62.9	48.4				45.9	35.4	1.3	88.9						
Ramp A	WB	2065+44.21	2077+25.00	R		6.0	1180.8					60.1					153.1	686.0	58.1	11.8					474.5	
Ramp A	WB	2065+44.21	2077+25.00	L		4.0	1180.8										153.1	413.3	35.0	11.8					494.2	
Ramp B	EB	3050+50.00	3062+35.22	R		6.0	1185.2										153.6	686.6	58.1	11.9					476.3	
Ramp B	EB	3050+50.00	3061+95.21	L		4.0	1145.2										148.5	400.8	35.0	11.5					479.3	
Ramp C	WB	4049+98.04	4065+85.11	R		6.0	1587.1										205.7	922.1	58.1	15.9					637.8	
Ramp C	WB	4052+26.70	4064+18.66	L		4.0	1192.0										154.5	417.2	35.0	11.9					498.9	
Ramp C	WB	4064+18.66	4065+85.11	L	2.0	2.0	166.5										21.6	36.8	22.1	1.7	69.7					
Ramp D	EB	5061+94.60	5077+69.92	R		6.0	1575.3										204.2	915.3	58.1	15.8					633.0	
Ramp D	EB	5061+94.60	5063+61.06	L	2.0	2.0	166.5										21.6	36.8	22.1	1.7	69.7					
Ramp D	EB	5063+61.06	5075+41.26	L		4.0	1180.2										153.0	413.1	35.0	11.8					493.9	
330th Avenue	NB	11037+07.02	11059+90.41	R		8.0	2283.4											943.0	41.3	22.8						699.4
330th Avenue	NB	11059+90.41	11062+33.26	R	2.0	6.0	242.9		19.8	8.2	1.2	54.0					66.6	27.4								
330th Avenue	SB	11037+07.02	11059+90.41	L		8.0	2283.4											775.5	34.0							
330th Avenue	SB	11059+90.41	11062+13.26	L	2.0	6.0	222.9		18.2	8.2	1.1	49.5					61.2	27.4								
332nd Avenue	NB	11065+66.17	11067+90.41	R	2.0	6.0	224.2		18.3	8.2	1.1	49.8					61.5	27.4								
332nd Avenue	NB	11067+90.41	11080+50.00	R		8.0	1259.6											427.8	34.0							385.8
332nd Avenue	NB	11080+50.00	11081+38.31	R		8 to 2	88.3											30.0	34.0							27.0
332nd Avenue	SB	11065+66.17	11067+90.41	L	2.0	6.0	244.2		19.9	8.2	1.2	54.3					67.0	27.4								
332nd Avenue	SB	11067+90.41	11081+95.52	L		8.0	1405.1											477.2	34.0							430.4
332nd Avenue	SB	11081+95.52	11082+51.85	L		8 to 2	56.3											19.1	34.0							17.3
Industrial Pkwy	WB	21049+14.47	21053+69.86	L		8.0	455.4											154.7	34.0							139.5
221st Street	WB	31053+93.86	31094+91.50	R		4.0	4097.6											796.8	19.4							1350.7
221st Street	WB	31053+93.86	31094+91.50	L		4.0	4097.6											796.8	19.4							1350.7
Field of Dreams	EB	51086+40.40	51087+03.52	R		0 to 5	63.1											10.8	17.0							19.3

**ACCESS POINTS AND SAFETY RAMPS**

Refer to Cross-Sections

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

- ① Refer to ME-210
- ② Refer to EW-501
- ③ Refer to EW-501 or EW-502

\*Predetermined for access point not constructed with this project.

Station	Side	Type A, B, C, Safety Ramp, or Predetermined*	Length of Opening ①			W FT	PR FT	SR FT	Pipe Culvert ③					Aprons No.	Driveway Surface Area		Driveway Surfacing Material TON	Remarks
			Case 1 or 2	17" Dropped Curb LF	3" Dropped Curb LF				H FT	Size IN	Pipe Length LF	Lt. LF	Rt. LF		HMA SY	PCC SY		
11037+42.00	RT	C				20.0		20.0									13.000	
11037+42.00	LT	C				16.0		20.0									12.000	
11042+20.00	LT	B				45.0	50.0										798.9	
11078+88.00	LT	C				30.0		15.0									40.000	
11080+15.00	LT	C				20.0	10.0										75.9	
11080+86.00	LT	C				20.0		10.0									17.000	
31072+00.00	RT	C				20.0		15.0	3.0	18.0	62.0	30.7	43.5	2			20.000	
31089+60.00	RT	C				20.0		15.0	3.0	18.0	58.0	29.9	40.3	2			20.000	
41060+50.00	LT	C				20.0		15.0									16.000	
51086+50.00	LT	B				2-7	25.0										40.0	
60001+92.00	RT	C				16.0		10.0	1.0	18.0	128.0	82.3	45.7	2			9.000	
60002+02.00	LT	C				16.0		10.0	1.0	18.0	109.0	42.3	66.7	2			7.000	

Entrance locations on 221st Street updated.









104-9  
04-21-15

**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.	Road or Lane Ident.	Location Station to Station		Side	Depth ②	Longitudinal Subdrain (DR-303)						Subdrain Outlet		Porous* Backfill CY	Class "A" Crushed Stone CY	Remarks	
						Shoulder		Backslope		Bridge Berm ①		DR-303, DR-304, or DR-305	Station				Standard Road Plan and Type
						Size	Length	Size	Length	Size	Type						
						IN	FT	IN	FT	IN	FT						
1	US 20 WBL	1040+00.00	1045+00.00	LT	36.0	4.0	540.0					1040+00.00 DR-304	41.7	0.2			
3	US 20 WBL	1045+00.00	1050+00.00	LT	36.0	4.0	540.0					1045+00.00 DR-304	41.7	0.2			
4	US 20 WBL	1050+00.00	1054+00.00	LT	36.0	4.0	440.0					1050+00.00 DR-304	34.0	0.2			
5	US 20 WBL	1054+00.00	1058+00.00	LT	36.0	4.0	440.0					1054+00.00 DR-304	34.0	0.2			
6	US 20 WBL	1058+00.00	1062+00.00	LT	24.0	4.0	440.0					1058+00.00 DR-304	20.4	0.2			
7	US 20 WBL	1062+00.00	1065+50.00	LT	24.0	4.0	390.0					1062+00.00 DR-304	18.1	0.2			
8	US 20 WBL	1065+50.00	1069+50.00	LT	36.0	4.0	440.0					1065+50.00 DR-304	34.0	0.2			
9	US 20 WBL	1069+50.00	1074+00.00	LT	36.0	4.0	490.0					1069+50.00 DR-304	37.8	0.2			
10	US 20 WBL	1074+00.00	1079+00.00	LT	36.0	4.0	540.0					1074+00.00 DR-304	41.7	0.2			
11	US 20 WBL	1079+00.00	1082+50.00	LT	36.0	4.0	390.0					1079+00.00 DR-304	30.1	0.2			
12	US 20 EBL	1040+00.00	1043+50.00	RT	42.0	4.0	390.0					1040+00.00 DR-304	36.1	0.2			
13	US 20 EBL	1043+50.00	1048+00.00	RT	42.0	4.0	490.0					1043+50.00 DR-304	45.4	0.2			
14	US 20 EBL	1048+00.00	1052+00.00	RT	36.0	4.0	440.0					1048+00.00 DR-304	34.0	0.2			
15	US 20 EBL	1052+00.00	1055+50.00	RT	36.0	4.0	390.0					1052+00.00 DR-304	30.1	0.2			
16	US 20 EBL	1055+50.00	1057+00.00	RT	36.0	4.0	190.0					1055+50.00 DR-304	14.7	0.2			
17	US 20 EBL	1057+00.00	1062+00.00	RT	24.0	4.0	540.0					1057+00.00 DR-304	25.0	0.2			
18	US 20 EBL	1062+00.00	1065+50.00	RT	24.0	4.0	390.0					1062+00.00 DR-304	18.1	0.2			
19	US 20 EBL	1065+50.00	1070+50.00	RT	36.0	4.0	540.0					1065+50.00 DR-304	41.7	0.2			
20	US 20 EBL	1070+50.00	1075+25.00	RT	36.0	4.0	515.0					1070+50.00 DR-304	39.7	0.2			
21	US 20 EBL	1077+70.00	1082+00.00	RT	42.0	4.0	470.0					1077+70.00 DR-304	43.5	0.2			
22	US 20 EBL	1082+00.00	1085+00.00	RT	42.0	4.0	340.0					1082+00.00 DR-304	31.5	0.2			
23	US 20 EBL	1085+00.00	1087+65.00	RT	42.0	4.0	305.0					1085+00.00 DR-304	28.2	0.2			
24	US 20 EBL	1087+75.00	1087+75.00	RT	48.0	4.0	20.0					1087+75.00 DR-304	2.2	0.2	OUTLET EXT. SEE NOTE 1		
25	330TH/332ND	11060+80.00	11062+25.00	RT	36.0	4.0	185.0					11060+80.00 DR-304	14.3	0.2			
26	330TH/332ND	11065+40.00	11067+50.00	RT	36.0	4.0	250.0					11065+40.00 DR-304	19.3	0.2			
27	330TH/332ND	11060+30.00	11062+25.00	LT	36.0	4.0	235.0					11060+30.00 DR-304	18.1	0.2			
28	330TH/332ND	11065+40.00	11067+20.00	LT	36.0	4.0	220.0					11065+40.00 DR-304	17.0	0.2			
29	RAMP A	2065+45.00	2069+25.00	LT	36.0	4.0	420.0					2065+45.00 DR-304	32.4	0.2			
30	RAMP A	2069+25.00	2074+00.00	LT	36.0	4.0	515.0					2069+25.00 DR-304	39.7	0.2			
31	RAMP A	2074+00.00	2077+25.00	LT	30.0	4.0	365.0					2074+00.00 DR-304	22.5	0.2			
32	RAMP B	3050+50.00	3055+00.00	RT	36.0	4.0	490.0					3050+50.00 DR-304	37.8	0.2			
33	RAMP B	3055+00.00	3058+58.00	RT	36.0	4.0	398.0					3055+00.00 DR-304	30.7	0.2			
34	RAMP B	3058+58.00	3062+25.00	RT	36.0	4.0	407.0					3058+58.00 DR-304	31.4	0.2			
35	RAMP C	4050+00.00	4055+00.00	LT	36.0	4.0	540.0					4050+00.00 DR-304	41.7	0.2			
36	RAMP C	4055+00.00	4060+00.00	LT	36.0	4.0	540.0					4055+00.00 DR-304	41.7	0.2			
37	RAMP C	4060+00.00	4064+50.00	RT	36.0	4.0	490.0					4060+00.00 DR-304	37.8	0.2			
38	RAMP C	4064+25.00	4065+85.00	LT	36.0	4.0	200.0					4064+25.00 DR-304	15.4	0.2			
39	RAMP D	5062+00.00	5064+00.00	RT	36.0	4.0	240.0					5062+00.00 DR-304	18.5	0.2			
40	RAMP D	5063+00.00	5066+00.00	LT	36.0	4.0	340.0					5063+00.00 DR-304	26.2	0.2			

103-7  
08-01-08

**SHRINKAGE DATA**

Material	%	Remarks
TOPSOIL	40%	SHRINKAGE
CLASS 10	30%	SHRINKAGE
BROKEN/WEATHERED ROCK	0%	SWELL
ROCK	10%	SWELL
BOULDERS	200 CY (Est.)	NOTE: BOULDER ESTIMATE IS FOR CLASS 12 BOULDER EXCAVATION IN THE OVERBURDEN SOIL ONLY AND IS A SEPARATE QUANTITY FROM CLASS 12 ROCK EXCAVATION.

103-6  
04-19-11

**EMBANKMENT WITH MOISTURE CONTROL**

Moisture content shall be within the limits of minus 2 and plus 2 percentage points of Optimum Moisture Content for maximum density within the area described and listed below.

Moisture Control is required for all Class 10 fill placed in all locations and depths. Stability berms placed outside the normal foreslope template and topsoil will not require Moisture Control.

107-31  
04-19-11

**PLOWING AND SHAPING**

Refer to Standard Road Plan EW-101

Station to Station	D	Remarks	
		FT	
1048+00.00	1052+25.00	2.0	US 20 WBL
1077+25.00	1081+00.00	2.0	US 20 WBL
1048+00.00	1050+50.00	2.0	US 20 EBL
41054+00.00	41055+00.00	4.0	218TH
11037+07.02	11039+25.00	2.0	330TH/332ND
11079+25.00	11080+00.00	4.0	330TH/332ND
11080+00.00	11080+25.00	Varies	(4.0ft to 2.0ft) 330TH/332ND
11080+25.00	11082+51.85	2.0	330TH/332ND


SLIVER FILL  
MODIFIED

**SPECIAL ATTENTION (SLIVER FILL)**

Special attention should be given to Section 2107.03.C of the Standard Specifications on this project.

**GEOTECHNICAL DESIGN**

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

 Signature: *Roch S. V. Player* 3/2/2015 Date

**ROCH S. V. PLAYER**  
21582

Printed or Typed Name: **ROCH S. V. PLAYER**  
By license renewal date is December 31, 20 16

Pages or sheets covered by this seal: CS-1-CS-2, Q-1-Q-24

Typed name added for geotechnical design seal. Added Braun Intertec to design team.

**LONGITUDINAL SUBDRAIN SHOULDER AND BACKSLOPE**

Refer to Soils Sheets

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

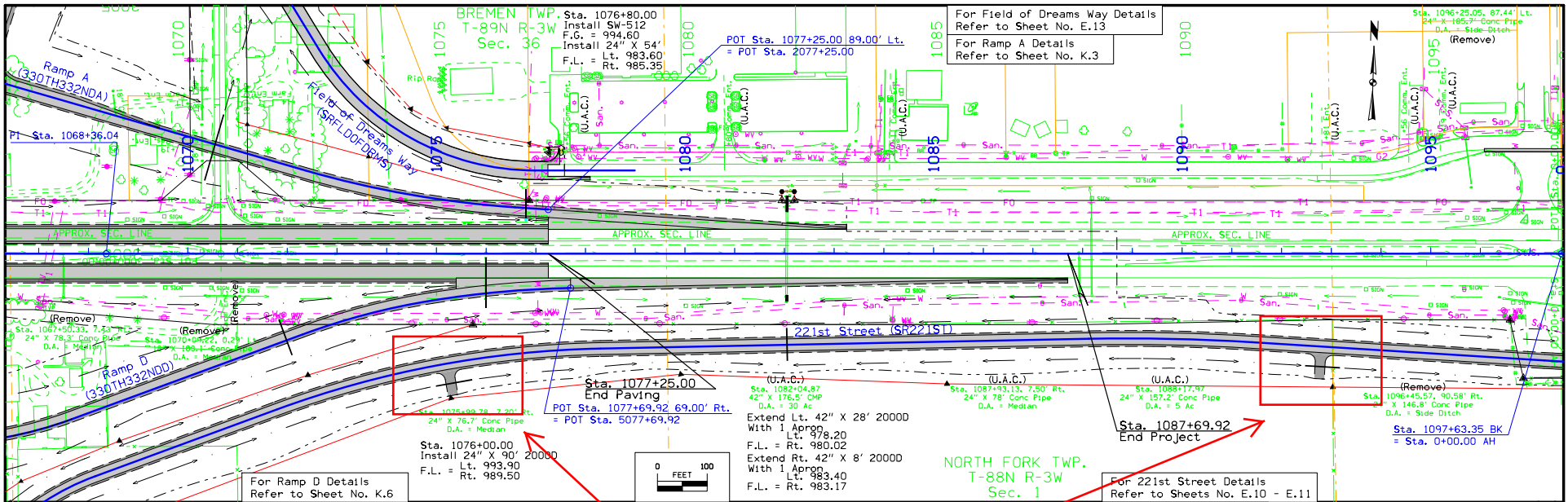
Line No.	Road or Lane Ident.	Location		Side	Depth D IN	Longitudinal Subdrain (DR-303)						Subdrain Outlet		Porous* Backfill CY	Class "A" Crushed Stone CY	Remarks		
		Station to Station				Shoulder		Backslope		Bridge Berm Ⓢ		DR-303, DR-304, or DR-305	Station				Standard Road Plan and Type	
		IN	FT			Size	Length	Size	Length	Size	Type							Length
41	RAMP D	5066+00.00	5070+00.00	LT	24.0	4.0	440.0						5066+00.00 5070+00.00	DR-304 DR-304	20.4	0.2		
42	RAMP D	5070+00.00	5074+00.00	RT	24.0	4.0	440.0						5070+00.00 5074+00.00	DR-304 DR-304	20.4	0.2		
43	RAMP D	5074+00.00	5077+50.00	RT	36.0	4.0	390.0						5074+00.00 5077+50.00	DR-304 DR-304	30.1	0.2		
<b>Totals</b>							16775.0								83	1239.1	8.4	

NOTE: ALL LONGITUDINAL SUBDRAINS ARE TYPE 7A OR 7B (DEPENDING ON TYPE OF SHOULDER) WITH PCC UNLESS OTHERWISE NOTED IN REMARKS COLUMN.

NOTE: RECORDS INDICATE THAT LONGITUDINAL SUBDRAINS EXIST WITHIN THE PROJECT AREA. INSTALL EXTENSIONS ON OUTLETS TABULATED ABOVE AND MAKE OTHER ADJUSTMENTS AS NECESSARY, AS COORDINATED AND APPROVED BY THE ENGINEER.

NOTE: IF ADDITIONAL LONGITUDINAL SUBDRAINS AND/OR OUTLETS OTHER THAN THOSE TABBED ABOVE ARE ENCOUNTERED, THOSE EXISTING LONGITUDINAL SUBDRAINS AND OUTLETS SHALL REMAIN FUNCTIONAL (ESTABLISH A CLEAN CONTACT BETWEEN EXISTING TRENCH AND SPECIAL BACKFILL TREATMENT/SUBBASE) AND EXTENSIONS INSTALLED IF NECESSARY.

Added Braun Intertec to design team.

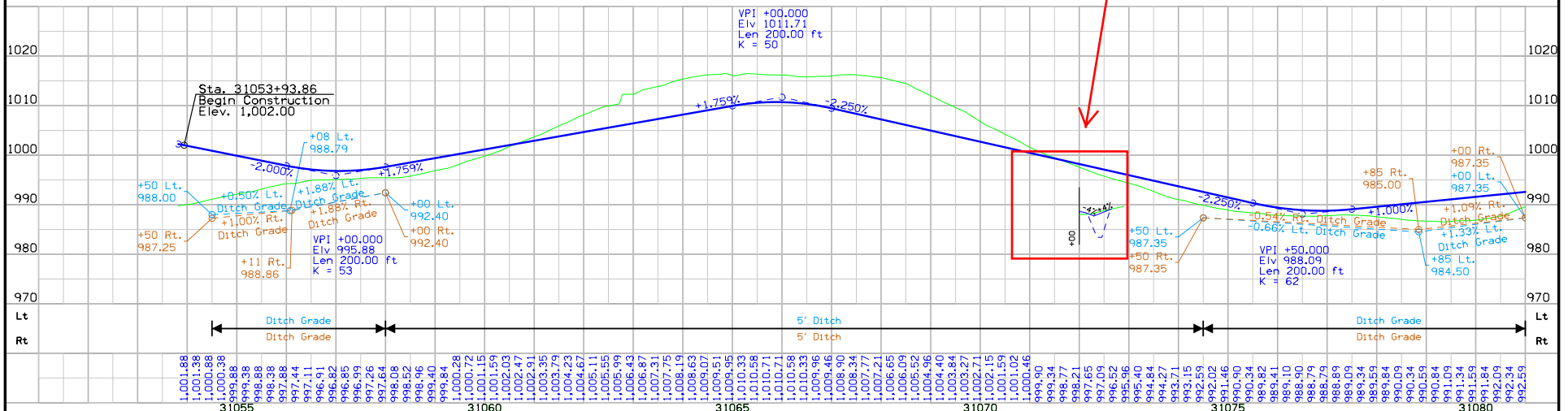
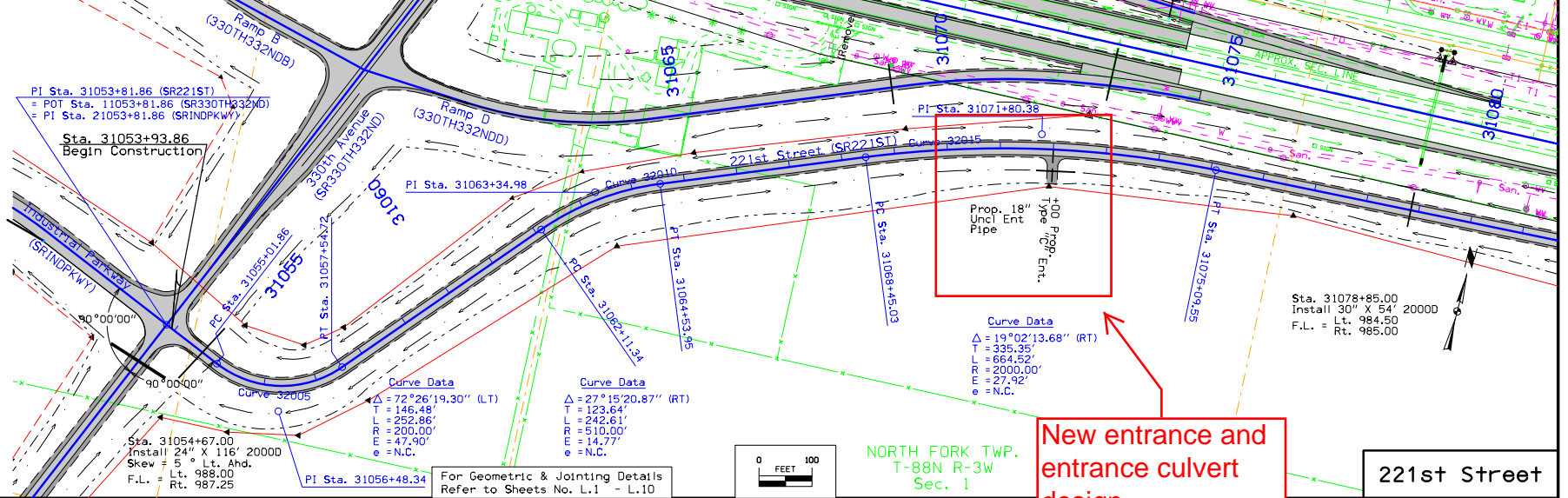


**New locations for entrances on 221st Street shown.**

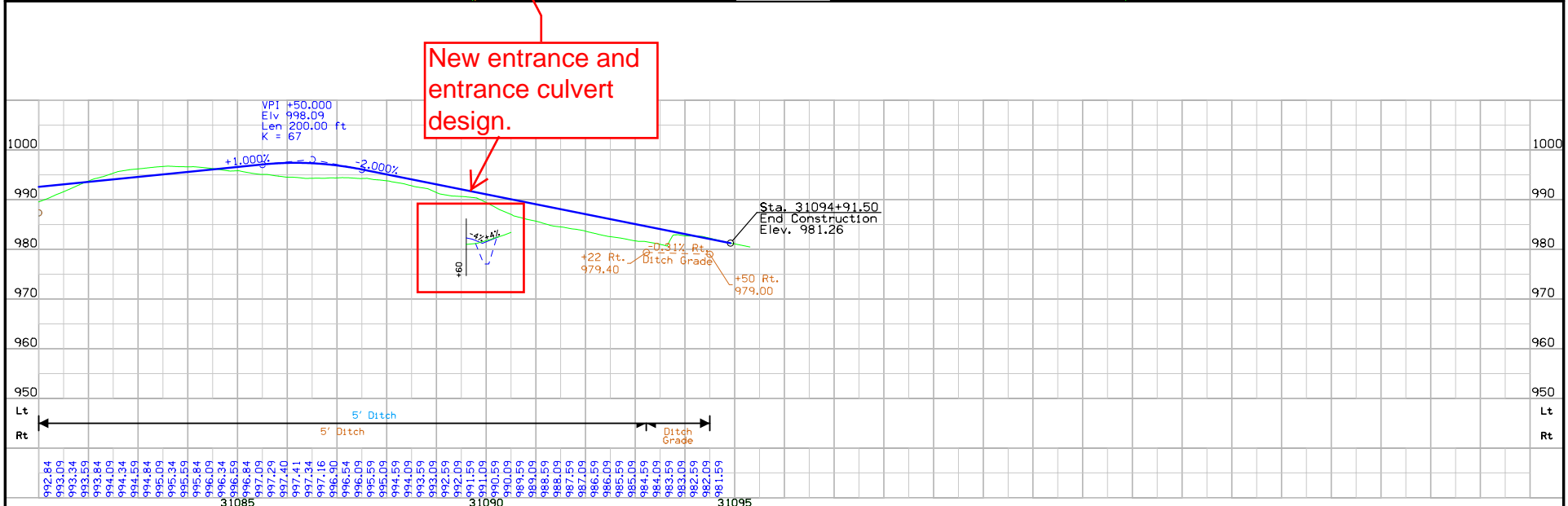
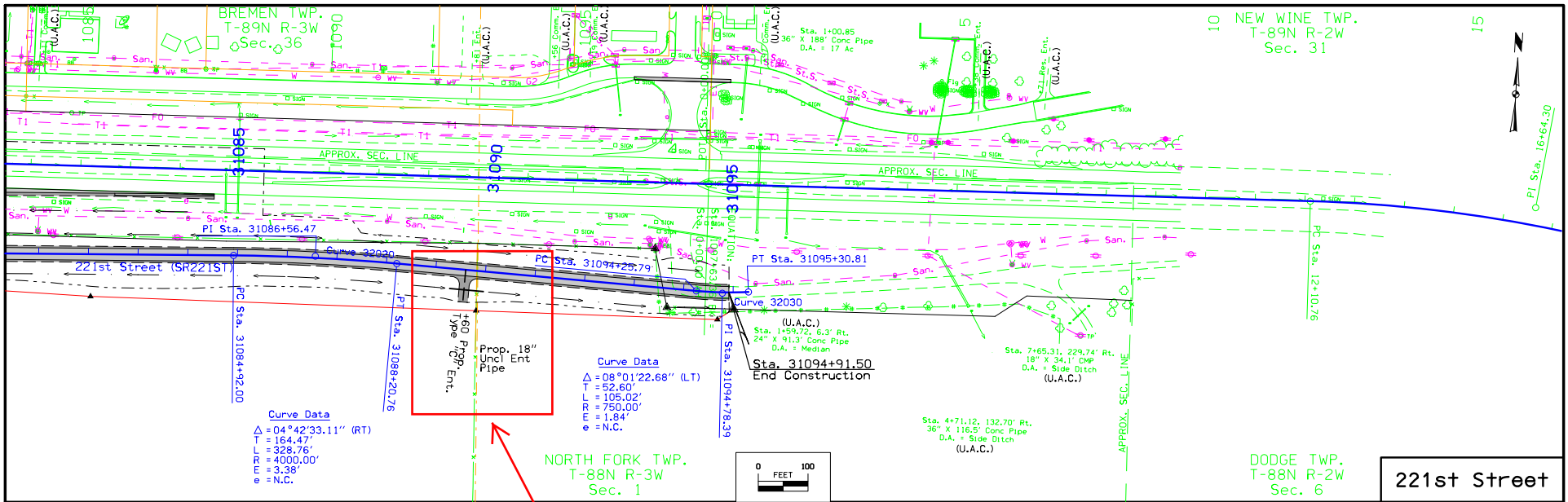


FILE NO.	ENGLISH	DESIGN TEAM	STANLEY CONSULTANTS INC.	DELAWARE/DUBUQUE COUNTY	PROJECT NUMBER	NHSX-020-9(203)-3H-28	SHEET NUMBER	D.3
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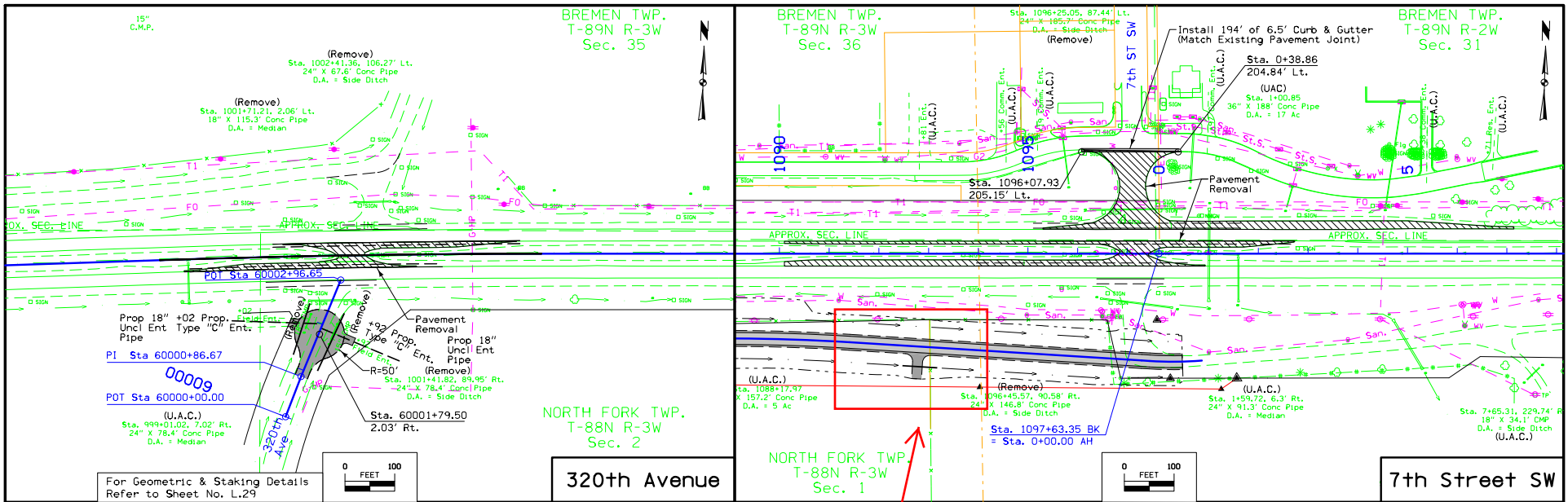
For Industrial Parkway Details Refer to Sheet No. E.9 | For Ramp B Details Refer to Sheet No. K.4 | For Side Road Details Refer to Sheets No. E.3 - E.6 | For Ramp D Details Refer to Sheet No. K.6 | For Main Line Details Refer to Sheets No. D.2 - D.4



FILE NO.	ENGLISH	DESIGN TEAM	Stanley Consultants Inc.	DELAWARE/DUBUQUE COUNTY	PROJECT NUMBER	NHSX-020-9(203)--3H-28	SHEET NUMBER	E.10
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FILE NO.	ENGLISH	DESIGN TEAM	Stanley Consultants Inc.	DELAWARE/DUBUQUE COUNTY	PROJECT NUMBER	NHSX-020-9(203)-3H-28	SHEET NUMBER	E.11
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New entrance location shown.



