

**PROJECT DESCRIPTION**

PAVEMENT REPLACEMENT OVER SUM - I.R. 76 FROM S.L.M. 8.42 TO 10.00 AND SUM - 77 FROM S.L.M. 9.77 TO 11.54. COVERS THE "SOUTH LEG" AND "WEST LEG", INCLUDES REHABILITATION OF SEVERAL STRUCTURES IN THE CITY OF AKRON, SUMMIT COUNTY, OHIO.

**HISTORIC RECORDS**

**GEOLOGY**

**RECONNAISSANCE**

**SUBSURFACE EXPLORATION**

**EXPLORATION FINDINGS SPECIFICATIONS**

THIS GEOTECHNICAL EXPLORATION WAS PERFORMED IN ACCORDANCE WITH THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, OFFICE OF GEOTECHNICAL ENGINEERING, SPECIFICATIONS FOR GEOTECHNICAL EXPLORATIONS, DATED JANUARY 2007.

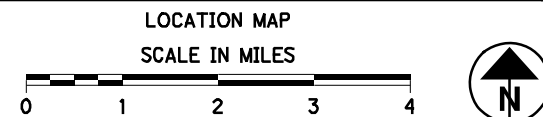
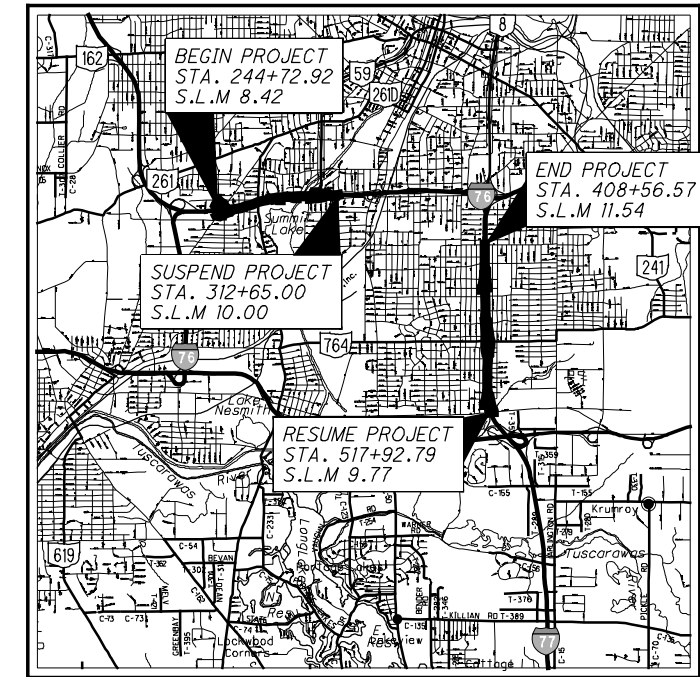
**AVAILABLE INFORMATION**

ALL AVAILABLE SOIL AND BEDROCK INFORMATION THAT CAN BE CONVENIENTLY SHOWN ON THE GEOTECHNICAL EXPLORATION SHEETS HAS BEEN SO REPORTED. ADDITIONAL EXPLORATIONS MAY HAVE BEEN MADE TO STUDY SOME SPECIAL ASPECT OF THE PROJECT. COPIES OF THIS DATA, IF ANY, MAY BE INSPECTED IN THE DISTRICT DEPUTY DIRECTOR'S OFFICE OR THE OFFICE OF GEOTECHNICAL ENGINEERING AT 1980 WEST BROAD STREET.

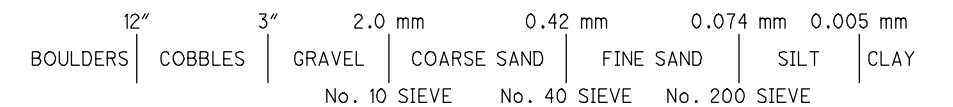
INDEX OF SHEETS					
LOCATION FROM STA. TO STA.	PLAN VIEW SHEET	PROFILE SHEET	CROSS-SECTION SHEET	CUT MAX.	FILL EMB. MAX.
I.R. 76 244+72.92 312+65.00				FT	FT
I.R. 77 517+92.79 408+56.57				FT FT	FT FT
				FT FT FT	FT FT FT

**LEGEND**

DESCRIPTION	ODOT CLASS	CLASSIFIED MECH./VISUAL
GRAVEL AND/OR STONE FRAGMENTS	A-1-a	
GRAVEL AND/OR STONE FRAGMENTS WITH SAND	A-1-b	
FINE SAND	A-3	
COARSE AND FINE SAND	A-3a	
GRAVEL AND/OR ST. FRAG. WITH SAND AND SILT	A-2-4	
GRAVEL AND/OR ST. FRAG. WITH SAND, SILT AND CLAY	A-2-6	
SANDY SILT	A-4a	
SILT	A-4b	
SILT AND CLAY	A-6a	
SILTY CLAY	A-6b	
CLAY	A-7-6	
	TOTAL	
UNCONTROLLED FILL (UCF)	VISUAL	
SHALE	VISUAL	
PAVEMENT OR BASE = X = APPROXIMATE THICKNESS	VISUAL	
SOD AND TOPSOIL = X = APPROXIMATE THICKNESS	VISUAL	
BORING LOCATION - PLAN VIEW.		
HISTORIC BORING LOCATION - PLAN VIEW - SUM-76-8.42/SUM-77-9.77		
DRIVE SAMPLE AND/OR ROCK CORE BORING PLOTTED TO VERTICAL SCALE ONLY. HORIZONTAL BAR INDICATES A CHANGE IN STRATIGRAPHY.		
AUGUR BORING PLOTTED TO VERTICAL SCALE ONLY. HORIZONTAL BAR INDICATES A CHANGE IN STRATIGRAPHY.		
<b>WC</b> INDICATES WATER CONTENT IN PERCENT.		
<b>N<sub>60</sub></b> INDICATES STANDARD PENETRATION RESISTANCE NORMALIZED TO 60% DRILL ROD ENERGY RATIO.		
<b>X/Y/Z</b> NUMBER OF BLOWS FOR STANDARD PENETRATION TEST (SPT): X= NUMBER OF BLOWS FOR FIRST 6 INCHES. Y= NUMBER OF BLOWS FOR SECOND 6 INCHES. Z= NUMBER OF BLOWS FOR THIRD 6 INCHES.		
<b>W</b> INDICATES FREE WATER ELEVATION.		
INDICATES A PLASTIC MATERIAL WITH A MOISTURE CONTENT EQUAL TO OR GREATER THAN THE LIQUID LIMIT MINUS 3.		
INDICATES A NON-PLASTIC MATERIAL WITH A MOISTURE CONTENT GREATER THAN 25 % OR GREATER THAN 19 % WITH A WET APPEARANCE.		
<b>*</b> INDICATES A SAMPLE TAKEN WITHIN 3 FT OF PROPOSED GRADE.		
<b>SS</b> INDICATES A SPLIT SPOON SAMPLE.		
<b>ST</b> INDICATES A SHELBY TUBE SAMPLE.		
<b>HA</b> INDICATES A HAND AUGER SAMPLE.		
<b>NP</b> INDICATES A NON-PLASTIC SAMPLE.		
<b>TR</b> INDICATES A TOP OF ROCK.		



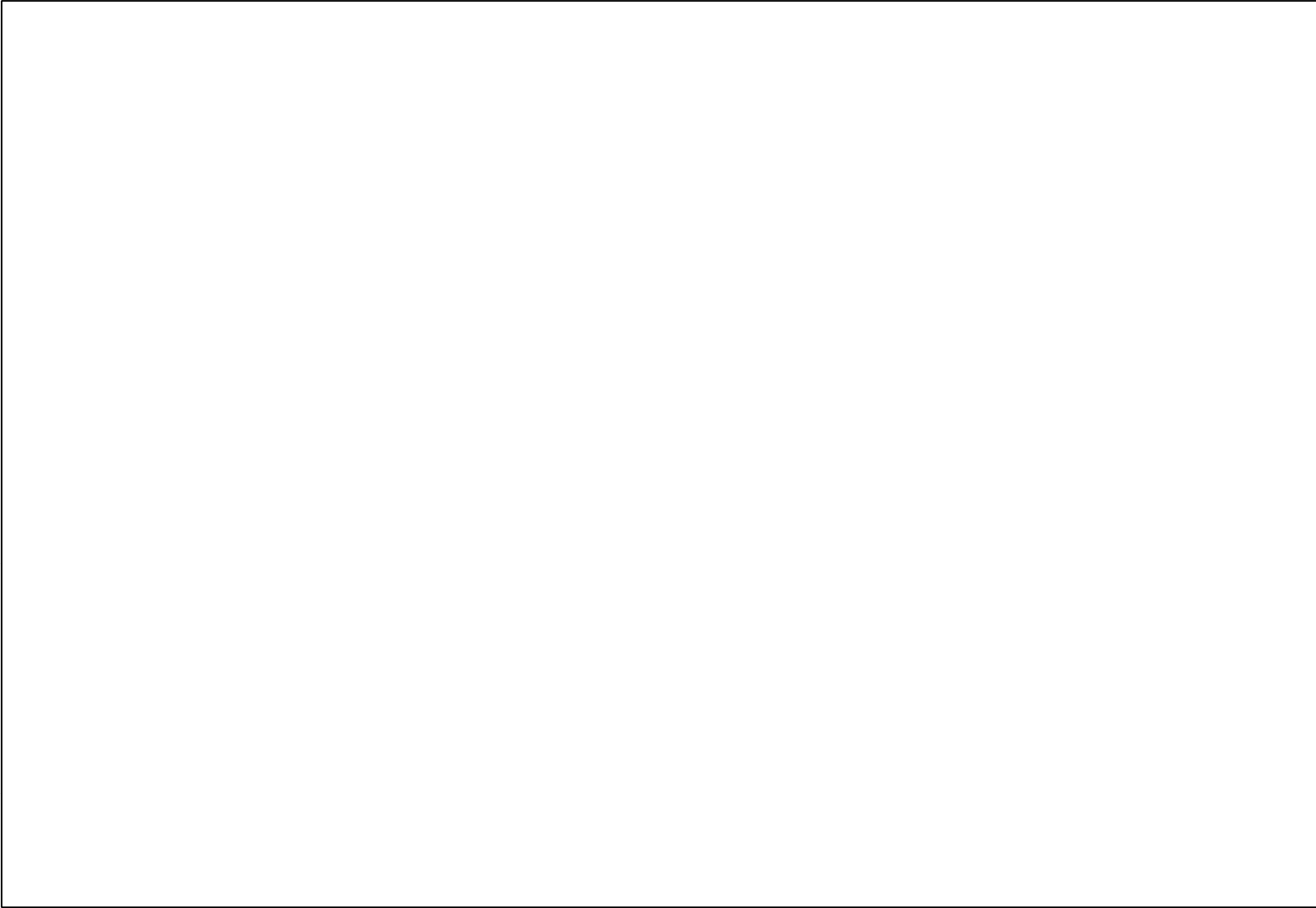
**PARTICLE SIZE DEFINITIONS**



HISTORIC BORING DESCRIPTIONS	ODOT CLASS	CLASSIFIED MECH./VISUAL
GRAVEL AND/OR STONE FRAGMENTS	A-1-a	
GRAVEL AND/OR STONE FRAGMENTS WITH SAND	A-1-b	
FINE SAND	A-3	
COARSE AND FINE SAND	A-3a	
GRAVEL AND/OR ST. FRAG. WITH SAND AND SILT	A-2-4	
GRAVEL AND/OR ST. FRAG. WITH SAND, SILT AND CLAY	A-2-6	
GRAVEL AND/OR ST. FRAG. WITH SAND, SILT AND CLAY	A-7-6	
UNCONTROLLED FILL (UCF)	VISUAL	

RECON. -  
 DRILLING -  
 DRAWN - SM 08/19  
 REVIEWED - PAN 09/19

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Station & Offset	Depth From To	% Agg	% CS	% FS	% Silt	% Clay	LL	PI	% WC	SHTL Close	Loss On Ign.
H-003-0-61 255+90 20'RT	0.3-7.0	0	6	18	48	28	NP	NP	15	A-4a	
	7.0-10.0	0	2	14	57	27	NP	NP	26	A-4b	
	10.0-14.0	10	6	13	44	27	27	10	14	A-4a*	
	14.0-23.0	0	5	14	46	35	29	11	12	A-6a	
	23.0-26.0	Dark Gray Broken Shale							8	Visual	
H-004-0-61 259+41 CL	0.4-3.0	45	5	9	29	12	NP	NP	13	A-4a	
	3.0-13.0	Brown Weathered Shale							6	Visual*	
	13.0-18.0	Gray and Brown Weathered Shales							8	Visual	
H-005-0-61 264+50 3'LT	0.2-4.0	20	5	17	34	24	NP	NP	17	A-4a	
	4.0-10.0	16	3	32	38	12	NP	NP	16	A-4a	
H-006-0-61 267+50 35'RT	0.0-4.0	22	15	30	24	12	NP	NP	9	A-2-4	
	4.0-10.0	17	7	32	29	15	NP	NP	16	A-4a	
	10.0-15.0	28	19	27	14	12	NP	NP	8	A-2-4	
	15.0-22.0	34	43	10	5	8	NP	NP	17	A-1-b	
	22.0-30.0	20	51	25	4	4	NP	NP	6	A-1-b	
H-007-0-61 268+75 CL	0.4-7.0	0	32	25	22	21	20	7	12	A-4a	
	7.0-14.0	16	40	37	7	-	NP	NP	4	A-3a	
	14.0-19.0	0	1	94	7	-	NP	NP	8	A-3	
	19.0-26.0	28	50	19	8	-	NP	NP	8	A-1-b	
	26.0-30.0	0	5	25	48	22	NP	NP	12	A-4a	
H-008-1-61 270+00 65'RT	0.4-4.0	0	8	14	40	38	33	16	25	A-6b	
	4.0-13.0	47	36	13	4	4	NP	NP	6	A-1-b	
	13.0-16.0	0	1	4	79	16	NP	NP	16	A-4b	
	16.0-18.0	0	15	78	7	-	NP	NP	20	A-3	
	18.0-21.0	52	29	13	6	-	NP	NP	11	A-1-a	
	21.0-28.0	0	31	9	58	31	NP	NP	15	A-4b	
	28.0-30.0	17	31	37	15	-	NP	NP	12	A-3a	
H-008-0-61 270+20 CL	0.5-5.0	20	53	24	-	4	NP	NP	NP	A-1-b	
	5.0-8.0	7	68	19	-	6	NP	NP	NP	A-3a	
	8.0-9.0	35	37	20	-	8	NP	NP	NP	A-1-b	
	9.0-12.0	49	29	14	-	8	NP	NP	NP	A-1-b	
	12.0-15.0	0	9	72	-	12	NP	NP	NP	A-3a	
15.0-18.0	57	26	12	-	5	NP	NP	NP	A-1-a		
H-014-0-61 276+09 CL	0.0-3.0	30	12	25	21	13	NP	NP	11	A-2-4	
	3.0-5.0	19	8	26	30	17	NP	NP	16	A-4a	
	5.0-7.0	3	1	52	21	19	NP	NP	21	A-4a	
	7.0-9.0	Black Loamy Compact Peat							339	Visual	76%
	9.0-12.0	Black Fibrous Compact Peat							366	Visual	17%
	12.0-15.0	Brown to Black Fine-Textured Peat							101	Visual	
	15.0-21.0	0	32	61	7	7	NP	NP	23	A-3	
21.0-26.0	0	22	67	11	11	NP	NP	22	A-3a		
26.0-31.0	0	18	58	16	16	8	NP	25	A-3a		

Station & Offset	Depth From To	% Agg	% CS	% FS	% Silt	% Clay	LL	PI	% WC	SHTL Class	Loss On Ign.	
H-022-0-61 283+75 CL	0.0-1.5	Random Fill - Dark Gray W/Cinders and Bricks					Gravel			Visual	44%	
	1.5-3.0	Dark Gray Loamy Compact Feat							22	Visual	86%	
	3.0-8.0	Dark Gray Fibrous Feat							24	Visual	64%	
	8.0-12.0	Brown & Black Fine-textured Feat							42	Visual		
	12.0-18.0	Gray Marly Sedimentary Feat							69	Visual	11%	
	18.0-24.0	Gray Silty Marly Sedimentary Feat							43	Visual	9%	
	24.0-27.0		1		3	64	33	104	60	A-7-5	5%	
	27.0-30.0		20		8	-	-	NP	NP	A-1-a		
	30.0-35.0		23		5	-	-	NP	NP	A-1-a		
	H-019-0-61 279+82 CL	0.5-2.0		11	15	26	27	NP	NP	26	A-4a	
2.0-4.0			23	17	16	15	NP	NP	13	A-2-a		
4.0-5.0			23	52	-	-	NP	NP	19	A-1-a		
5.0-6.0			16	7	-	-	NP	NP	16	A-1-a		
6.0-11.0			0	73	-23	-	NP	NP	8	A-1-a		
11.0-13.0			0	76	-24	-	NP	NP	7	A-1-a		
13.0-17.0			0	13	79	-24	NP	NP	8	A-1-a		
17.0-21.0			0	73	-27	-	NP	NP	22	A-4b		
21.0-26.0			0	41	55	-	NP	NP	20	A-1-a		
26.0-30.0			0	62	48	-	NP	NP	18	A-4b		
30.0-35.0		0	4	72	-	NP	NP	17	A-4b			
35.0-41.0		0	4	4	17	NP	NP	23	A-4b			
H-021-0-61 282+35 15'HT	0.2-2.0		33	35	16	7	NP	NP	7	A-3a		
	2.0-3.0		18	20	13	7	NP	NP	13	A-1-b		
	3.0-5.0		23	22	13	7	NP	NP	18	A-1-b		
	5.0-6.0	Black Compact Feat							97	Visual	39%	
	6.0-10.5	Brown Fibrous Coarse-textured Feat							53	Visual	84%	
	10.5-11.5		2	2	25	14	NP	Feat	29	Visual	10%	
	11.5-16.0		28	2	-	4	NP	NP	29	A-7-6		
	16.0-21.0		22	9	-	6	NP	NP	5	A-1-a		
	H-024-0-61 285+00 CL	0.4-4.0		13	23	29	16	NP	NP	23	A-4a	
		4.0-7.0		58	13	13	5	NP	NP	17	A-1-b	
7.0-10.0			56	11	11	9	NP	NP	10	A-1-b		
10.0-15.0			48	11	18	8	NP	NP	6	A-1-b		
15.0-19.0			23	58	-10	-	NP	NP	6	A-1-b		
19.0-24.0			0	26	64	9	NP	NP	18	A-4b		
24.0-29.0			0	51	42	11	NP	NP	14	A-4a		
29.0-34.0			20	51	11	24	NP	NP	14	A-3a		
34.0-38.0			32	46	24	46	NP	NP	14	A-2-a		
38.0-43.0			0	4	47	41	NP	NP	16	A-4a		
43.0-46.0		0	4	47	41	NP	NP	15	A-4a			
H-026-0-61 288+00 CL	0.4-9.0		51	10	12	10	NP	9	13	A-2-a		
	9.0-10.0		29	14	10	5	NP	NP	7	A-1-b		
	10.0-12.0		40	12	10	3	NP	NP	8	A-1-b		
	12.0-17.0		38	13	-	-	NP	NP	3	A-1-b		
	17.0-22.0		10	63	-	-	NP	NP	3	A-1-b		
	22.0-23.0		11	52	-10	-	NP	NP	3	A-3		
	23.0-25.0		3	79	-	-	NP	NP	3	A-3		
	25.0-30.0		0	19	73	-	NP	NP	20	A-3		
	30.0-35.0		2	82	-	-	NP	NP	21	A-3		
	35.0-41.0	Random Fill							20	A-3		

Station & Offset	Depth From-To	% Agg	% C.S	% ES	% Silt	% Clay	L.L	P.I.	% W.C	SMTL Class	
H-001-0-61 247+00 CL	2.0-6.0	0	1	2	74	23	27	3	18	A-4b	
	6.0-11.0	29	3	12	33	21	21	2	16	A-4a	
	11.0-16.0	48	8	12	17	15	NP	NP	12	Visual	
	16.0-26.0	48	8	12	17	15	NP	NP	12	A-2-4	
	26.0-31.0	22	6	13	36	23	23	6	20	A-4a	
	31.0-36.0	40	1	3	35	19	25	6	13	A-4a	
	36.0-41.0	18	22	10	34	16	22	8	15	A-4a	
	41.0-46.0	33	7	21	18	21	21	5	14	A-4a	
	46.0-51.0	8	4	25	48	23	NP	NP	19	A-4a	
	51.0-56.0	16	11	10	40	23	NP	NP	18	A-4a	
H-002-0-61 253+00 CL	5.0-10.0	7	10	38	29	16	NP	NP	22	A-4a	
	10.0-15.0	Dark	Brown	Fibrous	Peat	79%	NP	NP	336	Visual	
	15.0-20.0	Dark	Brown	Fibrous	Peat	67%	NP	NP	359	Visual	
	20.0-25.0	Dark	Brown	Fibrous	Peat	66%	NP	NP	425	Visual	
	25.0-30.0	Dark	Brown	Fibrous	Peat	37%	NP	NP	227	Visual	
	30.0-35.0	Dark	Brown	Fibrous	Peat	31%	NP	NP	206	Visual	
	35.0-40.0	Dark	Brown	Fibrous	Peat	44%	NP	NP	284	Visual	
	40.0-45.0	12	27	57	5	-	NP	NP	20	A-3	
	45.0-50.0	8	36	49	7	-	NP	NP	24	A-3	
	50.0-55.0	0	1	19	53	27	NP	NP	11	A-4b	
H-015-0-61 276+15 CL	0.0-1.5	0	0	0	0	0	NP	NP	25	A-4a	
	1.5-3.0	0	0	0	0	0	NP	NP	25	A-4a	
	3.0-4.5	0	0	0	0	0	NP	NP	25	A-4a	
	4.5-6.0	0	0	0	0	0	NP	NP	25	A-4a	
	6.0-7.5	0	0	0	0	0	NP	NP	25	A-4a	
	7.5-9.0	0	0	0	0	0	NP	NP	25	A-4a	
	9.0-10.5	0	0	0	0	0	NP	NP	25	A-4a	
	10.5-12.0	0	0	0	0	0	NP	NP	25	A-4a	
	12.0-13.5	0	0	0	0	0	NP	NP	25	A-4a	
	13.5-15.0	0	0	0	0	0	NP	NP	25	A-4a	
H-017-0-61 277+90 CL	0.0-1.5	Random	Pill	-	Black Sand	W/Gravel,	NP	NP	20	Visual	
	1.5-3.0	Random	Pill	-	Stone	Fragments and	NP	NP	20	Visual	
	3.0-4.5	Random	Pill	-	Cinders		NP	NP	20	Visual	
	4.5-6.0	Brown	Fibrous	Peat	Brown	Silty	Sandy	Clay	233	Visual	
	6.0-7.5	Brown	Fibrous	Compact	Peat	W/Gravel,	Stone		270	Visual	
	7.5-9.0	Brown	Fibrous	Compact	Peat	Brick	Fragments		206	Visual	
	9.0-10.5	Brown	Fibrous	Compact	Peat	Brown	Silty	Sandy	Clay	219	Visual
	10.5-12.0	26	17	41	11	3	NP	NP	31	A-3a	
	12.0-13.5	0	12	57	20	11	NP	NP	18	A-3a	
	13.5-15.0	59	11	13	10	17	NP	NP	11	A-1-b	
H-015-0-61 276+15 CL	20.0-21.0	Brown	Gravel				NP	NP	11	Visual	
	21.0-22.0	Brown	Silty	Sandy	Gravel		NP	NP	11	Visual	
	22.0-23.0	Brown	Silty	Sandy	Gravel		NP	NP	11	Visual	
	23.0-24.0	Gray	Clayey	Silt	W/Few	Gravel		NP	16	Visual	
	24.0-25.0	71	6	9	14	-	NP	NP	18	A-1-a	
	25.0-26.0	0	0	48	50	2	NP	NP	18	A-4b	
	26.0-27.0	0	1	42	52	5	NP	NP	18	A-4b	
	27.0-28.0	17	0	62	21	-	NP	NP	19	A-3a	
	28.0-29.0	0	0	60	40	-	NP	NP	20	A-4a	

Station & Offset	Depth From-To	Agg	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	% W.C.	SHTL Class.
H-023-0-61 284+00 CL	0.8-1.5	30	12	14	28	16	NP	18	A-4a	
	1.5-2.0	26	20	23	12	19	NP	19	A-2-a	
	4.5-6.0	Blackish-Brown Textured Peat	Blackish-Brown Textured Peat	Fibrous Fine-Textured Peat				487	Visual	85%
	6.0-7.5	Blackish-Brown Textured Peat	Blackish-Brown Textured Peat	Fibrous Fine-Textured Peat				252	Visual	44%
	7.5-9.0	Blackish-Brown Peat	Slightly Fibrous	Pine-Textured				490	Visual	83%
	9.0-10.5	Blackish-Brown Peat	Slightly Fibrous	Pine-Textured				303	Visual	3%
	10.5-12.0	Dark Gray Peat	Marly Sedimentary				161	188	Visual	27%
	12.0-13.5	Dark Gray Peat	Marly Sedimentary				NP	88	Visual	16%
	13.5-15.0	Dark Gray Peat	Marly Sedimentary				50	100	Visual	17%
	15.0-16.5	Gray Marly Mixed W/Blackish-Brown Textured Peat	Gray Marly Sedimentary Peat				33	94	Visual	16%
	16.5-18.0	Gray Marly Textured Peat	Gray Marly Sedimentary Peat				28	81	Visual	14%
	18.0-19.5	Gray Silty Trace of Marl	Silty Sedimentary Peat				24	59	Visual	14%
	19.5-21.0	Gray Silty Trace of Marl	Silty Sedimentary Peat				13	59	Visual	14%
	21.0-22.5	Gray Silty Trace of Marl	Silty Sedimentary Peat				14	36	Visual	9%
	22.5-23.5	Gray Silty Trace of Marl	Silty Sedimentary Peat				12	54	Visual	
	24.0-26.0	54	18	14	6	8	NP	11	A-1-a	
	30.0-31.0	86	9	3	-	-	NP	7	A-1-a	
	35.0-36.0	67	16	9	-	-	NP	9	A-1-a	
	40.0-41.0	89	6	3	-	-	NP	10	A-1-a	
	50.0-51.0	3	44	41	-10	-	NP	24	A-3	
	55.0-56.0	3	31	55	-11	-	NP	23	A-3a	
	60.0-61.0	0	5	10	54	25	NP	18	A-4b	
H-008-2-61 270+00 175'RT	0.4-5.0	16	26	40	-18	66	NP	7	A-3a	
	5.0-9.0	0	1	2	31	66	54	15	A-7-5	
	9.0-15.0	Dark Peat	Brown Sandy Peat	Fibrous Compact			NP	143	Visual	24%
	15.0-17.0	Gray Peat	Marly Sedimentary				102	88	Visual	8%
	17.0-25.0	6	19	68	-7	-	NP	17	A-3	
	25.0-30.0	13	28	51	-12	-	NP	14	A-3a	
H-007-1-61 269+00 75'RT	0.2-4.0	Brown Silty Peat	Silty Sand and Gravel				NP	2	Visual	
	4.0-5.0	12	19	25	26	18	19	11	A-4a	
	5.0-9.0	17	47	19	8	9	24	7	A-2-a	
	9.0-12.0	55	19	20	-	6	NP	NP	A-1-a	
	12.0-20.0	40	45	11	-	4	NP	NP	A-1-b	

Station & Offset	Depth From-To	Agg	% C.S	% F.S	% Silt	% Clay	L.L	P.I	W.C	SHTL	
H-017-4-61	271+00 75'BT	0.2-1.0	Brown Sandy Silt W/Gravel & Cinders	NP	NP	NP	NP	NP	NP	Visual	
	1.0-2.0	Light Brown Sandy Silt W/Little Gravel	NP	NP	NP	NP	NP	NP	NP	Visual	
	2.0-3.0	Dark Brown Sandy Silt W/Some Gravel and Cinders	12	33	23	17	NP	NP	15	Visual	
	3.0-4.0		15	33	23	17	NP	NP	15	A-4a	
	4.0-5.0		24	24	-	4	NP	NP	4	A-1-b	
	5.0-6.0		19	46	21	5	NP	NP	17	A-3a	
	6.0-7.5		34	31	-	8	NP	NP	7	A-1-b	
	7.5-9.0		52	24	5	6	NP	NP	11	A-1-b	
	9.0-10.0		7	81	3	3	NP	NP	6	A-3	
	10.0-11.0		51	24	-	4	NP	NP	10	A-1-b	
	11.0-15.0		21	55	-10	-	NP	NP	9	A-3	
	15.0-18.0		2	94	-4	-	NP	NP	22	A-3	
H-017-4-61	271+00 150'BT	0.2-1.0	29	17	35	9	NP	NP	6	A-3a	
	1.0-3.0	38	22	20	10	10	NP	NP	9	A-1-b	
	3.0-7.0	0	3	17	43	37	NP	NP	19	A-4a	
	7.0-8.5	0	6	24	35	35	NP	NP	25	A-6b	
	8.5-14.0	Brown to Black Fine-Textured Feat	NP	NP	NP	NP	NP	NP	189	Visual	
	14.0-15.0	Gray Sedimentary Feat	43	12	NP	NP	NP	NP	38	Visual	
	15.0-18.0	12	17	46	14	11	NP	NP	17	A-3a	
	18.0-24.0	10	18	60	9	3	NP	NP	20	A-3a	
H-010-1-61	272+20 120'BT	0.0-3.0	20	9	19	36	NP	NP	10	A-4a	
	3.0-6.0	34	20	19	19	8	NP	NP	12	A-2-4	
	6.0-7.0	Brown Fibrous Feat	NP	NP	NP	NP	NP	NP	229	Visual	
	7.0-11.0	0	7	76	11	4	NP	NP	18	A-3a	
	11.0-11.5	0	3	42	38	17	NP	NP	28	A-4a	
	11.5-12.0	4	30	56	6	4	NP	NP	7	A-3	
	12.0-15.0	0	2	23	51	24	NP	NP	23	A-4b	
	15.0-20.0	37	36	18	-	9	NP	NP	15	A-1-b	
H-011-0-61	273+20 CL	0.0-2.0	0	7	74	24	NP	NP	NP	12	A-3a
	2.0-5.0	0	21	74	-	5	NP	NP	NP	1	A-3
	5.0-9.0	5	20	68	-	7	NP	NP	4	A-3	
	9.0-11.0	0	28	57	10	5	NP	NP	5	A-3a	
	11.0-16.0	0	1	8	59	32	NP	NP	9	A-4b	
	16.0-17.0	66	1	18	1	3	NP	NP	12	A-3a	
H-012-0-61	274+25 29'BT	0.0-2.5	3	10	35	34	NP	NP	NP	11	A-4a
	2.5-4.0	Brown Fibrous Feat	NP	NP	NP	NP	NP	NP	104	Visual	
	4.0-7.0	8	10	79	-	3	NP	NP	5	A-3	
	7.0-13.0	0	22	71	-	7	NP	NP	6	A-3	
	13.0-16.0	0	17	63	9	11	NP	NP	19	A-3a	
	16.0-18.0	0	29	48	12	11	NP	NP	20	A-3a	
	18.0-24.0	0	1	5	58	36	NP	NP	28	A-4b	
	24.0-28.0	64	22	13	-	1	NP	NP	18	A-1-a	
H-013-4-61	275+40 70'LT	0.2-1.0	Brown Silty Sand W/Gravel, Roots and Cinders	NP	NP	NP	NP	NP	NP	Visual	
	1.0-3.0	25	23	29	14	9	NP	NP	8	A-3a	
	3.0-7.5	Dark Brown Pine-Textured Feat	NP	NP	NP	NP	NP	NP	372	Visual	
	7.5-11.0	3	38	39	17	3	NP	NP	47	A-3a	
	11.0-13.0	Dark Brown Pine-Textured Feat	NP	NP	NP	NP	NP	NP	154	Visual	
	13.0-22.0	Gray Sedimentary Feat	81	37	NP	NP	NP	NP	85	Visual	
	22.0-24.0	Gray Sedimentary Feat	13	68	-17	-	NP	NP	65	Visual	
	24.0-29.0	2	2	68	-17	-	NP	NP	14	A-3a	
H-013-3-61	275+47 57'BT	0.0-3.0	Gray Silt and Stone Fragments	NP	NP	NP	NP	NP	NP	Visual	
	5.0-7.0	Brown Fibrous Feat	NP	NP	NP	NP	NP	NP	123	Visual	
	7.0-9.5	0	4	91	-	5	NP	NP	10	A-3	
	9.5-11.0	0	2	6	62	30	NP	NP	51	A-3	
	11.0-16.0	18	24	43	-15	-	NP	NP	18	A-3a	
H-013-2-61	275+75 10'LT	0.0-3.0	Silty Sand and Brick Fragments	NP	NP	NP	NP	NP	NP	Visual	
	5.0-6.0	Brown Decayed Wood with a Trace of Silt	NP	NP	NP	NP	NP	NP	NP	Visual	
	6.0-11.0	0	18	73	-	9	NP	NP	11	A-3	
	11.0-14.0	4	28	68	-	8	NP	NP	23	A-3	



Station & Offset	Depth From-To	Agg	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	% W.C.	SHTL Close
H-014-1-61	276+00 52'BT	0.0-4.0	Brown Silty Sand W/Sand, Bricks & Bricks							Visual
		4.0-6.0	Cinders and Glass						460	Visual
		6.0-12.0	Brown Fibrous Feat						111	Visual
		12.0-14.0	Gray Sedimentary Feat	181	NP	NP	NP	NP	81	A-3a
		14.0-15.0	Gray Sedimentary Feat	11	67	14			NP	Visual
		15.0-20.0	Gray Sedimentary Feat	0	5	61	34		37	A-7-5
		20.0-24.0		0	38	28	11		NP	A-4a
		24.0-25.0		0	23	30	23		6	A-4a
		25.0-28.0		0	11	36	23		NP	A-4a
		28.0-33.0		0	20	67	-13-		NP	A-3a
H-015-1-61	276+50 70'LT	0.0-4.0	53	15	26	-6-			NP	A-1-b
		4.0-5.0	23	32	26	-17-			NP	A-1-b
		5.0-10.0	16	21	42	9	12		NP	A-3a+
		10.0-15.0	13	31	40	-16-			NP	A-3a
		15.0-20.0	10	30	42	-18-			NP	A-3a
		20.0-25.0	13	21	45	12	9		NP	A-1-b
		25.0-30.0	34	24	32	-10-			NP	A-3a
		30.0-34.0	13	31	41	-15-			NP	Visual
		34.0-37.0	Black Fine-textured Feat						311	Visual
		37.0-42.0	Gray Sedimentary Feat	145	NP	NP	NP	NP	89	Visual
		42.0-46.0	Gray Marly Sedimentary Feat	86	NP	NP	NP	NP	111	Visual
		46.0-50.0	1	8	63	28			46	A-7-5
H-015-2-61	277+00 70'LT	0.0-2.0	11	17	59	-13+			NP	A-3a
		2.0-5.0	32	17	34	4			NP	A-3a
		5.0-10.0	18	33	33	-16-			NP	A-1-b
		10.0-15.0	26	26	35	-13-			NP	A-1-b
		15.0-16.0	0	10	20	45	25		9	A-4a
		16.0-21.0	21	23	33	16	7		NP	A-3a
H-016-0-61	277+00 35'LT	0.0-3.0	Brown Sandy Silt W/Trace of Gravel and Cinders							Visual
		3.0-6.0	16	11	11	36	26		11	A-6a
		6.0-9.0	33	13	19	24	11		14	A-2-6
		9.0-19.0	Dark Brown Fibrous Feat						209	Visual
		19.0-25.0	Brown to Gray Fibrous Feat						282	Visual
		25.0-29.0	Gray Sedimentary Feat-Trace of Marl	75	NP	NP	NP	NP	41	Visual
		29.0-34.0	0	14	55	27	4		NP	A-3a
H-016-1-61	277+02 75'BT	0.0-2.5	48	8	20	17	7		NP	A-1-b
		2.5-5.0	37	8	20	26	9		NP	A-2-4
		5.0-6.0	34	1	21	30	14		NP	A-4a
		6.0-14.0	Brown Fibrous Feat						368	Visual
		14.0-19.0	Gray Sedimentary Feat-Trace of Marl	45	NP	NP	NP	NP	42	Visual
		19.0-27.0	2	1	8	56	33		15	A-7-6
		27.0-28.0	0	28	57	-15-			29	A-3a
		28.0-35.0	0	1	5	46	48		NP	A-6a
		35.0-42.0	0	2	10	45	43		11	A-6a
		42.0-46.0	0	1	4	55	40		9	A-4b
		46.0-48.5	0	0	3	63	34		11	A-6a
H-017-4-61	278+58 55'BT	0.0-1.5	58	13	11	11	7		NP	A-1-b
		1.5-2.0	Brown Compact Fine-Textured Feat	43	NP	NP	NP	NP	7	Visual
		2.0-6.5	0	4	60	7	29		NP	A-4a
		6.5-7.0	0	4	29	46	21		NP	A-4a
		7.0-12.0	0	19	56	15	10		NP	A-3a
H-017-2-61	278+75 135'LT	0.0-1.5	17	23	30	10	NP	NP	9	A-3a
		1.5-3.5	Brown Compact Pine-Textured Feat	110	NP	NP	NP	NP	43	Visual
		3.5-5.0	67	18	6	7	2		NP	A-1-a
H-018-0-61	279+10 21'LT	2.0-4.0	63	11	8	9	11		15	A-2-4
		4.0-10.0	65	18	7	3	NP	NP	5	A-1-a
H-018-1-61	279+20 98'LT	0.0-1.0	24	17	17	29	17		NP	A-4a
		1.0-2.0	25	17	18	26	14		NP	A-4a
		2.0-3.5	Black Pine-Textured Feat						NP	Visual 25%
		3.5-5.0	42	7	14	17	20		NP	A-1-b
		5.0-7.0	19	8	16	26	31		NP	A-4a
		7.0-7.5	42	29	11	9	NP	NP	24	A-1-b

Station & Offset	Depth From-To	Agg	% C.S.	% F.S.	% Silt	% Clay	L	Pt	% W.G.	SHTL
										Close
H-020-2-61 ✓ 280+70	0.0-3.0 3.0-4.0 4.0-5.0	(28 7 Gray Sandstone Fragments	19 7	24 17	18 31	11 38	NP 32	NP 12	9 23	A-2-4 A-6a Visual
H-020-3-61 ✓ 280+85	0.0-1.5 1.5-3.0 3.0-4.0 4.0-5.0 5.0-6.0 6.0-12.0	Brown Silty Sand W/Trace of Gravel and Stone Fragments Dark Brown Silt W/Trace of Roots 0 34 39 67	5 9 18 20	19 23 14 6	45 17 13 4	31 17 16 3	21 22 25 NP	3 3 8 NP	18 13 12 7	Visual A-4a A-2-4 A-2-4 A-1-a
H-020-2-61 ✓ 281+55	0.2-3.0 3.0-4.0 4.0-5.0 5.0-9.0 9.0-10.0 10.0-11.0 11.0-15.0	Black Sandy Silt and Clinders Black Sandy Silt and Clinders Black Fine-Textured Compact Peat Black Compact Fibrous Peat (4 52 (59	39 10 7 13 20	19 18 15 10 10	19 32 30 16 5	13 28 23 4 6	NP 29 24 NP NP	NP 12 6 NP NP	13 138 22 5	A-2-4 Visual 71a A-6a A-1-a
H-021-0-61 ✓ 282+05	0.7-3.0 3.0-4.0 4.0-6.0 6.0-11.0	Reddish-Brown Compact Peat 15 69	7 13	18 6	32 6	28 6	29 24	12 6	138 22 5	A-2-4 Visual 71a A-6a A-1-a
H-021-3-61 ✓ 282+50	0.0-1.0 1.0-2.0 2.0-9.0 9.0-10.0 10.0-12.0 12.0-14.0	(29 (44 Dark Brown Fibrous Peat Gray Marly Sedimentary Peat 16 34	43 24 20 37	25 20 10 10	3- 4 6 7	8 8 7	NP NP NP NP	NP NP NP NP	9 17 440 76 7 17	A-1-b A-1-b Visual 89a Visual 85a A-1-a A-3a
H-021-2-61 ✓ 282+50	0.4-2.5 2.5-4.0 4.0-10.0 10.0-11.0 11.0-15.0	(30 Black Fine-Textured Peat Dark Brown Fibrous Peat Gray Marly Sedimentary Peat 60	22 18 25	21 10 8	14 14 3	13 11	20 27	3) 8	9 153 455 64 8	A-2-4 Visual 66a Visual 84a Visual A-1-a
H-022-1-61 ✓ 283+50	0.5-3.0 3.0-4.0 4.0-10.0 10.0-11.0 11.0-17.0 17.0-20.0 20.0-21.0	47 Black Fine-Textured Peat Black Fibrous Peat Black Fine-Textured Peat Gray Marly Sedimentary Peat Gray Marly Sedimentary Peat 13	18 10 5 16 19	10 6 25 15	14 11 6 7	11	27	8	12 190 709 365 77 42 12	A-2-4 Visual 62a Visual 90a Visual 79a Visual 98a Visual 77a A-2-4
H-022-4-61 ✓ 283+80	0.6-3.0 3.0-4.0 4.0-12.0 12.0-18.0 18.0-24.0 24.0-26.0 26.0-27.0 27.0-30.0	Black Sandy Clayey Silt W/Gravel and Tile Black Silty Peat W/Trace of Marl Black Fine-Textured Peat Gray Sedimentary Peat Trace of Marl Gray Sedimentary Peat (0 22 (69	57 412 127 103 144 NP NP	10 6 25 10 19	14 11 30 10 4	11	27	8	57 412 91 103 59 13 9	Visual 24a Visual 66a Visual 11a Visual 15a A-7-5 A-2-5 A-1-a
H-022-2-61 ✓ 283+90	0.0-1.0 1.0-2.0 2.0-10.0 10.0-16.0 16.0-21.0 21.0-22.0 22.0-24.0	Brown Sandy Silt W/Gravel Black Silty Peat W/Gravel & Decayed Wood Brown Fibrous Peat Gray Marly Sedimentary Peat Gray Sedimentary Peat W/Trace of Marl 2 23	148 80 NP NP NP	66 36 NP NP	66 36 NP NP	66 36 NP NP	66 36 NP NP	66 36 NP NP	116 68 20 11	Visual Visual 16a Visual 91a Visual 11a Visual 98a A-1-a
H-024-1-61 ✓ 285+32	0.4-2.0 2.0-4.0 4.0-5.0 5.0-6.0 6.0-11.0 11.0-14.0 14.0-15.0	(55 0 44 30 58 (29 (41	16 5 24 28 21 43 41	12 18 20 18 9 23 14	11 62 4 15 9 6 4	6 15 8 9 6 3 4	NP NP NP NP NP NP	NP NP NP NP NP NP	7 73 27 18 11 7 6	A-1-b A-4b A-1-b A-1-b A-1-a A-1-b A-1-b
H-020-1-61 ✓ 286+20	0.2-2.0 2.0-8.0 8.0-14.0	59 48 20	16 20 59	9 15 16	9 9 5-	8 8 -	NP NP NP	NP NP NP	7 6 6	A-1-b A-1-b A-1-b

Station & Offset	Depth From-To	% Agg	% C.S	% ES	% Silt	% Clay	L.L	P.I.	% W.G	SMTL Class	
H-026-1-61	288+00 75'LT	0.0-2.0	44	12	18	14	32	11	15	A-2-6	
		2.0-4.0	51	24	18	7-	NP	NP	7	A-1-a	
		4.0-6.0	4	27	66	2-	NP	NP	4	A-1-b	
		6.0-10.0	57	32	6	4-	NP	NP	6	A-1-a	
		10.0-11.0	51	26	8	7-	NP	NP	5	A-1-a	
		11.0-15.0	4	27	66	3-	NP	NP	4	A-1-b	
H-026-2-61	288+00 180'RT	0.0-1.0	Brown Sandy Silt W/Gravel & Tile								
		1.0-4.0	Brown Sandy Silt W/Gravel & Tile								
		4.0-7.0	Brown Sandy Silt W/Gravel & Glass								
		7.0-11.0	Brown to Gray Fine-Textured Feat								
		11.0-12.0	0	23	38	33	37	13	190	A-6a	
		12.0-13.0	0	14	67	-19-	NP	NP	13	A-3a	
		13.0-15.0	52	14	18	10	6	NP	10	A-1-b	
H-026-2-61	288+07 125'RT	1.0-3.5	Brown Sandy Clayey Silt								
		3.5-5.0	W/Gravel and Clinders								
		5.0-6.0	0	2	45	29	14	NP	30	A-4a	
		6.0-7.0	48	13	27	9	3	NP	15	A-1-b	
			48	11	14	13	14	24	15	A-2-4	
H-027-2-61	288+85 110'RT	0.1-5.0	26	18	25	18	13	NP	13	A-2-b	
		5.0-7.5	18	7	24	18	23	NP	32	A-4a	
		7.5-6.5	27	15	27	18	13	24	10	A-2-b	
		6.5-7.0	9	3	18	37	31	20	4	A-4a	
H-027-3-61	289+00 75'LT	0.0-1.5	Bricks, Broken Tile, Concrete, & Soil								
		1.5-3.0	29	11	18	24	8	NP	8	A-4a	
		3.0-5.0	Black Compact Feat								
		5.0-6.0	16	6	29	27	22	21	7	A-4a	
		6.0-11.0	63	14	9	4	10	NP	6	A-1-a	
H-028-0-61	289+72 15'RT	0.2-2.0	31	17	15	22	15	27	9	A-4a	
		2.0-7.0	44	18	15	-23-	NP	NP	3	A-1-b	
		7.0-11.0	36	42	12	-10-	NP	NP	6	A-1-b	
H-029-1-61	290+00 170'LT	0.2-3.0	15	11	22	30	12	NP	6	A-4a *	
		3.0-5.0	37	17	13	22	11	24	8	A-2-4 *	
		5.0-6.0	17	27	19	18	19	96	45	A-7-5	
		6.0-7.0	Dark Brown Compact Feat								
		7.0-8.0	Brown to Gray Fine-Textured Feat								
		8.0-10.0	3	24	50	1	22	NP	13	A-3a	
		10.0-16.0	67	9	8	14	2	NP	10	A-1-b	
H-029-2-61	290+00 100'RT	0.0-3.0	22	24	14	21	15	NP	17	A-2-b	
		3.0-6.0	27	15	27	18	13	24	10	A-2-b	
		6.0-7.0	45	26	11	12	6	NP	15	A-1-b	
H-030-0-61	290+55 40'LT	0.0-3.0	Brown Sandy Silt W/Little Gravel								
		3.0-8.0	34	33	19	-14+	NP	NP	8	A-1-b	
		8.0-10.0	6	25	56	-13-	NP	NP	5	A-3a	
		0.4-3.0	Black Fine-Textured Feat								
		3.0-5.0	Brown Fine-Textured Feat								
		5.0-7.0	Slightly Fibrous								
		7.0-9.0	0	12	63	18	7	NP	NP	Visual	
		9.0-14.0	0	14	55	-31-	NP	NP	NP	A-2a	
		14.0-19.0	6	26	55	-13-	NP	NP	20	A-3a	
			0	26	62	-12-	NP	NP	21	A-3a	
DRIVE-PRESS											
DRIVE-PRESS SAMPLE SOIL TEST DATA											
H-026-1-61	276+55 65'LT	5.0-6.0	Dark Gray Silty Sand & Gravel								
		10.0-11.0	Gravel W/Little Gray Clayey Silt								
		15.0-16.0	Gray Silty Sand								
		20.0-21.0	Stone Fragments W/Some Gravel								
		25.0-26.0	Gray Silty Sand and Gravel								
		30.0-31.0	Gray Silty Sand & Stone Fragments								
		35.0-36.0	56	20	19	0	3	NP	NP	A-1-a	
		40.5-41.5	0	2	12	63	21	NP	NP	A-4b	
		41.5-42.0	0	2	11	58	29	NP	NP	A-4b	
		42.0-43.5	0	6	10	38	13	NP	NP	A-4a	
		43.5-44.5	0	1	4	69	26	NP	NP	A-4b	
		50.0-51.5	0	4	10	52	34	NP	NP	A-1-b	
		51.5-53.0	60	8	14	16	6	NP	NP	A-7-6	
		53.0-54.5	57	7	13	16	6	71	NP	A-4a	
		54.5-55.5	25	17	28	18	14	NP	NP	A-3a	
		60.0-61.5	0	8	18	10	10	NP	NP	A-4a	
		61.5-62.5	0	8	14	24	14	NP	NP	A-3a	
		65.0-66.5	0	15	57	17	11	NP	NP	A-3a	
		66.5-67.5	25	16	35	16	8	NP	NP	A-3a	
		70.0-71.0	0	10	38	32	20	NP	NP	A-4a	



BORING	STATION & OFFSET		DEPTH		To	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C. CLASS	SHTL
	74' R	454 + 40	From	74' R										
B-018-1-61	B-18-1	454 + 40	74' R	0.0-1.7	Fill Material	33	6	23	28	10	NP	NP	17	A-4a
				1.7-5.0		0	1	24	58	17	24	3	21	A-4b
				5.0-8.0		0	0	48	38	14	NP	NP	10	A-4a
				8.0-18.0		0	29	20	38	13	NP	NP	15	A-4a
				18.0-27.0		9	0	7	72	12	24	1	23	A-4b
				27.0-30.0		3	4	21	51	21	25	6	20	A-4b
				30.0-35.0	Light Brown and Gray Sandstone	31	2	10	36	21	24	5	23	A-4a
B-018-2-61	B-18-2	454 + 37	€	0.0-3.0		28	8	21	28	15	20	2	23	A-4a
				3.0-6.5		53	4	14	20	9	32	6	22	A-2-4
				6.5-17.0		2	4	29	45	20	22	4	17	A-4a
				17.0-21.0		2	5	28	49	16	23	3	19	A-4a
				21.0-26.0		4	2	17	59	18	21	4	18	A-4b
				26.0-35.0	Light Brown and Gray Sandstone	19	6	20	39	16	23	5	17	A-4a
B-018-3-61	B-18-3	454 + 70	107'L	0.0-15.0		2	15	46	22	15	21	5	14	A-4a
						0	0	45	48	7	NP	NP	15	A-4a
						1	1	36	48	14	21	4	15	A-4a
				15.0-18.0		21	19	34	19	7	20	2	20	A-3a
				18.0-23.5		7	3	10	55	25	23	5	23	A-4b
				23.5-35.0	Light Brown and Gray Sandstone									Visual
B-020-1-60	B-20-1	436 + 83	18' L	0.0-7.0		12	12	36	28	12	26/-	5/0	22	A-4a
						4	4	39	31	22	23	8	10	A-4a
				7.0-15.0		9	24	58	-	9	NP	NP	3	A-3
				15.0-18.0		2	0	67	24	7	NP	NP	18	A-3a
				18.0-28.0		0	1	37	49	13	19	3	17	A-4a
						1	0	41	46	12	NP	NP	16	A-4a
						1	3	43	47	6	NP	NP	18	A-4a
				28.0-38.0		6	1	26	58	9	17	0	17	A-4b
						0	1	15	75	9	NP	NP	20	A-4b
				38.0-41.0		20	6	19	41	14	18	2	15	A-4a
				41.0-52.0		1	1	15	74	9	NP	NP	23	A-4b
						1	1	5	53	40	27	6	25	A-4b
				52.0-58.0		25	32	29	-	14	NP	NP	11	A-1-b
				58.0-62.0	Clayey Silt, with sand, some gravel									Visual
				62.0-74.0		31	44	13	-	12	NP	NP	11	A-1-b
						37	44	16	-	3	NP	NP	13	A-1-b
				74.0-87.0		7	23	54	-	16	NP	NP	15	A-3a
						1	4	70	-	25	NP	NP	17	A-3a
						5	34	50	-	11	NP	NP	18	A-3a
				87.0-90.0		0	2	97	-	1	NP	NP	26	A-3
B-020-2-60	B-20-2	437 + 49	23'R	0.0-1.0		11	18	39	25	7	NP	NP	20	A-3a
				1.0-8.0		6	17	37	25	15	22	5	15	A-4a
						4	10	41	23	22	23	9	11	A-4a
				8.0-28.0		13	26	50	9	2	NP	NP	6	A-3a
						0	0	80	18	2	NP	NP	23	A-3a
						0	1	75	21	3	NP	NP	19	A-3a
						1	0	73	21	5	NP	NP	18	A-3a
						0	1	72	25	2	NP	NP	17	A-3a
				28.0-36.0		0	1	63	29	7	NP	NP	18	A-4a
						4	1	57	26	12	NP	NP	17	A-4a
B-020-4-60	B-20-4	438 + 58	38'L	0.5-1.5		7	19	8	52	14	20/20	5/2	15	A-4b
				1.4-10.0		9	21	44	17	9	NP	NP	11	A-3a
						5	28	45	13	9	NP	NP	13	A-3a
						11	29	47	8	5	NP	NP	18	A-3a
				10.0-13.0		32	37	23	-	8	NP	NP	17	A-1-b
				13.0-22.0		18	12	56	-	14	NP	NP	9	A-3a
						6	3	78	-	13	NP	NP	21	A-3a
				22.0-24.0		29	25	37	-	9	NP	NP	13	A-1-b
B-021-1-60	B-21-1	430 + 70	11'L	0.0-3.0		11	30	24	20	15	22	0	18	A-3a
				3.0-7.0		7	41	42	-	10	NP	NP	8	A-3
				7.0-10.0		25	44	20	-	11	NP	NP	6	A-1-b
				10.0-13.0		34	26	14	18	8	19	0	10	A-2-4
				13.0-19.0		39	37	18	-	6	NP	NP	5	A-1-b
				19.0-31.5		0	7	88	-	5	NP	NP	3	A-3
						0	6	90	-	4	NP	NP	22	A-3
						0	7	89	-	4	NP	NP	21	A-3

BORING	STATION & OFFSET		DEPTH		% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C. CLASS	SHTL
	From	To	From	To									
B-20-4	438 + 58	38'L	0.5-1.5	7	19	8	52	14	20/20	5/2	15	A-4b	
			1.4-10.0	9	21	44	17	9	NP	NP	11	A-3a	
				5	28	45	13	9	NP	NP	13	A-3a	
			10.0-13.0	11	29	47	8	5	NP	NP	18	A-3a	
			13.0-22.0	18	37	23	-	8	-	NP	NP	17	A-1-b
B-21-1	430 + 70	11'L	0.0-3.0	11	30	24	20	15	22	0	18	A-3a	
			3.0-7.0	7	41	42	-	10	NP	NP	8	A-3	
			7.0-10.0	25	44	20	-	11	NP	NP	6	A-1-b	
			10.0-13.0	34	26	14	18	8	19	0	10	A-2-4	
			13.0-19.0	39	37	18	-	6	NP	NP	5	A-1-b	
B-21-1A	430 + 72	11'L	19.0-31.5	0	7	88	-	5	NP	NP	3	A-3	
				0	6	90	-	4	NP	NP	22	A-3	
				0	7	89	-	4	NP	NP	21	A-3	
			31.5-59.0	1	10	87	-	2	NP	NP	15	A-3	
				1	7	88	-	4	NP	NP	21	A-3	
B-21-2	431 + 74	46'L	0.0-7.0	32	11	22	22	13	26	1	17	A-2-4	
			7.0-18.0	44	9	15	14	13	27	6	15	A-2-4	
				26	32	15	-	9	NP	NP	5	A-1-b	
			18.0-28.0	0	43	22	-	9	NP	NP	4	A-1-b	
			28.0-31.5	11	9	89	-	2	NP	NP	22	A-3	
B-21-3	432 + 19	21'R	0.0-4.5	27	15	23	23	12	31	11	21	A-2-b	
			4.5-8.0	65	16	7	11	1	NP	NP	10	A-1-a	
			8.0-13.0	38	12	37	13	0	NP	NP	12	A-1-b	
			13.0-16.5	14	23	58	-	5	NP	NP	21	A-3	
			16.5-21.0	50	27	21	-	2	NP	NP	16	A-1-a	
B-21-4	432 + 78	54'R	0.0-1.0	24	21	25	20	10	NP	NP	23	A-2-4	
			1.0-4.0	25	12	24	23	16	26	6	18	A-4a	
			4.0-8.0	42	33	12	-	13	NP	NP	9	A-1-b	
			8.0-31.5	7	28	67	-	5	NP	NP	5	A-3	
				1	22	66	-	5	NP	NP	3	A-3	
B-21-5	434 + 16	36'L	0.0-3.5	23	23	30	13	11	NP	NP	49	A-3a	
			3.5-8.0	0	10	54	27	9	NP	NP	9	A-4a	
			8.0-13.0	4	32	46	10	8	NP	NP	15	A-3a	
			13.0-28.0	22	35	56	-	7	NP	NP	21	A-3	
				26	26	42	-	10	NP	NP	15	A-3	
B-21-6	432 + 78	54'R	0.0-90.0	1	1	95	-	3	NP	NP	21	A-3	
				2	1	25	65	7	NP	NP	20	A-4b	
				1	2	32	56	9	NP	NP	19	A-4b	
				24	21	25	20	10	NP	NP	23	A-2-4	
				25	12	24	23	16	26	6	18	A-4a	

BORING	STATION & OFFSET		DEPTH From To	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL CLASS	
	CL	CL											
B-021-6-60	B-21-6	434 + 80	CL	14	1	26	31	15	48	16	34	A-4a	
				8	13	44	24	11	139	33	80		
				0	8	56	23	13	NP	NP	14	A-4a	
				22	30	41	-	7	NP	NP	17	A-1b	
				58	26	9	-	7	NP	NP	9	A-1a	
				1	10	86	-	3	NP	NP	22	A-3	
				0	12	86	-	2	NP	NP	22	A-3	
				38	9	41	-	12	NP	NP	13	A-3a	
				53	10	25	-	12	NP	NP	11	A-1b	
				3	1	2	74	20	22	3	25	A-4b	
				0	1	12	76	11	NP	NP	21	A-4b	
				9	3	6	55	27	23	3	21	A-4b	
				4	5	21	48	22	18	3	15	A-4a	
				21	6	16	40	17	17	1	16	A-4a	
				4	5	17	54	20	18	3	16	A-4b	
				10	4	15	52	19	19	2	20	A-4b	
				0	0	0	85	15	25	2	25	A-4b	
				0	0	0	86	14	25	4	25	A-4b	
				0	0	10	70	20	20	4	23	A-4b	
				0	0	71	-	29	-	-	21	A-3a	
				1	3	12	51	27	20	4	17	A-4b	
B-021-7-60	B-21-7	435 + 50	CL	19	14	30	23	14	NP	NP	NP	24	A-4a
				3	12	46	27	12	NP	NP	NP	13	A-4a
				7	17	42	18	16	NP	NP	16	A-3a	
				15	33	44	-	8	-	NP	NP	10	A-3
				51	29	10	-	10	-	NP	NP	6	A-1-a
				1	3	91	-	5	-	NP	NP	22	A-3
				0	4	92	-	3	-	NP	NP	24	A-3
				0	5	90	-	5	-	NP	NP	22	A-3
R-001-0-59	R-1	441 + 86	CL	7	10	25	35	23	29/26	7/1	21	A-4a	
				25	16	36	14	9	18	0	12	A-3a	
				16	20	47	10	7	-	-	12	A-3a	
				36	13	34	13	4	-	-	16	A-2-4	
				26	14	30	24	6	19	0	22	A-2-4	
R-002-0-59	R-2	445 + 21	130°L	18	11	19	36	16	37	3	30	A-4a	
				23	12	37	18	10	17	0	15	A-2-4	
				5	21	62	-	12	-	NP	NP	8	A-3a*
				47	5	34	9	5	NP	NP	14	A-1-b*	
				1	0	80	16	3	NP	NP	27	A-3a	
R-003-0-59	R-3	449 + 38	45°L	18	8	21	36	17	31	4	10	A-4a	
				29	5	13	35	18	26	7	17	A-4a	
				10	5	18	45	22	22	4	15	A-4a	
				7	3	15	52	23	23	3	18	A-4b	
				2	4	16	53	25	24	4	19	A-4b	
R-004-0-59	R-4	452 + 64	40°R	36	19	20	20	5	-	0	21	A-1-b	
				10	6	30	35	19	22	2	15	A-4a	
				9	7	28	36	20	23	6	12	A-4a	
				20	10	20	33	17	25	7	12	A-4a	
				3	2	18	55	22	23	3	18	A-4b	
				0	0	1	62	37	27	6	24	A-4b	
				5	3	12	55	25	26	5	34	A-4b	
				37	0	53	-	10	-	-	6	A-3*	
R-010-0-59	R-10	447 + 69	28°R	19	15	29	22	15	24	3	20	A-4a	
				3	1	11	56	29	26	5	20	A-4b	
				53	4	30	-	13	-	NP	NP	10	A-1-b
				Gray and Brown Broken Sandstone									Visual
R-011-0-59	R-11	450 + 38	41°R	21	8	27	24	20	29	4	25	A-4a	
				22	6	24	31	17	21	3	18	A-4a	
				28	17	15	22	18	24	4	19	A-4a	
				10	5	13	50	22	20	3	17	A-4b	
				Gray and Brown Broken Sandstone									Visual
R-012-0-59	R-12	451 + 72.5	60°L	18	11	39	18	14	22	2	21	A-3a	
				5	4	16	48	27	24	5	17	A-4a	
				8	7	17	44	24	23	3	20	A-4a	
				31	31	25	-	13	-	NP	NP	5	A-1-b
				0	3	91	-	6	-	NP	NP	5	A-3
				4	7	14	51	24	22	3	20	A-4b*	
				Light Brown Broken Sandstone									Visual

STATION & OFFSET	DEPTH	AGG.	C.S.	F.S.	SILI	CLAY	L.L.	P.I.	W.C.	SHTL CLASS.	
H-041-0-61 521+00 CL	0.0-5.0	0	4	17	54	25	NP	NP	16	A-4a	
	5.0-9.5	36	6	18	25	16	21	13	13	A-4a	
H-042-0-61 523+00 CL	0.0-5.0	19	9	21	35	18	21	3	13	A-4a *	
	5.0-10.0	14	9	21	38	18	23	3	13	A-4a *	
SR 8 (CL SURVEY)											
H-043-0-61 327+00 CL	0.0-5.0	16	5	11	48	20	NP	NP	6	A-4a *	
	5.0-10.0	0	5	31	37	27	20	3	13	A-4a	
	10.0-14.0	17	6	23	38	16	NP	NP	17	A-4a	
	14.0-18.5	26	4	19	32	19	13	3	13	A-4a	
H-044-0-61 330+00 CL	0.0-4.0	30	7	33	19	12	NP	NP	9	A-2-4	
	4.0-9.0	21	8	34	25	12	NP	NP	13	A-4a *	
	9.0-14.0	34	7	25	21	13	NP	NP	16	A-2-4	
	14.0-18.0	24	11	40	15	10	NP	NP	15	A-3a	
	18.0-23.0	18	14	40	17	11	NP	NP	14	A-3a	
	23.0-27.0	0	13	46	23	13	NP	NP	13	A-4a	
H-044-0-61 339+00 CL	0.3-2.0	11	5	32	36	16	NP	NP	14	A-4a	
	2.0-5.0	53	5	25	10	7	NP	NP	8	A-1-D	
	5.0-7.0	0	3	11	28	58	30	15	21	A-6a	
H-045-0-61 341+02 CL	0.3-1.0	6	8	27	35	24	20	5	14	A-4a	
	1.0-3.5	4	6	18	50	22	NP	NP	13	A-4b	
	3.5-7.0	9	10	44	25	12	NP	NP	9	A-4a	
	7.0-11.5	34	6	38	13	9	NP	NP	7	A-2-4	
H-046-0-61 350+35 CL	0.3-1.3	Cinders and Soil Mixture					Visual				
	1.3-2.0	18	7	17	40	18	20	6	15	A-4a	
	2.0-5.0	20	7	16	38	19	23	7	18	A-4a	
	5.0-8.5	25	11	21	28	19	23	8	18	A-4a	
	8.5-9.0	Dark-Gray Weathered Shale					Visual				
	9.0-11.0	Gray Weathered Shale					Visual				
H-047-0-61 518+05 CL	0.3-5.0	0	5	10	53	29	NP	NP	10	A-4a	
	5.0-10.0	0	5	12	53	29	NP	NP	10	A-4a	
	10.0-13.0	25	5	11	34	20	NP	NP	10	A-4a	
	13.0-16.5	0	20	5	12	11	NP	NP	10	A-4a	
DRIVE SAMPLE SOIL TEST DATA											
H-048-0-61 515+73 57'Rt	SR 3 (Northbound Lanes)										
	2.5-3.5	Brown Gravelly Sand					Visual				
	3.0-6.0	0	9	21	38	32	23	5	16	A-4a	
	7.5-8.5	20	10	27	24	19	21	4	12	A-4a	
	10.0-11.0	27	22	23	11	12	NP	NP	13	A-1-D	
	15.0-16.0	10	7	55	16	12	NP	NP	12	A-3a	
	20.0-21.0	Brown Gravelly Sand					Visual				
	25.0-26.0	4	14	73	-	19	NP	NP	13	A-3a	
	30.0-31.0	49	25	22	29	-	NP	NP	12	A-1-D	
	35.0-36.0	14	7	23	29	27	13	4	13	A-4a	
B-016-0-63 512+19 120'Lt	SR 8 (Northbound Lanes) (Cont'd)										
	2.5-3.5	10	6	17	37	30	25	7	16	A-4a	
	5.0-6.0	0	6	21	43	30	24	6	15	A-4a	
	7.5-8.5	12	7	20	33	28	23	7	14	A-4a	
	10.0-11.0	15	7	17	35	28	24	7	13	A-4a	
	12.5-13.5	17	4	14	37	28	23	4	14	A-4a	
	15.0-16.0	0	5	13	54	28	20	2	12	A-4b	
	17.5-18.5	Gray Gravelly Sand					Visual				
	20.0-21.0	8	5	16	49	22	20	3	13	A-4a	
	25.0-26.0	Brown Broken Weathered Sandstone Boulders					Visual				
	30.0-31.0	29	22	24	14	11	NP	NP	11	A-1-D	
	35.0-36.0	0	3	66	3	9	NP	NP	22	A-3a	
	40.0-41.0	0	7	91	-	2	NP	NP	6	A-3	
	45.0-46.0	30	17	36	9	8	NP	NP	13	A-1-D	
50.0-51.0	Gray Gravel					Visual					
55.0-55.4	Gray Silty Sand					Visual					

H-045-0-61	STATION & OFFSET	DEPTH FROM TO	% AGG. C.S. F.S. SILT CLAY			L.L. P.I.	% M.C.	SHTL CLASS.			
			%	%	%						
			SR 8 (CL SURVEY)								
H-045-0-61	333+63 45'Rt	3.0-6.0	41	6	11	25	17	23	7	15	A-4a
H-046-0-61	333+06 6'Rt	5.0-6.0	54	15	19	-	12	-	NP	15	A-1-0
H-047-2-61	341+90 85'Lt	2.0-3.0 3.0-6.0	31 36	3 4	12 12	33 33	13	19	NP NP	7 16	A-4a A-4a
H-051-1-61	350+43 110'Lt	2.0-3.0	Gray Clayey Silty Sand with Trace of Stone Fragments								
		5.0-6.0	9	2	3	53	27	23	7	15	Visual
		10.0-10.3	10	10	13	33	26	23	8	24	A-4b A-4a
H-051-0-61	350+35 CL	0.2-1.3 1.3-2.0 2.0-5.0 5.0-8.0 8.5-9.0 9.0-11.0	18 20 20 25	7 7 11	17 16 21	40 38 26	18 19 17	20 22 23	6 7 8	15 17 18 18	Visual A-4a A-4a A-4a Visual Visual
H-052-1-61	353+30 110'Lt	0.2-1.0 1.0-2.0 2.0-8.0 8.0-9.5	15 16 13 13	0 4 8	30 19 20	29 47 42	20 24 25	20	NP NP NP	17 19 16 18	A-4-b A-4-b A-4e0 Visual
H-052-0-61	353+30 CL	0.8-3.0 3.0-5.5 5.5-11.0 11.0-13.5 13.5-16.0 16.0-19.0 19.0-20.0	47 22 12 10	7 6 6 4	23 37 23 21	16 18 38 40	7 17 21 25		NP NP NP NP	14 17 16 12 12 20 13	A-1-b A-2-4 A-4a A-4a Visual Visual Visual
H-052-2-61	353+30 95'Lt	0.3-1.5 1.5-3.0 3.0-6.0 6.0-10.0	46 6 0 7	8 4 4 8	24 26 12 18	14 36 36 43	8 28 28 24		NP NP NP NP	9 20 22 13	A-1-b A-4a A-4b A-4a
H-053-0-61	356+30 25'Lt	0.2-1.0 1.0-2.5 2.5-5.0 5.0-7.5 7.5-9.0 9.0-10.0	12 1 0 25 61	1 1 6 4 4	29 18 42 20 11	35 52 29 34 4	19 28 23 17 20		NP NP NP NP	17 19 16 17 8 12	A-4a A-4b A-4a A-4a A-1-b Visual
H-053-1-61	356+65 135'Lt	0.2-1.0 1.0-3.0 3.5-5.5 5.5-6.0	0 1 12 12	2 4 6 6	28 44 47 3	53 33 24	17 16 11		NP NP NP	11 8 8 8	A-4b A-4a A-3a Visual
H-055-0-61	361+00 18'Lt	0.6-4.0 4.5-8.0 8.0-10.0	17 0	8 1	16 3	40 55	19 41		NP NP	17 18	A-4a A-6a Visual
H-056-0-61	363+45 32'Lt	0.4-1.5 1.5-5.0 5.0-9.0 9.0-10.0 10.0-12.5 12.5-13.5	23 47 20 25 10 37	6 6 10 2 3 5	22 15 19 8 8 24	25 17 29 33	24 15 22 22		NP NP NP NP NP	16 12 16 15 11 9	A-4a A-2-4 A-4a A-6a Visual Visual
H-057-0-61	366+65 CL	0.7-4.5 4.5-5.0	17 17	6 6	26 26	28 28	23		NP	8	A-4a Visual
H-058-0-61	374+75 CL	0.6-2.5 2.5-5.0 5.0-7.0 7.0-10.0 10.0-14.0 14.0-16.5 16.5-20.0	0 9 8 21 52 10 37	5 4 6 5 5 5	16 15 19 28 16 24 24	45 46 48 35 17 40 15	34 26 19 11 10 19		NP NP NP NP NP NP	18 17 18 14 16 12 11	A-4a A-4a A-4a A-4a A-2-4 A-4a A-2-4
H-058-1-61	374+75 180'Lt	0.4-3.0 3.0-7.0 7.0-10.0	11 9 23	3 3 3	18 19 23	41 50 29	21 17 17		NP NP NP	14 14 22	A-4a A-4b A-4a
H-059-0-61	378+60 CL	0.6-2.0 2.0-6.5 6.5-9.5	19 13 39	7 4 7	14 17 23	38 44 20	22 21 11		NP NP NP	9 12 12	A-4a A-4a A-2-4
H-059-1-61	378+60 130'Lt	0.7-1.5 1.5-5.0 5.0-10.0	14 10 16	8 5 7	27 19 26	28 43 35	23 23 16		NP NP NP	8 15 13	A-4a A-4a A-4a

STATION & OFFSET	DEPTH FROM TO	AGG.	C.S.	F.S.	S&I	CLAY	L.L.	P.I.	W.C.	SHTL CLASS.
H-060-0-61 382+78 CL	0.3-4.0	9	6	14	44	27	27	11	27	A-6a
	4.0-7.5	11	6	17	46	20	22	7	17	A-4a
	7.5-10.0	15	6	20	39	20	18	5	12	A-4a
H-061-0-61 388+00 CL	0.3-3.0	24	5	17	38	16	18	5	14	A-4a *
	3.0-5.0	38	4	17	27	14	19	5	15	A-4a *
	5.0-7.5	38	4	11	31	16	23	7	23	A-4a
H-062-0-61 391+54 65'RB	0.6-1.5	12	4	14	48	22	NP	NP	25	A-4a
	1.5-7.5	7	7	19	41	26	21	7	16	A-4a
	7.5-10.0	16	7	40	25	12	NP	NP	13	A-4a
	10.0-11.0	73	1	16	6	4	NP	NP	20	A-1-a
H-051-1-61 350+43 110'LB	2.0-3.0	Gray Clayey Silty Sand with trace of Stone Fragments								Visual
	5.0-6.0	9	2	9	53	27	25	7	24	A-4b
	10.0-10.5	10	10	19	35	26	23	8	16	A-4a
H-053-1-61 356+38 175'LB	2.0-3.0	0	4	72	12	12	NP	NP	10	A-3a
	5.0-6.0	7	6	73	6	8	NP	NP	18	A-3a
	10.0-11.0	30	3	48	9	10	NP	NP	23	A-3a
H-063-0-61 394+40 30'LB	5.0-6.0	18	7	16	36	23	NP	NP	16	A-4a
	10.0-11.0	Gray Gravel and Stone Fragments							8	Visual

