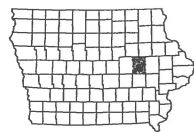


PCC Pavement - Grade and New
NHSX-030-6(181)--3H-06

LETTING DATE
August 17, 2021

BENTON COUNTY



Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM
BENTON COUNTY

PCC Pavement - Grade and New
W of Co Rd V44 to 1 mi W of US 218 (EB/WB)

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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



For Project Location Map
Refer to Sheet No. A.2

For Index of Sheets
Refer to Sheet No. A.3

DESIGN DATA RURAL			
2019	AADT	7100	V.P.D.
2037	AADT	8500	V.P.D.
2037	DHV	880	V.P.H.
	TRUCKS	21	%
Total Design ESALs		..	

INDEX OF SEALS		
SHEET NO.	NAME	TYPE
A.1	Kelly C. Bell	Primary Signature Block
CD.1	David R. Claman	Hydraulic Design
CS.1	Mark A. Dell	Geotechnical Design
RC.1	Seana K. Godbold	Landscape Design
V.1	David J. Mulholland	Hydraulic Design

REVISIONS

TOTAL

782

PROJECT IDENTIFICATION NUMBER

92-06-030-030

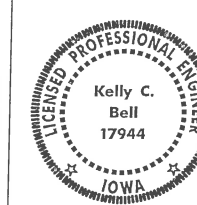
PROJECT NUMBER

NHSX-030-6(181)--3H-06

R.O.W. PROJECT NUMBER

NHSN-030-6(101)--2R-06

ROADWAY 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.

Kelly C. Bell 05-28-2021
Signature Date

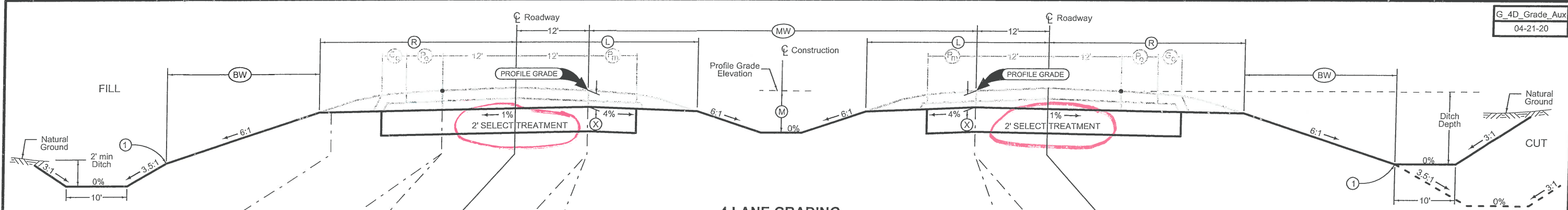
Kelly C. Bell
Printed or Typed Name

My license renewal date is December 31, 2021

Pages or sheets covered by this seal: A.1-A.3, B.1-B.10, C.1-C.28, D.1-D.27, E.1-E.9, F.1-F.2, G.1-G.19, H.1-H.13, HE.1-HE.8, J.1-J.21, L.1-L.49, T.1-T.57, U.1-U.18, W.1000-W.1114, W.2000-W.2115, X.100-X.108, X.200-X.203, X.300-X.308, X.400-X.403, X.500-X.519, X.600-X.616, X.700-X.708, X.800-X.808, X.900-X.907, Z.100-Z.119, Z.200-Z.213, Z.300-Z.315, Z.400-Z.408

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A.3	Index of Sheets
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C.5	Index of Tabulations
C.5	General Notes
C.6 - 28	Tabulations
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* E.7	21st Avenue
* E.8	V66
* E.9	22nd Avenue
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J.1	Staging Notes Stage
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J.2	Traffic Control Closure Tables
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* J.4 - 6	Staging Typical
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* Q.2 - 25	Soils Sheets US 30
* Q.26	Soils Sheet 16th Avenue
* Q.27	Soils Sheet 17th Avenue
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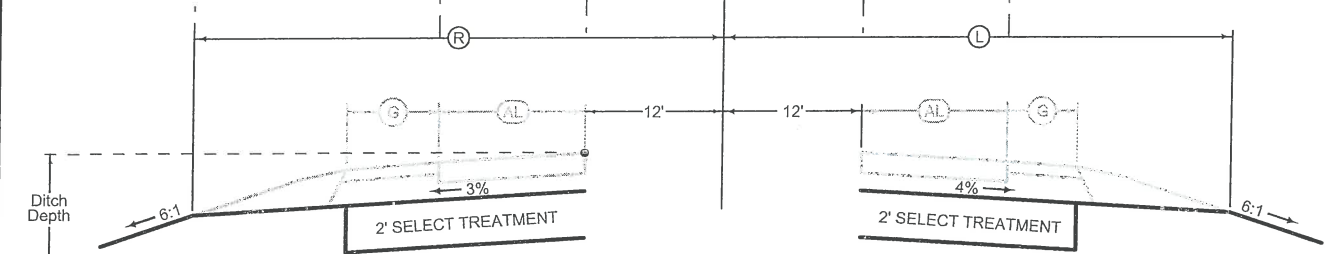
INDEX OF SHEETS	
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* Q.30	Soils Sheet 19th Avenue
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* Z.300 - 315	US 30 Culverts
* Z.400 - 408	US 30 Entrances
	* Color Plan Sheets