108-23A  
08-01-08

### TRAFFIC CONTROL PLAN

US 20  
At all times, at least one lane of traffic shall be maintained on US 20 in each direction. During winter shutdown, November 20th - April 1st each year, two lanes of traffic shall be maintained on US 20 in each direction with the same profile in both directions.

**Stage 1C/Stage 2**  
Closure of US 20 will be allowed each day, Monday through Thursday, from 9:00 am to 2:30 pm for production blasting.

**Stage 3**  
For EB and WB traffic the Contractor will be allowed to close US 20 with use of the proposed 330th Ave./332 Ave. interchange ramps as a detour for placement of bridge beams. The ramps shall be paved before being used as a detour.

330th AVENUE  
330th Avenue will be closed at US 20 until the new interchange is open to traffic.

332nd AVENUE  
332nd Avenue will be closed at US 20 until the new interchange is open to traffic.

320th AVENUE  
320th Avenue will remain open until the new interchange is open to traffic.  
Once the interchange is open to traffic, 320th will be closed at US 20.

7th STREET SW  
7th Street SW will remain open until the new interchange is open to traffic.  
Once the interchange is open to traffic, 7th Street SW will be closed at US 20.

218th STREET  
218th St. will remain open to traffic at all times.  
Once the interchanged is open to traffic, the existing connection of 218th St. to US-20 will be closed at US-20.

111-01  
04-17-12

### COORDINATED OPERATIONS

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

Project	Type of Work
MP-20-6(705)283--76-28	HMA Joint and Crack Sealing
NHSX-20-9(204)--3H-28	Bridge New PPCB
NHSN-000-5(726)--2R-00	Traffic Signs
NHSN-000-5(675)--2R-00	Traffic Signs
NHSN-20-8(48)--2R-28	Salvage & Removal, Parcel 8

Notation regarding road closure and time limits for blasting added.  
Notation regarding detours during beam placement added.

108-26A  
08-01-08

### STAGING NOTES

Stage 1A  
Traffic Control  
Close 330th Avenue south of the proposed southerly tie-in.  
Maintain access to existing Industrial Parkway via existing 330th Avenue to the north.

Construction  
Construct new 330th Avenue, between southerly tie-in and Industrial Parkway.  
Construct the extension of Industrial Parkway between existing 330th Avenue and 221st Street.  
Construct 221st Street, between new 330th Avenue and the US-20 Access to the east.  
Obliterate existing 330th Avenue south of Industrial Parkway to new tie-in and re-establish existing drainage.

Stage 1B  
Traffic Control  
EB and WB traffic shifted to outside lanes to construct median crossovers. Maintain one lane of traffic on US 20 in each direction.  
Move Industrial Parkway traffic to new construction (Industrial Parkway extension and 221st Street).

Construction  
Construct both median crossovers. Prior to winter shutdown, provide/maintain two lanes of traffic in both directions on US 20.

Stage 1C  
Traffic Control  
EB and WB traffic shifted to WB lanes utilizing new median crossovers, one lane in each direction.  
Closure of US 20 will be allowed each day, Monday through Thursday, from 9:00 am to 2:30 pm for production blasting.  
Access to 330th Avenue and 332nd Avenue at US 20. Construct turnaround on 330th Avenue.  
Maintain access to existing Industrial Parkway via extension of Industrial Parkway and 221st Street.  
Maintain access to existing Field of Dreams Way via 7th Street SW.

Construction  
Reconstruct EB lanes of US 20.  
Construct Ramp B, Ramp D, and 330th Avenue between Industrial Parkway and Ramps B and D.

Stage 2  
Traffic Control  
EB and WB traffic shifted to newly constructed EB lanes utilizing median crossovers, one lane in each direction.  
Closure of US 20 will be allowed each day, Monday through Thursday, from 9:00 am to 2:30 pm for production blasting.  
Access to 330th Avenue and 332nd Avenue to remain closed at US 20.  
Maintain access to existing Industrial Parkway via extension of Industrial Parkway and 221st Street.  
Maintain access to existing Field of Dreams Way via 7th Street SW.  
Maintain access to existing 218th Street via US-20.

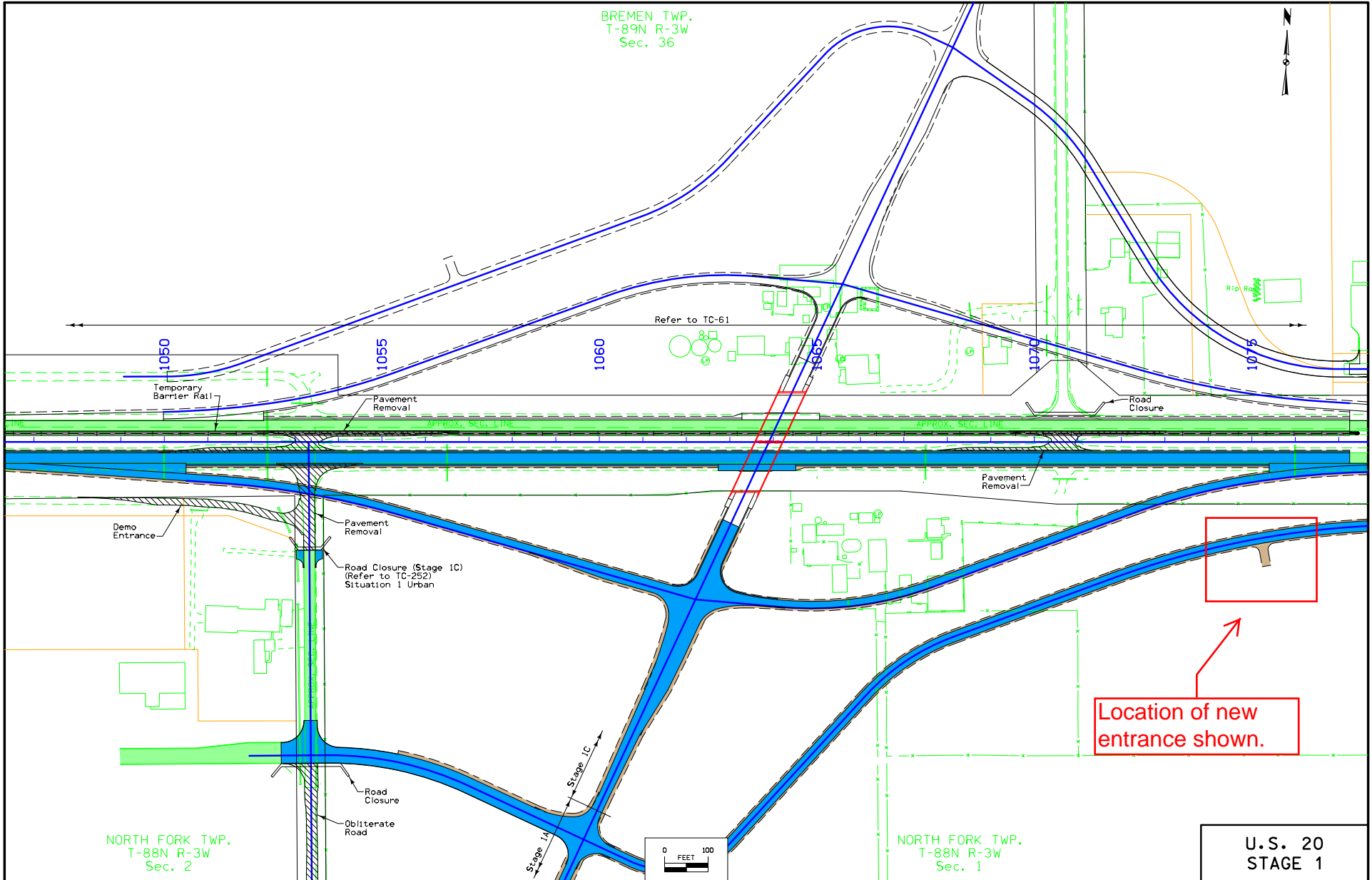
Construction  
Reconstruct WB lanes of US 20.  
Construct Ramp A, Ramp C, 332nd Avenue, Field of Dreams Way, and 218th Street.  
Remove 332nd Avenue between US 20 and Field of Dreams Way.

Stage 3  
Traffic Control  
EB and WB traffic shifted to outside lanes to remove median crossovers and construct median bridge pier.  
Maintain one lane of traffic on US 20 in each direction. Refer to Road Design Detail 8210 (Modified) on Sheet B.11.  
Maintain two lanes of traffic in each direction (Standard Road Plan TC-402) while constructing 330th/332nd bridge approach on both sides.  
For EB and WB traffic the contractor will be allowed to close US 20 with use of the proposed 330th Ave./332 Ave. interchange ramps as a detour for placement of bridge beams. The ramps shall be paved before being used as a detour.

Maintain access to existing Industrial Parkway via extension of Industrial Parkway and 221st Street.  
Maintain access to new 218th St. via 332nd Avenue.

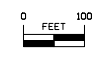
Construction  
Construct bridge approaches.  
Construct 330th Avenue/332nd Avenue bridge over US 20.  
Remove 7th Street SW access at US 20.  
Remove 320th Street access at US 20 and construct turnaround.  
Remove access to 221st Street at US 20 opposite 7th Street SW.  
Remove access to 218th St. at US-20.

BREMEN TWP.  
T-89N R-3W  
Sec. 36



NORTH FORK TWP.  
T-88N R-3W  
Sec. 2

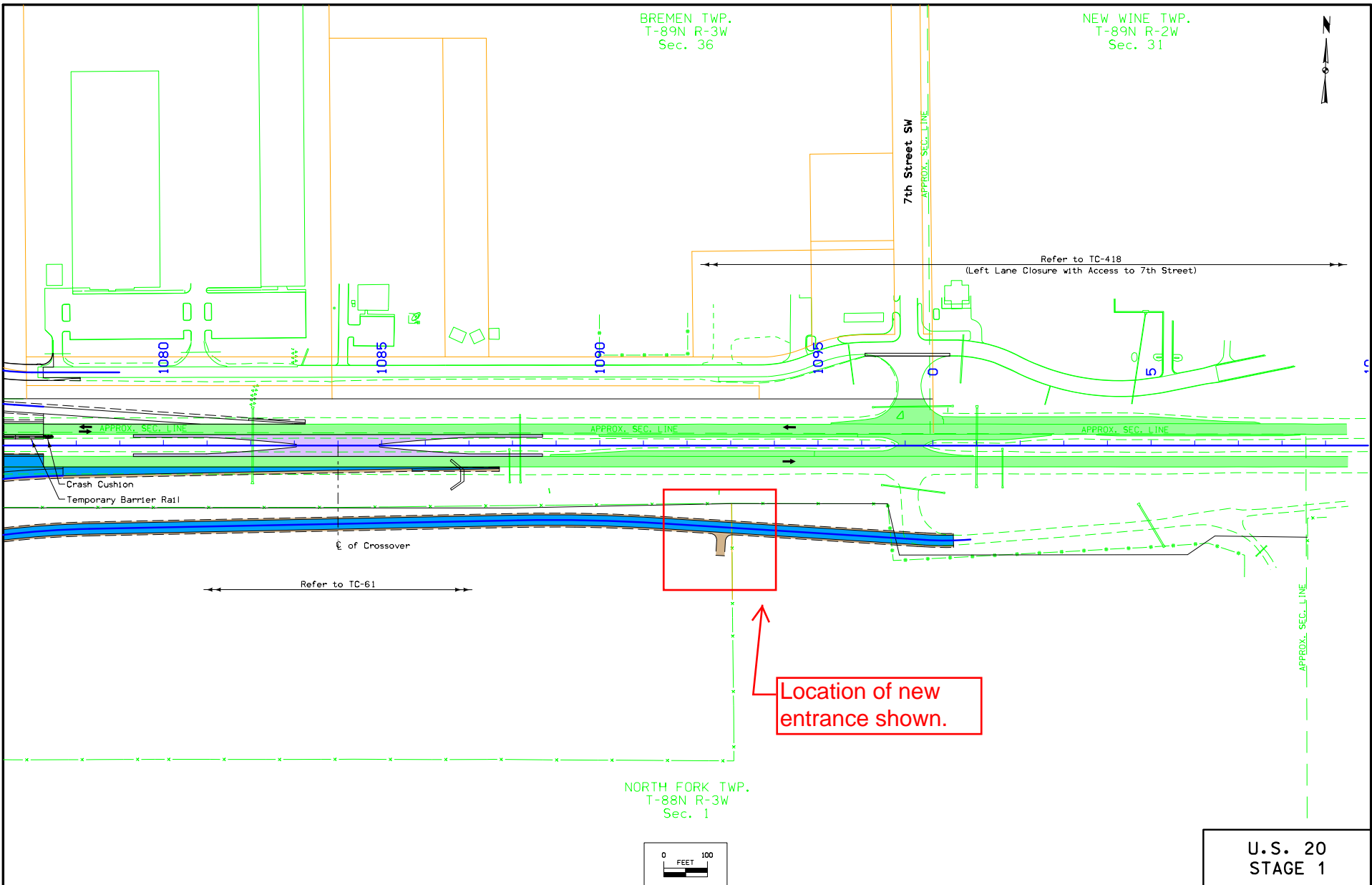
NORTH FORK TWP.  
T-88N R-3W  
Sec. 1



Location of new entrance shown.

U.S. 20  
STAGE 1

FILE NO.	ENGLISH	DESIGN TEAM	Stanley Consultants Inc.	DELAWARE/DUBUQUE COUNTY	PROJECT NUMBER	NHSX-020-9(203)--3H-28	SHEET NUMBER	J.5
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BREMEN TWP.  
T-89N R-3W  
Sec. 36



Pavement  
Removal

Refer to TC-61

Rip

1050

1055

1060

1070

1075

Temporary  
Barrier Rail

Demo  
Entrance

APPROX. SPLIT LINE

APPROX. SPLIT LINE

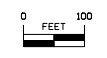
Road  
Closure

Road  
Closure

Location of new  
entrance shown.

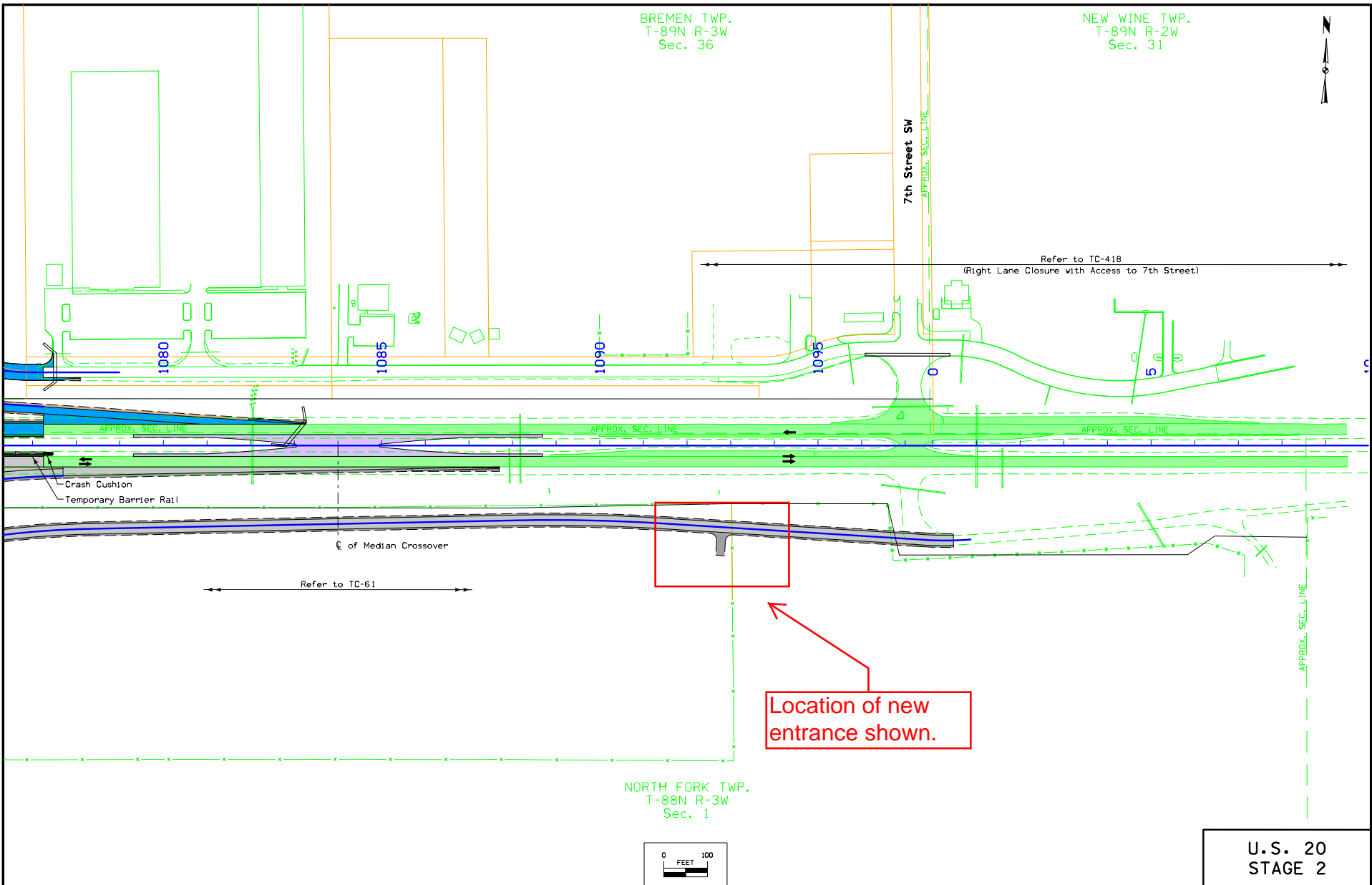
NORTH FORK TWP.  
T-88N R-3W  
Sec. 2

NORTH FORK TWP.  
T-88N R-3W  
Sec. 1



U.S. 20  
STAGE 2

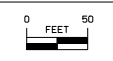
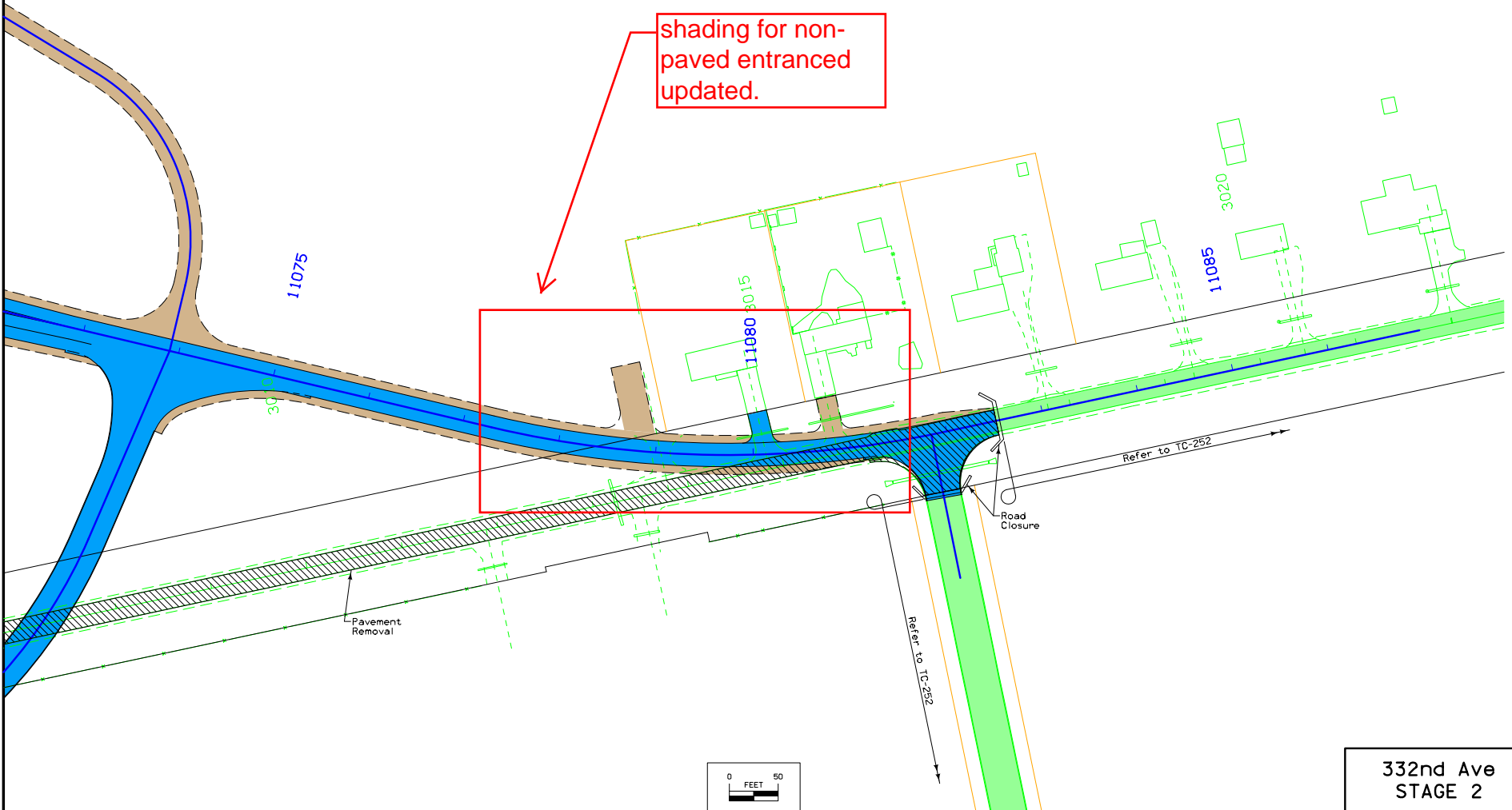
FILE NO.	ENGLISH	DESIGN TEAM	Stanley Consultants Inc.	DELAWARE/DUBUQUE COUNTY	PROJECT NUMBER	NHSX-020-9(203)--3H-28	SHEET NUMBER	J.10
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BREMEN TWP.  
T-89N R-3W  
Sec. 36



shading for non-paved entranced updated.



332nd Ave  
STAGE 2

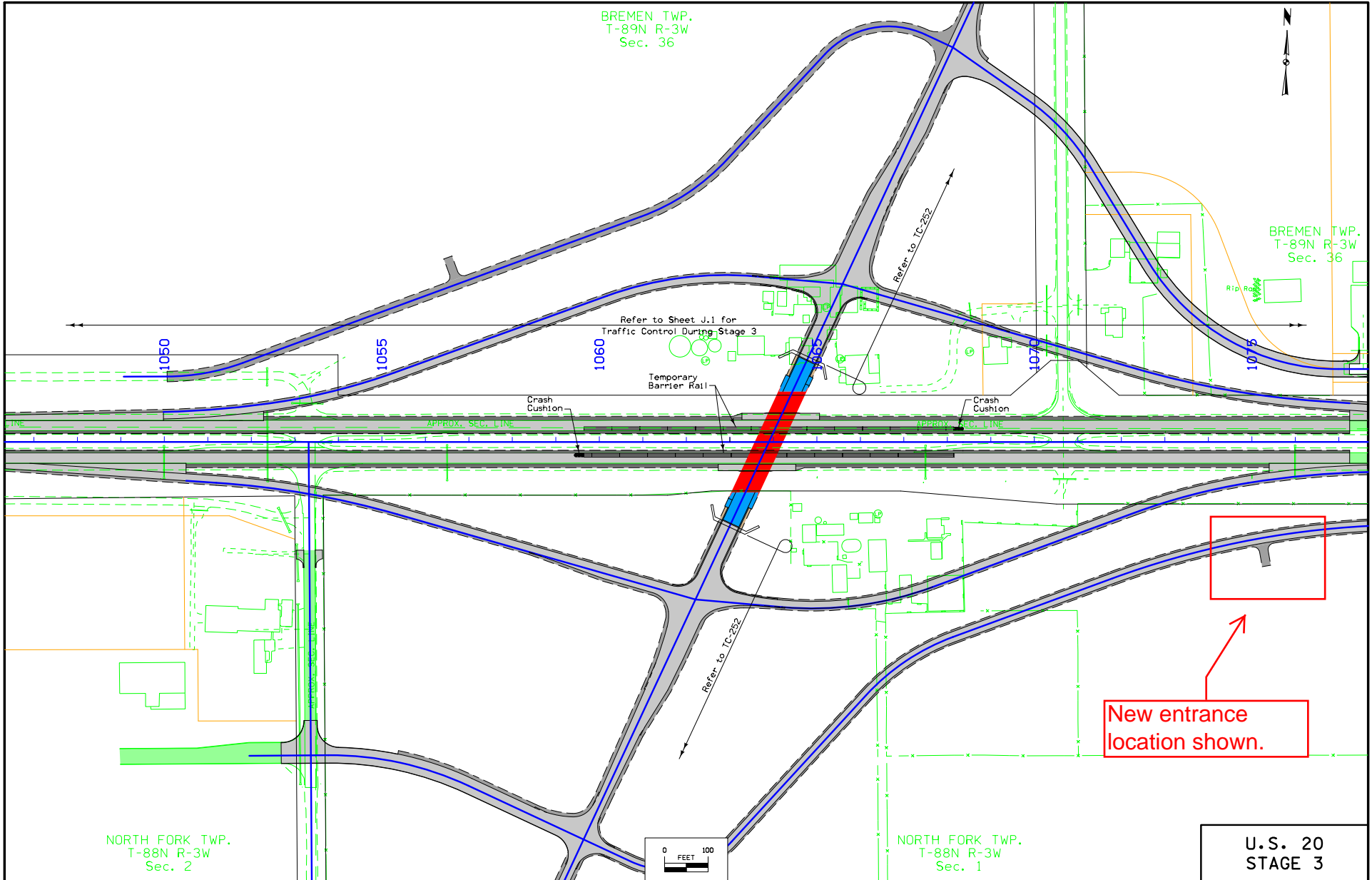
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BREMEN TWP.  
T-89N R-3W  
Sec. 36

BREMEN TWP.  
T-89N R-3W  
Sec. 36

NORTH FORK TWP.  
T-88N R-3W  
Sec. 2

NORTH FORK TWP.  
T-88N R-3W  
Sec. 1

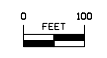


Refer to Sheet J.1 for  
Traffic Control During Stage 3

Refer to IC-282

Refer to IC-282

New entrance  
location shown.