SUMMARY OF SOIL TEST DATA  
I.R. 76

EXPLORATION NO. STATION & OFFSET	FROM	TO	SAMPLE ID	% REC	% HP	% TSF	% GR	% CS	% FS	% SILT	% CLAY	LL	PL	PI	% WC	ODOT CLASS (GI)
B-036-0-79 STA. 03+45, 100'RT. NORTHING = EASTING =	2.5 - 3.0	SS-1 - SS-2					56	3	5	25	11	24	18	6	6	A-4a (0)
B-037-0-79 STA. 09+50, 110'RT. NORTHING = EASTING =	2.5 - 5.0	SS-1 - SS-3				18	26	7	13	30	24	23	16	7	12	A-4a - VISUAL
B-038-0-79 STA. 03+80, 42'LT. NORTHING = EASTING =	2.5 - 15.0	SS-1 - SS-5				22	8	13	32	25	22	22	16	6	11	A-4a - A-3a
B-039-0-79 STA. 249+25, 75'LT. NORTHING = EASTING =	5.0 - 25.0	SS-1 - SS-5				0	1	2	52	45	31	23	8	24	8	A-4b - A-4a
B-040-0-79 STA. 09+35, 62'RT. NORTHING = EASTING =	5.0 - 10.0	SS-1 - SS-3				4	3	2	48	43	33	23	10	15	15	A-4a - A-4b
B-041-0-79 STA. 5+05, 40' RT NORTHING = EASTING =	2.5 - 7.5	SS-1 - SS-3				7	8	36	32	17	19	16	3	14	14	A-4a - A-6b
B-042-0-79 STA. 9+00, 45' RT NORTHING = EASTING =	2.5 - 20.0	SS-1 - SS-8				3	7	30	30	30	20	15	5	17	25	A-4a - A-4c
B-043-0-79 STA. 469+85, 25' RT NORTHING = EASTING =	2.5 - 10.0	SS-1 - SS-4				20	6	29	25	20	19	16	3	12	11	A-4a - A-4c
B-044-0-79 STA. 2+35, 42' RT NORTHING = EASTING =	2.5 - 25.0	SS-1 - SS-11				15	1	6	39	39	39	23	16	37	8	A-4a - A-4c
B-001-0-61 STA. 50+17, 77'LT. NORTHING = EASTING =	0.0 - 28.0	SS-1 - SS-11				21	16	20	27	16	24	17	7	17	17	A-4a - A-3a
B-002-0-61 STA. 49+57, 77'LT. NORTHING = EASTING =	0.0 - 28.5	SS-1 - SS-13				7	11	20	39	23	-	-	-	47	47	A-4a - A-3a





SUMMARY OF SOIL TEST DATA  
I.R. 76

EXPLORATION NO. STATION & OFFSET	FROM	TO	SAMPLE ID	% REC	% TSF	% GR	% CS	% FS	% SILT	% CLAY	LL	PL	PI	% ODOT WC CLASS (GI)
B-007A-0-61	0.5	2.0	SS-1	-	-	-	-	-	-	-	-	-	-	-
STA. 48+94, 69' RT	2.5	4.0	SS-2	-	4	32	43	12	9	25	15	10	14	A-2-4 (0)
NORTHING =	5.0	6.5	SS-3	-	26	18	30	21	5	-	-	-	11	A-2-4 (0)
EASTING =	7.5	9.0	SS-4	-	32	49	14	5	-	-	-	-	5	A-1-b (0)
	10.0	11.5	SS-5	-	10	37	49	4	-	-	-	-	5	A-3 (0)
	12.5	14.0	SS-6	-	22	32	39	7	-	-	-	-	4	A-1-b (0)
	15.0	16.5	SS-7	-	25	46	24	5	-	-	-	-	5	A-1-b (0)
	20.0	21.5	SS-8	-	0	84	11	3	-	-	-	-	10	A-3a (0)
	25.0	26.0	SS-9	-	49	10	25	13	3	-	-	-	13	A-1-b (0)
	30.0	31.5	SS-10	-	5	3	6	59	27	22	17	5	14	A-4b (8)
	35.0	36.5	SS-11	-	10	5	8	52	25	22	18	4	14	A-4b (8)
	40.0	41.5	SS-12	-	27	30	34	9	-	-	-	-	13	A-1-b (0)
	45.0	46.5	SS-13	-	36	10	12	36	6	-	-	-	18	A-4a (1)
	50.0	51.5	SS-14	-	4	1	7	74	14	20	20	0	10	A-4b (8)
	55.0	56.5	SS-15	-	0	0	19	75	6	-	-	-	21	A-4b (8)
	60.0	61.5	SS-16	-	36	5	6	43	10	20	18	2	20	A-4b (4)
	65.0	66.5	SS-17	-	56	14	9	16	5	18	16	2	11	A-1-b (0)
B-008-0-61	0.4	1.9	SS-1	-	-	-	-	-	-	-	-	-	-	-
STA. 48+48, 76' RT	2.4	4.0	SS-2	-	-	-	-	-	-	-	-	-	-	-
NORTHING =	5.0	6.5	SS-3	-	14	9	41	22	14	17	15	2	12	A-4a (0)
EASTING =	7.5	9.0	SS-4	-	8	40	31	8	13	25	15	10	10	A-2-4 (0)
	10.0	11.5	SS-5	-	5	16	70	9	-	-	-	-	10	A-3 (0)
	12.5	14.0	SS-6	-	56	31	39	6	-	-	-	-	13	A-1-a (0)
	15.0	16.5	SS-7	-	9	42	24	5	-	-	-	-	8	A-1-b (0)
	17.5	19.0	SS-8	-	9	41	39	6	5	-	-	-	18	A-1-b (0)
	20.0	21.5	SS-9	-	15	30	46	9	-	-	-	-	16	A-3 (0)
	25.0	26.5	SS-10	-	2	0	77	17	4	-	-	-	18	A-3a (0)
	30.0	30.5	SS-11	-	4	8	54	27	7	-	-	4	19	A-3a (0)
	30.5	31.5	SS-12	-	3	0	18	71	8	-	-	-	17	A-4b (8)
	35.0	36.5	SS-13	-	15	4	26	36	19	18	13	5	16	A-4a (4)
	40.0	41.5	SS-14	-	15	12	12	36	25	21	15	6	17	A-4a (5)
	44.5	46.0	SS-15	-	1	3	7	50	29	23	17	6	16	A-4b (8)
	49.5	51.0	SS-16	-	1	0	10	73	16	20	19	1	22	A-4b (8)
	54.5	56.0	SS-17	-	1	5	42	42	10	-	-	-	16	A-4a (3)
	59.5	61.0	SS-18	-	0	0	14	58	28	19	17	2	18	A-4b (8)
	64.5	66.0	SS-19	-	25	15	25	17	8	16	14	2	12	A-1-b (0)
	69.5	71.0	SS-20	-	3	7	15	37	18	19	15	4	15	A-4a (4)

SUMMARY OF SOIL TEST DATA  
I.R. 77

EXPLORATION NO. STATION & OFFSET	FROM	TO	SAMPLE ID	% REC	% TSF	% GR	% CS	% FS	% SILT	% CLAY	LL	PL	PI	% ODOT WC CLASS (GI)
B-003-1-60	0.0	1.5	SS-1	-	-	-	-	-	-	-	-	-	-	-
STA. 377+40, 30' LT.	2.5	4.0	SS-2	-	4	4	12	46	34	30	18	12	21	A-6a (9)
NORTHING =	4.0	6.0	SS-3	-	19	10	20	33	18	23	17	6	16	A-4a (3)
EASTING =	6.0	7.5	SS-4	-	17	7	19	32	25	24	16	8	23	A-4a (4)
	9.0	10.5	SS-5	-	24	11	43	-	22	-	-	-	16	A-3a (0)
B-003-2-60	0.0	1.5	SS-1	-	-	-	-	-	-	-	-	-	-	-
STA. 378+20, 41' RT.	2.5	4.0	SS-2	-	7	6	14	46	27	29	22	7	24	A-4a (8)
NORTHING =	5.0	6.5	SS-3	-	7	6	17	46	24	23	17	6	17	A-4a (7)
EASTING =	7.5	9.0	SS-4	-	12	7	20	37	24	21	15	6	18	A-4a (5)
	10.0	11.5	SS-5	-	18	8	22	29	23	21	14	7	12	A-4a (3)
B-003-3-60	0.0	1.5	SS-1	-	-	-	-	-	-	-	-	-	-	-
STA. 378+63, 49' LT.	2.5	4.0	SS-2	-	2	4	21	58	15	-	-	0	23	A-4b (8)
NORTHING =	5.0	6.5	SS-3	-	19	10	21	32	18	19	17	2	16	A-4a (3)
EASTING =	7.5	9.0	SS-4	-	49	4	33	7	7	-	-	0	10	A-1-b (0)
	10.0	11.5	SS-5	-	36	5	38	9	12	-	-	0	15	A-2-4 (0)
	12.5	14.0	SS-6	-	26	5	42	17	10	-	-	0	19	A-2-4 (0)
	15.0	16.5	SS-7	-	49	9	19	15	8	19	-	19	13	A-1-b (0)
B-003-4-60	0.0	1.5	SS-1	-	-	-	-	-	-	-	-	-	-	-
STA. 379+37, 14' RT.	2.5	4.0	SS-2	-	21	8	21	29	21	26	16	10	17	A-4b (3)
NORTHING =	5.0	6.5	SS-3	-	9	7	21	41	22	21	17	4	17	A-4a (6)
EASTING =	7.5	9.0	SS-4	-	6	10	42	30	12	16	13	3	13	A-1-b (1)
	9.0	10.5	SS-5	-	23	5	38	21	13	16	13	3	14	A-2-4 (0)
B-004-1-60	0.0	1.5	SS-1	-	-	-	-	-	-	-	-	-	-	-
STA. 370+06, CL.	2.5	4.0	SS-2	-	1	4	19	51	25	25	19	6	23	A-4b (8)
NORTHING =	4.0	6.0	SS-3	-	0	1	9	69	21	27	21	6	23	A-4b (8)
EASTING =	6.0	7.5	SS-4	-	32	15	28	14	11	22	18	4	18	A-2-4 (0)
	8.0	10.0	SS-5	-	4	6	20	52	18	20	14	6	16	A-4b (7)
	10.0	11.5	SS-6	-	21	7	14	38	20	20	17	3	14	A-4b (5)
	14.0	15.5	SS-7	-	13	12	13	34	28	27	19	8	13	A-4a (5)
B-004-3-60	0.0	1.5	SS-1	-	-	-	-	-	-	-	-	-	-	-
STA. 370+53, 61' LT.	5.0	6.5	SS-2	-	22	10	24	41	23	22	16	6	17	A-4a (6)
NORTHING =	7.5	9.0	SS-3	-	22	7	34	27	10	NP	NP	NP	14	A-4a (0)
EASTING =	10.0	11.5	SS-4	-	9	1	2	67	21	20	17	3	14	A-4b (8)
	10.0	11.5	SS-4	-	2	8	21	46	23	20	16	4	15	A-4a (7)
B-004-5-60	0.0	1.5	SS-1	-	-	-	-	-	-	-	-	-	-	-
STA. 371+21, 39' RT.	3.0	4.5	SS-2	-	22	10	24	31	13	33	28	5	36	A-4a (2)
NORTHING =	6.0	7.5	SS-3	-	22	9	17	36	16	24	17	7	16	A-4a (3)
EASTING =	9.0	10.5	SS-4	-	10	8	17	43	22	23	17	6	18	A-4a (6)
	10.0	11.5	SS-4	-	19	2	5	44	30	31	20	11	14	A-6a (8)
B-004-8-60	0.0	1.5	SS-1	-	-	-	-	-	-	-	-	-	-	-
STA. 371+22, 42' LT.	5.0	6.5	SS-2	-	7	6	21	46	20	22	17	5	17	A-4a (6)
NORTHING =	10.0	11.5	SS-3	-	19	8	18	36	19	20	16	4	13	A-4a (4)
EASTING =	12.5	14.0	SS-4	-	30	5	15	31	19	22	15	7	13	A-4a (3)
B-004-11-60	0.0	1.5	SS-1	-	-	-	-	-	-	-	-	-	-	-
STA. 371+90, 9' RT.	2.5	4.0	SS-2	-	5	4	24	42	25	29	18	11	21	A-6a (7)
NORTHING =	5.0	7.0	SS-3	-	5	7	24	41	23	22	15	7	15	A-4a (6)
EASTING =	7.0	8.5	SS-4	-	11	6	25	38	20	22	15	7	16	A-4a (5)
	10.0	11.5	SS-5	-	22	3	21	39	15	22	15	7	19	A-4a (4)
	11.5	13.0	SS-6	-	1	1	6	22	70	33/31	17/17	16/14	25	A-6a (9)
	15.0	16.5	SS-7	-	8	1	5	8	78	32/32	17/18	15/14	21	A-6a (9)
B-005-1-60	0.0	1.5	SS-1	-	-	-	-	-	-	-	-	-	-	-
STA. 353+24, 105' LT.	3.0	4.5	SS-2	-	25	10	16	36	13	31	22	9	21	A-4a (3)
NORTHING =	6.0	7.5	SS-3	-	15	7	21	36	21	24	16	8	13	A-4a (4)
EASTING =	9.0	10.5	SS-4	-	12	8	19	41	20	24	18	6	16	A-4a (5)
	11.0	12.0	SS-5	-	55	12	4	21	8	30	20	10	9	A-2-4 (0)
	13.0	13.5	SS-6	-	46	10	10	25	9	25	20	5	12	A-2-4 (0)



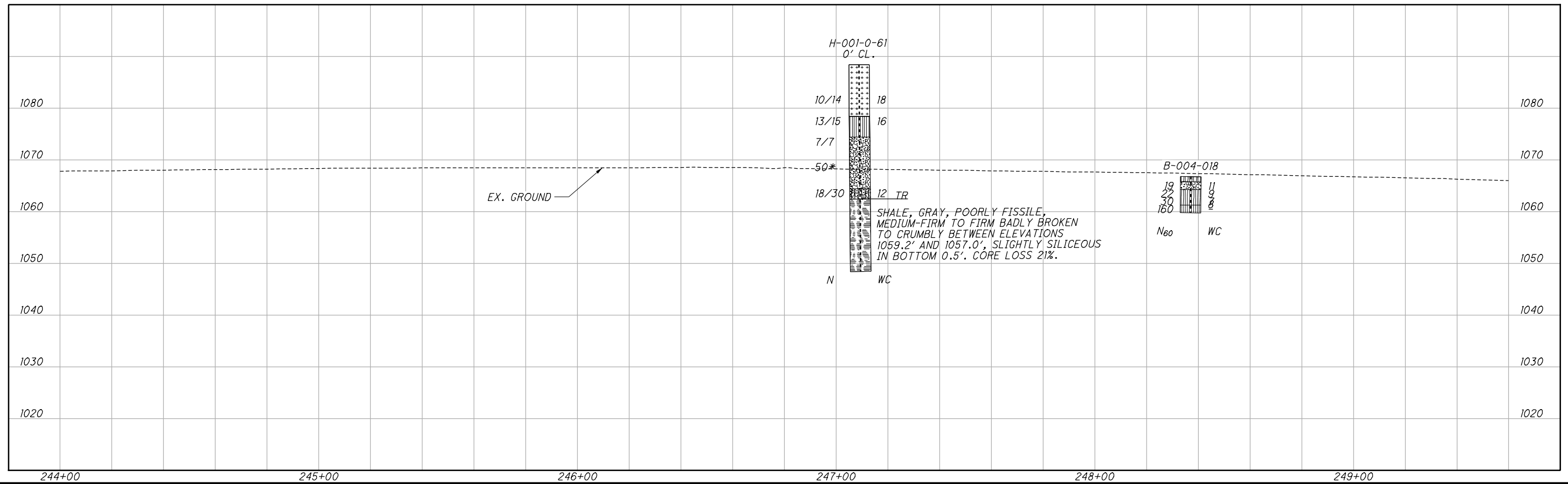
SUMMARY OF SOIL TEST DATA  
I.R. 77

EXPLORATION NO. STATION & OFFSET	FROM	TO	SAMPLE ID	% REC	HP TSF	% GR	% CS	% FS	% SILT	% CLAY	LL	PL	PI	% WC	ODOT CLASS (GI)
B-017-A-03 STA. 474+66, 176' NORTHING = EASTING =	0.0	1.5	SS-1	-	-	27	20	42	-	11	-	-	-	7	A-3a (0)
	3.0	4.5	SS-2	-	-	21	17	49	-	13	-	-	-	13	A-3a (0)
	6.0	7.5	SS-3	-	-	22	21	42	-	15	-	-	-	14	A-3a (0)
	8.5	10.0	SS-4	-	-	42	18	17	16	4	20	16	4	14	A-1-b (0)
	11.0	12.5	SS-5	-	-	53	23	7	15	2	-	-	-	13	A-1-b (0)
	13.5	15.0	SS-6	-	-	52	23	10	10	5	22	18	4	14	A-1-a (0)
	16.0	17.5	SS-7	-	-	42	11	29	11	7	18	16	2	15	A-1-a (0)
	18.5	20.0	SS-8	-	-	24	11	14	28	23	23	16	7	12	A-4a (3)
	21.0	21.5	SS-9	-	-	36	6	22	26	8	16	14	2	11	A-2-4 (0)
	21.0	1.5	SS-1	-	-	45	20	20	20	-	15	-	-	10	A-1-b (0)
B-017-A-04 STA. 475+19, 166' NORTHING = EASTING =	3.0	4.5	SS-2	-	-	27	5	36	23	9	-	-	-	14	A-2-4 (0)
	6.0	7.5	SS-3	-	-	6	6	59	18	11	-	-	-	14	A-3a (0)
	8.5	10.0	SS-4	-	-	35	20	20	12	13	21	18	3	12	A-2-4 (0)
	11.0	12.5	SS-5	-	-	48	28	12	-	12	-	-	-	10	A-1-b (0)
	13.5	15.0	SS-6	-	-	45	25	16	9	5	20	17	3	16	A-1-b (0)
	16.0	17.5	SS-7	-	-	55	17	13	9	6	25	22	3	17	A-1-b (0)
	18.5	19.5	SS-8	-	-	54	12	9	17	8	24	19	5	16	A-1-b (3)
	23.0	24.5	SS-9	-	-	10	8	62	-	20	-	-	-	9	A-3a (0)
	25.5	27.0	SS-10	-	-	5	4	51	26	14	18	15	3	12	A-4a (1)
	30.5	31.0	SS-11	-	-	9	6	36	33	16	16	13	3	16	A-4a (3)
B-017-A-05 STA. 475+89, 193' NORTHING = EASTING =	0.0	1.5	SS-1	-	-	38	13	34	-	15	-	-	-	6	A-1-b (0)
	2.5	4.0	SS-2	-	-	46	16	19	-	19	-	-	-	7	A-1-b (0)
	5.0	6.5	SS-3	-	-	32	11	37	-	20	-	-	-	9	A-2-4 (0)
	7.5	9.0	SS-4	-	-	11	18	39	-	32	-	-	-	15	A-3a (0)
	10.0	11.5	SS-5	-	-	39	32	13	-	16	-	-	-	13	A-1-b (0)
	12.5	14.0	SS-6	-	-	46	27	12	-	15	-	-	-	13	A-1-b (0)
	15.0	16.5	SS-7	-	-	41	29	12	-	18	-	-	-	15	A-1-b (0)
	20.0	21.5	SS-8	-	-	31	4	31	26	8	15	12	3	12	A-2-4 (0)
	25.0	26.5	SS-9	-	-	7	5	69	-	19	-	-	-	15	A-3a (0)

P:\02329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\02329\_IP001.dgn Sheet 3/16/2020 10:29:53 AM mlutes



MATCH LINE STA. 249+60, SEE SHEET 02



SOIL PROFILE  
 BEGIN STA. 244+00.00 TO STA. 249+60.00 I.R. 76

SUM-76-8.42  
 SUM-77-9.77

P:\102329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\102329\_IP002.dgn Sheet 3/16/2020 10:30:42 AM milutes



MATCHLINE STA. 249+60.00, SEE SHEET 01

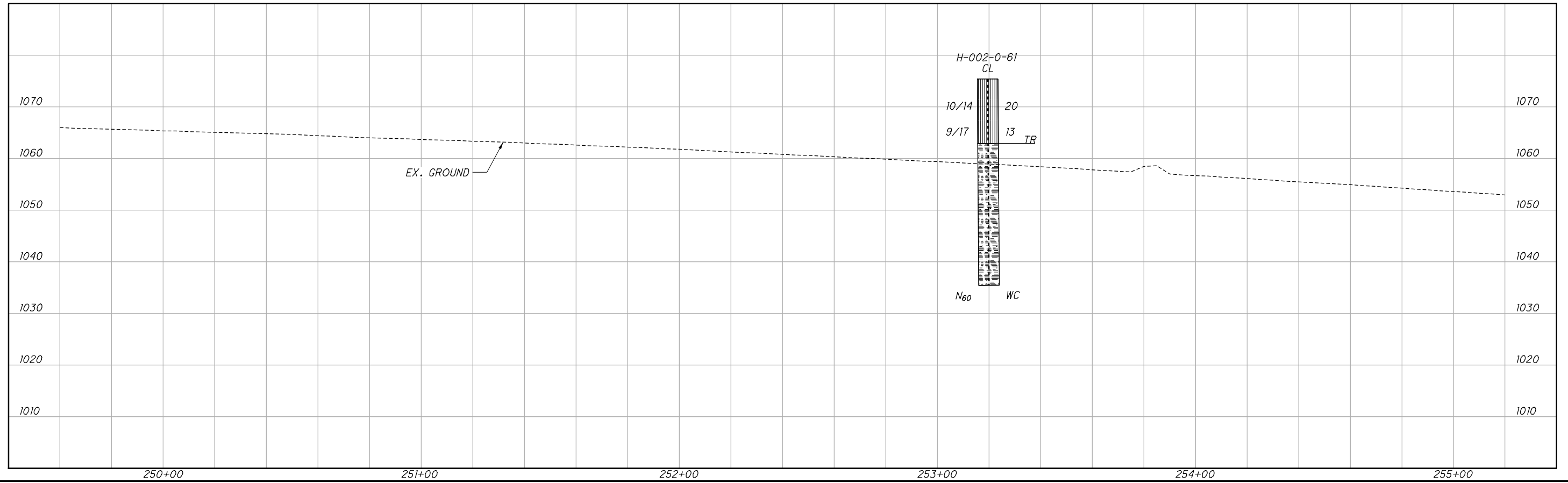
MATCHLINE STA. 255+20.00, SEE SHEET 03

P.I. Sta. 252+72  
 $\Delta = 15^{\circ} 46' 52''$  (LT)  
 $Dc = 1^{\circ} 15' 03''$   
 $R = 4,581.00'$   
 $T = 634.89'$   
 $L = 1,261.74'$   
 $E = 43.79'$   
 $C = 1,257.76'$   
 $C.B. = N 79^{\circ} 55' 03'' E$



DRAWN SM  
 CHECKED PAN

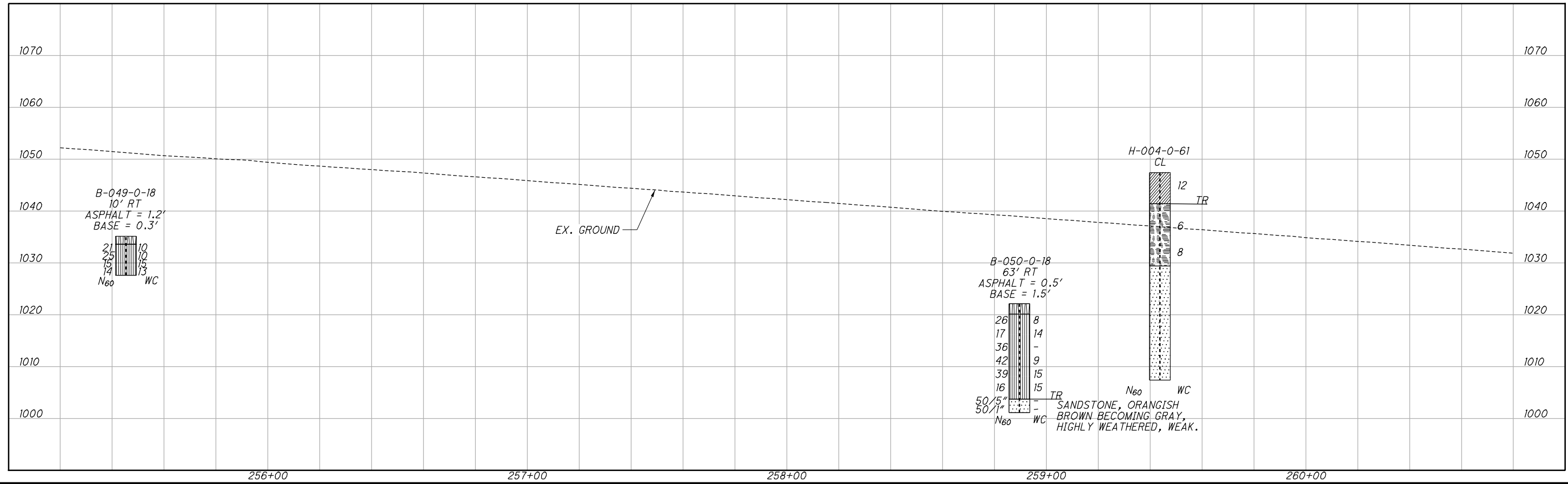
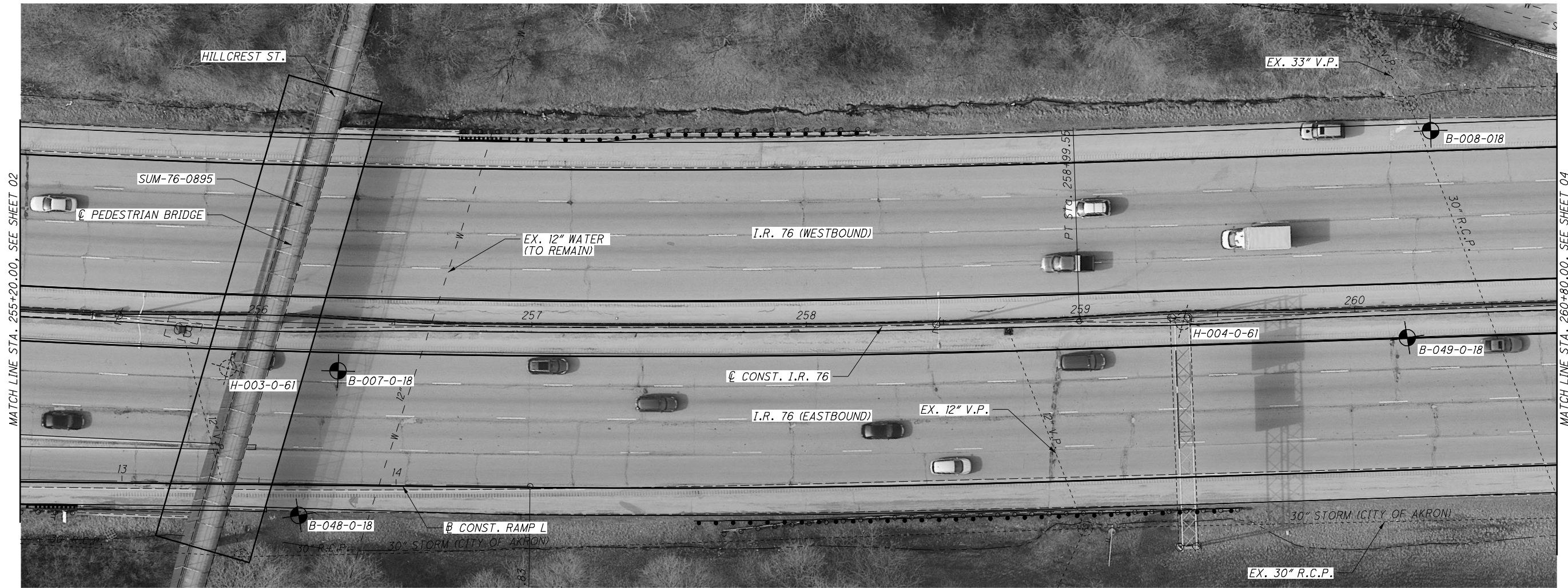
**SOIL PROFILE**  
**STA. 249+60.00 TO STA. 255+20.00 I.R. 76**



**SUM-76-8.42**  
**SUM-77-9.77**



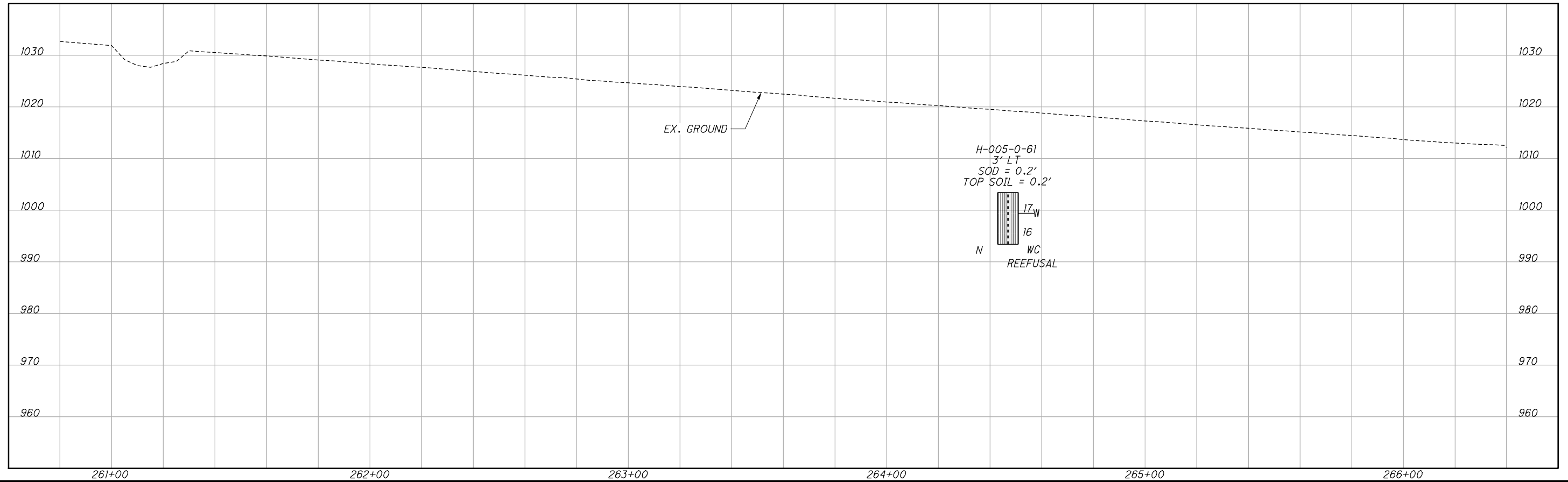
P:\02329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\02329\_IP003.dgn Sheet 3/16/2020 10:31:36 AM mlufes



SOIL PROFILE  
 STA. 255+20.00 TO STA. 260+80.00 I.R. 76

SUM-76-8.42  
 SUM-77-9.77

P:\102329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\102329\_IP004.dgn Sheet 3/16/2020 10:32:28 AM mlutes



**SUM-76-8.42**

**SUM-77-9.77**

**SOIL PROFILE**

**STA. 260+80.00 TO STA. 266+40.00 I.R. 76**

0 20 40  
HORIZONTAL SCALE IN FEET

DRAWN: SM  
CHECKED: PAN

25

173



P:\02329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\02329\_IP005.dgn Sheet 3/16/2020 10:33:20 AM miles

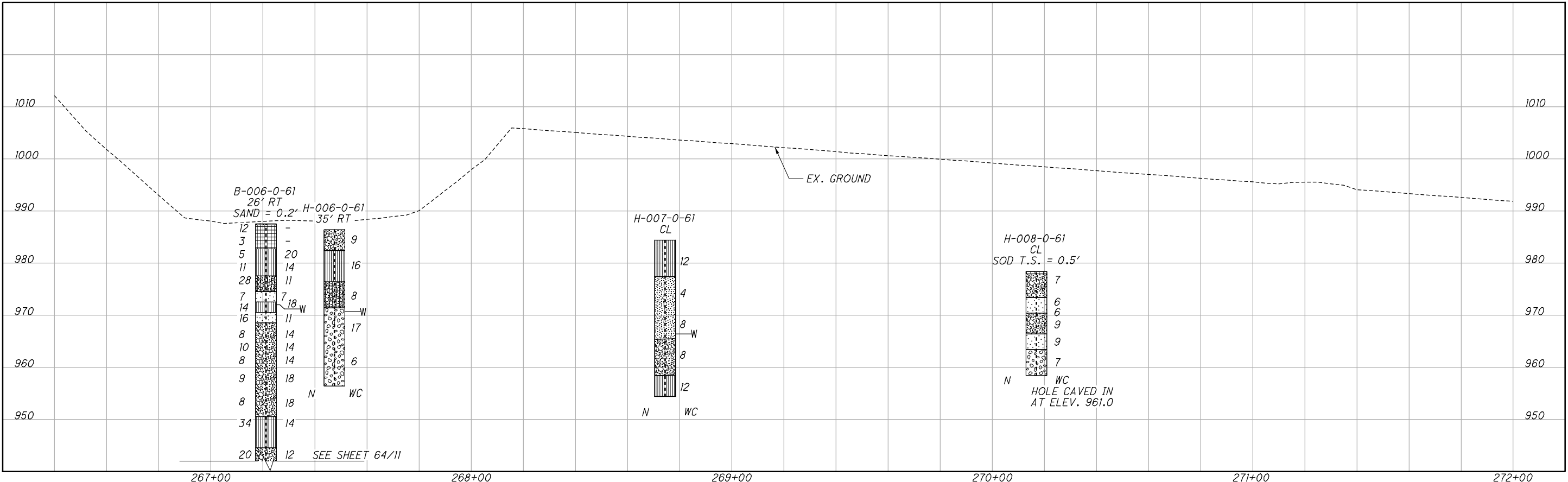


MATCH LINE 266+40.00, SEE SHEET 04

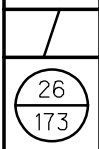
MATCH LINE STA. 272+00.00, SEE SHEET 06



**SOIL PROFILE**  
**STA. 266+40.00 TO STA. 272+00.00 I.R. 76**

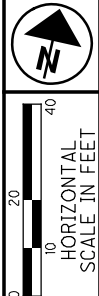
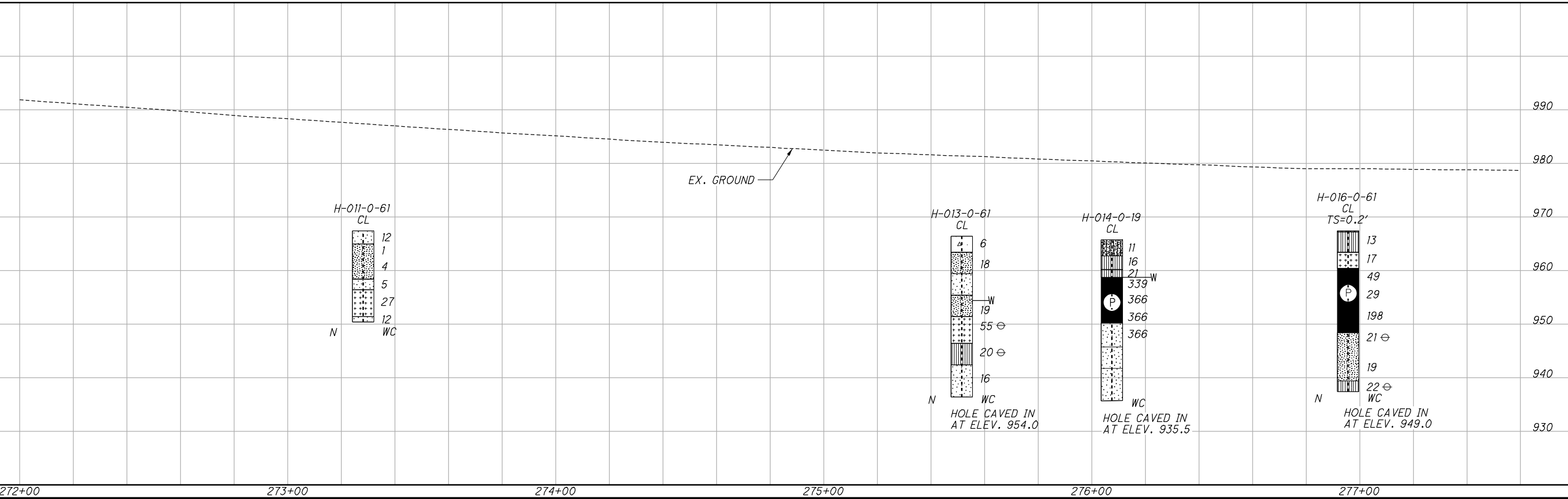


**SUM-76-8.42**  
**SUM-77-9.77**





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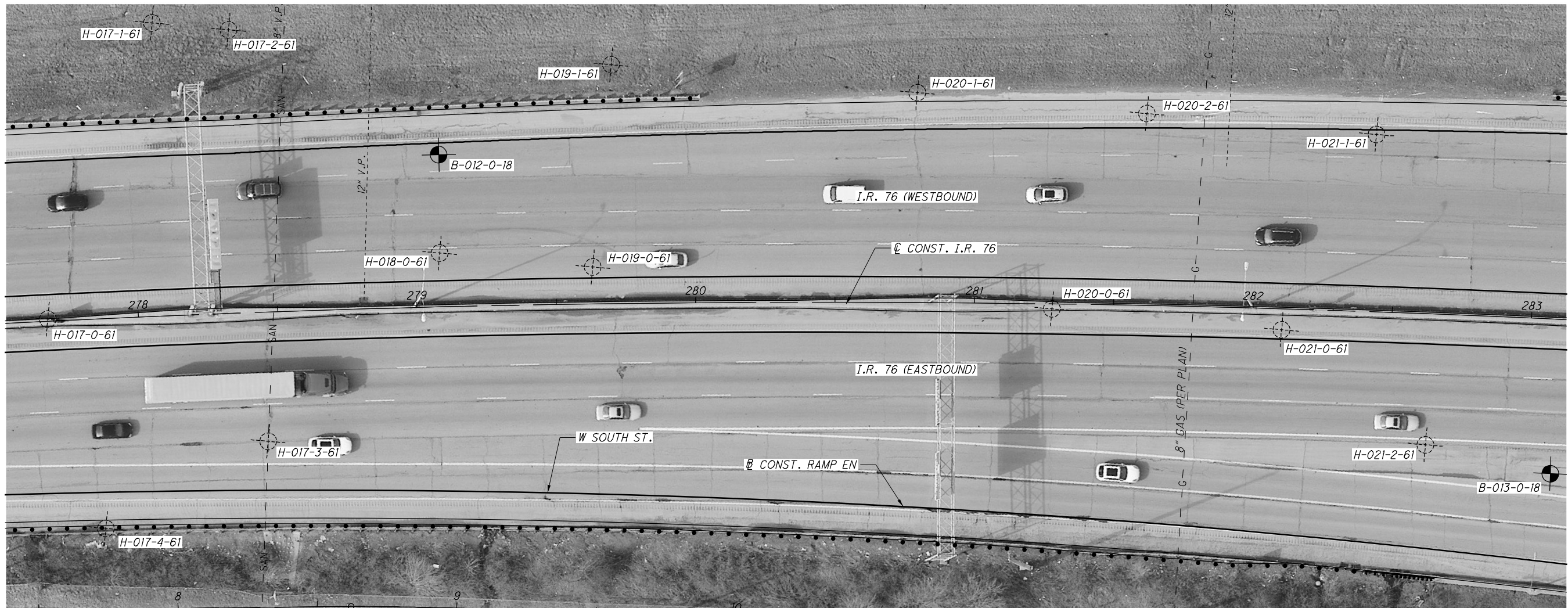


DRAWN: SM  
CHECKED: PAN

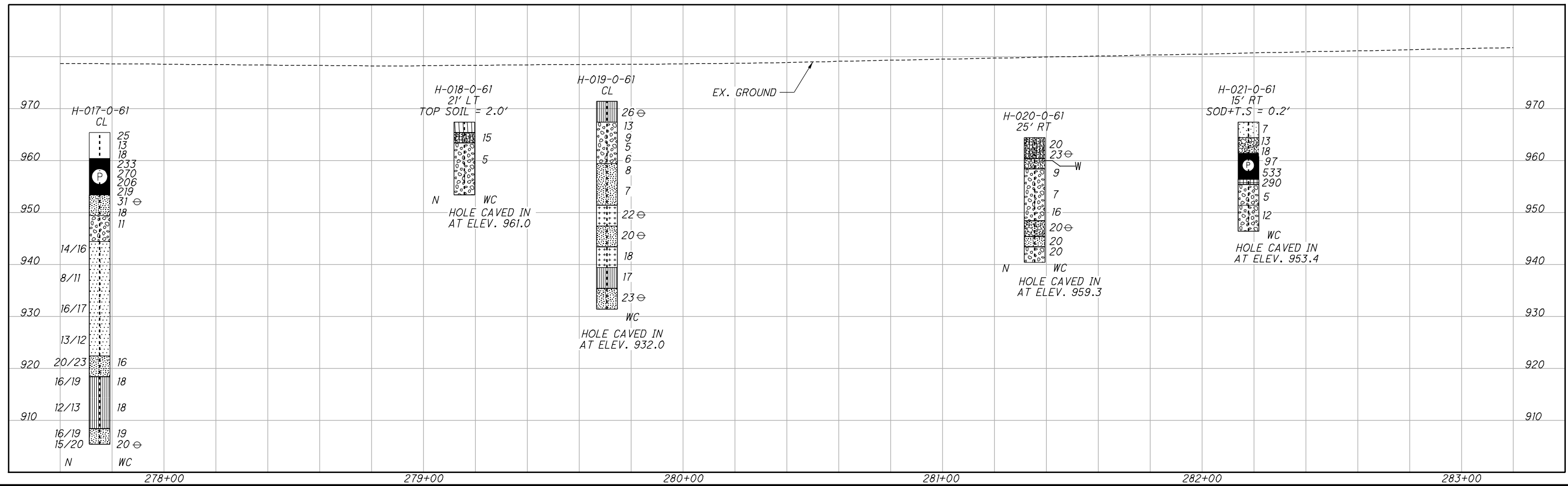
SOIL PROFILE  
STA. 272+00.00 TO STA. 277+60.00 I.R. 76

SUM-76-8.42  
SUM-77-9.77

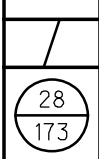
P:\02329\_SUM-76\_77\Design\Sheets\SoilProfile\02329\_IP007.dgn Sheet 3/16/2020 10:35:03 AM mlut.es



SOIL PROFILE  
 STA. 277+60.00 TO STA. 283+20.00 I.R. 76



SUM-76-8.42  
 SUM-77-9.77





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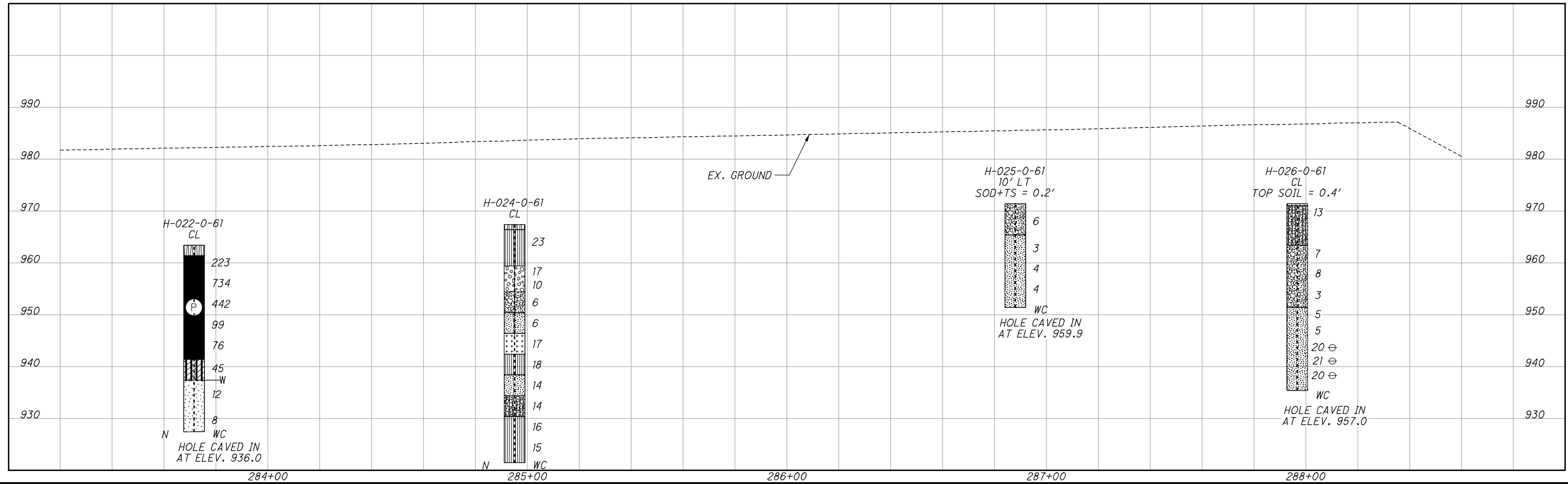


MATCH LINE STA. 283+20.00, SEE SHEET XX

MATCH LINE STA. 288+60.00, SEE SHEET XX

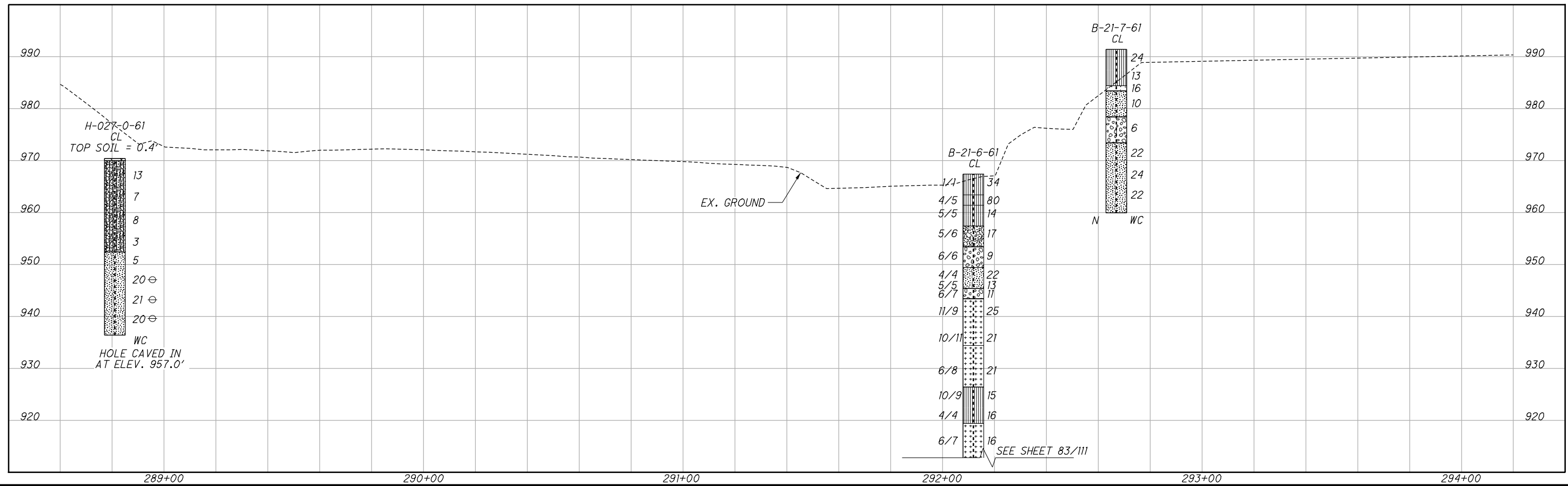



SOIL PROFILE  
 STA. 283+20.00 TO STA. 288+60.00 I.R. 76



SUM-76-8.42  
 SUM-77-9.77

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10  
HORIZONTAL  
SCALE IN FEET

DRAWN: SM  
CHECKED: PAN

**SOIL PROFILE**

**STA. 288+60.00 TO STA. 294+20.00 I.R. 76**

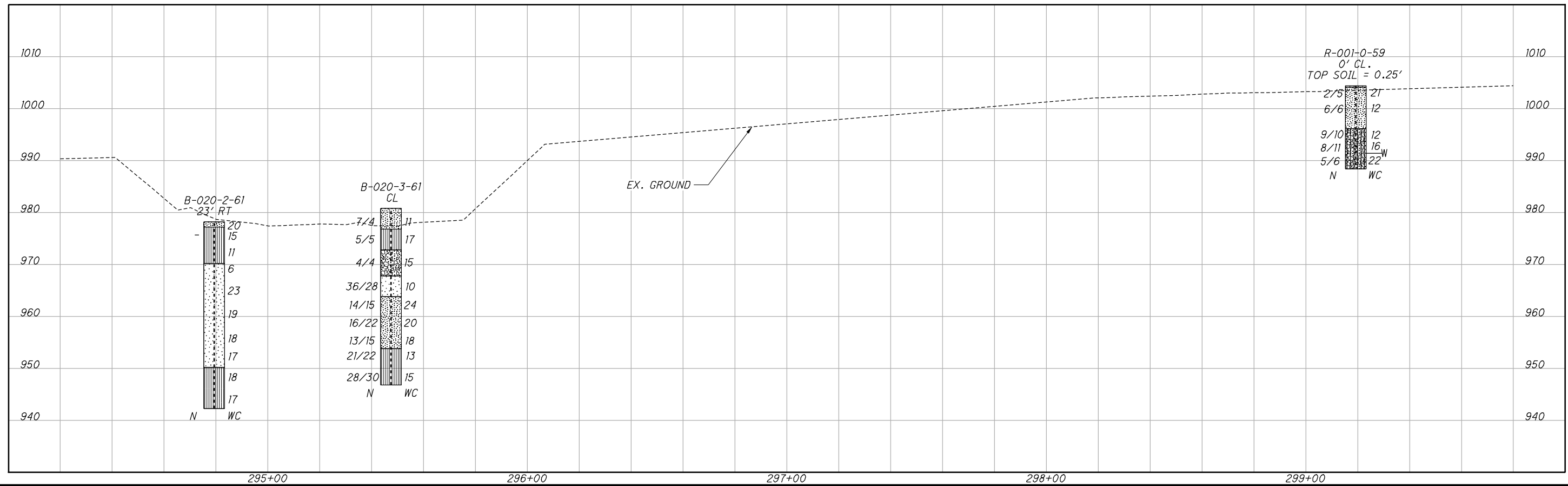
**SUM-76-8.42**

**SUM-77-9.77**

30  
173



P:\102329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\102329\_IP010.dgn Sheet 3/16/2020 10:37:36 AM mlufes



31  
173

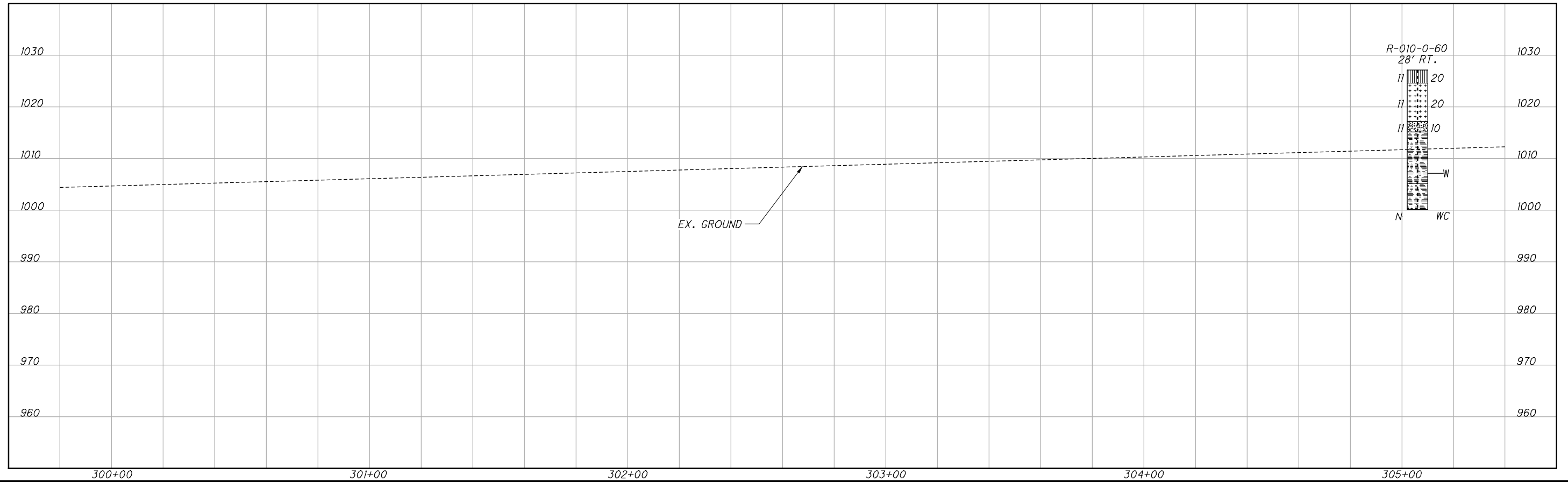
**SUM-76-8.42**  
**SUM-77-9.77**

**SOIL PROFILE**  
**STA. 294+20.00 TO STA. 299+80.00 I.R. 76**

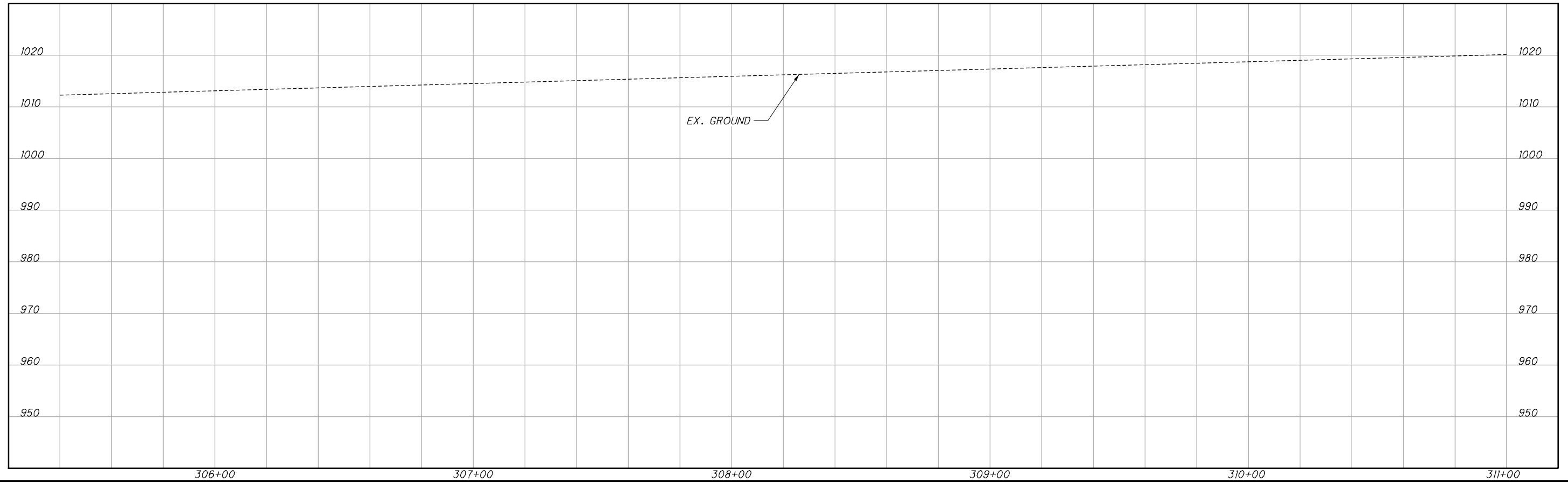
0 20 40  
HORIZONTAL  
SCALE IN FEET

DRAWN: SM  
CHECKED: PAN

P:\02329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\02329\_IP01.dgn Sheet 3/16/2020 10:38:26 AM mlutes







**SUM-76-8.42**

**SUM-77-9.77**

**SOIL PROFILE**

**STA. 305+40.00 TO STA. 311+00.00 I.R. 76**

33

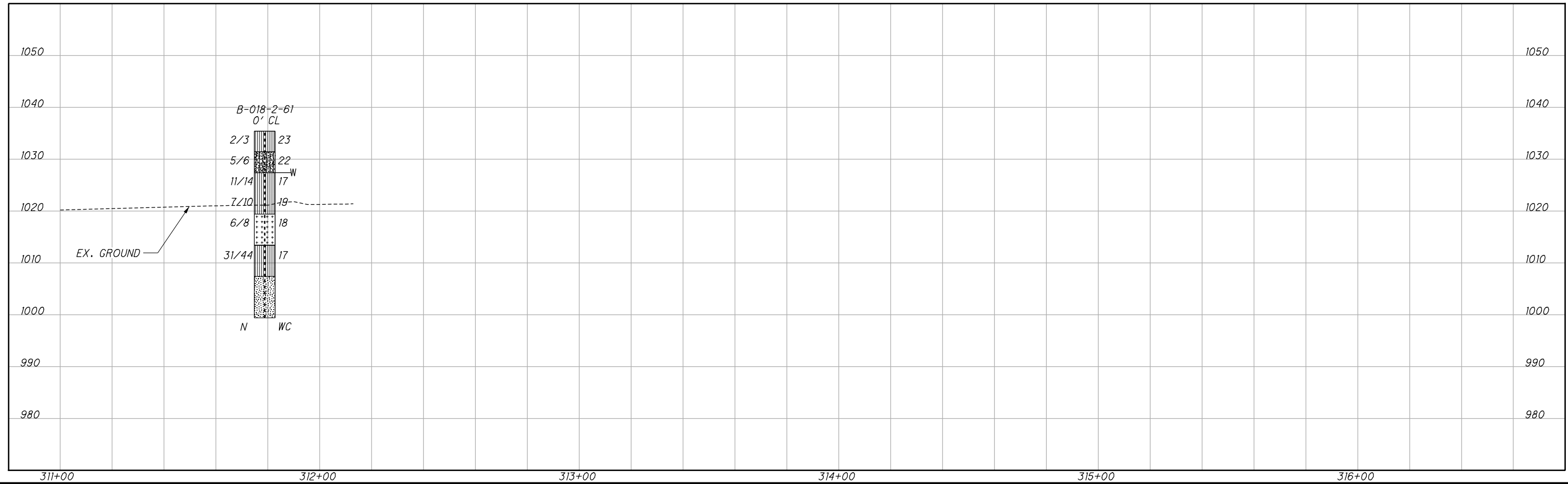
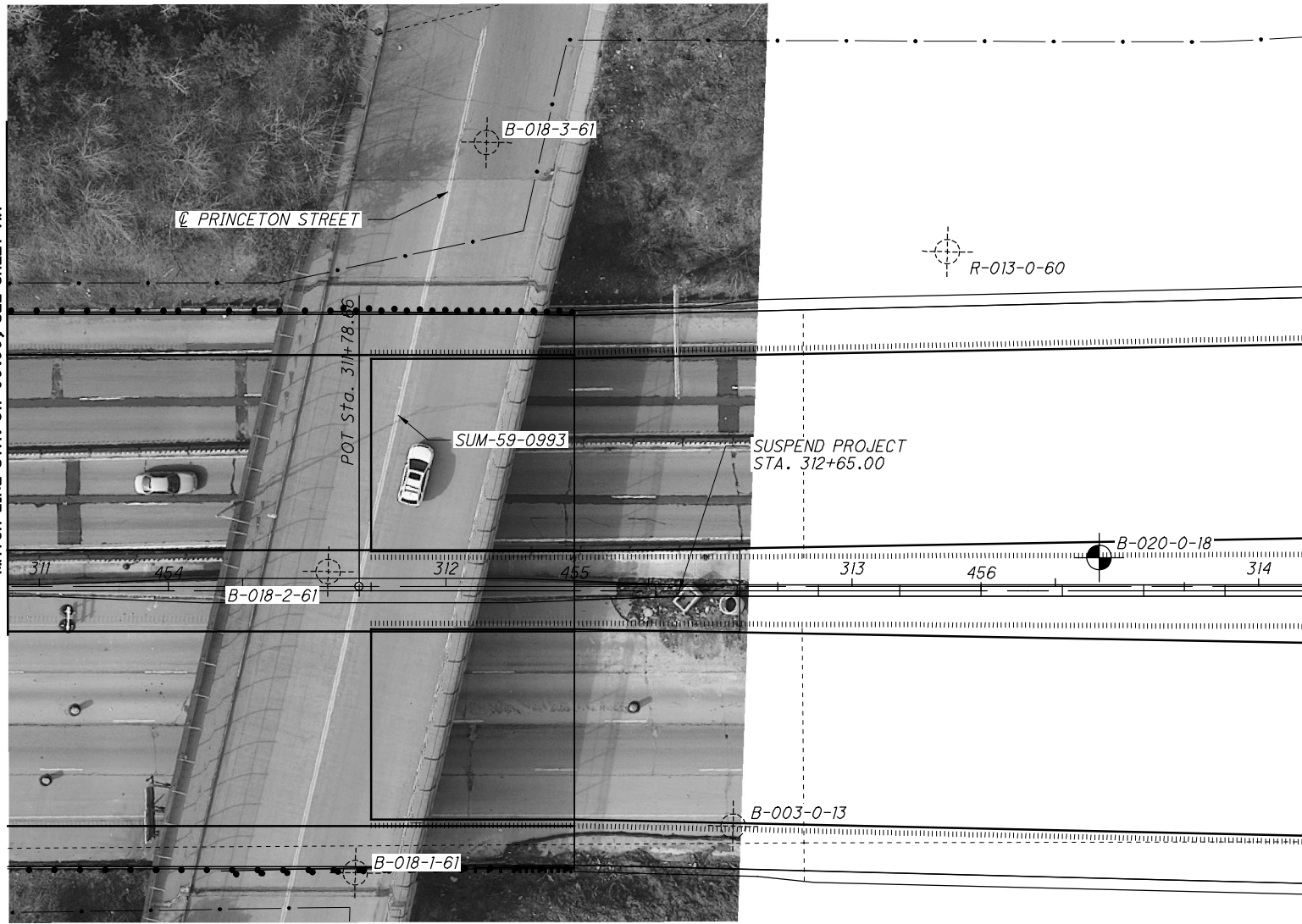
173

DRAWN: SM  
CHECKED: PAN

0 20 40  
HORIZONTAL SCALE IN FEET

P:\02329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\02329\_IP013.dgn Sheet 3/16/2020 10:40:06 AM mlUtes

MATCH LINE STA. 311+00.00, SEE SHEET XX

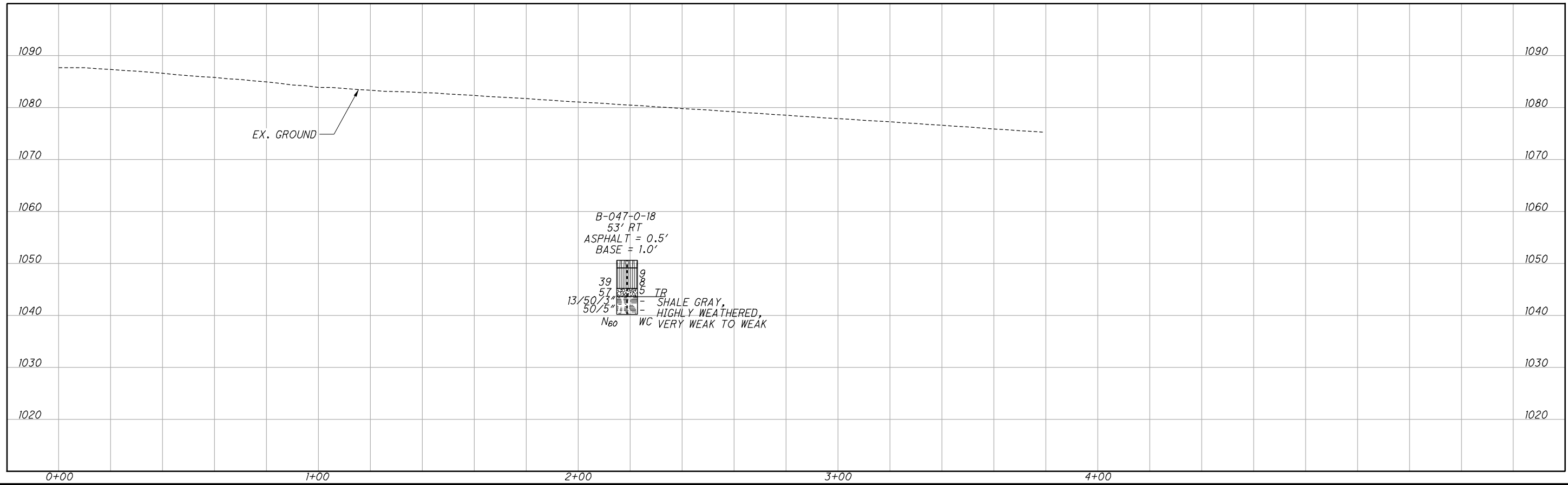


**SOIL PROFILE**  
**STA. 311+00.00 TO STA. 312+65.00 I.R. 76**

**SUM-76-8.42**  
**SUM-77-9.77**



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**SOIL PROFILE**

**BEGIN STA. 0+00.00 TO END STA. 3+97.72 RAMP K**

**SUM-76-8.42**

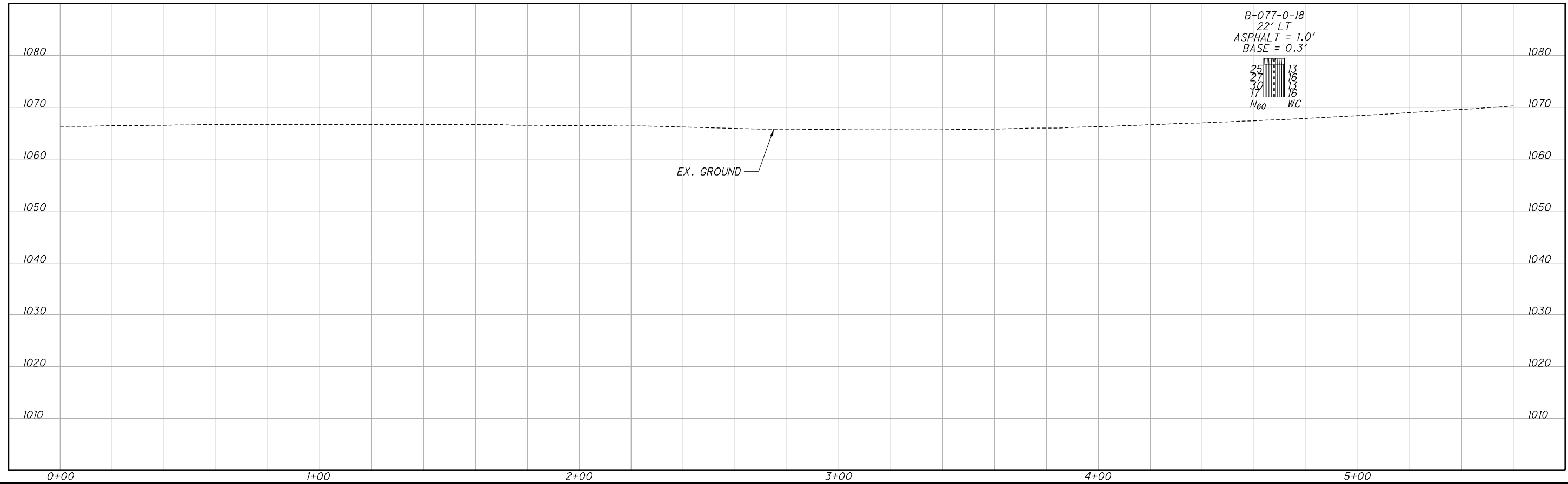
**SUM-77-9.77**

35  
173

DRAWN: SM  
CHECKED: PAN

0 20 40  
HORIZONTAL  
SCALE IN FEET

P:\02329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\02329\_IP402.dgn Sheet 3/16/2020 10:41:25 AM mlutes



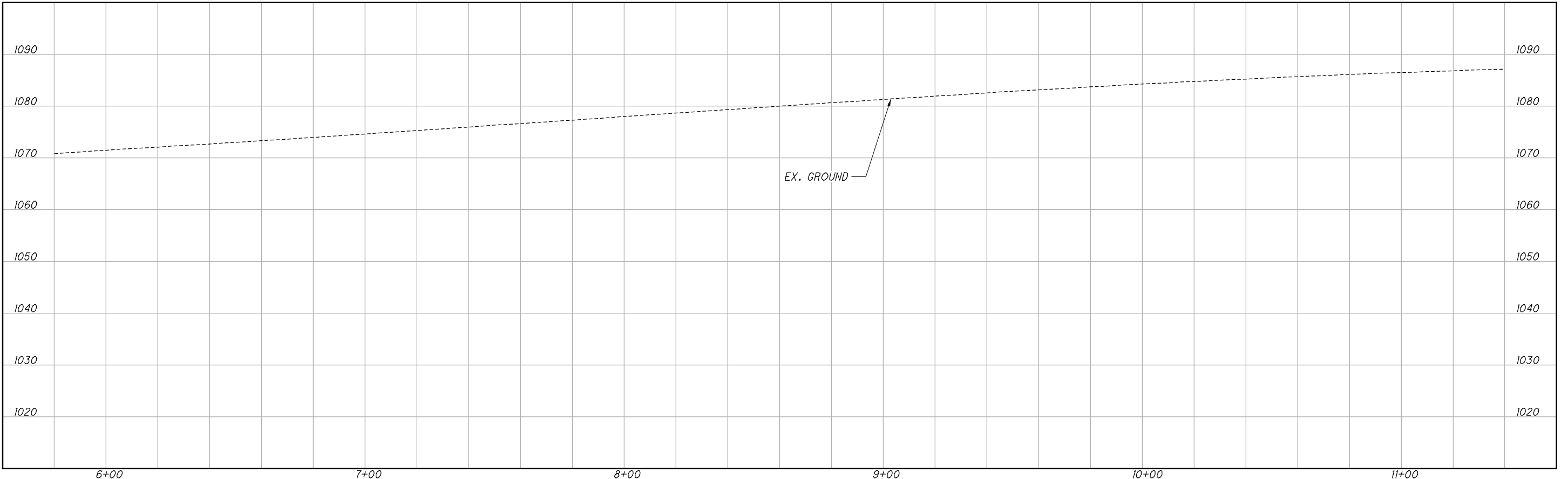
DRAWN SM  
CHECKED PAN

**SOIL PROFILE**  
**BEGIN STA. 0+00.00 TO STA. 5+60.00 RAMP J**

**SUM-76-8.42**  
**SUM-77-9.77**



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HORIZONTAL SCALE IN FEET

DRAWN	SM
CHECKED	PAN

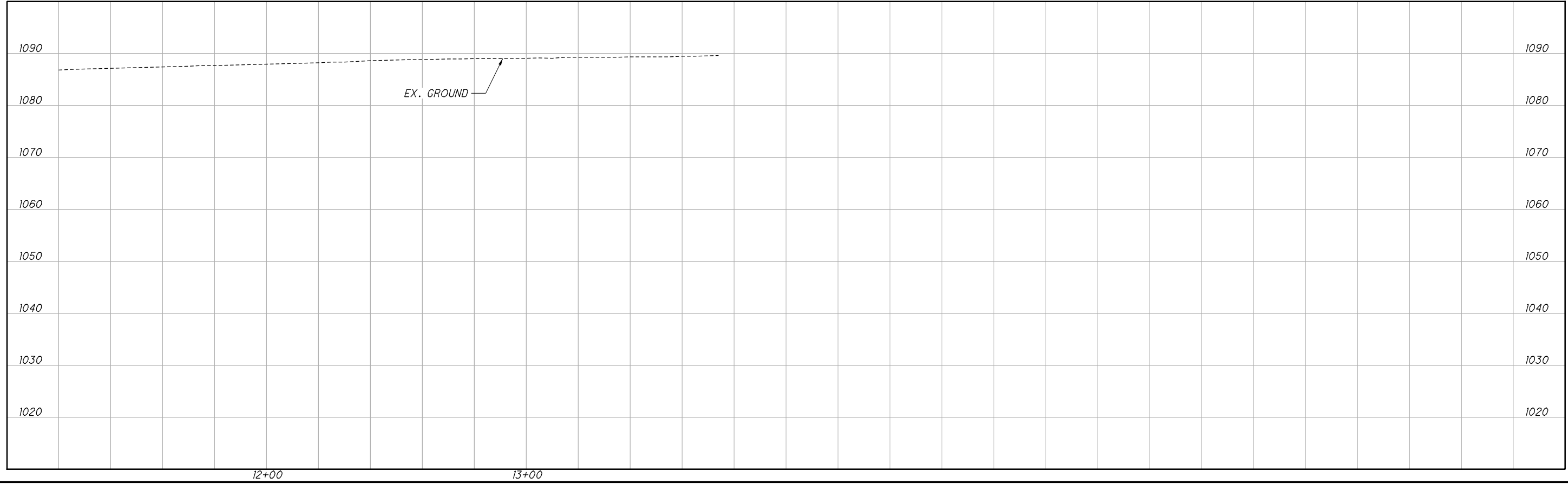
**SOIL PROFILE**

**STA. 5+60.00 TO STA. 11+20.00 RAMP J**

**SUM-76-8.42**

**SUM-77-9.77**

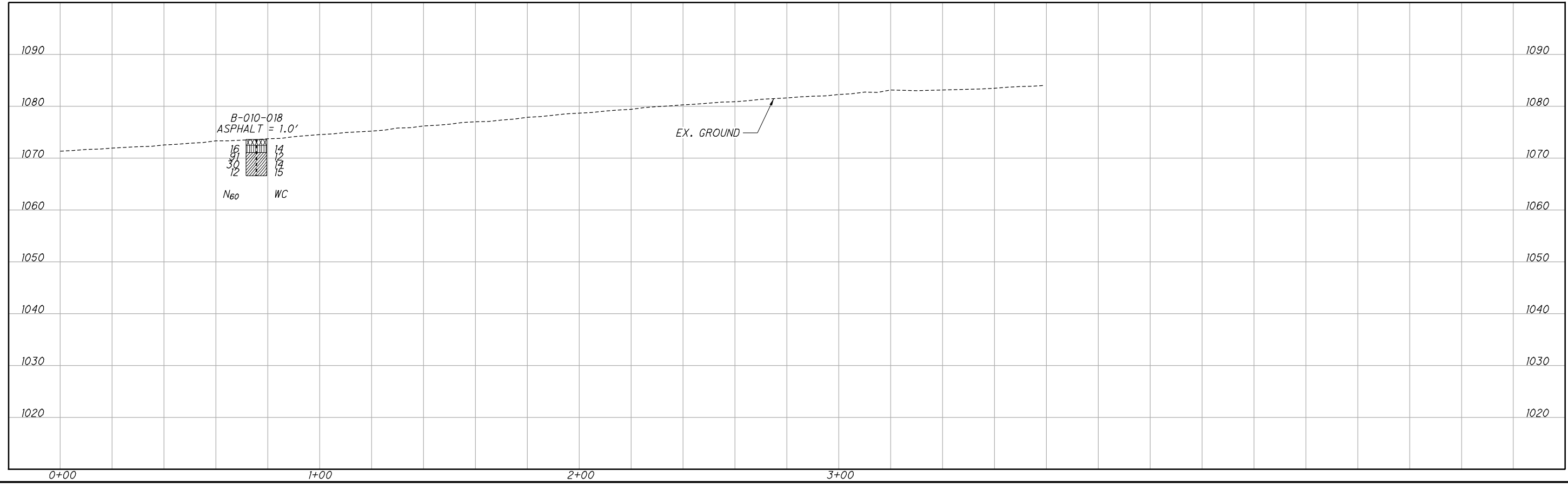
/
37
173



	<p style="font-size: 8px;">HORIZONTAL SCALE IN FEET</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; font-size: 8px;">DRAWN SM</td> <td style="width: 50%; font-size: 8px;">CHECKED PAN</td> </tr> </table>	DRAWN SM	CHECKED PAN	SOIL PROFILE STA. 11+20.00 TO END STA. 13+73.95 RAMP J		
DRAWN SM	CHECKED PAN						
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; font-size: 10px;">SUM-76-8.42</td> <td style="width: 50%; font-size: 10px;">38</td> </tr> <tr> <td style="width: 50%; font-size: 10px;">SUM-77-9.77</td> <td style="width: 50%; font-size: 10px;">173</td> </tr> </table>	SUM-76-8.42	38	SUM-77-9.77	173			
SUM-76-8.42	38						
SUM-77-9.77	173						