4 LANE GRADING

ROAD IDENTIFICATION	LOCATION		DIMENSIONS						
	STATION TO STATION		L Feet	R Feet	X Inches	BW Feet	MW Feet	M Feet	
U.S. Highway 30	1045+00.00	1293+25.00	30.6	31.8	16	19.4	64	4	
U.S. Highway 30	1293+25.00	1309+77.18	30.6	31.8	16	19.4	64-110	4	
U.S. Highway 30	1309+77.18	1327+94.17	30.6	31.8	16	19.4	110	4	
U.S. Highway 30	1327+94.17	1345+25.00	30.6	31.8	16	19.4	110-64	4	
U.S. Highway 30	1345+25.00	1389+00.00	30.6	31.8	16	19.4	64	4	

* U.S. Highway 30 WB grading begins at Station 1053+25.00



Auxiliary Lane Grading

LOCATION		R Feet
ROAD IDENTIFICATION	STATION TO STATION	
U.S. 30 WB (21st Ave/V-66)	1320+05.84 - 1328+53.79	59.3 - 31.8

Auxiliary Lane Grading

LOCATION		L Feet
ROAD IDENTIFICATION	STATION TO STATION	
U.S. 30 WB (16th Ave/V-44)	1056+60.00 - 1058+10.00	42.6
U.S. 30 WB (16th Ave/V-44)	1058+10.00 - 1058+30.00	42.6 - 30.6
U.S. 30 WB (17th Ave)	1109+21.00 - 1110+71.00	42.6
U.S. 30 WB (17th Ave)	1110+71.00 - 1111+91.00	42.6 - 30.6
U.S. 30 WB (17th Ave Dr)	1135+45.00 - 1136+95.00	42.6
U.S. 30 WB (17th Ave Dr)	1136+95.00 - 1138+15.00	42.6 - 30.6
U.S. 30 WB (18th Ave)	1161+82.00 - 1163+32.00	42.6
U.S. 30 WB (18th Ave)	1163+32.00 - 1164+52.00	42.6 - 30.6
U.S. 30 WB (19th Ave)	1214+41.00 - 1215+91.00	42.6
U.S. 30 WB (19th Ave)	1215+91.00 - 1217+11.00	42.6 - 30.6
U.S. 30 WB (20th Ave)	1267+07.00 - 1268+57.00	42.6
U.S. 30 WB (20th Ave)	1268+57.00 - 1269+77.00	42.6 - 30.6
U.S. 30 WB (21st Ave/V-66)	1321+20.00 - 1322+70.00	42.6
U.S. 30 WB (21st Ave/V-66)	1322+70.00 - 1324+50.00	42.6 - 30.6
U.S. 30 WB (22nd Ave)	1372+16.00 - 1373+66.00	42.6
U.S. 30 WB (22nd Ave)	1373+66.00 - 1374+86.00	42.6 - 30.6

Auxiliary Lane Grading

LOCATION		L Feet
ROAD IDENTIFICATION	STATION TO STATION	
U.S. 30 EB (16th Ave/V-44)	1052+10.00 - 1053+30.00	30.6 - 42.6
U.S. 30 EB (16th Ave/V-44)	1053+30.00 - 1054+80.00	42.6
U.S. 30 EB (17th Ave)	1104+73.00 - 1105+93.00	30.6 - 42.6
U.S. 30 EB (17th Ave)	1105+93.00 - 1107+43.00	42.6
U.S. 30 EB (17th Ave Dr)	1130+98.00 - 1132+18.00	30.6 - 42.6
U.S. 30 EB (17th Ave Dr)	1132+18.00 - 1133+68.00	42.6
U.S. 30 EB (18th Ave)	1157+35.00 - 1158+55.00	30.6 - 42.6
U.S. 30 EB (18th Ave)	1158+55.00 - 1160+05.00	42.6
U.S. 30 EB (19th Ave)	1209+94.00 - 1211+14.00	30.6 - 42.6
U.S. 30 EB (19th Ave)	1211+14.00 - 1212+64.00	42.6
U.S. 30 EB (20th Ave)	1262+59.00 - 1263+79.00	30.6 - 42.6
U.S. 30 EB (20th Ave)	1263+79.00 - 1265+29.00	42.6
U.S. 30 EB (21st Ave/V-66)	1313+15.00 - 1314+95.00	30.6 - 42.6
U.S. 30 EB (21st Ave/V-66)	1314+95.00 - 1316+45.00	42.6
U.S. 30 EB (22nd Ave)	1367+68.00 - 1368+88.00	30.6 - 42.6
U.S. 30 EB (22nd Ave)	1368+88.00 - 1370+38.00	42.6

Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.

See Plan & Profile sheets and cross sections for additional details of ditches and backslopes.