U.S. 20  
STAGE 3

FILE NO.	ENGLISH	DESIGN TEAM	Stanley Consultants Inc.	DELAWARE/DUBUQUE COUNTY	PROJECT NUMBER	NHSX-020-9(203)--3H-28	SHEET NUMBER	J.14
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BREMEN TWP.  
T-89N R-3W  
Sec. 35

BREMEN TWP.  
T-89N R-3W  
Sec. 36

NORTH FORK TWP.  
T-88N R-3W  
Sec. 2

NORTH FORK TWP.  
T-88N R-3W  
Sec. 1

Curve Data  
 $\Delta = 08^{\circ}01'17.07''$  (LT)  
 $D = 02^{\circ}51'53.24''$   
 $R = 2000.00'$   
 $T = 140.23'$   
 $L = 280.00'$   
 $E = 4.91'$   
 $e = 5.40\%$   
 $L = 168'$   
 $x = 62'$   
 $m = 50.4'$

Curve Data  
 $\Delta = 10^{\circ}40'47.54''$  (RT)  
 $D = 04^{\circ}05'33.20''$   
 $R = 1400.00'$   
 $T = 130.86'$   
 $L = 260.96'$   
 $E = 6.10'$   
 $e = 6.00\%$   
 $L = 186'$   
 $x = 62'$   
 $m = 55.8'$

Curve Data  
 $\Delta = 24^{\circ}50'58.62''$  (RT)  
 $D = 07^{\circ}09'43.10''$   
 $R = 800.00'$   
 $T = 176.25'$   
 $L = 346.97'$   
 $m = 19.19'$   
 $e = 5.40\%$   
 $L = 130'$   
 $x = 48'$   
 $m = 39.0'$

Curve Data  
 $\Delta = 12^{\circ}08'03.30''$  (RT)  
 $D = 02^{\circ}51'53.24''$   
 $R = 2000.00'$   
 $T = 212.58'$   
 $L = 423.57'$   
 $E = 11.27'$   
 $e = 5.40\%$   
 $L = 168'$   
 $x = 62'$   
 $m = 50.4'$

Curve Data  
 $\Delta = 25^{\circ}10'58.43''$  (LT)  
 $D = 07^{\circ}09'43.10''$   
 $R = 800.00'$   
 $T = 176.70'$   
 $L = 351.62'$   
 $m = 19.71'$   
 $e = 5.40\%$   
 $L = 130'$   
 $x = 48'$   
 $m = 39.0'$

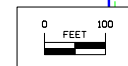
PI Sta. 2065+23.97 (330TH332NDA)  
= PI Sta. 4066+06.39 (330TH332NDC)  
= POT Sta. 11067+90.41 (SR330TH332ND)  
PI Sta. 4062+35.68

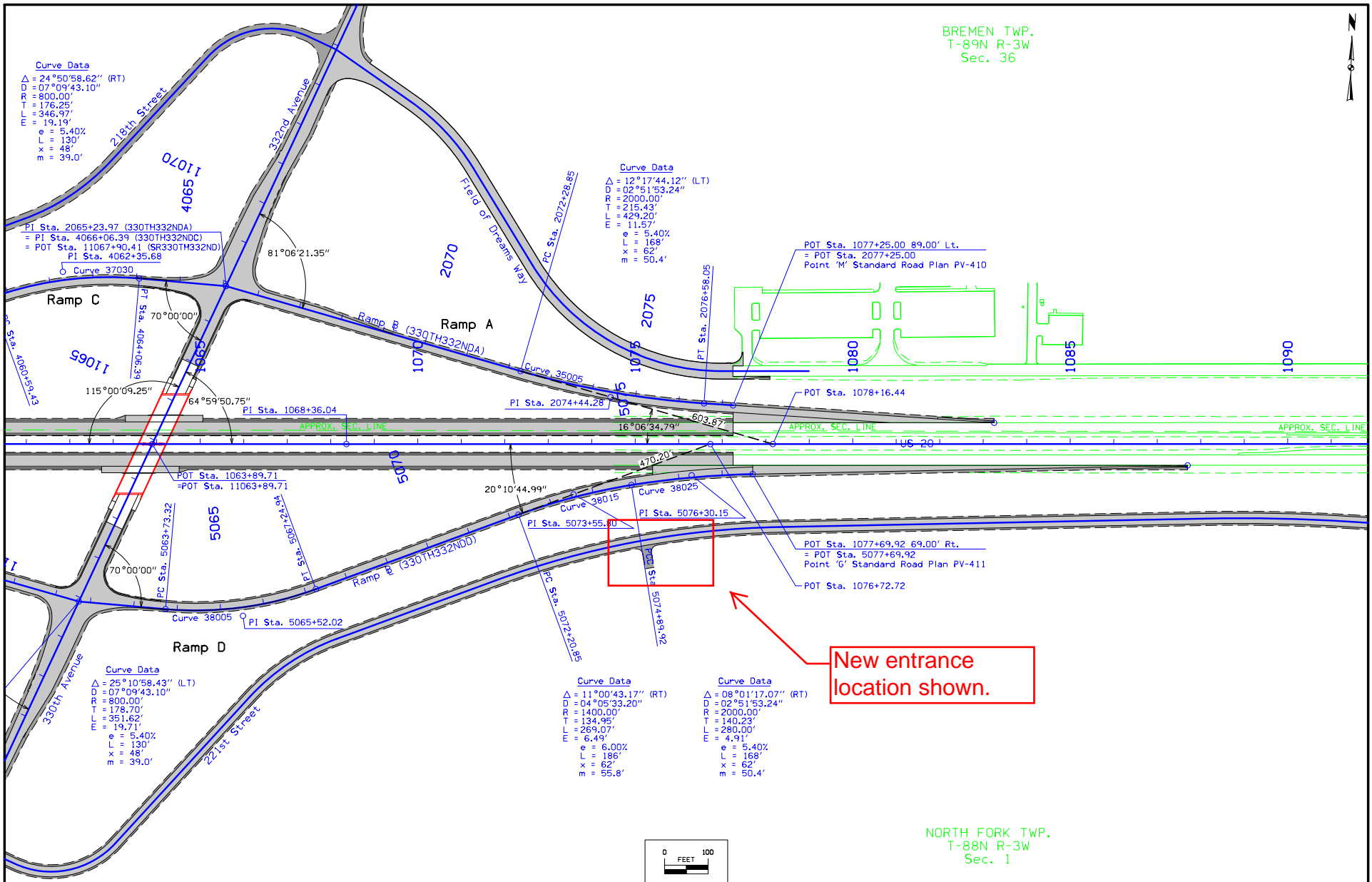
POT Sta. 1049+98.04 69.00' Lt.  
= PC Sta. 4049+98.04  
Point 'G' Standard Road Plan PV-411

POT Sta. 1049+54.58  
POT Sta. 1050+50.00 89.00' Rt.  
= POT Sta. 3050+50.00  
Point 'M' Standard Road Plan PV-410

PI Sta. 3062+55.57 (330TH332NDB)  
= PI Sta. 5061+73.32 (330TH332NDD)  
= POT Sta. 11059+90.41 (SR330TH332ND)

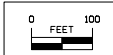
relocated entrance  
no longer shows up  
on this sheet.





BREMEN TWP.  
T-89N R-3W  
Sec. 36

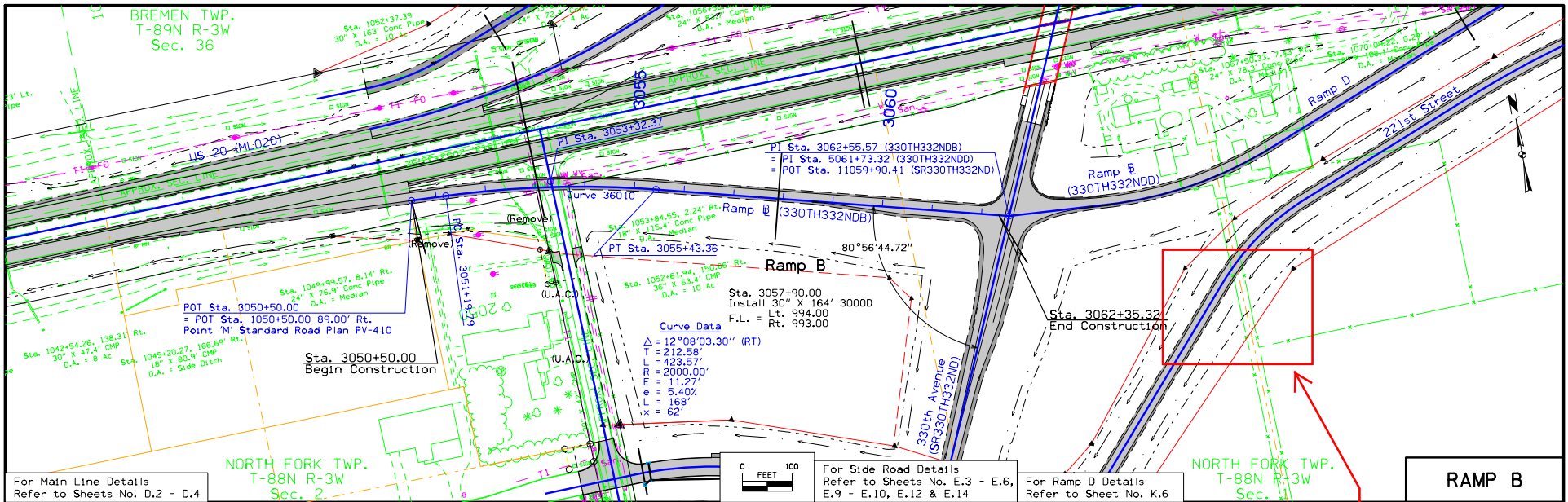
NORTH FORK TWP.  
T-88N R-3W  
Sec. 1



FILE NO.	ENGLISH	DESIGN TEAM	<b>Stanley Consultants Inc.</b>	DELAWARE/DUBUQUE COUNTY	PROJECT NUMBER	<b>NHSX-020-9(203)--3H-28</b>	SHEET NUMBER	<b>K.2</b>
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12:28:49 PM 3/13/2015 8725 c:\projects\datasource-1\common\0319374\28020203k02.sht





For Main Line Details Refer to Sheets No. D.2 - D.4

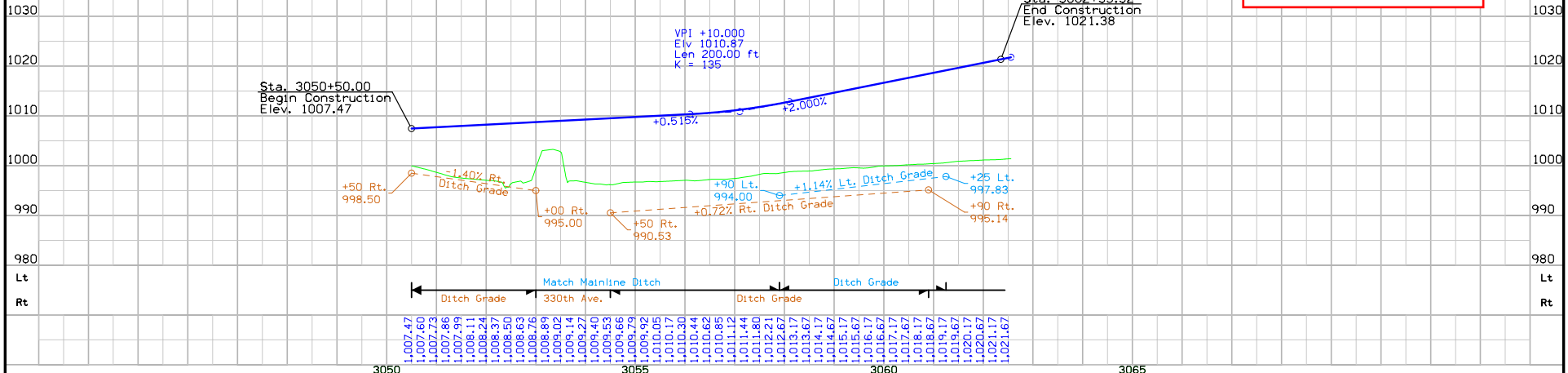
For Side Road Details Refer to Sheets No. E.3 - E.6, E.9 - E.10, E.12 & E.14

For Ramp D Details Refer to Sheet No. K.6

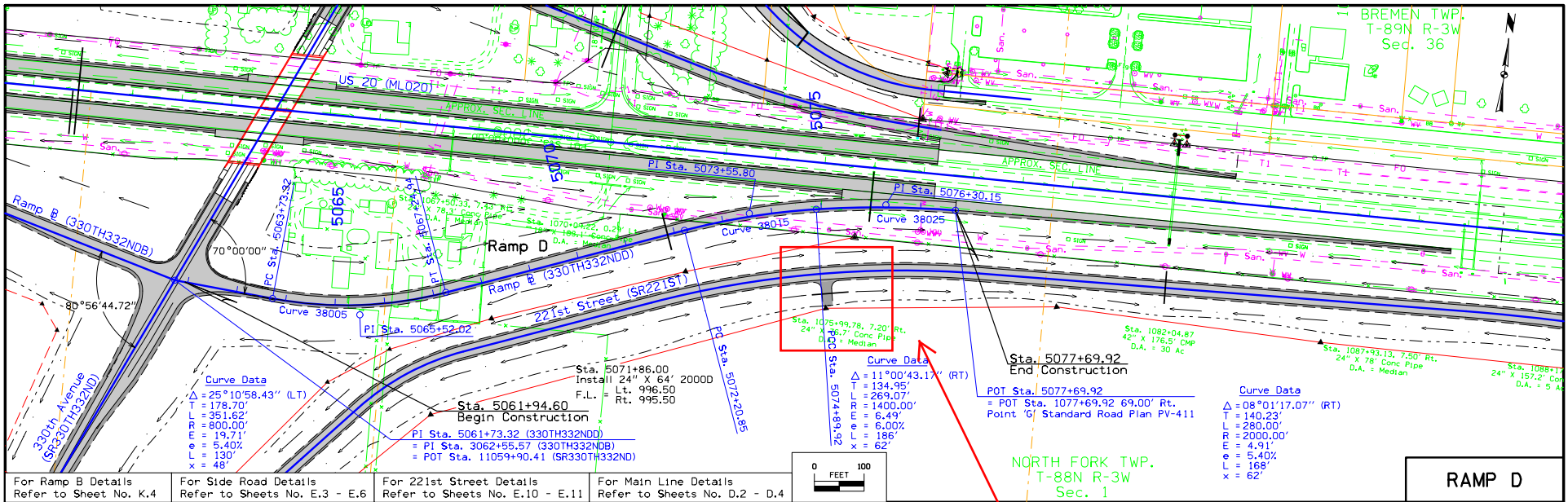
NORTH FORK TWP. T-88N R-3W Sec. 2

0 FEET 100

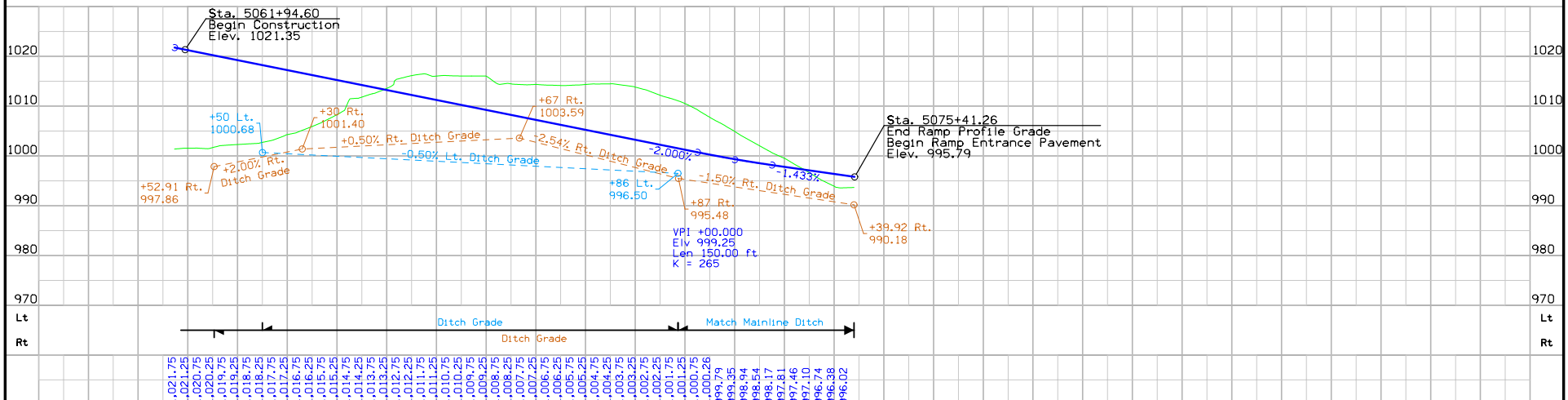
Relocated entrance no longer shows up on this sheet.



FILE NO.	ENGLISH	DESIGN TEAM	Stanley Consultants Inc.	DELAWARE/DUBUQUE	COUNTY	PROJECT NUMBER	NHSX-020-9(203)-3H-28	SHEET NUMBER	K.4
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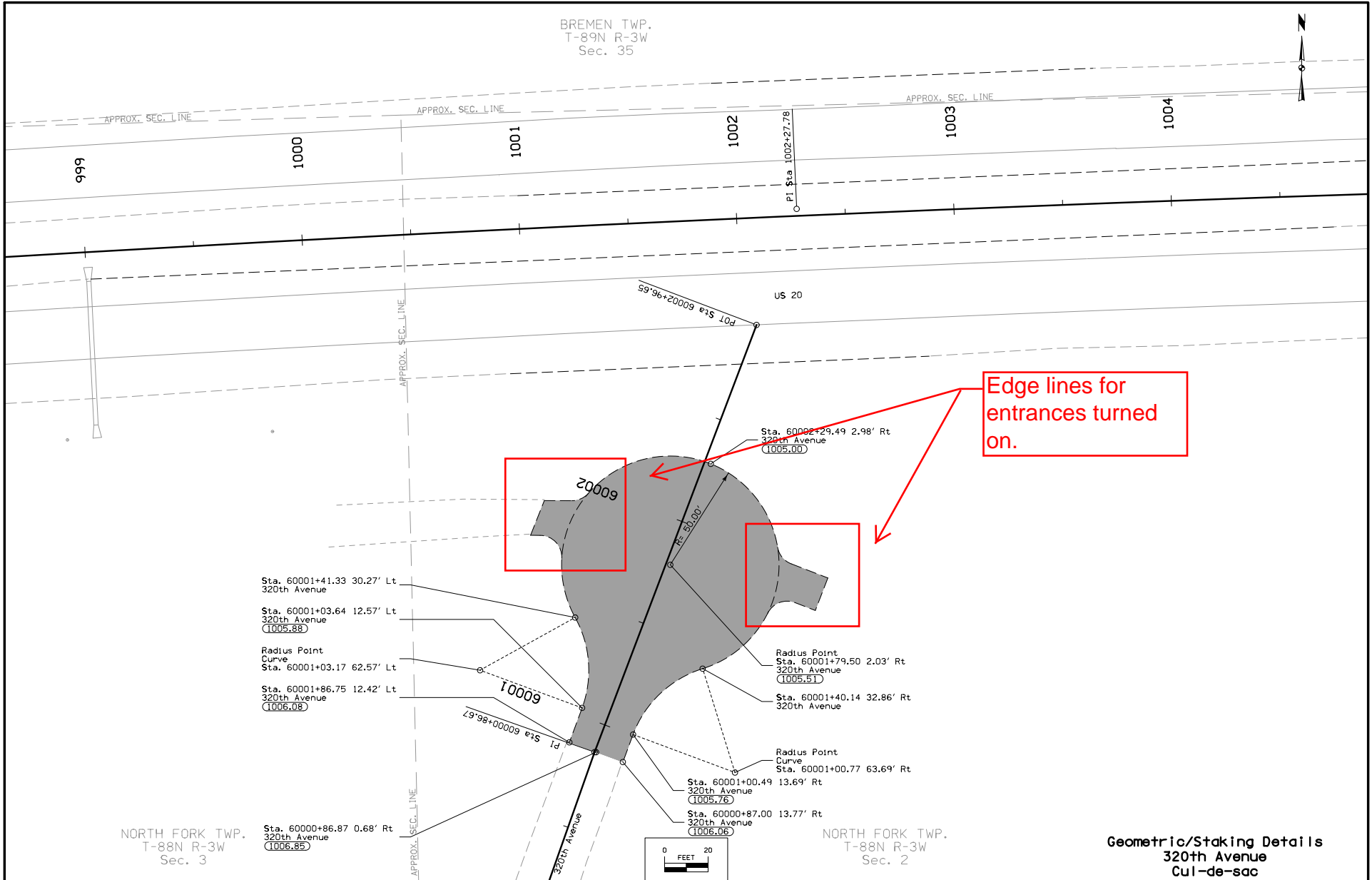
New entrance location shown.



FILE NO.	ENGLISH	DESIGN TEAM	Stanley Consultants Inc.	DELAWARE/DUBUQUE COUNTY	PROJECT NUMBER	NHSX-020-9(203)-3H-28	SHEET NUMBER	K.6
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BREMEN TWP.  
T-89N R-3W  
Sec. 35

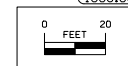


Edge lines for  
entrances turned  
on.

NORTH FORK TWP.  
T-88N R-3W  
Sec. 3

NORTH FORK TWP.  
T-88N R-3W  
Sec. 2

Geometric/Staking Details  
320th Avenue  
Cul-de-sac



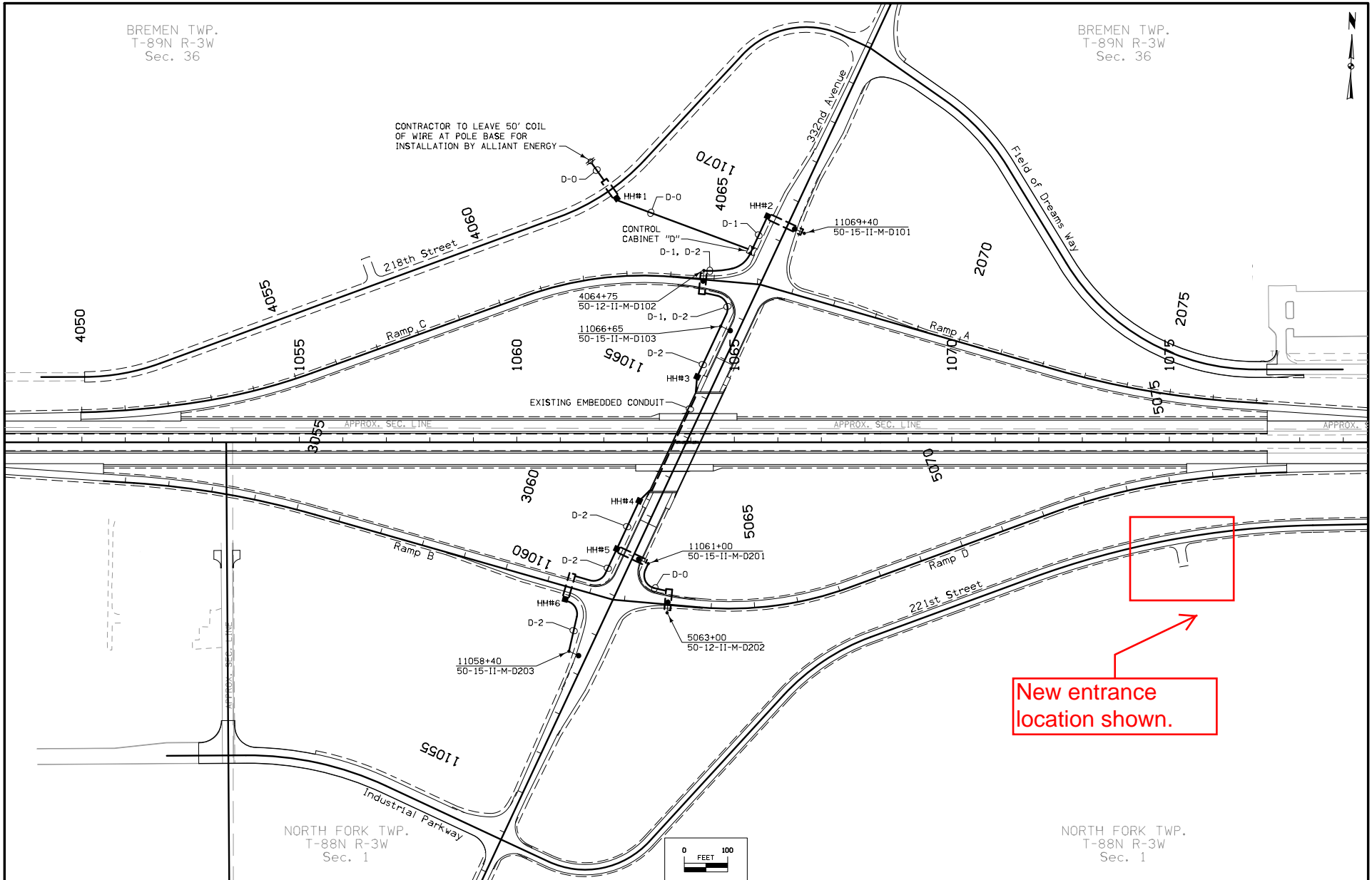
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BREMEN TWP.  
T-89N R-3W  
Sec. 36

BREMEN TWP.  
T-89N R-3W  
Sec. 36



CONTRACTOR TO LEAVE 50' COIL  
OF WIRE AT POLE BASE FOR  
INSTALLATION BY ALLIANT ENERGY



**New entrance  
location shown.**



NORTH FORK TWP.  
T-88N R-3W  
Sec. 1

NORTH FORK TWP.  
T-88N R-3W  
Sec. 1



### SURVEY SYMBOLS

- SJ Sign
- PLG Location of General Photo
- PIP Pipe Culvert
- TP TPD Telephone Pedestal
- INB Storm Sewer Beehive Intake
- MH Utility Access (Manhole)
- BB Billboard
- BLD Building or Foundation
- MM Mile Marker Post
- FW Wire Fence
- OUT Tile Outlet
- IN Storm Sewer Intake
- LIN Miscellaneous Line
- LUM Luminaire
- FLG FLG Flag Poles
- WV Water Valve
- X LC Approx. Lot Corner
- EB Electrical Box
- TYP TV Pedestal
- MIS Miscellaneous
- PR Electric Riser Pole
- FHD Fire Hydrants
- SL Speed Limit Sign
- FCL Chain Link and Security Fence
- TDC Tree Deciduous
- SHR Shrub
- TEV Evergreen Tree
- TLNR Tree Line Right
- WH Water Hydrant
- FWD Wood Fence
- ROC Rock Outcropping
- TLNL Tree Line Left
- CUL Culvert
- TIL Tile Line
- LP LP, Tank
- WEL Well
- EG Edge of Gravel Road
- EP Edge of Paved Roads (ML or SR)
- CU Back of Curb
- GU Gutter In Front of Curb
- CON Concrete or A/C Slab
- ENP Edge Paved Entrance & Park Lot
- ENT Centerline BL of Entrance
- SH Paved Shoulder
- ENU Edge Unpaved Entrance & Parking
- SNP Unpaved Shoulder
- D Centerline Draw or Stream (Down)
- DU Centerline Draw or Stream (Up)
- RIP Rip-Rap
- CP Control Point
- PRO Profile Shot
- SOP Size of Pipe or Culvert
- UE Utility Elevation
- BL Topo Breakline

### UTILITY LEGEND

- E1 — ALLIANT ENERGY  
Jason Hogan  
4902 North Biltmore  
Madison, WI 53707-1007  
608-458-4871  
jasonhogan@alliantenergy.com
- E2 — Maquoketa Valley Electric Cooperative  
Jeremy Rlchert  
P.O. Box 370  
Anamosa, IA 52205  
319-462-3541 : Ext.209  
jrlchert@mvec.com
- T1 — Windstream Communications(Formerly Iowa Telecom)  
Dan Hogan  
107 East Fayette  
Manchester, IA 52057  
563-927-2925  
daniel.hogan@windstream.com
- San. — City of Dyersville  
David Vorwald  
340 1st Avenue East  
Dyersville, IA 52040  
563-875-7724  
dvorwald@cityofdyersville.com
- St.S. — Black Hills Energy  
Brad Fleming  
1815 Capital Avenue  
Omaha, NE 68102  
402-221-2714  
brad.fleming@blackhillscorp.com
- W — ICN  
Larry Klawitter  
400 East 1st Street / Grimes Office Building  
Des Moines, IA 50319  
515-725-4741  
larry.klawitter@iowa.gov
- TV — Mediacom  
Bob Frazer  
207 West Pearl Street  
Decorah, IA 52101  
563-387-6119  
bfrazer@mediacomcc.com