P:\02329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\02329\_IP405.dgn Sheet 3/16/2020 10:43:57 AM milutes



DRAWN: SM  
CHECKED: PAN

**SOIL PROFILE**  
**BEGIN STA. 0+00.00 TO STA. 3+78.85 RAMP M**

**SUM-76-8.42**  
**SUM-77-9.77**



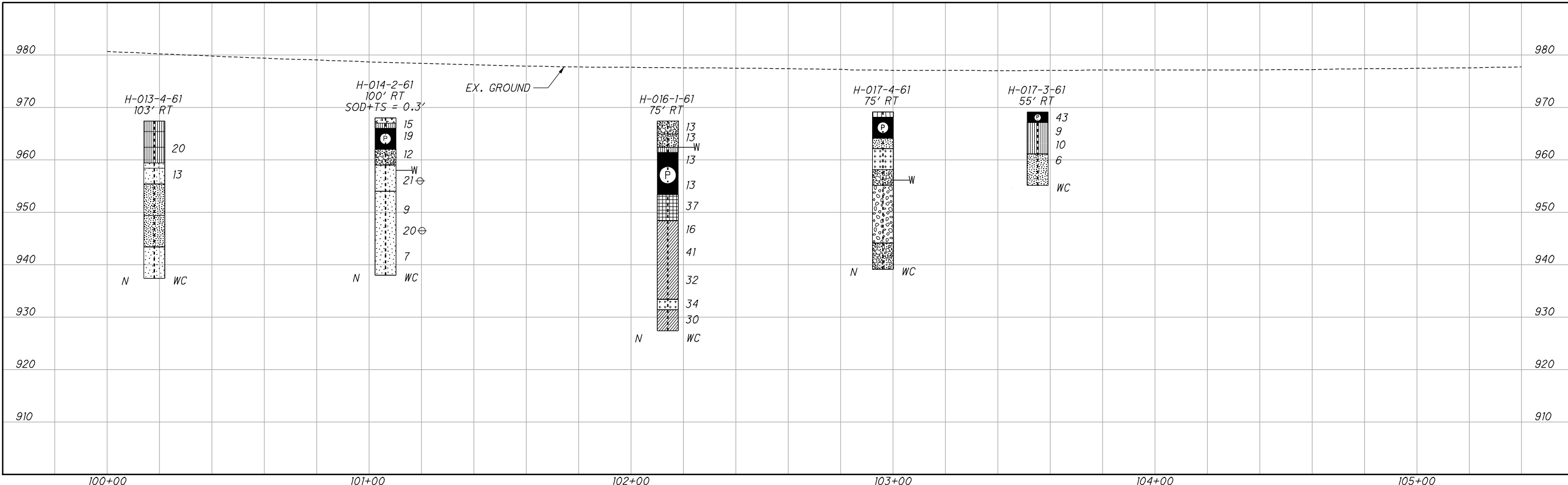
0 20 40  
HORIZONTAL  
SCALE IN FEET

DRAWN  
SM  
CHECKED  
PAN

**SOIL PROFILE**  
**BEGIN STA. 100+00.00 TO STA. 105+40.00 RAMP EN**

**SUM-76-8.42**  
**SUM-77-9.77**

40  
173



P:\02329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\02329\_IP406.dgn Sheet 3/16/2020 10:44:49 AM milutes



P:\02329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\02329\_IP407.dgn Sheet 3/16/2020 10:45:42 AM milutes



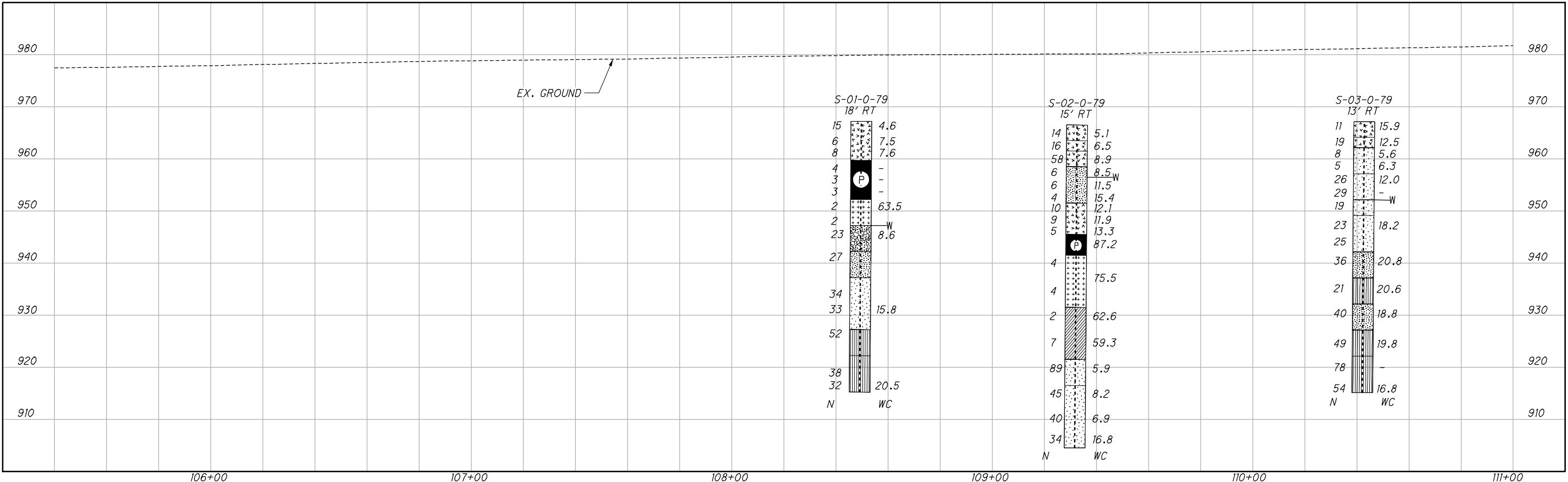
MATCHLINE STA. 105+40.00, SEE SHEET XX

MATCHLINE STA. 111+00.00, SEE SHEET XX



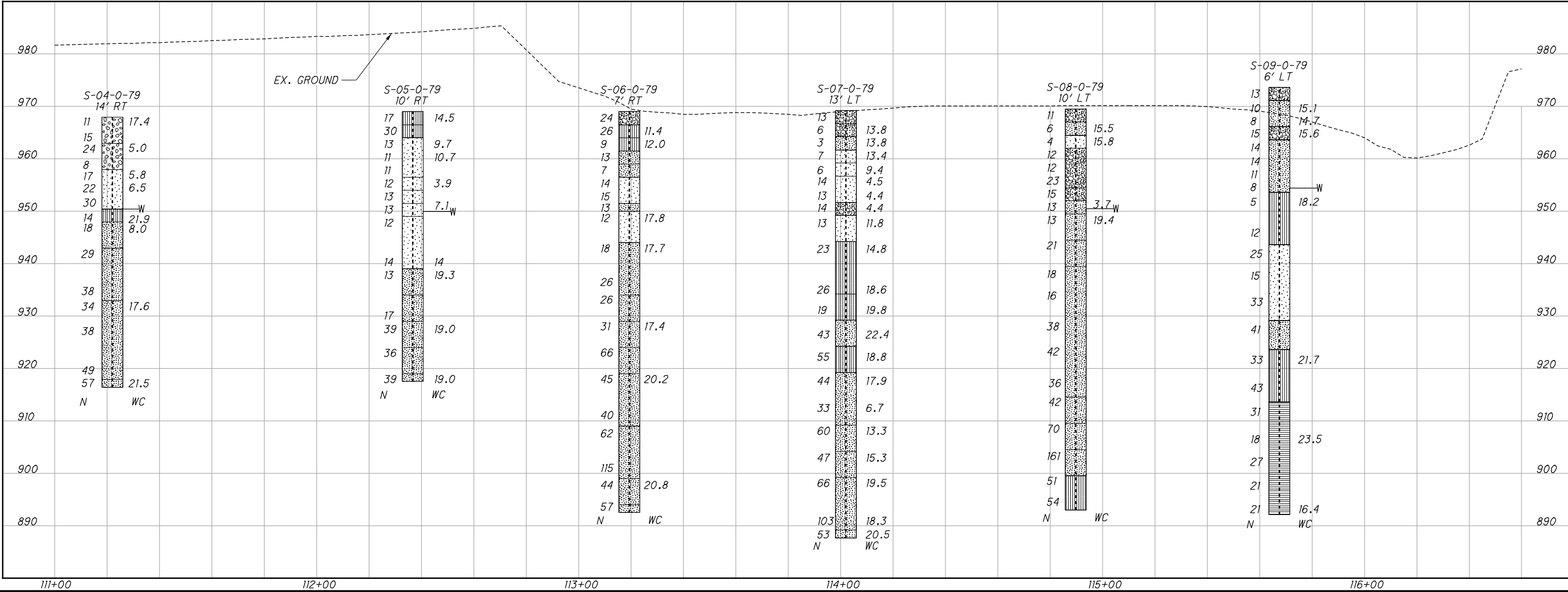
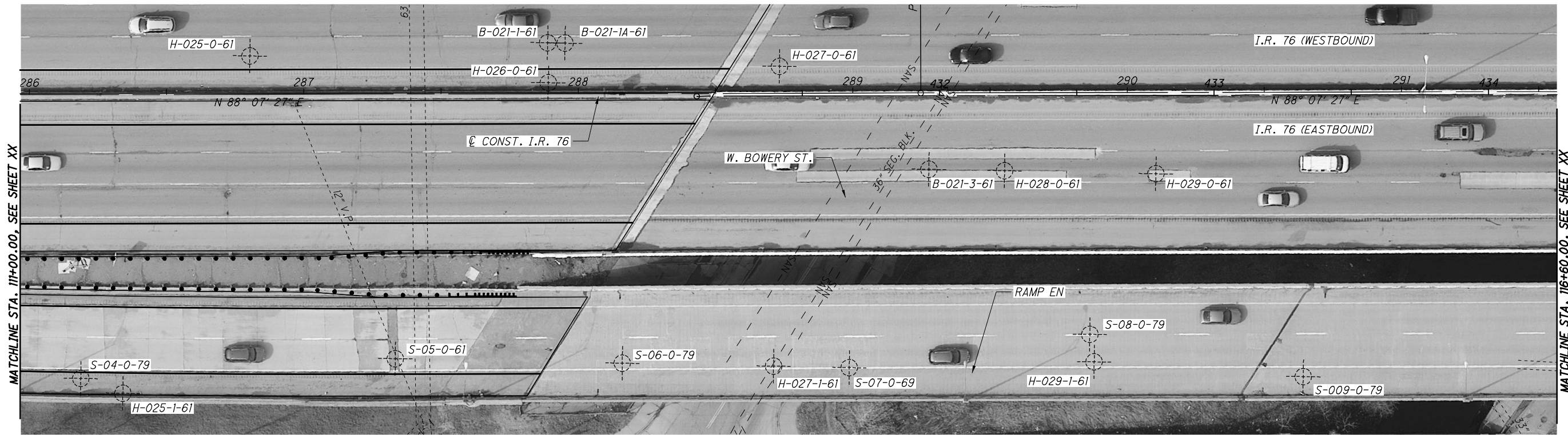
SOIL PROFILE  
STA. 105+40.00 TO STA. 111+00.00 RAMP EN

SUM-76-8.42  
SUM-77-9.77



106+00      107+00      108+00      109+00      110+00      111+00

P:\02329\_SUM-76-77\Design\Sheets\SoilProfile\02329\_IP408.dgn Sheet 3/16/2020 10:46:32 AM milutes



10 HORIZONTAL SCALE IN FEET

DRAWN: SM  
CHECKED: PAN

**SOIL PROFILE**

**STA. 111+00.00 TO STA. 116+60.00 RAMP EN**

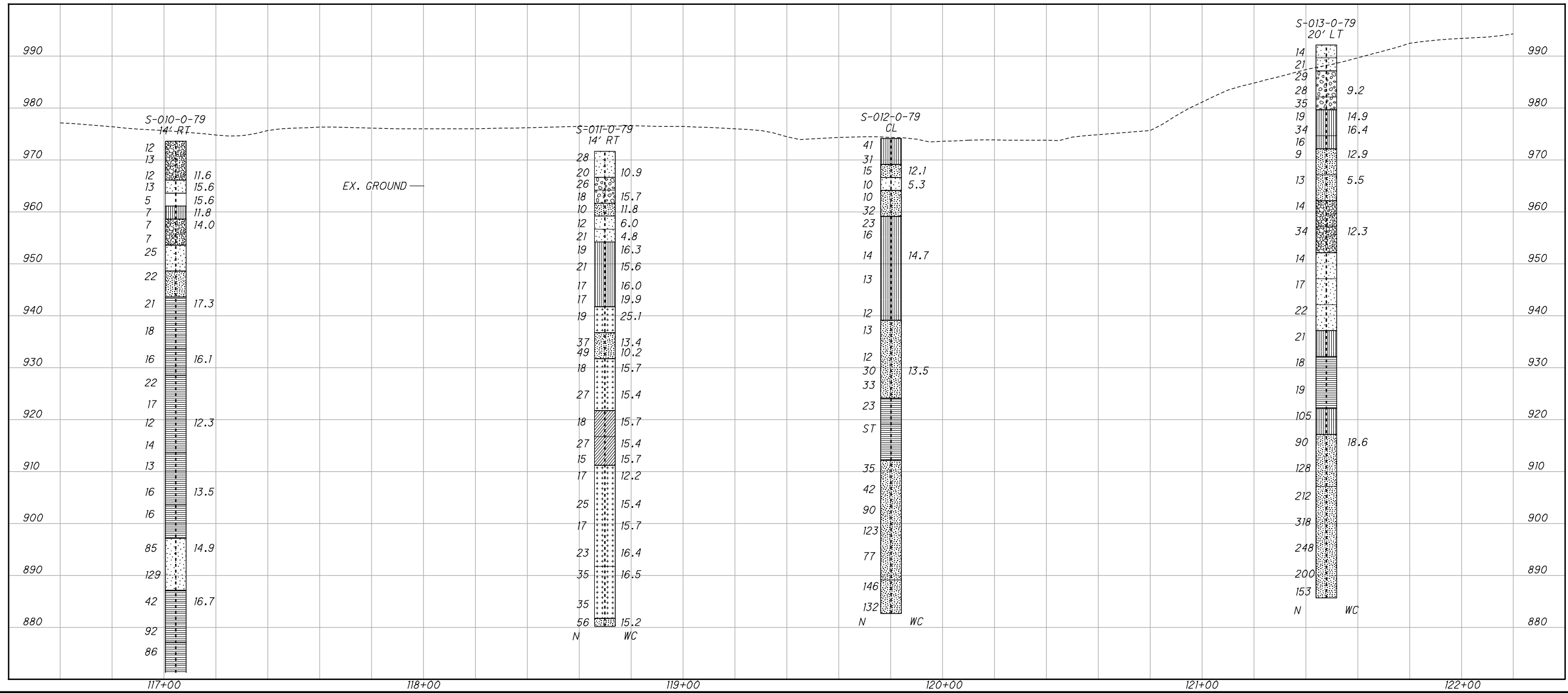
**SUM-76-8.42**

**SUM-77-9.77**

42  
173



P:\02329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\02329\_IP409.dgn Sheet 3/16/2020 10:47:25 AM miles

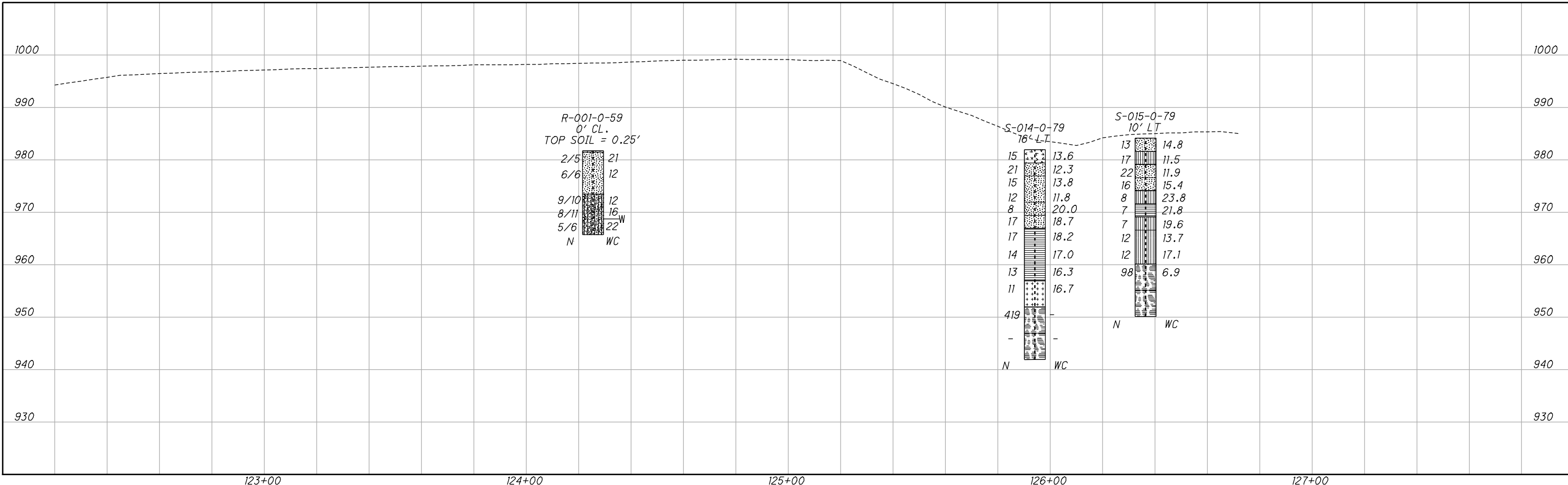
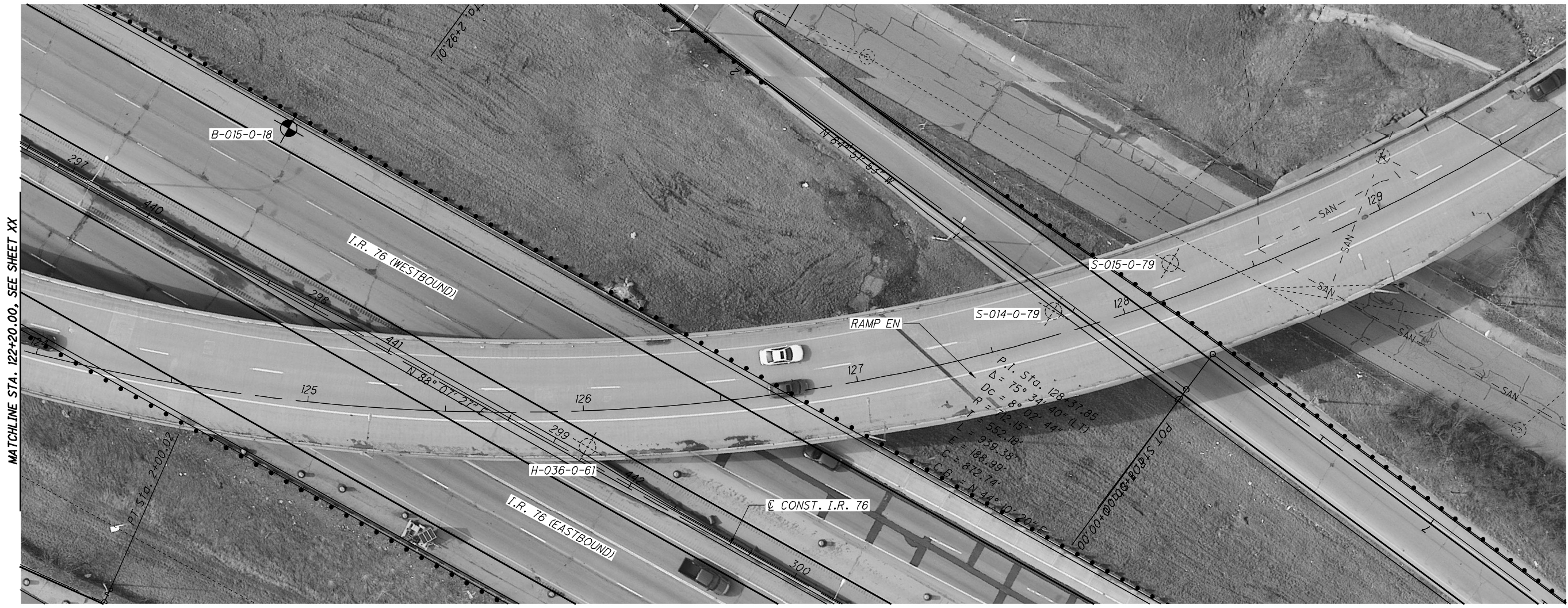


**SOIL PROFILE**

**STA. 116+60.00 TO STA. 122+20.00 RAMP EN**

**SUM-76-8.42**  
**SUM-77-9.77**

43  
173



0 20 40  
 HORIZONTAL  
 SCALE IN FEET

DRAWN

SM

CHECKED

PAN

SOIL PROFILE

STA. 122+20.00 TO STA. END 127+00.00 RAMP EN

SUM-76-8.42

SUM-77-9.77

44

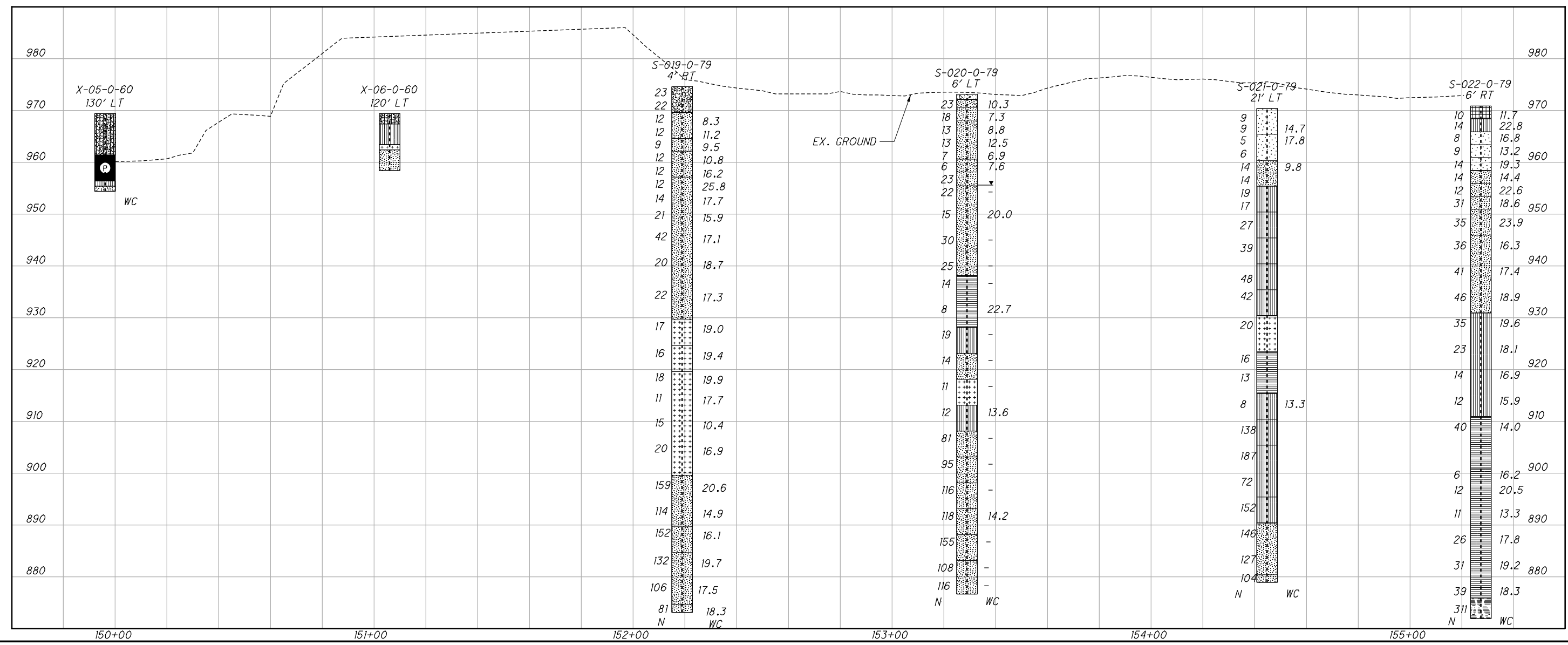
173



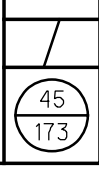


DRAWN: SM  
CHECKED: PAN

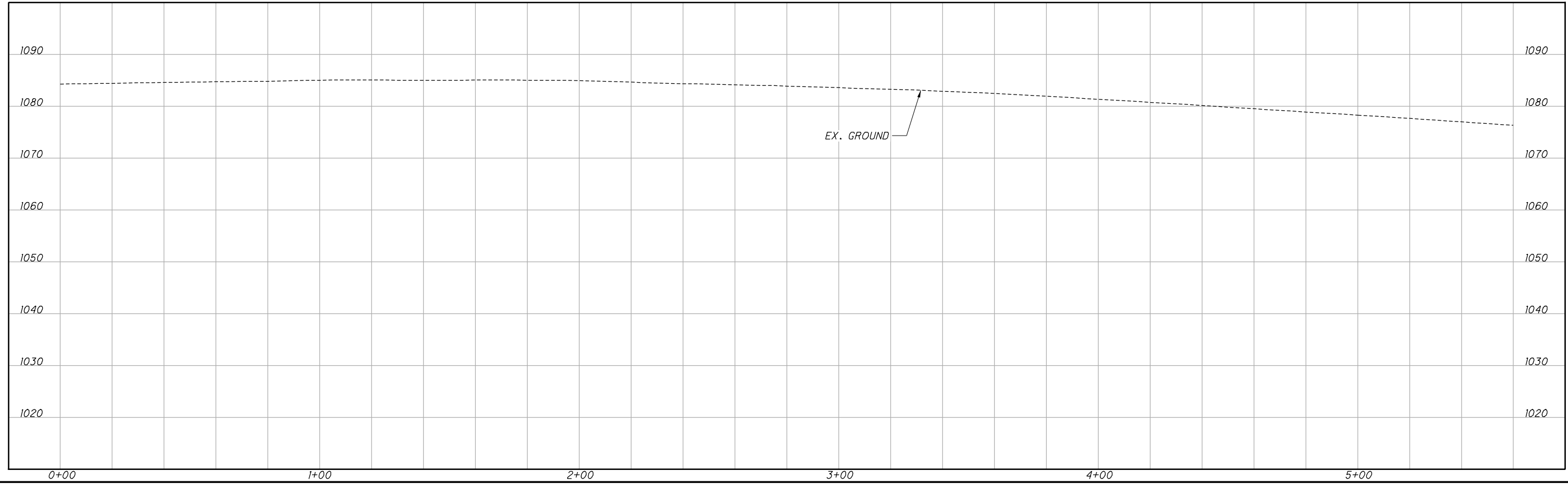
**SOIL PROFILE**  
**BEGIN STA. 150+00.00 TO END 155+40.00 RAMP SW**



**SUM-76-8.42**  
**SUM-77-9.77**



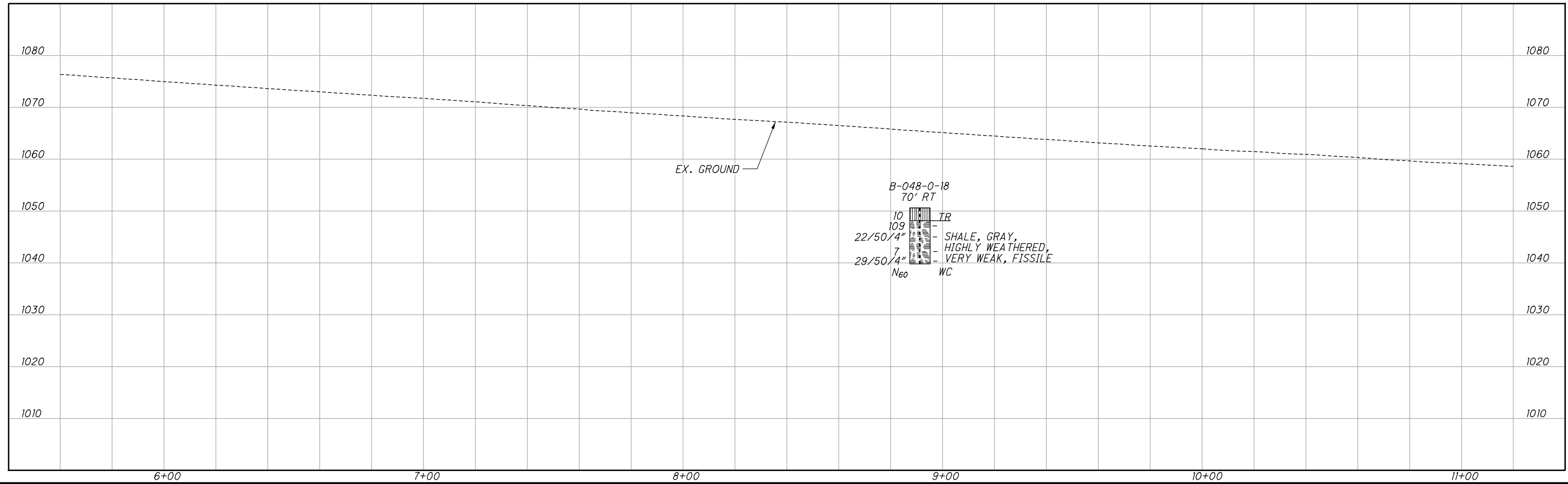
P:\02329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\02329\_IP41.dgn\_Sheet 3/16/2020 10:49:09 AM milutes



 DRAWN SM CHECKED PAN	 HORIZONTAL SCALE IN FEET
<b>SUM-76-8.42</b> <b>SUM-77-9.77</b>	<b>SOIL PROFILE</b> <b>BEGIN STA. 0+00.00 TO STA. 5+60.00 RAMP L</b>



P:\02329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\02329\_IP413.dgn Sheet 3/16/2020 10:50:50 AM ml/tes



0 20 40  
HORIZONTAL  
SCALE IN FEET

DRAWN

SM

CHECKED

PAN

SOIL PROFILE

STA. 5+60.00 TO STA. 11+20.00 RAMP L

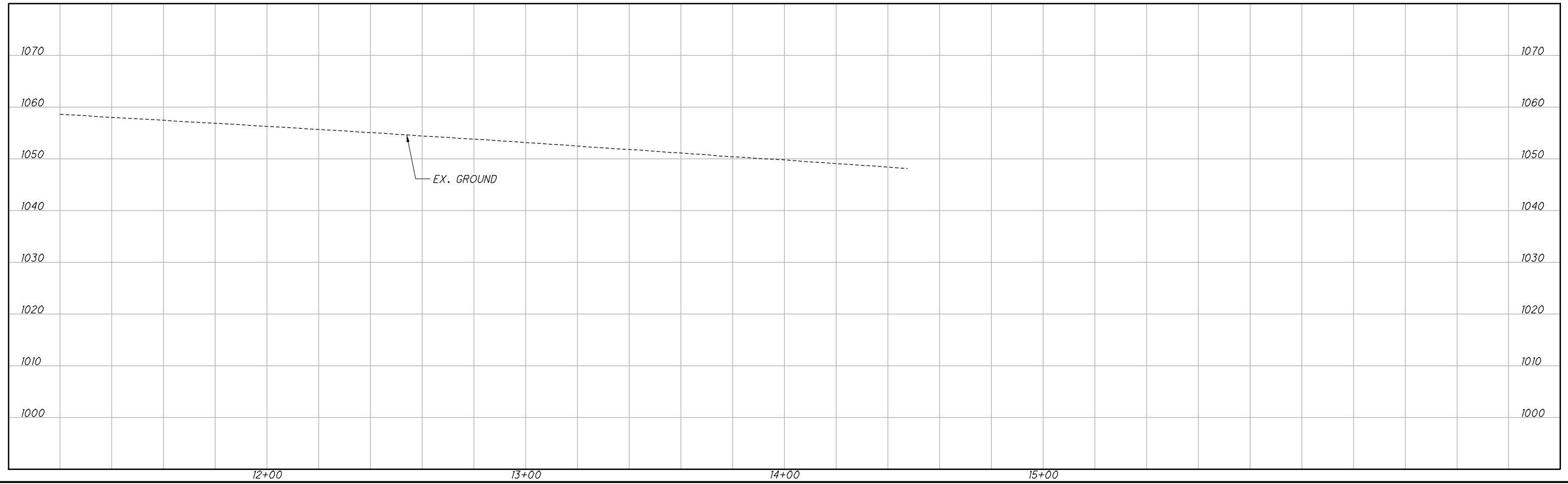
SUM-76-8.42

SUM-77-9.77

47

173

P:\02329\_SUM-76\_77\Design\Geotechnical\Sheets\Soil Profile\02329\_IP414.dgn Sheet 3/16/2020 10:51:40 AM mlutes



MATCHLINE STA. 11+20.00, SEE SHEET XX



DRAWN: SM  
 CHECKED: PAN

**SOIL PROFILE**  
**STA. 11+20.00 TO END STA. 14+47.66 RAMP L**

**SUM-76-8.42**  
**SUM-77-9.77**





10  
20  
40  
HORIZONTAL  
SCALE IN FEET

DRAWN  
SM  
CHECKED  
PAN

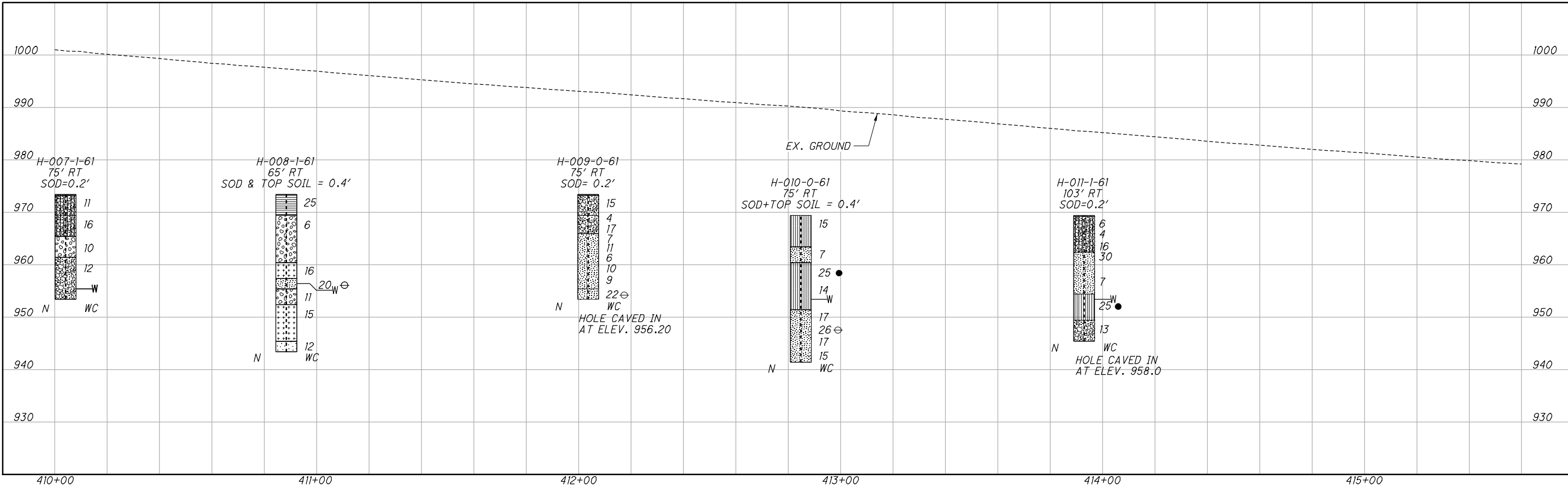
**SOIL PROFILE**  
**BEGIN STA. 410+00.00 TO STA. 415+60.00 RAMP G**

**SUM-76-8.42**  
**SUM-77-9.77**

49  
173



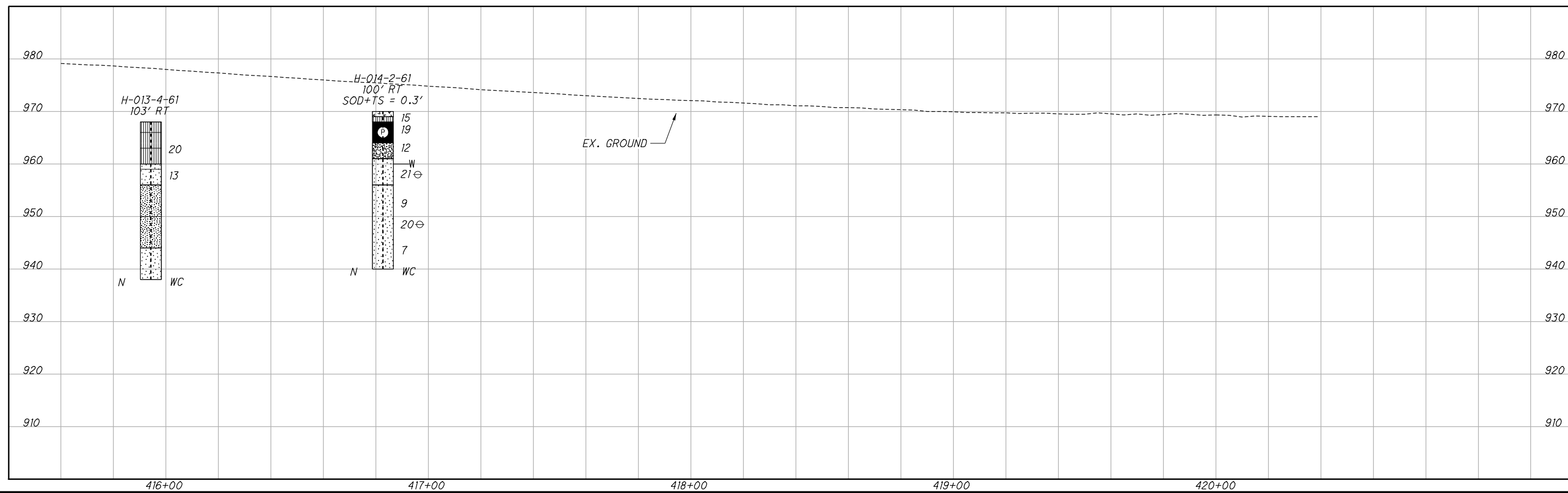
MATCHLINE STA. 415+60.00, SEE SHEET XX



P:\02329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\02329\_IP415.dgn Sheet 3/16/2020 10:52:36 AM mlutes

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MATCHLINE STA. 415+60.00, SEE SHEET XX



SOIL PROFILE

STA. 415+60.00 TO END STA. 420+39.35 RAMP G

SUM-76-8.42  
SUM-77-9.77

DRAWN: SM  
CHECKED: PAN

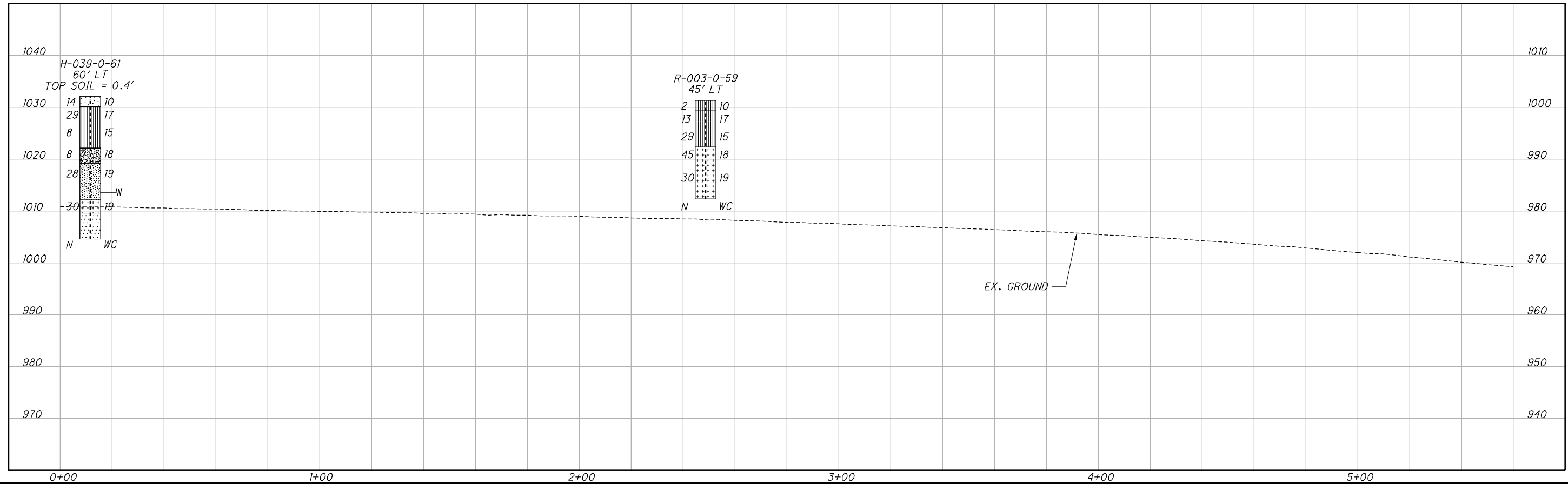
50  
173



P:\02329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\02329\_IP417.dgn Sheet 3/16/2020 10:54:21 AM mlJtes



MATCHLINE STA. 5+60.00, SEE SHEET XX



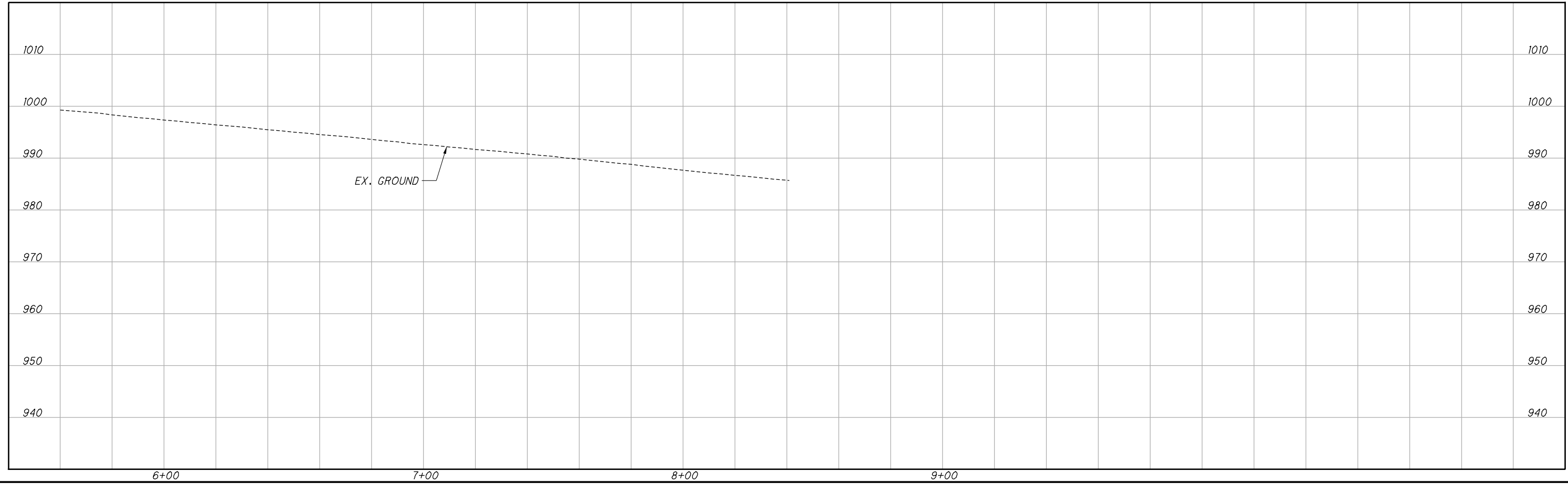
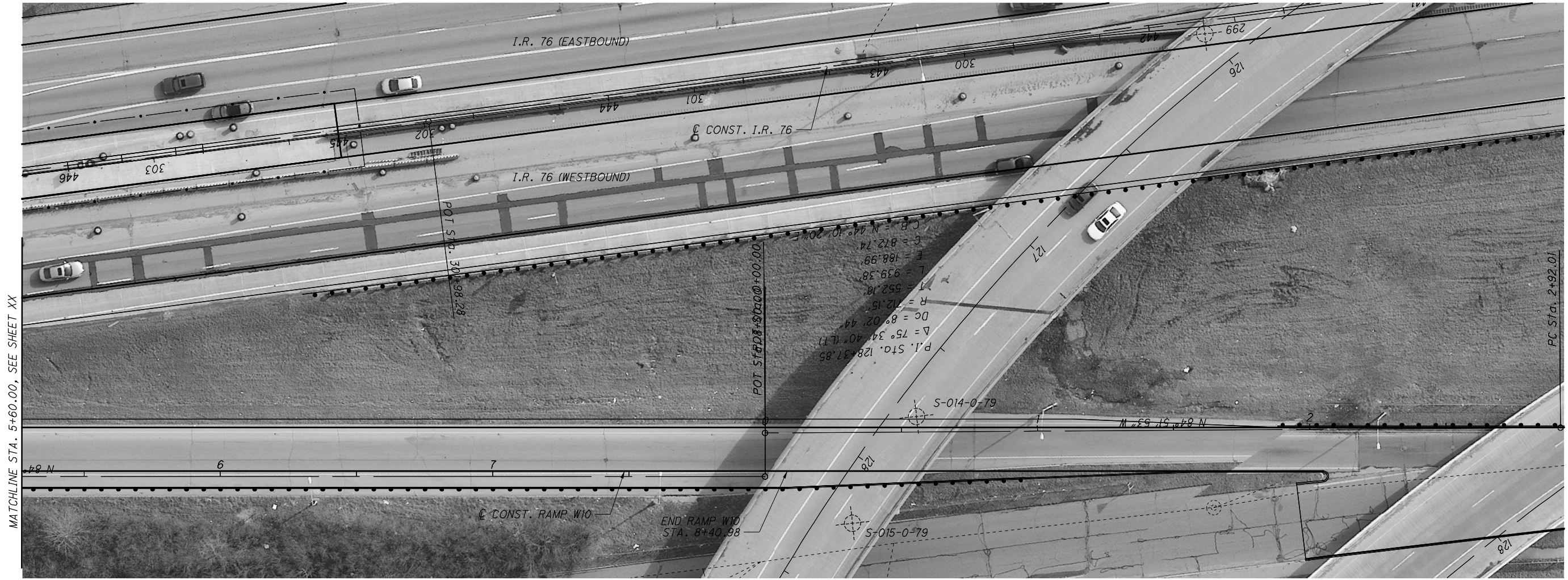
DRAWN	SM
CHECKED	PAN

**SOIL PROFILE**

**BEGIN STA. 0+00.00 TO STA. 5+60.00 RAMP W10**

**SUM-76-8.42**

**SUM-77-9.77**



DRAWN SM
 CHECKED PAN

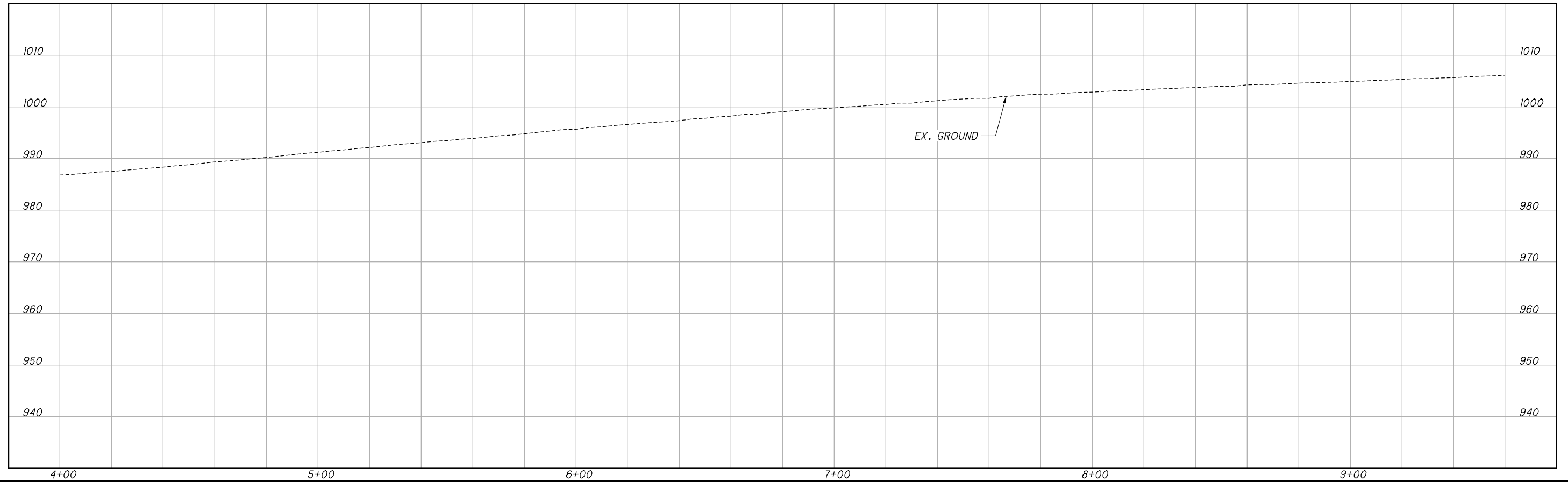
SUM-76-8.42
SOIL PROFILE

SUM-77-9.77
STA. 5+60.00 TO END STA. 8+40.98 RAMP W10

52
173



P:\02329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\02329\_IP419.dgn Sheet 3/16/2020 10:56:07 AM mlutes



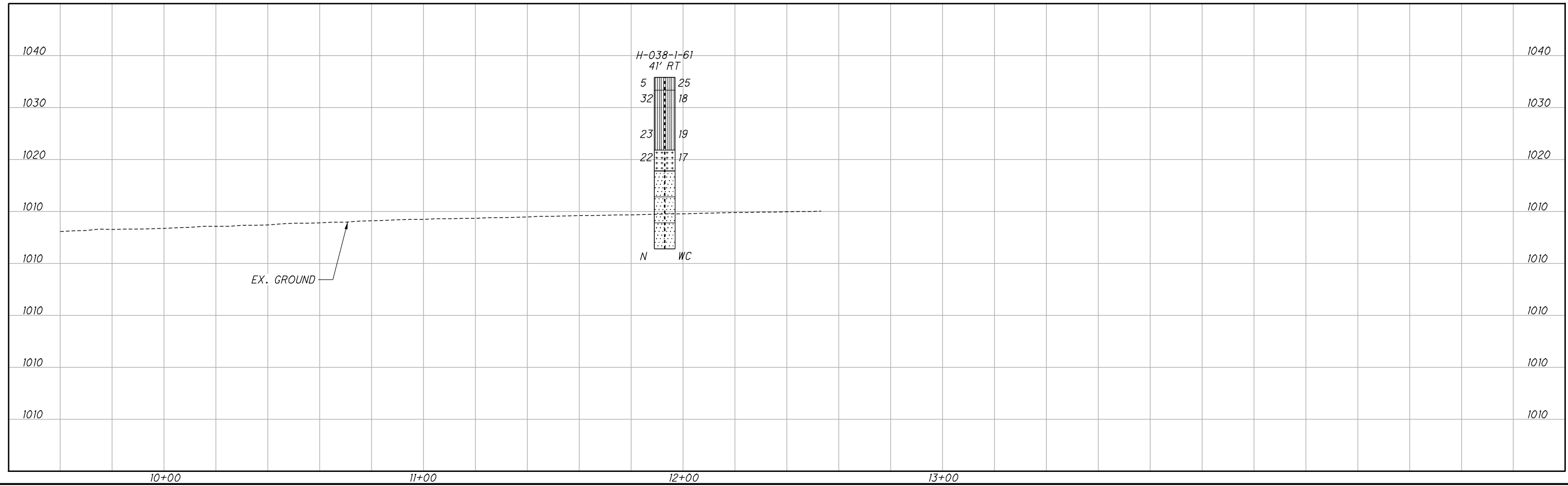
DRAWN	SM
CHECKED	PAN

**SOIL PROFILE**  
**BEGIN STA. 4+00.00 TO STA. 9+60.00 RAMP W11**

**SUM-76-8.42**  
**SUM-77-9.77**



P:\02329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\02329\_IP420.dgn Sheet 3/16/2020 10:57:04 AM milutes

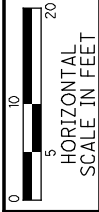
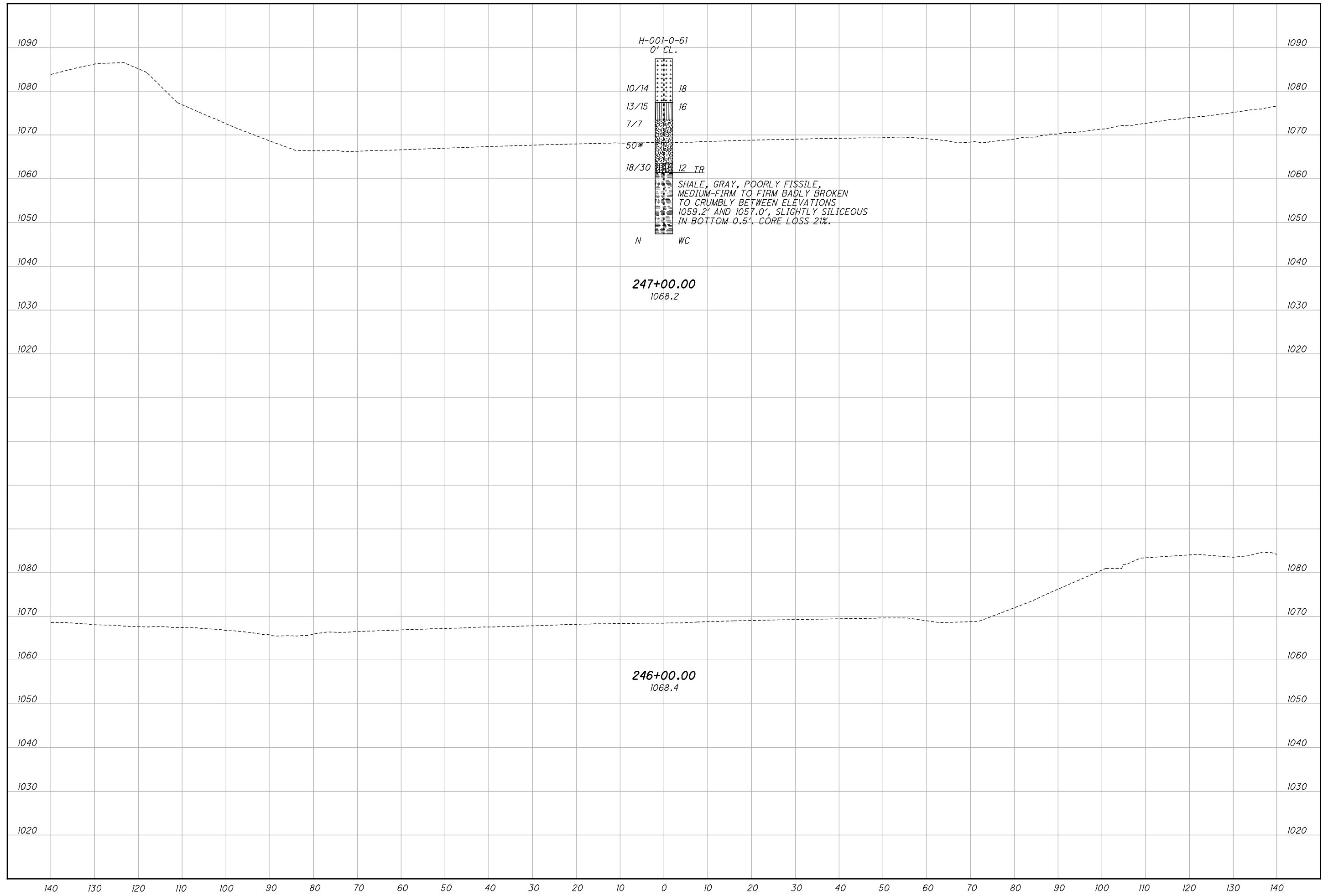


DRAWN: SM  
CHECKED: PAN

**SOIL PROFILE**  
**STA. 9+60.00 TO END STA. 12+53.21 RAMP W11**

**SUM-76-8.42**  
**SUM-77-9.77**

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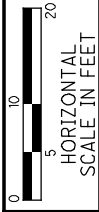
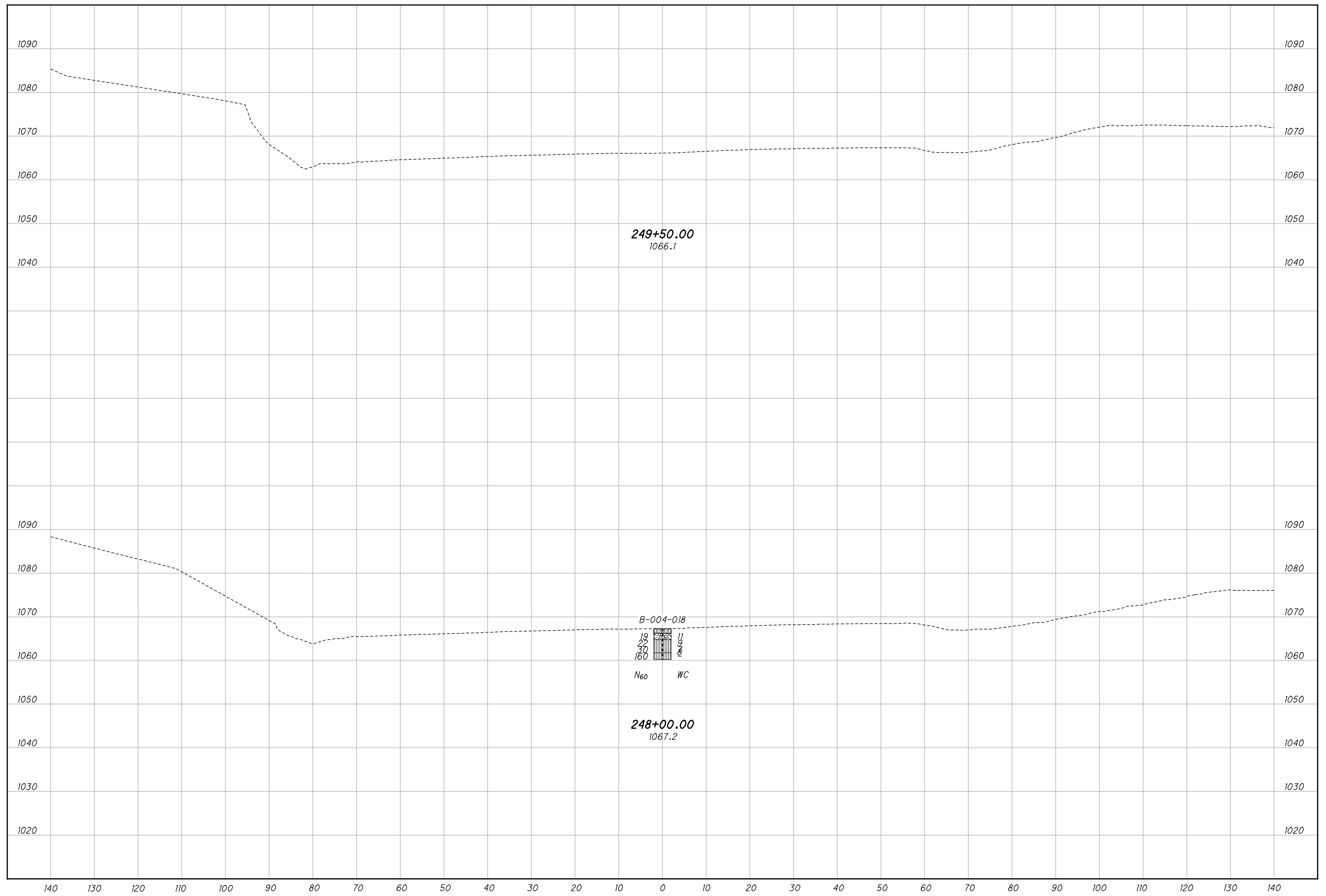


DRAWN	SM
CHECKED	PAN

**SOIL PROFILE**  
**I.R. 76 CROSS SECTIONS 246+00.00 & 247+00.00**

**SUM-76-8.42**  
**SUM-77-9.77**

P:\102329\_SUM-76\_77\Design\Sheets\SoilProfile\102329\_IX002.dgn Sheet 3/16/2020 10:57:51AM mlutes

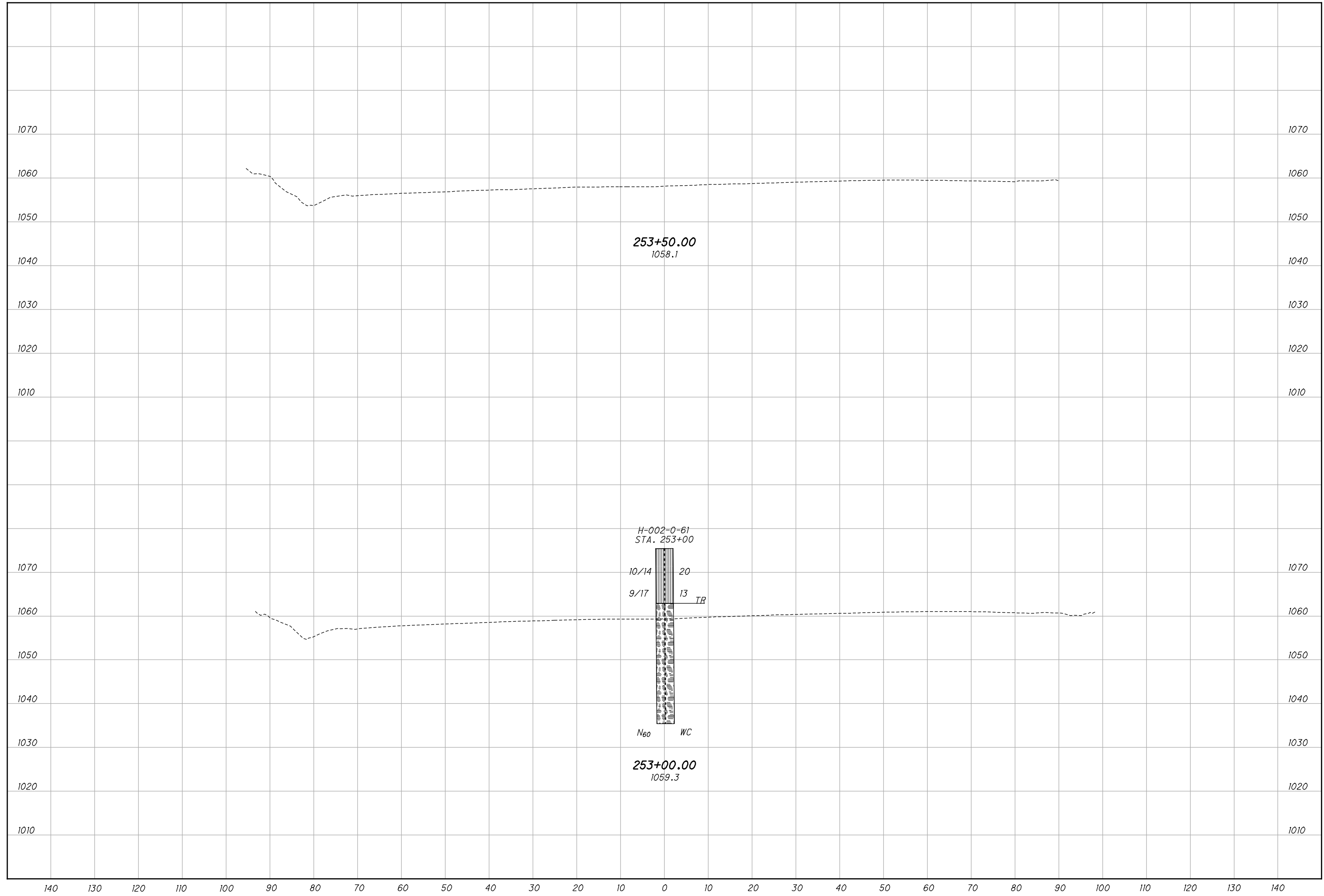


DRAWN  
SM  
CHECKED  
PAN

**SOIL PROFILE**  
**I.R. 76 CROSS SECTIONS 248+00.00 & 249+50.00**

**SUM-76-8.42**  
**SUM-77-9.77**

P:\02329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\02329\_IX003.dgn Sheet 3/16/2020 10:57:52 AM mlutes



DRAWN  
SM  
CHECKED  
PAN

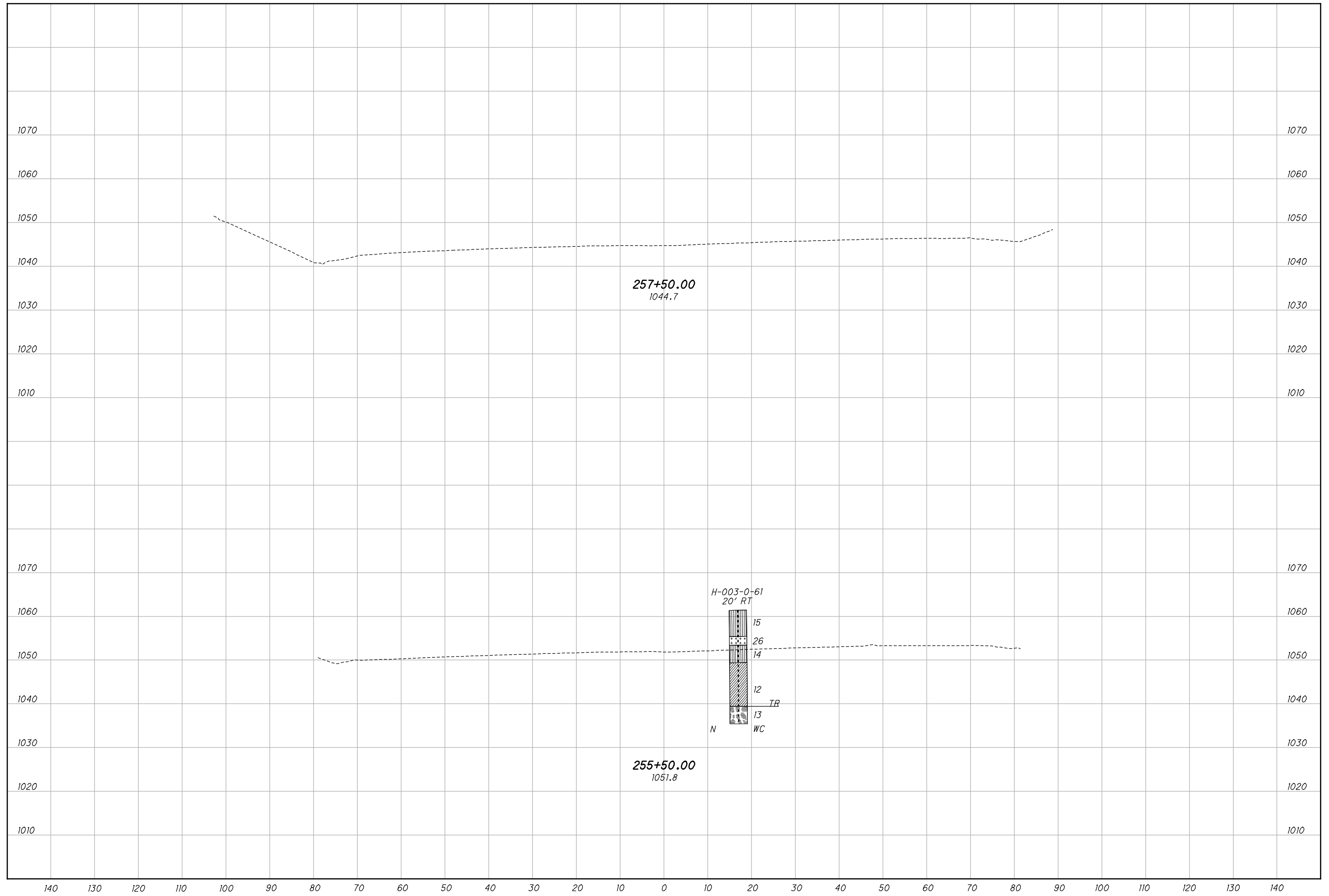
**SOIL PROFILE**  
**I.R. 76 CROSS SECTIONS 253+00.00 & 253+50.00**

**SUM-76-8.42**  
**SUM-77-9.77**

57  
173



P:\102329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\102329\_1X004.dgn Sheet 3/16/2020 10:57:54 AM mlutes

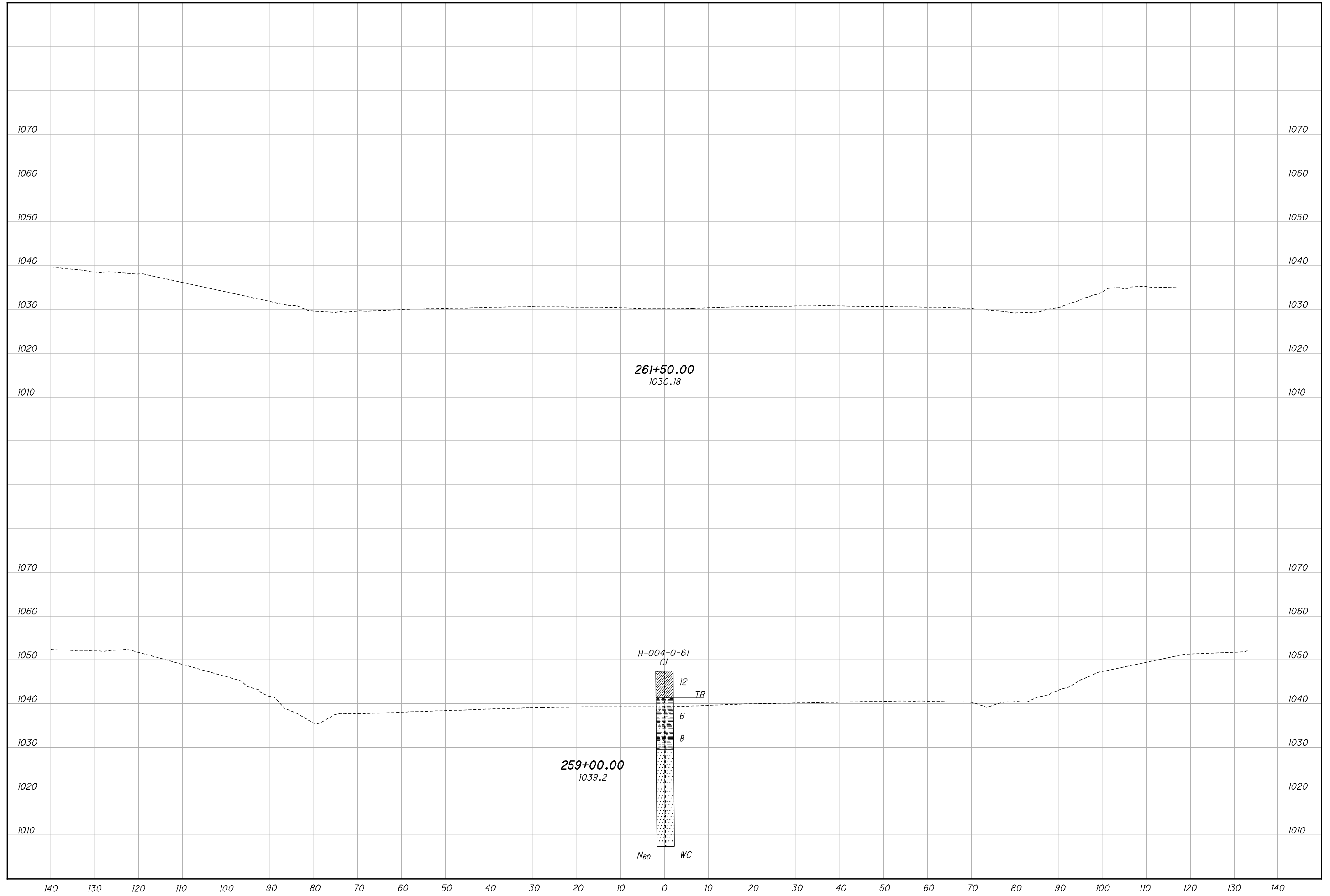


DRAWN  
SM  
CHECKED  
PAN

**SOIL PROFILE**  
**I.R. 76 CROSS SECTIONS 255+50.00 & 257+50.00**

**SUM-76-8.42**  
**SUM-77-9.77**

P:\102329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\102329\_1X005.dgn\_Sheet 3/16/2020 10:57:55 AM mlutes