1 Refer to project plan and cross sections for specific location of foreslope change.

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
1	2101-0850001	CLEARING AND GRUBBING Quantity includes all disturbed areas.
2	2102-0425070	SPECIAL BACKFILL See Tab. 100-24M, Tab. 112-8, and Tab. 112-9M in the C Sheets for locations and details.
3	2102-2624980	CONTRACTOR FURNISHED SELECT TREATMENT See Tab. 103-11 in the C Sheets for locations and details.
4	2102-2625001	EMBANKMENT-IN-PLACE, CONTRACTOR FURNISHED See Tab. 112-8 in the C Sheets and Tab. 107-28 in the T Sheets for locations and details.
5	2102-2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW See Tab. 112-8 in the C Sheets and Tab. 107-28 in the T Sheets for locations and details. Quantity includes and additional 8,570.2 CY of plowing and shaping. See Tab. 107-31 in the CS Sheets for locations and details. Overhaul is incidental to roadway excavation on this project and will not be paid for separately.
6	2102-2710090	EXCAVATION, CLASS 10, WASTE See Tab. 107-28 in the T Sheets for locations and details.
7	2102-2712015	EXCAVATION, CLASS 12, BOULDERS OR ROCK FRAGMENTS See Tab. 103-7 in the CS sheets for location and details. Dispose of excess material according to Article 1106.07 of the current specifications.
8	2102-2713090	EXCAVATION, CLASS 13, WASTE Includes 844.5 CY of material to be wasted for the removal of the crossover at Sta. 1405+25. See Tab. 112-8 in the C Sheets for locations and details.
9	2102-4560000	LOCATING TILE LINES Estimated at twice the project length.
10	2104-2710020	EXCAVATION, CLASS 10, CHANNEL See project NHSX-030-6(205)--3H-06 for locations and details.
11	2105-8425015	TOPSOIL, STRIP, SALVAGE AND SPREAD See Tab. 103-7 and Tab. 103-10 in the CS Sheets, Tab. 107-28 in the T Sheets and cross sections for locations and details. Overhaul will not be paid for this item.
12	2107-0425020	COMPACTING BACKFILL ADJACENT TO BRIDGES, CULVERTS OR STRUCTURES See Tab. 104-4 in the CD Sheets for locations and details.
13	2107-0875100	COMPACTION WITH MOISTURE CONTROL See Tab. 103-6 in the CS Sheets and Tab. 107-28 in the T Sheets. Cubic yards shown on the contract documents as determined by the template fill volume. Shrinkage will not be included in the moisture control quantity.
14	2107-3825025	GRANULAR MATERIAL FOR BLANKET AND SUBDRAIN See Tab. 104-5C and Tab. 104-6 in the CS sheets for locations and details.
15	2111-8174100	GRANULAR SUBBASE See Tab. 100-24M and Tab. 112-9M in the C Sheets for locations and details.
16	2112-0000100	WICK DRAIN See Tab. 104-6 in the CS Sheet for locations and details.
17	2115-0100000	MODIFIED SUBBASE See Tab. 100-24M for locations and details.
18	2121-7425010	GRANULAR SHOULDERS, TYPE A See Tab. 112-8 and Tab. 112-9M in the C Sheets for locations and details.
19	2122-5190006	PAVED SHOULDER, P.C. CONCRETE, 6 IN.
20	2122-5190010	PAVED SHOULDER, P.C. CONCRETE, 10 IN.
21	2123-7450000	SHOULDER CONSTRUCTION, EARTH See Tab. 112-9M in the C Sheets for locations and details.
22	2301-1003100	STANDARD OR SLIP-FORM PORTLAND CEMENT CONCRETE PAVEMENT, QM- C, CLASS 3 DURABILITY, 10 IN. See Tab. 100-24M in the C Sheets for locations and details.
23	2301-6911722	PORTLAND CEMENT CONCRETE PAVEMENT SAMPLES
24	2301-9091000	RUMBLE STRIP PANEL (PCC SURFACE) See Tab. 112-7 in the C Sheets for locations and details.