### PLAN VIEW COLOR LEGEND OF SOILS SHEETS

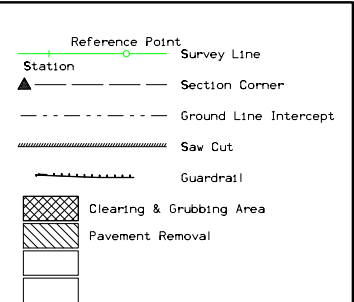
LINEWORK	Design	Color No.
Green	(2)	Existing Topographic Features and Labels
Purple (Halo)	(15)	Backslope Drains
Blue	(1)	Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
SHADING	Design	Color No.
Brown, Light	(236)	Core Out

### PROFILE VIEW COLOR LEGEND OF SOILS SHEETS

LINEWORK	Design	Color No.
Blue	(1)	Proposed Alignment, Stationing, and Alignment Annotation
Green	(2)	Existing Ground Line Profile
Green, Med	(227)	Class 10 Topsoil
Green, M.Light	(226)	Unsuitable A Topsoil
Green, Light	(225)	Unsuitable B Topsoil
Green, V.Light	(224)	Unsuitable C Topsoil
Orange	(6)	Loam
Brown, Dark	(238)	Class 10
Brown, Med	(237)	Sand
Red	(3)	Unsuitable A
Pink, Dark	(13)	Unsuitable B
Pink	(11)	Unsuitable C
Red	(3)	Shale
Red	(3)	Waste
Gray, Light	(48)	Broken and Weathered Rock
Gray, Med	(80)	Rock
Gray, V.Dark	(128)	Boulders

### PATTERN AND SYMBOL LEGEND OF SOILS SHEETS

Soils Book No. Drilled by Braun Intertec		
Date(s) Drilled 2012-2014		
Water	Treatment	Unsuitable A Topsoil
Dry	Sand Blanket	Unsuitable B Topsoil
Sample	Soil Remediation Area	Unsuitable C Topsoil
Plugged	Select Soil	Unsuitable A
Moisture	Select Sand	Unsuitable B
Shelby	Shale	Unsuitable C
Blow Count	Broken and Weathered Rock	Sandy Soil
Dens. Core	Rock	Boulders
	Sandstone	



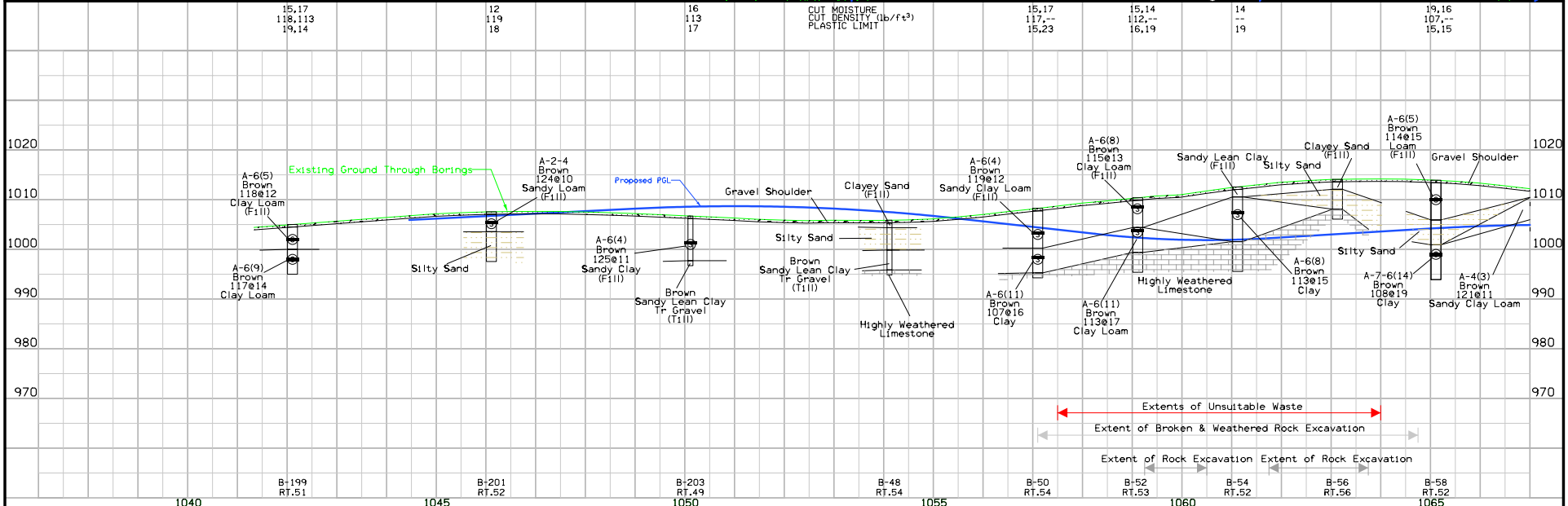
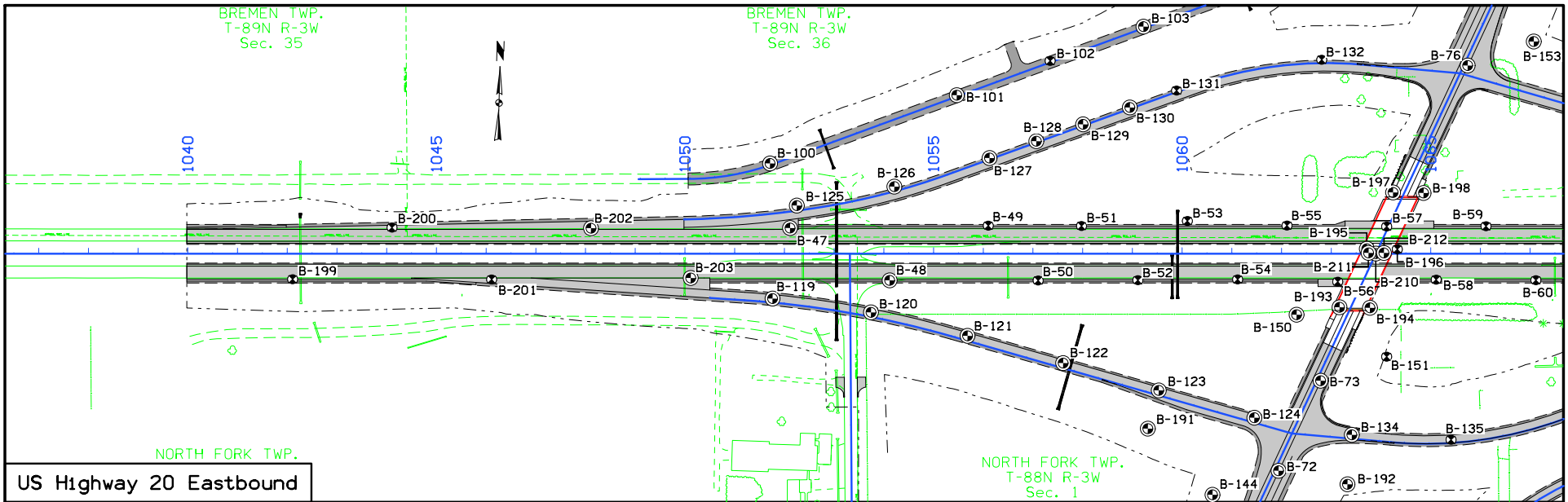
- ### RIGHT-OF-WAY LEGEND
- ▲ Proposed Right-of-Way
  - ▲ Existing and Proposed Right-of-Way
  - ▲ Easement and Existing Right-of-Way
  - Borrow
  - Easement (Temporary)
  - Easement
  - X Excess
  - A/C Access Control

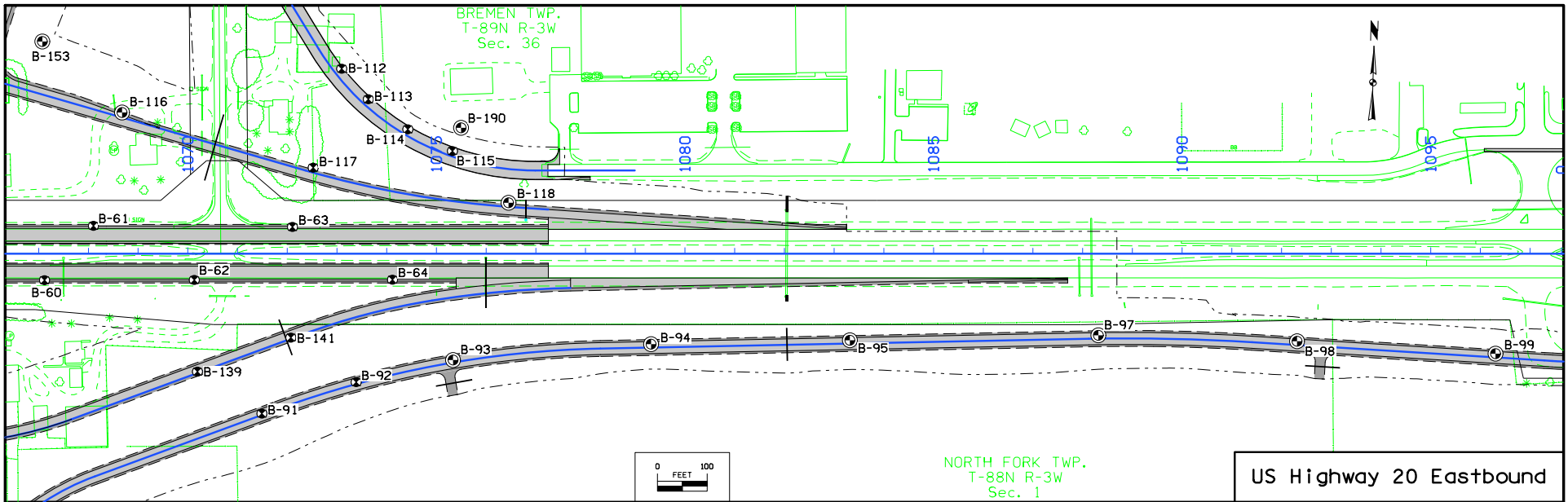
Braun Intertec added to Design team. This change applies for Sheets Q.1 - Q.24.

NOTE: Sounding and test boring data shown in the plans were accumulated for designing and estimating purposes. Their appearance on the plans does not constitute a guarantee that conditions other than those indicated will be encountered. Details and notes shown elsewhere shall be used for roadway and structure construction.

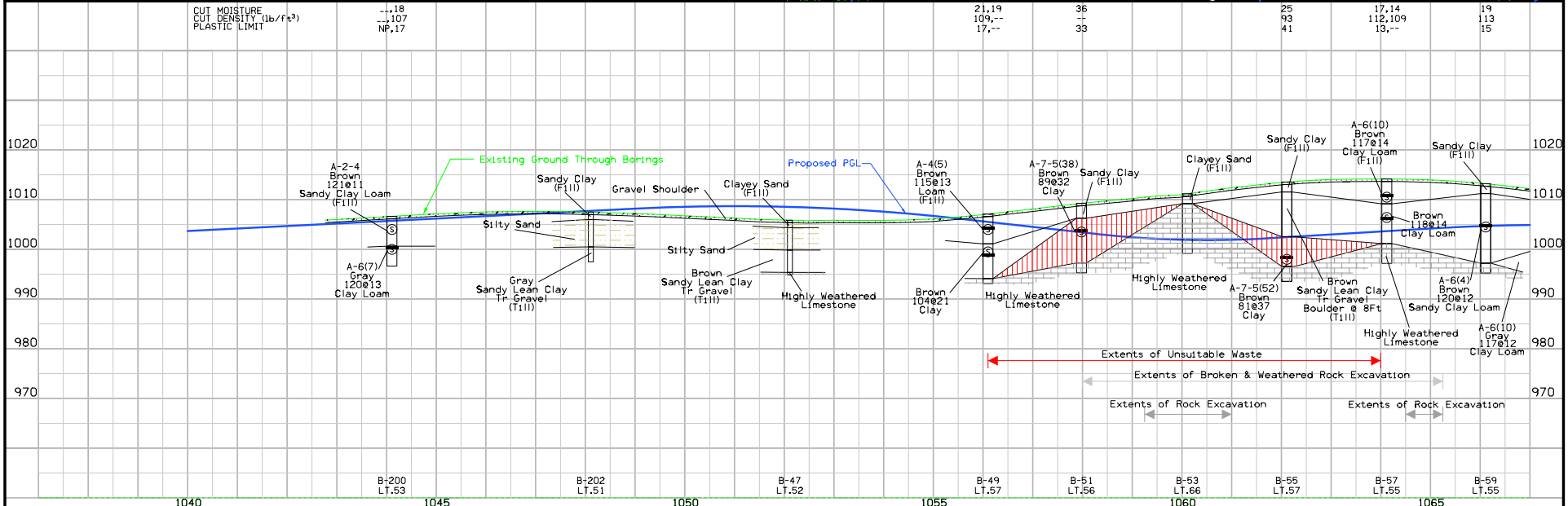
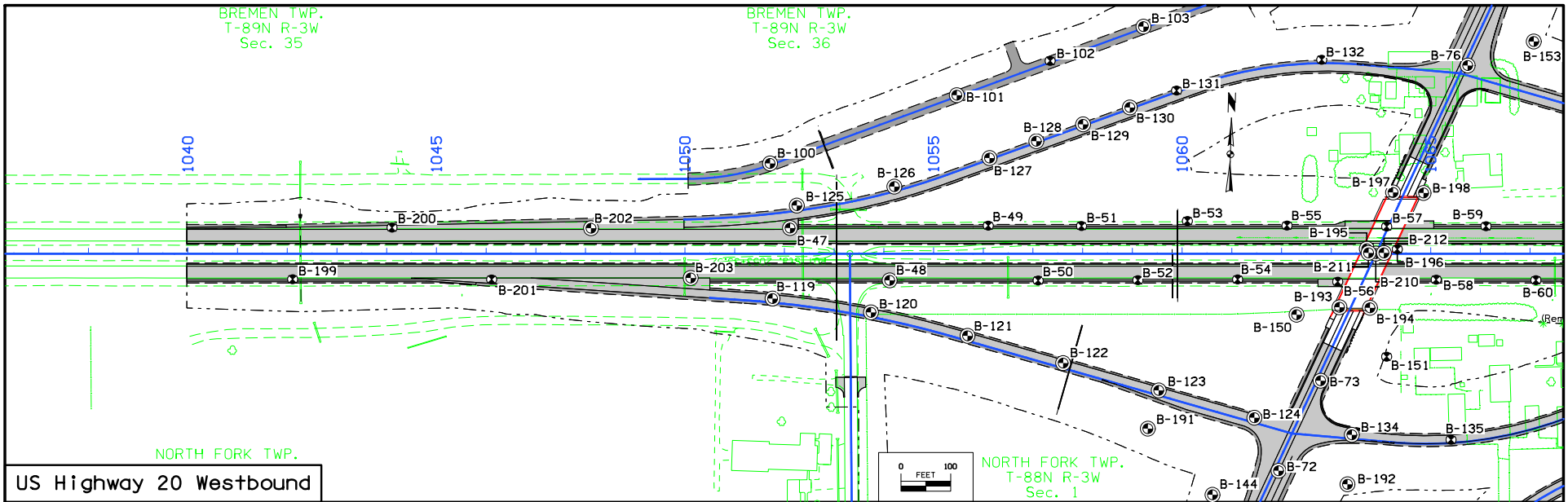
## SOILS LEGEND AND SYMBOL INFORMATION SHEET

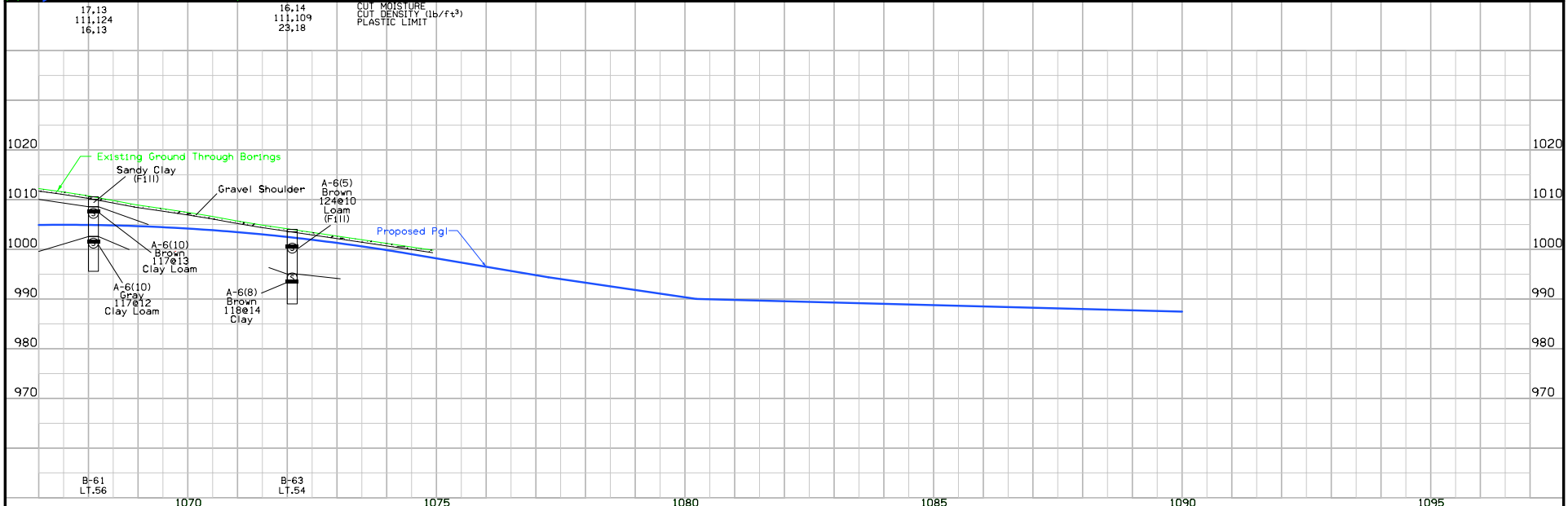
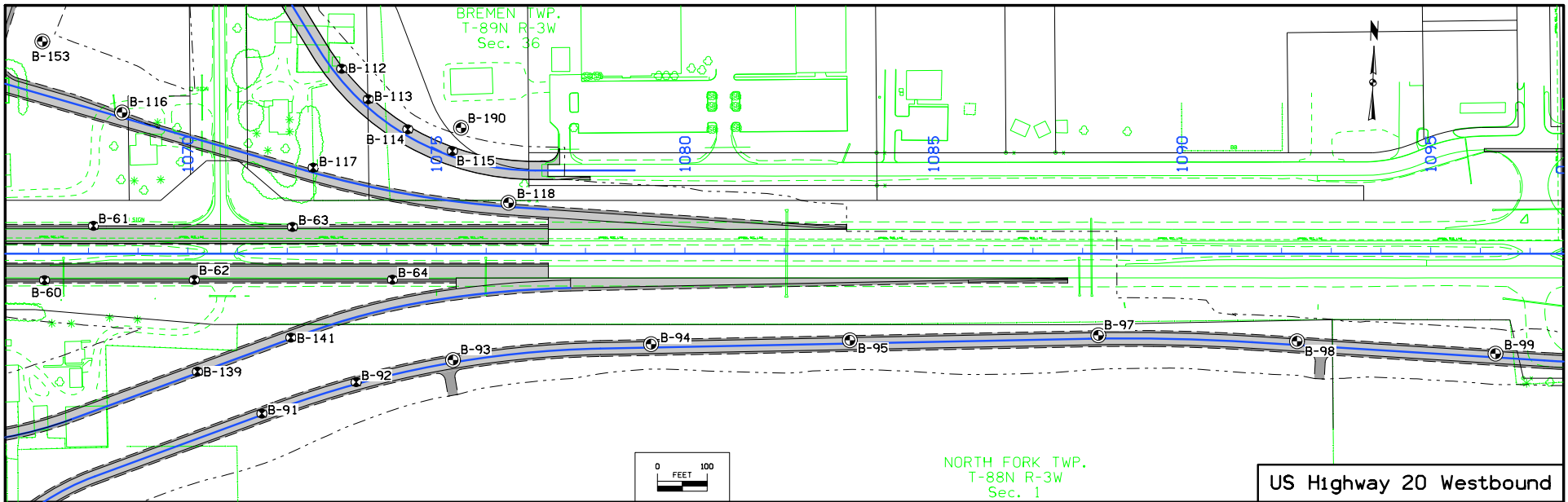
(COVERS SHEET SERIES Q & R)





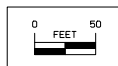
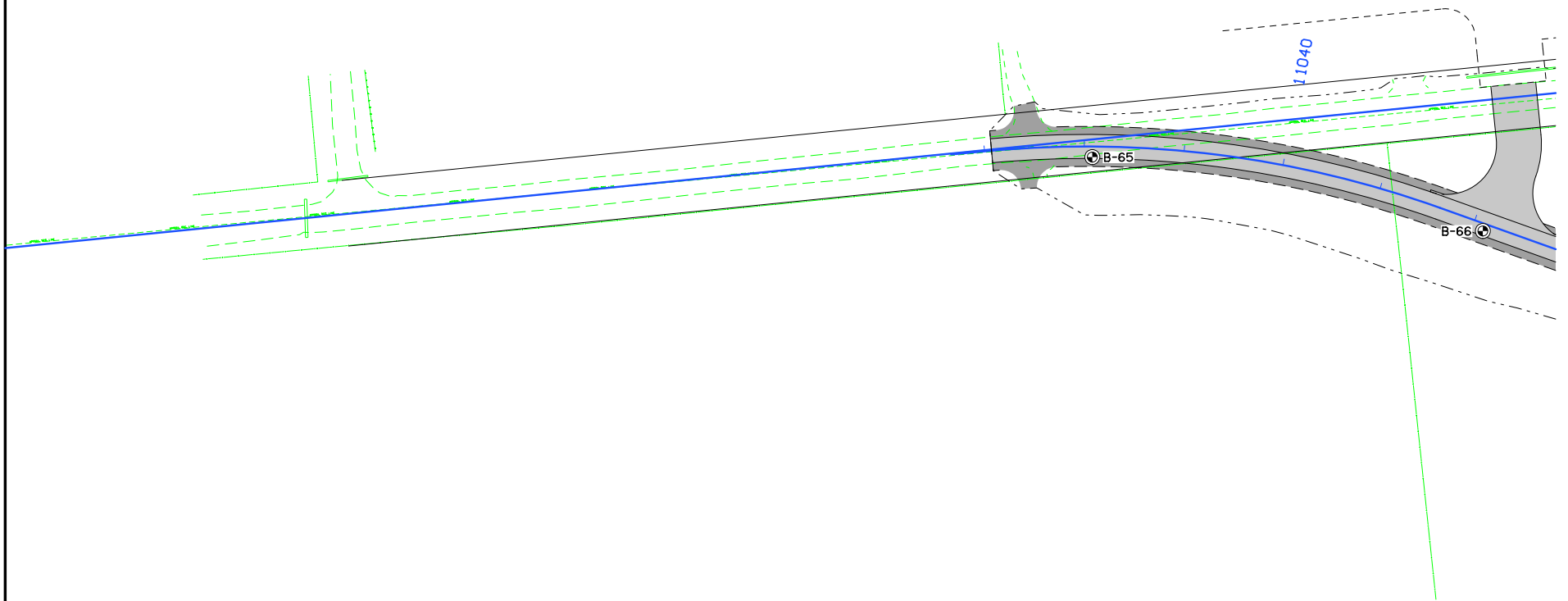
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FILE NO.	ENGLISH	DESIGN TEAM	STANLEY CONSULTANTS INC. \ BRAUN INTERTEC	DELAWARE/DUBUQUE COUNTY	PROJECT NUMBER	NHSX-020-9(203)--3H-28	SHEET NUMBER	0.5
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NORTH FORK TWP.  
T-88N R-3W  
Sec. 2



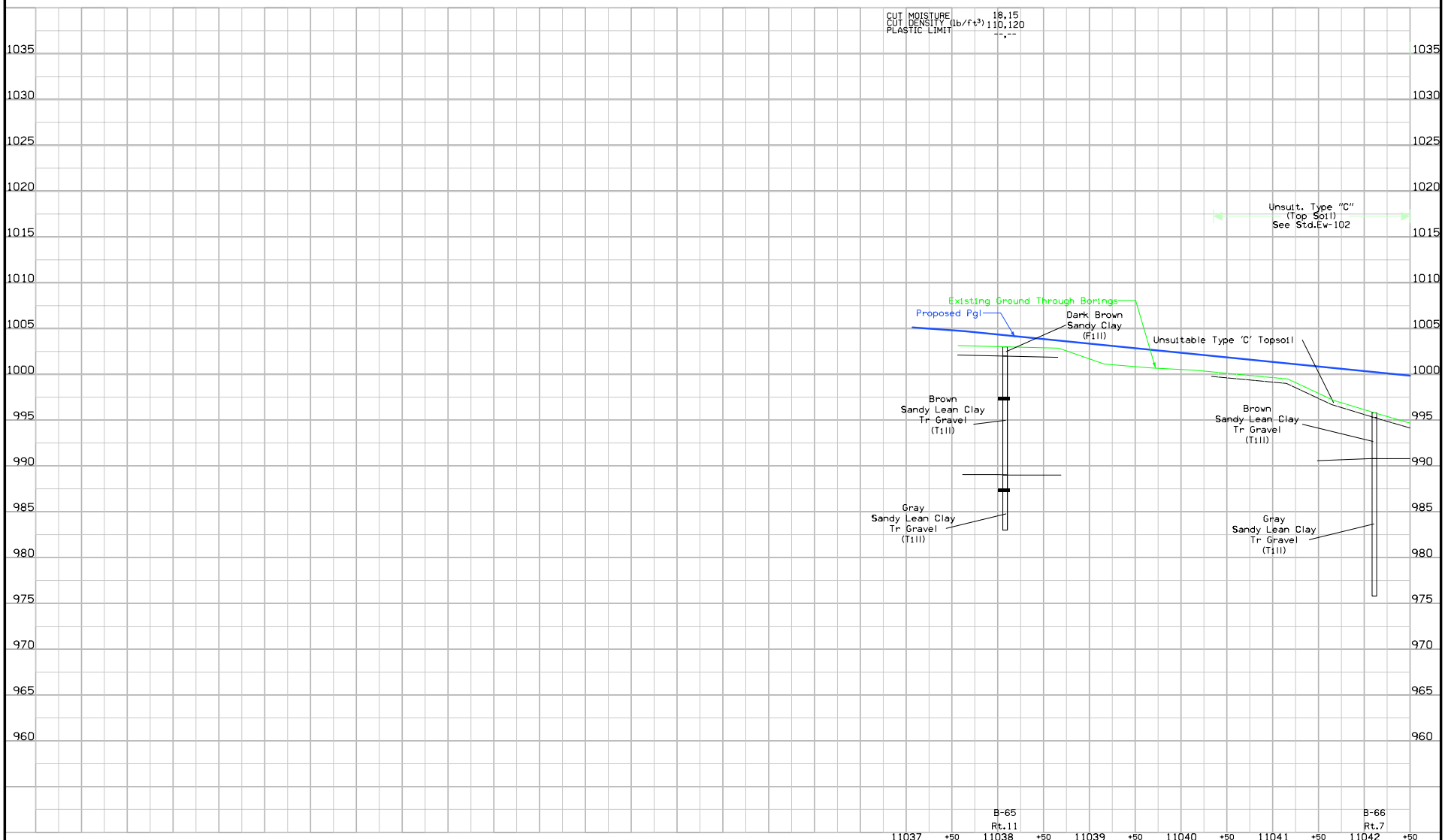
NORTH FORK TWP.  
T-88N R-3W  
Sec. 1

330th Avenue

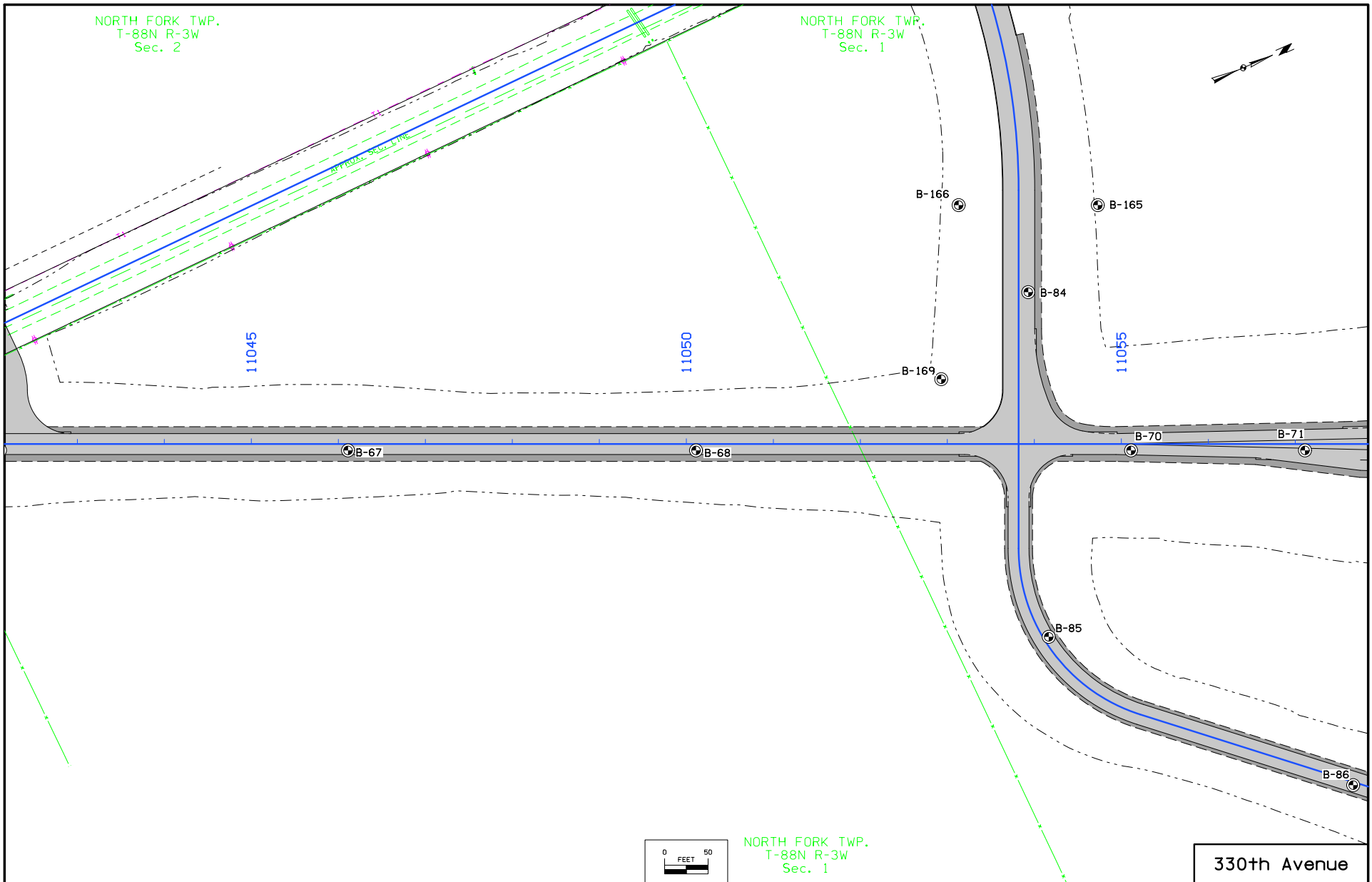
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330th Avenue