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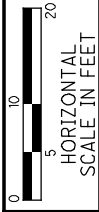
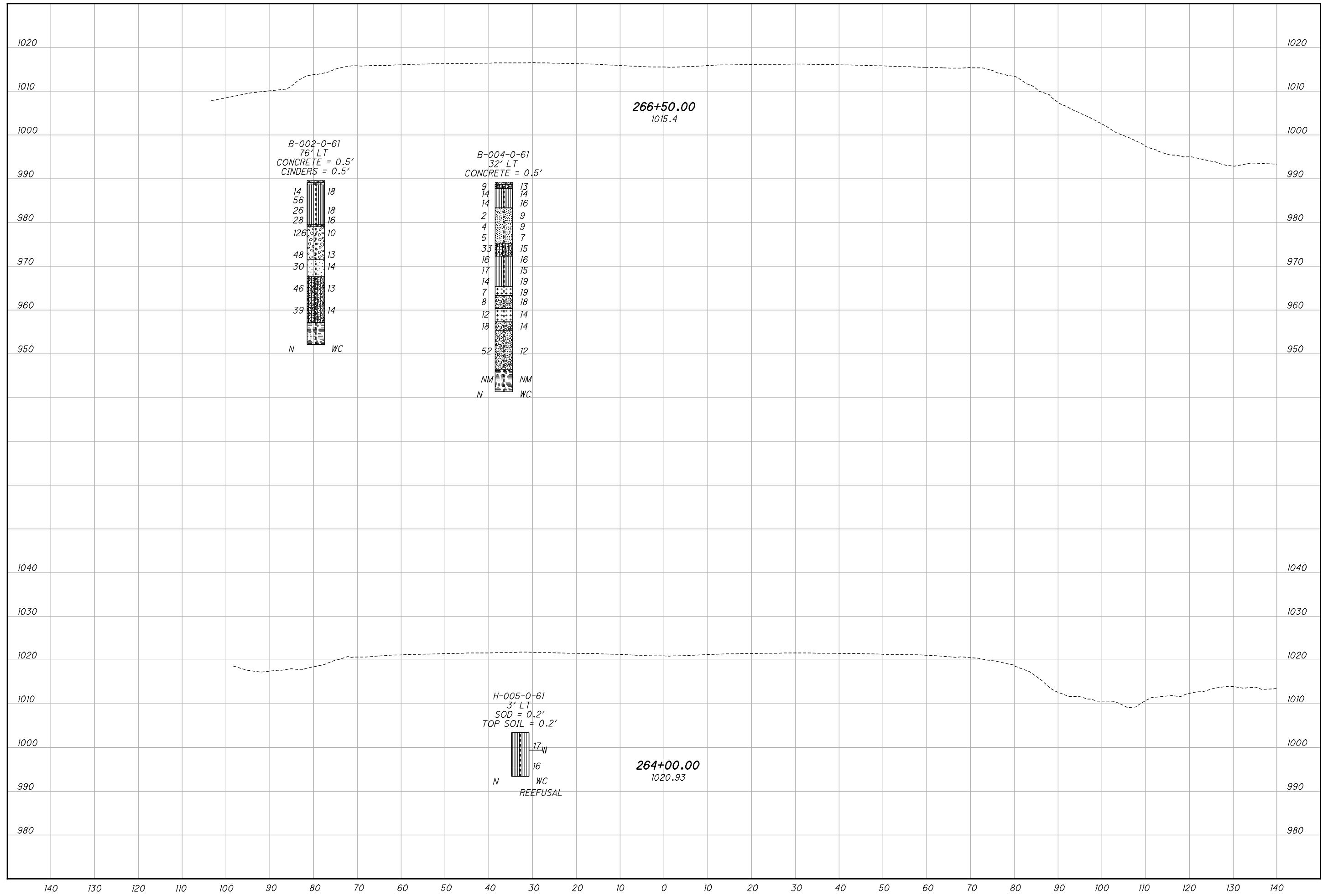
CHECKED  
PAN

**SOIL PROFILE**  
**I.R. 76 CROSS SECTIONS 259+00.00 & 261+50.00**

**SUM-76-8.42**  
**SUM-77-9.77**

59  
173

P:\102329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\102329\_1X006.dgn\_Sheet 3/16/2020 10:57:57 AM mlutes

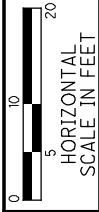
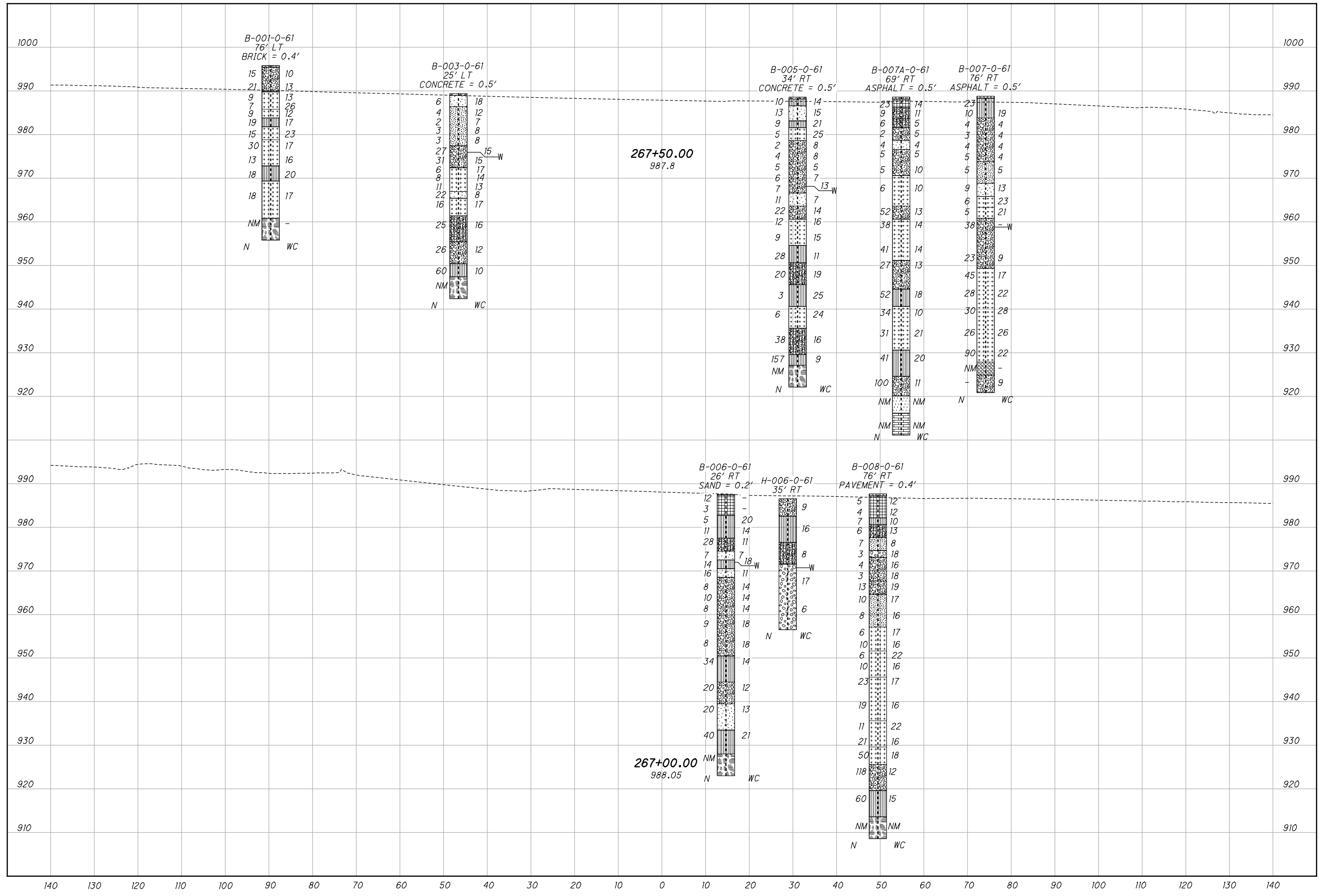


DRAWN	SM
CHECKED	PAN

**SOIL PROFILE**  
**I.R. 76 CROSS SECTIONS 264+50.00 & 266+50.00**

**SUM-76-8.42**  
**SUM-77-9.77**

P:\102329\_SUM-76\_77\Design\Sheets\SoilProfile\102329\_1X007.dgn Sheet 3/16/2020 10:57:58 AM mlutes



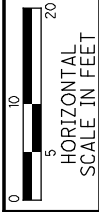
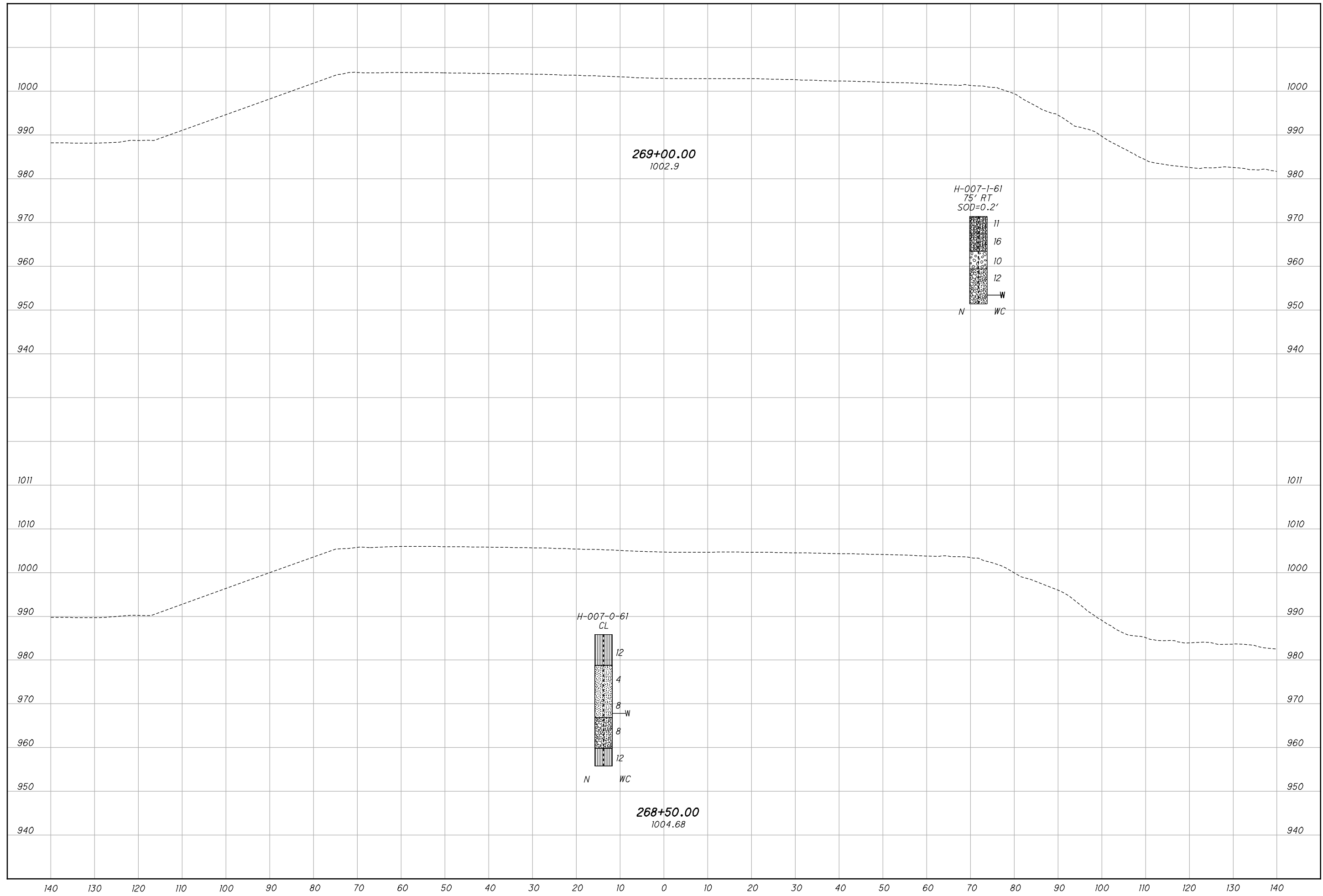
DRAWN SM  
CHECKED PAN

**SOIL PROFILE**  
**I.R. 76 CROSS SECTIONS 267+00.00 & 267+50.00**

**SUM-76-8.42**  
**SUM-77-9.77**



P:\102329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\102329\_1X008.dgn Sheet 3/16/2020 10:58:00 AM mlutes

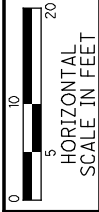
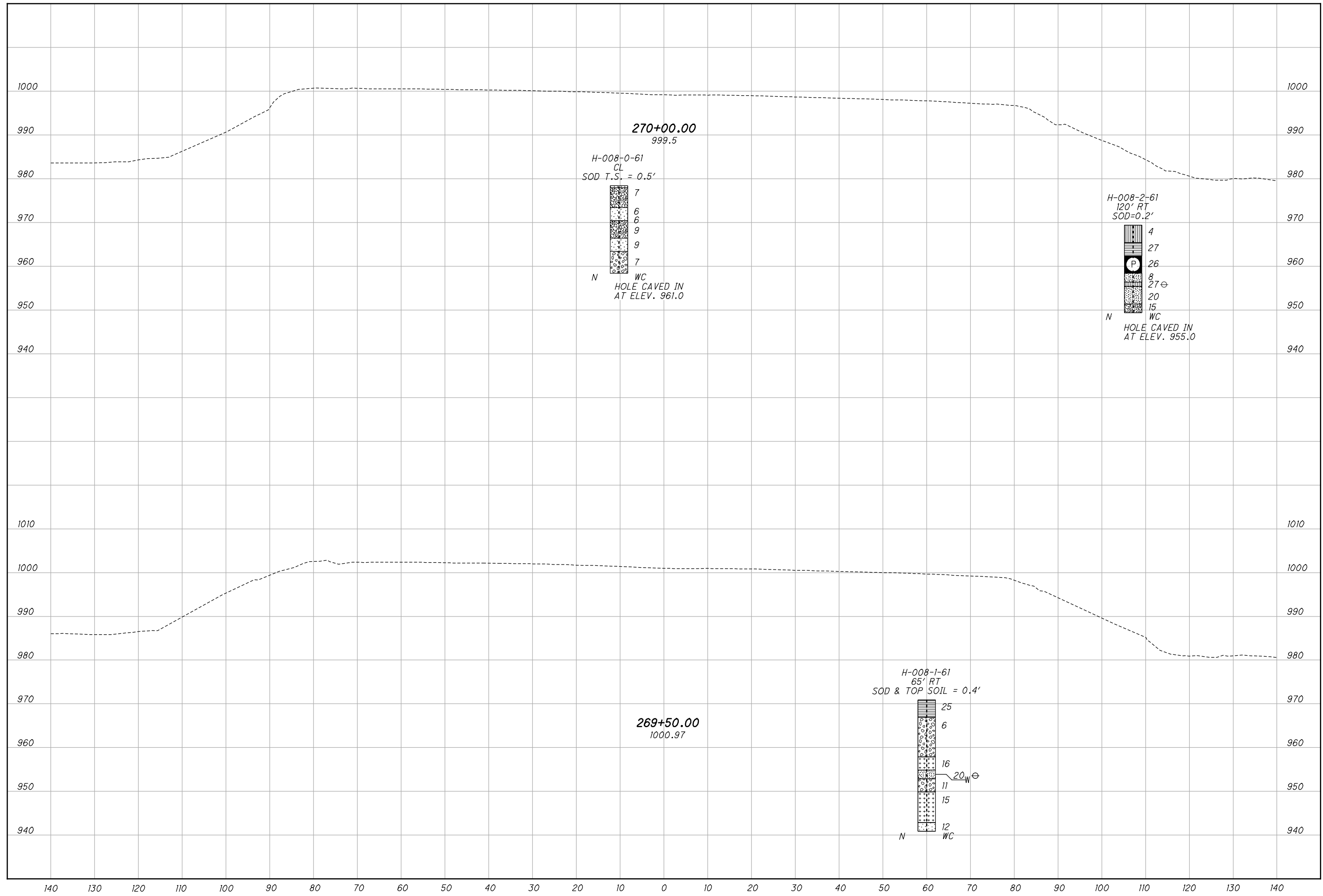


DRAWN: SM  
CHECKED: PAN

**SOIL PROFILE**  
**I.R. 76 CROSS SECTIONS 268+50.00 & 269+00.00**

**SUM-76-8.42**  
**SUM-77-9.77**

P:\102329\_SUM-76\_77\Design\Sheets\SoilProfile\102329\_1X009.dgn Sheet 3/16/2020 10:58:01 AM mlufes

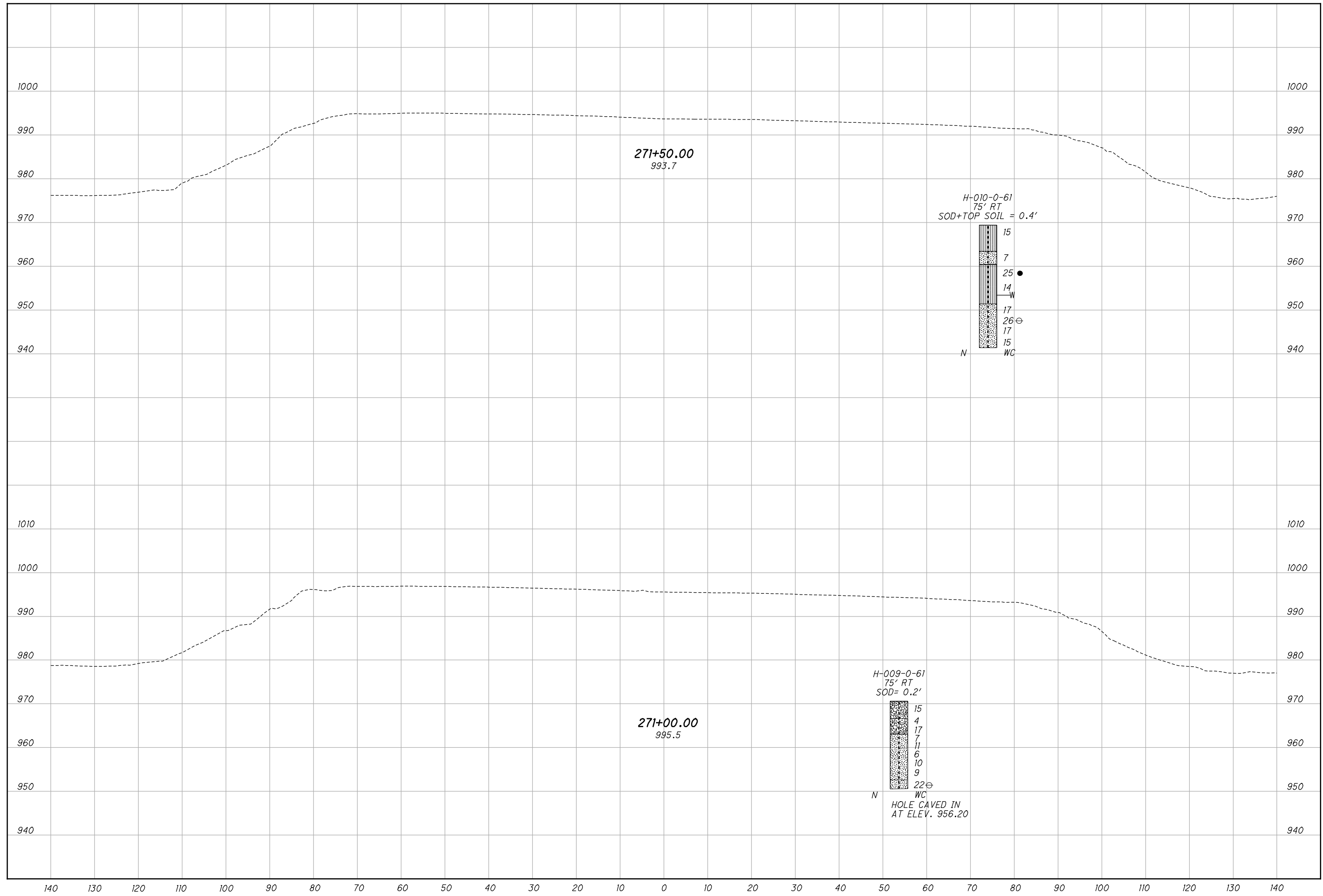


DRAWN: SM  
 CHECKED: PAN

**SOIL PROFILE**  
**I.R. 76 CROSS SECTIONS 269+50.00 & 270+00.00**

**SUM-76-8.42**  
**SUM-77-9.77**

P:\102329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\102329\_1X010.dgn Sheet 3/16/2020 10:58:03 AM mlJtes

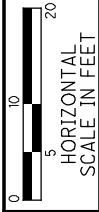
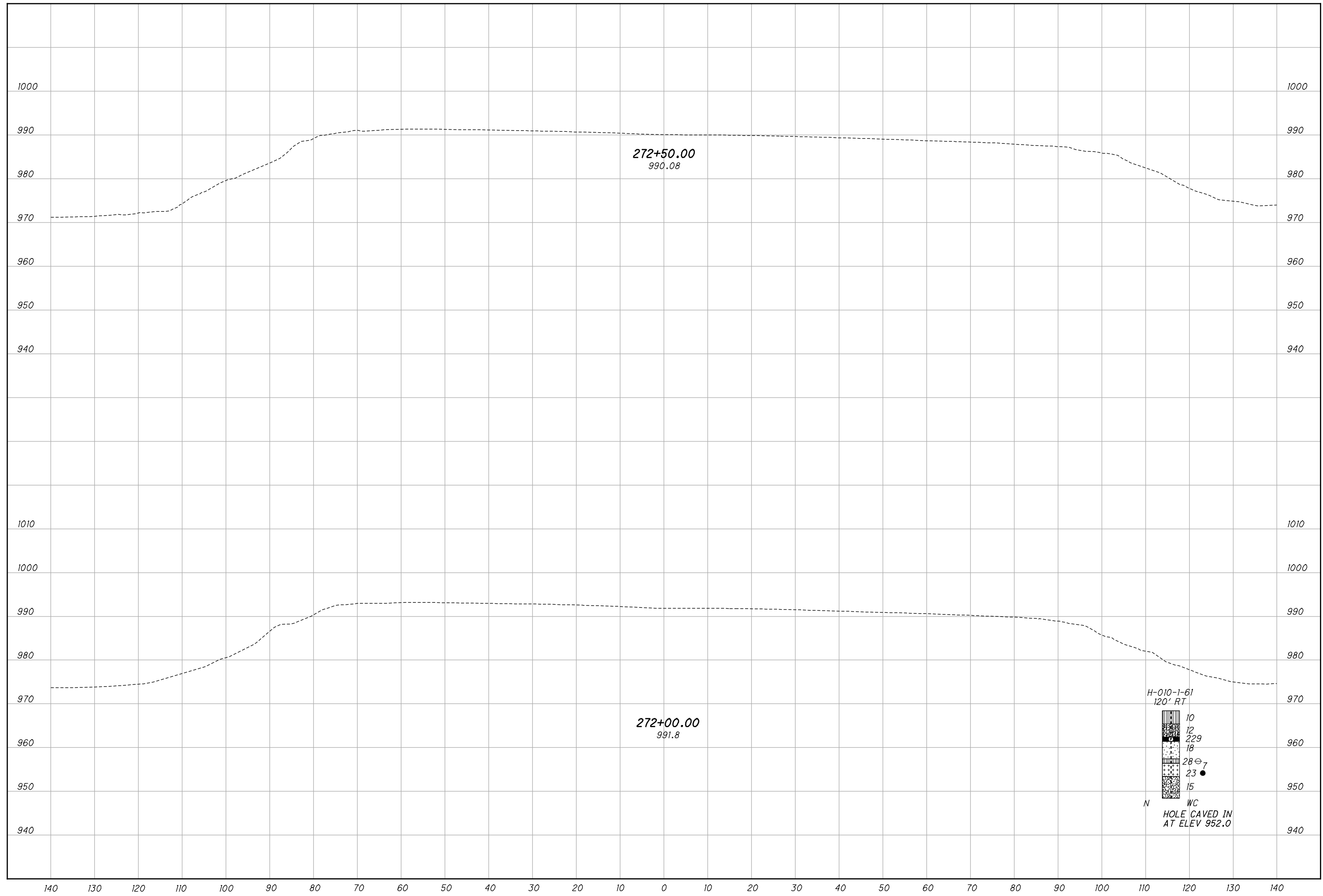


DRAWN: SM  
CHECKED: PAN

**SOIL PROFILE**  
**I.R. 76 CROSS SECTIONS 271+00.00 & 271+50.00**

**SUM-76-8.42**  
**SUM-77-9.77**

P:\102329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\102329\_1X01.dgn\_Sheet\_3/16/2020 10:58:04 AM mlutes



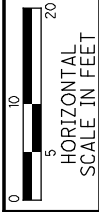
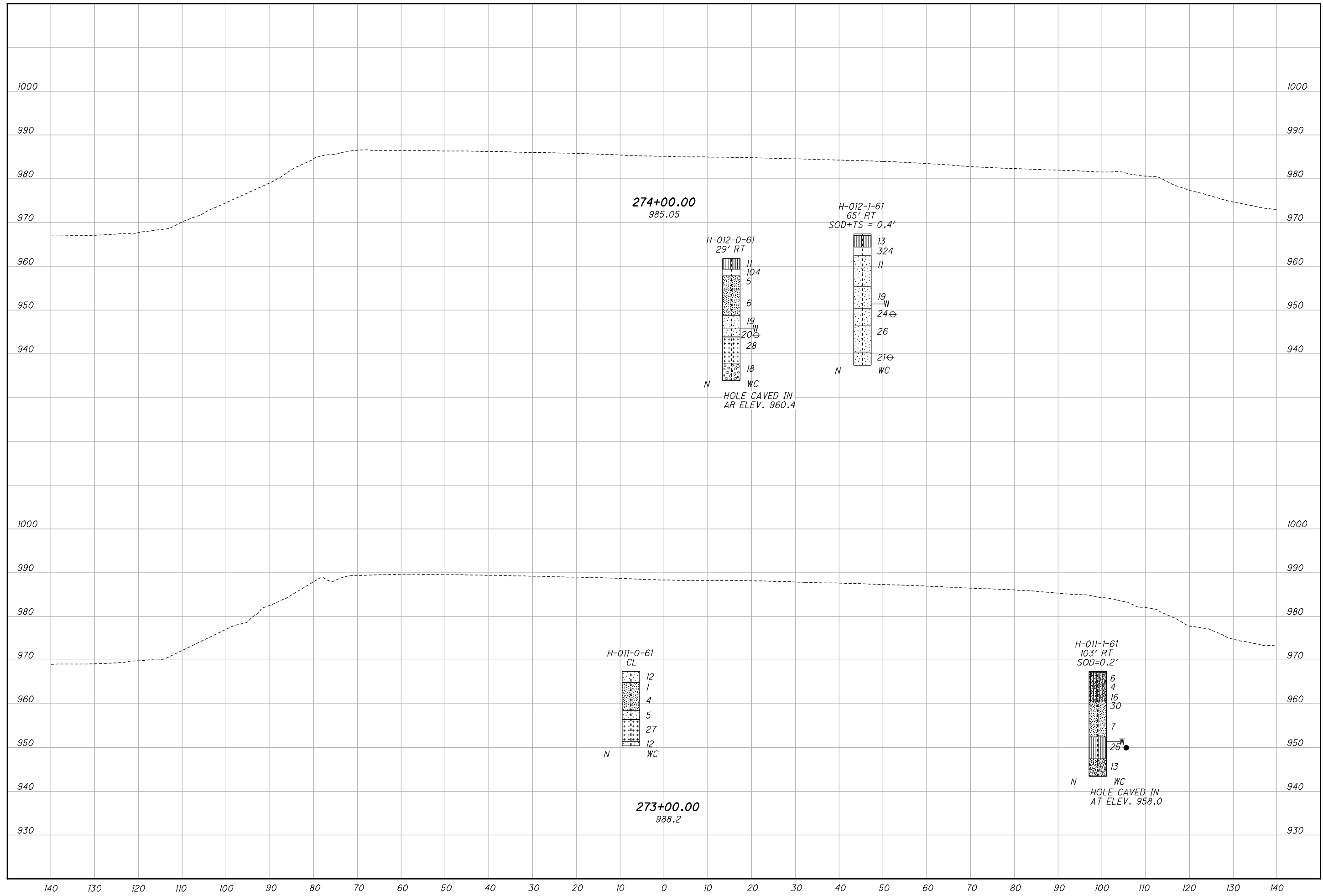
DRAWN  
SM  
CHECKED  
PAN

**SOIL PROFILE**  
**I.R. 76 CROSS SECTIONS 272+00.00 & 272+50.00**

**SUM-76-8.42**  
**SUM-77-9.77**



P:\02329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\02329\_IX012.dgn Sheet 3/16/2020 10:58:05 AM mlutes

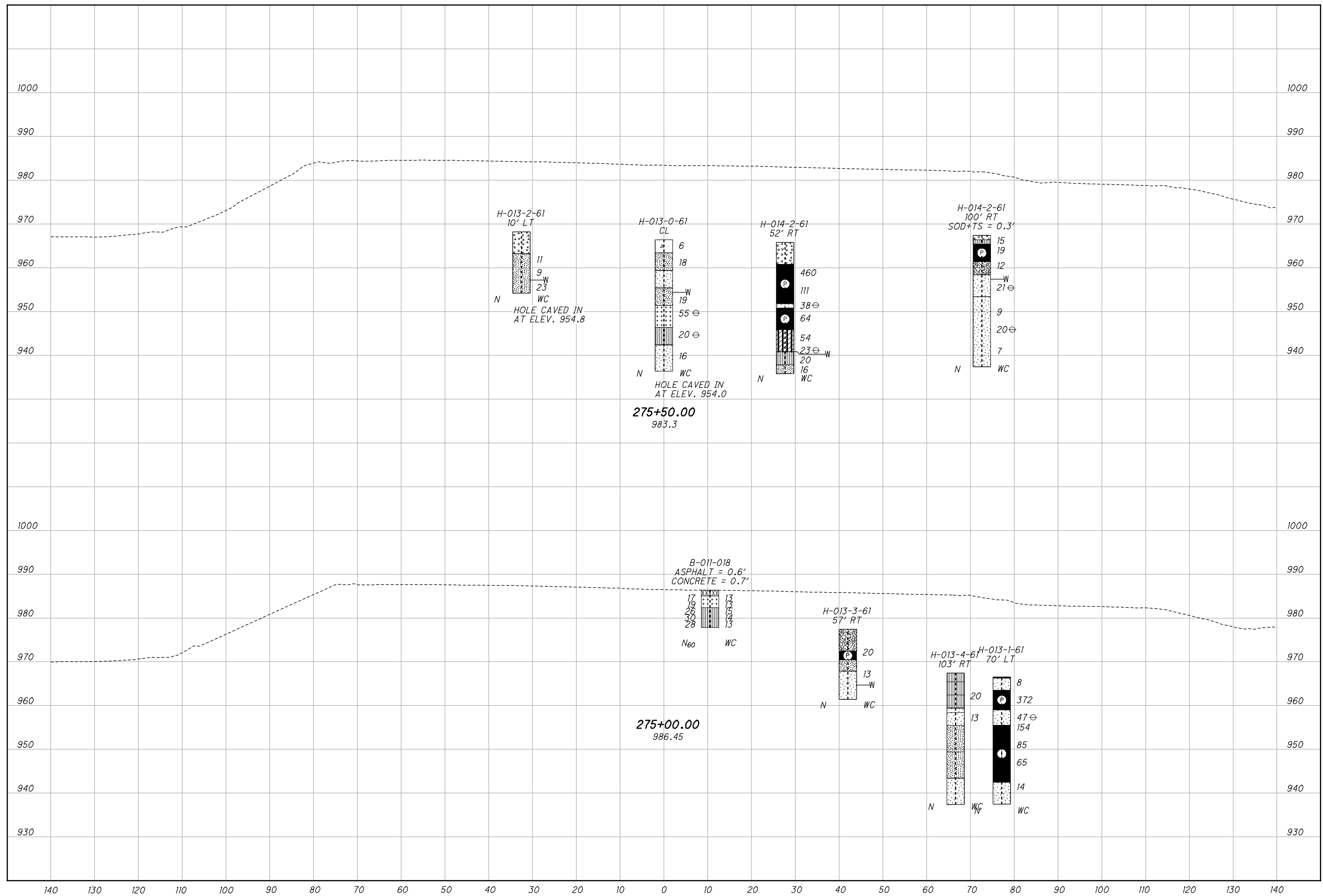


DRAWN	SM
CHECKED	PAN

**SOIL PROFILE**  
**I.R. 76 CROSS SECTIONS 273+00.00 & 274+00.00**

**SUM-76-8.42**  
**SUM-77-9.77**

P:\02329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\02329\_IJ013.dgn Sheet 3/16/2020 10:58:07 AM mlj/tes

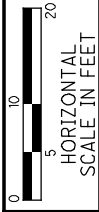
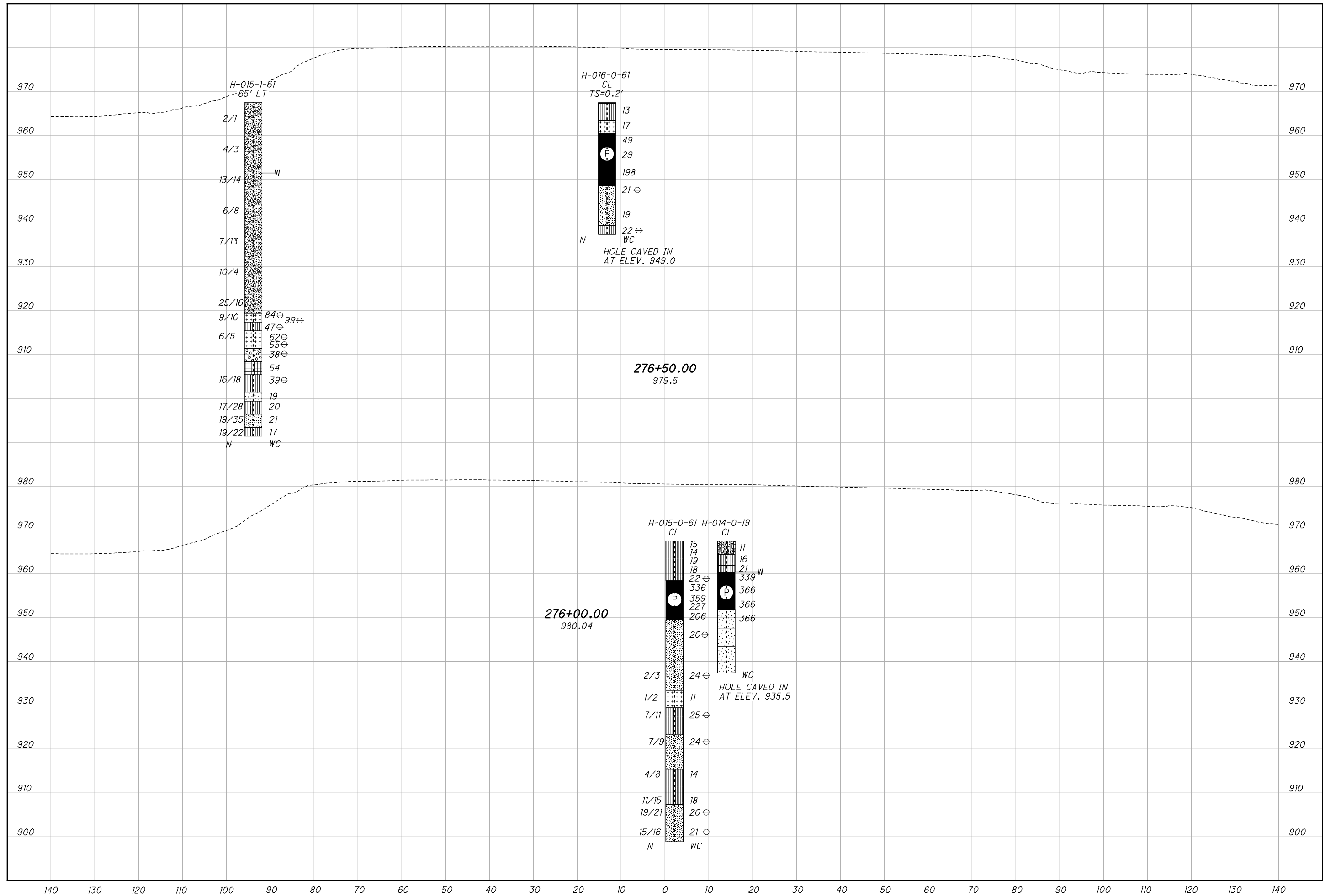


DRAWN SM  
CHECKED PAN

**SOIL PROFILE**  
**I.R. 76 CROSS SECTIONS 275+00.00 & 275+50.00**

**SUM-76-8.42**  
**SUM-77-9.77**

P:\102329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\102329\_1X014.dgn Sheet 3/16/2020 10:58:08 AM mlJtes



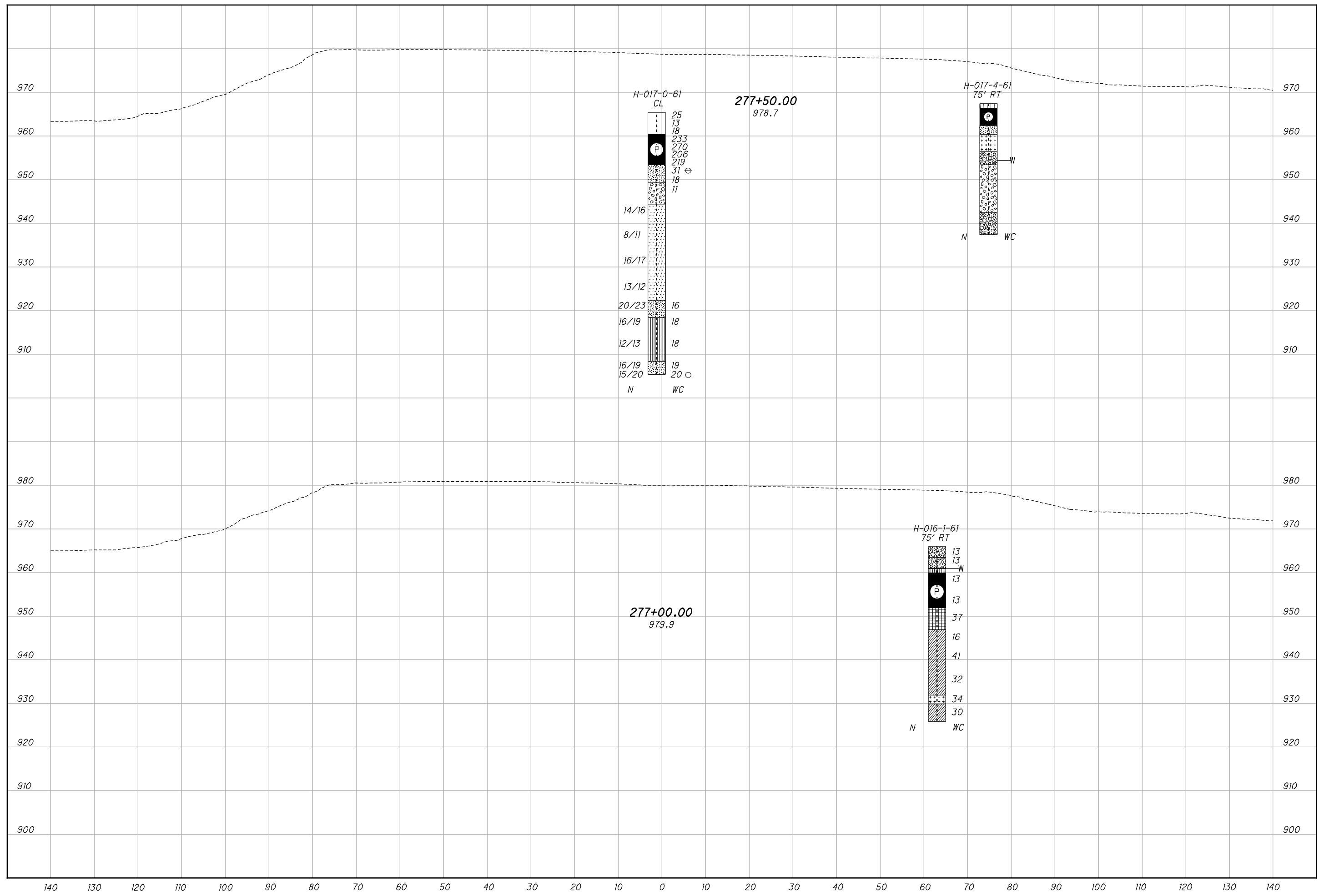
DRAWN: SM  
CHECKED: PAN

**SOIL PROFILE**  
**I.R. 76 CROSS SECTIONS 276+00.00 & 276+50.00**

**SUM-76-8.42**  
**SUM-77-9.77**



P:\102329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\102329\_1X015.dgn Sheet 3/16/2020 10:58:10 AM mlufes

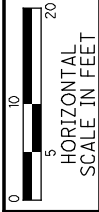
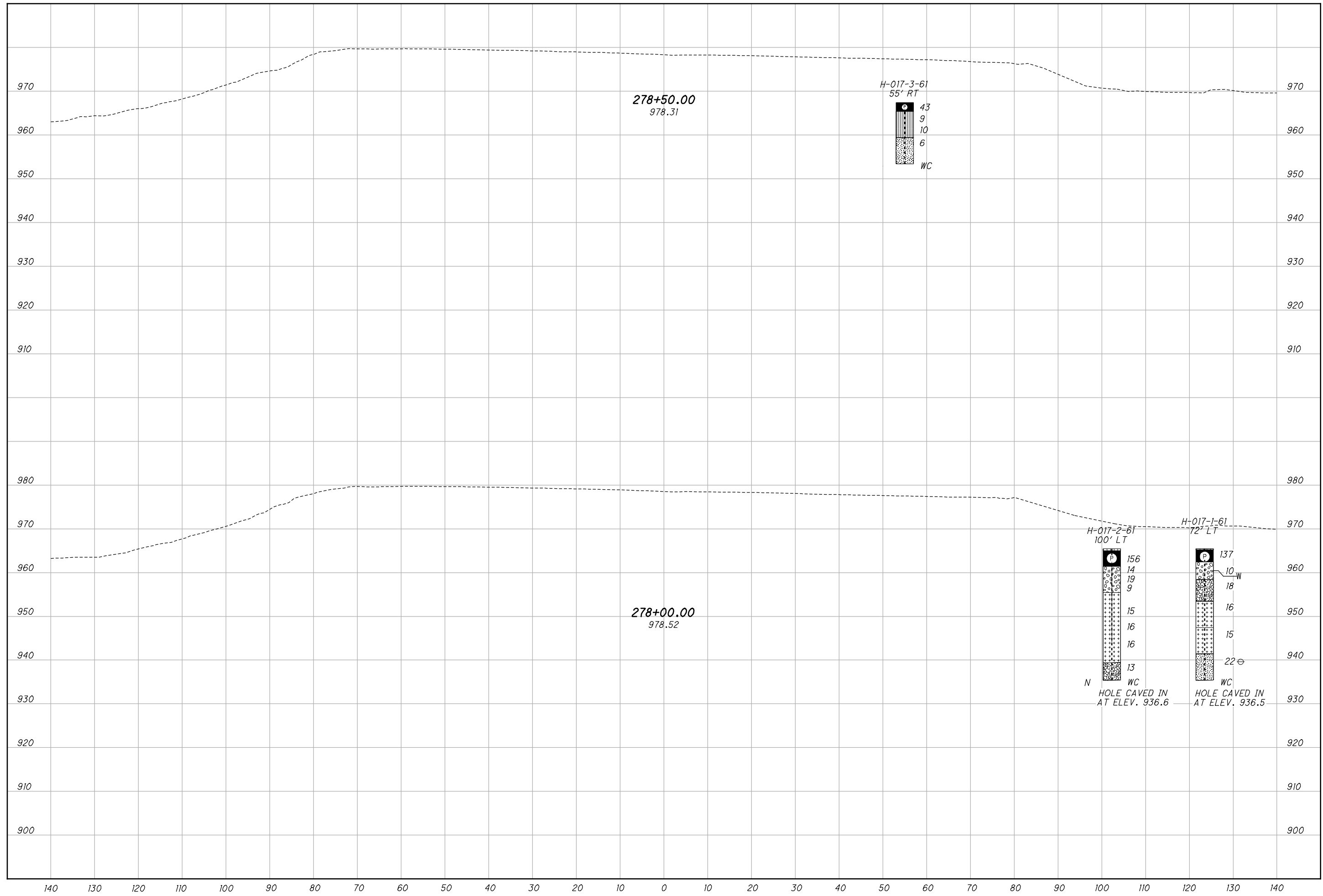


DRAWN SM  
CHECKED PAN

**SOIL PROFILE**  
**I.R. 76 CROSS SECTIONS 277+00.00 & 277+50.00**

**SUM-76-8.42**  
**SUM-77-9.77**

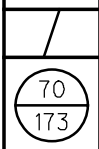
P:\102329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\102329\_1X016.dgn Sheet 3/16/2020 10:58:11 AM mlutes



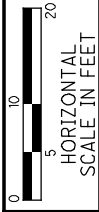
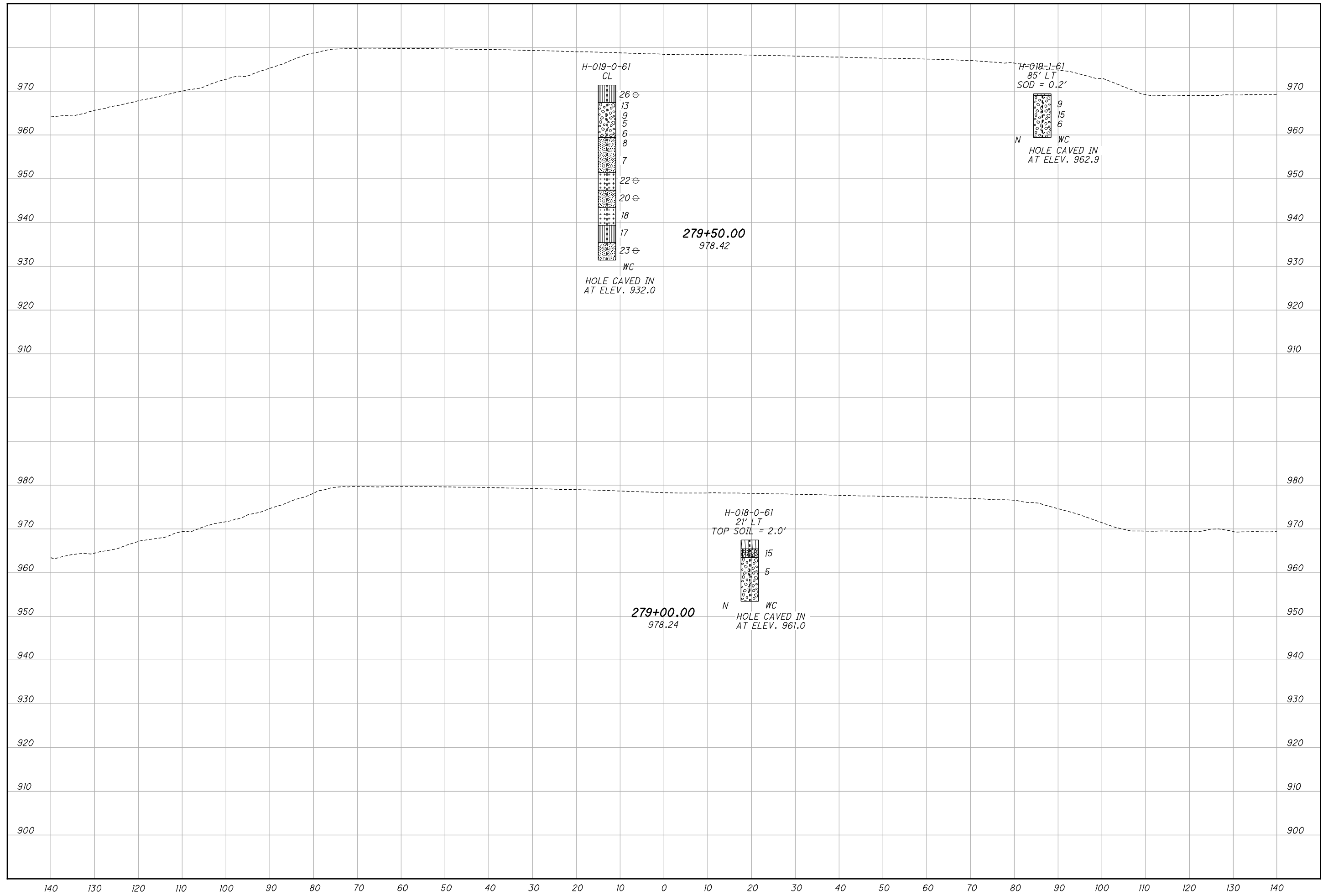
DRAWN SM  
CHECKED PAN

**SOIL PROFILE**  
**I.R. 76 CROSS SECTIONS 278+00.00 & 278+50.00**

**SUM-76-8.42**  
**SUM-77-9.77**



P:\02329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\02329\_IJ017.dgn Sheet 3/16/2020 10:58:12 AM mlufes

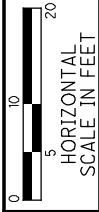
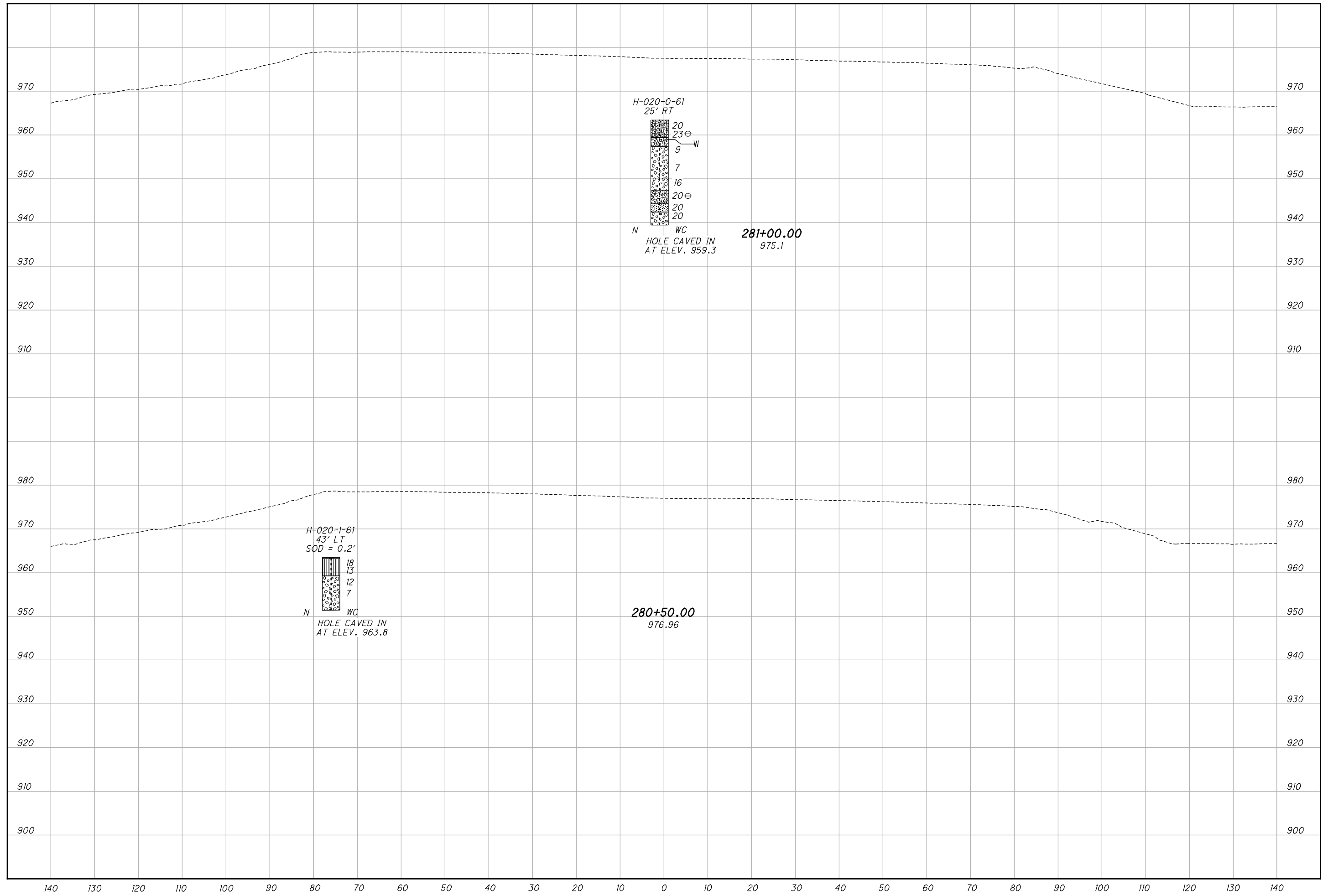


DRAWN SM  
CHECKED PAN

**SOIL PROFILE**  
**I.R. 76 CROSS SECTIONS 279+00.00 & 279+50.00**

**SUM-76-8.42**  
**SUM-77-9.77**

P:\102329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\102329\_1X08.dgn Sheet 3/16/2020 10:58:13 AM mlufes



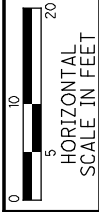
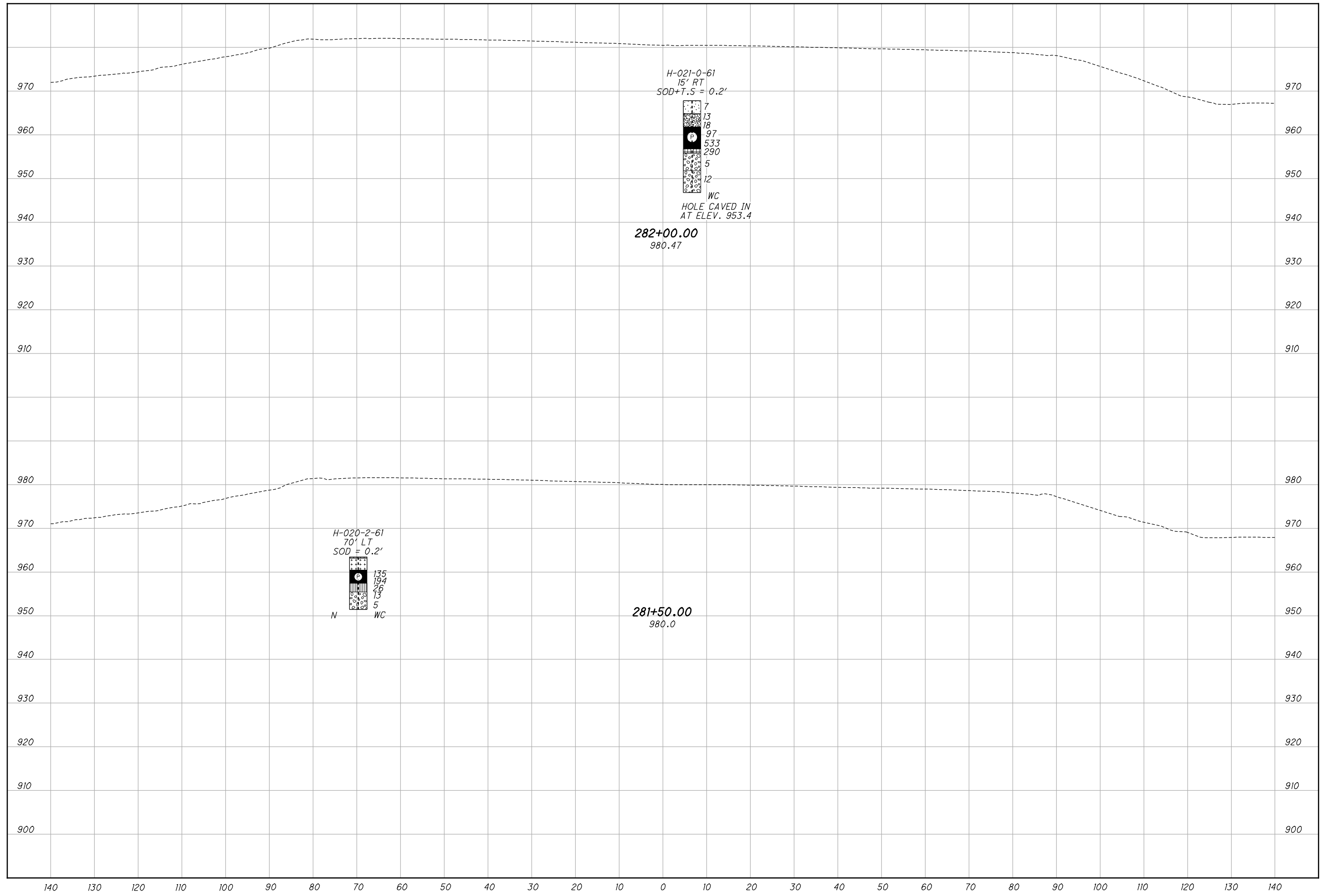
DRAWN SM  
CHECKED PAN

**SOIL PROFILE**  
**I.R. 76 CROSS SECTIONS 277+00.00 & 277+50.03**

**SUM-76-8.42**  
**SUM-77-9.77**



P:\102329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\102329\_1X019.dgn Sheet 3/16/2020 10:58:14 AM mlufes

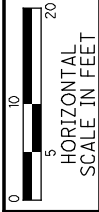
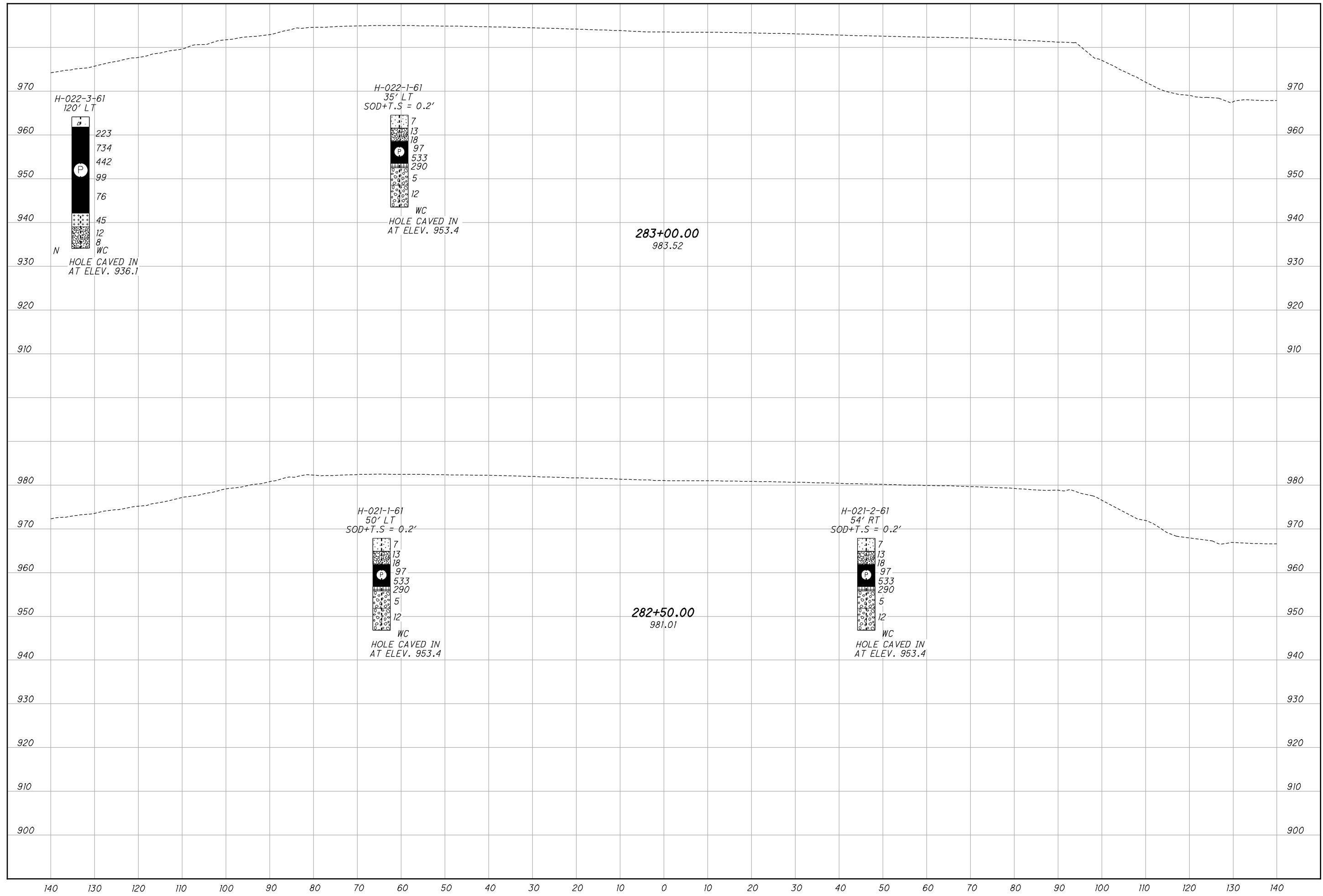


DRAWN: SM  
CHECKED: PAN

**SOIL PROFILE**  
**I.R. 76 CROSS SECTIONS 280+50.00 & 281+00.00**

**SUM-76-8.42**  
**SUM-77-9.77**

P:\102329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\102329\_1X020.dgn Sheet 3/16/2020 10:58:16 AM mlj/tes

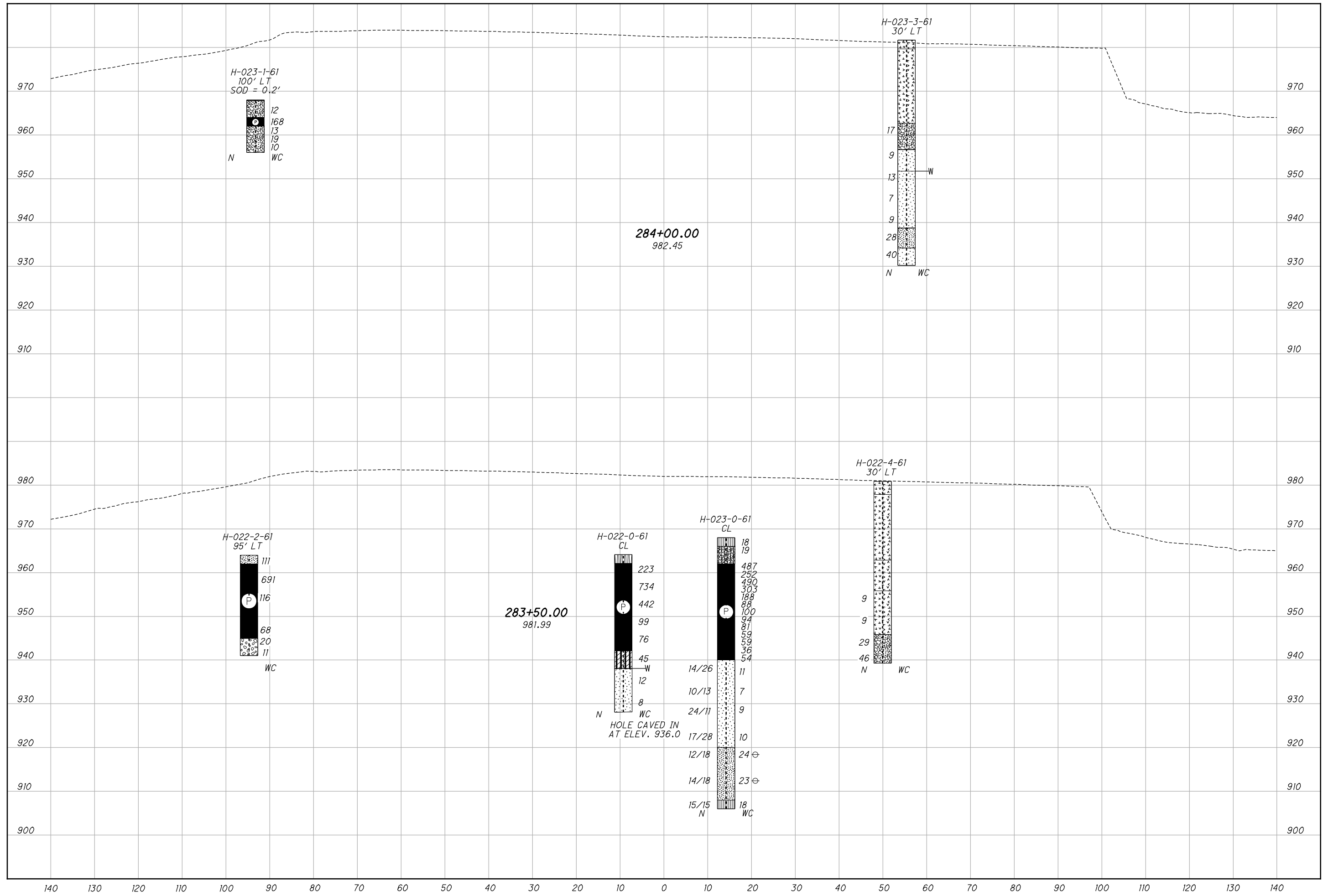


DRAWN SM  
CHECKED PAN

**SOIL PROFILE**  
**I.R. 76 CROSS SECTIONS 281+50.00 & 282+00.00**

**SUM-76-8.42**  
**SUM-77-9.77**

P:\102329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\102329\_1X02L.dgn Sheet 3/16/2020 10:58:17 AM mlufes

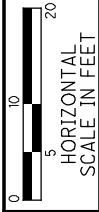
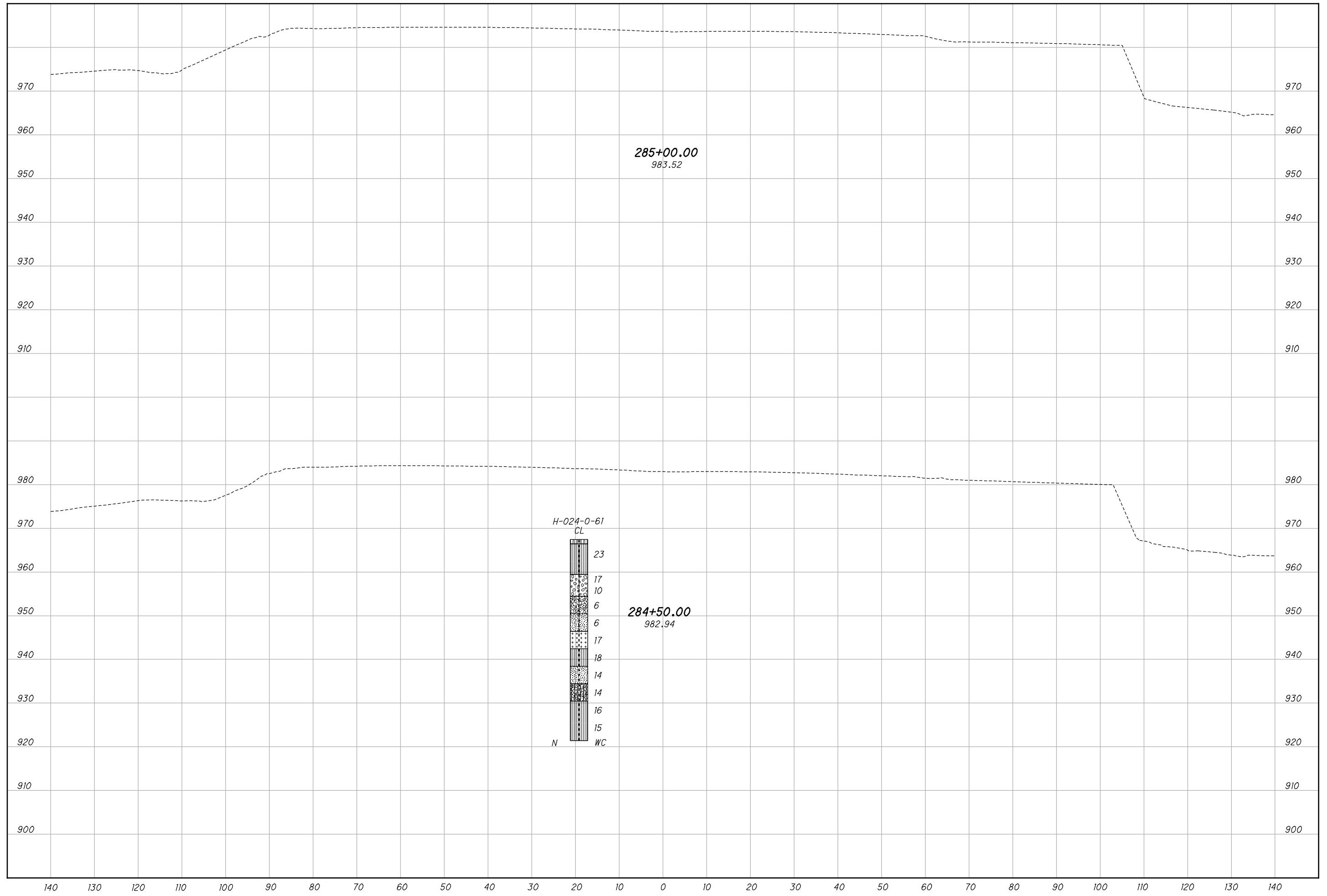


DRAWN SM  
CHECKED PAN

**SOIL PROFILE**  
**I.R. 76 CROSS SECTIONS 282+50.00 & 283+0.00**

**SUM-76-8.42**  
**SUM-77-9.77**

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SM  
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PAN

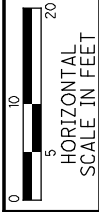
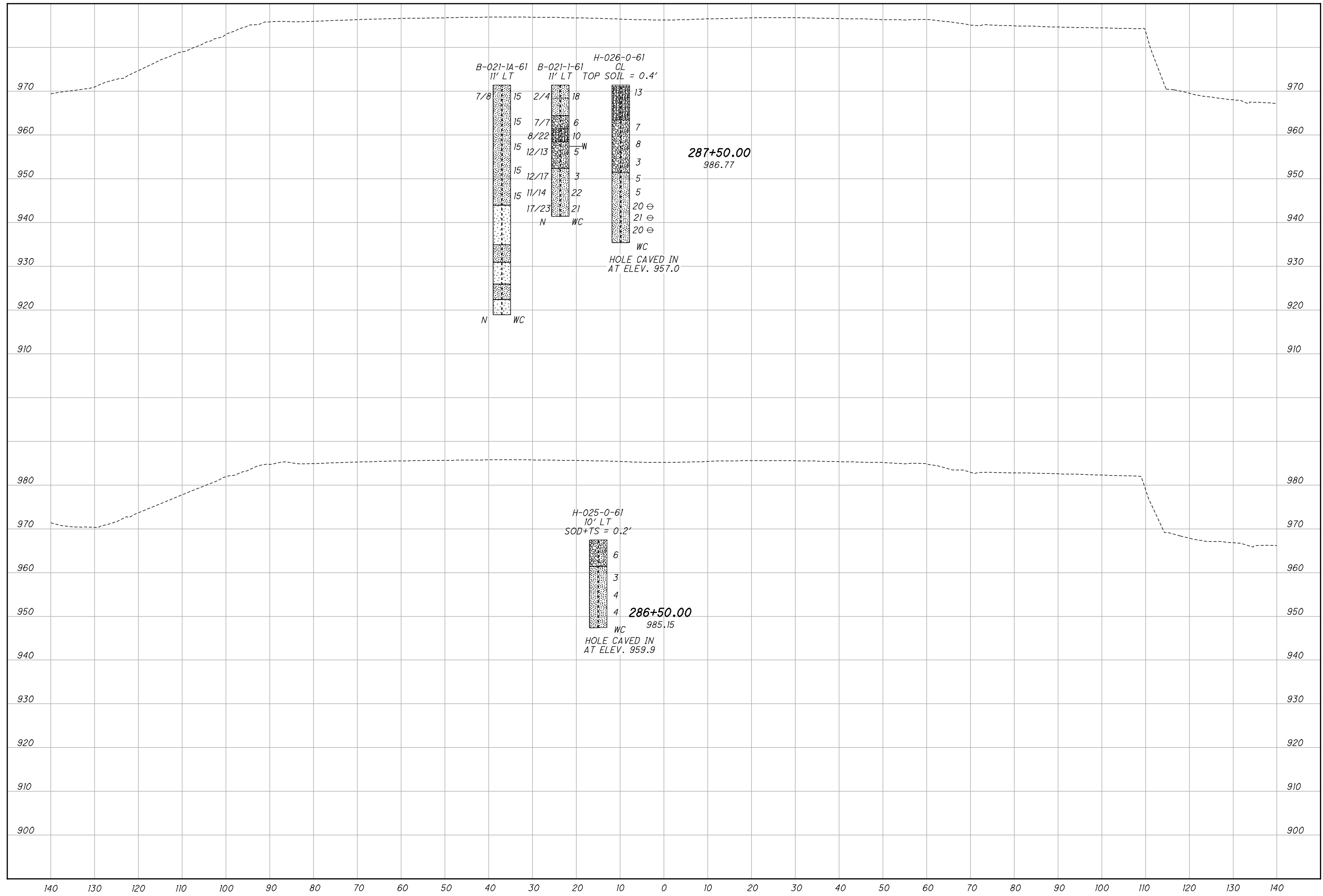
**SOIL PROFILE**  
**I.R. 76 CROSS SECTIONS 283+50.00 & 284+00.00**

**SUM-76-8.42**  
**SUM-77-9.77**

76  
173



P:\102329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\102329\_1X023.dgn Sheet 3/16/2020 10:58:20 AM mlutes