ESTIMATE REFERENCE INFORMATION

Item No.	Item Code	Description
25	2304-0100000	DETOUR PAVEMENT See Tab. 100-24M and Tab. 112-8 in the C Sheets for locations and details.
26	2312-8260051	GRANULAR SURFACING ON ROAD, CLASS A CRUSHED STONE See G 2 GradeGran Modified in the B Sheets for locations and details.
27	2315-8275025	SURFACING, DRIVEWAY, CLASS A CRUSHED STONE See Tab. 102-3M in the C Sheets for locations and details.
28	2401-6745650	REMOVAL OF EXISTING STRUCTURES See Tab. 110-2 in the C Sheets for locations and details.
29	2402-0425040	FLOODED BACKFILL See Tab. 104-3 and Tab. 104-4 in the CD Sheets for locations and details.
30	2402-2720100	EXCAVATION, CLASS 20, FOR ROADWAY PIPE CULVERT
31	2416-0100024	APRONS, CONCRETE, 24 IN. DIA.
32	2416-0100030	APRONS, CONCRETE, 30 IN. DIA.
33	2416-0100036	APRONS, CONCRETE, 36 IN. DIA.
34	2416-0100042	APRONS, CONCRETE, 42 IN. DIA.
35	2416-0100072	APRONS, CONCRETE, 72 IN. DIA.
36	2416-0100084	APRONS, CONCRETE, 84 IN. DIA. See Tab. 104-3 in the CD Sheets for locations and details.
37	2416-0102218	APRON, LOW CLEARANCE CONCRETE, EQUIVALENT DIAMETER 18 IN.
38	2416-0102224	APRON, LOW CLEARANCE CONCRETE, EQUIVALENT DIAMETER 24 IN. See Tab. 102-3M in the C Sheets for locations and details.
39	2416-1180024	CULVERT, CONCRETE ROADWAY PIPE, 24 IN. DIA.
40	2416-1180030	CULVERT, CONCRETE ROADWAY PIPE, 30 IN. DIA.
41	2416-1180036	CULVERT, CONCRETE ROADWAY PIPE, 36 IN. DIA.
42	2416-1180042	CULVERT, CONCRETE ROADWAY PIPE, 42 IN. DIA.
43	2416-1180072	CULVERT, CONCRETE ROADWAY PIPE, 72 IN. DIA.
44	2416-1180084	CULVERT, CONCRETE ROADWAY PIPE, 84 IN. DIA. See Tab. 104-3 in the CD Sheets for locations and details.
45	2416-1190218	CULVERT, LOW CLEARANCE CONCRETE ENTRANCE PIPE, EQUIVALENT DIAMETER 18 IN.
46	2416-1190224	CULVERT, LOW CLEARANCE CONCRETE ENTRANCE PIPE, EQUIVALENT DIAMETER 24 IN. See Tab. 102-3M in the C Sheets for locations and details.
47	2416-1240030	CULVERT, 3000D CONCRETE ROADWAY PIPE, 30 IN. DIA.
48	2416-1262030	CULVERT, CONCRETE PIPE, 2000D, TRENCHLESS, 30 IN. DIA.
49	2416-1263030	CULVERT, CONCRETE PIPE, 3000D, TRENCHLESS, 30 IN. DIA.
50	2417-0225024	APRONS, METAL, 24 IN. DIA.
51	2417-1060024	CULVERT, CORRUGATED METAL ROADWAY PIPE, 24 IN. DIA. See Tab. 104-3 in the CD Sheets for locations and details.
52	2417-5895018	BEVELED PIPE AND GUARD, 18 INCH See Tab. 112-8 in the C Sheets for locations and details.
53	2417-5895024	BEVELED PIPE AND GUARD, 24 INCH
54	2422-0360015	APRONS, UNCLASSIFIED, 15 IN. DIA.
55	2422-0360024	APRONS, UNCLASSIFIED, 24 IN. DIA.
56	2422-1722015	CULVERT, UNCLASSIFIED ENTRANCE PIPE, 15 IN. DIA.
57	2422-1722024	CULVERT, UNCLASSIFIED ENTRANCE PIPE, 24 IN. DIA. See Tab. 102-3M in the C Sheets for locations and details.
58	2422-1723018	CULVERT, UNCLASSIFIED ROADWAY PIPE, 18 IN. DIA. See Tab. 112-8 in the C Sheets for locations and details.
59	2502-8212034	SUBDRAIN, LONGITUDINAL, (SHOULDER) 4 IN. DIA. See Tab. 104-9 in the CS sheets for location and details. Includes 5,110 LF of DR-301 Type 2 installation found on Tab. 104-6 in the CS Sheets.
60	2502-8221305	SUBDRAIN OUTLET, DR-305 See Tab. 104-6 in the CS Sheets for locations and details.
61	2502-8221306	SUBDRAIN OUTLET, DR-306 See Tab. 104-9 in the CS sheets for location and details.
62	2503-0500402	BRIDGE END DRAIN, DR-402 See Tab. 104-8A in the C Sheets for locations and details.
63	2505-4008120	REMOVAL OF STEEL BEAM GUARDRAIL See Tab. 110-7A in the C Sheets for locations and details.
64	2505-4008300	STEEL BEAM GUARDRAIL
65	2505-4008410	STEEL BEAM GUARDRAIL BARRIER TRANSITION SECTION, BA-201
66	2505-4021010	STEEL BEAM GUARDRAIL END ANCHOR, BOLTED
67	2505-4021720	STEEL BEAM GUARDRAIL TANGENT END TERMINAL, BA-205 See Tab. 108-8A in the C Sheets for locations and details.

107-31
04-19-11

PLOWING AND SHAPING

Refer to Standard Road Plan EW-101

Station to Station		D	Remarks
		FT	
1054+00.00	1055+00.00	5.0	Quantity: 121.1 CY
1082+50.00	1084+50.00	3.5	Quantity: 311.4 CY
1096+30.00	1096+80.00	4.0	Quantity: 30.9 CY
1096+80.00	1097+20.00	3.5	Quantity: 22.8 CY
1135+50.00	1137+00.00	3.5	Quantity: 182.9 CY
1139+20.00	1143+75.00	4.0	Quantity: 509.6 CY
1146+80.00	1160+20.00	5.0	Quantity: 3408.6 CY
1160+30.00	1161+60.00	5.0	Quantity: 267.6 CY
1161+60.00	1168+00.00	5.0	Quantity: 673.6 CY
1187+25.00	1188+60.00	5.0	Quantity: 179.1 CY
1188+60.00	1189+50.00	3.5	Quantity: 139.5 CY
1198+50.00	1199+00.00	4.0	Quantity: 52.2 CY
1216+00.00	1216+50.00	5.0	Quantity: 27.6 CY
1219+50.00	1220+40.00	4.0	Quantity: 52.7 CY
1235+00.00	1237+50.00	3.5	Quantity: 262.3 CY
1241+25.00	1242+00.00	4.0	Quantity: 75.6 CY
1251+50.00	1254+00.00	5.0	Quantity: 274.4 CY
1254+00.00	1256+40.00	4.0	Quantity: 445.2 CY
1257+50.00	1261+50.00	4.0	Quantity: 450.1 CY
1277+75.00	1280+00.00	3.0	Quantity: 408.1 CY
1280+00.00	1281+50.00	5.0	Quantity: 107.9 CY
1296+75.00	1297+20.00	4.0	Quantity: 35.3 CY
1309+75.00	1311+00.00	4.0	Quantity: 88.0 CY
1328+00.00	1328+80.00	4.0	Quantity: 64.1 CY
1351+25.00	1351+50.00	3.5	Quantity: 21.0 CY
1351+50.00	1352+25.00	4.5	Quantity: 51.0 CY
1372+70.00	1373+00.00	4.0	Quantity: 23.3 CY
1373+00.00	1373+30.00	3.0	Quantity: 19.9 CY
1379+70.00	1382+00.00	4.5	Quantity: 264.4 CY
Total:			8570.2 CY