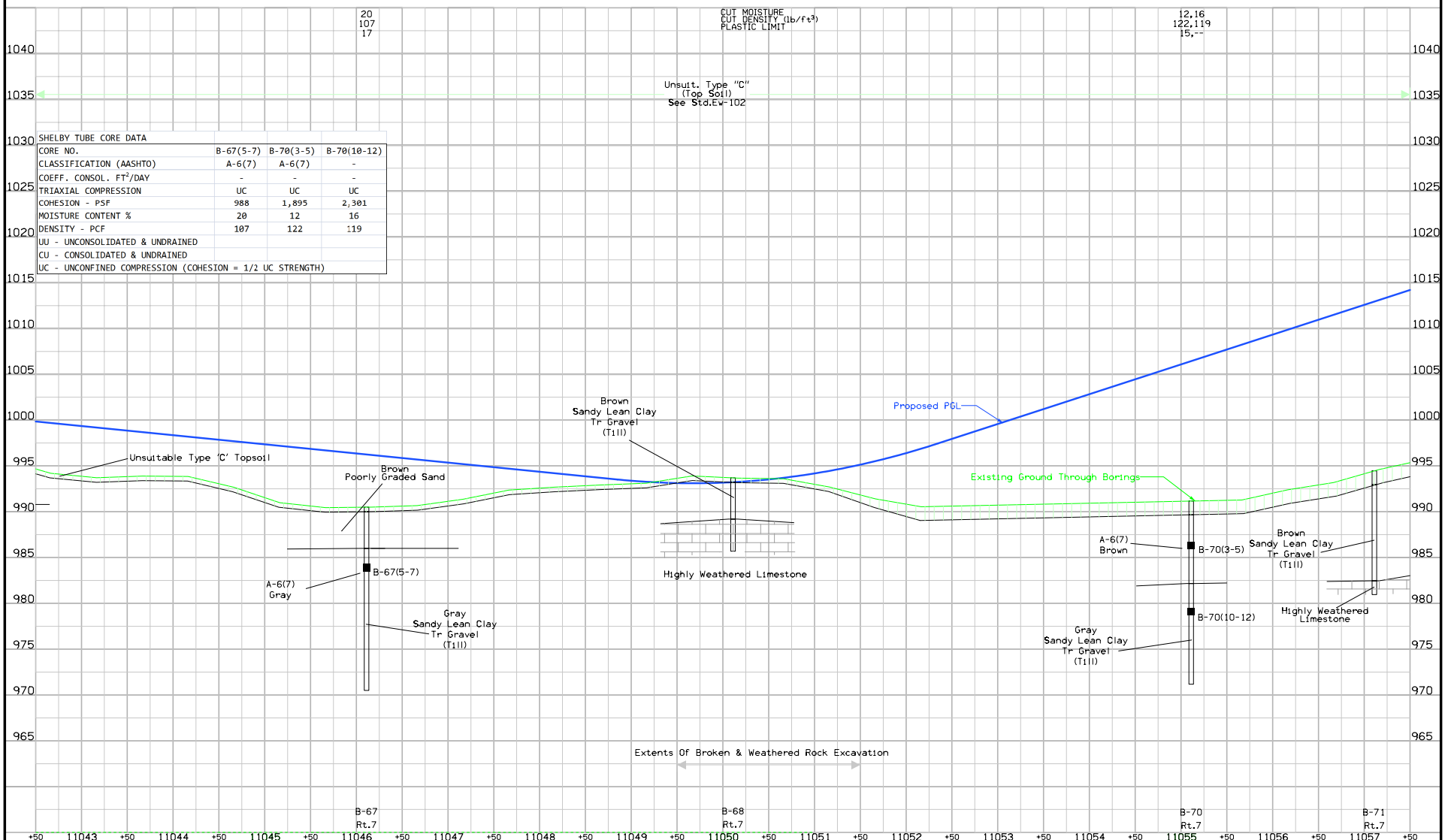


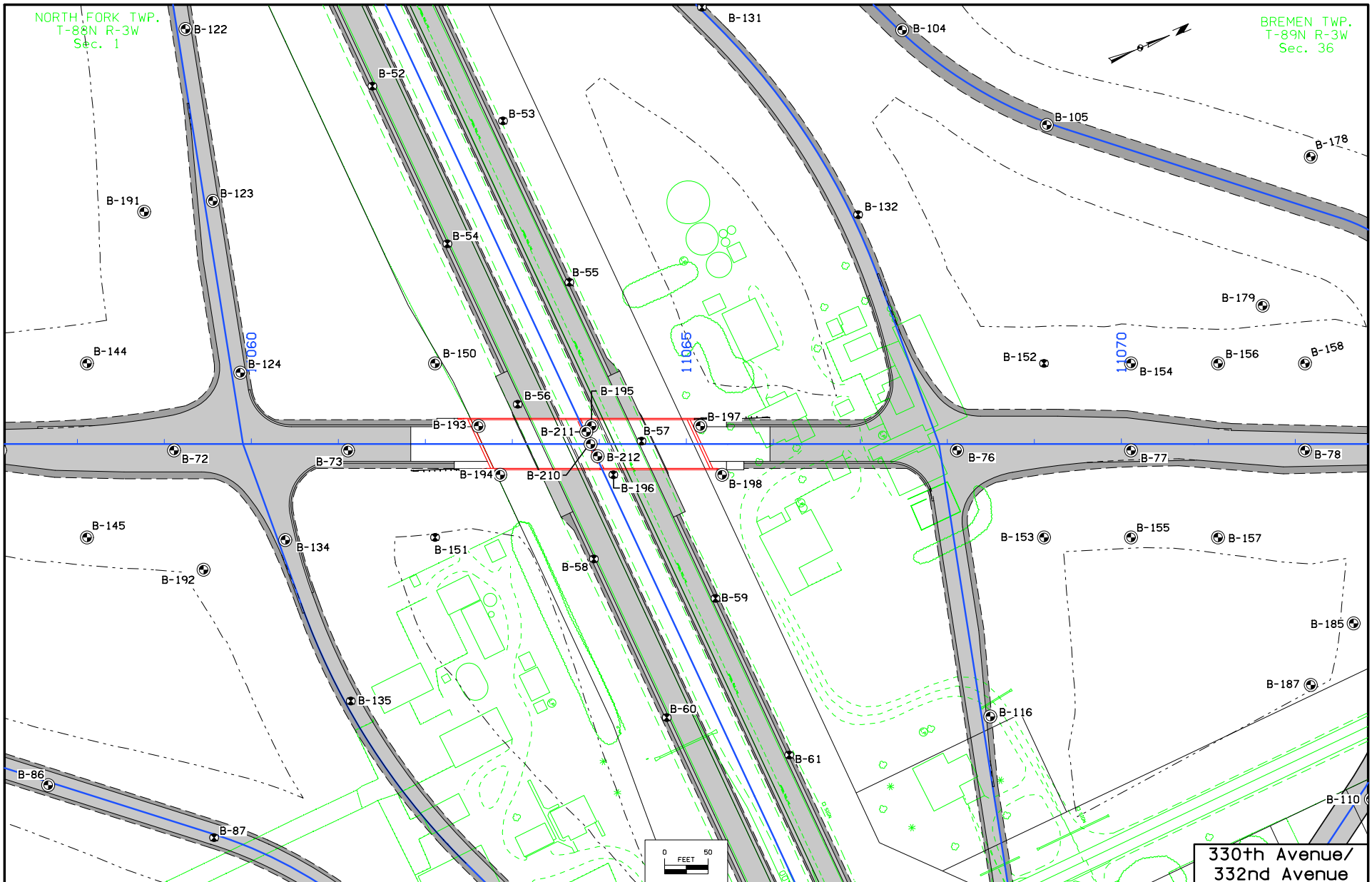




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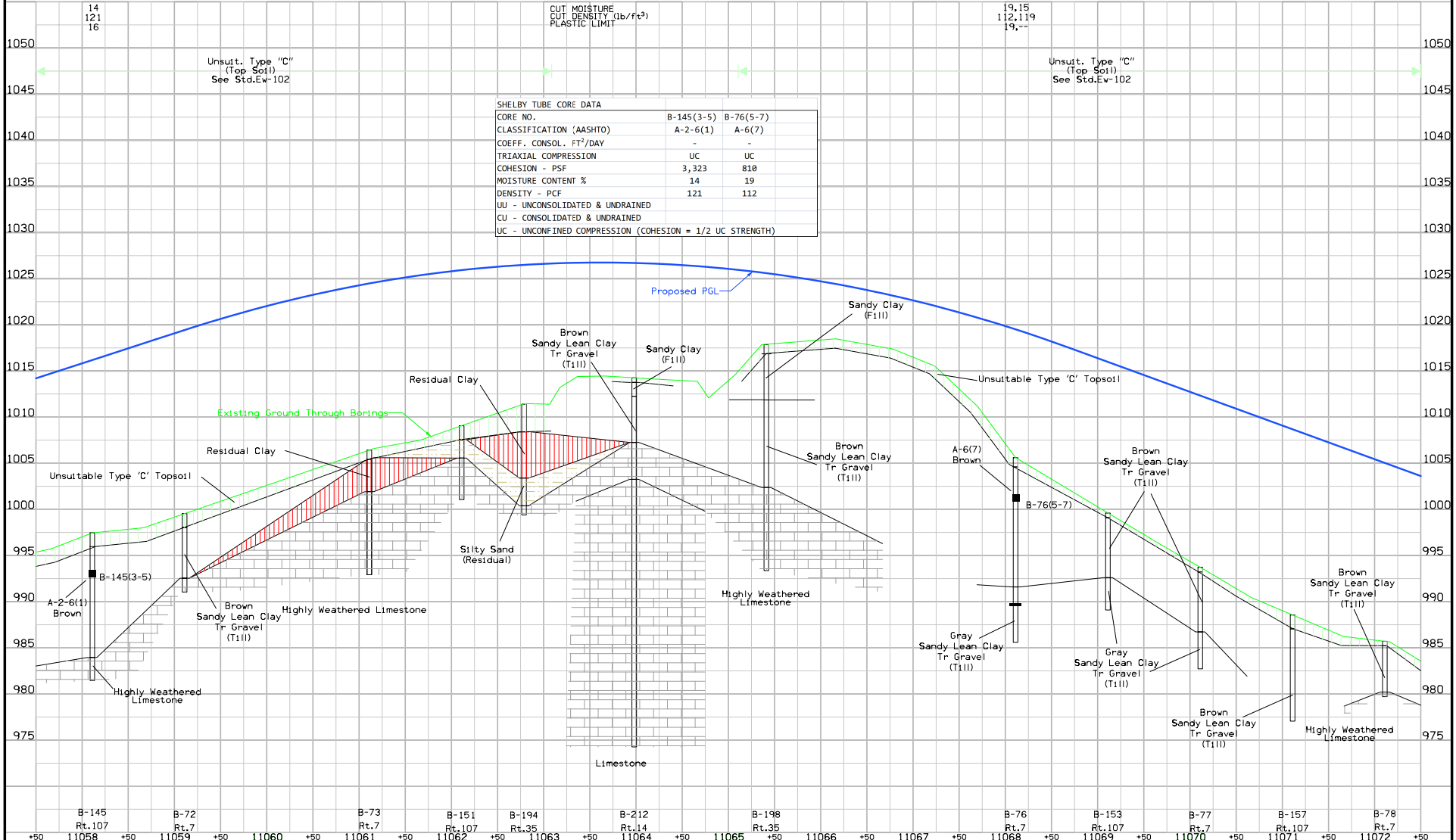
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T-88N R-3W  
Sec. 1

BREMEN TWP.  
T-89N R-3W  
Sec. 36

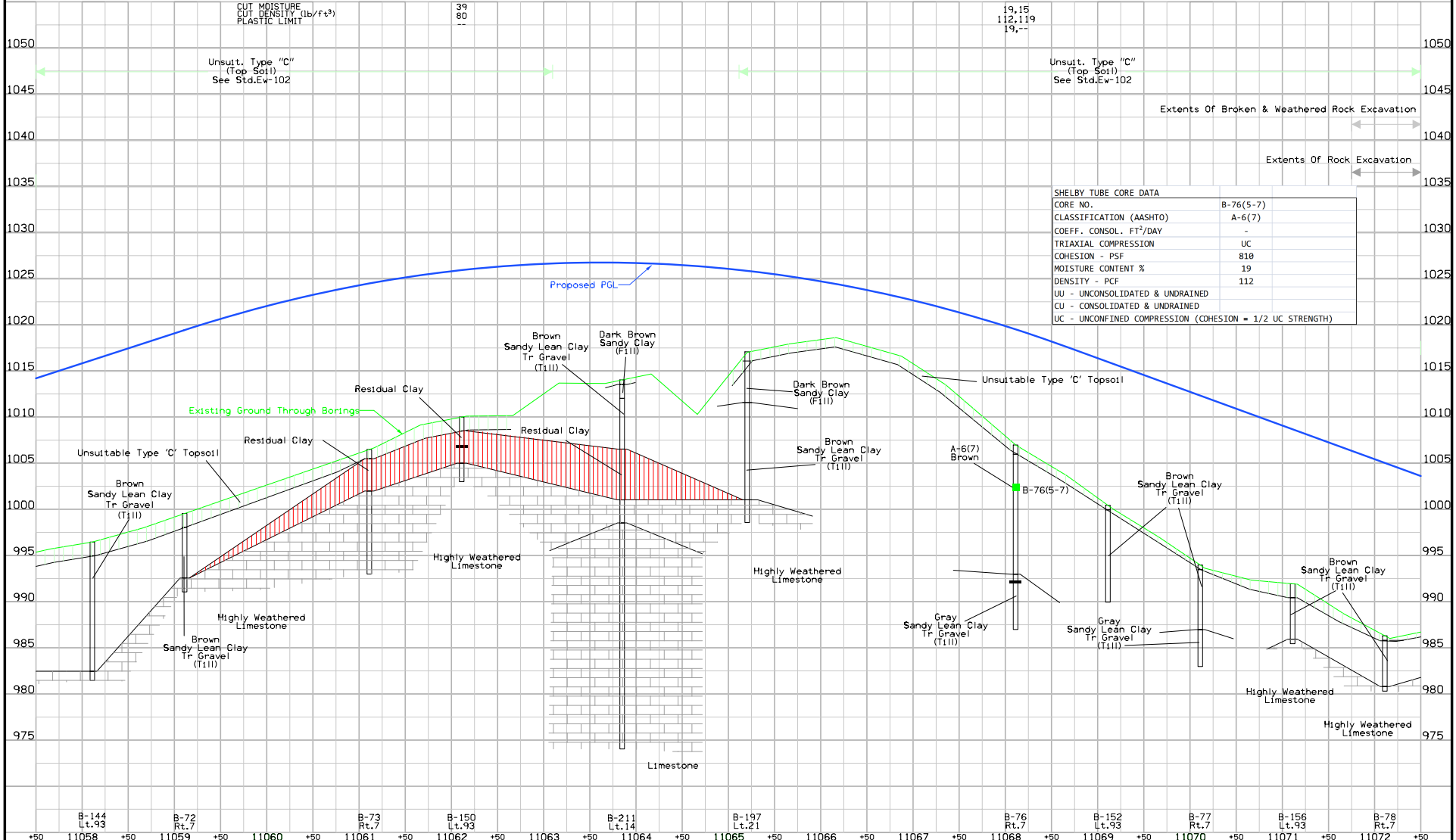
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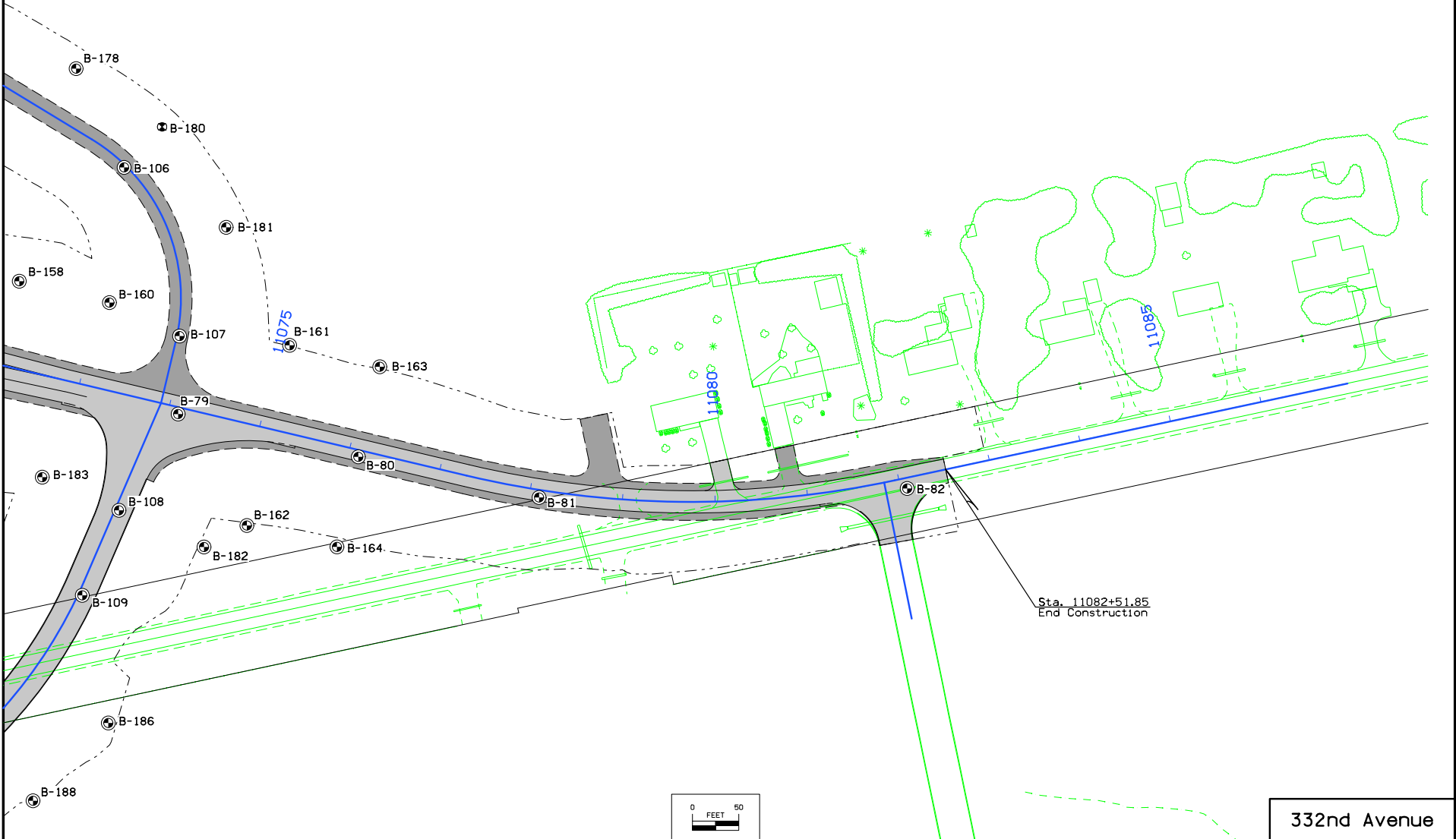
330th Avenue/  
332nd Avenue