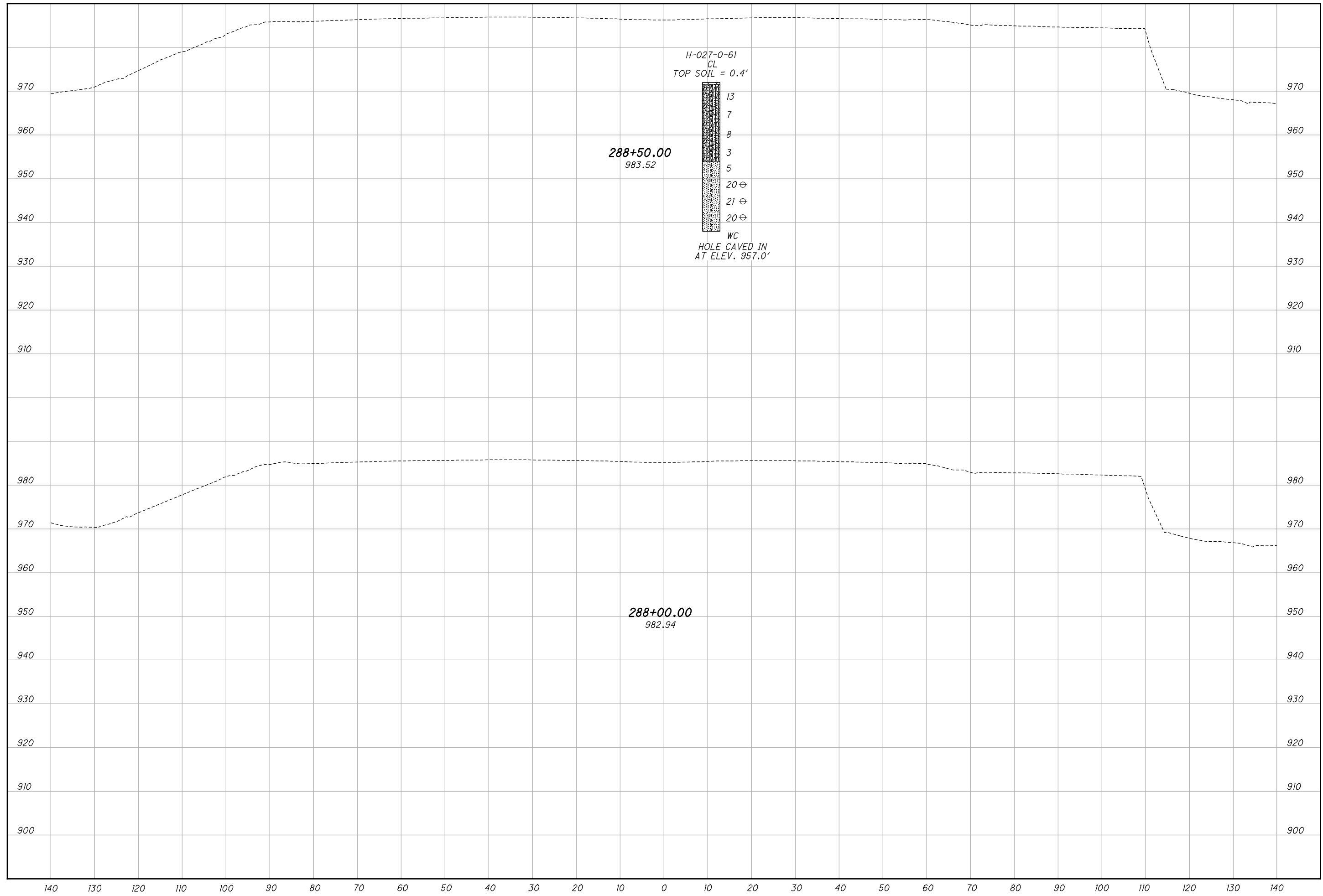


DRAWN: SM  
CHECKED: PAN

**SOIL PROFILE**  
**I.R. 76 CROSS SECTIONS 284+50.00 & 285+00.00**

**SUM-76-8.42**  
**SUM-77-9.77**

P:\102329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\102329\_1X024.dgn Sheet 3/16/2020 10:58:21 AM mlufes



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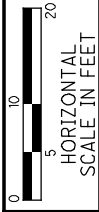
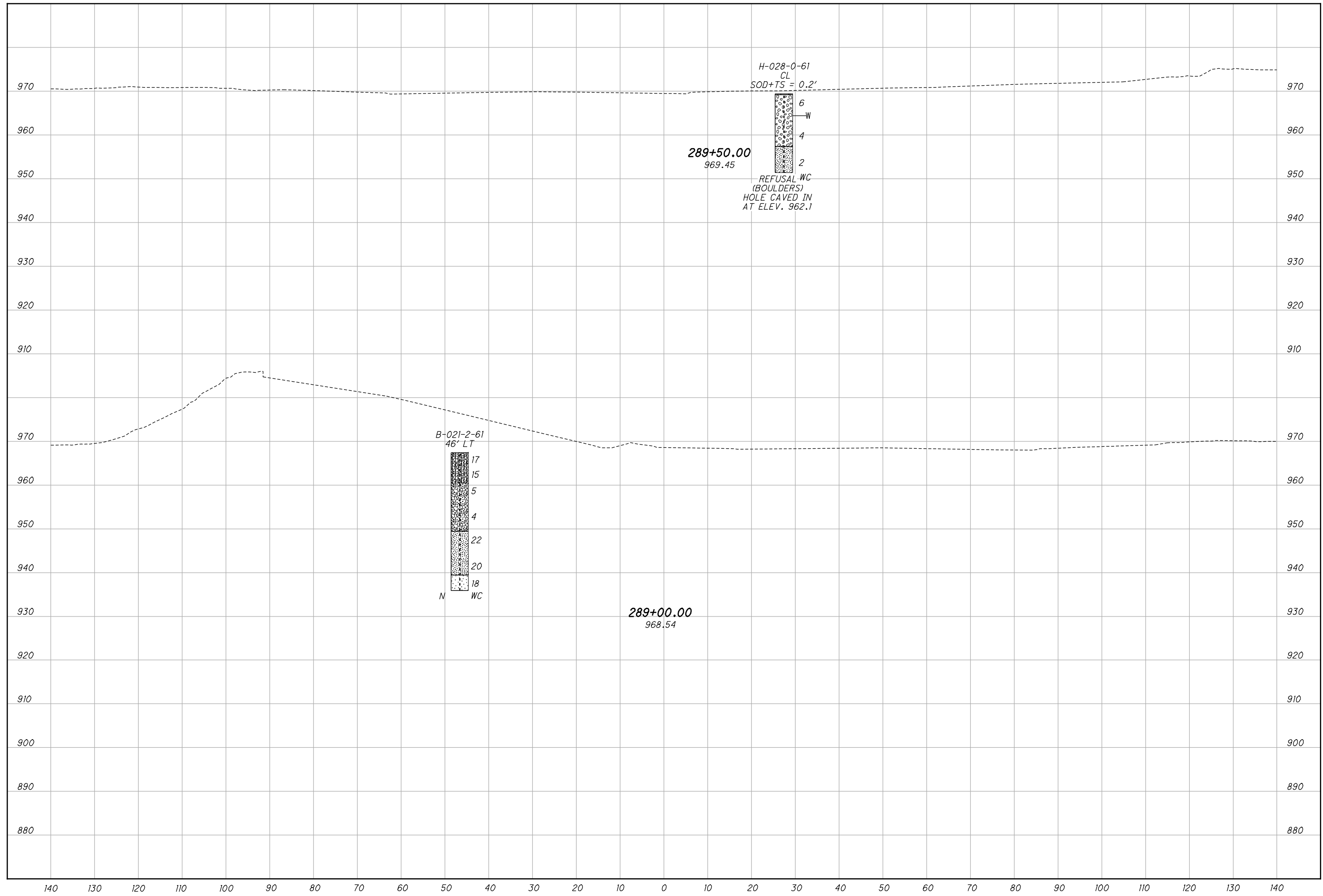
CHECKED  
PAN

**SOIL PROFILE**  
**I.R. 76 CROSS SECTIONS 286+50.00 & 287+50.00**

**SUM-76-8.42**  
**SUM-77-9.77**

78  
173

P:\102329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\102329\_1X025.dgn Sheet 3/16/2020 10:58:22 AM mlr/tes

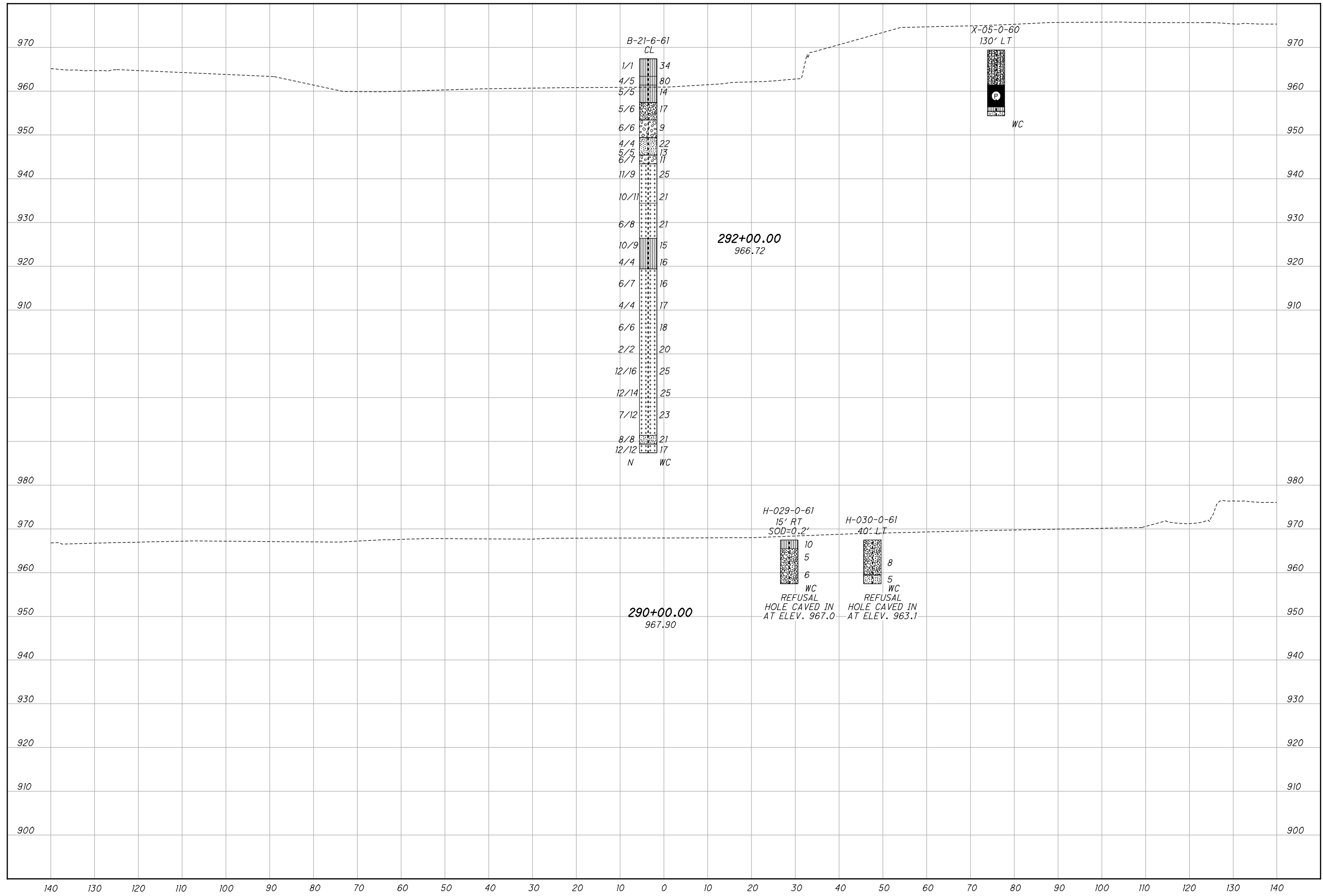


DRAWN SM  
CHECKED PAN

**SOIL PROFILE**  
**I.R. 76 CROSS SECTIONS 288+00.00 & 288+50.00**

**SUM-76-8.42**  
**SUM-77-9.77**

P:\102329\_SUM-76\_77\Design\Sheets\SoilProfile\102329\_1X026.dgn Sheet 3/16/2020 10:58:24 AM mlutes



DRAWN: SM  
 CHECKED: PAN  
 HORIZONTAL SCALE IN FEET  
 0 5 10 20

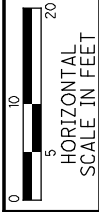
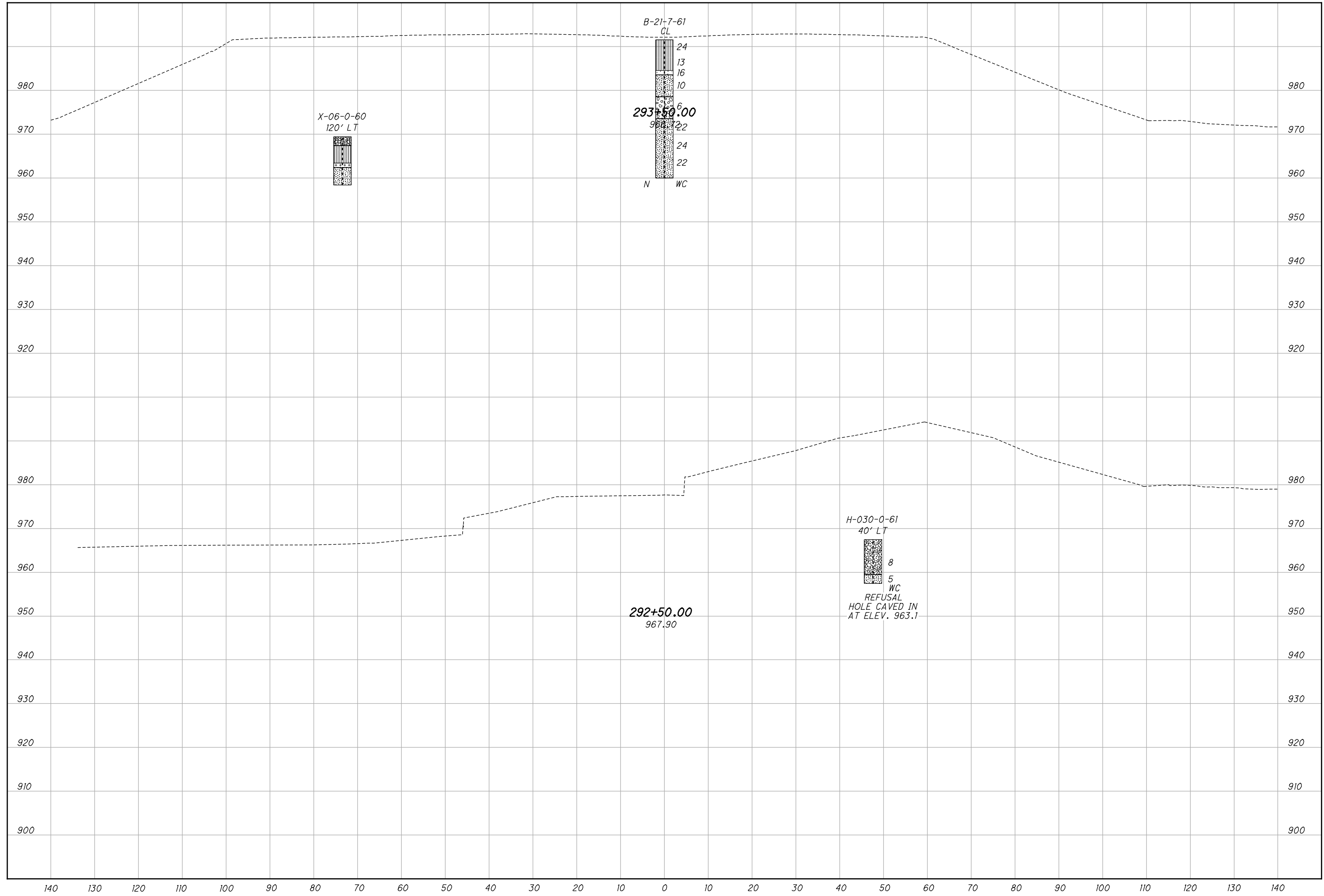
**SOIL PROFILE**  
**I.R. 76 CROSS SECTIONS 289+00.00 & 289+50.00**

**SUM-76-8.42**  
**SUM-77-9.77**

80  
 173



P:\102329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\102329\_1X027.dgn Sheet 3/16/2020 10:58:25 AM mlr/tes

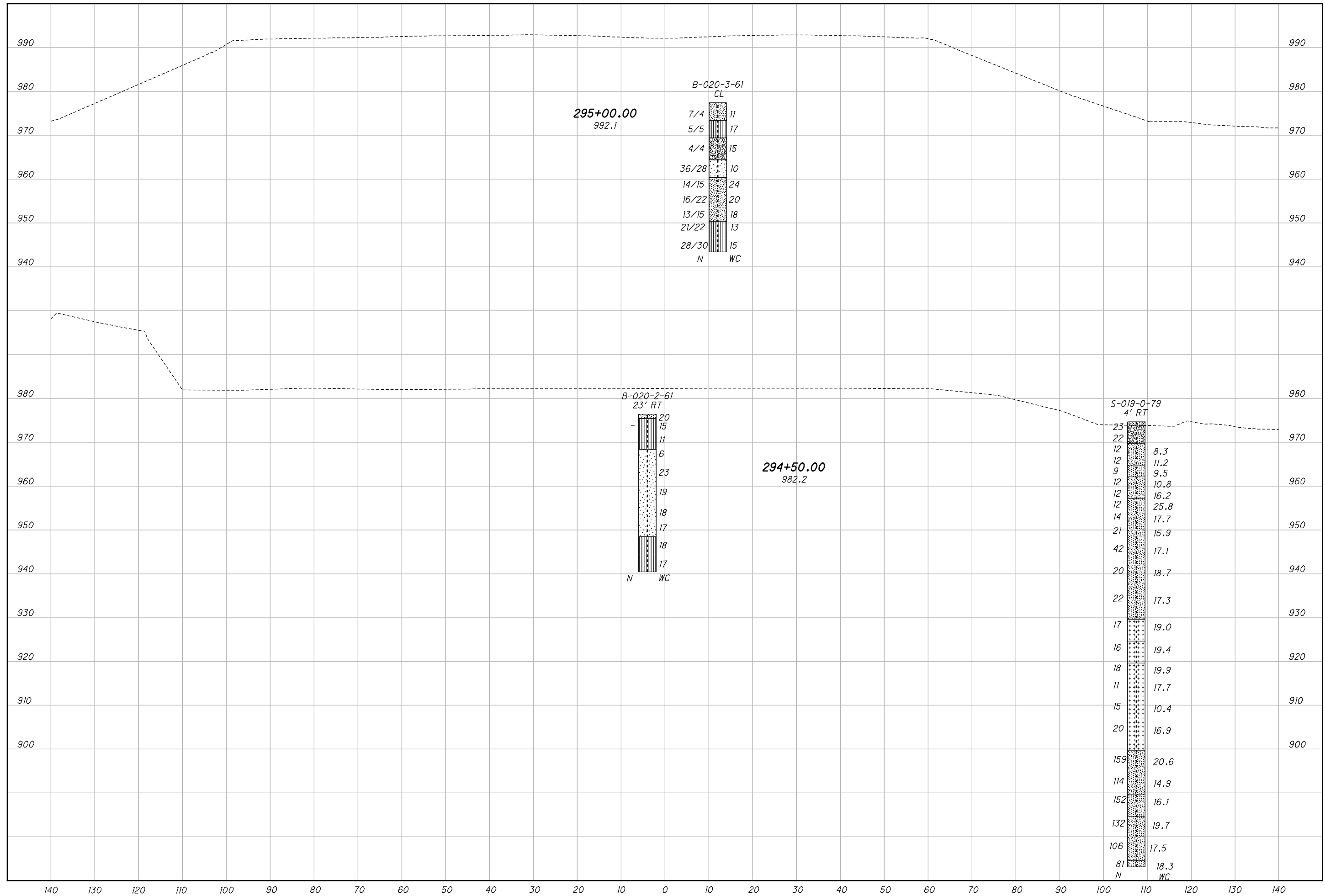


DRAWN SM  
CHECKED PAN

**SOIL PROFILE**  
**I.R. 76 CROSS SECTIONS 292+50.00 & 293+50.00**

**SUM-76-8.42**  
**SUM-77-9.77**

P:\102329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\102329\_1X028.dgn Sheet 3/16/2020 10:58:26 AM mlutes

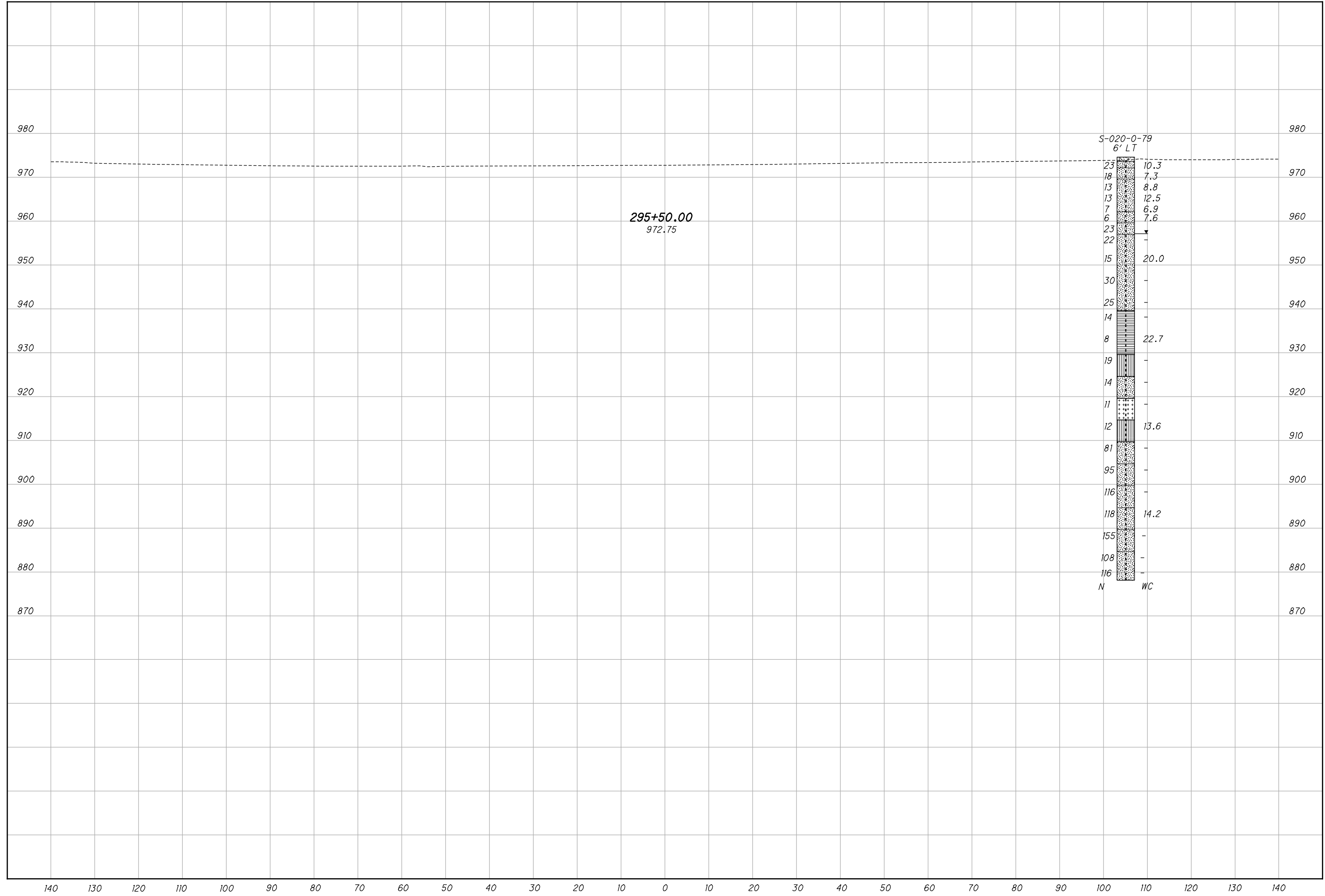


DRAWN SM  
CHECKED PAN

**SOIL PROFILE**  
**I.R. 76 CROSS SECTIONS 294+50.00 & 295+00.00**

**SUM-76-8.42**  
**SUM-77-9.77**

P:\102329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\102329\_1X029.dgn Sheet 3/16/2020 10:58:28 AM mlrtes



0 10 20  
 5  
 HORIZONTAL  
 SCALE IN FEET

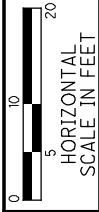
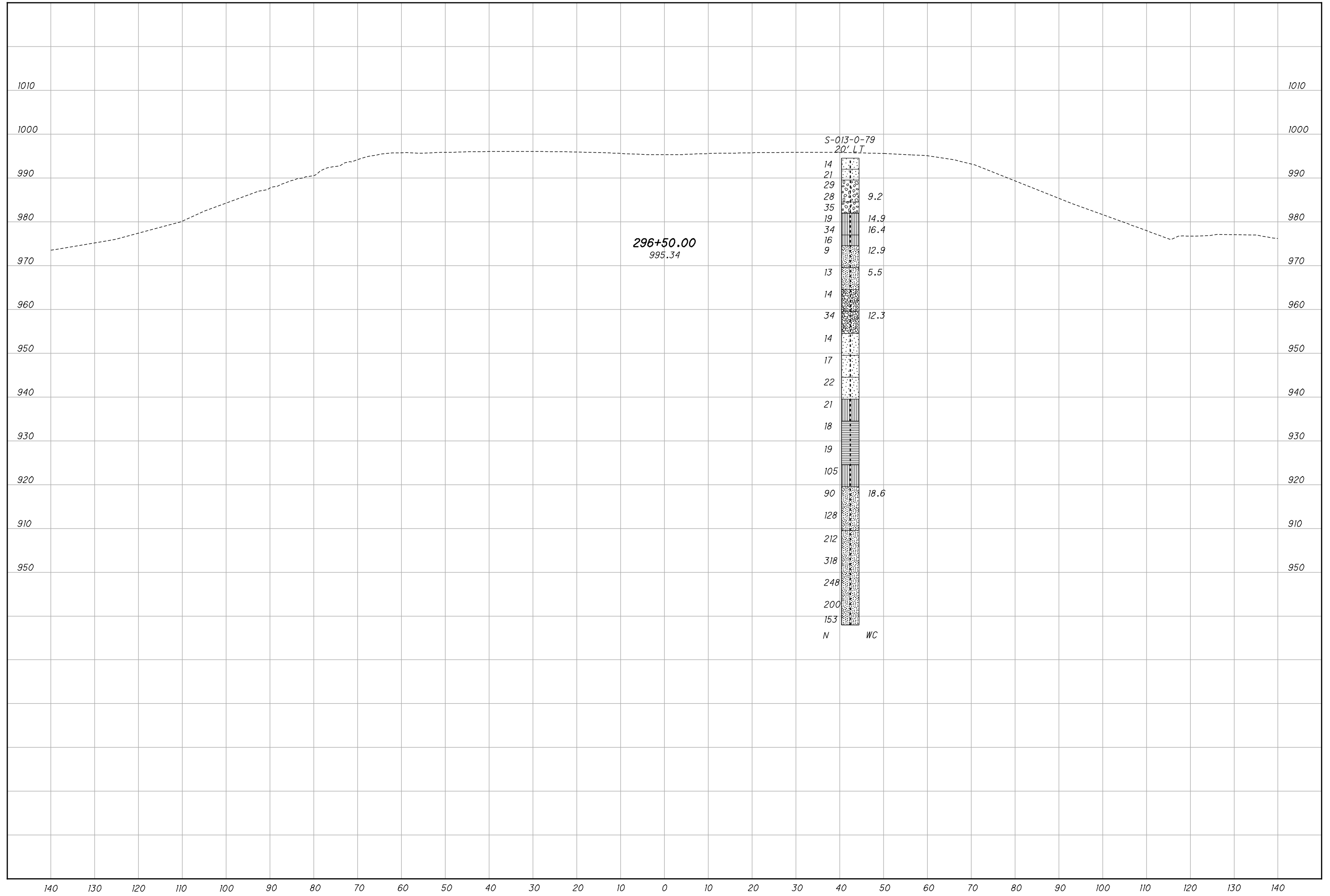
DRAWN  
 SM  
 CHECKED  
 PAN

**SOIL PROFILE**  
**I.R. 76 CROSS SECTION 295+50.00**

**SUM-76-8.42**  
**SUM-77-9.77**

83  
 173

P:\102329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\102329\_1X030.dgn Sheet 3/16/2020 10:58:29 AM mlutes



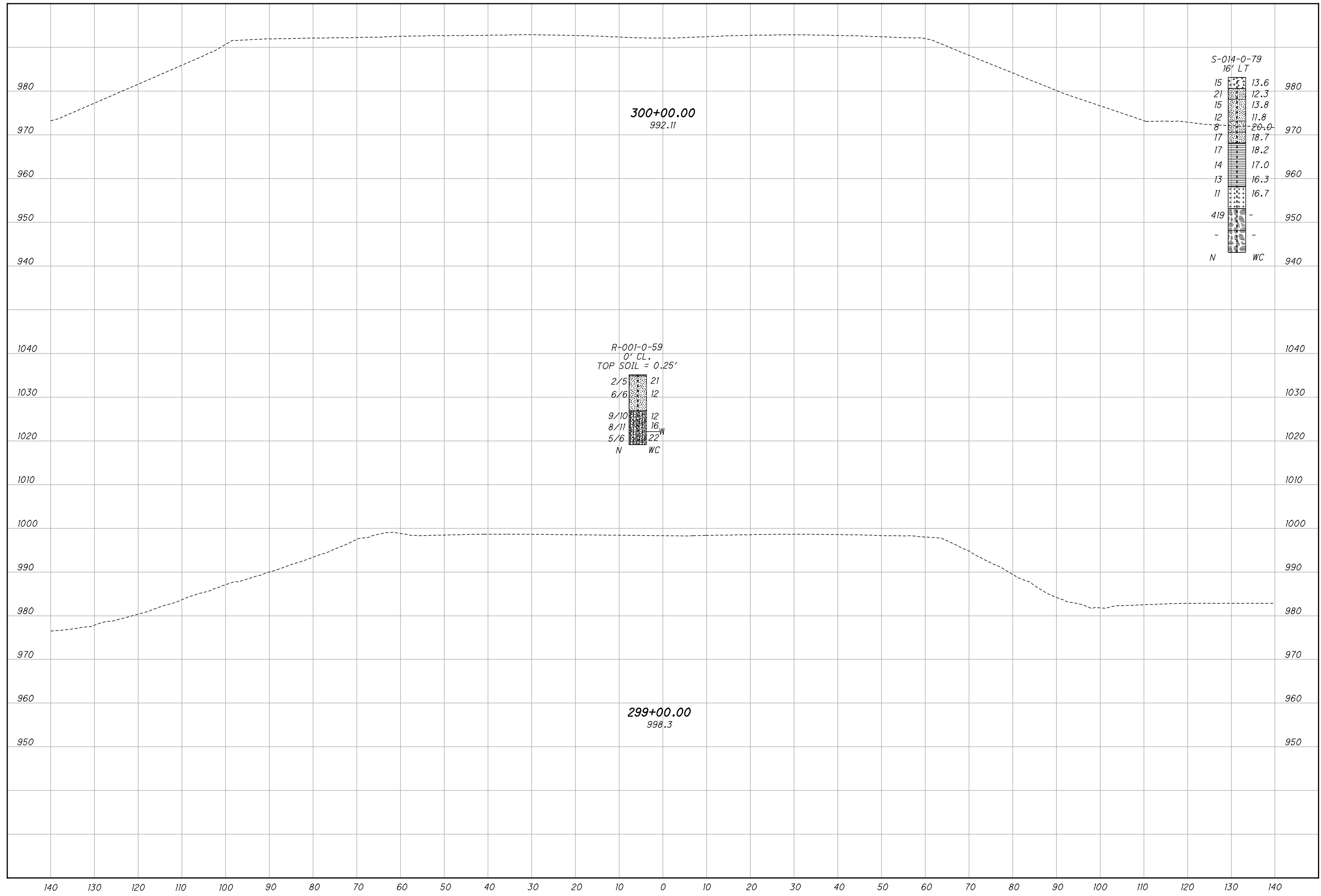
DRAWN  
SM  
CHECKED  
PAN

**SOIL PROFILE**  
**I.R. 76 CROSS SECTION 296+50.00**

**SUM-76-8.42**  
**SUM-77-9.77**



P:\102329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\102329\_1X031.dgn Sheet 3/16/2020 10:58:30 AM mlJtes

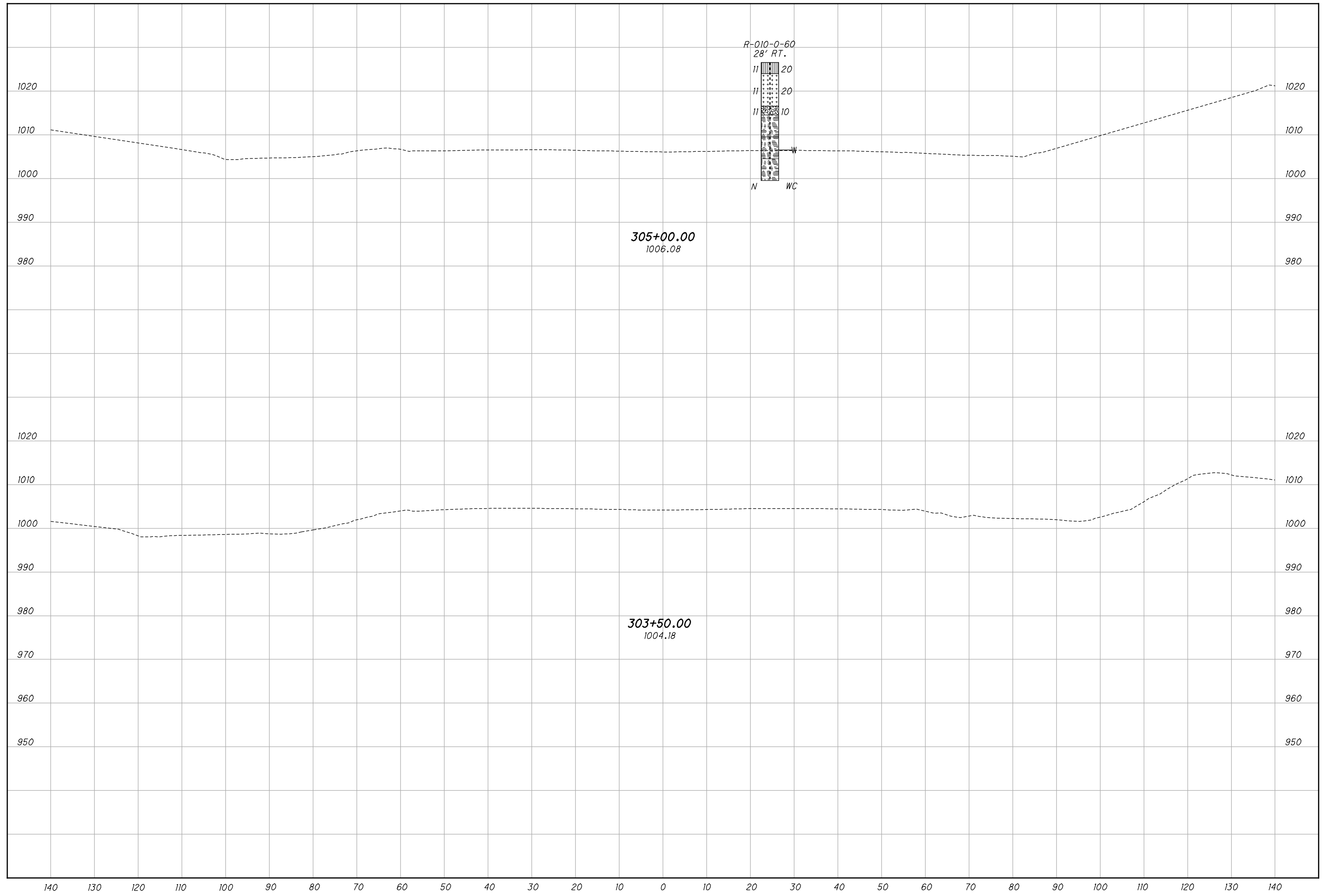


DRAWN SM  
CHECKED PAN

**SOIL PROFILE**  
**I.R. 76 CROSS SECTIONS 299+00.00 & 300+00.00**

**SUM-76-8.42**  
**SUM-77-9.77**

P:\02329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\02329\_1X032.dgn Sheet 3/16/2020 10:58:31 AM mlufes



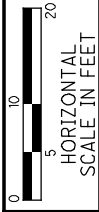
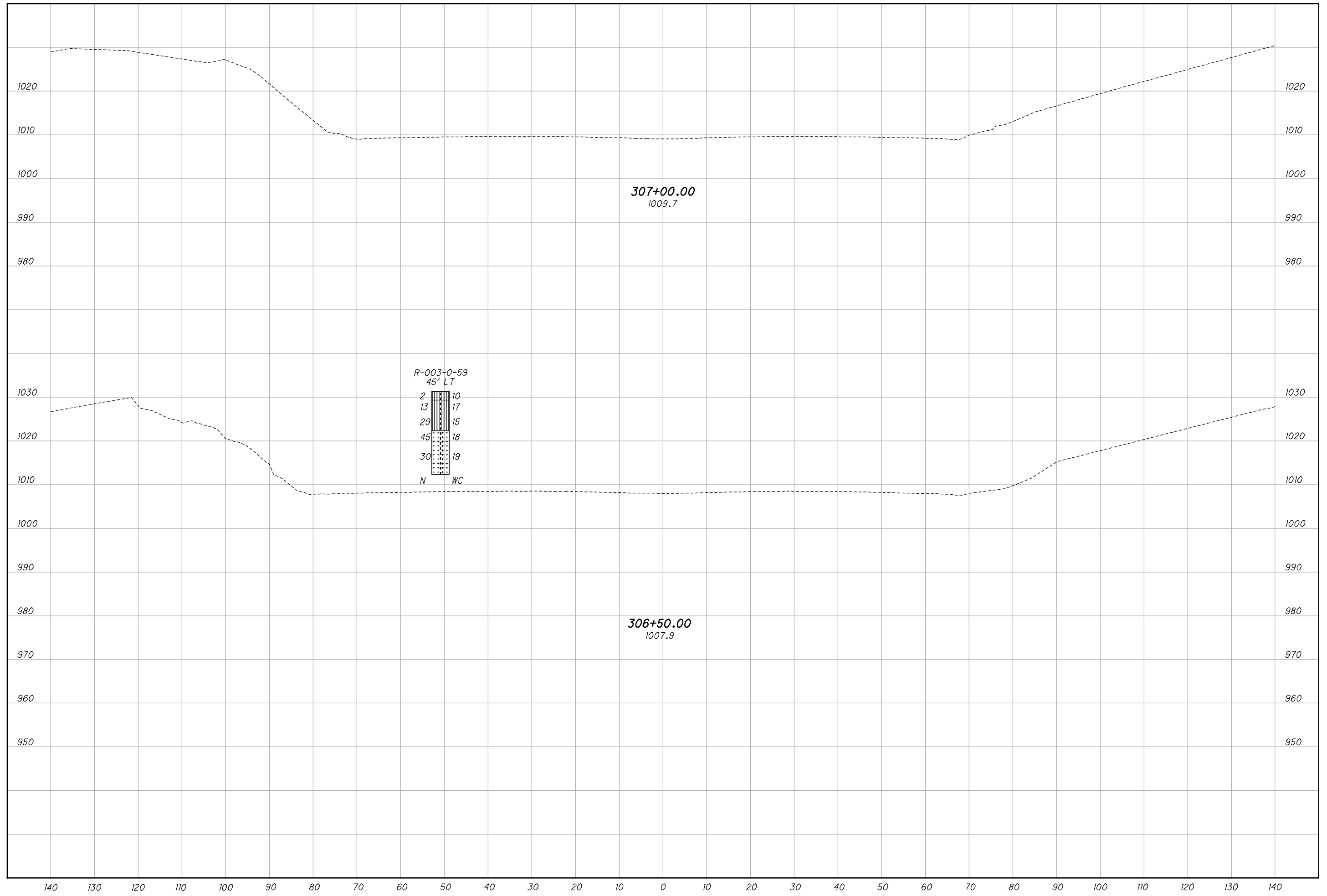
DRAWN  
SM

CHECKED  
PAN

**SOIL PROFILE**  
**I.R. 76 CROSS SECTIONS 303+50.00 & 305+00.00**

**SUM-76-8.42**  
**SUM-77-9.77**

P:\102329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\102329\_1X033.dgn Sheet 3/16/2020 10:58:33 AM milutes



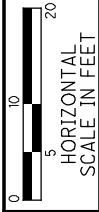
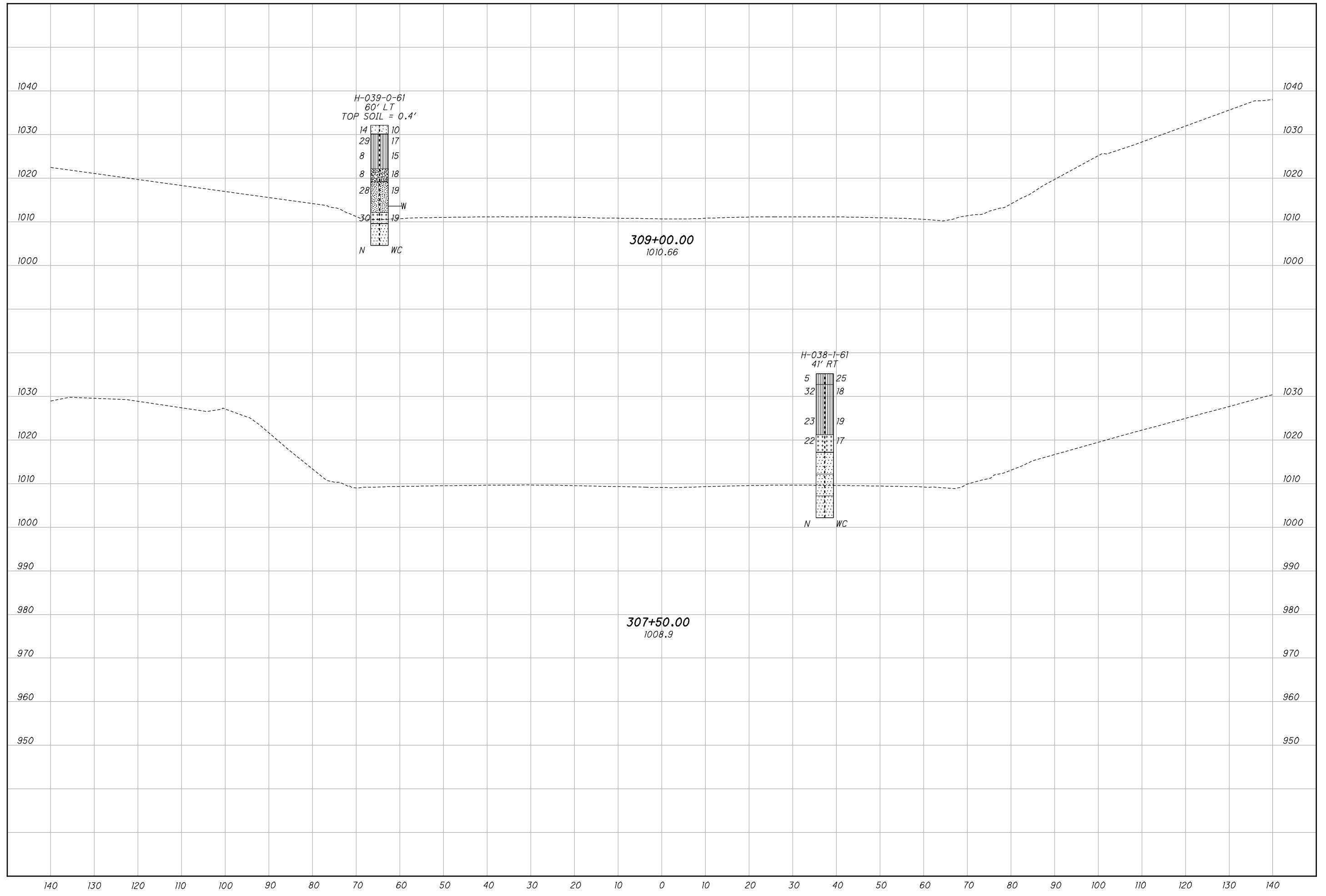
DRAWN SM  
CHECKED PAN

**SOIL PROFILE**  
**I.R. 76 CROSS SECTIONS 306+50.00 & 307+00.00**

**SUM-76-8.42**  
**SUM-77-9.77**

87  
173

P:\102329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\102329\_1X034.dgn Sheet 3/16/2020 10:58:34 AM mlr/tes



DRAWN  
SM

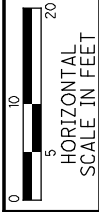
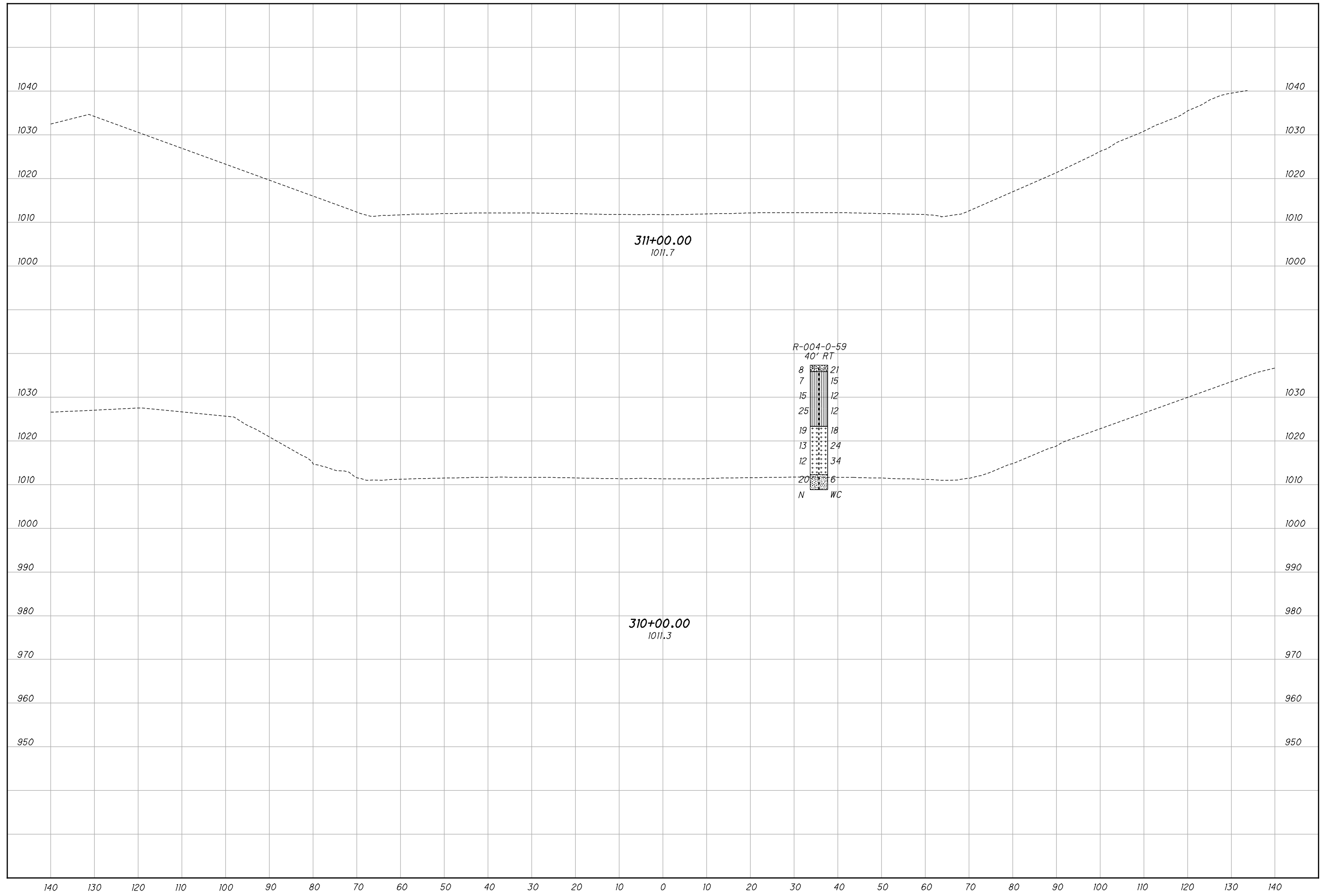
CHECKED  
PAN

**SOIL PROFILE**  
**I.R. 76 CROSS SECTIONS 307+50.00 & 309+00.00**

**SUM-76-8.42**  
**SUM-77-9.77**



P:\102329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\102329\_1X035.dgn Sheet 3/16/2020 10:58:35 AM mlr/tes

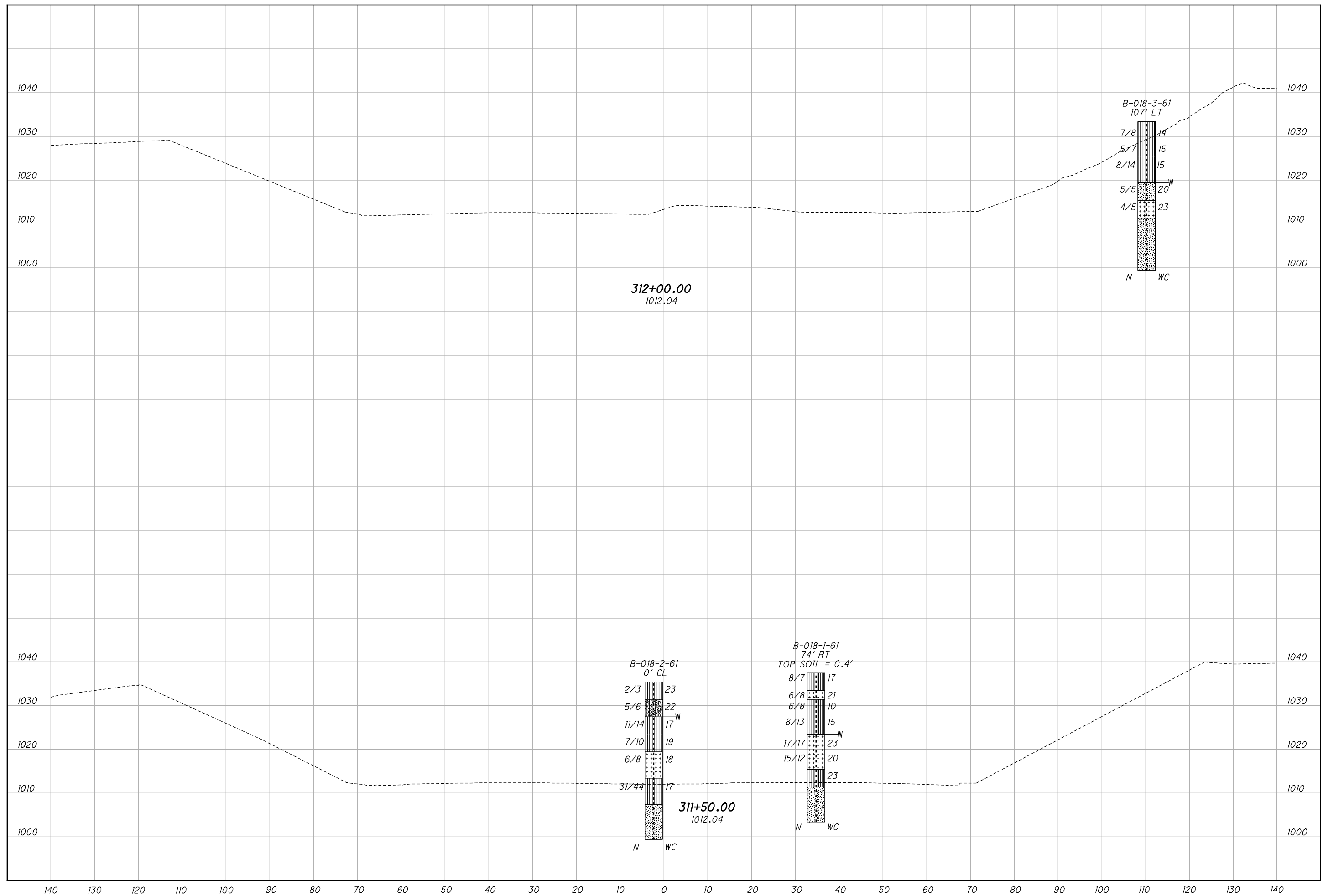


DRAWN  
SM  
CHECKED  
PAN

**SOIL PROFILE**  
**I.R. 76 CROSS SECTIONS 310+00.00 & 311+00.00**

**SUM-76-8.42**  
**SUM-77-9.77**

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**SOIL PROFILE**  
**I.R. 76 CROSS SECTION 311+50.00**

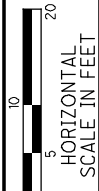
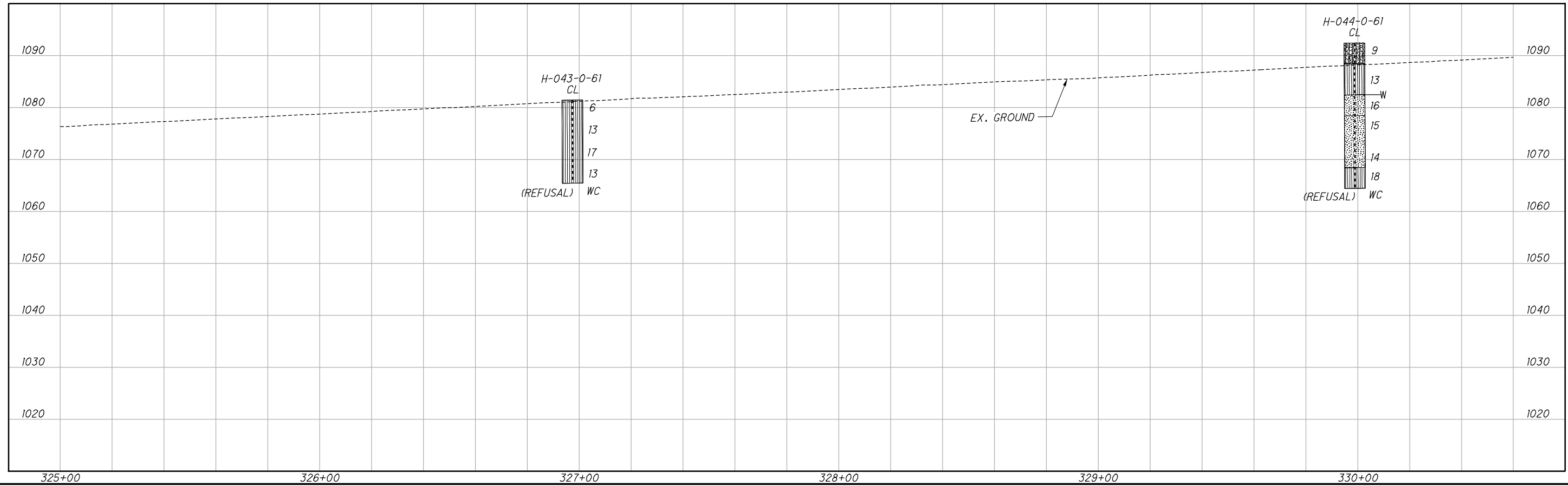
**SUM-76-8.42**  
**SUM-77-9.77**

90  
173

DRAWN  
SM  
CHECKED  
PAN



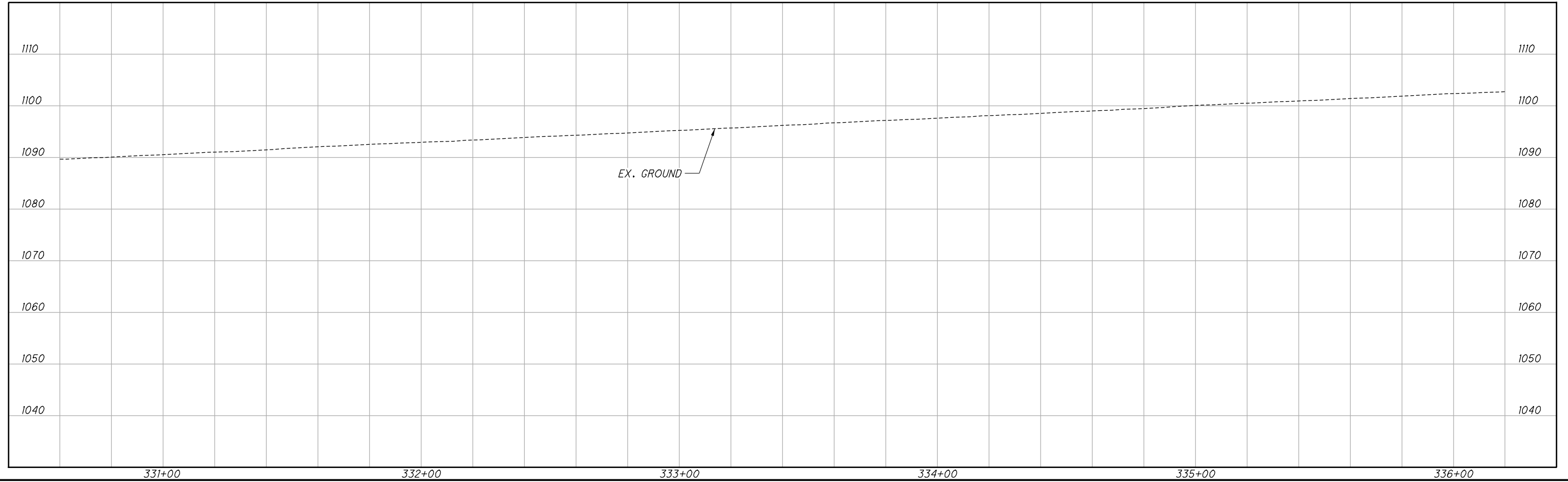
MATCH LINE STA. 330+60.00, SEE SHEET XX



DRAWN: SM  
CHECKED: PAN

**SOIL PROFILE**  
**BEGIN STA. 325+00.00 TO STA. 330+60.00 I.R. 77**

**SUM-76-8.42**  
**SUM-77-9.77**

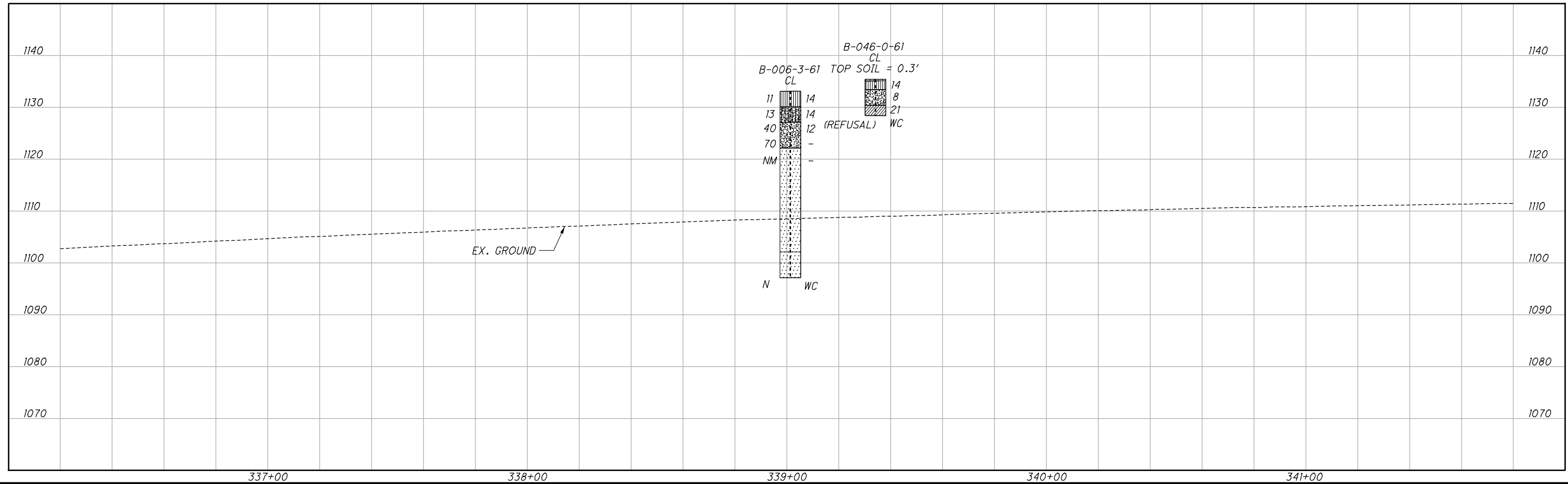


DRAWN: SM  
CHECKED: PAN

**SOIL PROFILE**  
**STA. 330+60.00 TO STA. 336+20.00 I.R. 77**

**SUM-76-8.42**  
**SUM-77-9.77**





93  
173

**SUM-76-8.42**  
**SUM-77-9.77**

**SOIL PROFILE**  
**STA. 336+20.00 TO STA. 341+80.00 I.R. 77**

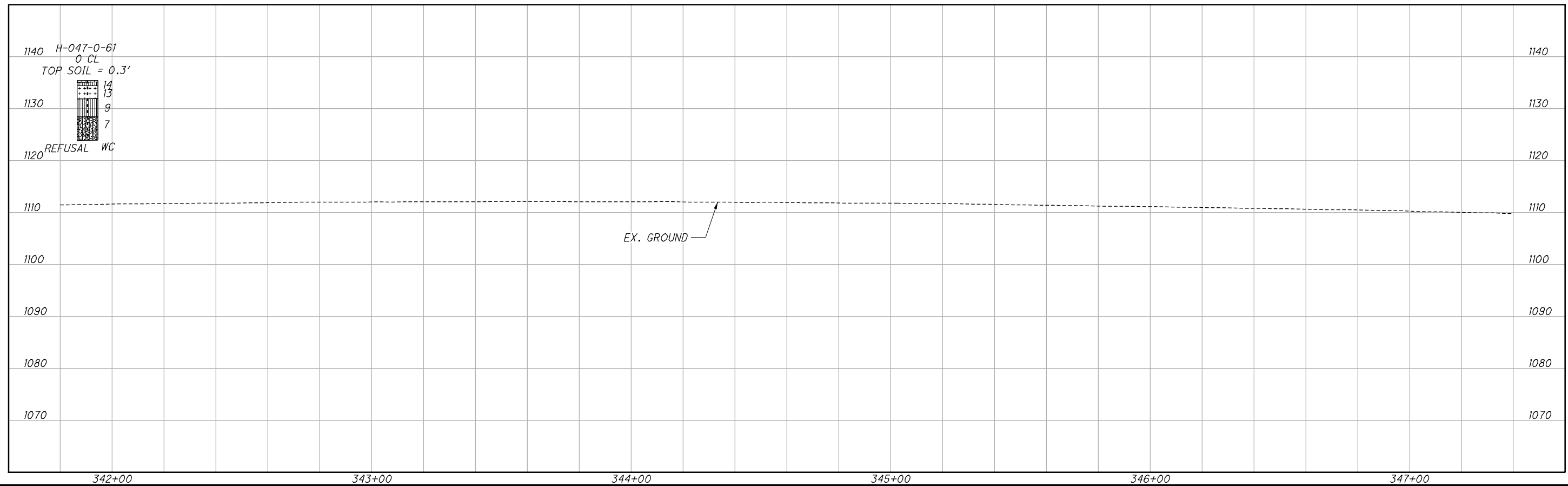
DRAWN: SM  
CHECKED: PAN

0 5 10 20  
HORIZONTAL SCALE IN FEET

N



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94  
173

**SUM-76-8.42**  
**SUM-77-9.77**

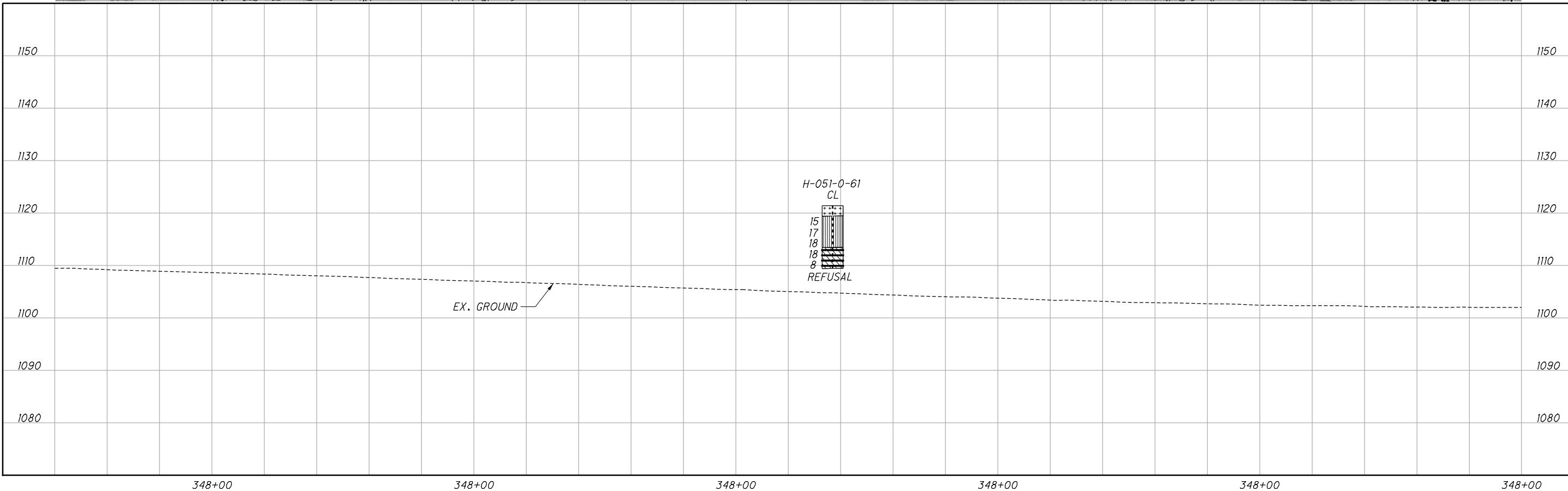
**SOIL PROFILE**  
**STA. 341+80.00 TO STA. 347+40.00 I.R. 77**

DRAWN: SM  
CHECKED: PAN



MATCH LINE STA. 347+40.00, SEE SHEET XX

MATCH LINE STA. 353+00.00, SEE SHEET XX



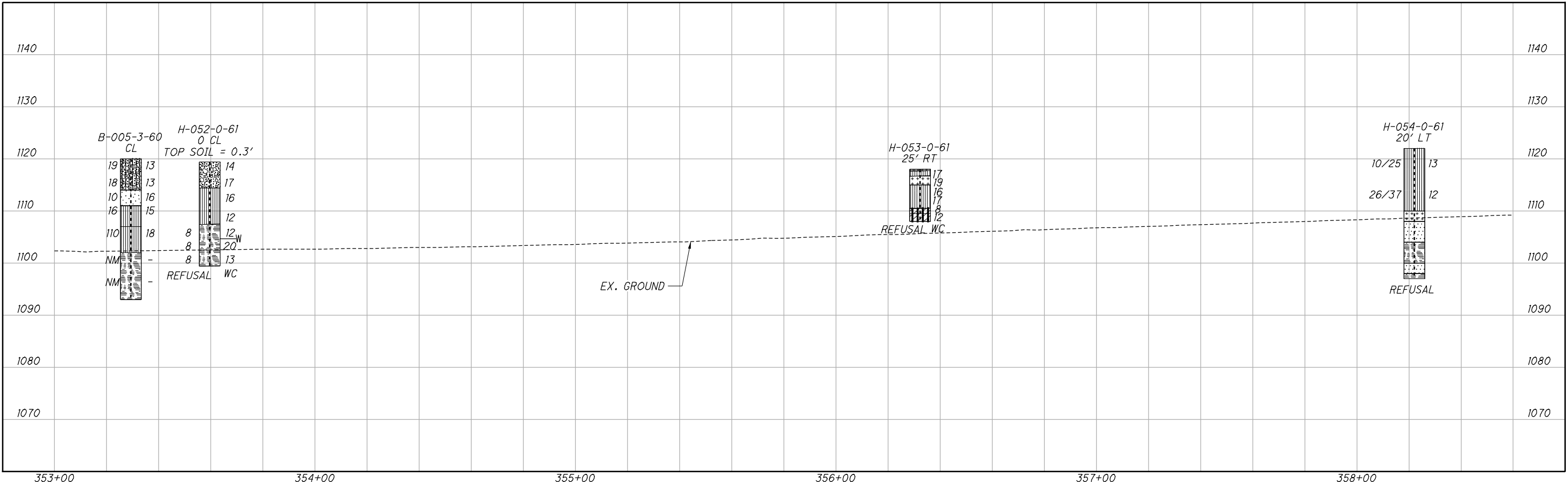
DRAWN  
SM

CHECKED  
PAN

**SOIL PROFILE**  
**STA. 347+40.00 TO STA. 353+00.00 I.R. 77**

**SUM-76-8.42**  
**SUM-77-9.77**





0 5 10 20  
HORIZONTAL SCALE IN FEET

DRAWN: SM  
CHECKED: PAN

**SOIL PROFILE**

**STA. 353+00.00 TO STA. 358+60.00 I.R. 77**

**SUM-76-8.42**

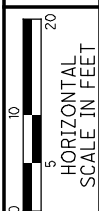
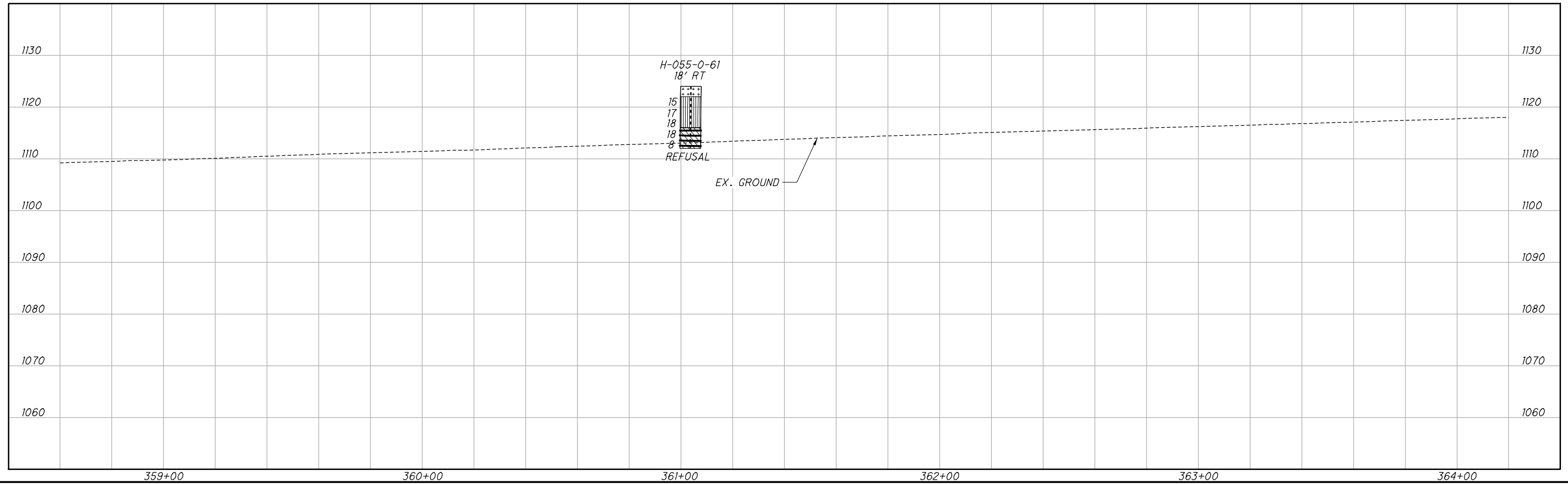
**SUM-77-9.77**

96  
173



MATCH LINE STA. 358+60.00, SEE SHEET XX

MATCH LINE STA. 364+20.00, SEE SHEET XX

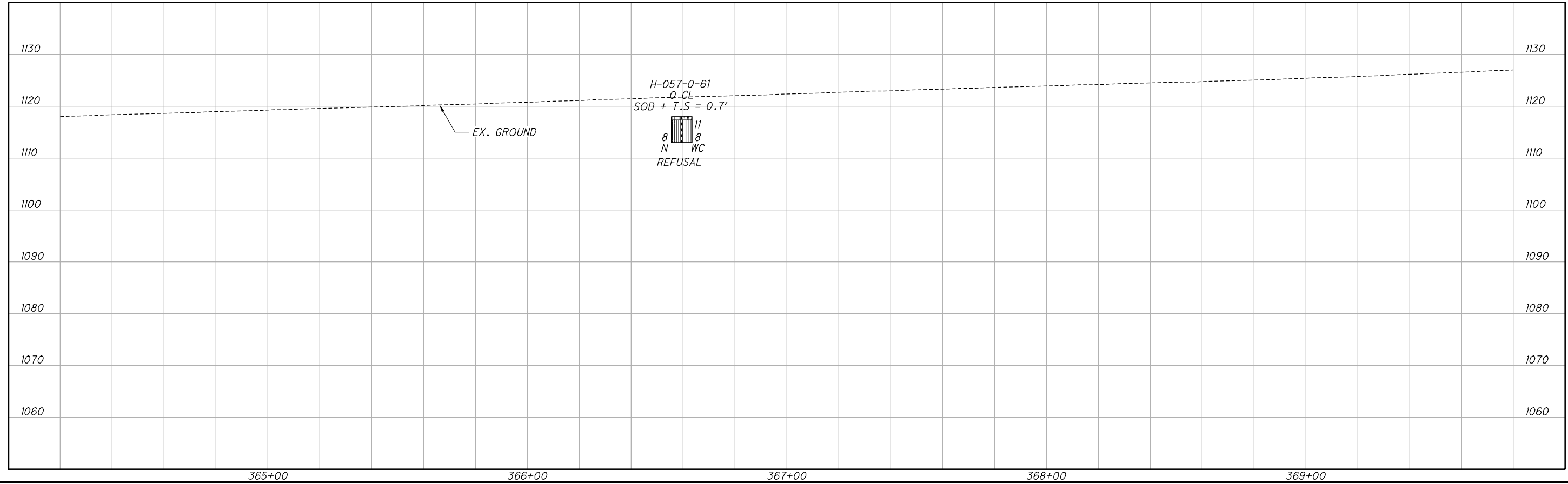


DRAWN SM  
CHECKED PAN

**SOIL PROFILE**  
**STA. 358+60.00 TO STA. 364+20.00 I.R. 77**

**SUM-76-8.42**  
**SUM-77-9.77**





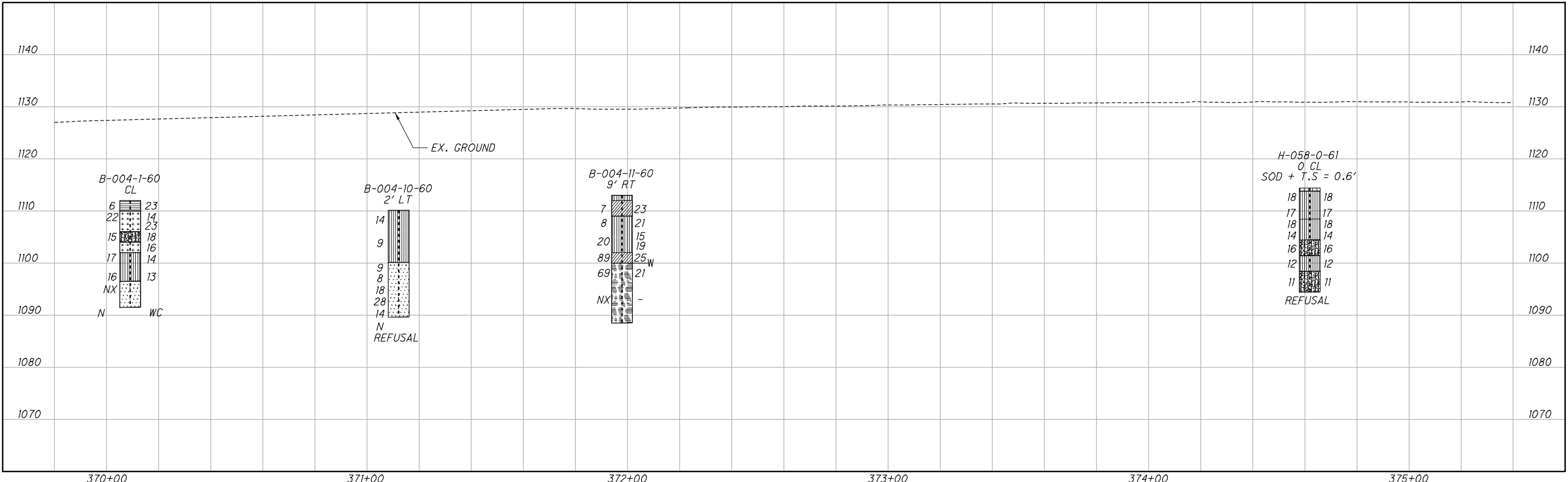
DRAWN SM  
CHECKED PAN

**SOIL PROFILE**  
**STA. 364+20.00 TO STA. 369+80.00 I.R. 77**

**SUM-76-8.42**  
**SUM-77-9.77**



P:\02329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\02329\_IPI09.dgn Sheet 3/16/2020 11:21:00 AM miutes