103-5
10-15-13

SETTLEMENT PLATES

Refer to Standard Road Plan EW-212

No.	Location		Remarks
	Station	Offset	
1	1143+40.00	20 Lt	
2	1143+75.00	70 Rt	
3	1144+08.00	20 Lt	
4	1144+38.00	20 Rt	
5	1144+60.00	70 Rt	
6	1147+10.00	20 Lt	
7	1147+40.00	20 Rt	
8	1147+63.00	70 Rt	
9	1147+75.00	20 Lt	
10	1148+25.00	20 Rt	
11	1149+00.00	20 Lt	
12	1149+25.00	70 Rt	
13	1150+75.00	20 Rt	
14	1203+00.00	70 Rt	
15	1204+00.00	20 Lt	
16	1205+50.00	70 Rt	
17	1206+40.00	20 Lt	
18	1208+00.00	70 Rt	
19	1208+00.00	20 Lt	
20	1210+50.00	70 Rt	
21	1256+10.00	70 Rt	
22	1256+10.00	70 Lt	
23	1256+10.00	20 Lt	
24	1256+10.00	20 Rt	
25	1257+55.00	70 Rt	
26	1257+55.00	20 Rt	
27	1257+60.00	20 Lt	
28	1257+60.00	70 Lt	
29	1358+00.00	70 Rt	
30	1359+50.00	20 Lt	
31	1360+50.00	70 Rt	
32	1361+50.00	20 Lt	
33	1362+25.00	70 Rt	

103-6
10-17-17

EMBANKMENT WITH MOISTURE CONTROL

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

103-7
08-01-08

SHRINKAGE DATA

Material	%	Remarks
Topsoil	40%	
Class 10	30%	
Boulders		500 CY

103-12
10-16-18

SLIDE REPAIR

Site No.	Location		Side	Boulders Cl. 12 Exc. CY	Class 10			Class "E" Revetment Tons	Engineering Fabric SY	Erosion Stone Tons	Gra. Material Blankets & Subdrain Tons	Macadam Stone Tons	Top Soil		Remarks
	Begin Sta.	End Sta.			Contractor Provided CY	Excavation & Waste CY	Roadway & Borrow CY						Furnish & Spread CY	Strip, Slavage & Snpread CY	
1	1202+75.00	1208+65.00	Med.					12886							Reinforced Steepened Slope See 0.40
2	1228+65.00	1229+48.00	Med.					2247							Reinforced Steepened Slope See 0.40
Total								15133							

SURVEY SYMBOLS

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

UTILITY LEGEND

PLAN VIEW COLOR LEGEND OF SOILS SHEETS

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

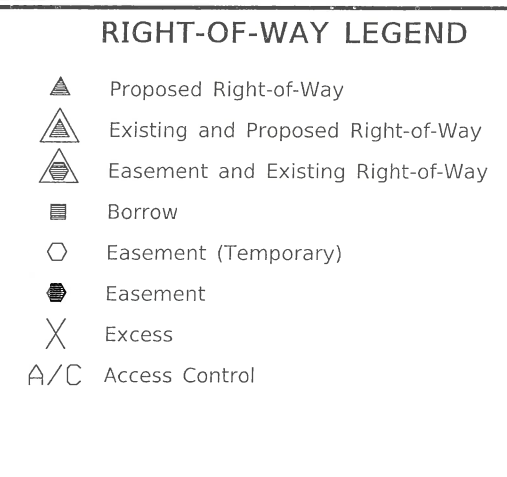
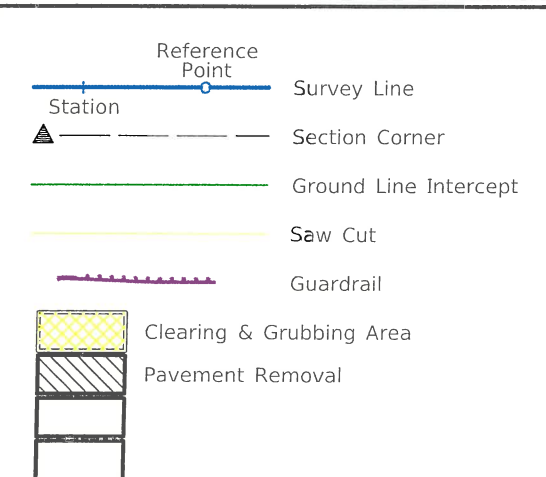
SHADING	Design Color No.	Description
Brown, Light	(236)	Core Out

PROFILE VIEW COLOR LEGEND OF SOILS SHEETS

LINEWORK	Design Color No.	Description
Blue	(1)	Proposed Alignment, Stationing, and Alignment Annotation
Green	(2)	Existing Ground Line Profile
Green, Med	(2)	Topsoil
Green, Med	(2)	Slope Dressing Only
Orange	(6)	Loam
Aqua (Cyan)	(7)	Class 10
Brown, Med	(4)	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

	Drill		CPT		Dig/Core	Date(s) Drilled _____
	Water		Treatment		Sandstone	
	Dry		Sand Blanket		Unsuitable A	
	Sample		Soil Remediation Area		Unsuitable B	
	Plugged		Select Soil		Unsuitable C	
	Moisture		Select Sand		Sandy Soil	
	Shelby		Slope Dressing Only		Boulders	
	Blow Count		Broken and Weathered Rock		Shale	
	Dens. Core		Rock		Waste	