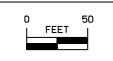
330th Avenue/  
332nd Avenue



BREMEN TWP.  
T-89N R-3W  
Sec. 36



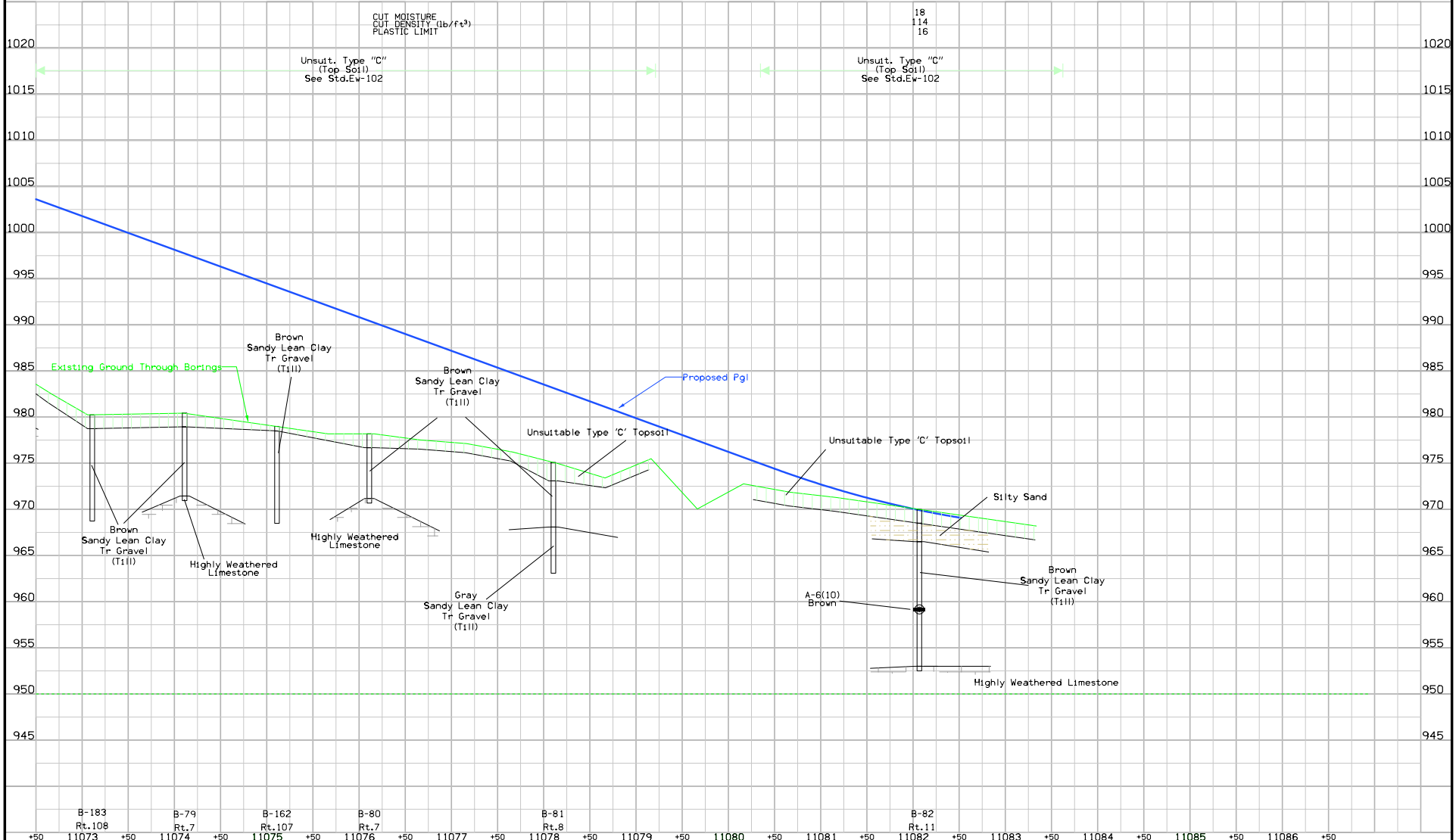
Sta. 11082+51.85  
End Construction



332nd Avenue

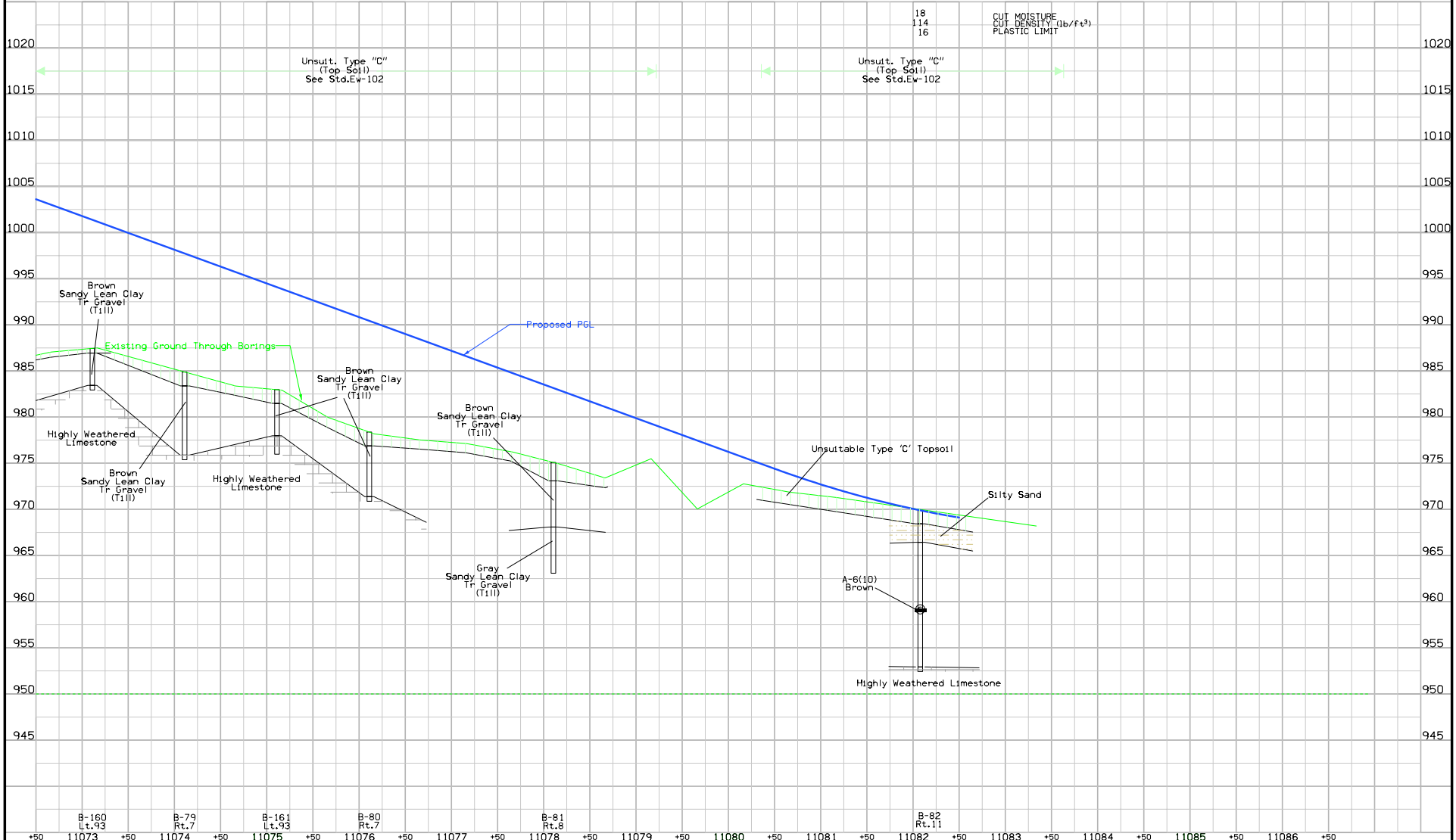
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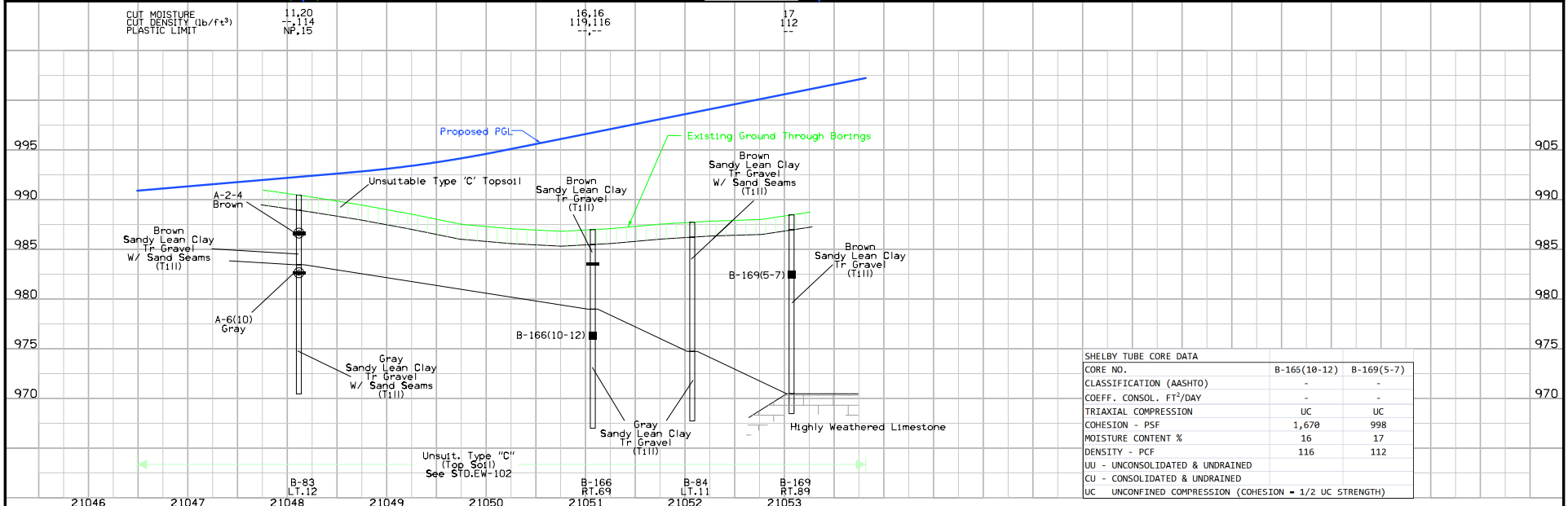
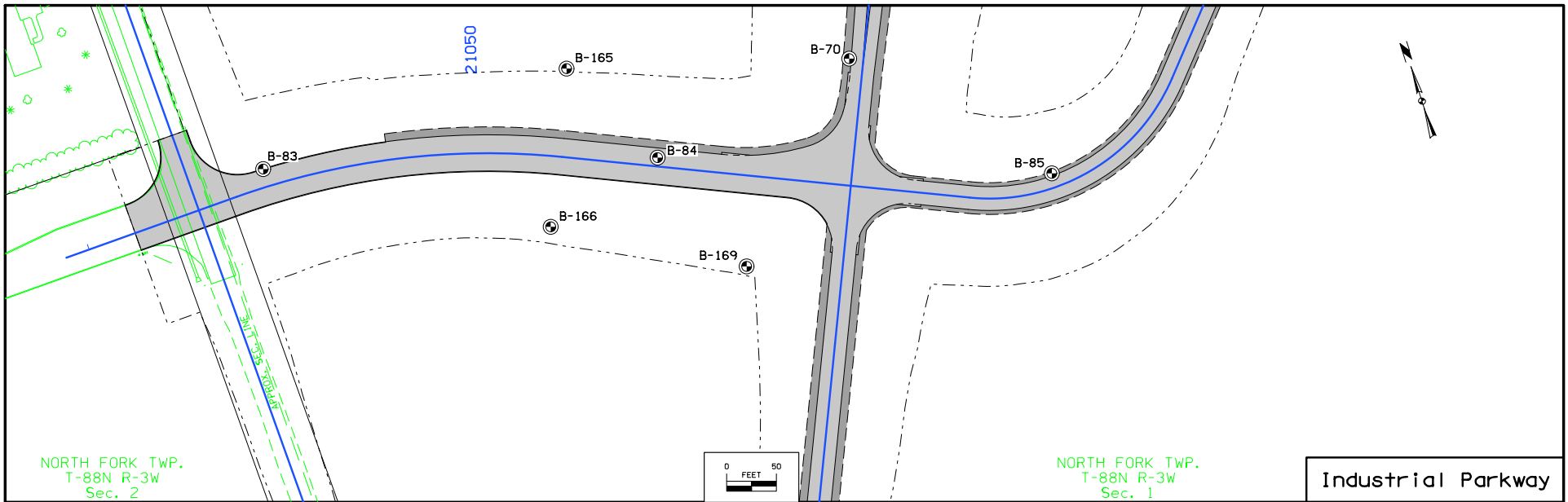


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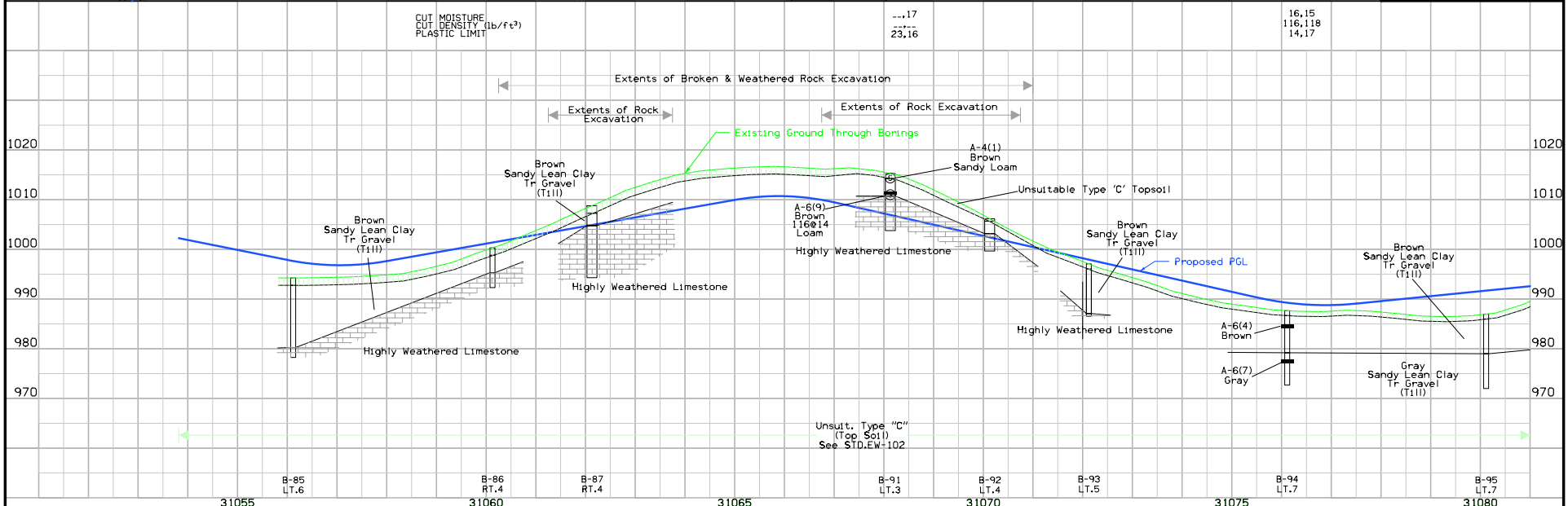
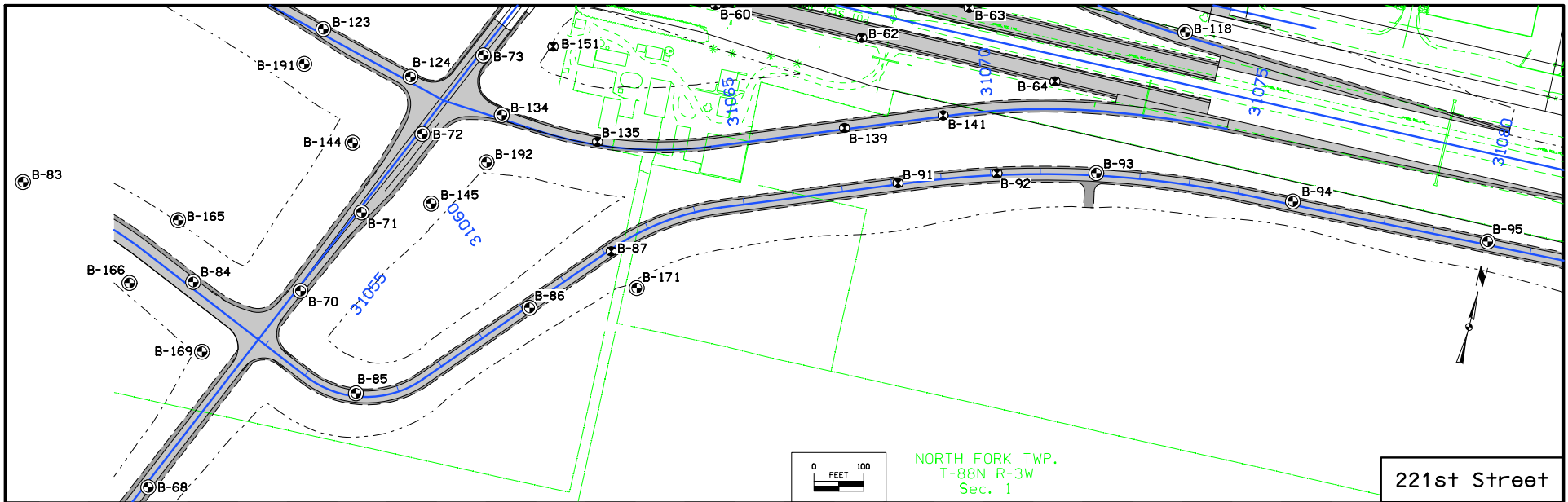




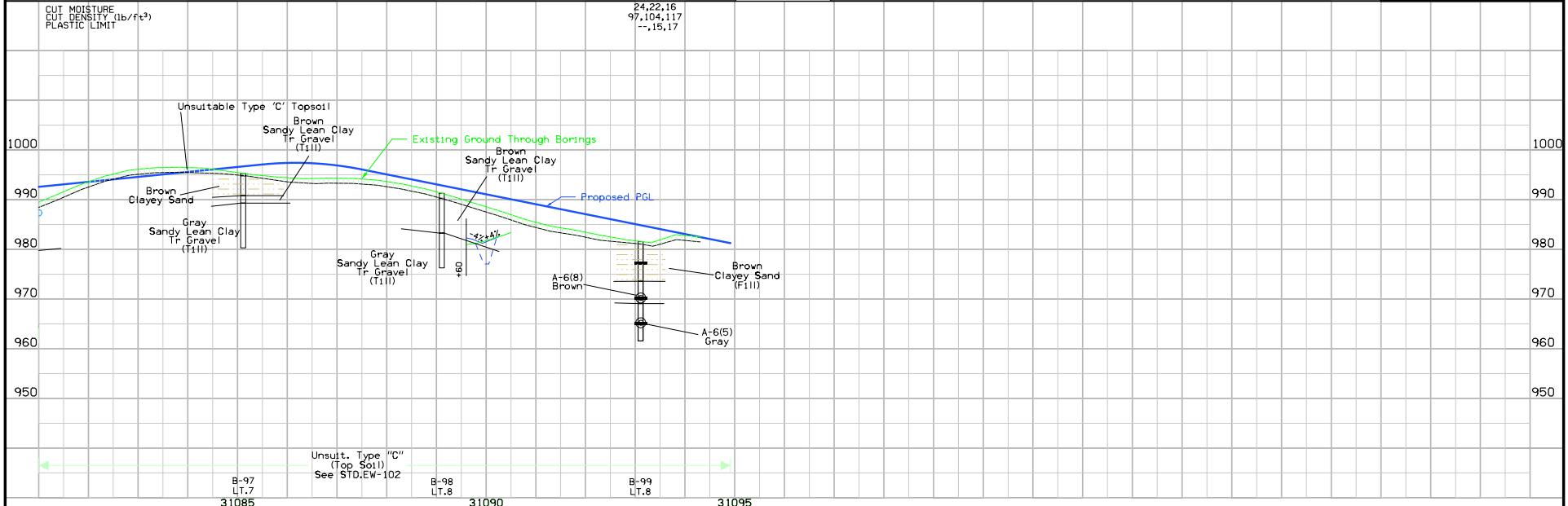
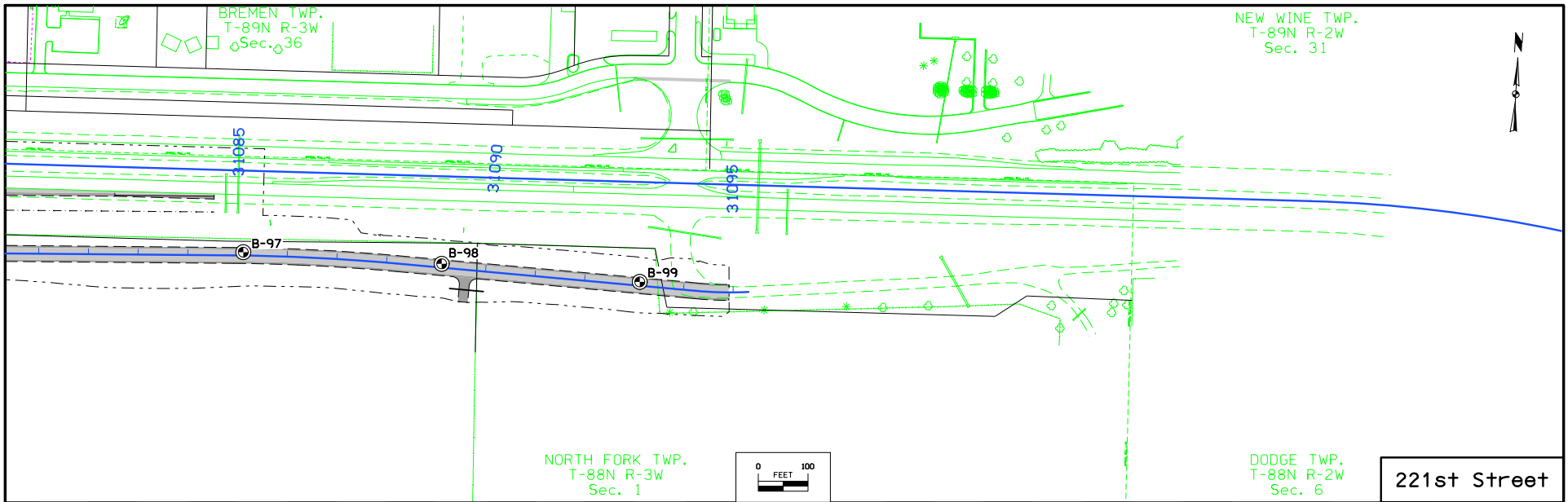
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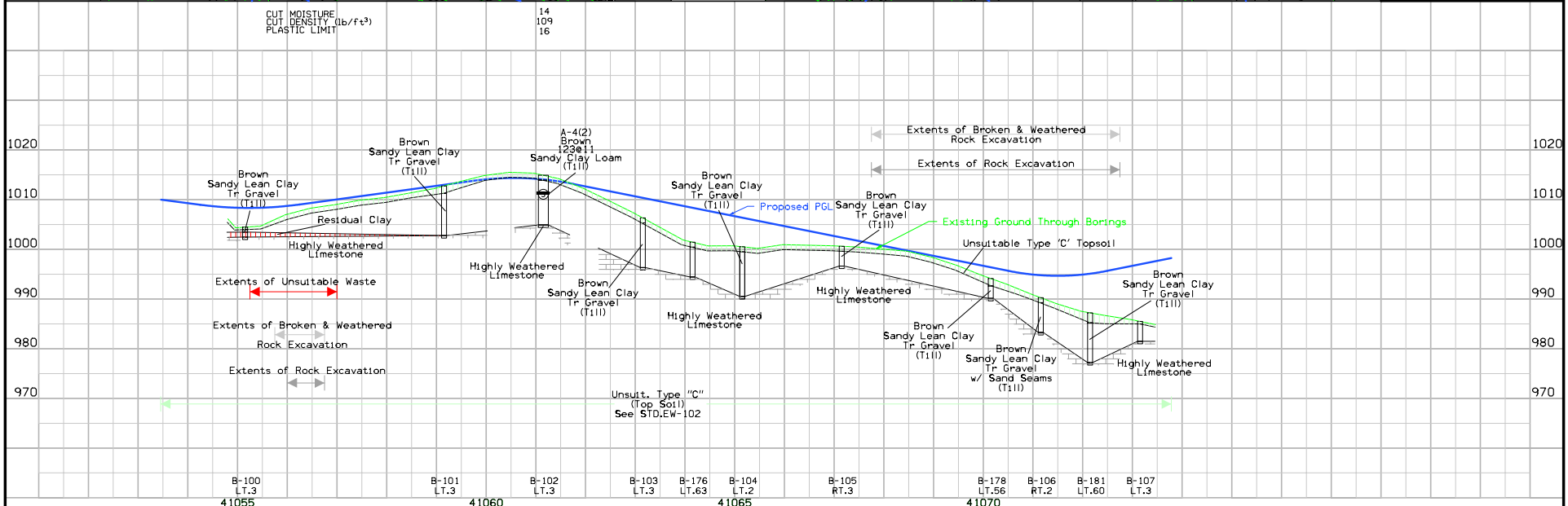
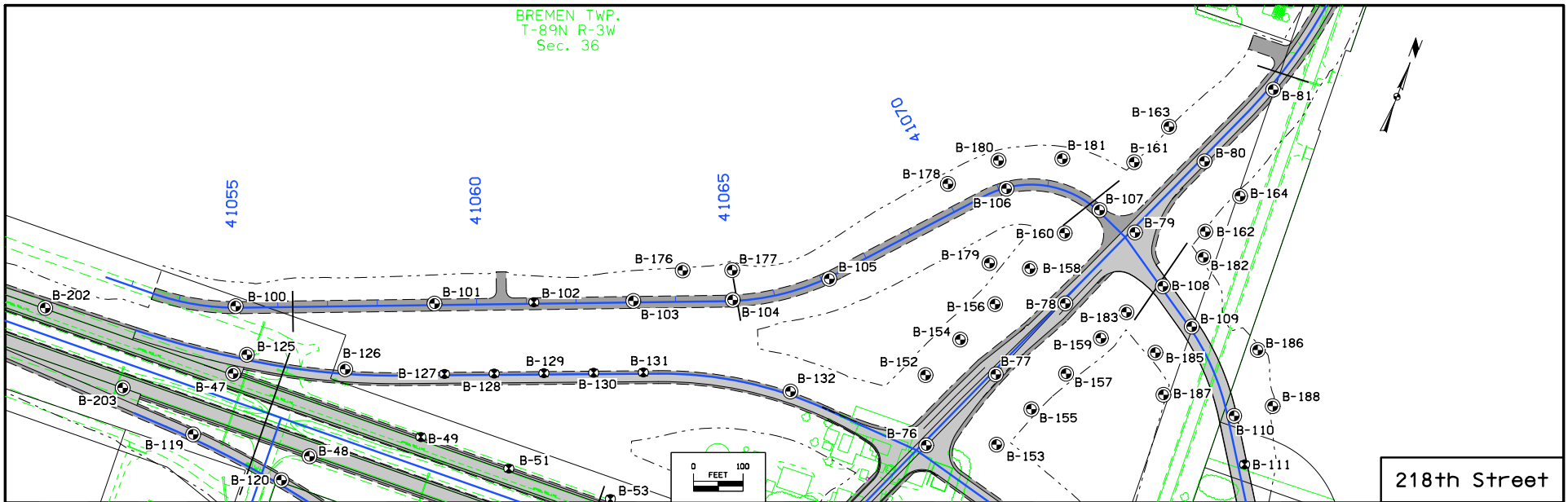
SHELBY TUBE CORE DATA		
CORE NO.	B-165(10-12)	B-169(5-7)
CLASSIFICATION (AASHTO)	-	-
COEFF. CONSOL. FT <sup>2</sup> /DAY	-	-
TRIAxIAL COMPRESSION	UC	UC
COHESION - PSF	1,670	998
MOISTURE CONTENT %	16	17
DENSITY - PCF	116	112
UU - UNCONSOLIDATED & UNDRAINED		
CU - CONSOLIDATED & UNDRAINED		
UC - UNCONFINED COMPRESSION (COHESION = 1/2 UC STRENGTH)		



FILE NO.	ENGLISH	DESIGN TEAM	STANLEY CONSULTANTS INC. \ BRAUN INTERTEC	DELAWARE/DUBUQUE COUNTY	PROJECT NUMBER	NHSX-020-9(203)--3H-28	SHEET NUMBER	Q.17
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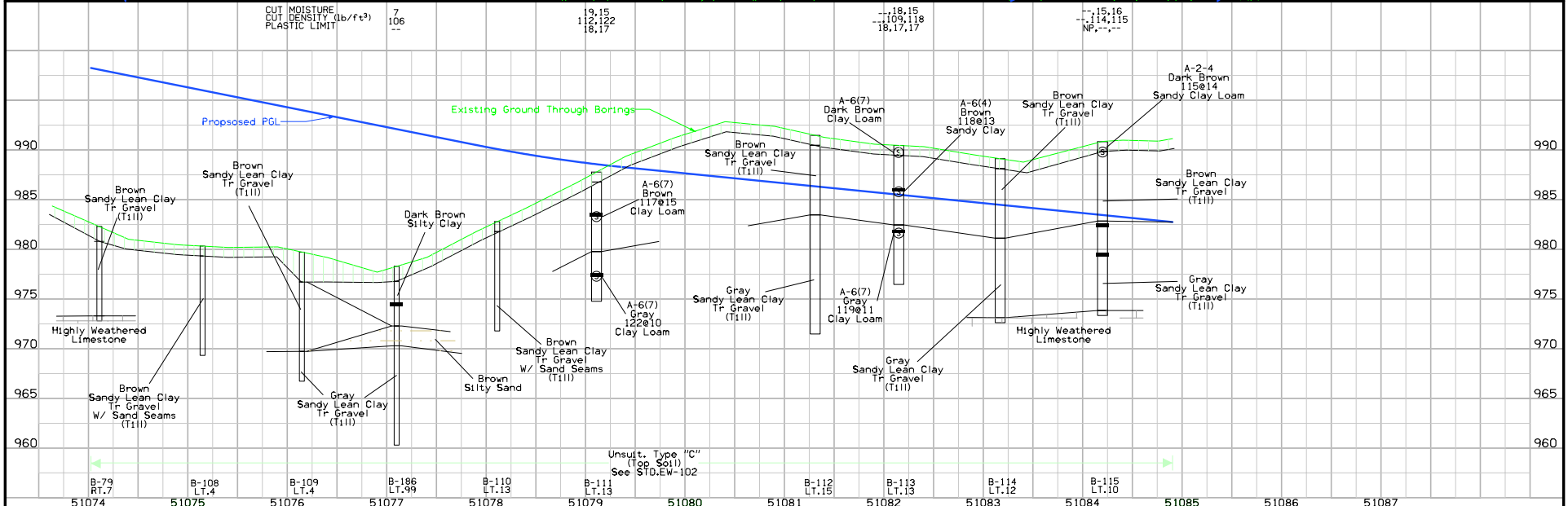
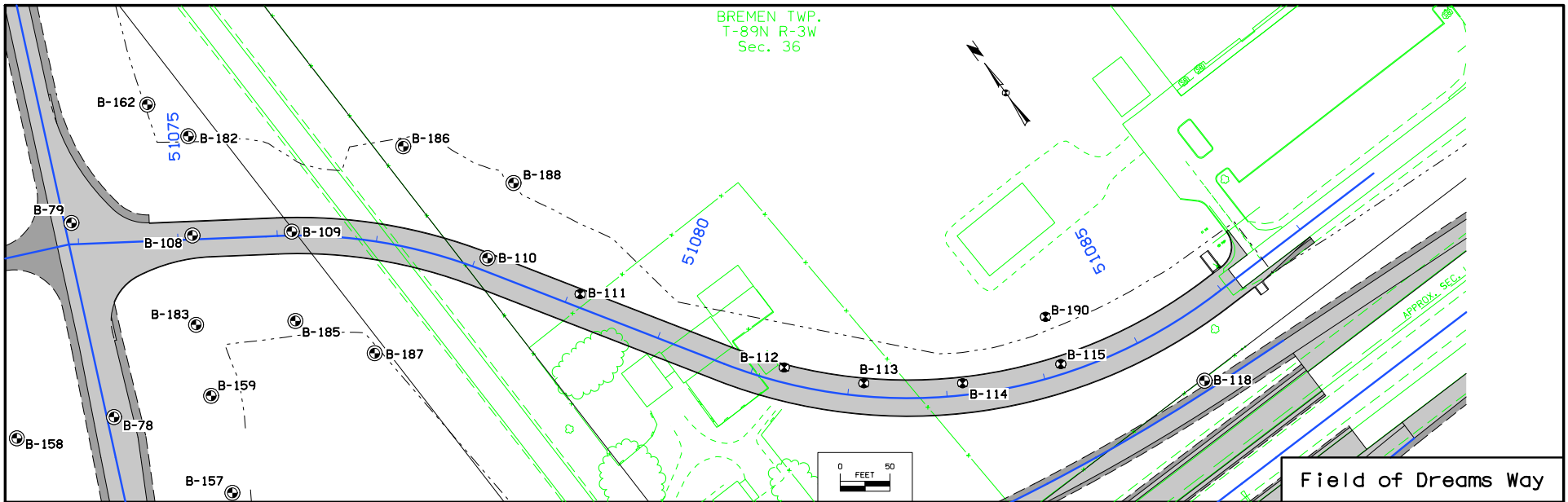