HORIZONTAL SCALE IN FEET

DRAWN: SM  
CHECKED: PAN

**SOIL PROFILE**

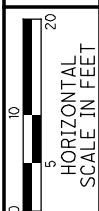
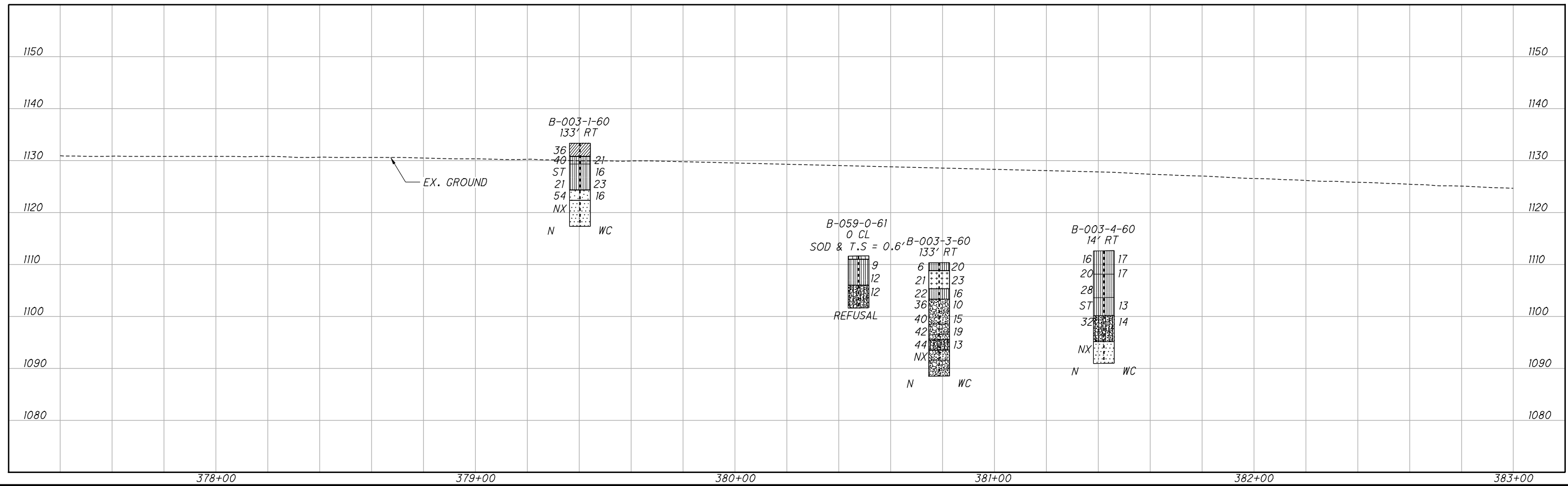
**STA. 369+80.00 TO STA. 375+40.00 I.R. 77**

**SUM-76-8.42**

**SUM-77-9.77**

99

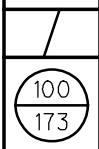
173



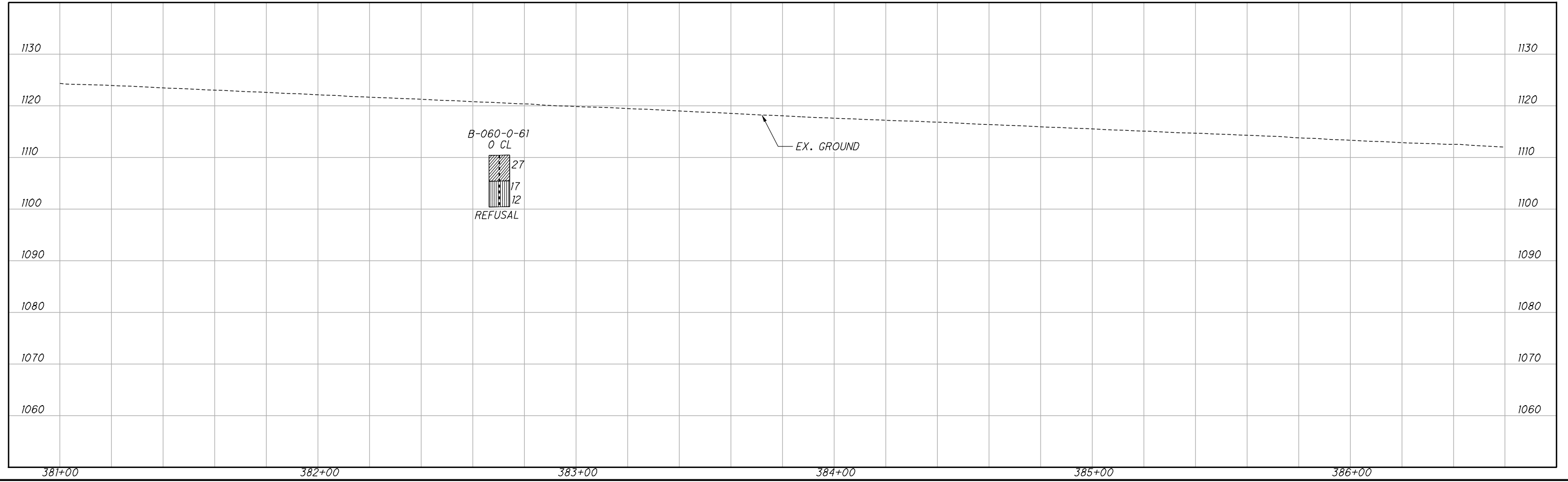
DRAWN: SM  
CHECKED: PAN

**SOIL PROFILE**  
**STA. 375+40.00 TO STA. 381+00.00 I.R. 77**

**SUM-76-8.42**  
**SUM-77-9.77**







MATCH LINE STA. 381+00.00, SEE SHEET XX

MATCH LINE STA. 386+60.00, SEE SHEET XX



DRAWN: SM  
CHECKED: PAN

**SOIL PROFILE**  
**STA. 381+00.00 TO STA. 386+60.00 I.R. 77**

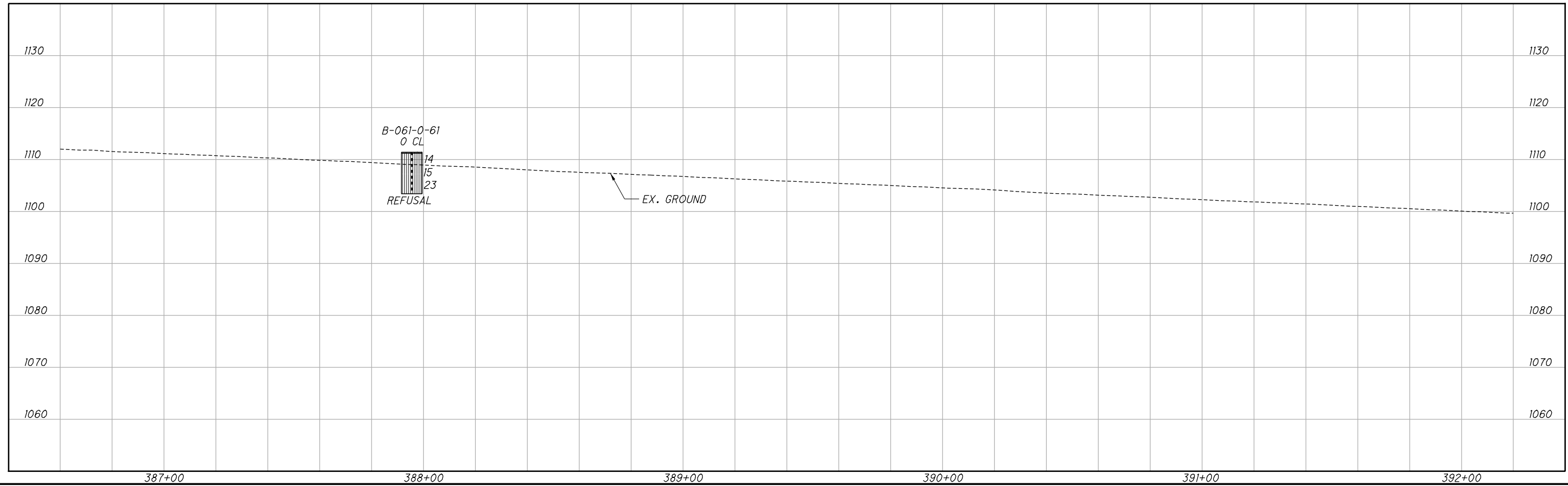
**SUM-76-8.42**  
**SUM-77-9.77**

101  
173



MATCH LINE STA. 386+60.00, SEE SHEET XX

MATCH LINE STA. 392+20.00, SEE SHEET XX



DRAWN SM  
CHECKED PAN

**SOIL PROFILE**  
**STA. 386+60.00 TO STA. 392+20.00 I.R. 77**

**SUM-76-8.42**  
**SUM-77-9.77**

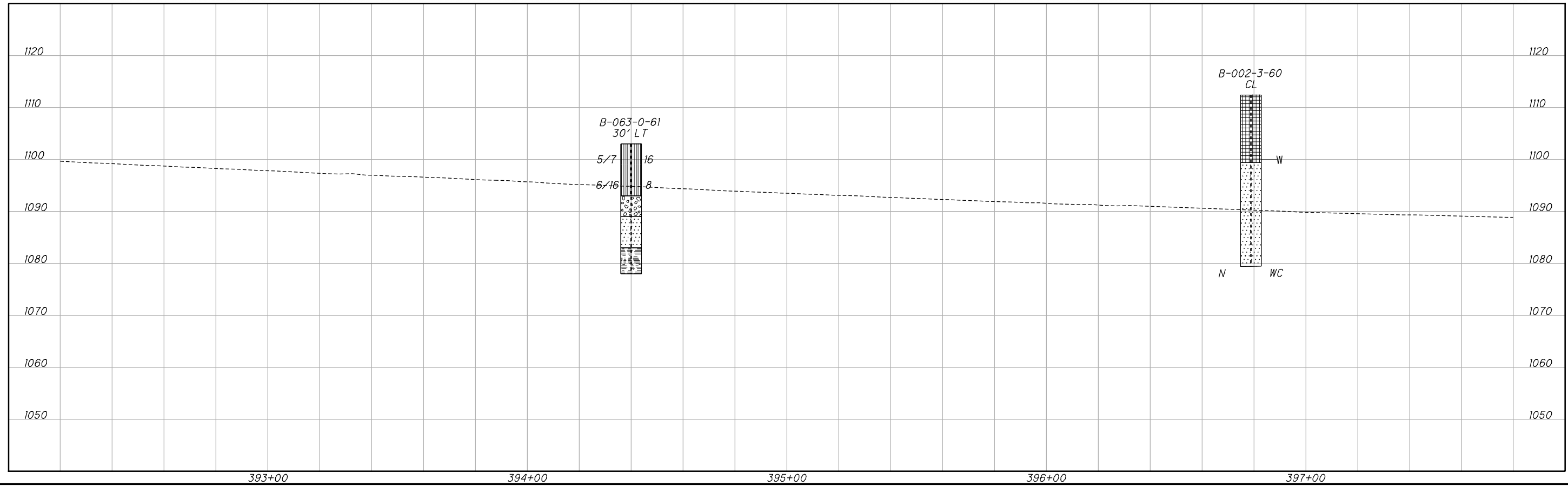
102  
173





MATCH LINE STA. 392+20.00, SEE SHEET XX

MATCH LINE STA. 397+80.00, SEE SHEET XX



DRAWN: SM  
CHECKED: PAN

**SOIL PROFILE**  
**STA. 392+20.00 TO STA. 397+80.00 I.R. 77**

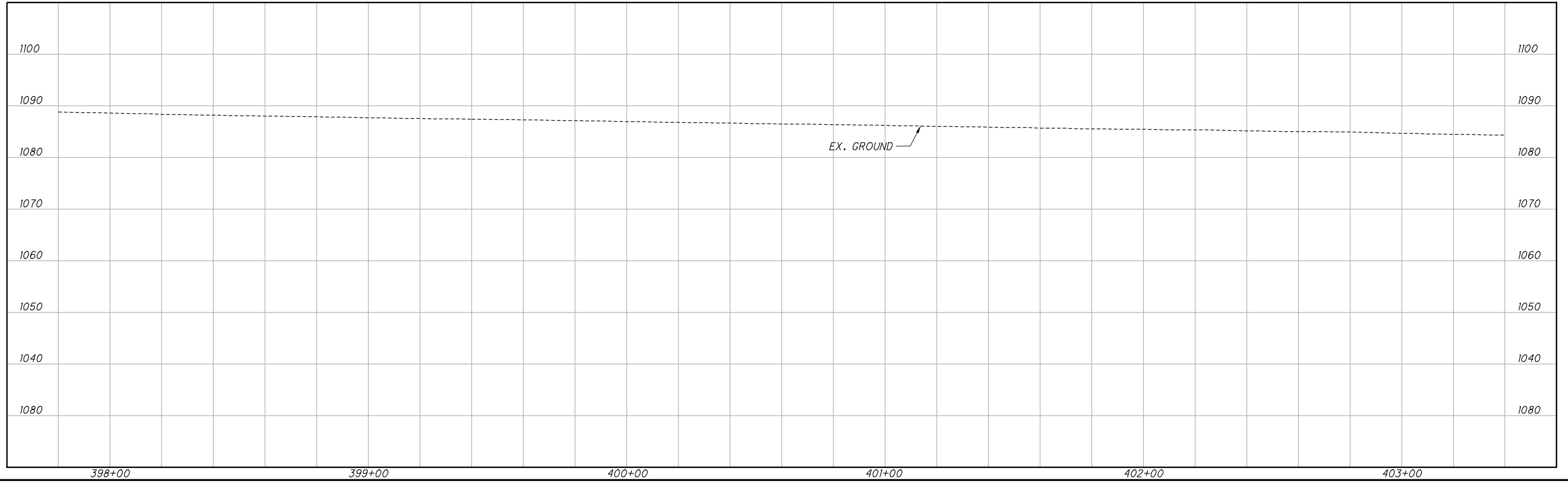
**SUM-76-8.42**  
**SUM-77-9.77**

103  
173



MATCH LINE STA. 392+80.00, SEE SHEET XX

MATCH LINE STA. 403+40.00, SEE SHEET XX



DRAWN SM  
CHECKED PAN

**SOIL PROFILE**  
**STA. 397+80.00 TO STA. 403+40.00 I.R. 77**

**SUM-76-8.42**  
**SUM-77-9.77**

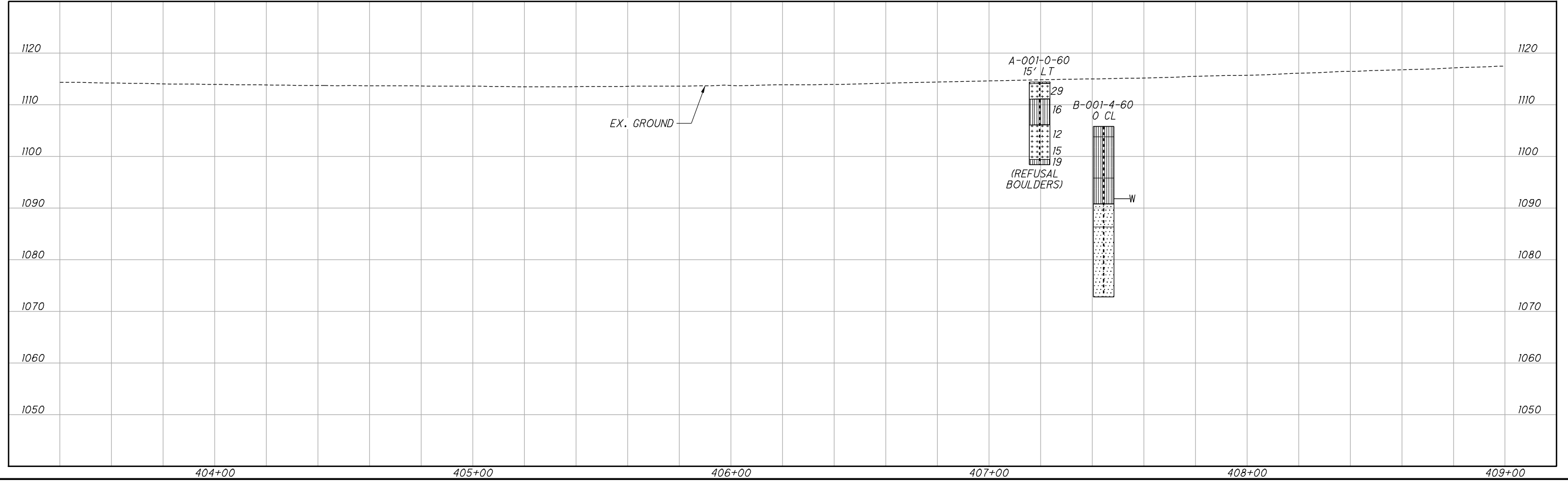


MATCH LINE STA. 403+40.00, SEE SHEET XX



DRAWN SM  
CHECKED PAN

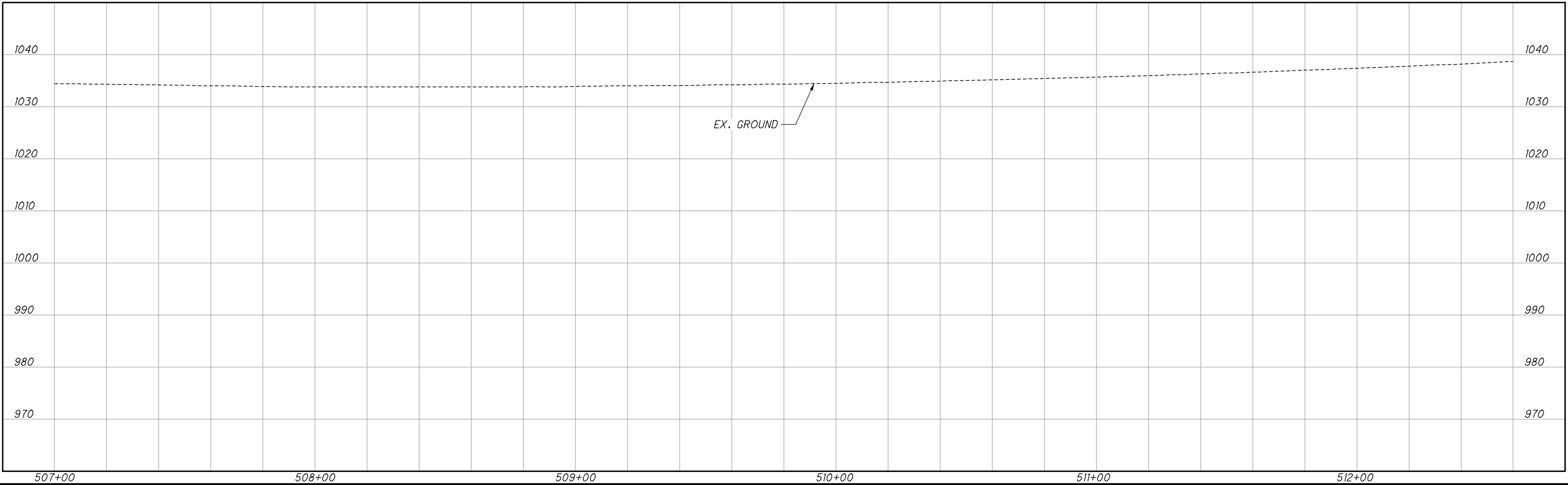
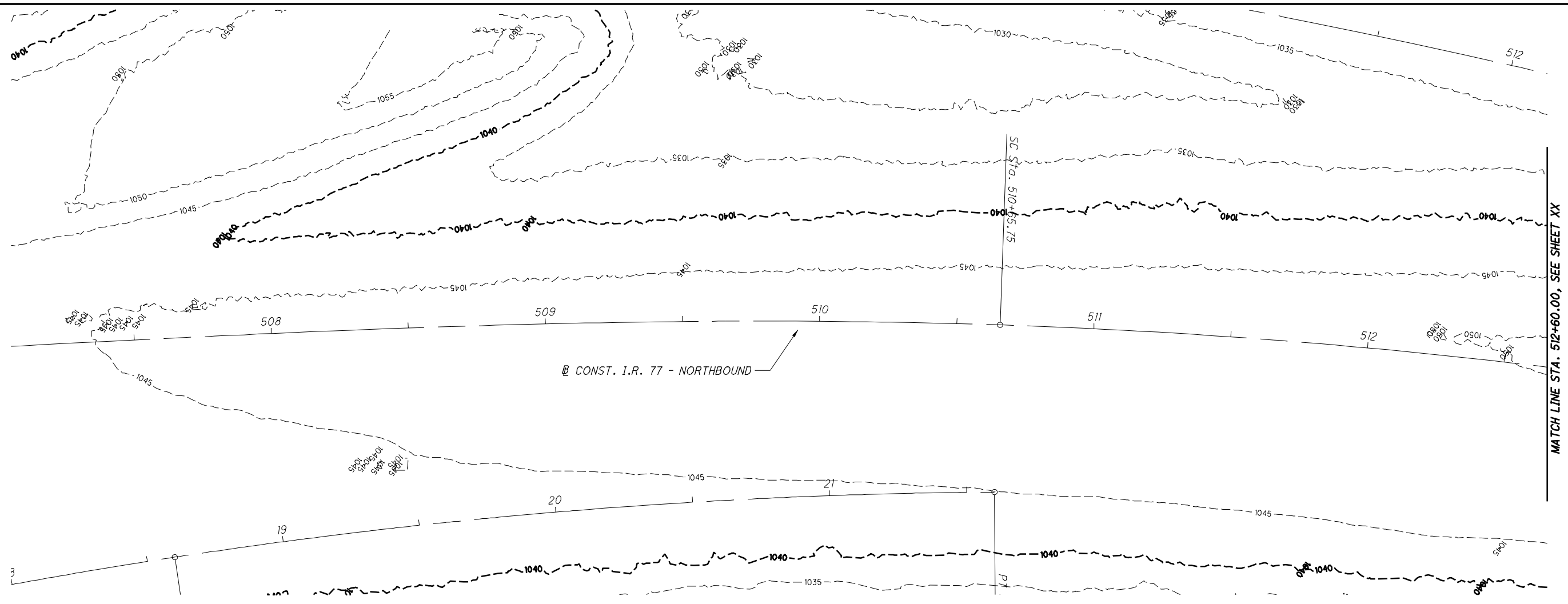
**SOIL PROFILE**  
**STA. 403+40.00 TO END STA. 408+56.57 I.R. 77**



**SUM-76-8.42**  
**SUM-77-9.77**

105  
173

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HORIZONTAL  
SCALE IN FEET

DRAWN

SM

CHECKED

PAN

SUM-76-8.42

SUM-77-9.77

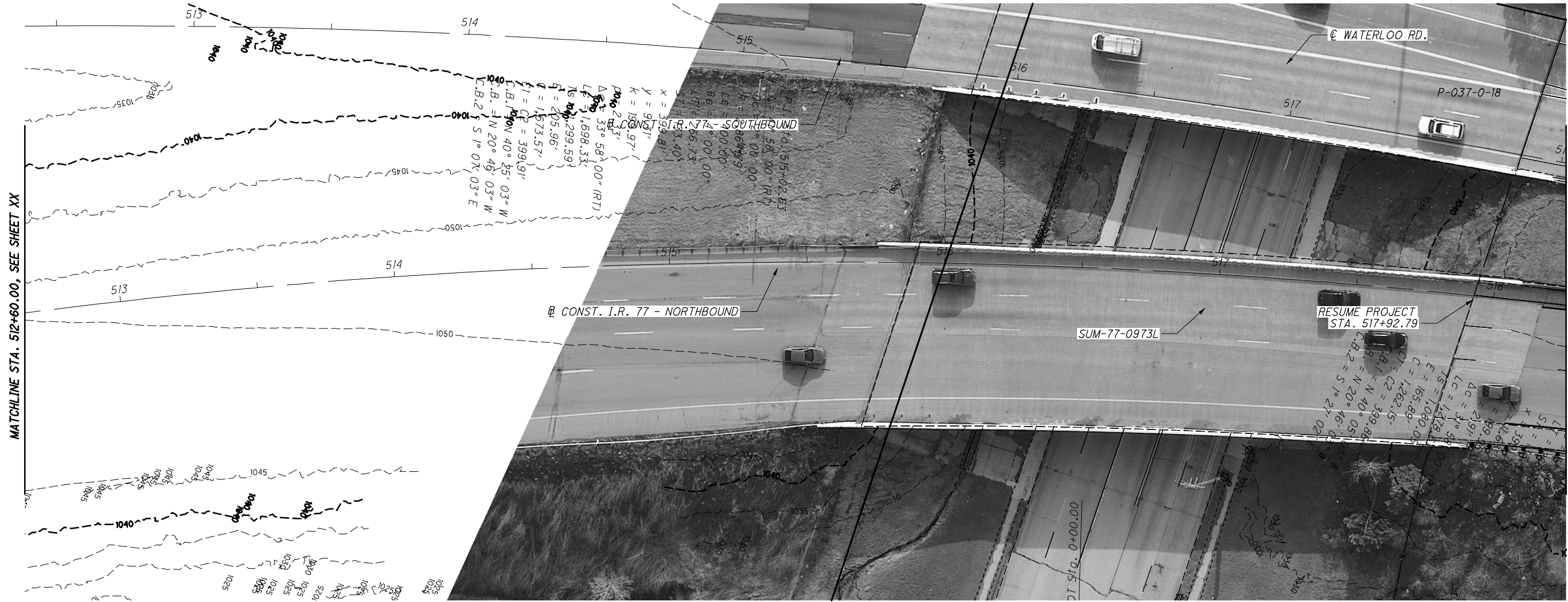
106

173

SOIL PROFILE

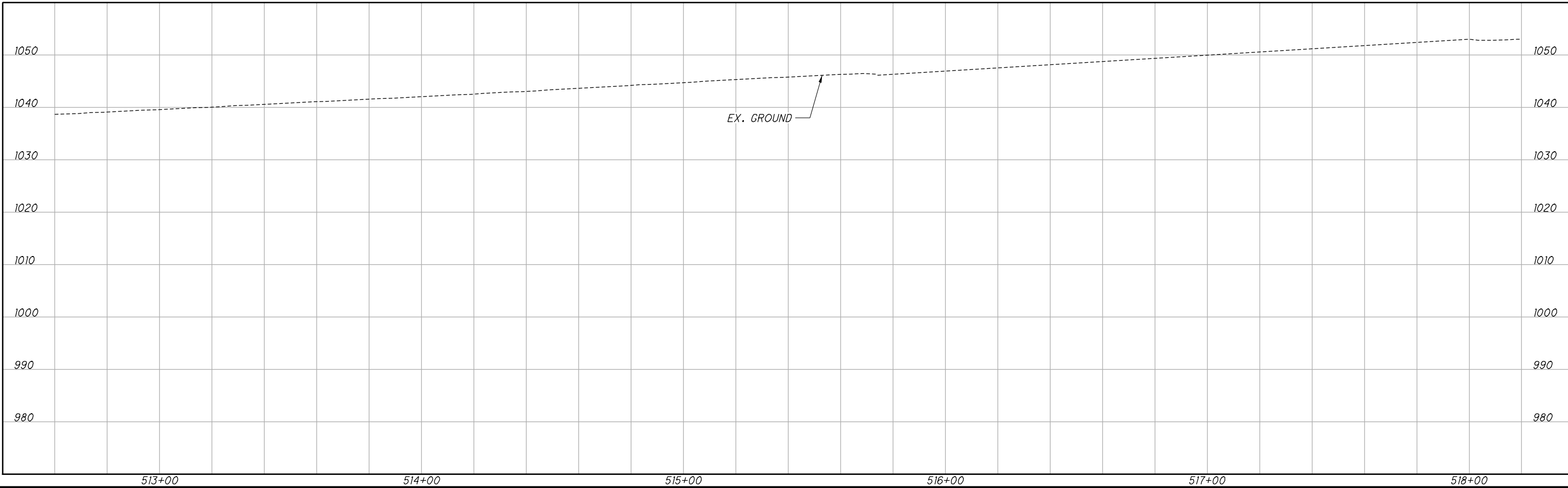
STA. 507+00.00 TO STA. 512+60.00 I.R. 77 NB





MATCHLINE STA. 512+60.00, SEE SHEET XX

MATCHLINE STA. 518+20.00, SEE SHEET XX



DRAWN SM  
CHECKED PAN

**SOIL PROFILE**  
**STA. 512+60.00 TO STA. 518+20.00 I.R. 77 NB**

**SUM-76-8.42**  
**SUM-77-9.77**

107  
173

P:\102329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\102329\_IP203.dgn Sheet 3/16/2020 11:24:50 AM mlutes



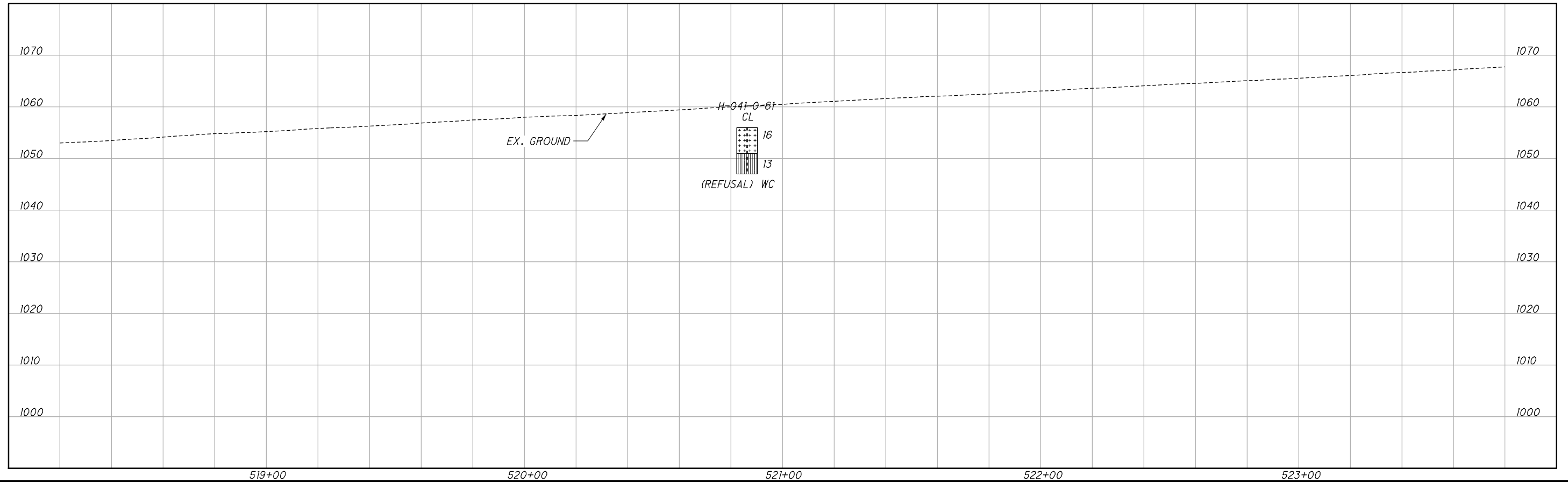
MATCH LINE STA. 518+20.00, SEE SHEE XX

MATCH LINE STA. 523+80.00, SEE SHEE XX



DRAWN SM  
CHECKED PAN

**SOIL PROFILE**  
**STA. 518+20.00 TO STA. 523+80.00 I.R. 77 NB**

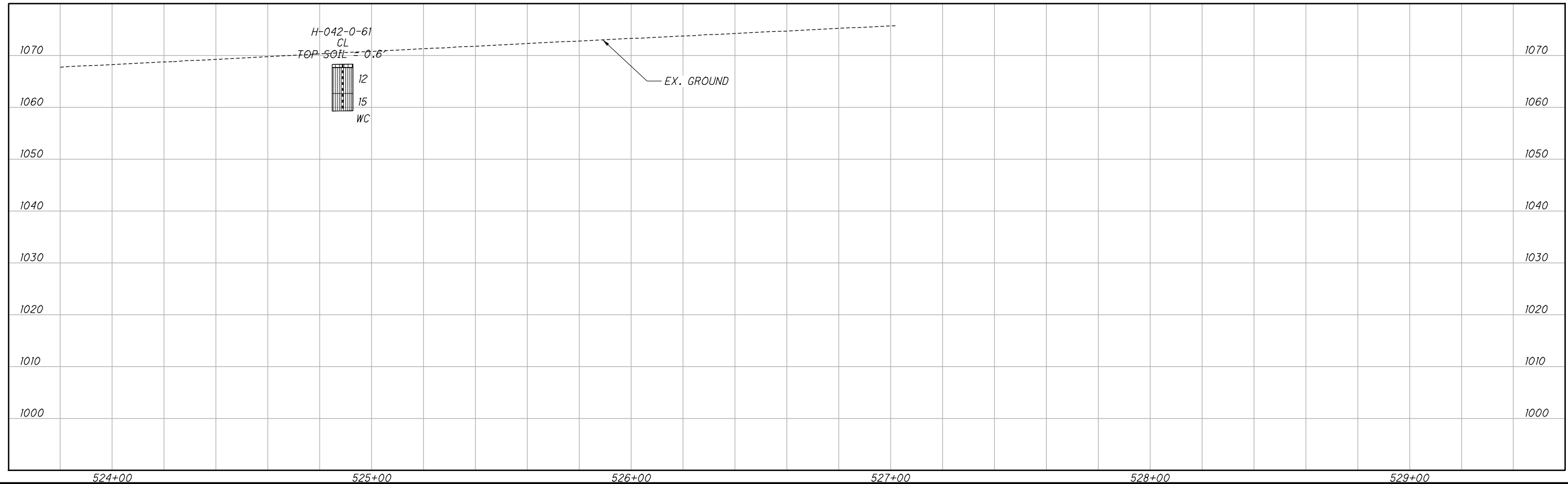


**SUM-76-8.42**  
**SUM-77-9.77**

108  
173



MATCH LINE STA. 523+80.00, SEE SHEE XX



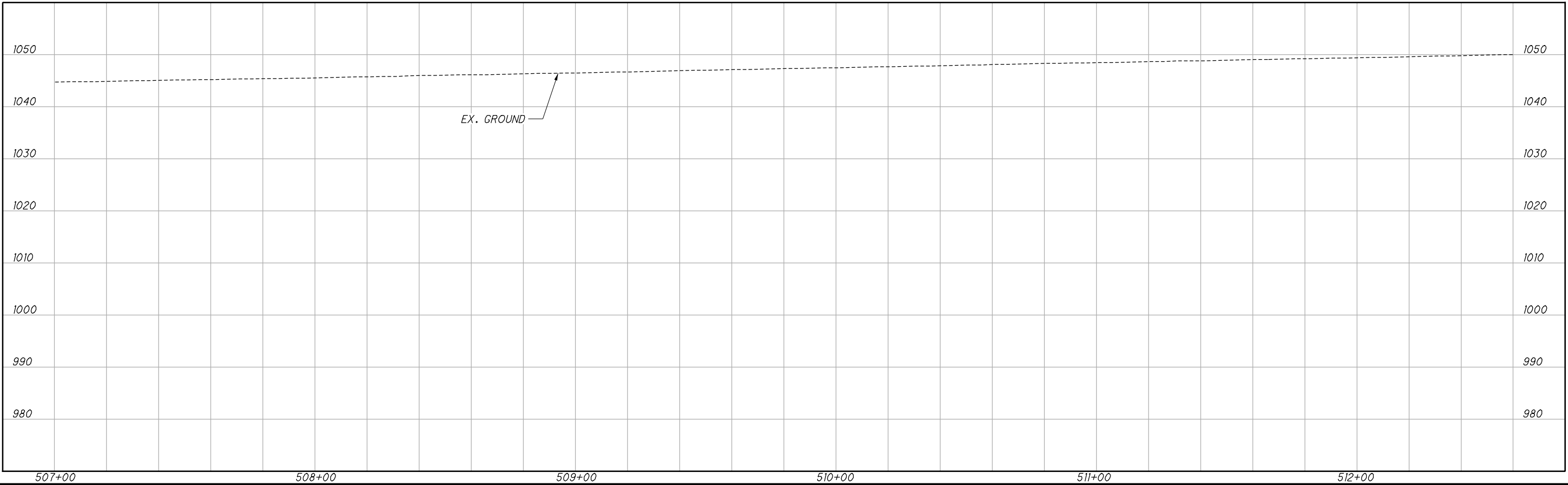
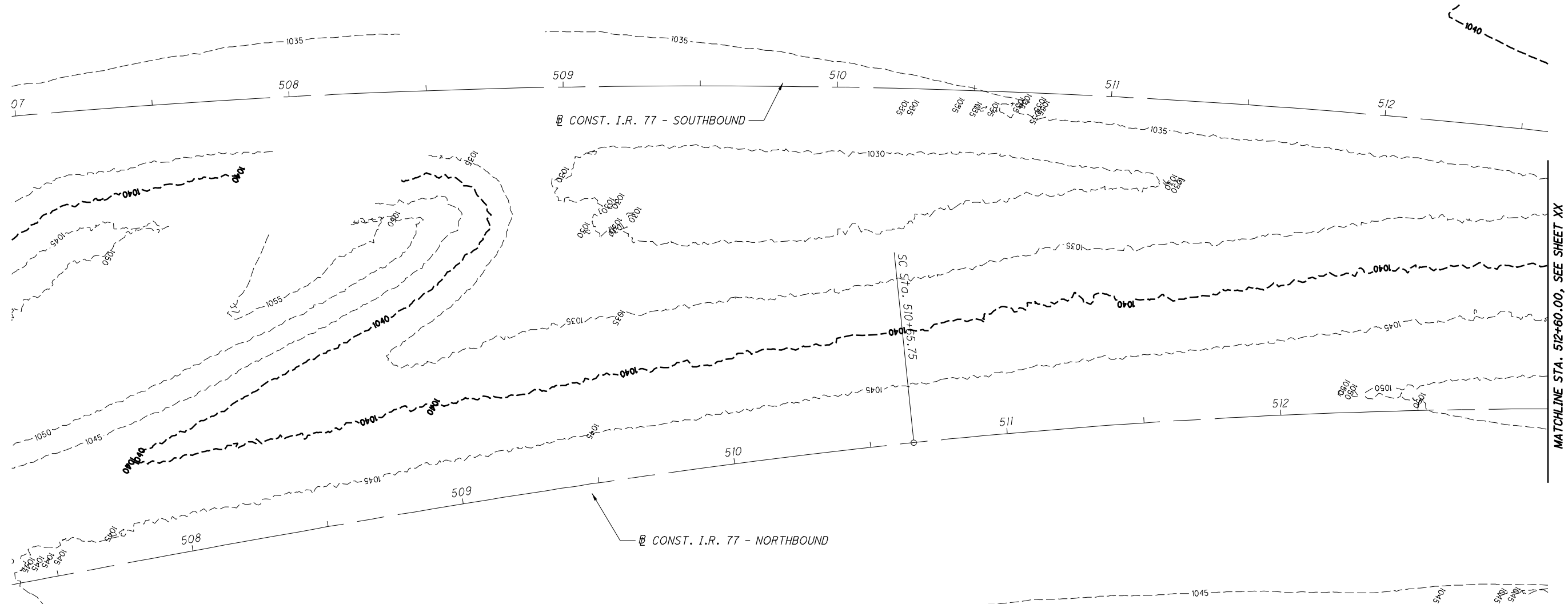
DRAWN: SM  
CHECKED: PAN

**SOIL PROFILE**  
**STA. 523+80.00 TO STA. 527+00.00 I.R. 77 NB**

**SUM-76-8.42**  
**SUM-77-9.77**



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**SOIL PROFILE**

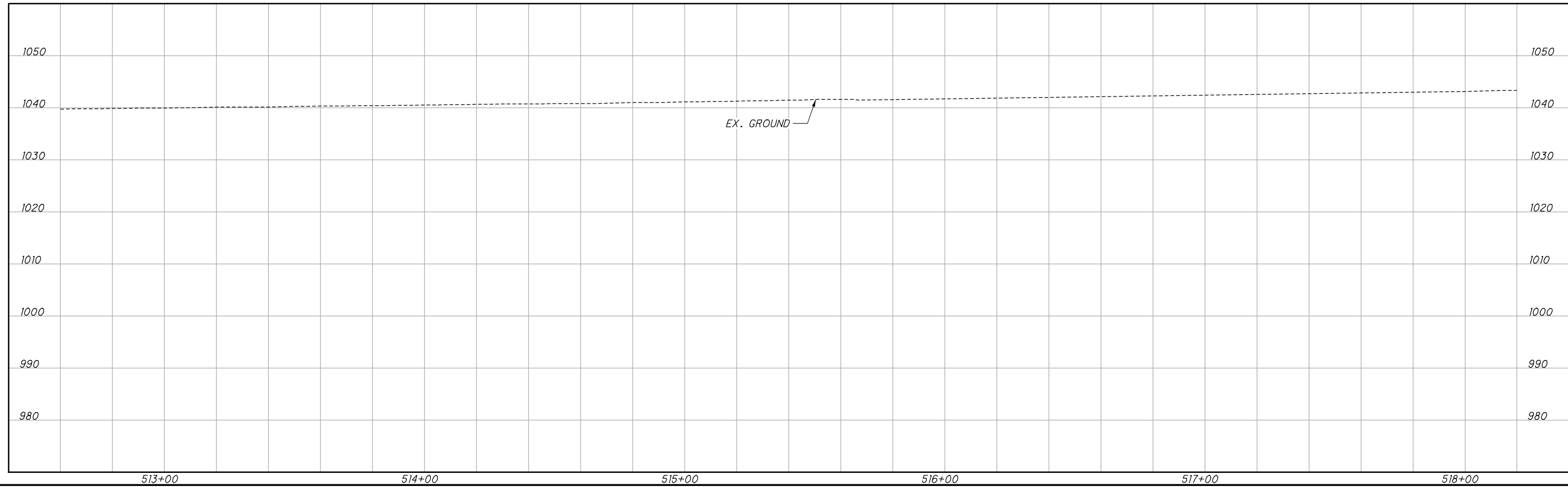
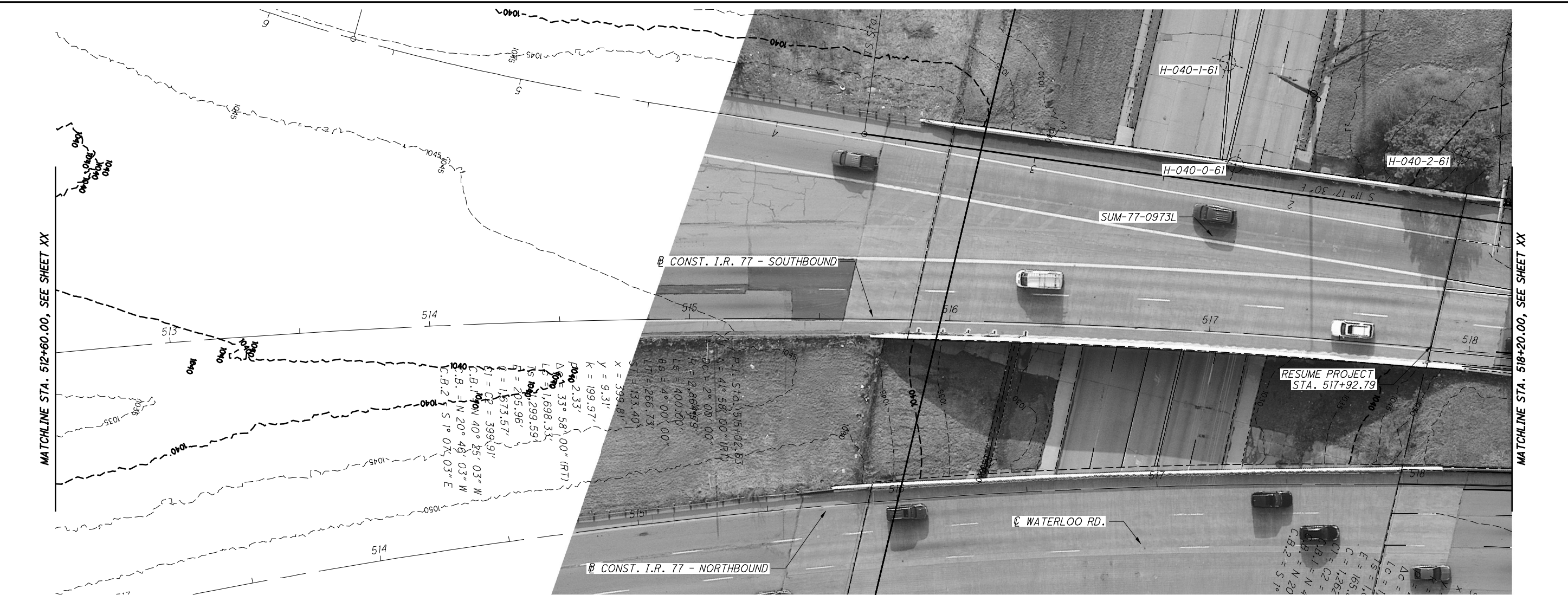
**STA. 507+00.00 TO STA. 512+60.00 I.R. 77 SB**

**SUM-76-8.42**  
**SUM-77-9.77**

DRAWN: SM  
CHECKED: PAN

110  
173





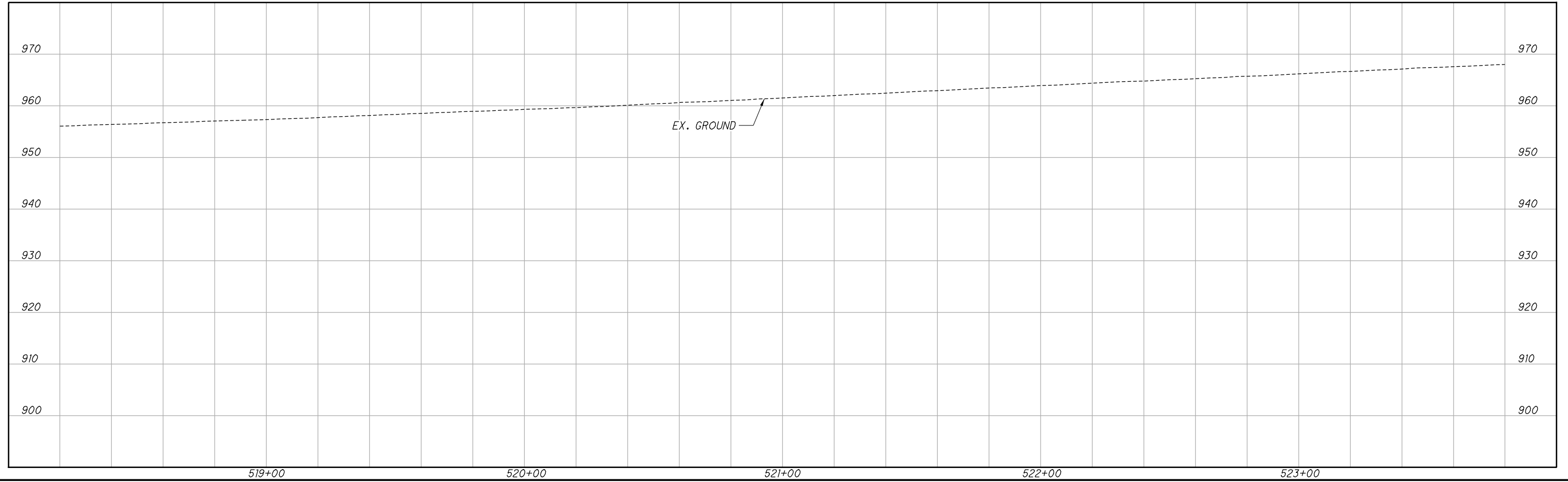
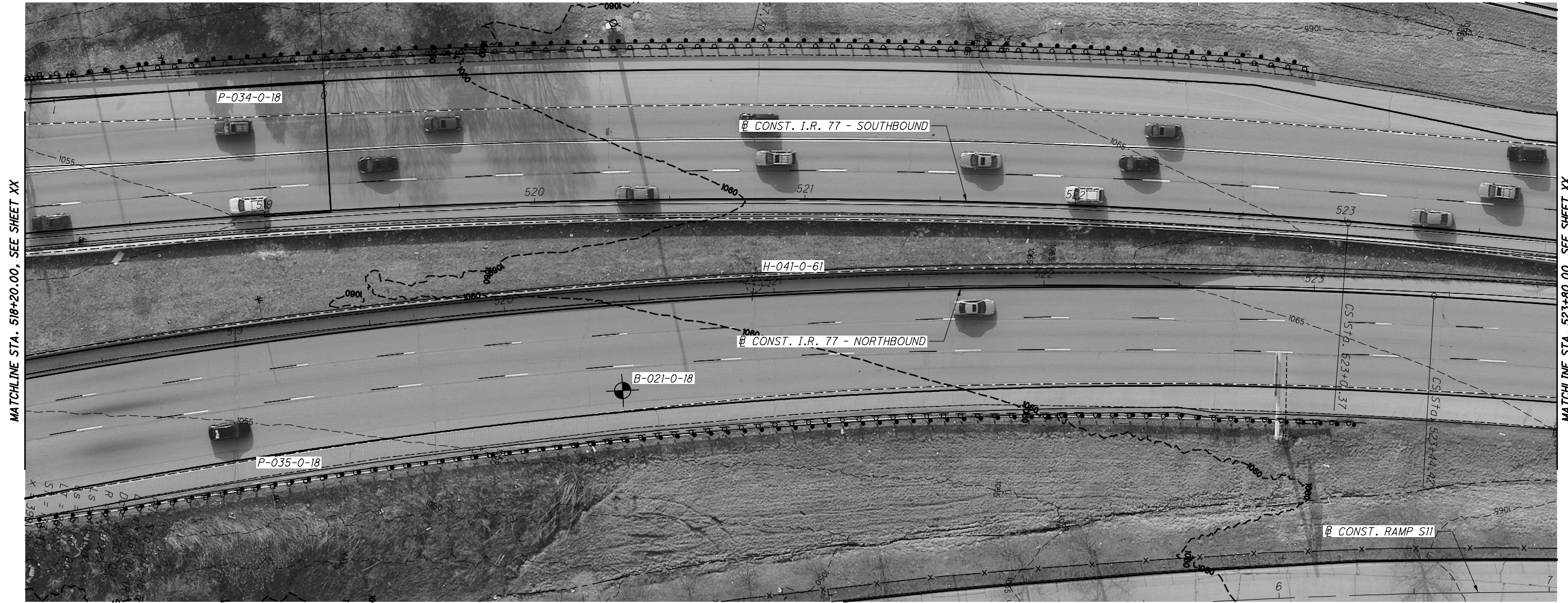
HORIZONTAL SCALE IN FEET

DRAWN: SM  
CHECKED: PAN

**SUM-76-8.42**  
**SUM-77-9.77**

**SOIL PROFILE**  
**STA. 512+60.00 TO STA. 518+20.00 I.R. 77 SB**

111  
173



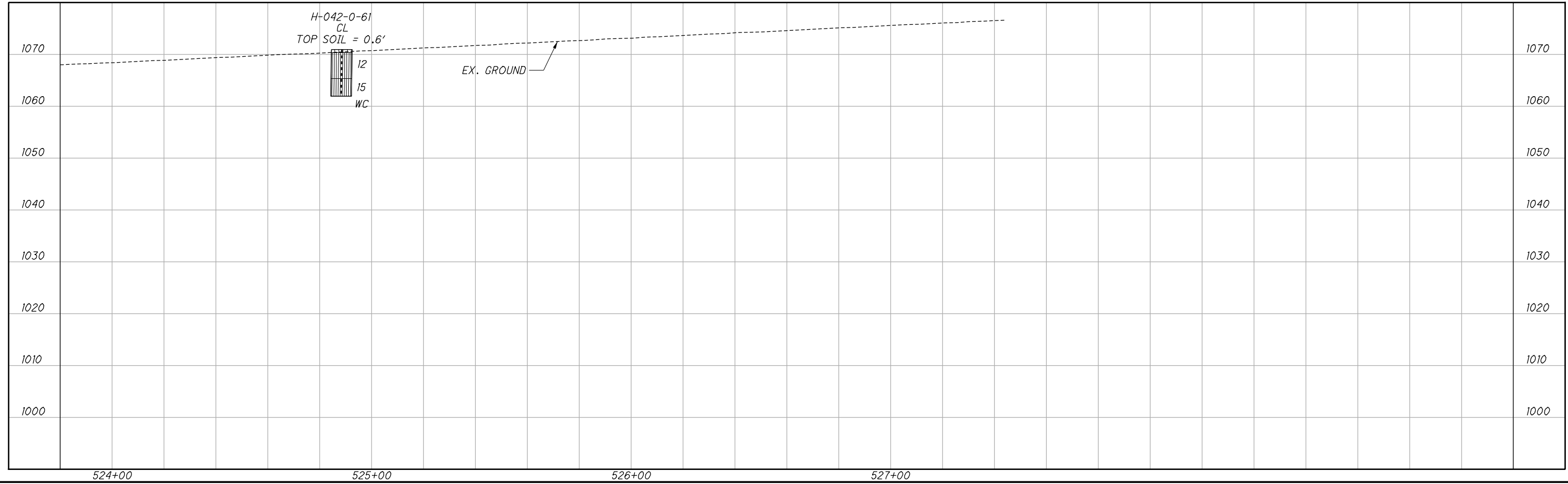
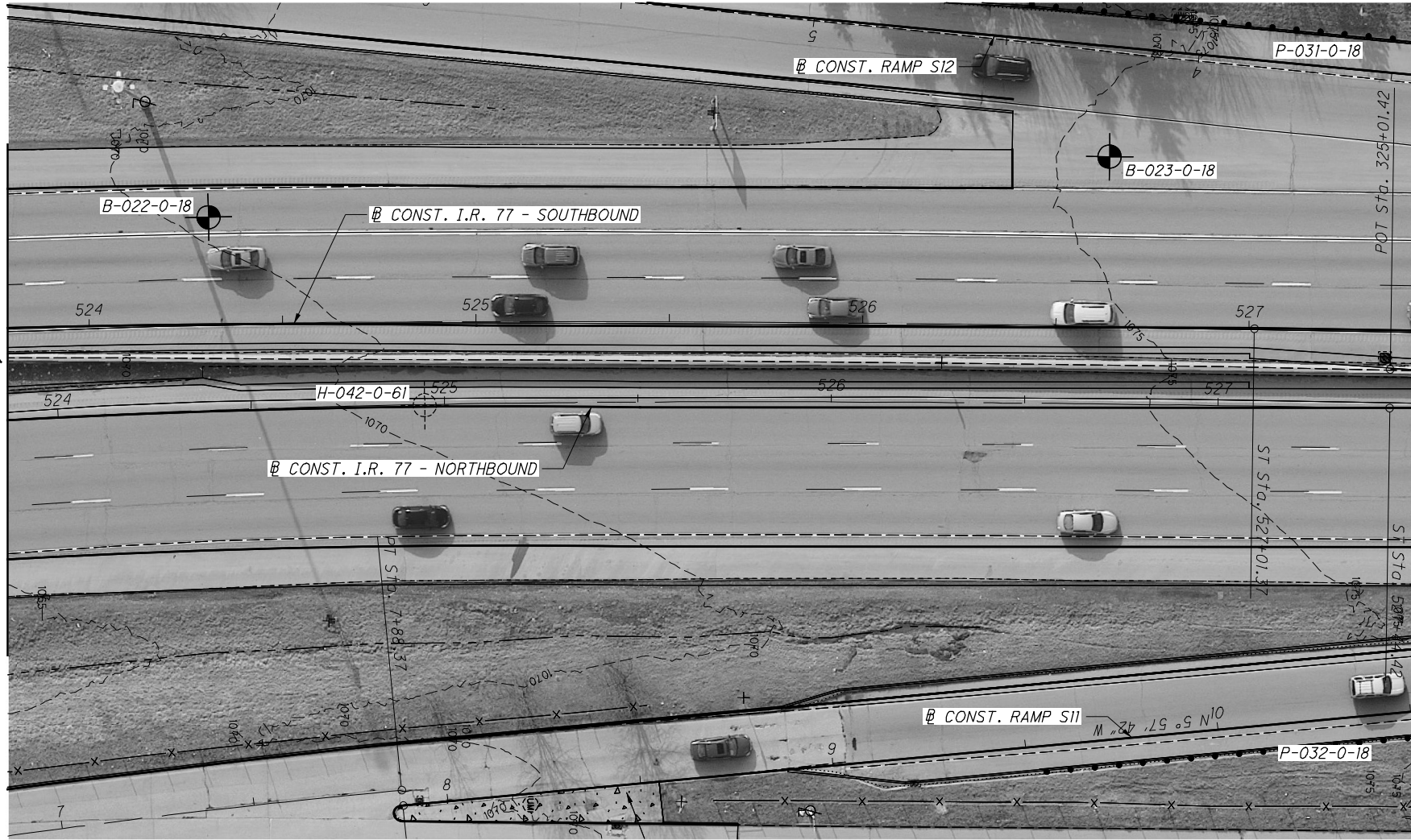
DRAWN: SM  
CHECKED: PAN

**SOIL PROFILE**  
**STA. 518+20.00 TO STA. 523+80.00 I.R. 77 SB**

**SUM-76-8.42**  
**SUM-77-9.77**

112  
173

MATCHLINE STA. 523+80.00, SEE SHEET XX



HORIZONTAL SCALE IN FEET

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DRAWN: SM

CHECKED: PAN

**SUM-76-8.42**

**SUM-77-9.77**

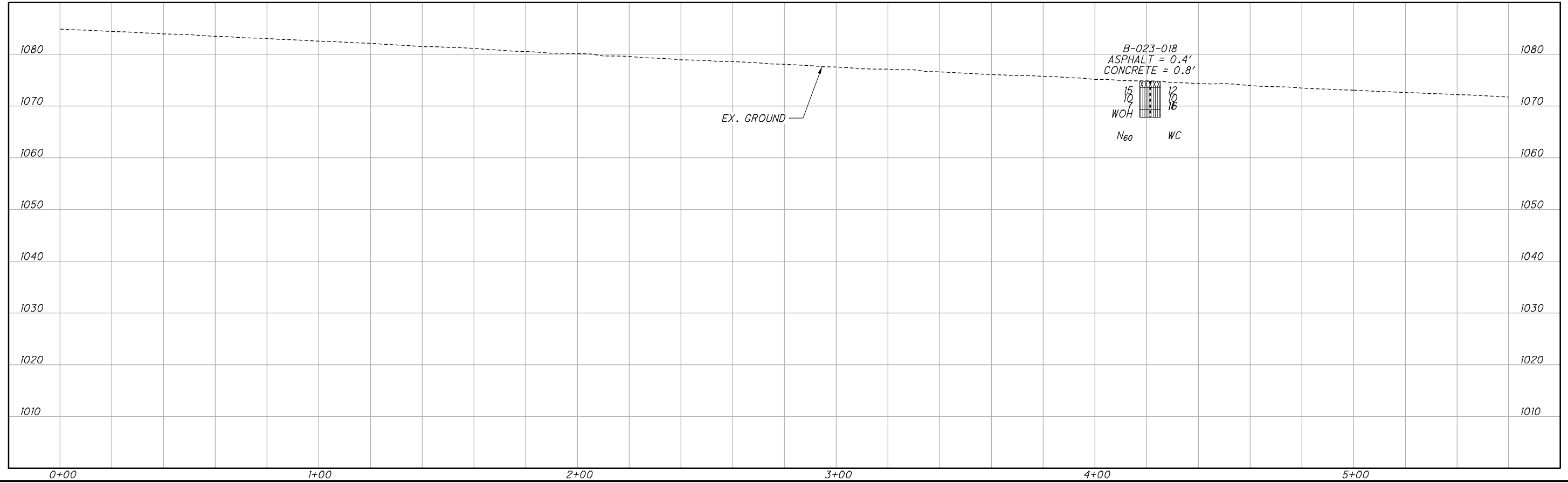
**SOIL PROFILE**

**STA. 523+80.00 TO STA. 527+00.00 I.R. 77 SB**

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DRAWN: SM  
CHECKED: PAN

**SOIL PROFILE**  
**BEGIN STA. 0+00.00 TO STA. 5+60.00 RAMP S12**

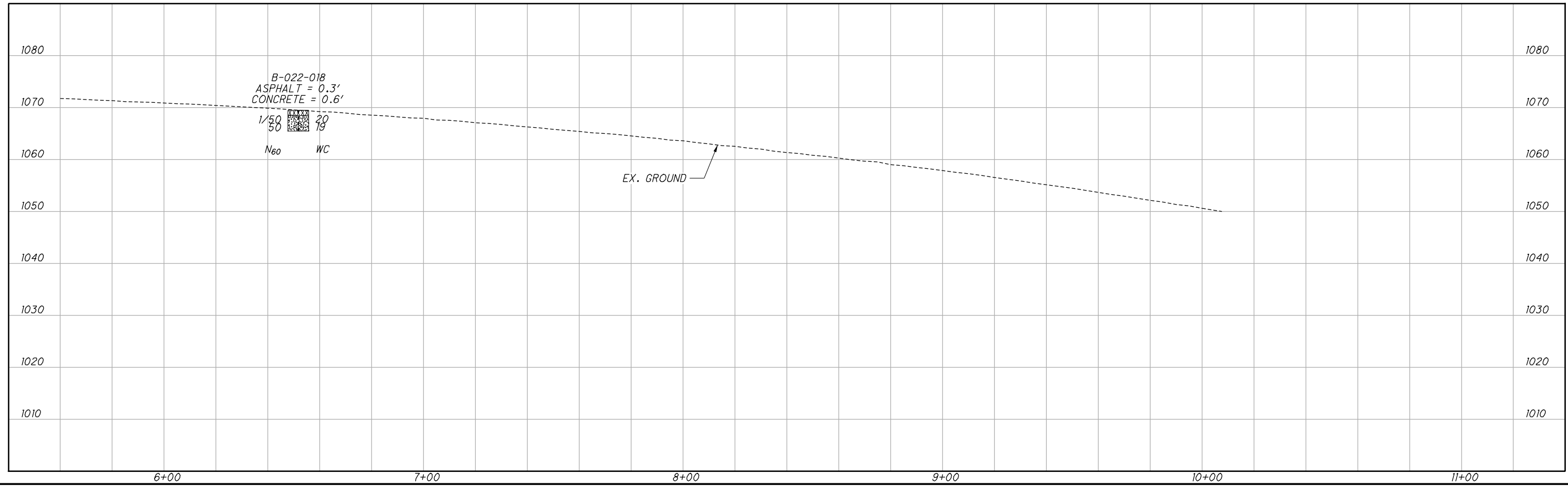
**SUM-76-8.42**  
**SUM-77-9.77**

0 / 0

114  
173



MATCHLINE STA. 5+60.00, SEE SHEET XX



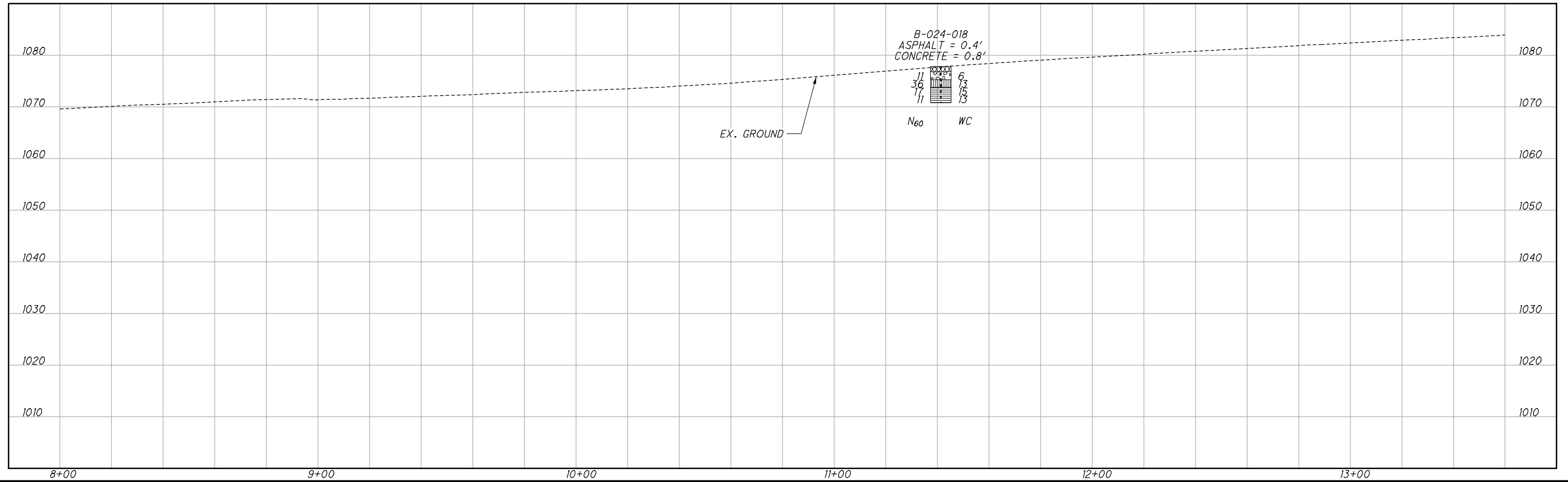
DRAWN: SM  
CHECKED: PAN

**SOIL PROFILE**  
**STA. 5+60.00 TO END STA. 10+07.70 RAMP S12**

**SUM-76-8.42**  
**SUM-77-9.77**



MATCHLINE STA. 13+60.00, SEE SHEET XX

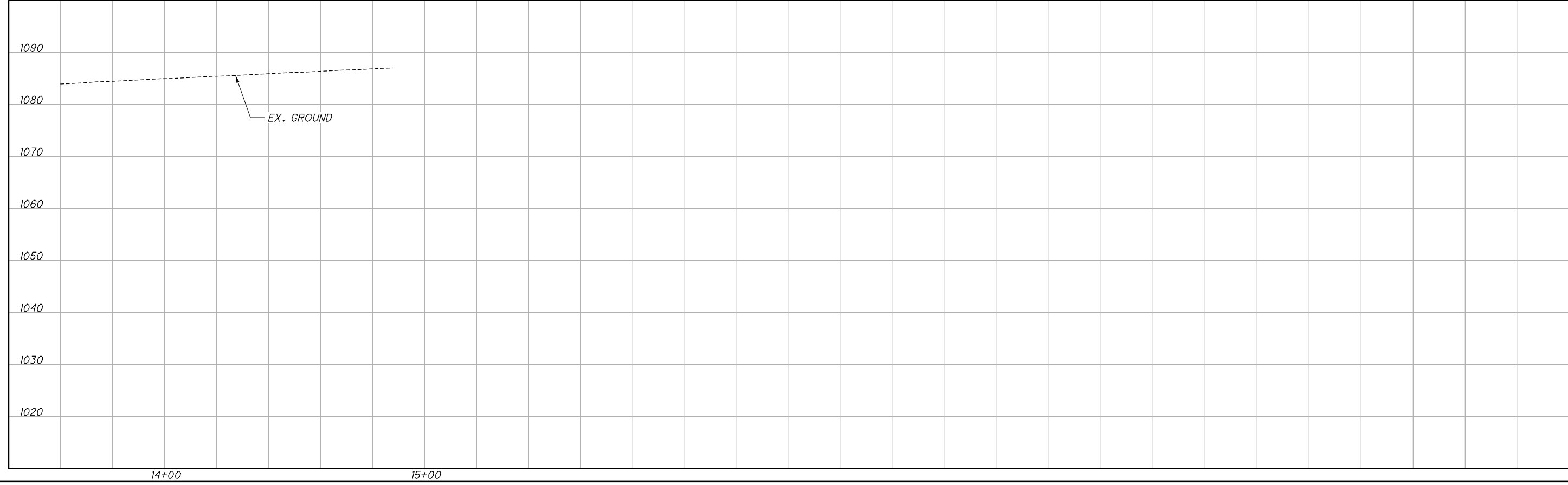


DRAWN: SM  
CHECKED: PAN

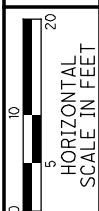
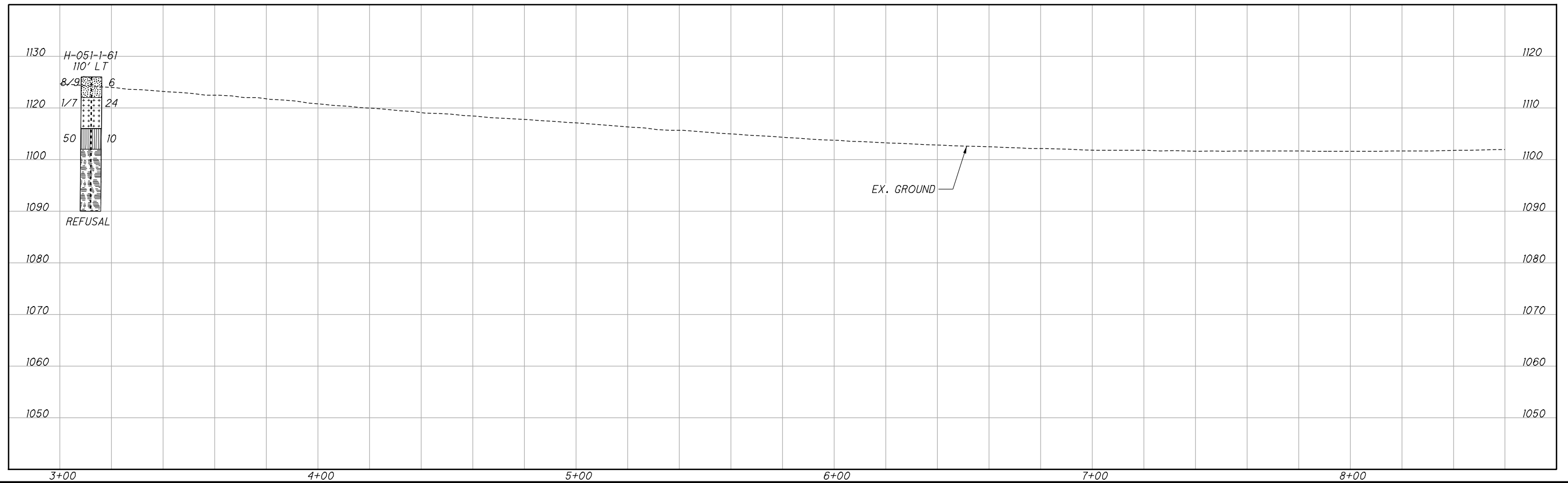
**SOIL PROFILE**  
**BEGIN STA. 8+00.00 TO STA. 13+60.00 RAMP S11**