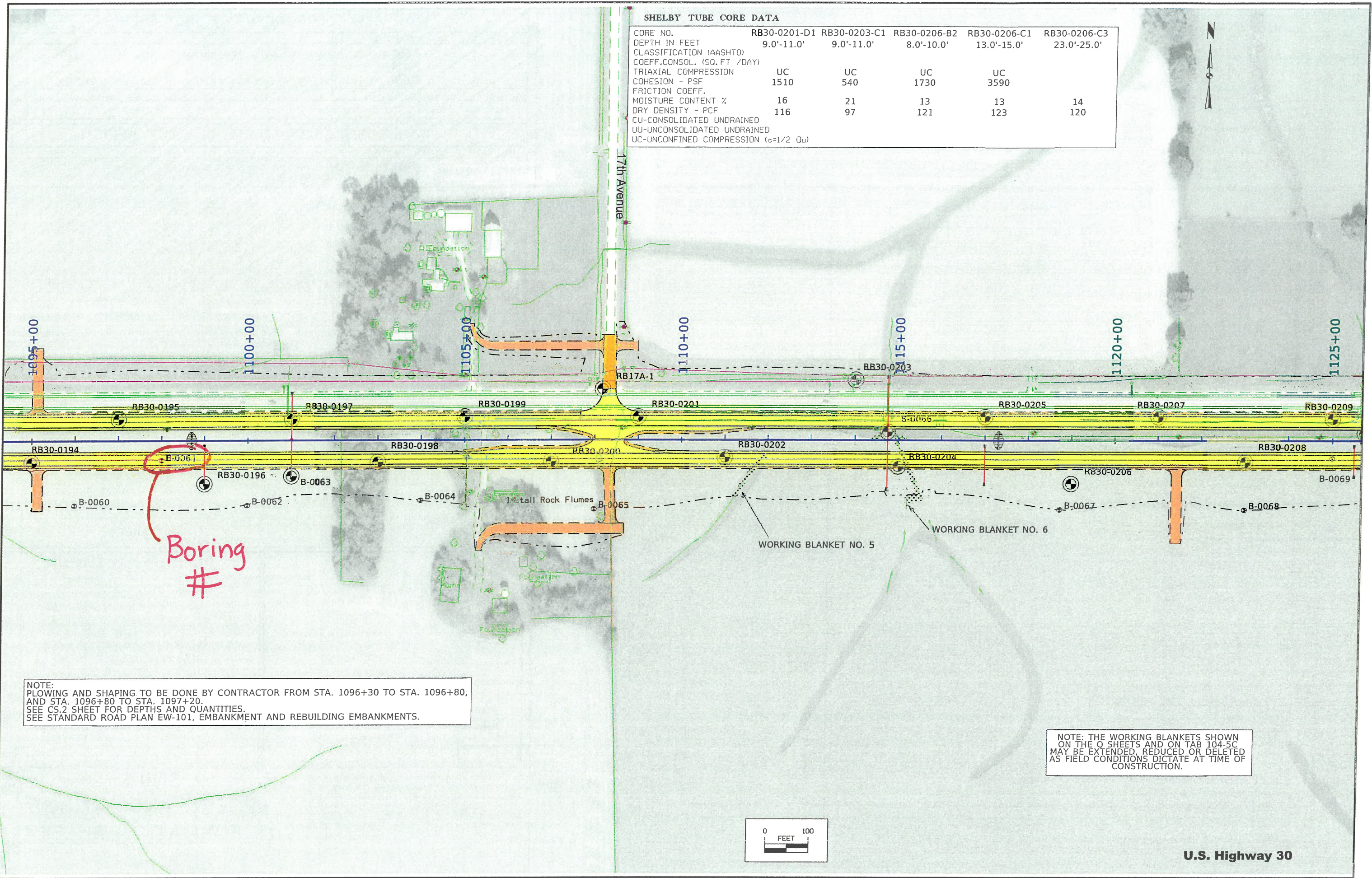


NOTE: Sounding and test boring data shown in the plans were accumulated for designing and estimating purposes. Their appearance on the plans does not constitute a guarantee that conditions other than those indicated will be encountered. Details and notes shown elsewhere shall be used for roadway and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

SOILS LEGEND AND SYMBOL INFORMATION SHEET

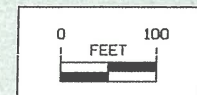
(COVERS SHEET SERIES Q)

SHELBY TUBE CORE DATA					
CORE NO.	RB30-0201-D1	RB30-0203-C1	RB30-0206-B2	RB30-0206-C1	RB30-0206-C3
DEPTH IN FEET	9.0'-11.0'	9.0'-11.0'	8.0'-10.0'	13.0'-15.0'	23.0'-25.0'
CLASSIFICATION (AASHTO)					
COEFF. CONSOL. (SQ. FT / DAY)					
TRIAxIAL COMPRESSION	UC	UC	UC	UC	
COHESION - PSF	1510	540	1730	3590	
FRICTION COEFF.					
MOISTURE CONTENT %	16	21	13	13	14
DRY DENSITY - PCF	116	97	121	123	120
CU-CONSOLIDATED UNDRAINED					
UU-UNCONSOLIDATED UNDRAINED					
UC-UNCONFINED COMPRESSION (c=1/2 Qu)					