BREMEN TWP.  
T-89N R-3W  
Sec. 36

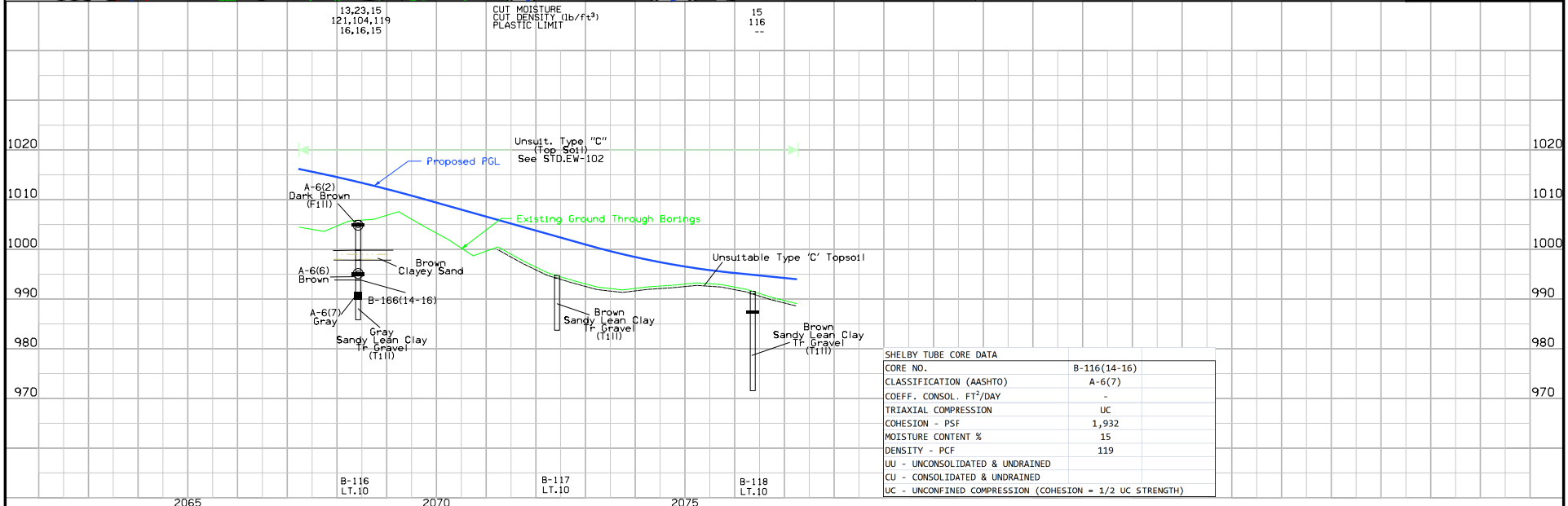
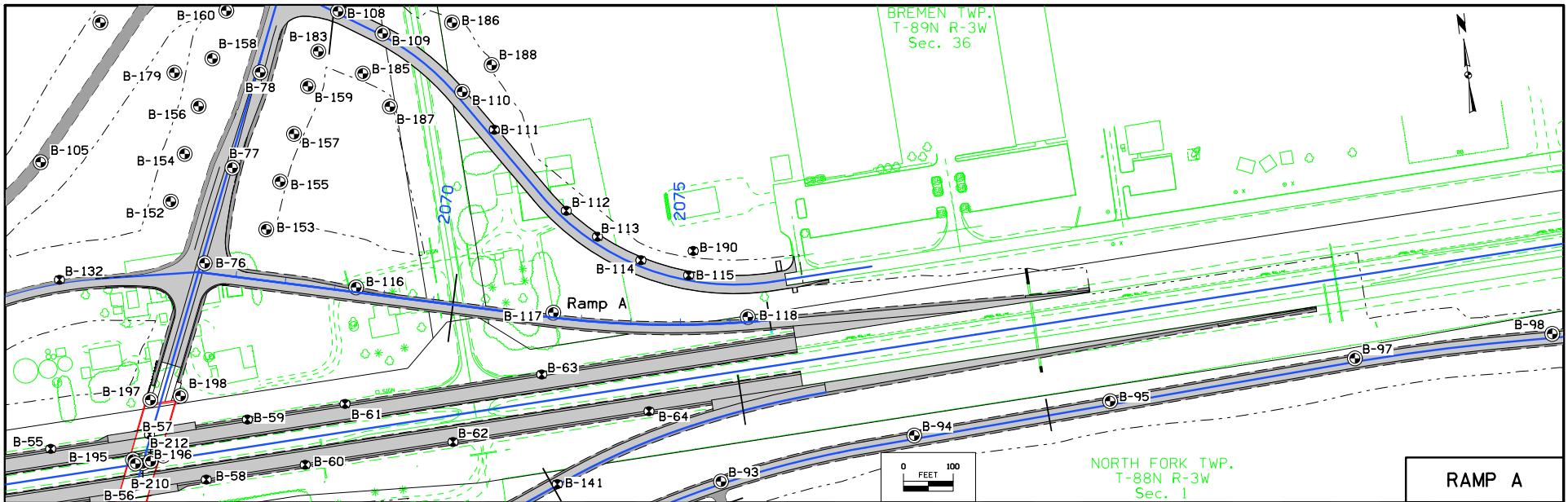


FILE NO.	ENGLISH	DESIGN TEAM	STANLEY CONSULTANTS INC. \ BRAUN INTERTEC	DELAWARE/DUBUQUE COUNTY	PROJECT NUMBER	NHSX-020-9(203)--3H-28	SHEET NUMBER	Q.19
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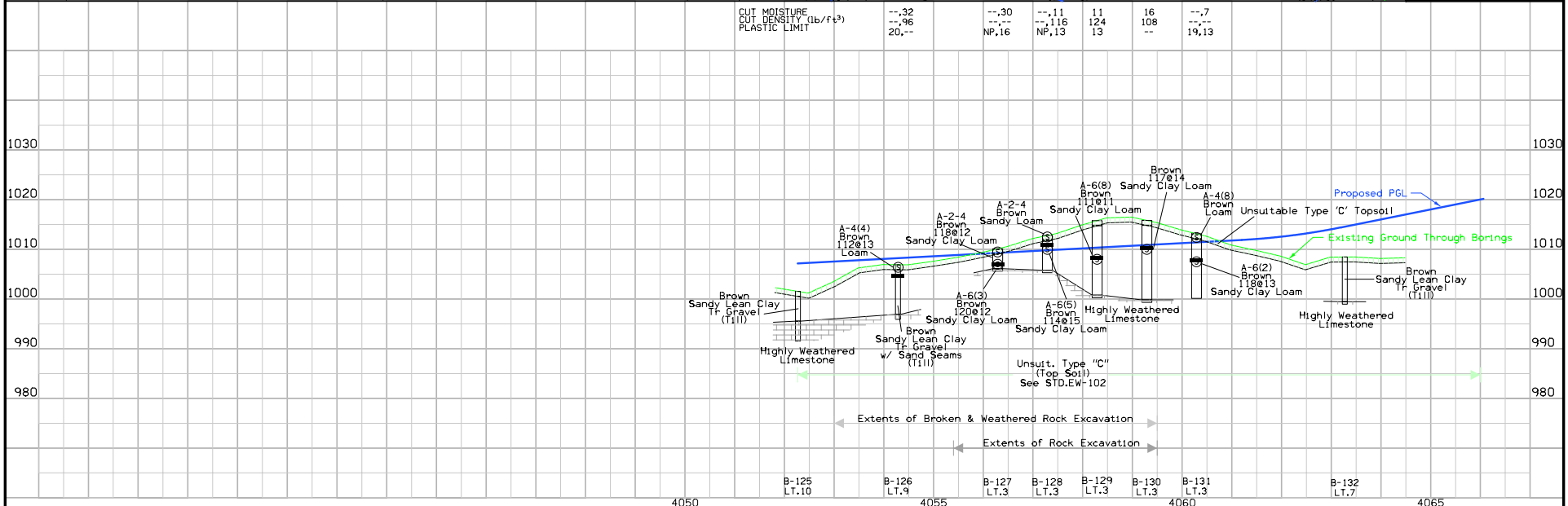
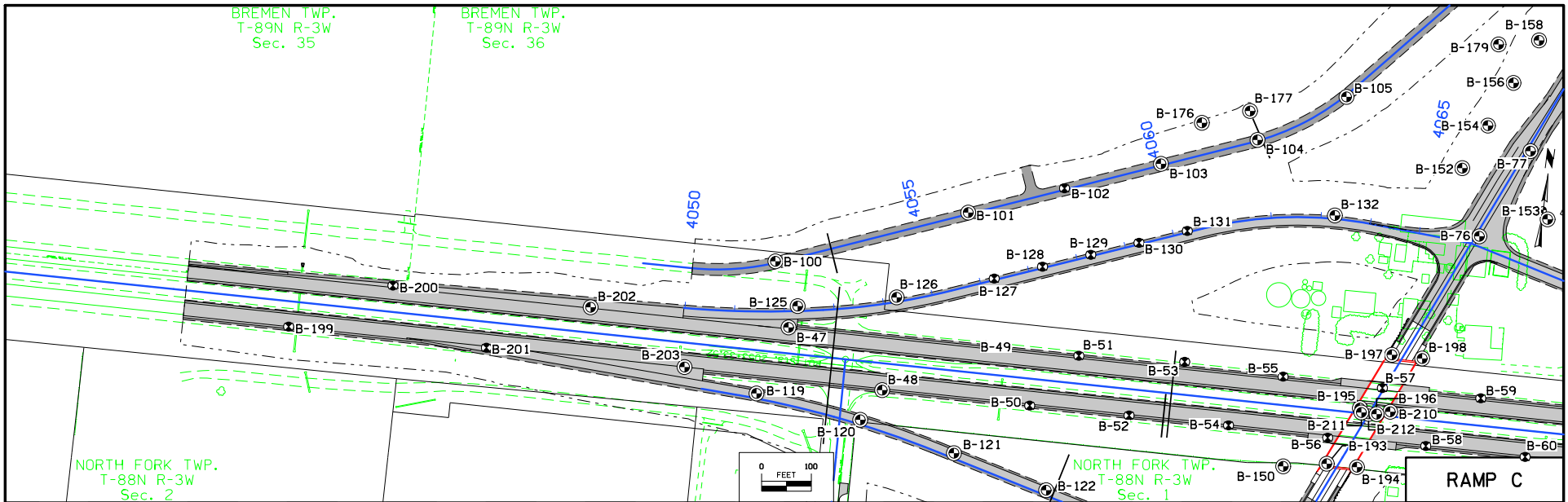


FILE NO.	ENGLISH	DESIGN TEAM	STANLEY CONSULTANTS INC.\BRAUN INTERTEC	DELAWARE/DUBUQUE COUNTY	PROJECT NUMBER	NHSX-020-9(203)-3H-28	SHEET NUMBER	Q.20
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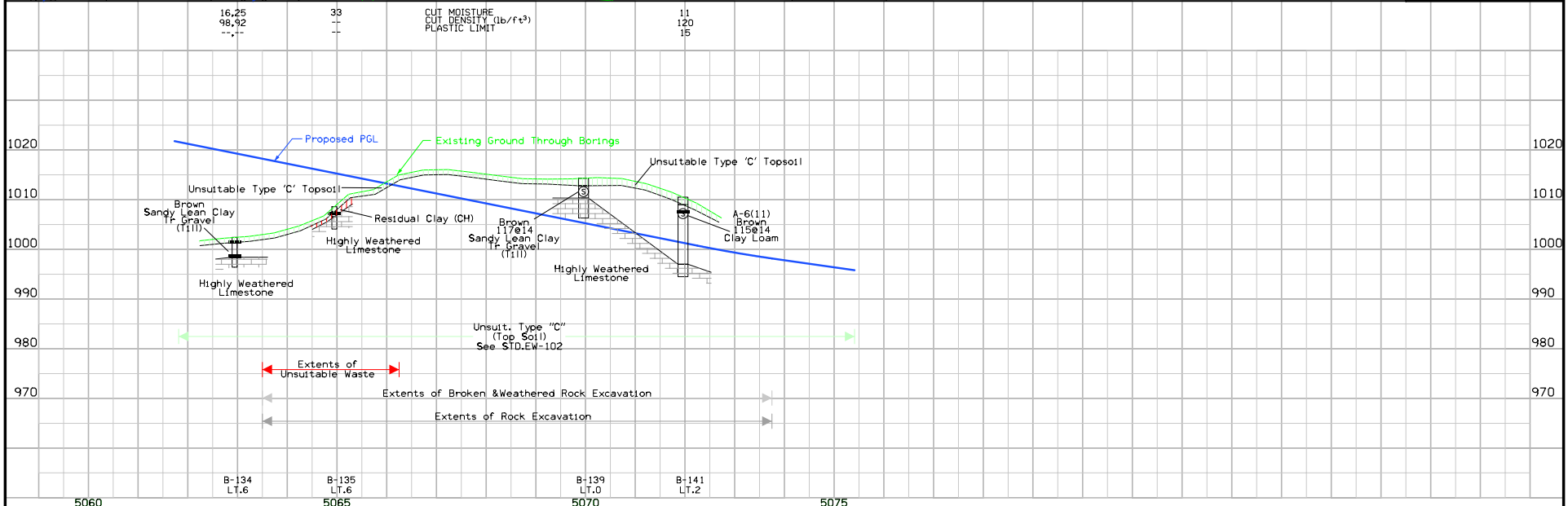
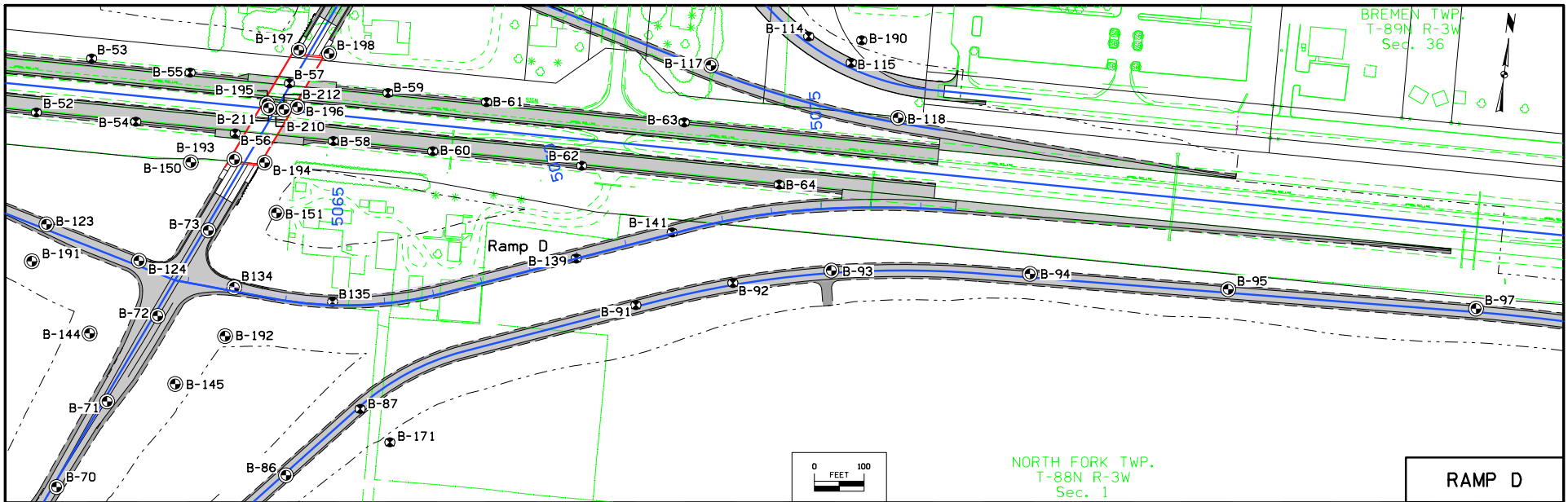








FILE NO.	ENGLISH	DESIGN TEAM	STANLEY CONSULTANTS INC. \ BRAUN INTERTEC	DELAWARE/DUBUQUE COUNTY	PROJECT NUMBER	NHSX-020-9(203)--3H-28	SHEET NUMBER	Q.23
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5060	5065	5070	5075
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**TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS**

Refer to Standard Road Plans EW-101 and EW-102.

STATION	TOTAL CUT	TOPSOIL TYPE C SAVED -C	TOPSOIL TYPE C SAVED WITH 40% SHRINK -C	BROKEN & WITHRD ROCK -C	HARD ROCK -C	HARD ROCK WITH 10% SWELL -C	CLASS 12 ROADWAY AND BORROW	CLASS 10 UNSUITABLE WASTE	CLASS 10 SUITABLE CUT	CLASS 10 SUITABLE -30% SHRINK	CLASS 10 ROADWAY AND BORROW	TOTAL FILL	APPROX. FILL VOLUME BELOW 3 FT	APPROX. FILL VOLUME BELOW 5 FT	STATION	TOTAL CUT	TOPSOIL TYPE C SAVED -C	TOPSOIL TYPE C SAVED WITH 40% SHRINK -C	BROKEN & WITHRD ROCK -C	HARD ROCK -C	HARD ROCK WITH 10% SWELL -C	CLASS 12 ROADWAY AND BORROW	CLASS 10 UNSUITABLE WASTE	CLASS 10 SUITABLE CUT	CLASS 10 SUITABLE -30% SHRINK	CLASS 10 ROADWAY AND BORROW	TOTAL FILL	APPROX. FILL VOLUME BELOW 3 FT	APPROX. FILL VOLUME BELOW 5 FT
21047+50.00	53	43	31						10	8	8	24			31068+50.00	2,753	269	192	963	495	545	1,458		1,026	789	789			
21047+57.83	191	62	44						130	100	100	31			31069+00.00	2,430	262	187	846	422	464	1,268		901	693	693			
21047+76.00	81	22	16						58	45	45	4			31069+50.00	2,108	260	186	751	406	447	1,157		691	532	532			
21047+80.67	424	193	138						231	178	178	40			31070+00.00	1,764	258	184	579	336	370	915		591	455	455			
21048+00.00	961	490	350						471	362	362	212			31070+50.00	1,401	253	181	228	137	151	365		782	602	602			
21048+50.00	255	144	103						111	85	85	94			31071+00.00	1,078	251	179						827	636	636			
21048+65.00	553	335	239						219	168	168	275			31071+50.00	840	246	176						593	456	456			
21049+00.00	212	134	96						77	59	59	135			31072+00.00	629	230	164						399	307	307	13		
21049+14.47	478	323	231						155	119	119	399	65		31072+50.00	507	214	153						293	225	225	36		
21049+50.00	593	452	323						141	108	108	802	353		31073+00.00	465	210	150						255	196	196	66		
21050+00.00	163	136	97						27	21	21	303	174	63	31073+50.00	430	207	148						223	172	172	107		
21050+15.00	370	321	229						50	38	38	810	518	258	31074+00.00	400	203	145						197	152	152	130		
21050+50.00	425	375	268						50	38	38	1,074	751	454	31074+50.00	342	193	138						149	115	115	124		
21050+90.14	106	94	67						12	9	9	284	206	133	31075+00.00	55	35	25						20	15	15	21		
21051+00.00	542	484	346						57	44	44	1,559	1,177	807	31075+09.55	213	140	100						73	56	56	74		
21051+50.00	547	500	357						47	36	36	1,747	1,382	1,012	31075+50.00	237	161	115						76	58	58	60		
21052+00.00	428	400	286						28	22	22	1,560	1,185	819	31076+00.00	244	155	111						88	68	68	33		
21052+49.37	4	4	3						4	3	3	17	11	6	31076+50.00	215	122	87						93	72	72	14		
21052+50.00	327	309	221						18	14	14	1,361	962	592	31076+88.46	71	38	27						33	25	25	4		
21053+00.00	81	76	54						5	4	4	376	203	55	31077+00.00	333	169	121						163	125	125	17		
21053+19.86	41	41	29									299	12		31077+50.00	345	181	129						165	127	127	48		
21053+50.00	27	27	19									199	11		31078+00.00	331	190	136						141	108	108	120		
21053+69.86															31078+50.00	319	197	141						122	94	94	210		
Subtotal	7,448	5,407	3,862	0	0	0	0	0	2,042	1,571	1,571	11,678	7,010	4,199	31079+00.00	279	195	139						84	65	65	290		
221st Street															31080+00.00	231	185	132							46	35	35	345	
31053+93.86	8	8	6									59	23		31080+50.00	237	185	132						52	40	40	336	31	
31054+00.00	170	169	121									766	540	231	31081+00.00	295	193	138						102	78	78	235		
31054+43.86	39	39	28									154	126	82	31081+50.00	415	203	145						212	163	163	97		
31054+50.00	543	393	281						150	115	115	1,025	781	429	31082+00.00	649	216	154						434	334	334	17		
31055+00.00	29	18	13						11	8	8	30	20	7	31082+50.00	922	225	161						697	536	536			
31055+01.86	803	447	319						356	274	274	643	378	39	31083+00.00	1,955	228	163						827	636	636			
31055+50.00	927	448	320						479	368	368	404	105		31083+50.00	1,070	227	162						843	648	648			
31056+00.00	918	419	299						500	385	385	212			31084+00.00	1,021	225	161						796	612	612			
31056+50.00	801	378	270						423	325	325	116			31084+50.00	879	221	158						658	506	506			
31057+00.00	92	46	33						46	35	35	12			31084+92.00	578	181	129						398	306	306			
31057+06.41	559	295	211						263	202	202	79			31085+00.00	93	34	24						58	45	45	1		
31057+50.00	53	29	21						23	18	18	8			31085+50.00	507	209	149						299	230	230	73		
31057+54.72	459	281	201						177	136	136	103			31085+50.00	408	202	144						207	159	159	186		
31058+00.00	429	297	212						132	102	102	160			31086+00.00	123	66	47						57	44	44	83		
31059+00.00	409	294	210						115	88	88	176			31086+16.67	238	132	94						107	82	82	171		
31059+50.00	449	300	214						149	115	115	146			31087+00.00	379	197	141						181	139	139	200		
31060+00.00	526	312	223						214	165	165	94			31087+50.00	452	204	146						248	191	191	100		
31060+50.00	652	326	233	38			38		288	222	222	32			31088+00.00	514	210	150						304	234	234	38		
31061+00.00	1,247	365	261	304	40	44	344		538	414	414				31088+20.76	228	88	63						140	108	108	8		
31061+50.00	1,568	391	279	773	73	80	846		333	256	256				31088+50.00	546	214	153						332	255	255	28		
31062+00.00	401	92	66	256	22	24	278		32	25	25				31089+00.00	531	213	152						318	245	245	35		
31062+11.34	1,521	321	229	771	69	76	840		360	277	277				31089+50.00	507	211	151						295	227	227	44		
31062+50.00	2,311	435	311	850	62	68	912		964	742	742				31090+00.00	417	204	146						213	164	164	109		
31063+00.00	2,571	431	308	950	113	124	1,063		1,078	829	829				31091+00.00	322	196	140						126	97	97	181		
31063+50.00	2,665	406	290	829	89	98	918		1,341	1,032	1,032				31091+50.00	292	192	137						100	77	77	204		
31064+00.00	2,679	398	284	491			491		1,790	1,377	1,377		</																



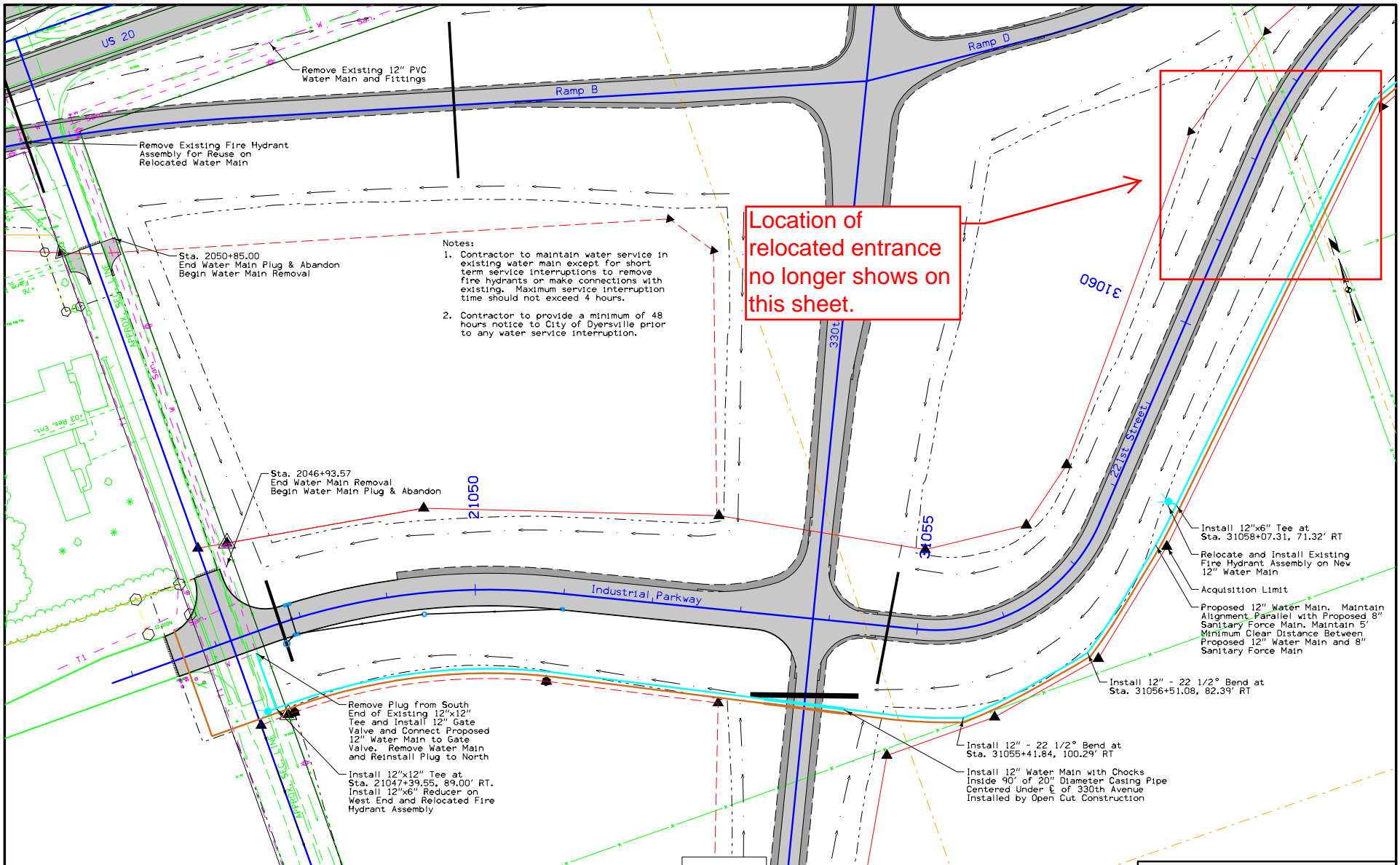
**TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS**

Refer to Standard Road Plans EW-101 and EW-102.

STATION	TOTAL CUT	TOPSOIL TYPE C SAVED -C	TOPSOIL TYPE C SAVED WITH 40% SHRINK -C	BROKEN & WITHRD ROCK -C	HARD ROCK -C	HARD ROCK WITH 10% SWELL -C	CLASS 12 ROADWAY AND BORROW	CLASS 10 UNSUITABLE WASTE	CLASS 10 SUITABLE CUT	CLASS 10 SUITABLE -30% SHRINK	CLASS 10 ROADWAY AND BORROW	TOTAL FILL	APPROX. FILL VOLUME BELOW 3 FT	APPROX. FILL VOLUME BELOW 5 FT	STATION	TOTAL CUT	TOPSOIL TYPE C SAVED -C	TOPSOIL TYPE C SAVED WITH 40% SHRINK -C	BROKEN & WITHRD ROCK -C	HARD ROCK -C	HARD ROCK WITH 10% SWELL -C	CLASS 12 ROADWAY AND BORROW	CLASS 10 UNSUITABLE WASTE	CLASS 10 SUITABLE CUT	CLASS 10 SUITABLE -30% SHRINK	CLASS 10 ROADWAY AND BORROW	TOTAL FILL	APPROX. FILL VOLUME BELOW 3 FT	APPROX. FILL VOLUME BELOW 5 FT		
218th Street															51075+50.00	465	455	325						10	8	8	3,001	2,746	2,320		
41053+46.33	10	10	7												51076+00.00	4	3	2						1	1	1	23	20	17		
41053+50.00	136	127	91						8	6	6	14			51076+00.40	430	428	306						2	2	2	2,515	2,221	1,799		
41054+00.00	94	62	44						33	25	25	101			51076+50.00	350	349	249						1	1	1	1,913	1,562	1,136		
41054+25.00	321	67	48						254	195	195	302	204	74	51077+00.00	353	309	221						44	34	34	1,532	1,148	722		
41054+50.00	369	127	91						241	185	185	352	133		51077+50.00	419	218	156						200	154	154	1,011	685	345		
41055+00.00	246	66	47						180	138	138	233	141	24	51077+89.93	143	55	39						88	68	68	226	141	55		
41055+22.57	135	21	15						114	88	88	124	128	121	51078+00.00	146	55	39						91	70	70	206	118	32		
41055+23.93	215	76	54	1		1			139	107	107	188	74		51078+10.16	525	230	164						335	258	212	611	251			
41055+50.00	472	164	117	3	2	2	5	4	304	234	234	276	50		51078+50.00	629	294	210						421	324	324	13				
41056+00.00	280	98	70	4	4	4	8	15	175	135	135	85		51079+00.00	616	195	139														
41056+25.00	331	111	79	6	9	10	15	11	206	158	158	54		51079+39.93	182	43	31						139	107	107						
41056+50.00	733	228	163	8	13	14	21	17	485	373	373	95		51079+50.00	1,276	227	162						1,049	807	807						
41057+00.00	721	227	162					27	494	380	380	90		51080+00.00	1,730	246	176						1,484	1,142	1,142						
41057+50.00	675	227	162					8	448	345	345	86		51080+50.00	799	109	78						690	531	531						
41058+00.00	612	225	161						387	298	298	83		51080+71.57	1,012	141	101						870	669	669						
41058+50.00	603	224	160						379	292	292	68		51081+00.00	1,611	235	168						1,376	1,058	1,058						
41059+00.00	675	225	161						449	345	345	44		51081+50.00	1,417	218	156						1,198	932	932						
41059+50.00	377	113	81						263	202	202	10		51082+00.00	1,281	209	149						1,073	825	825						
41059+75.00	397	115	82						282	217	217	5		51082+50.00	1,126	181	129						946	728	728						
41060+00.00	944	256	183						688	529	529	3		51083+00.00	1,018	155	111						862	663	663						
41060+56.12	767	199	142						568	437	437			51083+50.00	1,019	148	106						871	670	670						
41061+00.00	830	224	160						606	466	466	6		51084+00.00	1,098	141	101						956	735	735						
41061+75.00	377	111	79						266	205	205	12		51084+50.00	1,211	144	103						1,067	821	821						
41062+00.00	348	112	80						236	182	182	24		51085+00.00	1,255	146	104						1,110	854	854						
41062+50.00	583	228	157						363	279	279	120		51085+50.00	779	112	80						667	513	513						
41063+00.00	444	214	153						230	177	177	246	18	51085+93.14	62	15	11						47	36	36						
41063+50.00	386	225	161						160	123	123	377	160	51086+00.00	105	41	29						65	50	50						
41063+75.00	382	244	174						138	106	106	461	251	51086+18.48																	
41064+00.00	382	249	178						133	102	102	518	314	54																	
41064+50.00	386	255	182						131	101	101	574	376	120																	
41064+99.45	4	3	2						1	1	1	6	4	1																	
41065+00.00	378	255	182						123	95	95	568	368	108																	
41066+00.00	343	225	161						118	91	91	416	203																		
41066+50.00	390	211	151						178	137	137	269	43																		
41067+00.00	753	225	161	47	5	5	52		476	366	366	394	179																		
41067+39.10	280	55	39	12	0	12			214	165	165	125	81	24																	
41067+50.00	1,436	256	183	99	26	29	125		1,055	812	812	563	363	103																	
41068+00.00	1,635	267	191	104	49	54	153		1,214	934	934	539	336	76																	
41068+50.00	1,717	276	197	108	74	81	182		1,260	969	969	542	340	80																	
41069+00.00	1,623	279	199	113	115	126	228		1,117	859	859	515	310	50																	
41069+50.00	1,521	281	201	116	112	123	228		1,013	779	779	570	370	110																	
41070+00.00	1,357	280	200	118	105	115	223		855	658	658	623	428	168																	
41070+50.00	454	106	76	46	52	57	98		250	192	192	232	155	56																	
41070+69.20	580	172	123	38	48	53	86		322	248	248	289	160																		
41071+00.00	731	287	205	7	5	5	12		433	333	333	446	235																		
41071+50.00	724	304	217	18	29	32	47		373	287	287	632	438	178																	
41072+00.00	1,112	333	238	87	62	68	149		631	485	485	1,150	1,001	741																	
41072+50.00	848	286	204	76	36	40	112		451	347	347	1,482	1,362	1,102																	
41073+00.00	92	92	66						604	555	555	451																			
41073+20.22	1	1	1						9	8	7																				
41073+20.51	2	1	1																												







Location of relocated entrance no longer shows on this sheet.