**SUM-76-8.42**  
**SUM-77-9.77**





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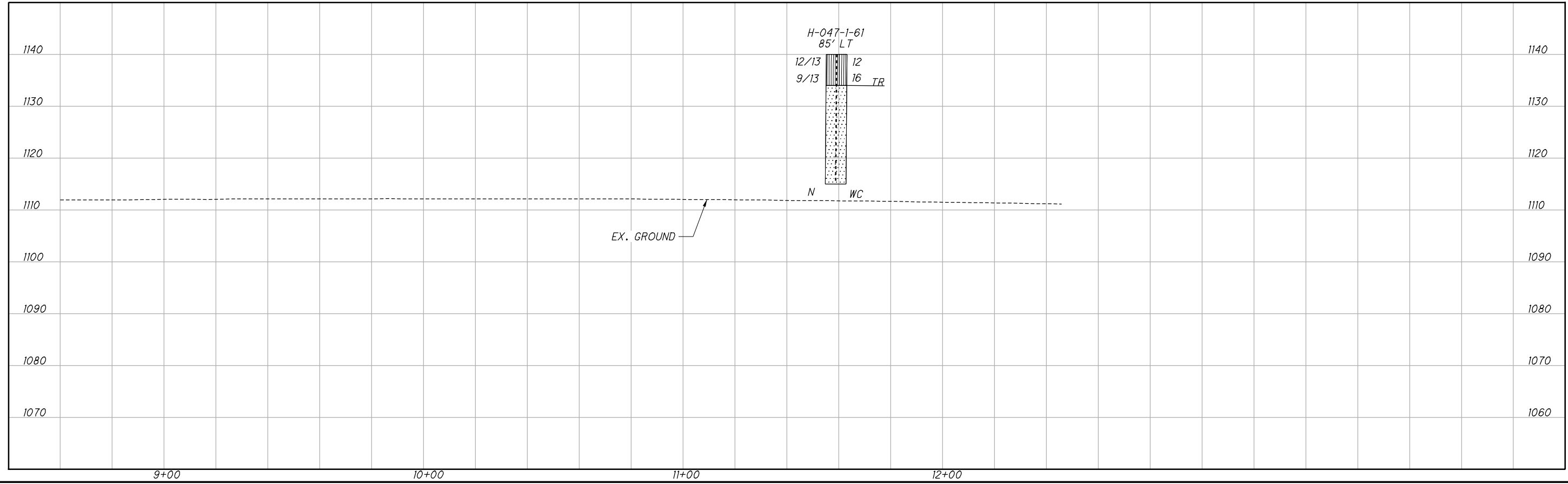
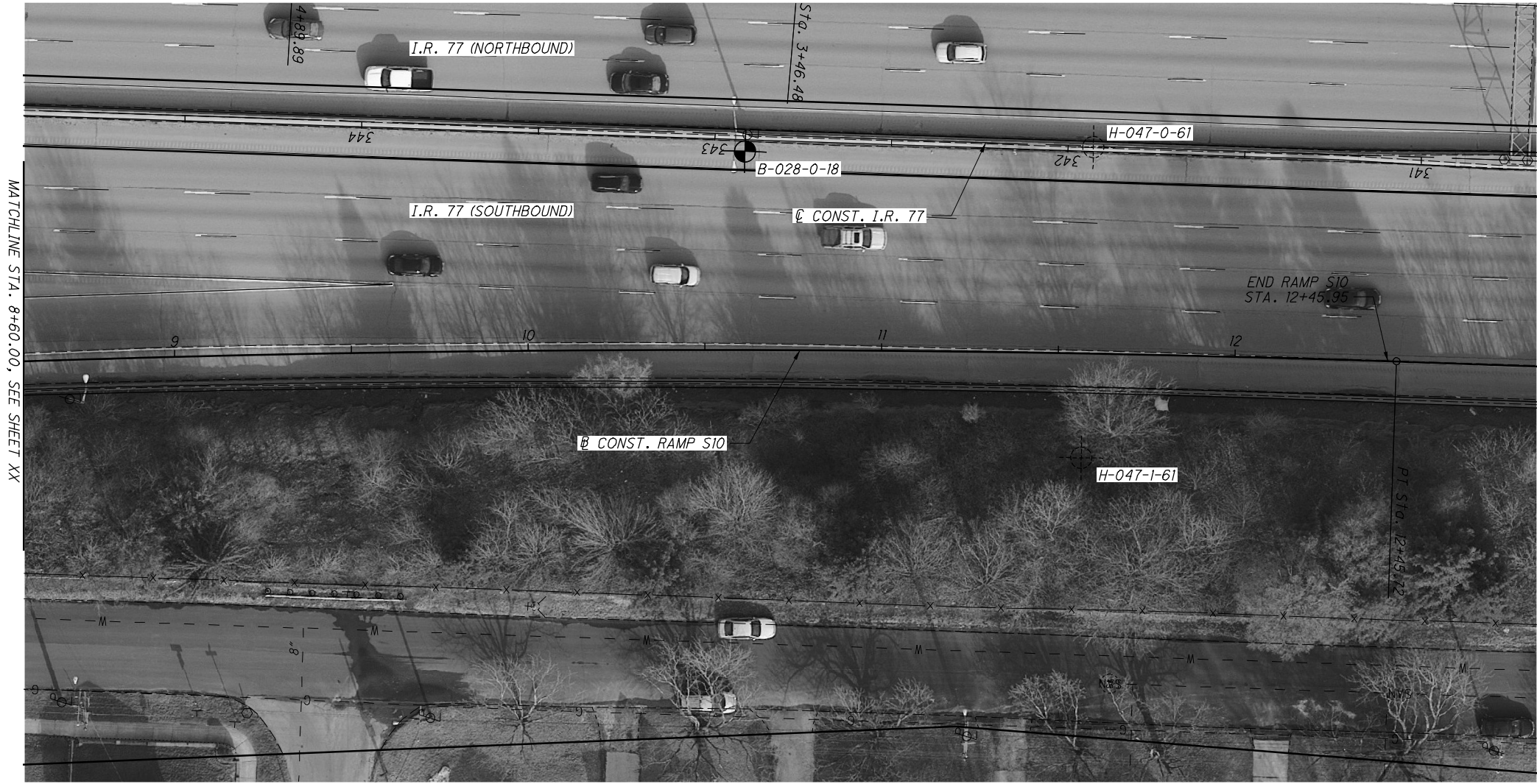


DRAWN: SM  
CHECKED: PAN

**SOIL PROFILE**  
**BEGIN STA. 3+00.00 TO STA. 8+60.00 RAMP S10**

**SUM-76-8.42**  
**SUM-77-9.77**





DRAWN: SM  
CHECKED: PAN

**SOIL PROFILE**  
**STA. 8+60.00 TO END STA. 12+45.95 RAMP S10**

**SUM-76-8.42**  
**SUM-77-9.77**

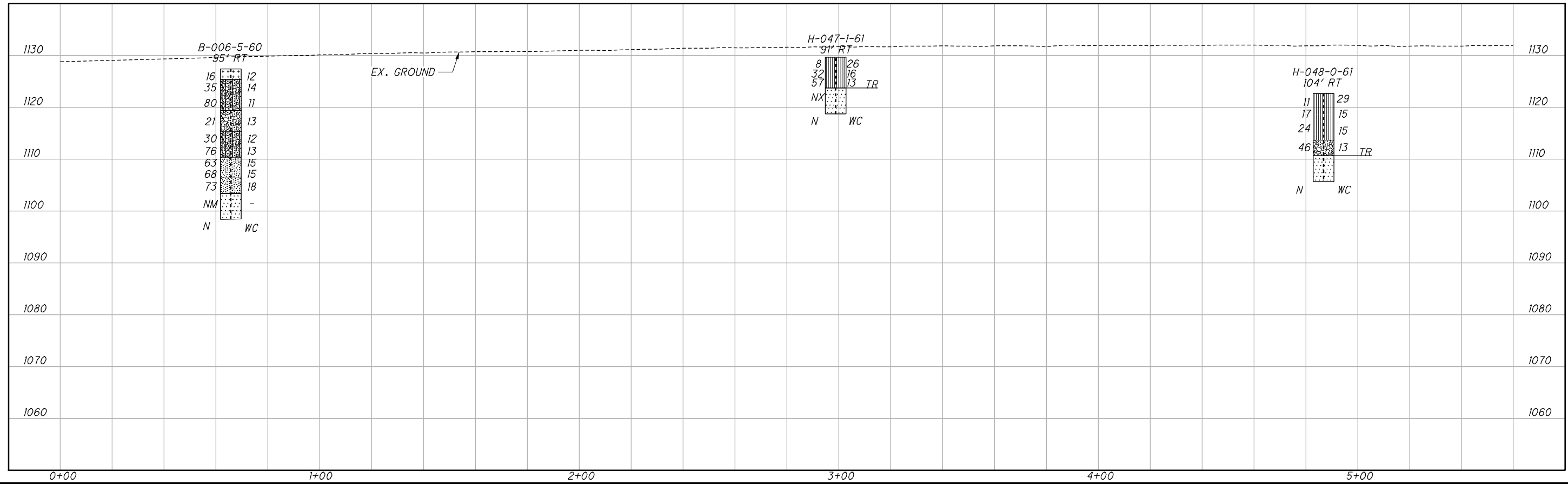
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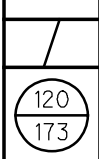
MATCHLINE STA. 5+60.00, SEE SHEET XX



**SOIL PROFILE**  
**BEGIN STA. 0+00.00 TO STA. 5+60.00 RAMP S9**



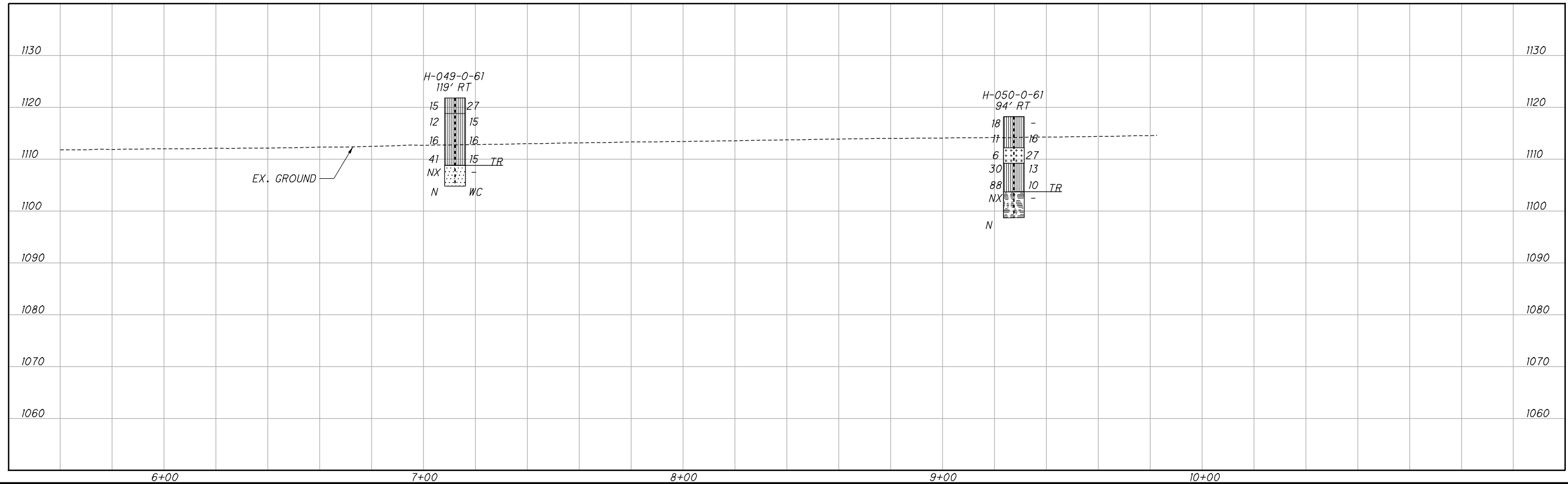
**SUM-76-8.42**  
**SUM-77-9.77**





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MATCHLINE STA. 5+60.00, SEE SHEET XX



**SOIL PROFILE**  
**STA. 5+60.00 TO END STA. 9+82.69 RAMP S9**

**SUM-76-8.42**  
**SUM-77-9.77**

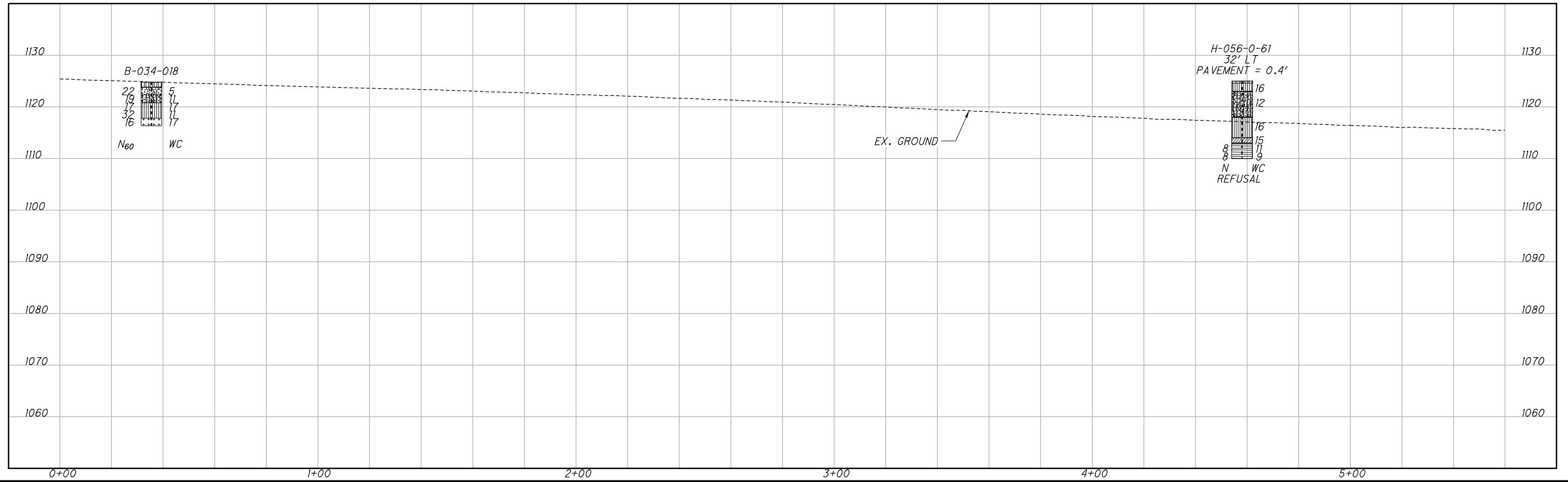
0 / 0

121  
173

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MATCHLINE SEE SHEET 5+60.00, SEE SHEET XX



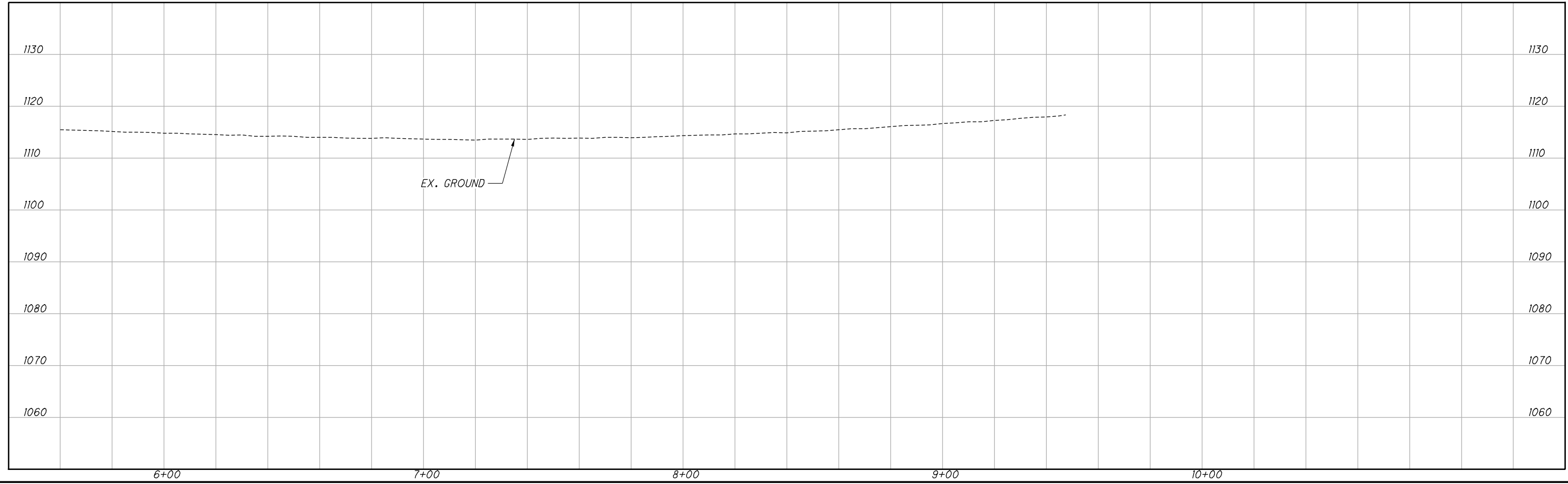
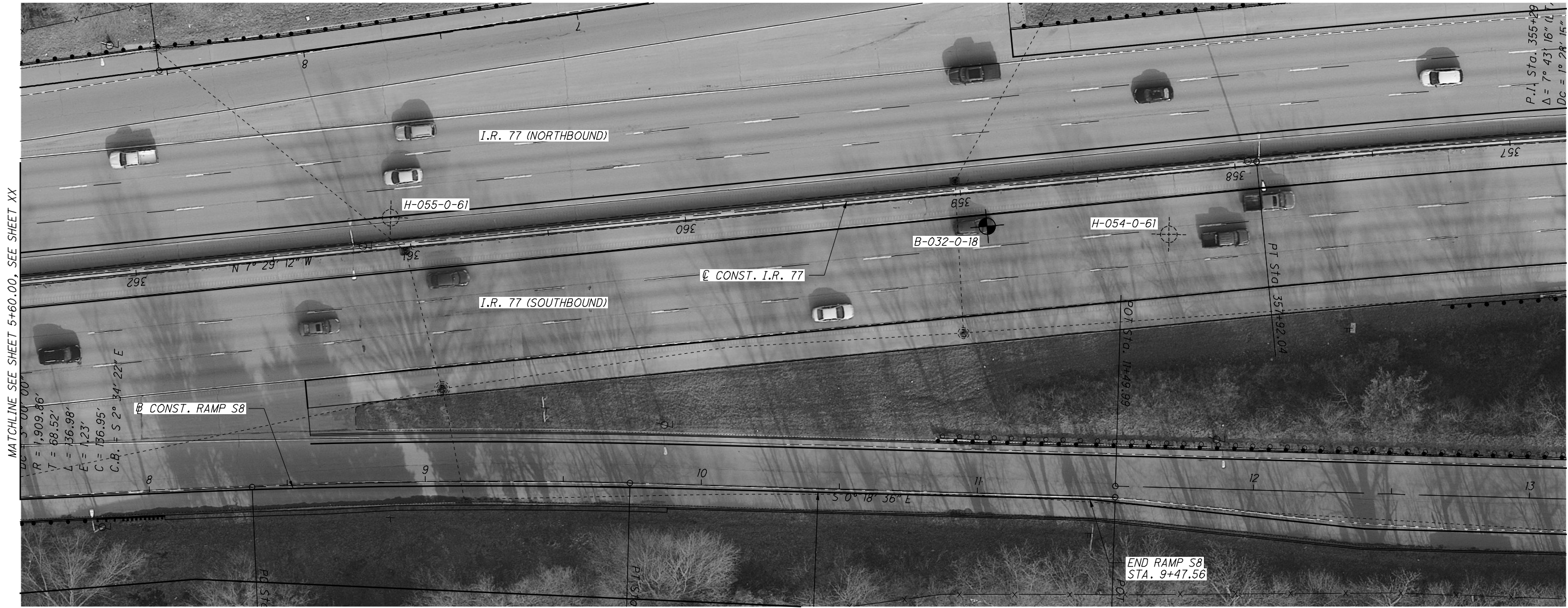
DRAWN SM  
CHECKED PAN

**SOIL PROFILE**  
**BEGIN STA. 0+00.00 TO STA. 5+60.00 RAMP S8**

**SUM-76-8.42**  
**SUM-77-9.77**

122  
173





**SUM-76-8.42**

**SUM-77-9.77**

**SOIL PROFILE**

**STA. 5+60.00 TO END STA. 9+47.56 RAMP S8**

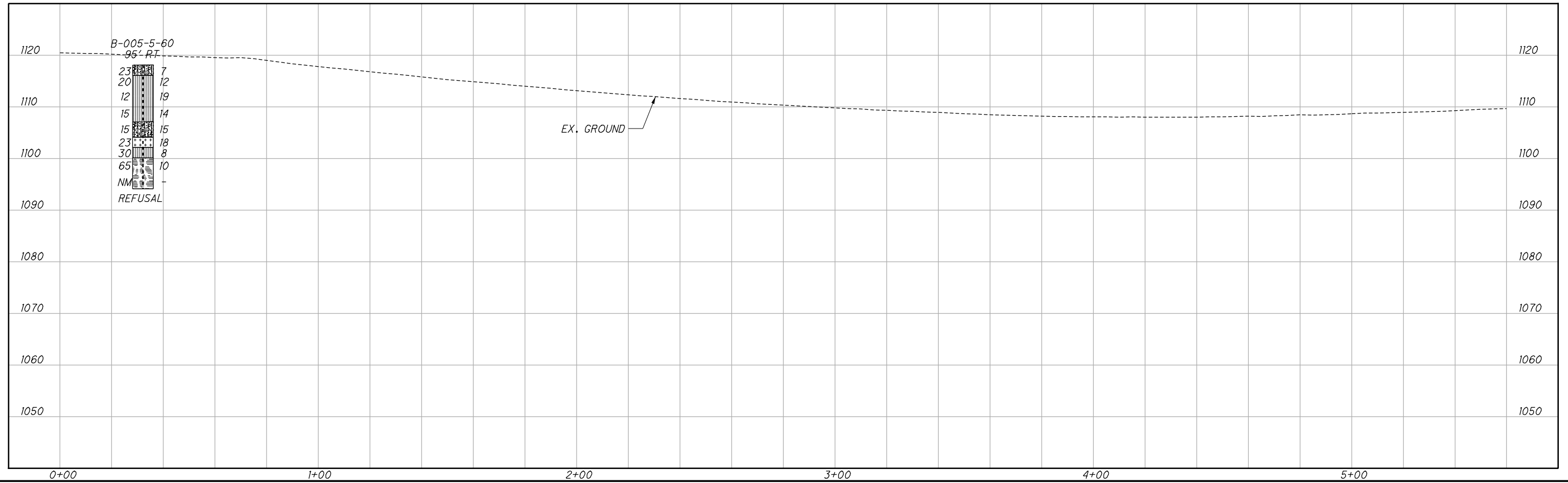
HORIZONTAL SCALE IN FEET

DRAWN: SM

CHECKED: PAN

123

173



10  
5  
0

HORIZONTAL SCALE IN FEET

DRAWN: SM  
CHECKED: PAN

**SOIL PROFILE**

**BEGIN STA. 0+00.00 TO STA. 5+60.00 RAMP S7**

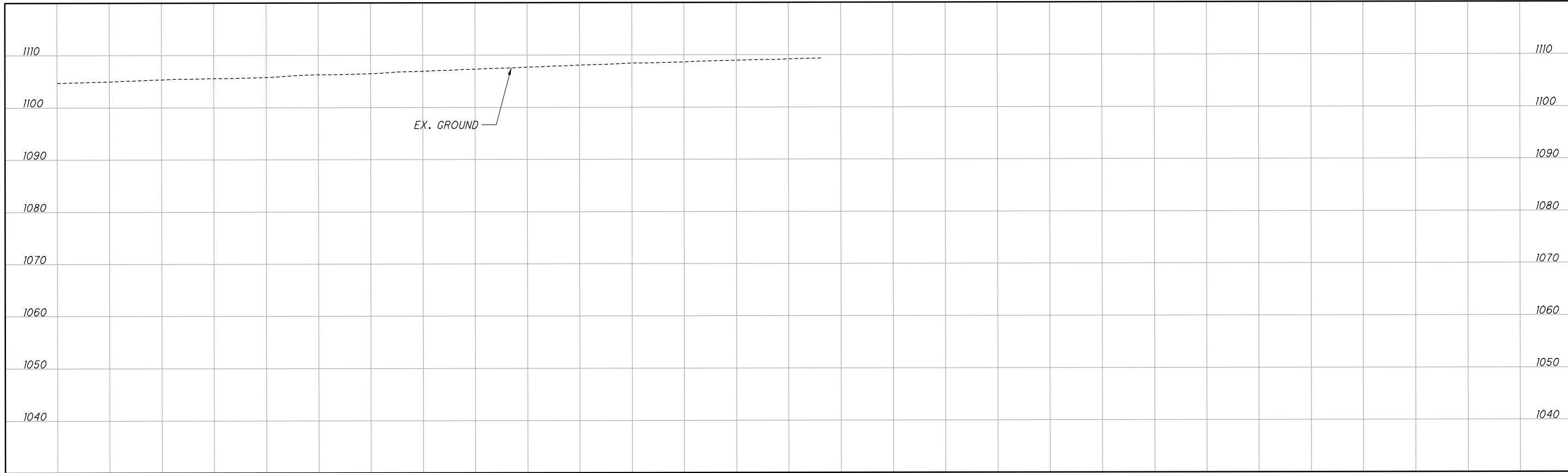
SUM-76-8.42


SUM-77-9.77


124

173









HORIZONTAL SCALE IN FEET

DRAWN  
SM


CHECKED  
PAN

**SUM-76-8.42**

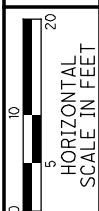
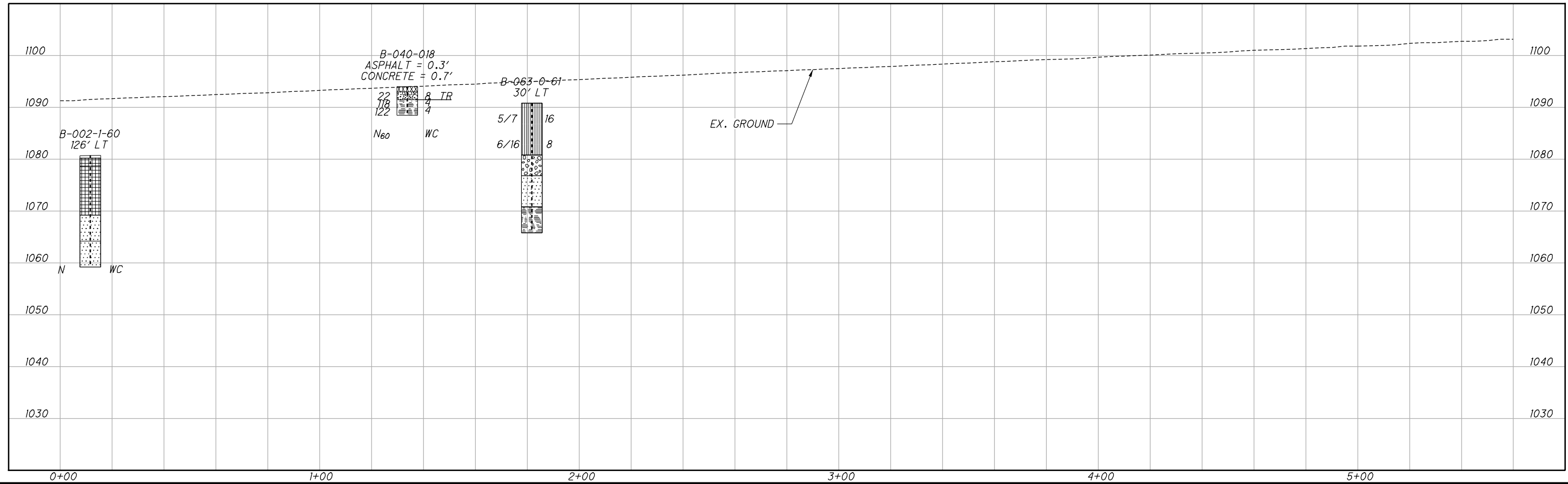
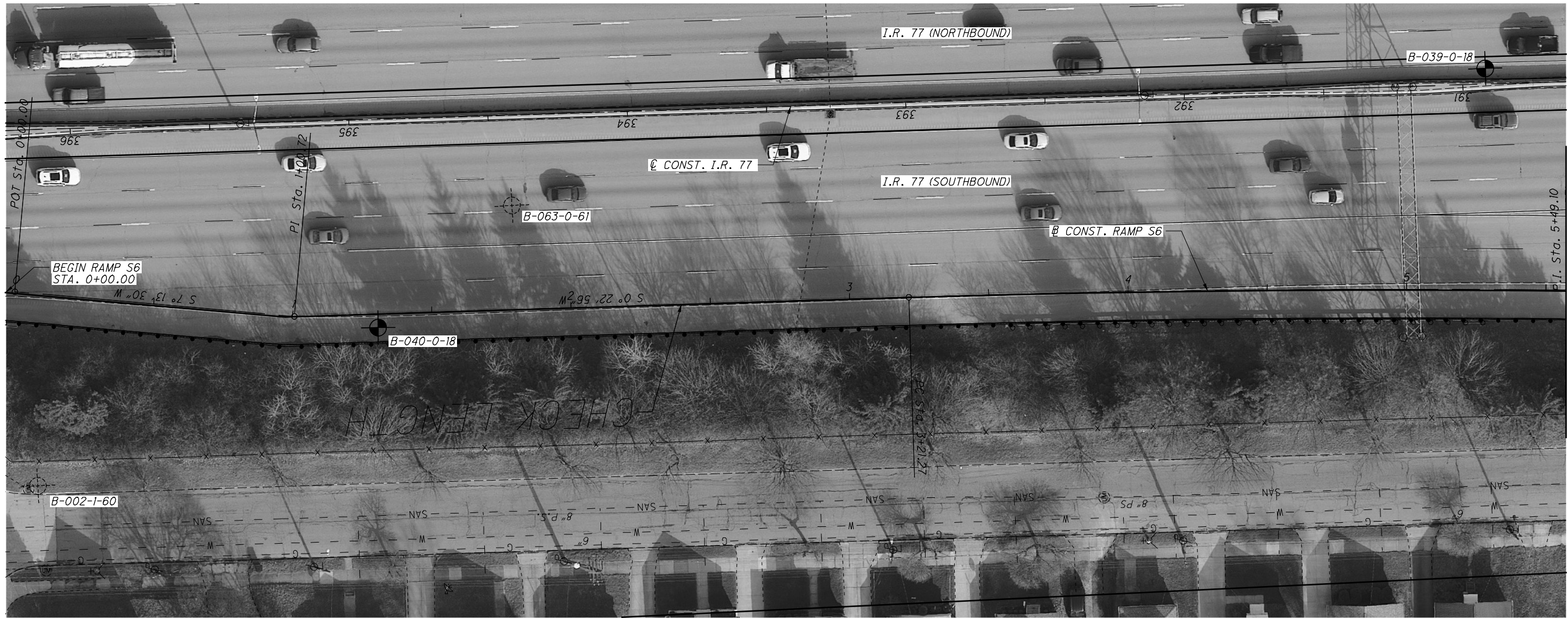
**SUM-77-9.77**

**SOIL PROFILE**

**STA. 5+60.00 TO END STA. 8+52.80 RAMP S7**



P:\102329\_SUM-76\_77\Design\Geotechnical\Sheets\Soil Profile 102329\_IP513.dgn Sheet 3/16/2020 11:41:52 AM mlutes



DRAWN: SM  
CHECKED: PAN

**SOIL PROFILE**  
**BEGIN STA. 0+00.00 TO STA. 5+60.00 RAMP S6**

**SUM-76-8.42**  
**SUM-77-9.77**

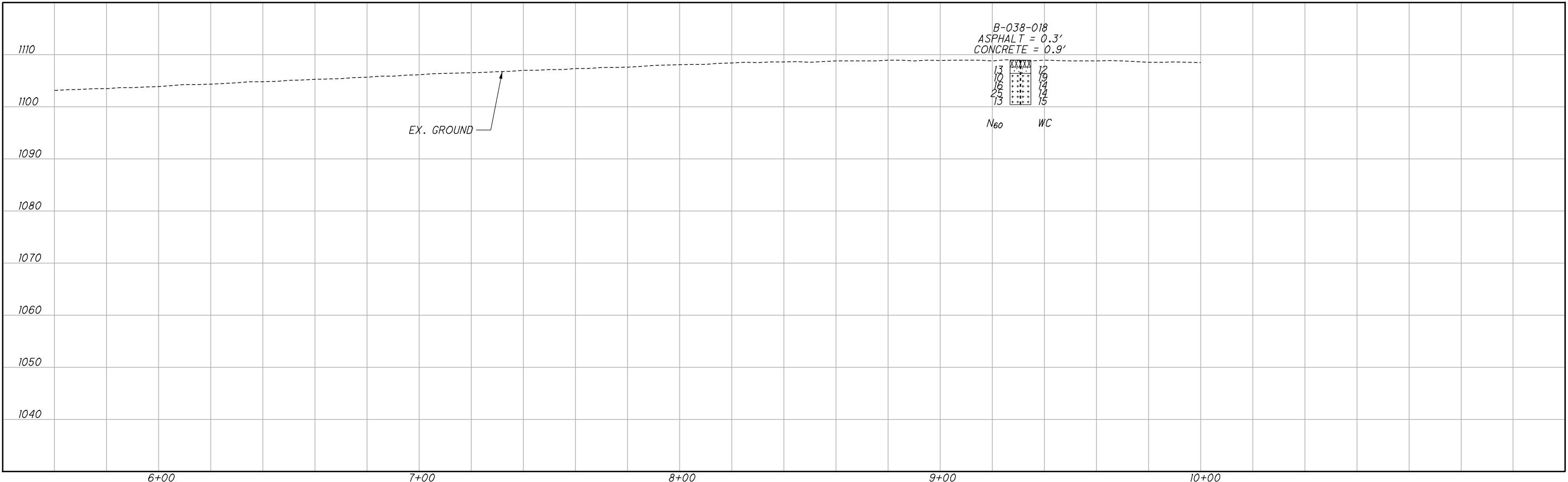
126  
173





MATCHLINE STA. 5+60.00 SEE SHEET XX  
 $DC = 1^{\circ} 00' 00''$   
 $R = 5,729.58'$   
 $T = 227.84'$   
 $L = 455.43'$   
 $E = 4.53'$   
 $C = 455.31'$   
 $\Delta B = S 2^{\circ} 39' 34'' W$

END RAMP S6  
 STA. 10+00.00

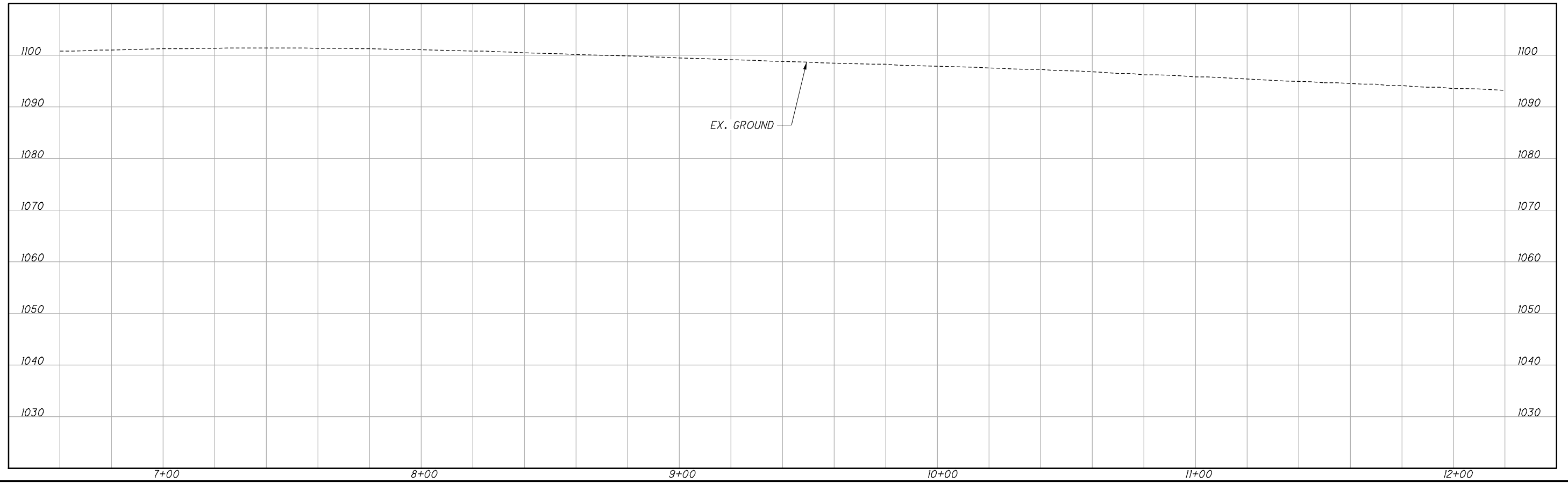


DRAWN SM  
 CHECKED PAN

**SOIL PROFILE**  
**STA. 5+60.00 TO END STA. 10+00.00 RAMP S6**

**SUM-76-8.42**  
**SUM-77-9.77**

127  
 173



20  
10  
5  
HORIZONTAL  
SCALE IN FEET

DRAWN  
SM

CHECKED  
PAN

SUM-76-8.42

SUM-77-9.77

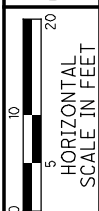
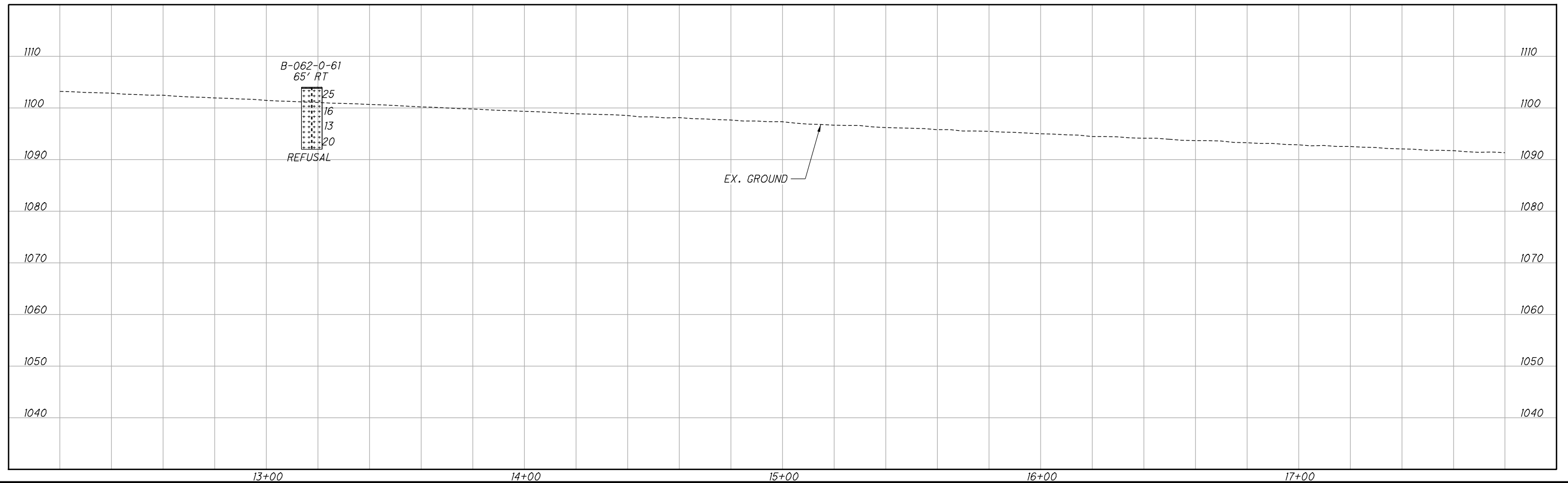
SOIL PROFILE

BEGIN STA. 6+50.00 TO STA. 12+20.00 RAMP S5

128  
173



P:\102329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\102329\_IP516.dgn Sheet 3/16/2020 11:44:28 AM mlutef



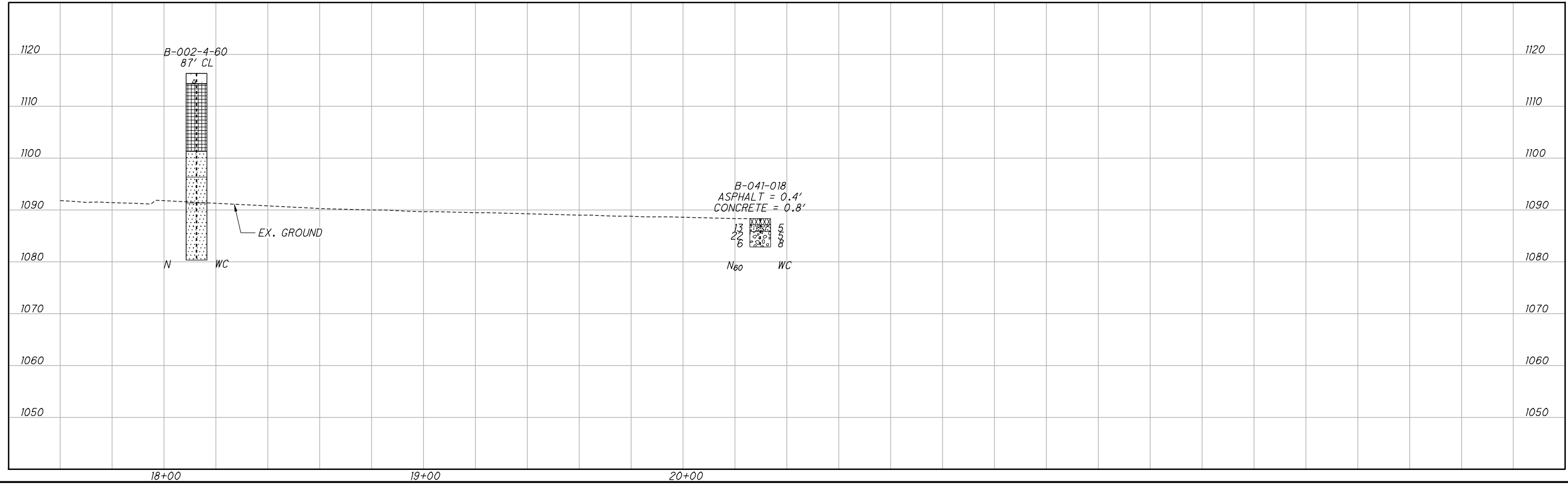
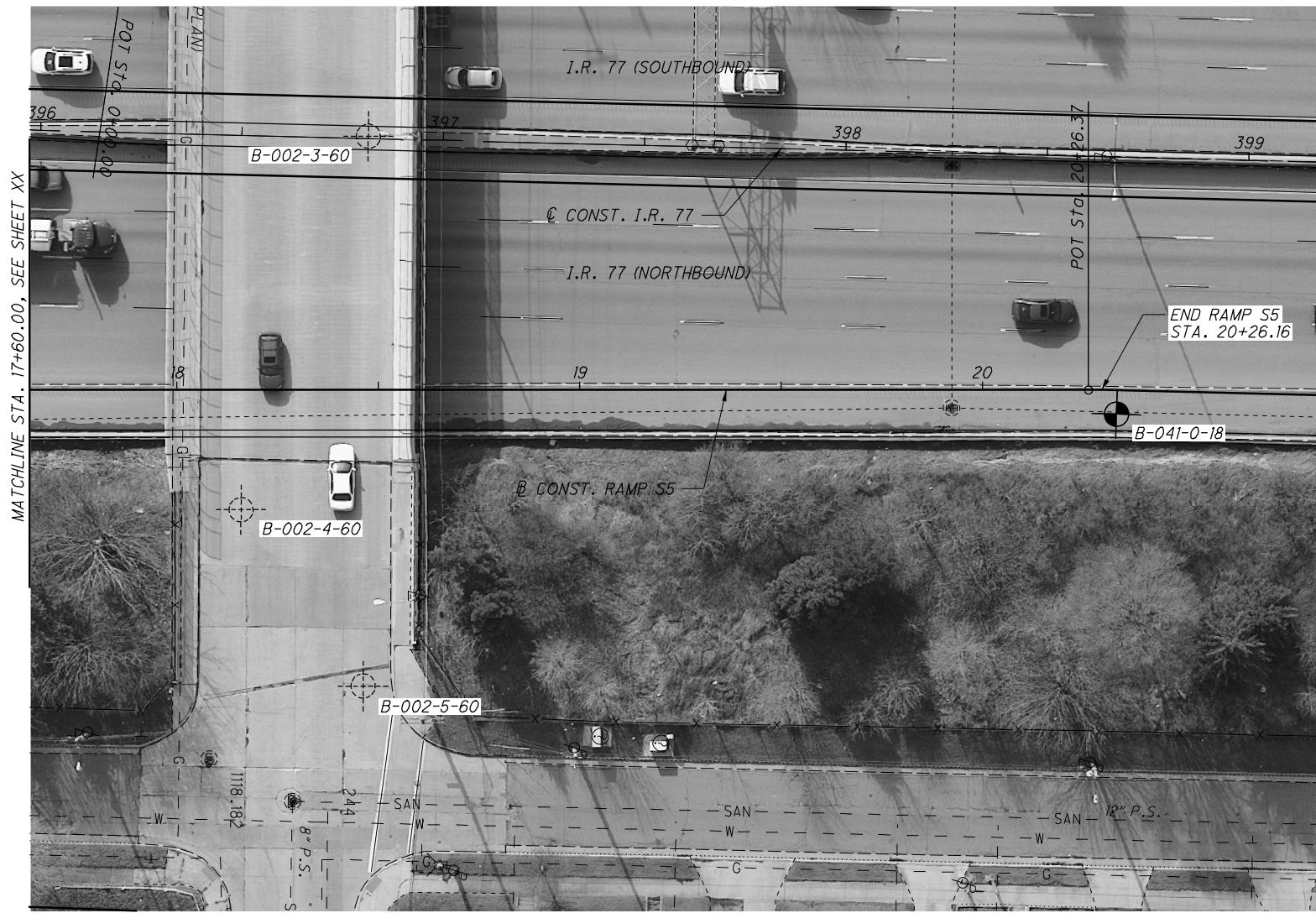
DRAWN: SM  
CHECKED: PAN

**SOIL PROFILE**  
**STA. 12+20.00 TO STA. 17+60.00 RAMP S5**

**SUM-76-8.42**  
**SUM-77-9.77**

129  
173

P:\02329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\02329\_IP517.dgn Sheet 3/16/2020 11:45:17 AM mlutes



**SUM-76-8.42**

**SUM-77-9.77**

**SOIL PROFILE**

**STA. 17+60.00 TO END STA. 20+26.16 RAMP S5**

130

173

DRAWN  
SM

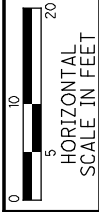
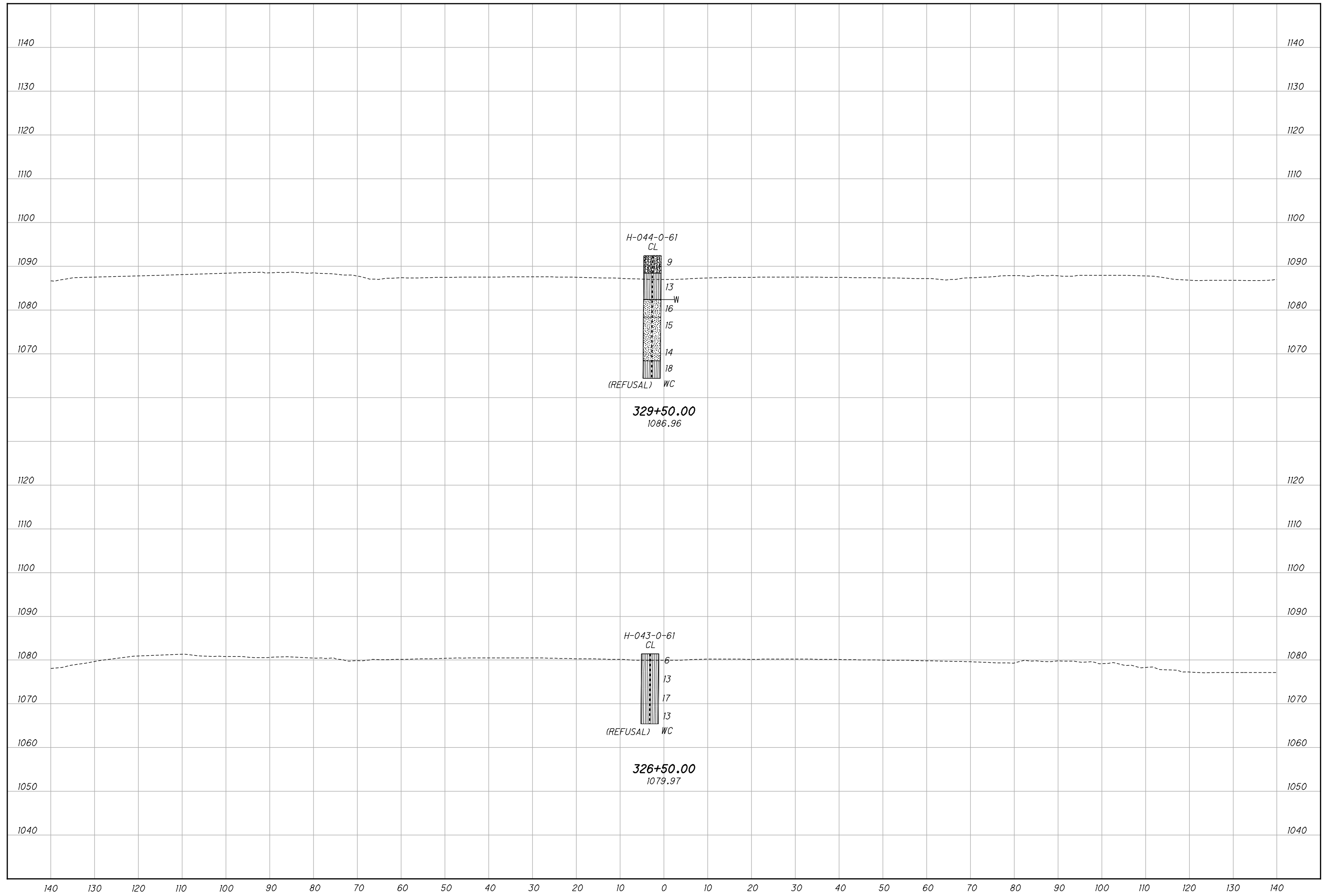
CHECKED  
PAN

0 5 10 20

HORIZONTAL  
SCALE IN FEET



P:\02329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\02329\_IX101.dgn\_Sheet\_3/16/2020 11:46:05 AM mlJtes



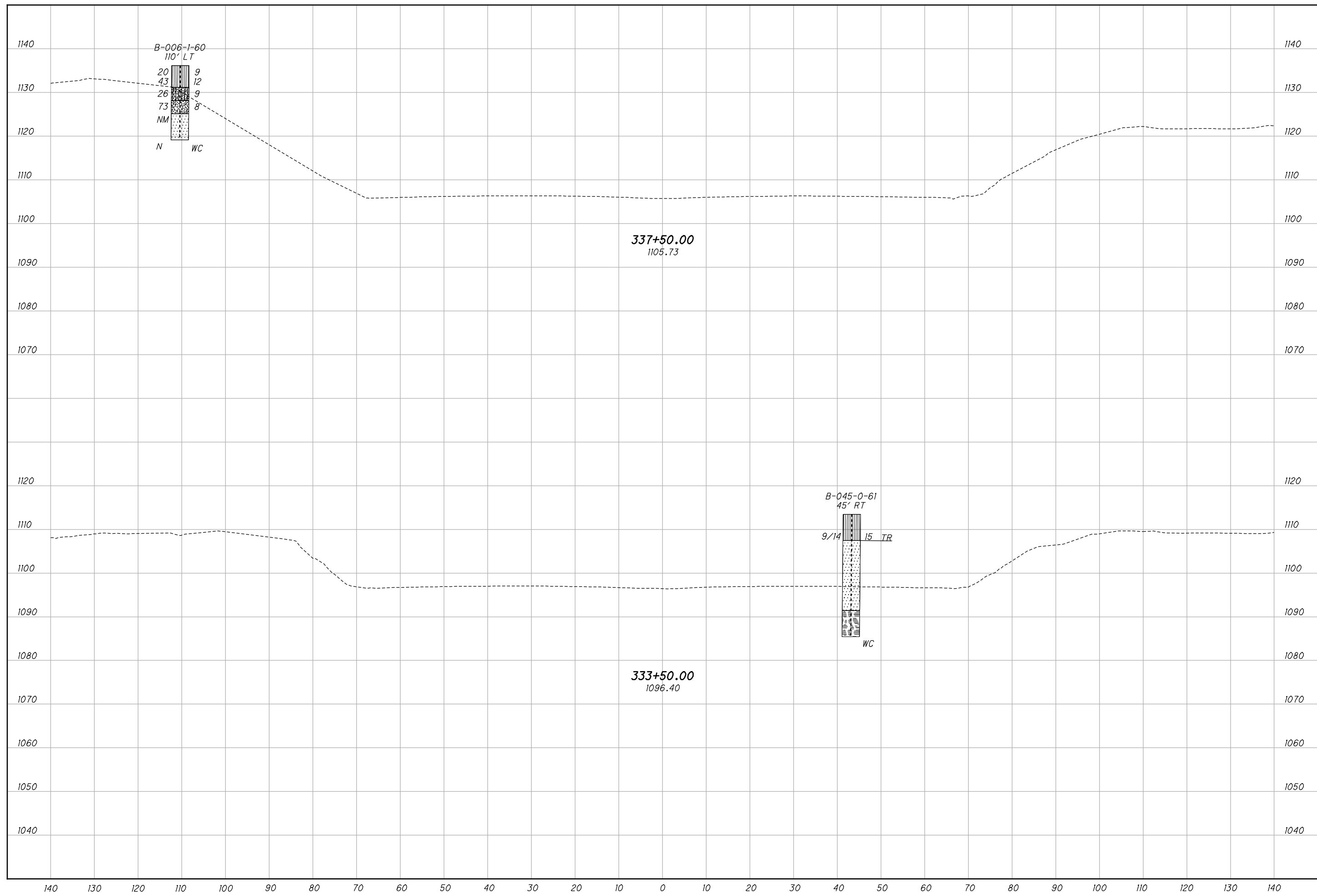
DRAWN  
SM  
CHECKED  
PAN

**SOIL PROFILE**  
**I.R. 77 CROSS SECTIONS 326+50.00 & 329+50.00**

**SUM-76-8.42**  
**SUM-77-9.77**

131  
173

P:\102329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\102329\_1X102.dgn Sheet 3/16/2020 11:46:06 AM mlr/tes



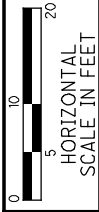
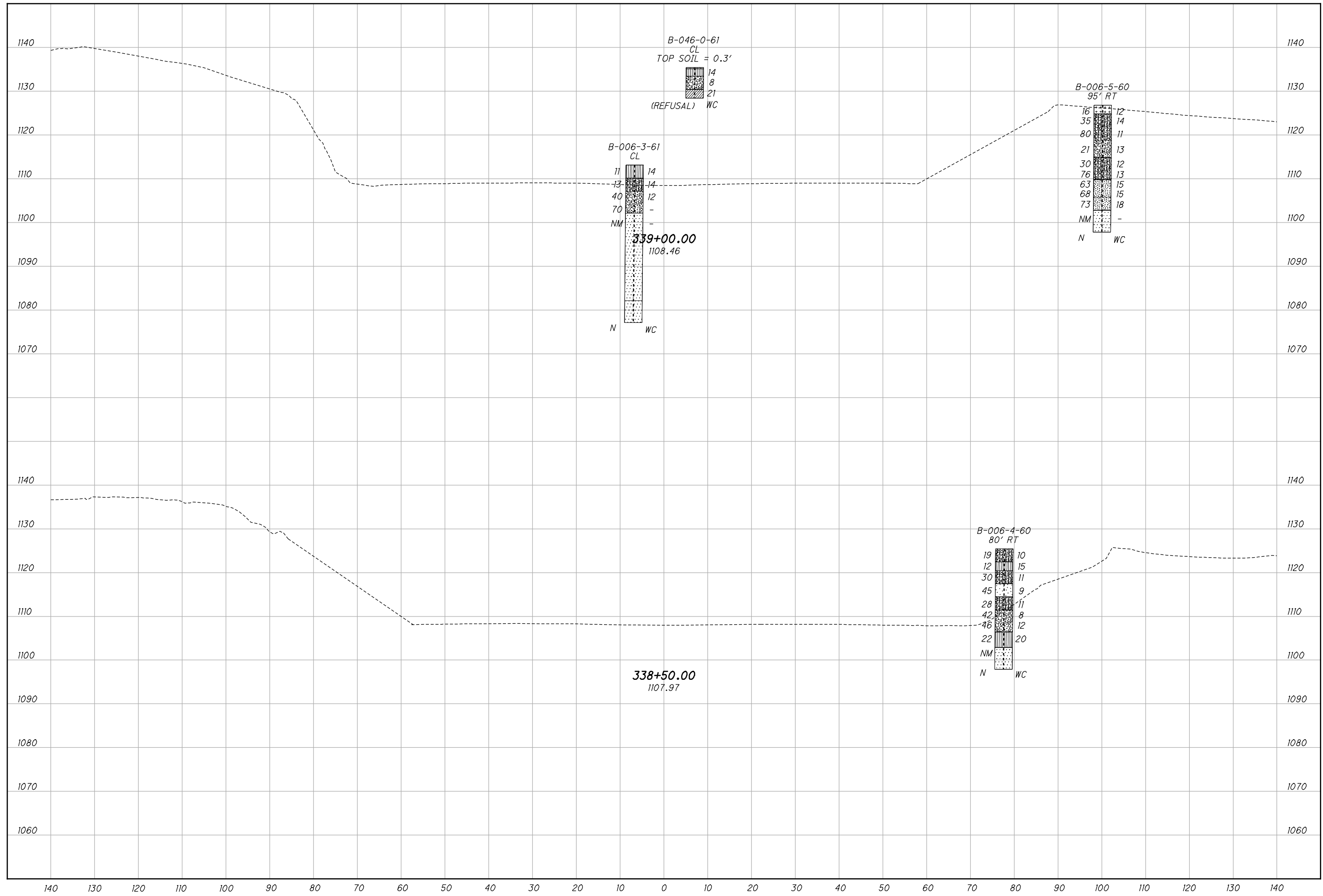
DRAWN  
SM  
CHECKED  
PAN

**SOIL PROFILE**  
**I.R. 77 CROSS SECTIONS 333+50.00 & 337+50.00**

**SUM-76-8.42**  
**SUM-77-9.77**

132  
173

P:\102329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\102329\_1X103.dgn Sheet 3/16/2020 11:46:08 AM mlutes

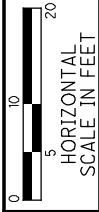
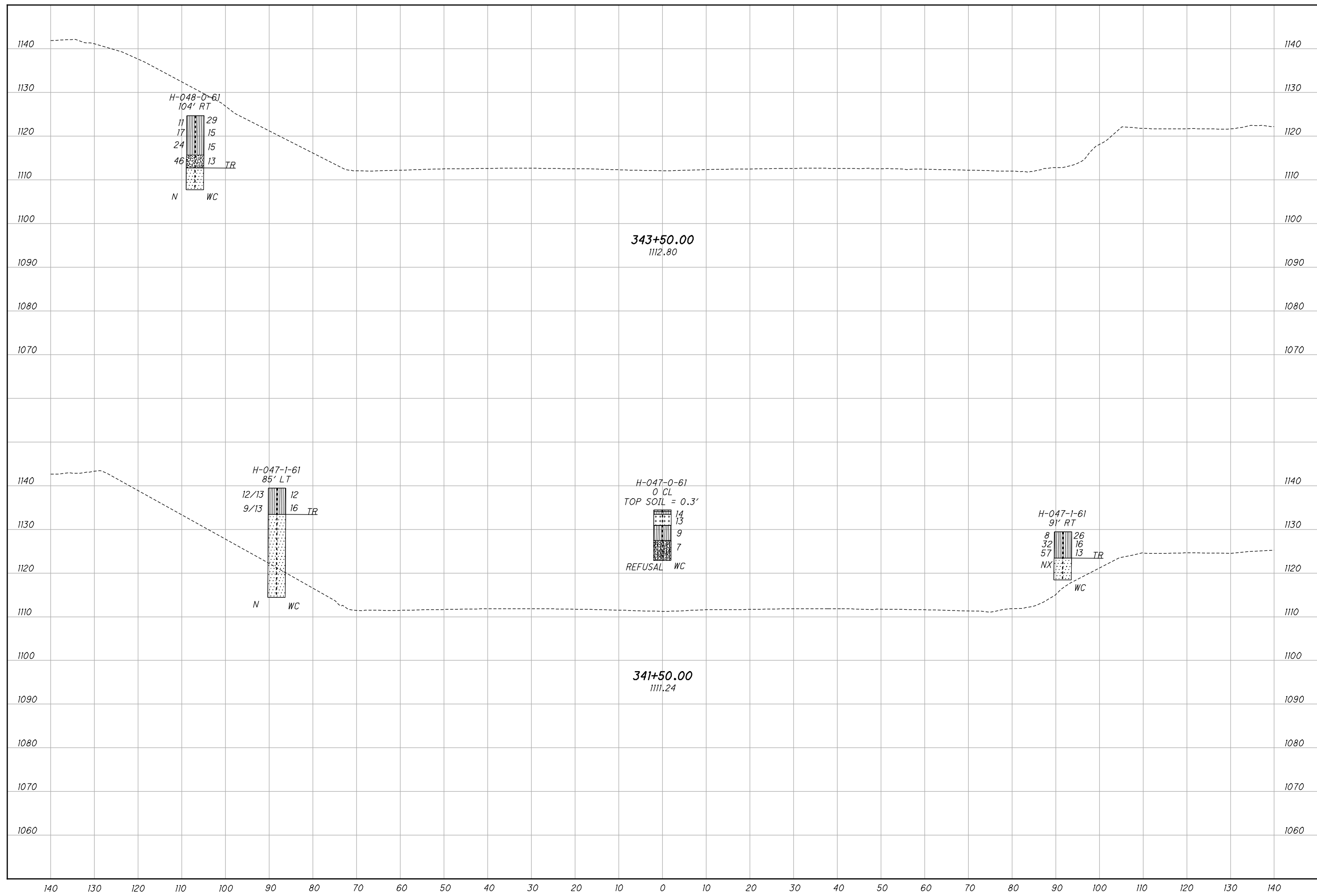


DRAWN SM  
 CHECKED PAN

**SOIL PROFILE**  
**I.R. 77 CROSS SECTIONS 338+50.00 & 339+00.00**

**SUM-76-8.42**  
**SUM-77-9.77**

P:\102329\_SUM-76\_77\Design\Sheets\SoilProfile\102329\_1X104.dgn Sheet 3/16/2020 11:46:09 AM mlufes



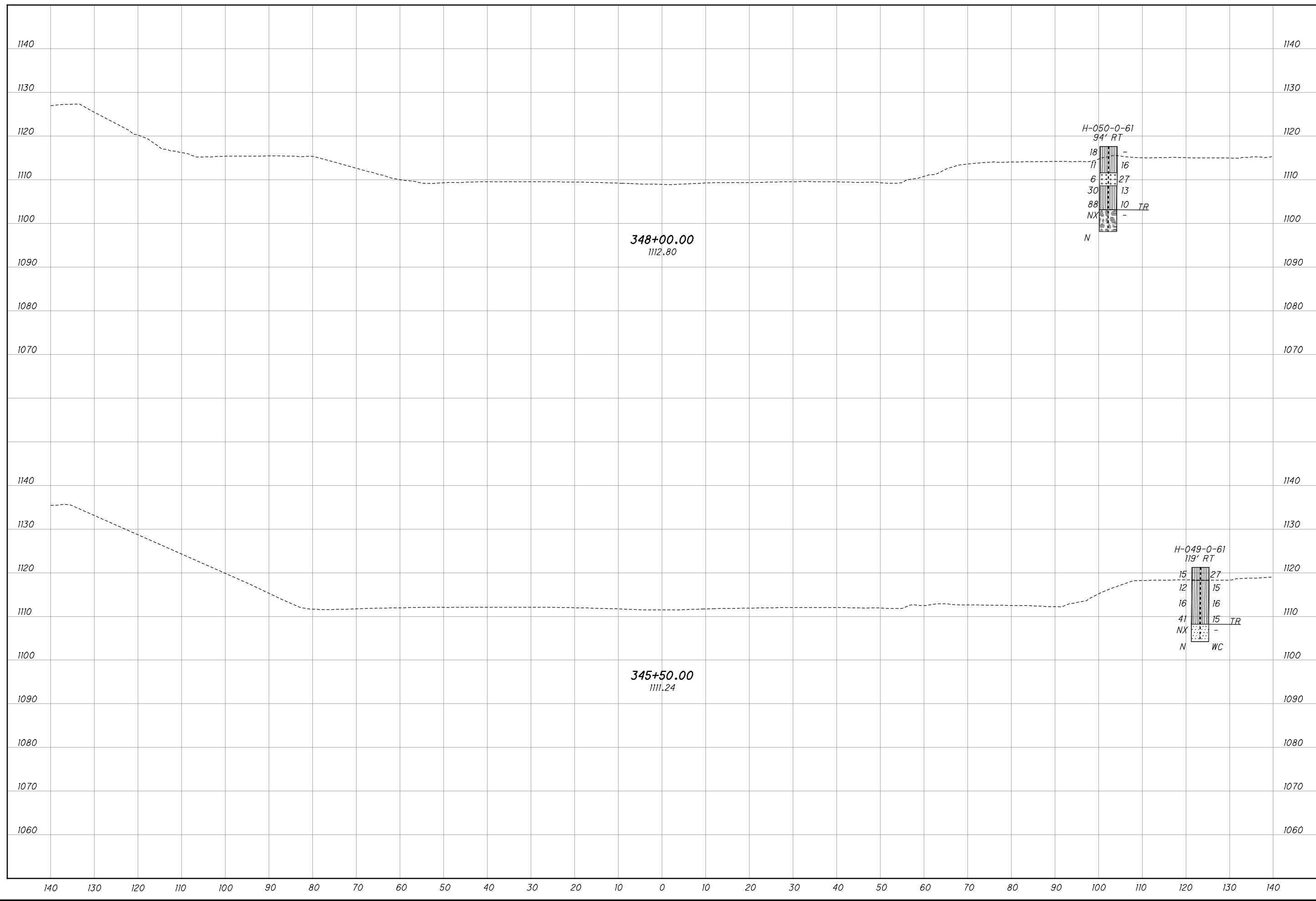
DRAWN: SM  
CHECKED: PAN

**SOIL PROFILE**  
**I.R. 77 CROSS SECTIONS 341+50.00 & 343+50.00**

**SUM-76-8.42**  
**SUM-77-9.77**



P:\102329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\102329\_1X105.dgn Sheet 3/16/2020 11:46:10 AM mlj/tes



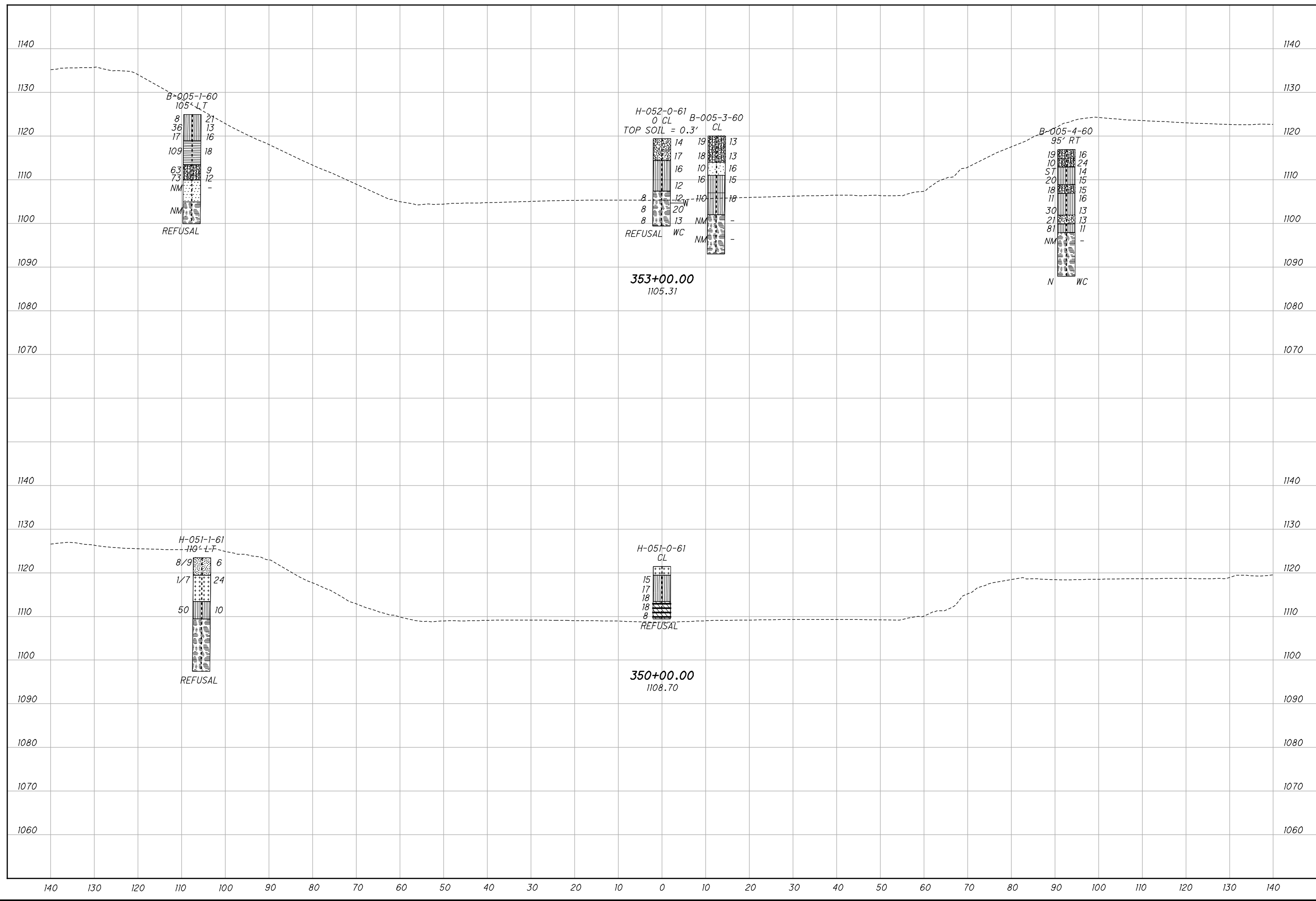
DRAWN: SM  
CHECKED: PAN  
HORIZONTAL SCALE: 1" = 20'

**SOIL PROFILE**  
**I.R. 77 CROSS SECTIONS 345+50.00 & 348+00.00**

**SUM-76-8.42**  
**SUM-77-9.77**

135  
173

P:\102329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\102329\_1X106.dgn Sheet 3/16/2020 11:46:12 AM mlj/tes

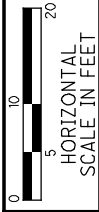
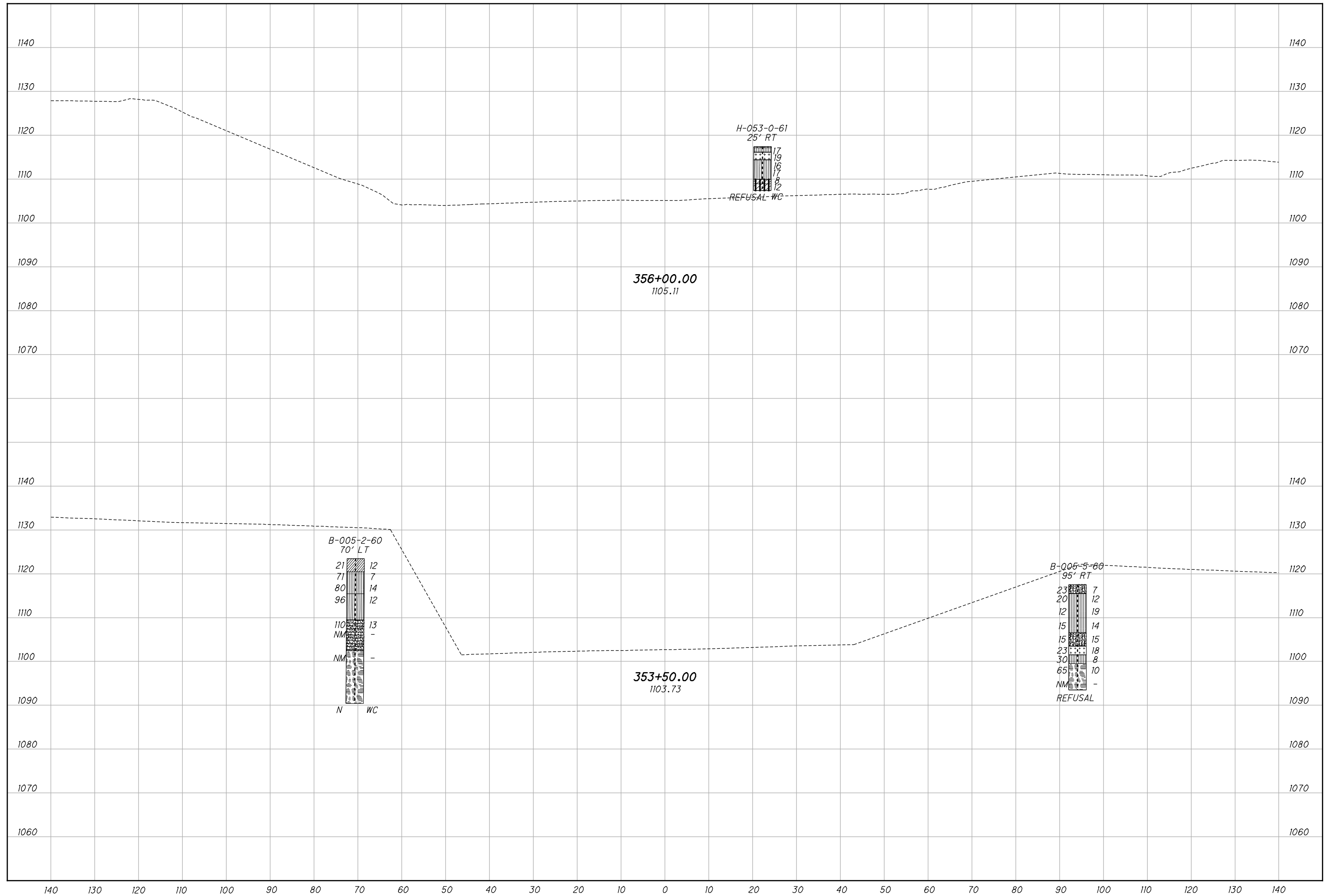


DRAWN: SM  
CHECKED: PAN

**SOIL PROFILE**  
**I.R. 77 CROSS SECTIONS 350+00.00 & 353+00.00**

**SUM-76-8.42**  
**SUM-77-9.77**

P:\02329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\I07.dgn Sheet 3/16/2020 11:46:13 AM mlutes