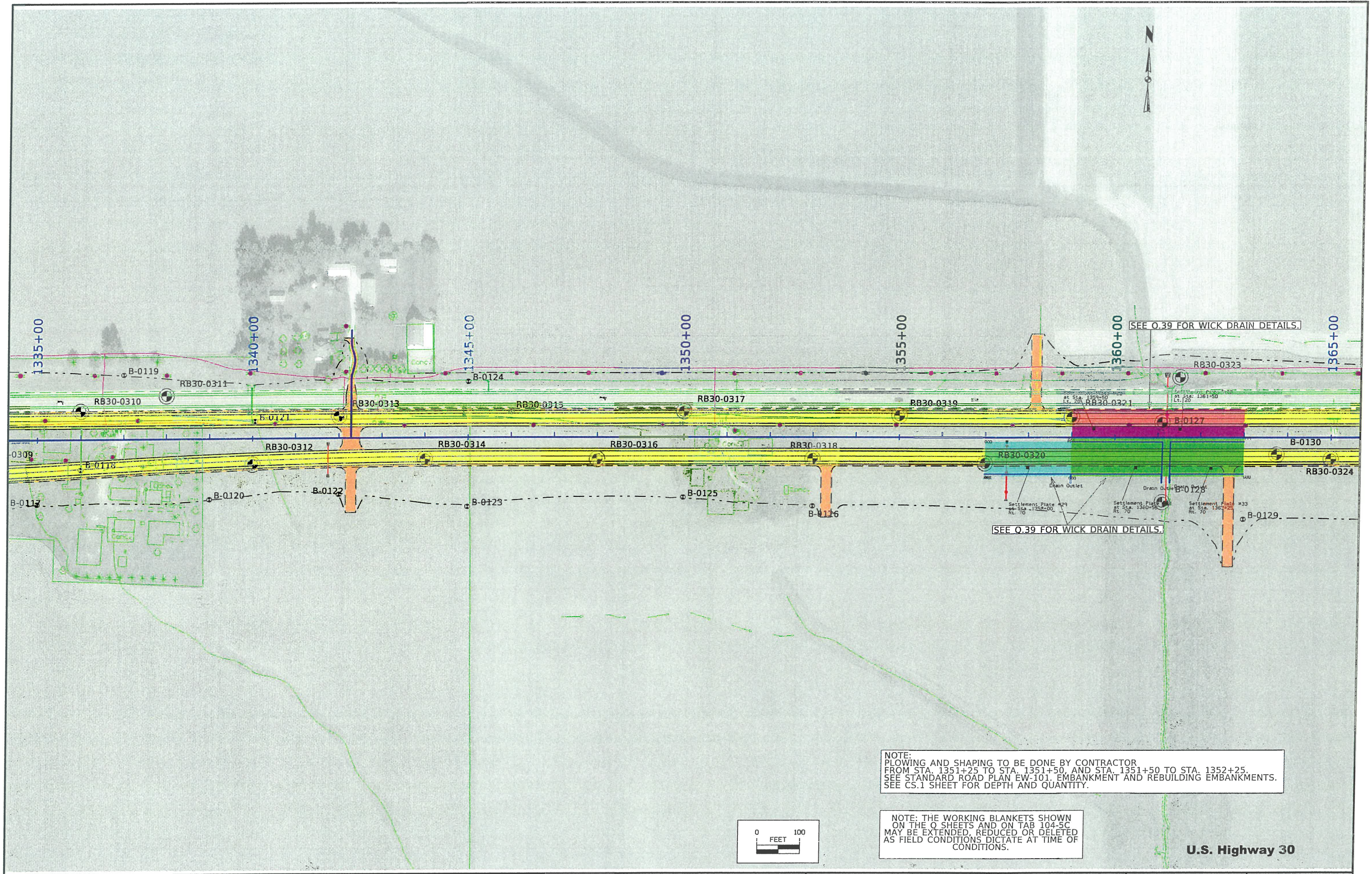


NOTE:
 PLOWING AND SHAPING TO BE DONE BY CONTRACTOR FROM STA. 1096+30 TO STA. 1096+80,
 AND STA. 1096+80 TO STA. 1097+20.
 SEE CS.2 SHEET FOR DEPTHS AND QUANTITIES.
 SEE STANDARD ROAD PLAN EW-101, EMBANKMENT AND REBUILDING EMBANKMENTS.

NOTE: THE WORKING BLANKETS SHOWN
 ON THE O SHEETS AND ON TAB 104-5C
 MAY BE EXTENDED, REDUCED OR DELETED
 AS FIELD CONDITIONS DICTATE AT TIME OF
 CONSTRUCTION.



U.S. Highway 30

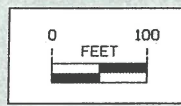


SEE O.39 FOR WICK DRAIN DETAILS.

SEE O.39 FOR WICK DRAIN DETAILS.

NOTE:
 PLOWING AND SHAPING TO BE DONE BY CONTRACTOR
 FROM STA. 1351+25 TO STA. 1351+50, AND STA. 1351+50 TO STA. 1352+25.
 SEE STANDARD ROAD PLAN EW-101. EMBANKMENT AND REBUILDING EMBANKMENTS.
 SEE CS.1 SHEET FOR DEPTH AND QUANTITY.

NOTE: THE WORKING BLANKETS SHOWN
 ON THE Q SHEETS AND ON TAB 104-5C
 MAY BE EXTENDED, REDUCED OR DELETED
 AS FIELD CONDITIONS DICTATE AT TIME OF
 CONDITIONS.