- Notes:
1. Contractor to maintain water service in existing water main except for short term service interruptions to remove fire hydrants or make connections with existing. Maximum service interruption time should not exceed 4 hours.
  2. Contractor to provide a minimum of 48 hours notice to City of Dyersville prior to any water service interruption.

Remove Existing 12" PVC Water Main and Fittings

Remove Existing Fire Hydrant Assembly For Reuse on Relocated Water Main

Sta. 2050+85.00  
End Water Main Plug & Abandon  
Begin Water Main Removal

Sta. 2046+93.57  
End Water Main Removal  
Begin Water Main Plug & Abandon

Remove Plug from South End of Existing 12"x12" Tee and Install 12" Gate Valve and Connect Proposed 12" Water Main to Gate Valve. Remove Water Main and Reinstall Plug to North

Install 12"x12" Tee at Sta. 21047+39.55, 89.00' RT. Install 12"x6" Reducer on West End and Relocated Fire Hydrant Assembly

Install 12"x6" Tee at Sta. 31058+07.31, 71.32' RT

Relocate and Install Existing Fire Hydrant Assembly on New 12" Water Main

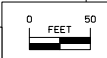
Acquisition Limit

Proposed 12" Water Main. Maintain Alignment Parallel with Proposed 8" Sanitary Force Main. Maintain 5' Minimum Clear Distance Between Proposed 12" Water Main and 8" Sanitary Force Main

Install 12" - 22 1/2° Bend at Sta. 31056+51.08, 82.39' RT

Install 12" - 22 1/2° Bend at Sta. 31055+41.84, 100.29' RT

Install 12" Water Main with Chocks Inside 90" of 20" Diameter Casing Pipe Centered Under C of 330th Avenue Installed by Open Cut Construction

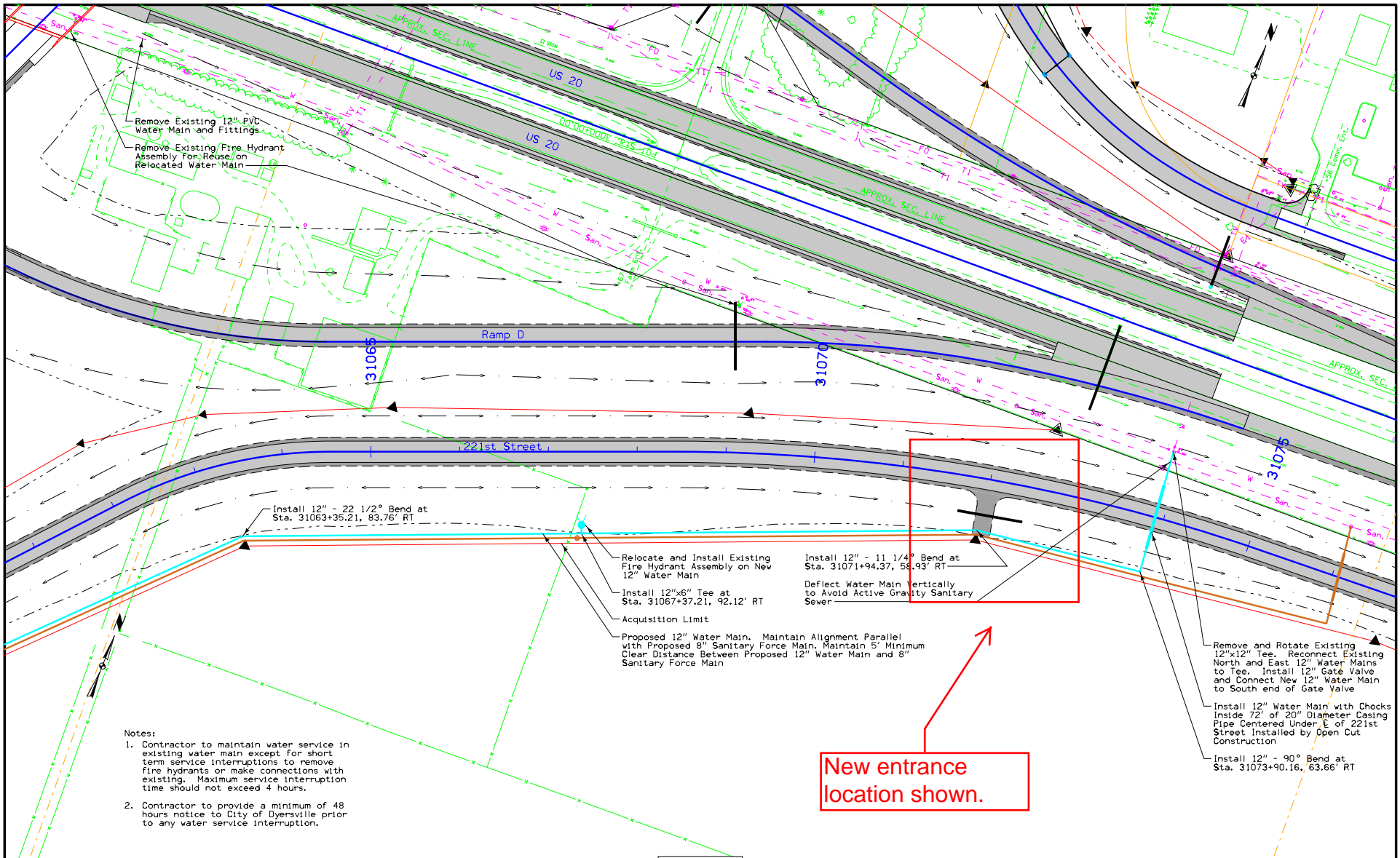


For Sanitary Sewer Details Refer to Sheets No. U.5 - U.8

For Profile Details Refer to Sheet No. U.2

**Water Main Relocation**

FILE NO.	ENGLISH	DESIGN TEAM	Stanley Consultants Inc.	DELAWARE/DUBUQUE COUNTY	PROJECT NUMBER	NHSX-020-9(203)--3H-28	SHEET NUMBER	U.1
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Remove Existing 12" PVC Water Main and Fittings  
 Remove Existing Fire Hydrant Assembly for Reuse on Relocated Water Main

Install 12" - 22 1/2° Bend at Sta. 31063+35.21, 83.76' RT

Relocate and Install Existing Fire Hydrant Assembly on New 12" Water Main  
 Install 12"x6" Tee at Sta. 31067+37.21, 92.12' RT  
 Acquisition Limit

Install 12" - 11 1/4° Bend at Sta. 31071+94.37, 58.93' RT  
 Deflect Water Main Vertically to Avoid Active Gravity Sanitary Sewer

Proposed 12" Water Main. Maintain Alignment Parallel with Proposed 8" Sanitary Force Main. Maintain 5' Minimum Clear Distance Between Proposed 12" Water Main and 8" Sanitary Force Main

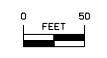
Remove and Rotate Existing 12"x12" Tee. Reconnect Existing North and East 12" Water Mains to Tee. Install 12" Gate Valve and Connect New 12" Water Main to South end of Gate Valve

Install 12" Water Main with Chocks Inside 72" of 20" Diameter Casing Pipe Centered Under E of 221st Street. Installed by Open Cut Construction

Install 12" - 90° Bend at Sta. 31073+90.16, 63.66' RT

- Notes:
- Contractor to maintain water service in existing water main except for short term service interruptions to remove fire hydrants or make connections with existing. Maximum service interruption time should not exceed 4 hours.
  - Contractor to provide a minimum of 48 hours notice to City of Dyersville prior to any water service interruption.

**New entrance location shown.**

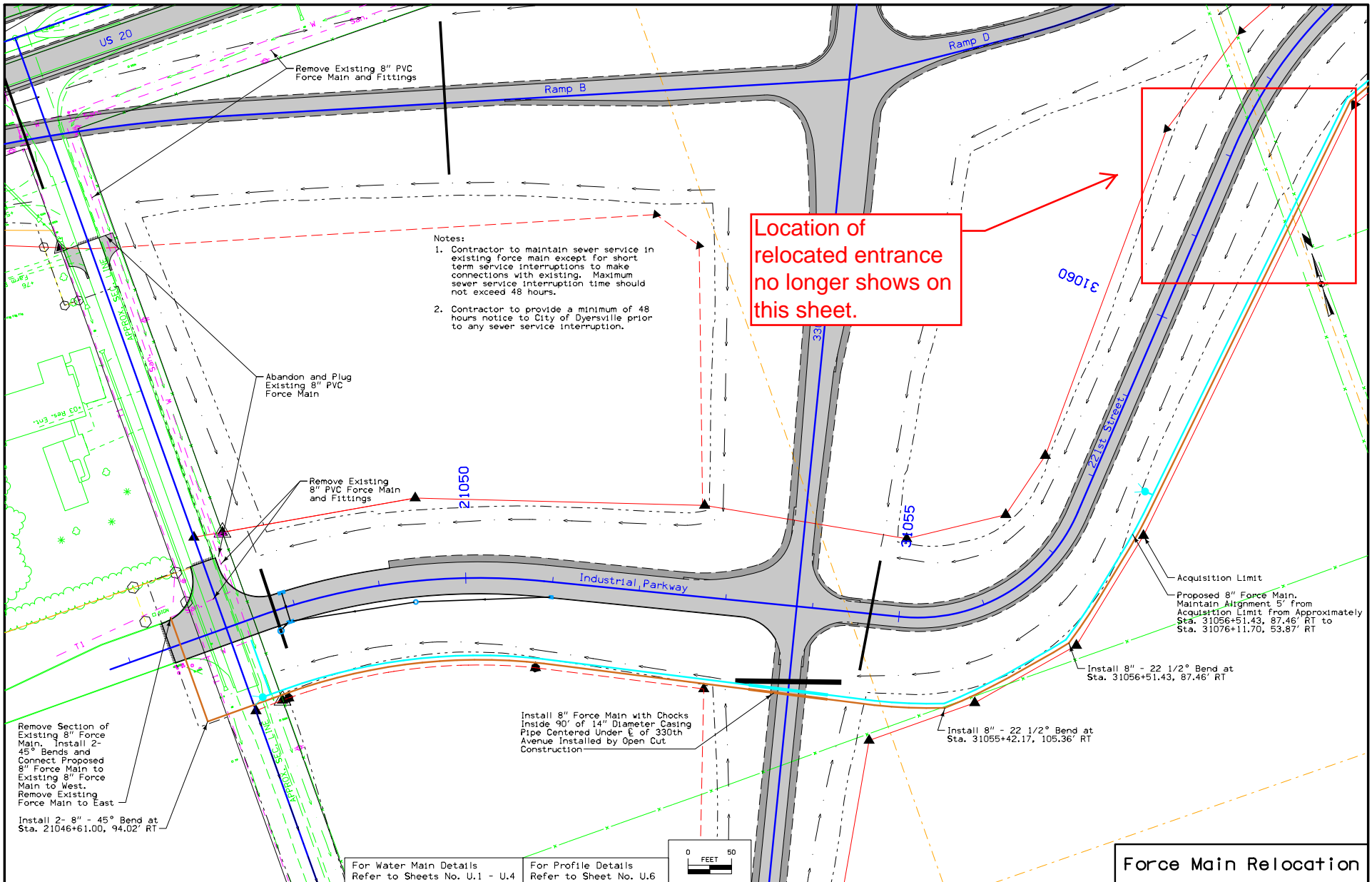


For Sanitary Sewer Details Refer to Sheets No. U.5 - U.8

For Profile Details Refer to Sheet No. U.4

**Water Main Relocation**

FILE NO.	ENGLISH	DESIGN TEAM	STANLEY CONSULTANTS INC.	DELAWARE/DUBUQUE COUNTY	PROJECT NUMBER	NHSX-020-9(203)--3H-28	SHEET NUMBER	U.3
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Location of relocated entrance no longer shows on this sheet.

- Notes:
1. Contractor to maintain sewer service in existing force main except for short term service interruptions to make connections with existing. Maximum sewer service interruption time should not exceed 48 hours.
  2. Contractor to provide a minimum of 48 hours notice to City of Dyersville prior to any sewer service interruption.

Abandon and Plug Existing 8" PVC Force Main

Remove Existing 8" PVC Force Main and Fittings

Remove Section of Existing 8" Force Main. Install 2- 45° Bends and Connect Proposed 8" Force Main to Existing 8" Force Main to West. Remove Existing Force Main to East

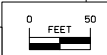
Install 2- 8" - 45° Bend at Sta. 21046+61.00, 94.02' RT

Install 8" Force Main with Chocks Inside 90' of 14" Diameter Casing Pipe Centered Under E of 330th Avenue Installed by Open Cut Construction

Install 8" - 22 1/2° Bend at Sta. 31056+51.43, 87.46' RT

Install 8" - 22 1/2° Bend at Sta. 31055+42.17, 105.36' RT

Acquisition Limit  
Proposed 8" Force Main. Maintain Alignment 5' from Acquisition Limit from Approximately Sta. 31056+51.43, 87.46' RT to Sta. 31076+11.70, 53.87' RT



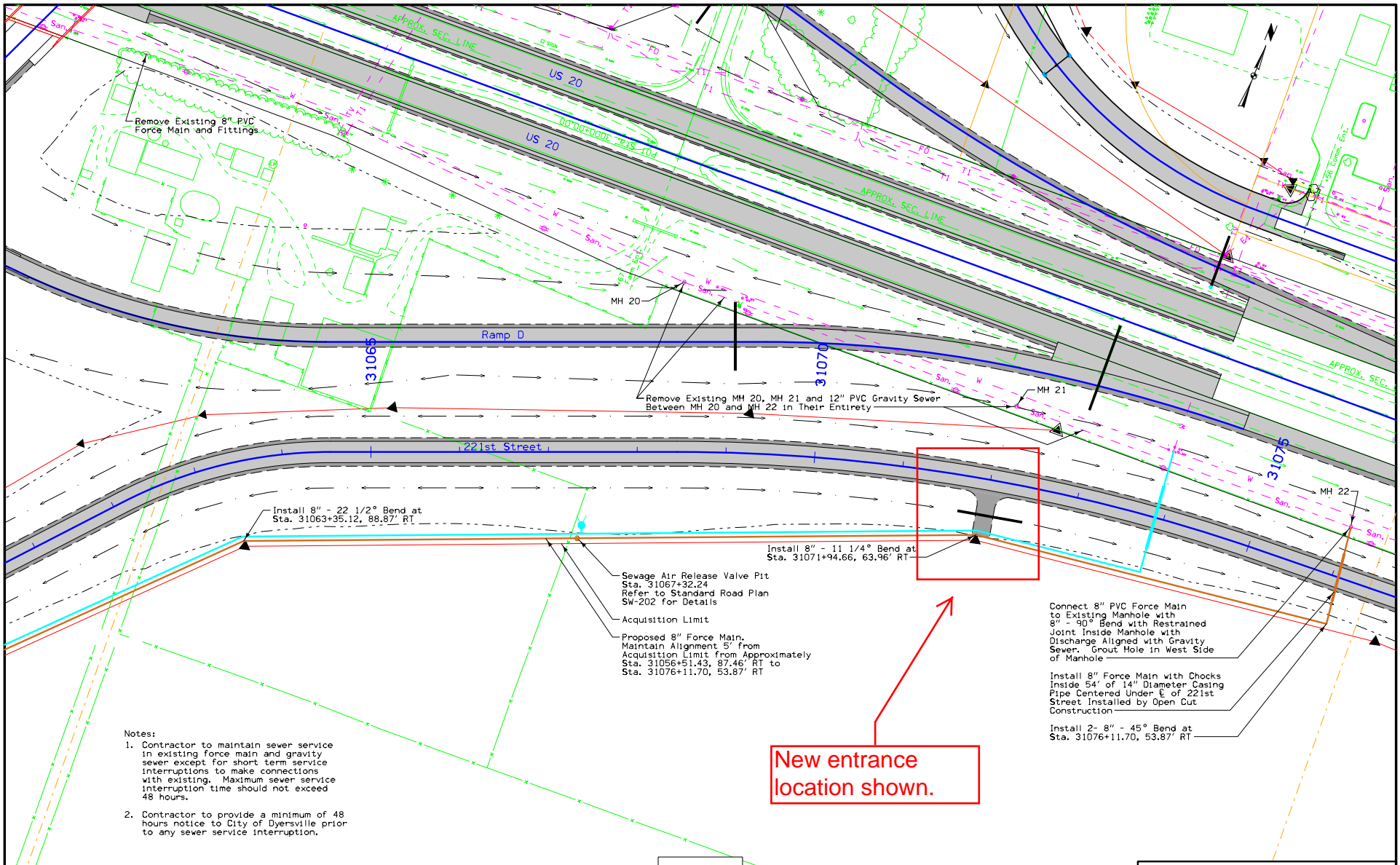
For Water Main Details Refer to Sheets No. U.1 - U.4

For Profile Details Refer to Sheet No. U.6

**Force Main Relocation**

FILE NO.	ENGLISH	DESIGN TEAM	<b>Stanley Consultants Inc.</b>	DELAWARE/DUBUQUE COUNTY	PROJECT NUMBER	<b>NHSX-020-9(203)--3H-28</b>	SHEET NUMBER	<b>U.5</b>
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- Notes:
- Contractor to maintain sewer service in existing force main and gravity sewer except for short term service interruptions to make connections with existing. Maximum sewer service interruption time should not exceed 48 hours.
  - Contractor to provide a minimum of 48 hours notice to City of Dyersville prior to any sewer service interruption.

Install 8" - 22 1/2° Bend at Sta. 31063+35.12, 88.87' RT

Install 8" - 11 1/4° Bend at Sta. 31071+94.66, 63.96' RT

Sewage Air Release Valve Pit  
Sta. 31067+32.24  
Refer to Standard Road Plan SW-202 for Details

Acquisition Limit

Proposed 8" Force Main, Maintain Alignment 5' from Acquisition Limit from Approximately Sta. 31056+51.43, 87.46' RT to Sta. 31076+11.70, 53.87' RT

Connect 8" PVC Force Main to Existing Manhole with 8" - 90° Bend with Restrained Joint Inside Manhole with Discharge Aligned with Gravity Sewer. Grout Hole in West Side of Manhole

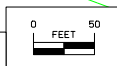
Install 8" Force Main with Chocks Inside 54' of 14" Diameter Casing Pipe Centered Under E of 221st Street Installed by Open Cut Construction

Install 2- 8" - 45° Bend at Sta. 31076+11.70, 53.87' RT

**New entrance location shown.**

For Water Main Details Refer to Sheets No. U.1 - U.4

For Profile Details Refer to Sheet No. U.8



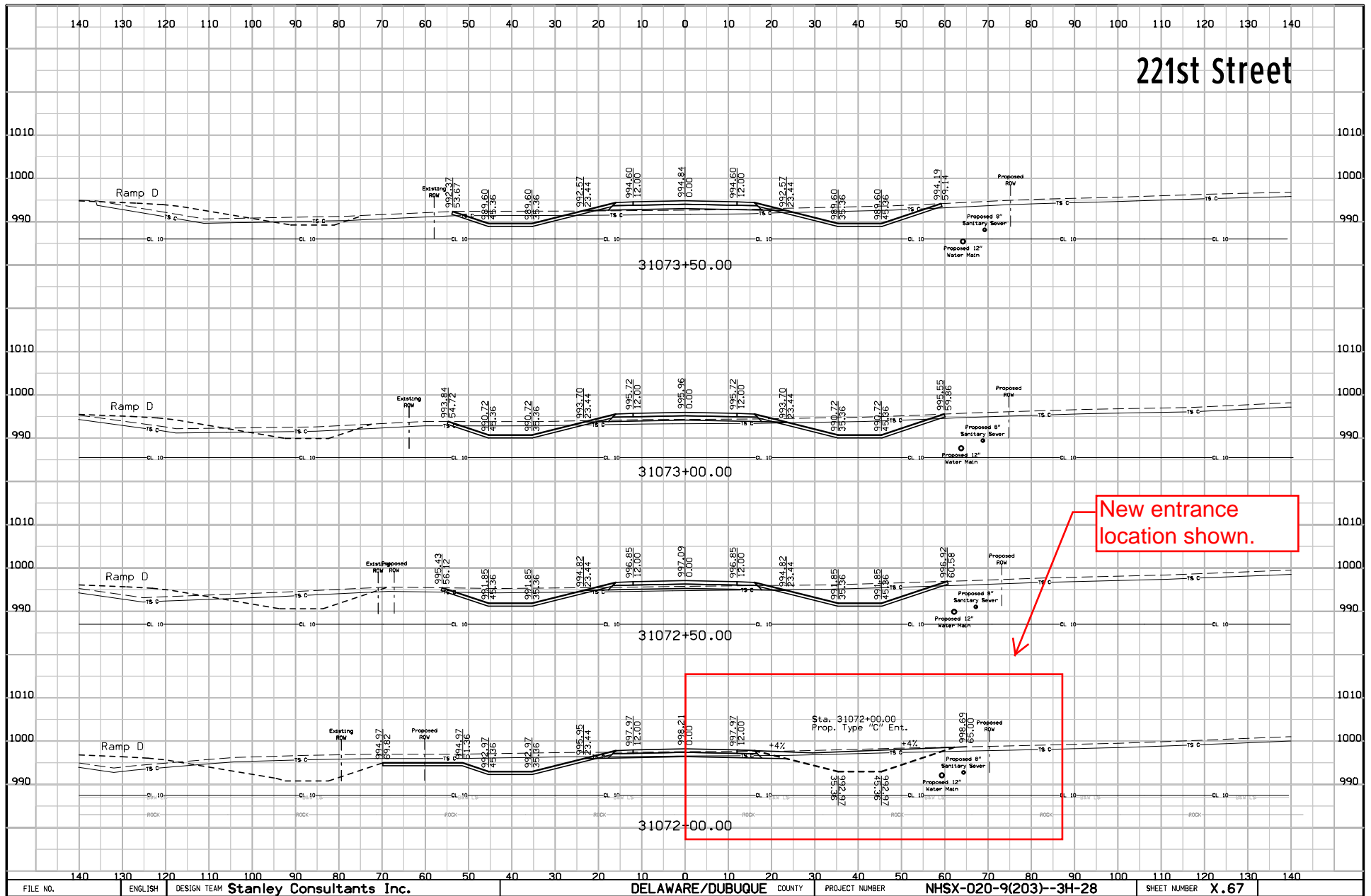
**Force Main Relocation**

FILE NO.	ENGLISH	DESIGN TEAM	<b>Stanley Consultants Inc.</b>	DELAWARE/DUBUQUE COUNTY	PROJECT NUMBER	<b>NHSX-020-9(203)--3H-28</b>	SHEET NUMBER	<b>U.7</b>
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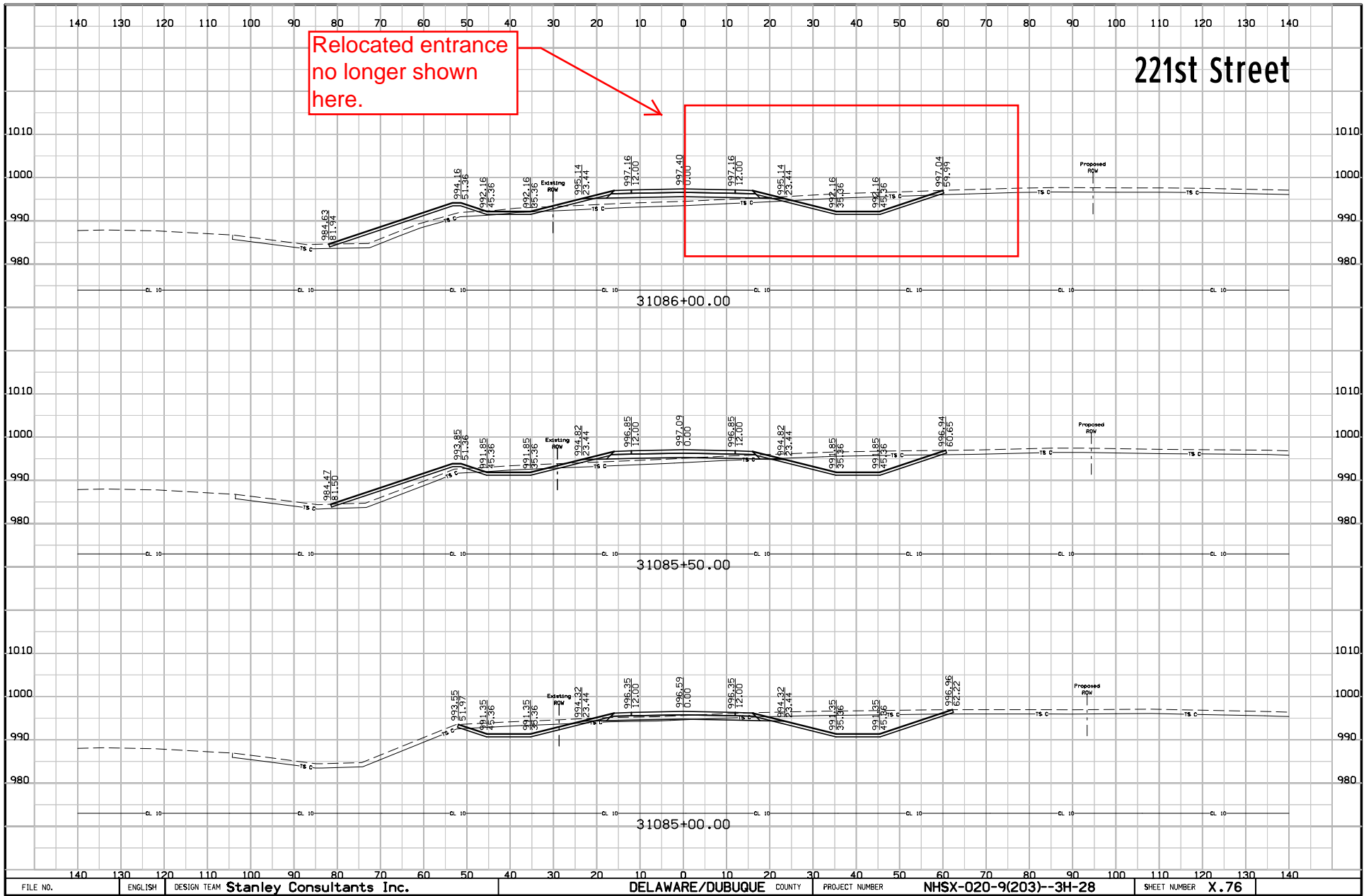




# 221st Street



New entrance location shown.



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

New entrance location shown.

221st Street