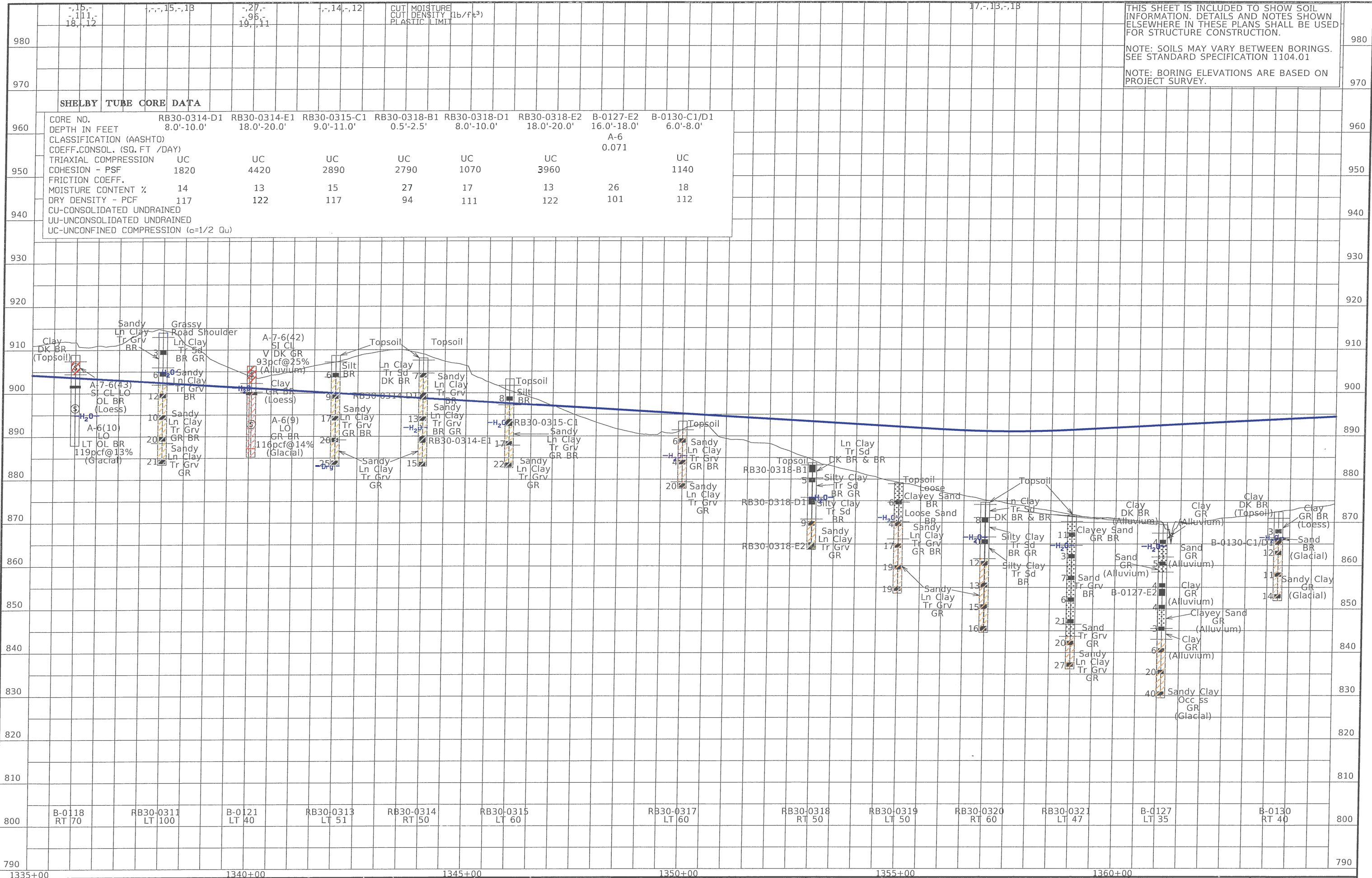


U.S. Highway 30

THIS SHEET IS INCLUDED TO SHOW SOIL INFORMATION. DETAILS AND NOTES SHOWN ELSEWHERE IN THESE PLANS SHALL BE USED FOR STRUCTURE CONSTRUCTION.

NOTE: SOILS MAY VARY BETWEEN BORINGS. SEE STANDARD SPECIFICATION 1104.01

NOTE: BORING ELEVATIONS ARE BASED ON PROJECT SURVEY.



SHELBY TUBE CORE DATA									
CORE NO.	RB30-0314-D1	RB30-0314-E1	RB30-0315-C1	RB30-0318-B1	RB30-0318-D1	RB30-0318-E2	B-0127-E2	B-0130-C1/D1	
DEPTH IN FEET	8.0'-10.0'	18.0'-20.0'	9.0'-11.0'	0.5'-2.5'	8.0'-10.0'	18.0'-20.0'	16.0'-18.0'	6.0'-8.0'	
CLASSIFICATION (AASHTO)							A-6		
COEFF. CONSOL. (SQ. FT / DAY)							0.071		
TRIAxIAL COMPRESSION	UC	UC	UC	UC	UC	UC		UC	
COHESION - PSF	1820	4420	2890	2790	1070	3960		1140	
FRICTION COEFF.									
MOISTURE CONTENT %	14	13	15	27	17	13	26	18	
DRY DENSITY - PCF	117	122	117	94	111	122	101	112	
CU-UNCONSOLIDATED UNDRAINED									
UU-UNCONSOLIDATED UNDRAINED									
UC-UNCONFINED COMPRESSION (c=1/2 Qu)									