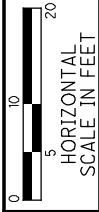
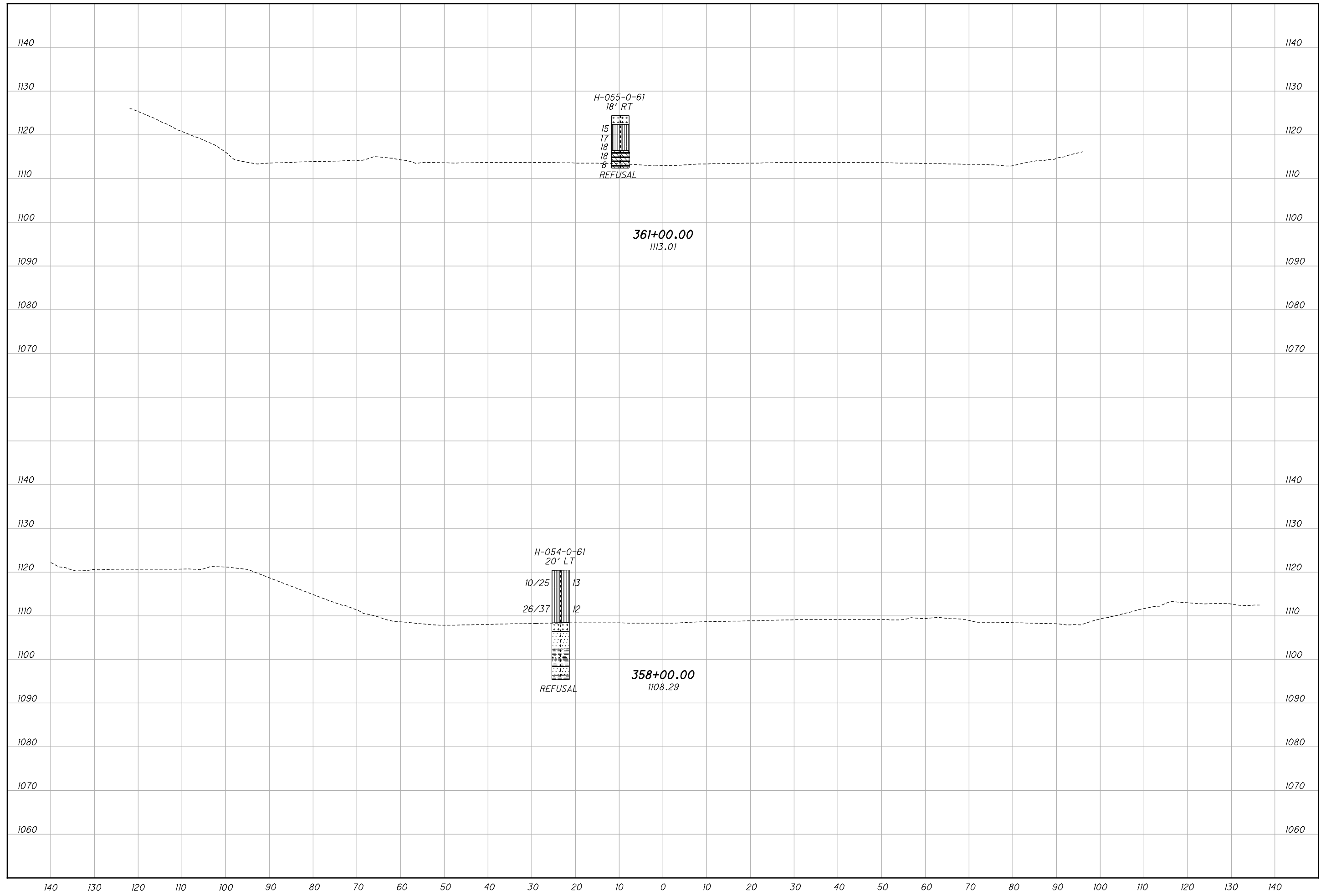
DRAWN: SM  
CHECKED: PAN

**SOIL PROFILE**  
**I.R. 77 CROSS SECTIONS 353+50.00 & 356+00.00**

**SUM-76-8.42**  
**SUM-77-9.77**

137  
173

P:\02329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\02329\_IX108.dgn Sheet 3/16/2020 11:46:14 AM mlutes



DRAWN SM  
CHECKED PAN

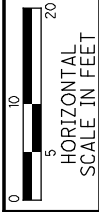
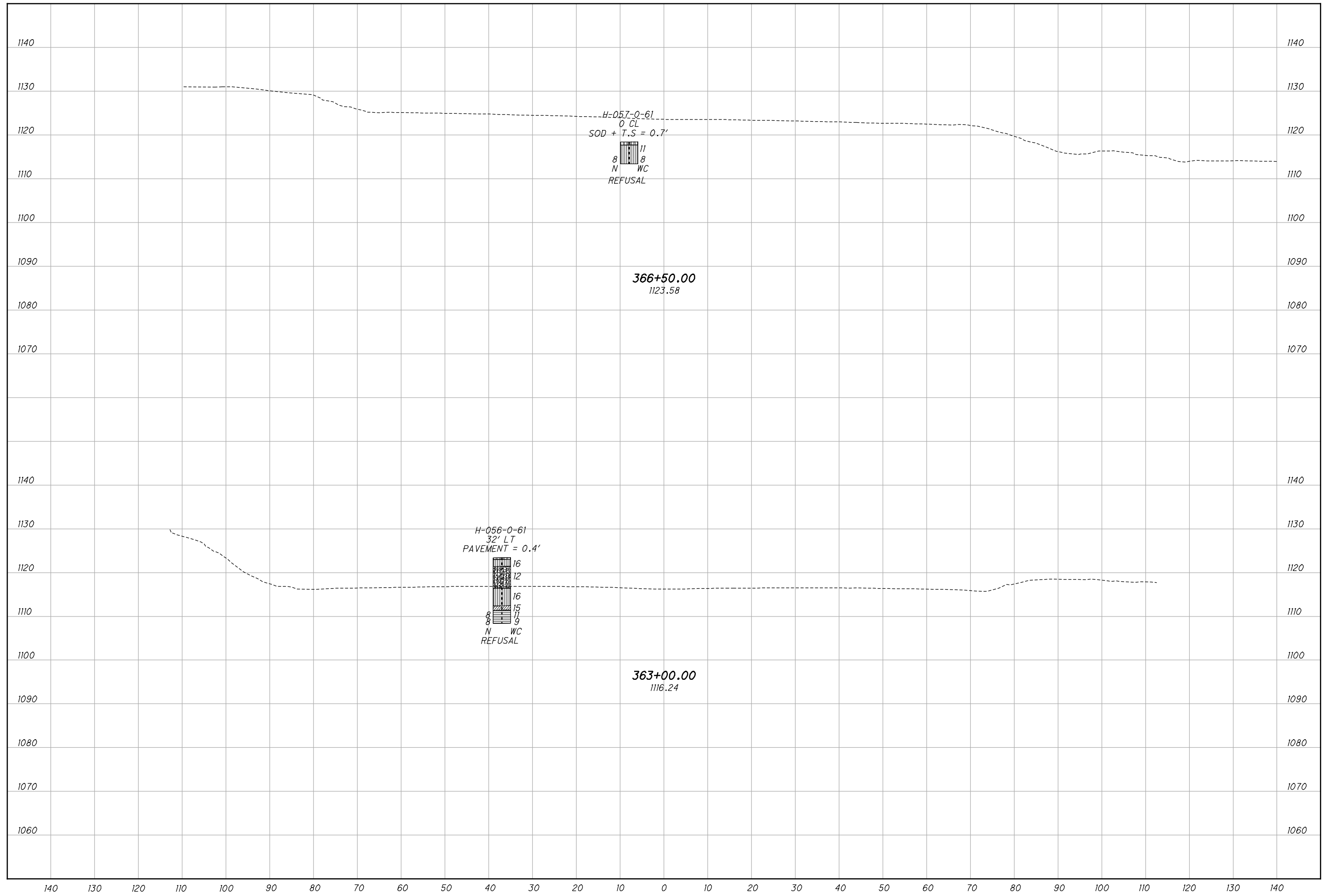
**SOIL PROFILE**  
**I.R. 77 CROSS SECTIONS 358+00.00 & 361+00.00**

**SUM-76-8.42**  
**SUM-77-9.77**

138  
173



P:\102329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\102329\_1X109.dgn Sheet 3/16/2020 11:46:16 AM mlJtes

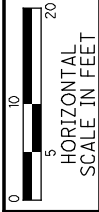
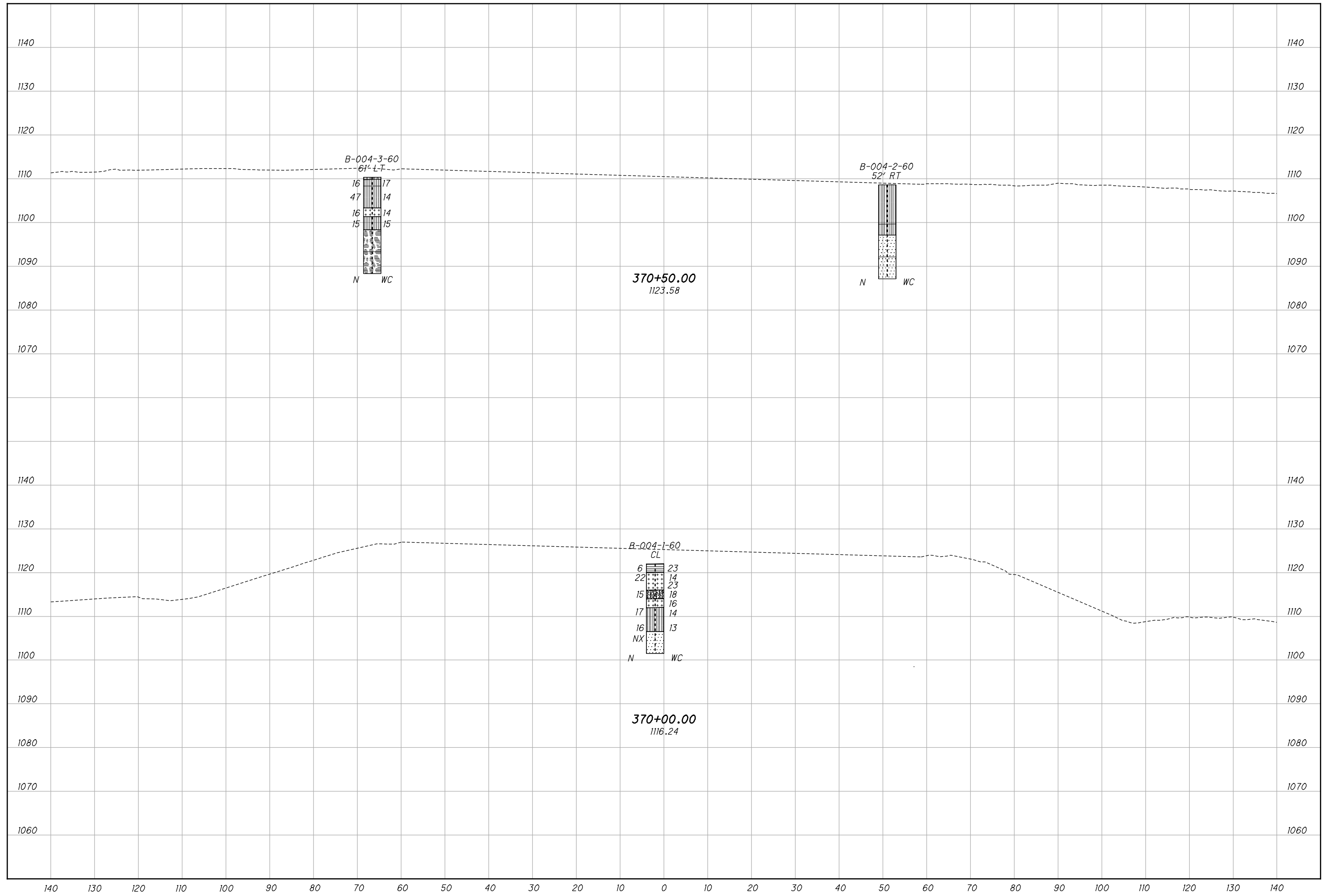


DRAWN SM  
CHECKED PAN

**SOIL PROFILE**  
**I.R. 77 CROSS SECTIONS 363+00.00 & 366+50.00**

**SUM-76-8.42**  
**SUM-77-9.77**

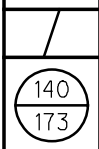
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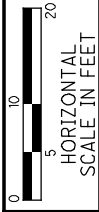
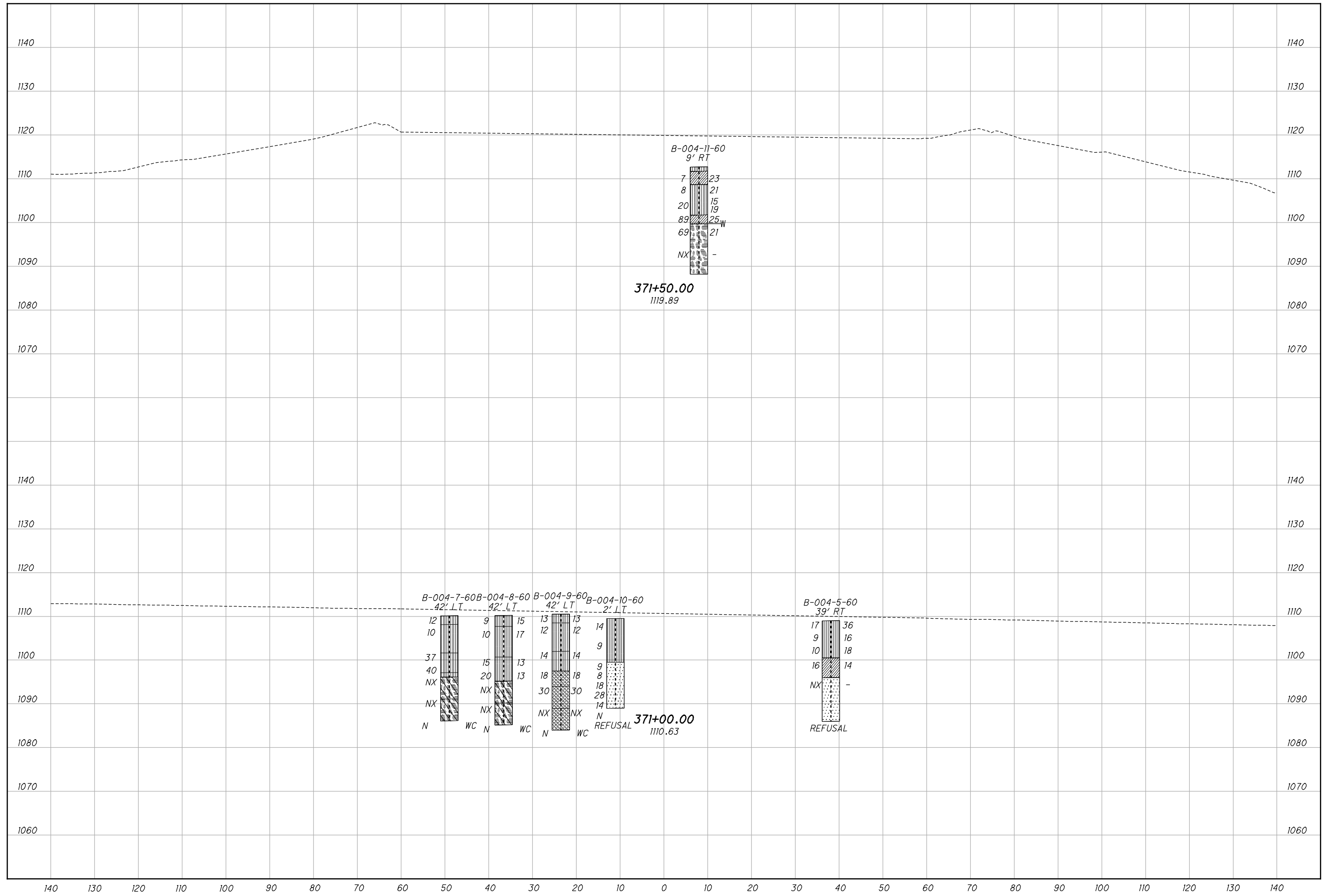
DRAWN SM  
CHECKED PAN

**SOIL PROFILE**  
**I.R. 77 CROSS SECTIONS 370+00.00 & 370+50.00**

**SUM-76-8.42**  
**SUM-77-9.77**



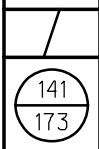
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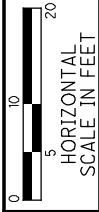
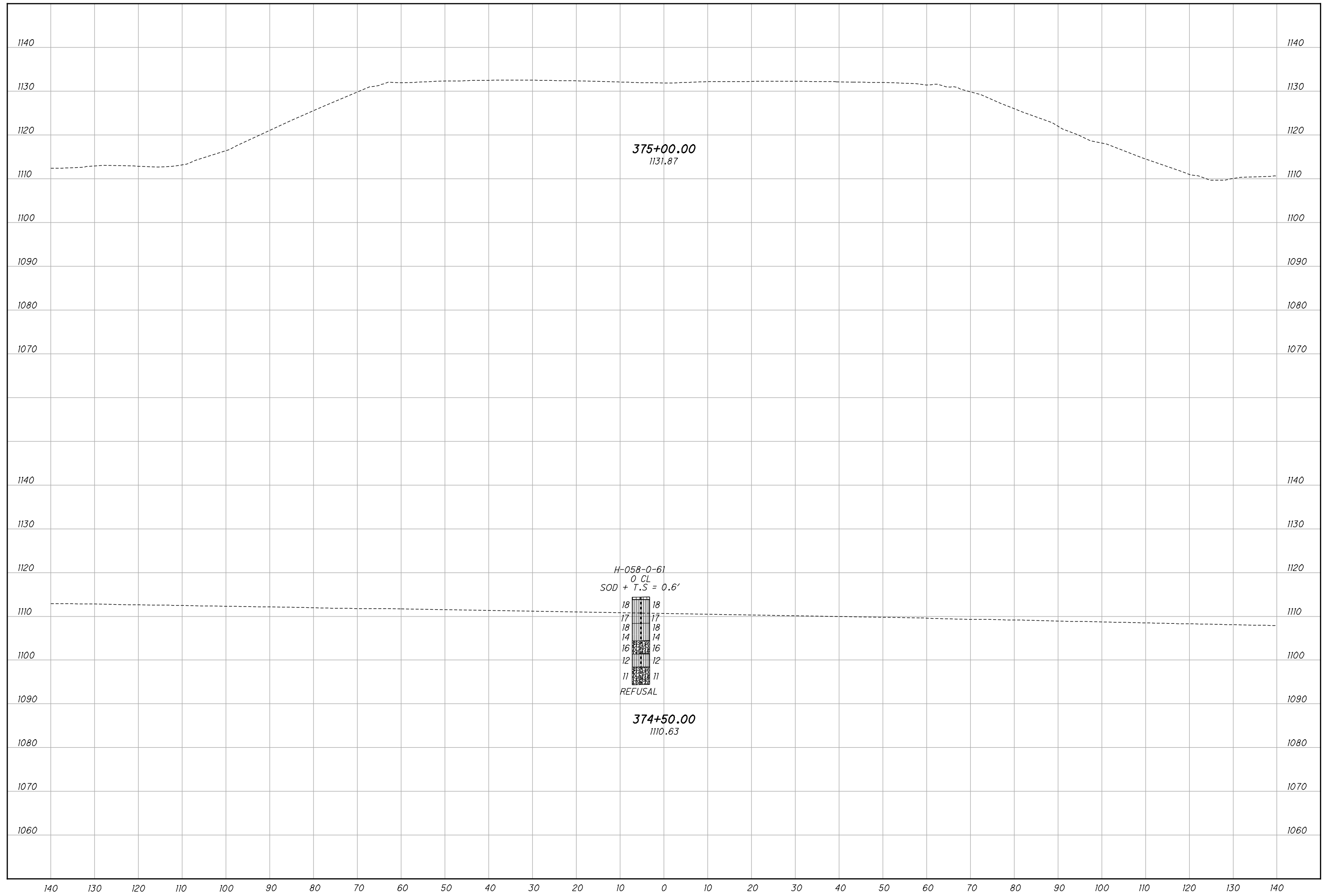
DRAWN: SM  
CHECKED: PAN

**SOIL PROFILE**  
**I.R. 77 CROSS SECTIONS 371+00.00 & 371+50.00**

**SUM-76-8.42**  
**SUM-77-9.77**



P:\02329\_SUM-76\_77\Design\Geotechnical\Sheets\SoilProfile\02329\_012.dgn\_Sheet 3/16/2020 11:46:20 AM mlj:tes



DRAWN: SM  
CHECKED: PAN

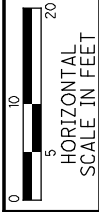
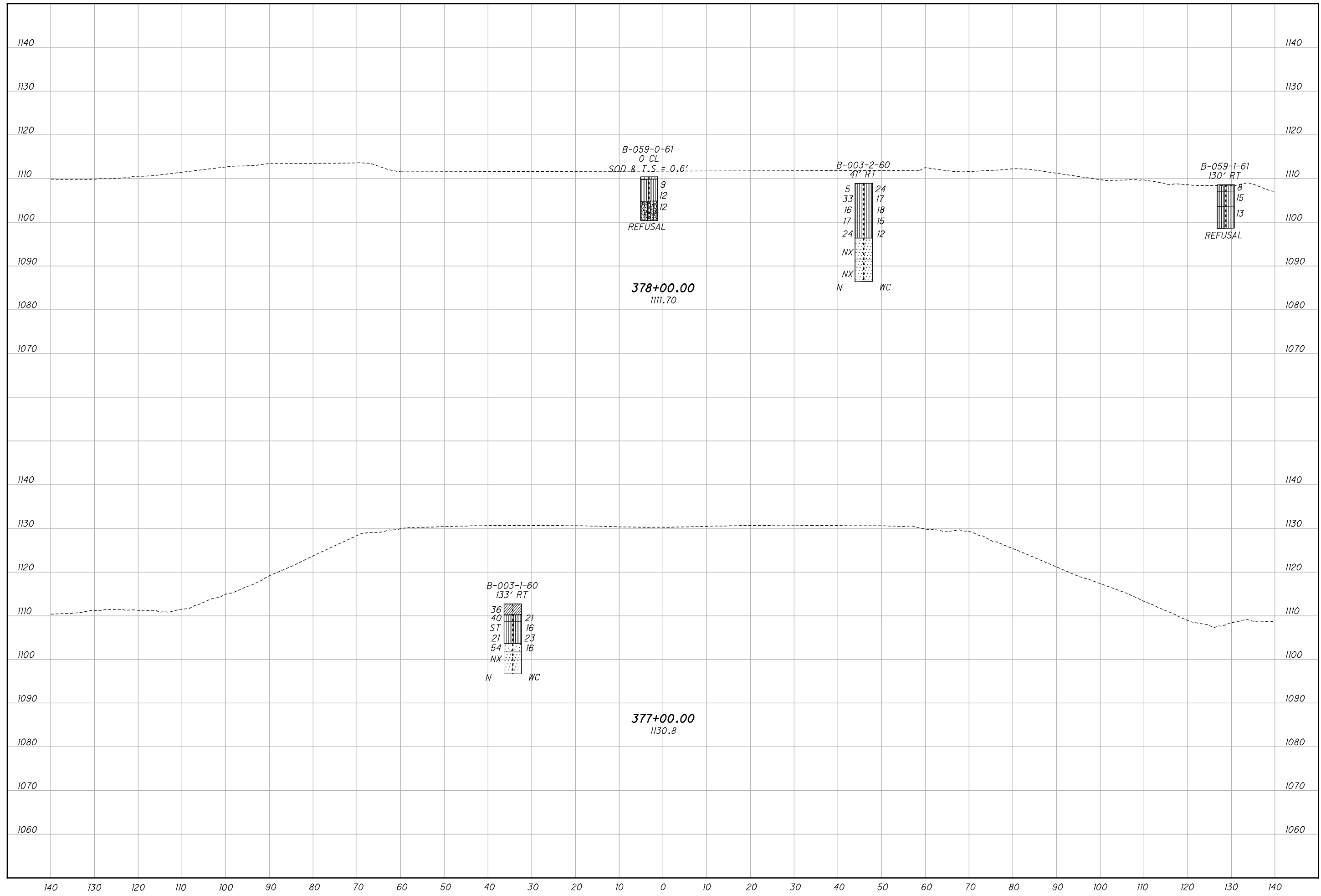
**SOIL PROFILE**  
**I.R. 77 CROSS SECTIONS 374+50.00 & 375+00.00**

**SUM-76-8.42**  
**SUM-77-9.77**

142  
173



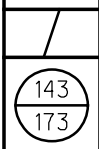
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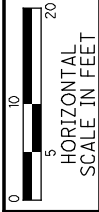
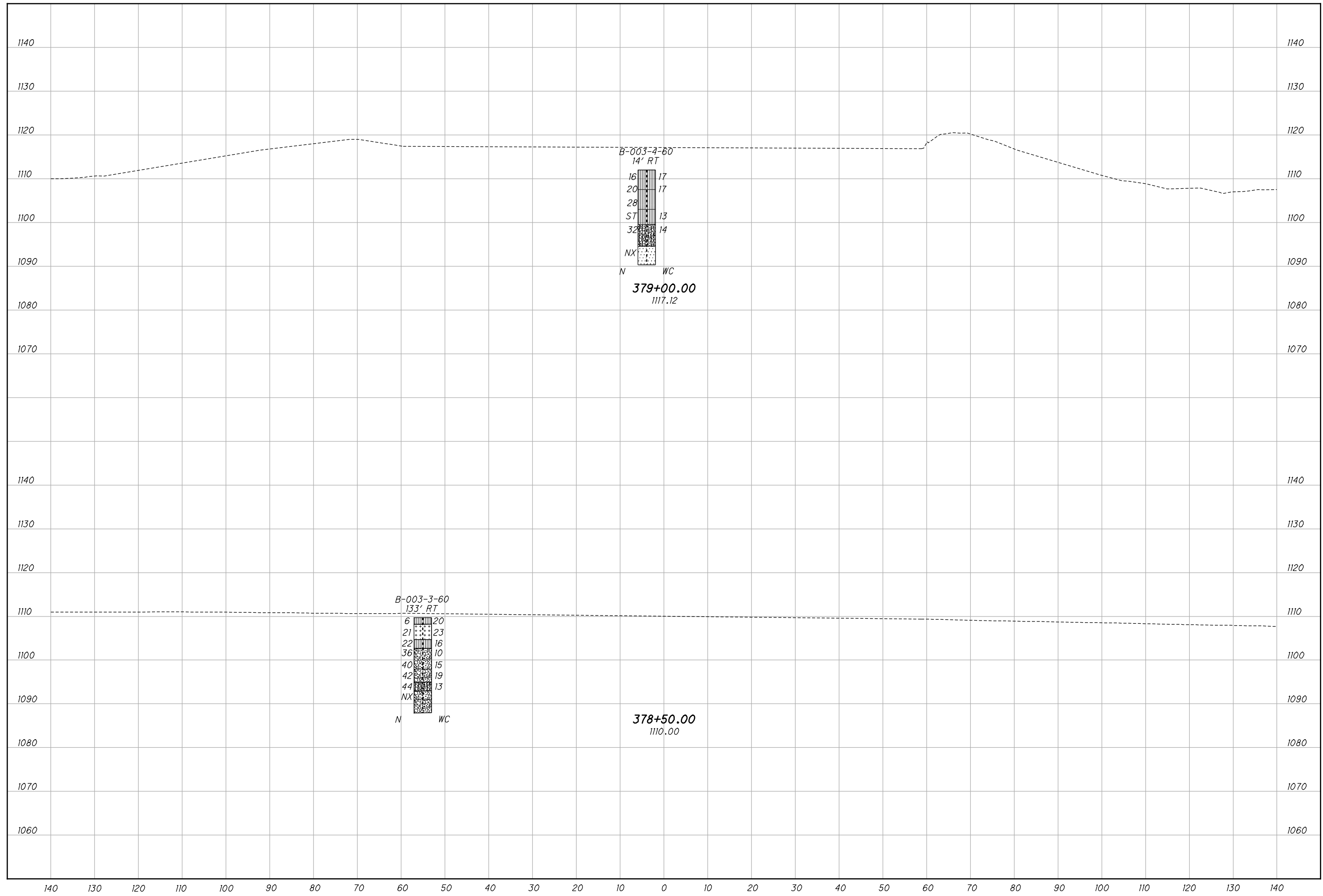
DRAWN: SM  
CHECKED: PAN

**SOIL PROFILE**  
**I.R. 77 CROSS SECTIONS 377+00.00 & 378+00.00**

**SUM-76-8.42**  
**SUM-77-9.77**



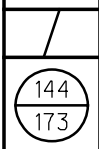
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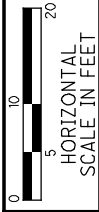
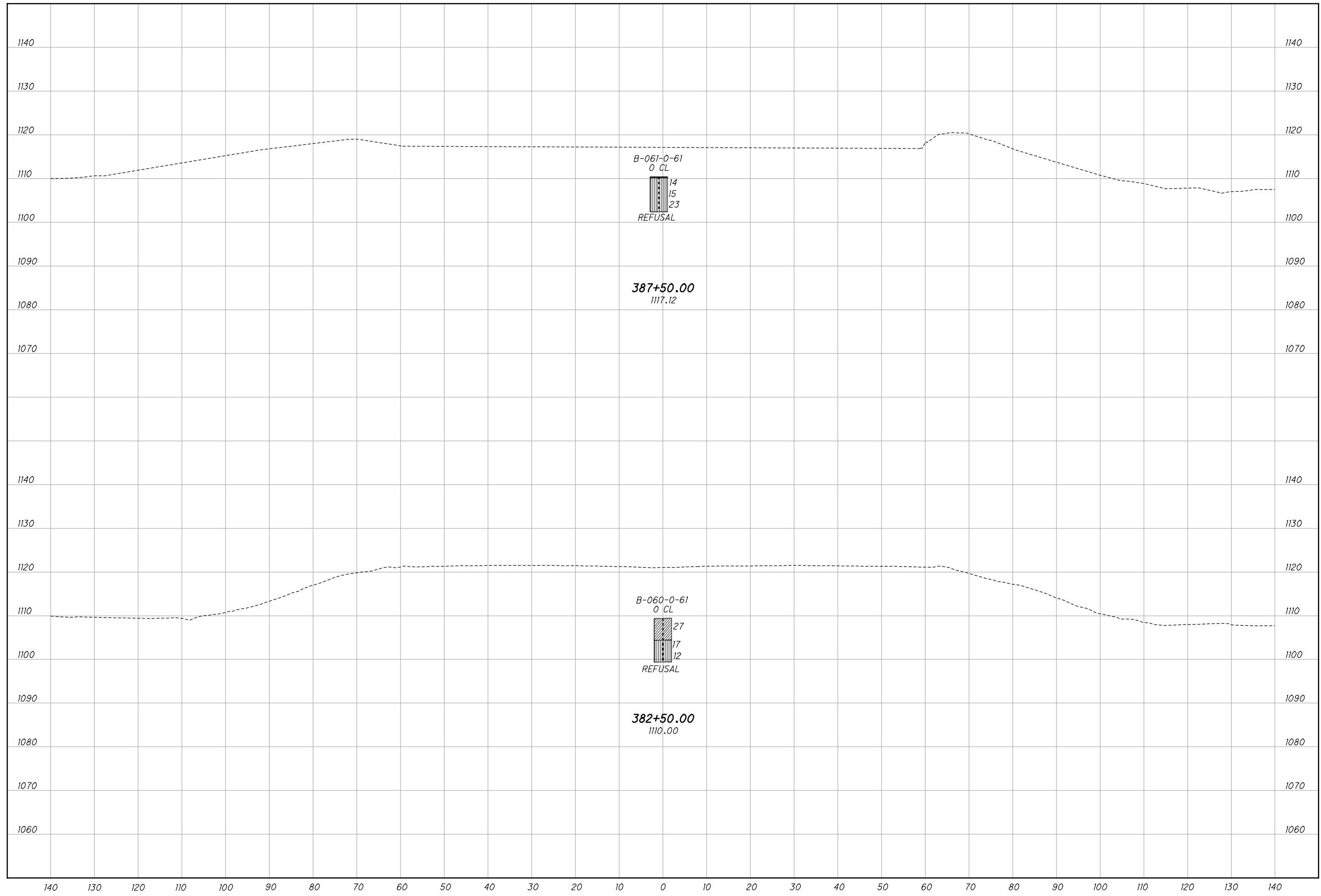
DRAWN: SM  
 CHECKED: PAN

**SOIL PROFILE**  
**I.R. 77 CROSS SECTIONS 378+50.00 & 379+00.00**

**SUM-76-8.42**  
**SUM-77-9.77**



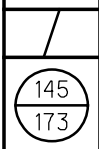
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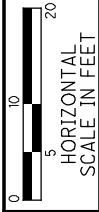
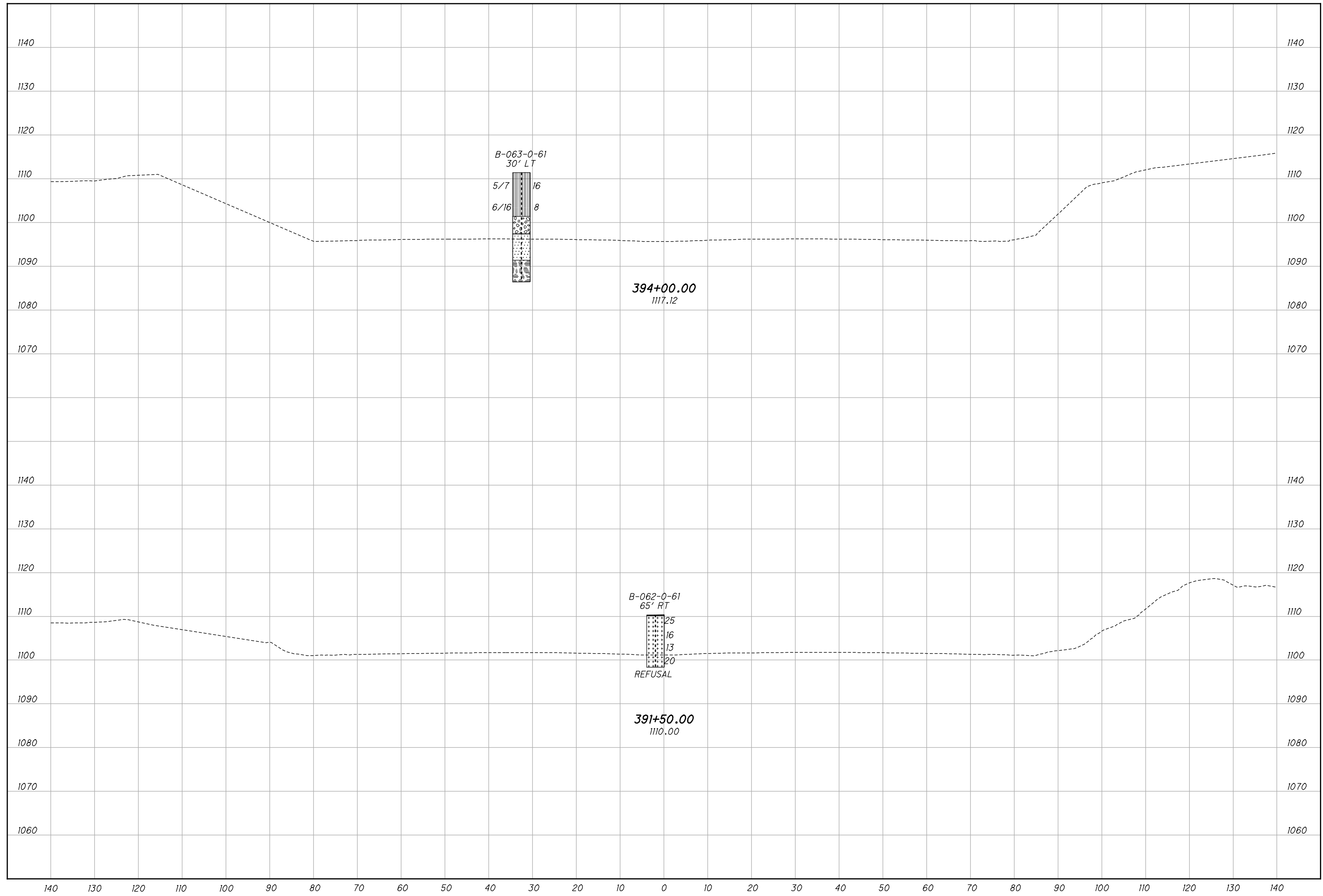
DRAWN: SM  
CHECKED: PAN

**SOIL PROFILE**  
**I.R. 77 CROSS SECTIONS 382+50.00 & 387+50.00**

**SUM-76-8.42**  
**SUM-77-9.77**



P:\102329\_SUM-76\_77\Design\Sheets\SoilProfile\102329\_1X16.dgn\_Sheet 3/16/2020 11:46:25 AM mlutes



DRAWN  
SM  
CHECKED  
PAN

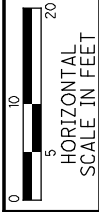
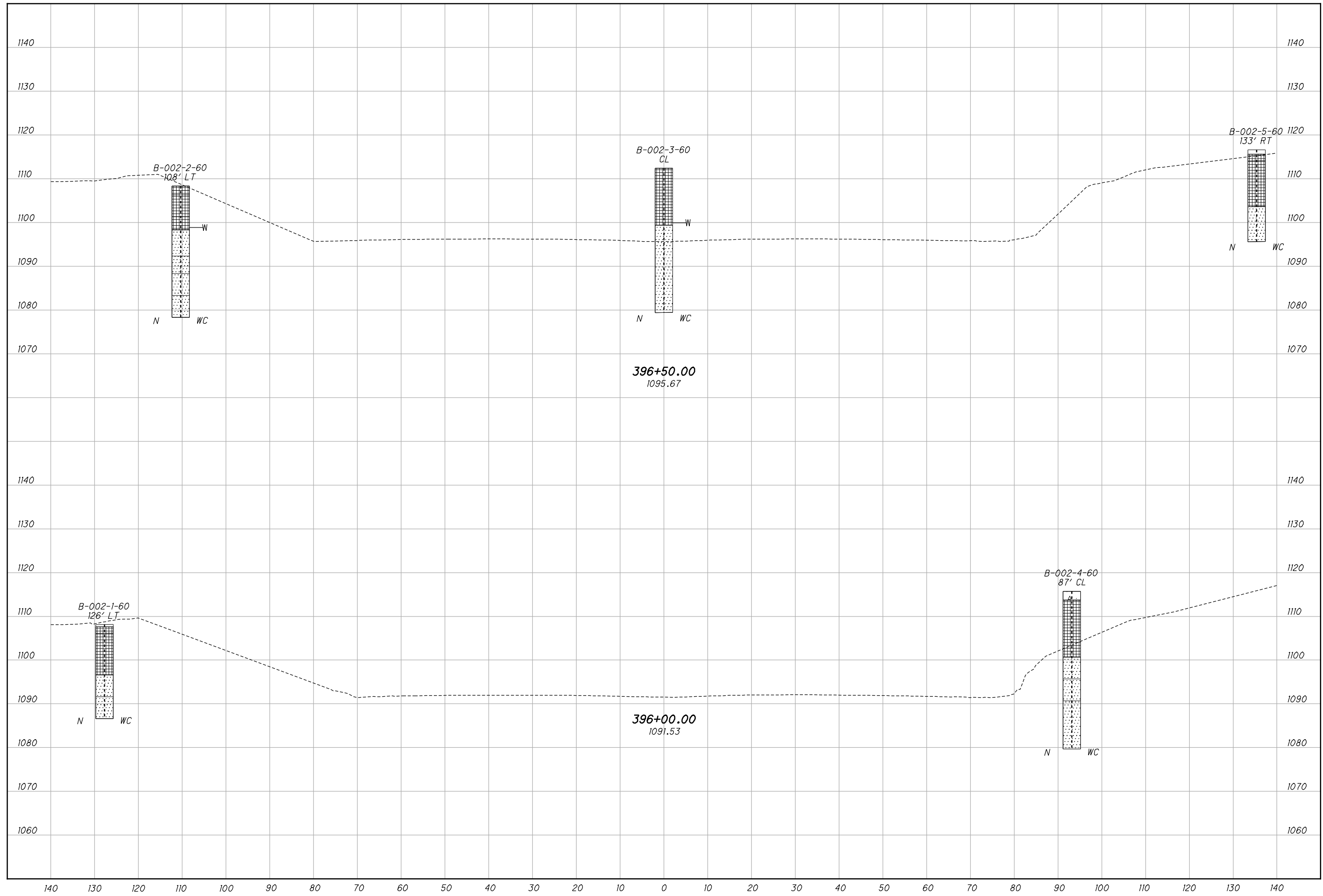
**SOIL PROFILE**  
**I.R. 77 CROSS SECTIONS 391+50.00 & 394+00.00**

**SUM-76-8.42**  
**SUM-77-9.77**

146  
173



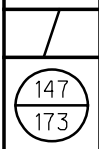
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DRAWN: SM  
CHECKED: PAN

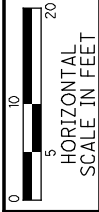
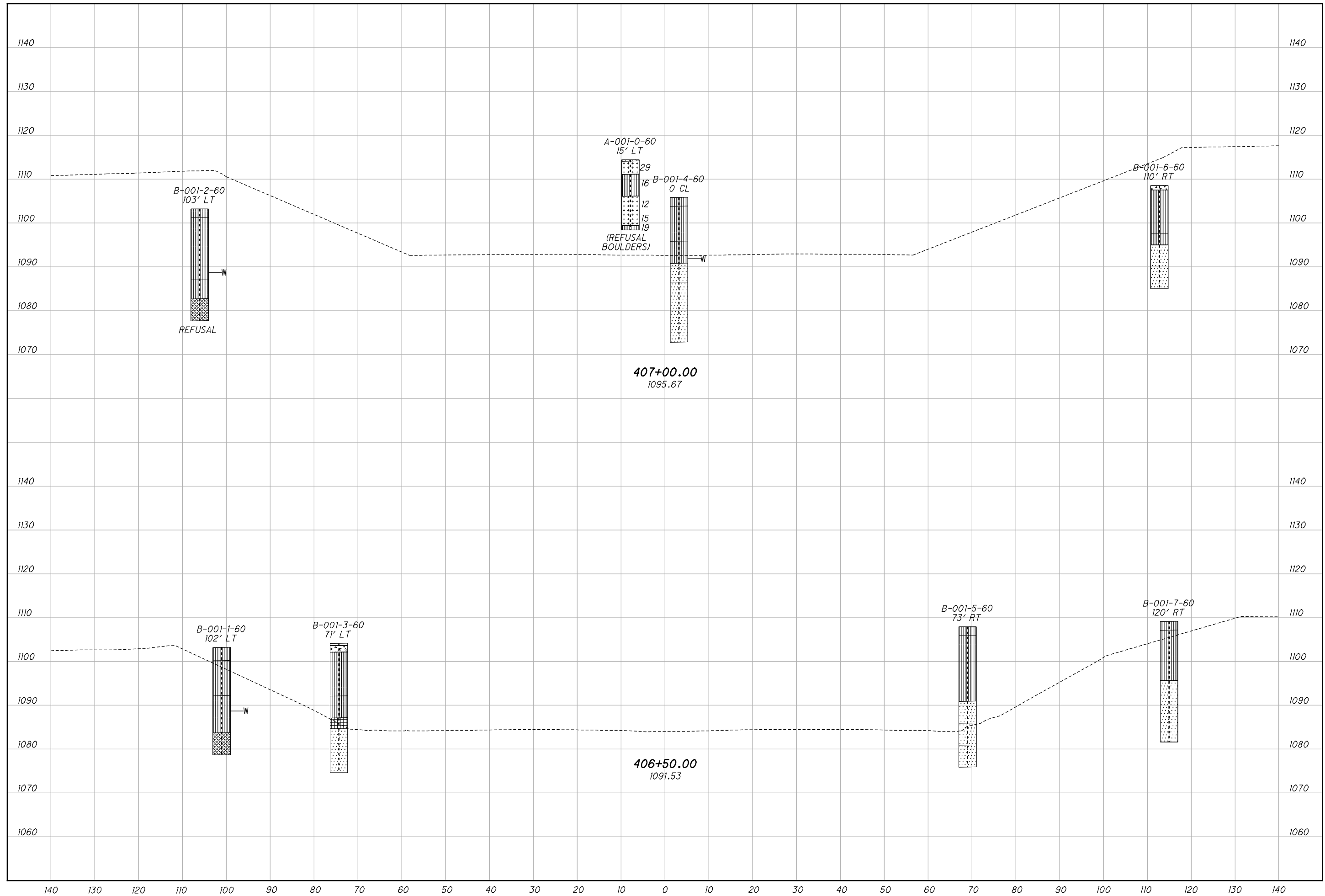
**SOIL PROFILE**  
**I.R. 77 CROSS SECTIONS 396+00.00 & 396+50.00**

**SUM-76-8.42**  
**SUM-77-9.77**



173

P:\02329\_SUM-76\_77\Design\Sheets\SoilProfile\02329\_1\18.dgn Sheet 3/16/2020 11:46:27 AM mlutes



DRAWN: SM  
 CHECKED: PAN

**SOIL PROFILE**  
**I.R. 77 CROSS SECTIONS 406+50.00 & 407+00.00**

**SUM-76-8.42**  
**SUM-77-9.77**

4120 AIRPORT ROAD  
CINCINNATI 26, OHIO

**THE H. C. NUTTING COMPANY**

Form No. 530-16-59

**TESTING ENGINEERS AND SOILS CONSULTANTS**

Split LOG OF BORING Page 1 of 2

DATE STARTED 5-29-61 SAMPLER TYPE Spoon DIA. 2" O.D. WATER ELEV. IMMEDIATE None CLIENT: City of Akron, Ohio  
 DATE COMPLETED 5-29-61 CASING LENGTH 35' DIA. 3.5" I.D. AFTER HOURS: PROJECT: Akron Expressway, Sum 18-0506  
 Backfilled (Driveway) over Manchester Rd. Part 13

BORING No. 1 STATION AND OFFSET 48+78, 76' Lt. of Centerline of SURFACE ELEV. 996.4

ELEV.	DEPTH	SAMPLE No.	STD. PEN. (N)	% REC.	DESCRIPTION	Physical Characteristics							SHTL CLASS				
						% AGG.	% C.S.	% F.S.	% SILT	% CLAY	LL	PL		W.C.			
996.4	0				0.4' brick												
996.4	2	1	3-4-11	14%	Brown silty sand, some sandstone fragments, fill, moist - medium stiff.	30	7	37	17	9	-	0	10	A-2-4			
	4	2	10-10-11	14%	do	29	10	33	19	9	19	6	13	A-2-4			
996.4	6	3	6-6-3	10%	do	30	9	23	26	12	21	7	13	A-2-4			
986.4	8	4	3-3-4	15%	Brown silt, some fine sand, with clay seams, wet - loose.	0	0	20	65	15	23	3	28	A-4b			
984.4	10	5	2-3-6	10%	Brown gravelly sand, little silt, moist - loose.	17	29	40	-14-	-	-	-	12	A-1-b			
982.4	12					24	6	15	40	15	24	5	17	A-4a			
982.4	14	6	10-8-11	10%	Brown sandy silt, with sand seams, some gravel, moist - medium dense.	7	6	13	54	20	26	6	23	A-4b			
979.4	16	7	5-7-8	8%	Brown reddish brown silt, little sand, trace of gravel, moist - medium dense.	33	7	18	32	10	22	4	17	A-4a			
	18	8	13-15-13	15%	Brown and gray sandy silt, some gravel, moist - medium dense.	13	6	17	47	17	19	4	16	A-4a			
973.4	20	9	5-6-7	16%	Gray sandy silt, little gravel, very moist - medium dense.	6	4	8	55	27	28	8	20	A-4b			
969.9	22																
	24																
	26	10	8-8-10	14%	Brown silt, little sand, trace of gravel, moist - medium dense.	27	8	13	38	14	19	3	17	A-4a			
	28																
	30																
	32	11	5-8-10	10%	Gray sandy silt, some gravel and rock fragments, very moist - medium dense.												
	34																

AS A MUTUAL PROTECTOR TO CLIENTS, THE PUBLIC, AND OURSELVES, ALL REPORTS ARE SUBMITTED AS THE CONFIDENTIAL PROPERTY OF CLIENTS, AND AUTHORIZATION FOR PUBLICATION OF STATEMENTS, CONCLUSIONS, OR EXTRACTS FROM OR REBASING OUR REPORTS IS RESERVED PENDING OUR WRITTEN APPROVAL.

4120 AIRPORT ROAD  
CINCINNATI 26, OHIO

**THE H. C. NUTTING COMPANY**

Form No. 530-16-59

**TESTING ENGINEERS AND SOILS CONSULTANTS**

Split LOG OF BORING Page 2 of 2

DATE STARTED 5-29-61 SAMPLER TYPE Spoon DIA. 2" O.D. WATER ELEV. IMMEDIATE None CLIENT: City of Akron, Ohio  
 DATE COMPLETED 5-29-61 CASING LENGTH 35' PANN Core Barrel 3.5" DIA. AFTER HOURS: PROJECT: Akron Expressway, Sum 18-0506  
 Backfilled (Driveway) over Manchester Rd. Part 13

BORING No. 1 STATION AND OFFSET 48+78, 76' Lt. of Centerline of SURFACE ELEV. 996.4

ELEV.	DEPTH	SAMPLE No.	STD. PEN. (N)	% REC.	DESCRIPTION	Physical Characteristics							SHTL CLASS				
						% AGG.	% C.S.	% F.S.	% SILT	% CLAY	LL	PL		W.C.			
961.4	34																
	36																
956.4	38	12	NA	80%	Light gray firm to hard, siliceous shale (core consists of 3/8" to 3" pieces - avg. 3").												
	40																
	42																
	44				Boring completed.												

SUM-76-8.42  
SUM-77-9.77

SOIL PROFILE  
BRIDGE OVER MANCHESTER ROAD  
BORING LOG B-001-0-61

DRAWN SM  
CHECKED PAN

**THE H. C. NUTTING COMPANY**

4120 AIRPORT ROAD  
CINCINNATI 26, OHIO

**TESTING ENGINEERS AND SOILS CONSULTANTS**

Page 1 of 2

Split

DATE STARTED 5-29-61 SAMPLER: TYPE SPDR DIA. 2" O.D. WATER ELEV. IMMEDIATE NONE CLIENT: City of Akron, Ohio  
 DATE COMPLETED 5-30-61 CASING: LENGTH 31 DIA. 3.5" I.D. AFTER HOURS PROJECT: Akron Expressway, Sum 18-0506  
 BORING No. 2 STATION AND OFFSET 47+84, 76' L. of Centerline of Manchester Rd. SURFACE ELEV. 990.2

ELEV.	DEPTH	SAMPLE No.	STD. PEN. (N)	% REC.	DESCRIPTION	Physical Characteristics							SHTL CLASS	
						% AGG.	% C.S.	% F.S.	% SILT	% CLAY	LL	P.L.		W.C.
990.2	0					30	6	20	33	11	21	5	18	A-4a
989.2	2	1	2-10-4	14"	0.5' Concrete-0.5' Cinders	Insufficient sample for testing.								
	4	2	20-23-33	2"	Brown sandy silt, some gravel and sandstone fragments, moist - loose.									
	6	3	10-13-13	13"	Brown and gray sandy silt, some gravel and sandstone fragments, moist - medium stiff.	20	4	13	42	21	24	6	18	A-4a
980.2	8	4	10-10-18	14"	Brown sandy silt, little gravel, moist-medium stiff.	12	7	19	44	18	25	5	16	A-4a
	10	5	46-80	8"	Brown gravely sand, with rock fragments, little silt, moist - very dense.	40	19	23	-18-	-	-	-	10	A-1-b
972.2	12					25	14	45	-	-	-	-	13	A-1-b
	14													
	16	6	25-23-25	6"	Brown gravely sand, little gravel, very moist - very dense.									
	18													
	20													
968.2	22	7	22-15-15	7"	Brown fine and coarse sand, little gravel and rock fragments, little silt, moist - dense.	16	18	38	19	9	16	1	14	A-3a
	24													
	26	8	14-18-28	8"	Gray silty sand and gravel with rock fragments, very moist - dense.	55	9	10	21	5	17	1	13	A-2-4
	28													
	30	9	15-18-21	9"	Gray silty sand and gravel with shale and rock fragments, moist - dense.	58	7	7	25	3	21	1	14	A-2-4
	32													

AS A MUTUAL PROTECTION TO CLIENTS, THE PUBLIC AND OURSELVES, ALL REPORTS ARE SUBMITTED AS THE CONFIDENTIAL PROPERTY OF CLIENTS, AND AUTHORIZATION FOR PUBLICATION OR STATEMENT OF CONCLUSIONS, OR EXTRACTS FROM OR REBIRING OUR REPORTS IS RESERVED PENDING OUR WRITTEN APPROVAL.

(cont'd. next page)

**THE H. C. NUTTING COMPANY**

4120 AIRPORT ROAD  
CINCINNATI 26, OHIO

**TESTING ENGINEERS AND SOILS CONSULTANTS**

Page 2 of 2

Split

DATE STARTED 5-29-61 SAMPLER: TYPE SPDR DIA. 2" O.D. WATER ELEV. IMMEDIATE NONE CLIENT: City of Akron, Ohio  
 DATE COMPLETED 5-30-61 CASING: LENGTH 31 DIA. 3.5" I.D. AFTER HOURS PROJECT: Akron Expressway, Sum 18-0506  
 BORING No. 2 STATION AND OFFSET 47+84, 76' L. of Centerline of Manchester Rd. SURFACE ELEV. 990.2

ELEV.	DEPTH	SAMPLE No.	STD. PEN. (N)	% REC.	DESCRIPTION	Physical Characteristics							SHTL CLASS	
						% AGG.	% C.S.	% F.S.	% SILT	% CLAY	LL	P.L.		W.C.
957.7	32													
	34				Layered gray, hard, siliceous, shale and limestone (core consists of broken pieces to 3 1/2" pieces - avg. 3" in limestone and 1" in shale). Limestone composes 9" of core.									
952.7	36	10	NA	65%										
	38													
	40				Boring completed.									



**THE H. C. NUTTING COMPANY**

4120 AIRPORT ROAD  
CINCINNATI 26, OHIO

**TESTING ENGINEERS AND SOILS CONSULTANTS**

Page 1 of 2

Split

DATE STARTED 5-24-61 SAMPLER TYPE Spoon DIA. 2" O.D. WATER ELEV. IMMEDIATE Net at 13.5 CLIENT: CITY of Akron, Ohio  
 DATE COMPLETED 5-25-61 CASING LENGTH 27.0 DIA. 3.5 I.D. AFTER PANM Core Barrel HOURS Backfilled (Sidewalk) PROJECT: AKRON EXPRESSWAY, Sum 18-0506  
 BORING No. 3 STATION AND OFFSET 48+87, 25' Lt. of Centerline of SURFACE ELEV. 990.0 Over Manchester Rd. Part 13

ELEV.	DEPTH	SAMPLE No.	STD. PEN. (N)	% REC.	DESCRIPTION	Physical Characteristics							SHTL CLASS	
						% AGG.	% C.S.	% F.S.	% SILT	% CLAY	LL	P.I.		W.C.
990.0	0					11	14	40	25	10	-	0	18	A-3a
989.5	2	1	2-3-3	14"	0.5' Concrete									
987.0	4	2	2-2-2	12"	Brown fine and coarse sand, little gravel, little silt, fill, moist-loose.	3	35	59	-3-	-	-	-	12	A-3
	6	3	1-1-1	16"	Brn. fine sand, and coarse sand, trace of gravel and silt, moist-very loose.	1	29	67	-3-	-	-	-	7	A-3
	8	4	1-1-2	17"	Brn. fine sand, trace of coarse sand gravel and silt, moist - very loose.	2	9	83	-6-	-	-	-	8	A-3
	10	5	1-1-2	16"	Brown fine sand, and coarse sand, trace of gravel and silt, moist - very loose.	8	39	50	-3-	-	-	-	8	A-3
978.0	12					50	10	25	12	3	-	0	15	A-1-b
	14	6	4-9-18	13"	Brown sandy gravel, with rock fragments, little silt, moist - med. dense	49	9	26	12	4	-	0	15	A-1-b
973.0	16	7	9-14-17	12"	do									
	18	8	5-6	8"	Brn. sandy silt, little gravel, moist-medium stiff.	12	8	25	39	15	20	3	17	A-4a
967.5	20	9	8	6"	Brn. and gray silty silt, little gravel, moist - medium stiff.	18	8	19	39	16	18	4	14	A-4a
	22	10	7-5-6	9"	Gray sandy silt, little gravel, moist-medium dense.	12	5	22	45	16	17	2	13	A-4a
963.0	24	11	6-9-13	10"	Gray fine and coarse sand, little gravel, some silt, with clay seams, moist - medium dense.	18	20	37	23	2	-	0	8	A-3a
	26	12	6-6-10	15"	Gray silt, and clay, moist - stiff.	0	0	1	61	38	26	9	17	A-4b
962.0	28					45	14	15	24	2	-	0	16	A-2-4
	30	13	6-9-16	8"	Gray silty sand, and gravel with brown sand seams, moist - medium dense.									
956.0	34													

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Form No. 530-16-58

**THE H. C. NUTTING COMPANY**

4120 AIRPORT ROAD  
CINCINNATI 26, OHIO

**TESTING ENGINEERS AND SOILS CONSULTANTS**

Page 2 of 2

Split

DATE STARTED 5-24-61 SAMPLER TYPE Spoon DIA. 2" O.D. WATER ELEV. IMMEDIATE Net at 13.5 CLIENT: CITY of Akron, Ohio  
 DATE COMPLETED 5-25-61 CASING LENGTH 27.0 DIA. 3.5 I.D. AFTER PANM Core Barrel HOURS Backfilled (Sidewalk) PROJECT: AKRON EXPRESSWAY, Sum 18-0506  
 BORING No. 3 STATION AND OFFSET 48+87, 25' Lt. of Centerline of SURFACE ELEV. 990.0 Over Manchester Rd. Part 13

ELEV.	DEPTH	SAMPLE No.	STD. PEN (N)	% REC.	DESCRIPTION	Physical Characteristics							SHTL CLASS	
						% AGG.	% C.S.	% F.S.	% SILT	% CLAY	LL	P.I.		W.C.
956.0	34					52	6	20	16	6	-	0	12	A-1-b
957.0	36	14	4-5-21	8"	Gray sandy gravel, little silt, moist - medium dense.									
	38													
948.0	40	15	24-60	8"	Gray sandy silt, and rock fragments, moist - very dense.	38	7	6	31	18	26	9	10	A-4a
	42													
943.0	44													
	46	16	NM	85%	Gray, hard, siliceous, shale (core consists of broken pieces to 2-3/4" pieces - avg. 1" with one 2 1/2" layer of limestone at top).									
48														
50					Boring completed.									

SUM-76-8.42  
SUM-77-9.77

SOIL PROFILE  
BRIDGE OVER MANCHESTER ROAD  
BORING LOG B-003-0-61

DRAWN SM  
CHECKED PAN

**THE H. C. NUTTING COMPANY**

4120 AIRPORT ROAD  
CINCINNATI 26, OHIO

**TESTING ENGINEERS AND SOILS CONSULTANTS**

LOG OF BORING Page 1 of 2

DATE STARTED 5-25-61 SAMPLER: TYPE Spoon DIA. 2" O.D. WATER ELEV. IMMEDIATE None CLIENT: City of Akron, Ohio  
 DATE COMPLETED 5-26-61 CASING: LENGTH 20.0' DIA. 3.5" I.D. AFTER HOURS Backfilled (Sidewalk) PROJECT: Akron Expressway, Sum 18-0506  
 BORING No. 4 STATION AND OFFSET 48+25, 32' L. of Centerline of SURFACE ELEV. 989.8 Over Manchester Rd. Part 13

ELEV.	DEPTH	SAMPLE No.	STD. PEN. (N)	% REC.	DESCRIPTION	Physical Characteristics							SMTL CLASS				
						% AGG.	% C.S.	% F.S.	% SILT	% CLAY	LL	PL		W.C.			
989.8	0				0.5' Concrete												
989.3	2	1	2-5-4	13%	Brown silty sand, some gravel, moist - medium stiff.	29	13	23	25	10	19	3	13	A-2-4			
988.3	4	2	4-6-8	14%	Brown sandy silt, some gravel and shale fragments, moist - stiff.	34	11	11	27	17	26	9	14	A-4a			
883.8	6	3	9-7-7	14%	Brown sandy silt, little gravel, with fine sand seams, moist - medium dense.	11	6	46	22	15	19	5	16	A-4a			
	8	4	2-1-1	18%	Brown fine sand, and coarse sand trace of gravel and silt, moist - very loose.	7	36	51	-6	-	-	-	9	A-3			
	10				do	6	32	53	-9	-	-	-	9	A-3			
	12	5	1-2-2	16%	do	2	33	60	-5	-	-	-	7	A-3			
	14	6	1-2-3	14%	do												
972.8	16	7	9-16-17	11%	Brown silty sand, and shale and sandstone fragments, moist - dense.	37	6	32	21	4	-	0	15	A-2-4			
	18	8	9-7-9	11%	Brown sandy silt, and sandstone fragments, moist - medium stiff.	35	10	19	35	1	21	3	16	A-4a			
	20				Gray sandy silt, little fine gravel, very moist - medium dense.	14	7	19	46	14	19	4	15	A-4a			
965.8	24	10	5-6-8	5%	do	Insufficient sample for testing.											
	26	11	4-7	12%	Gray silt, trace of fine sand, very moist - medium stiff.	0	0	10	69	21	23	6	19	A-4b			
963.8	26	12	8	5%	Brown sandy gravel, little silt, wet - medium dense.	46	13	19	16	6	19	2	19	A-1-b			
	28				do												
960.8	30				Gray silt, some sand in seams, little gravel, wet - soft.	11	8	17	59	5	18	3	18	A-4b			
957.8	32	13	5-5-7	14%													
955.8	34																

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**THE H. C. NUTTING COMPANY**

4120 AIRPORT ROAD  
CINCINNATI 26, OHIO

**TESTING ENGINEERS AND SOILS CONSULTANTS**

LOG OF BORING Page 2 of 2

DATE STARTED 5-25-61 SAMPLER: TYPE Spoon DIA. 2" O.D. WATER ELEV. IMMEDIATE None CLIENT: City of Akron, Ohio  
 DATE COMPLETED 5-26-61 CASING: LENGTH 20.0' DIA. 3.5" I.D. AFTER HOURS Backfilled (Sidewalk) PROJECT: Akron Expressway, Sum 18-0506  
 BORING No. 4 STATION AND OFFSET 48+25, 32' L. of Centerline of SURFACE ELEV. 989.8 Over Manchester Rd. Part 13

ELEV.	DEPTH	SAMPLE No.	STD. PEN. (N)	% REC.	DESCRIPTION	Physical Characteristics							SMTL CLASS	
						% AGG.	% C.S.	% F.S.	% SILT	% CLAY	LL	PL		W.C.
955.8	34				Brown gravelly sand, little silt, wet - medium dense.	34	36	16	-14	-	-	-	14	A-1-b
946.8	42	15	33-24-27	7%	Gray sandy gravel and rock fragments, little silt, moist - very dense.	65	7	8	15	5	19	2	12	A-1-b
941.8	48	16	MM	93%	Gray, hard, siliceous, shale (core consists of broken to 5 1/2" piece - avg. 1 1/2" - core is highly weathered at 44.5' and contains one 2" layer of limestone at top.)									
	50				Boring Completed.									

SUM-76-8.42  
SUM-77-9.77

SOIL PROFILE  
BRIDGE OVER MANCHESTER ROAD  
BORING LOG B-004-0-61

DRAWN SM  
CHECKED PAN

**THE H. C. NUTTING COMPANY**

4120 AIRPORT ROAD  
CINCINNATI 26, OHIO

**TESTING ENGINEERS AND SOILS CONSULTANTS**

LOG OF BORING Page 1 of 2

DATE STARTED 5-23-61 SAMPLER TYPE Spoon DIA 2" O.D. WATER ELEV. IMMEDIATE Met at 20.5' CLIENT: City of Akron, Ohio  
 DATE COMPLETED 5-24-61 CASING LENGTH 61.5' PAVN Core Barrel AFTER Backfilled (Sidewalk) PROJECT: Akron Expressway, Sum 18-0506  
 BORING No. 5 STATION AND OFFSET 49+00, 34' R of Centerline of Manchester Rd. SURFACE ELEV. 989.2

ELEV.	DEPTH	SAMPLE No.	STD. PEN. (N)	% REC.	DESCRIPTION	Physical Characteristics							SMTL CLASS				
						% AGG.	% C.S.	% F.S.	% SILT	% CLAY	LL	PL		W.C.			
989.2	0				0.5' Concrete												
987.2	2	1	4-3-7	14"	Brown sandy silt, some gravel, and cinders. fill, moist - medium stiff.	24	10	26	23	17	23	7	14	A-4a			
983.7	4	2	7-6-7	15"	Brown fine and coarse sand, little silt, trace of gravel, fill, moist - medium stiff.	6	6	62	12	14	-	0	15	A-3a			
982.2	6	3	2-4-5	15"	Brown sandy silt, moist - medium stiff.	0	0	58	32	10	-	0	21	A-4a			
979.2	8	4	3-2-3	17"	Brown silt, some fine sand and silt seams, wet - soft.	0	0	29	57	14	22	3	25	A-4b			
	12	5	1-1-1	15"	Brn. gravelly sand, trace of silt, moist - very loose.	36	44	13	-7	-	-	-	8	A-1-b			
	14	6	1-2-2	17"	Brown sandy gravel, trace of silt, moist - loose.	49	33	10	-8	-	-	-	8	A-1-b			
	16	7	1-2-3	15"	Brown gravelly sand, trace of silt, moist - loose.	12	46	37	-5	-	-	-	5	A-1-b			
	18	8	2-2-4	16"	do	16	57	22	-5	-	-	-	7	A-1-b			
967.2	22	9	2-2-5	17"	do	7	55	32	-6	-	-	-	13	A-1-b			
	24	10	4-5-6	17"	Brown fine sand, little silt, moist - medium dense.	0	1	87	-12	-	-	-	7	A-3a			
964.2	26	11	10-11-1	12"	Brown gravelly sand, little silt, moist - medium dense.	33	22	28	12	5	-	0	14	A-1-b			
955.2	34	12	7-6-6	10"	Gray silt, some sand, little gravel, with shale fragments, wet - medium dense.	12	4	20	53	11	17	2	16	A-4b			

(cont'd. next page)

**THE H. C. NUTTING COMPANY**

4120 AIRPORT ROAD  
CINCINNATI 26, OHIO

**TESTING ENGINEERS AND SOILS CONSULTANTS**

LOG OF BORING Page 2 of 2

DATE STARTED 5-23-61 SAMPLER TYPE Spoon DIA 2" O.D. WATER ELEV. IMMEDIATE Met at 20.0' CLIENT: City of Akron, Ohio  
 DATE COMPLETED 5-24-61 CASING LENGTH 61.5' PAVN Core Barrel AFTER Backfilled (Sidewalk) PROJECT: Akron Expressway, Sum 18-0506  
 BORING No. 5 STATION AND OFFSET 49+00, 34' R of Centerline of Manchester Rd. SURFACE ELEV. 989.2

ELEV.	DEPTH	SAMPLE No.	STD. PEN. (N)	% REC.	DESCRIPTION	Physical Characteristics							SMTL CLASS	
						% AGG.	% C.S.	% F.S.	% SILT	% CLAY	LL	PL		W.C.
951.2	36	13	3-4-5	7"	Gray sandy silt, with silt and sand seams, some shale and rock fragments, wet - loose.	31	7	19	32	11	17	3	15	A-4a
946.2	40	14	13-14-14	4"	Gray silty sand and shale and rock fragments, wet - medium dense.	47	13	14	21	5	17	1	11	A-2-4
941.2	44	15	9-9-11	6"	Gray sandy silt, some rock fragments, wet - medium dense.	23	4	9	45	19	19	3	19	A-4a
938.7	46	15	9-9-11	6"	Gray sandy silt, some rock fragments, wet - medium dense.	23	4	9	45	19	19	3	19	A-4a
936.2	48	15	9-9-11	6"	Gray sandy silt, some rock fragments, wet - medium dense.	23	4	9	45	19	19	3	19	A-4a
	50	16	3	3"	Gray silt, trace of sand, wet - loose.	0	1	3	70	26	23	3	25	A-4b
	52	17	4-6	8"	Brown silt, some sand, moist - medium dense.	0	2	18	64	16	26	4	24	A-4b
930.2	54	18	10-26-14	8"	Gray silty sand, and gravel, moist - dense.	47	8	11	24	10	20	5	16	A-2-4
927.7	56	19	15	5"	Gray sandy silt, and shale fragments, moist - very stiff.	48	5	4	30	13	27	9	9	A-4a
922.7	60	20	NM	92%	Gray, hard, silty shale (core consists of broken pieces to 3/4" pieces - avg. 2 1/2" - Core is highly weathered at top and shattered at 65.5').									
	62													
	64													
	66													
	68				Boring completed.									

SUM-76-8.42  
SUM-77-9.77

SOIL PROFILE  
BRIDGE OVER MANCHESTER ROAD  
BORING LOG B-005-0-61

DRAWN SM  
CHECKED PAN

153  
173

TESTING ENGINEERS AND SOILS CONSULTANTS

LOG OF BORING Page 1 of 2

Split

DATE STARTED 5-16-61 SAMPLER: TYPE SPOON DIA. 2" O.D. WATER ELEV. IMMEDIATE Wet @ 15.5' CLIENT: City of Akron, Ohio  
 DATE COMPLETED 5-17-61 CASING: LENGTH 59.5' DIA. 3.5" I.D. AFTER 24 HOURS Caved dry @ 32' PROJECT: Akron Expressway, Sum 18-0506  
 Over Manchester Rd. Part 13

BORING No. 6 STATION AND OFFSET 48+38, 26' Rt. of Centerline of SURFACE ELEV. 988.1

ELEV.	DEPTH	SAMPLE No.	STD. PEN. (N)	% REC.	DESCRIPTION	Physical Characteristics							SHTL CLASS				
						% AGG.	% C.S.	% F.S.	% SILT	% CLAY	LL	PL		W.C.			
988.1	0				0.2" Sand												
987.5	2	1	5-5-7	12"	Brown sandy clay and cinders, fill, moist - medium stiff.	No tests performed.											
	4	2	2-1-2	8"	do	No tests performed.											
983.1	6	3	1-2-3	13"	Brown sandy silt, with fine sand lenses, trace of gravel, moist - medium stiff.	4	9	32	31	24	25	7	20	A-4a			
	8	4	2-4-7	14"	Brown and gray sandy silt, some sandstone fragments, moist - medium stiff.	26	7	27	25	15	19	3	14	A-4a			
978.1	10	5	14-14-14	13"	Brown silty sand, and sandstone fragments, moist - medium dense.	45	6	20	17	12	19	5	11	A-24			
	12	6	9	3"	do	Insufficient sample for testing.											
975.1	14	7	7-7	11"	Brown fine and coarse sand, little silt, trace of gravel, moist - medium dense.	9	16	63	-12-				7	A-3a			
973.1	16	8	7-7-7	10"	Brown sandy silt with fine sand seams, moist - medium dense.	0	2	61	20	12	-	0	18	A-4a			
971.1	18	9	7-8-8	7"	Brown fine to coarse sand, trace of gravel, moist - medium dense.	10	3	55	9	13	-	0	11	A-3a			
969.1	20	10	5-4-4	9"	Brown gravelly sand, little silt, moist - loose.	33	40	12	-	15-			14	A-1-b			
	22																
	24	11	4-5-5	5"	Brown sandy gravel, trace of silt, wet - loose.	46	35	10	-	9-			14	A-1-b			
	26	12	4-4-4	6"	Brown gravelly sand, little silt, wet - loose.	31	40	16	-	13-			14	A-1-b			
	28																
	30	13	3-3-6	8"	Brown gravelly sand, little silt	9	46	32	-	13-			18	A-1-b			

TESTING ENGINEERS AND SOILS CONSULTANTS

LOG OF BORING Page 2 of 2

Split

DATE STARTED 5-16-61 SAMPLER: TYPE SPOON DIA. 2" O.D. WATER ELEV. IMMEDIATE Wet @ 15.5' CLIENT: City of Akron, Ohio  
 DATE COMPLETED 5-17-61 CASING: LENGTH 59.5' DIA. 3.5" I.D. AFTER 24 HOURS Caved Dry @ 32' PROJECT: Akron Expressway, Sum 18-0506  
 Over Manchester Rd. Part 13

BORING No. 6 STATION AND OFFSET 48+38, 26' Rt. of Centerline of SURFACE ELEV. 988.1

ELEV.	DEPTH	SAMPLE No.	STD. PEN. (N)	% REC.	DESCRIPTION	Physical Characteristics							SHTL CLASS	
						% AGG.	% C.S.	% F.S.	% SILT	% CLAY	LL	PL		W.C.
981.1	34				Brown gravelly sand, trace of silt, wet - loose.	34	37	22	-7-				18	A-1-b
	36	14	2-3-5	10"										
	38													
945.1	40	15	15-16-18	5"	Gray sandy silt with fine wet sand seams, little gravel, moist - medium stiff.	14	9	32	33	12	15	1	14	A-4a
	42													
	44													
940.1	46	16	9-10-10	8"	Gray and brown sandy gravel, little silt, wet - medium dense.	50	16	15	14	5	16	1	12	A-1-b
	48													
	50													
	52	17	7-7-13	5"	Brown fine and coarse sand, some gravel, trace of silt, wet - medium dense.	27	15	37	8	13	-	0	15	A-3a
	54													
936.1	56	18	13-13-27	10"	Brown sandy silt, some sand and gravel seams, wet - dense.	30	7	10	42	11	23	2	21	A-4a
	58													
928.6	60													
	62	19	NM	76%	Gray, hard, siliceous, shale (consists of broken pieces to 3/4" pieces - avg. broken pieces except last 1/4" which is hard and in tact.)									
923.6	64													
	66				Boring completed.									



**TESTING ENGINEERS AND SOILS CONSULTANTS**

Split  
LOG OF BORING Page 1 of 2

DATE STARTED 5-22-61 SAMPLER TYPE Spoon DIA. 2" O.D. WATER ELEV. IMMEDIATE None CLIENT: City of Akron, Ohio  
 DATE COMPLETED 5-22-61 CASING LENGTH 62.0' DIA. 3.5" I.D. AFTER HOURS Caved at 30' PROJECT: Akron Expressway, Sum 18-0506  
 BORING No. 7 STATION AND OFFSET 49+10, 76' R. of Centerline of SURFACE ELEV. 989.4 Over Manchester Rd. Part 13

ELEV.	DEPTH	SAMPLE No.	STD. PEN. (N)	% REC.	DESCRIPTION	Physical Characteristics							SHTL CLASS				
						AGG.	% C.S.	% F.S.	% SILT	% CLAY	LL	PL		W.C.			
989.4	0				0.5" Blacktop.	No tests performed											
988.4	2	1	21-15-8	16"	Brown sandy clay and cinders, fill, moist - medium stiff.												
884.4	4	2	5-4-6	17"	Brown sandy silt, fill, moist - medium stiff.	0	0	46	37	17	19	3		19	A-4a		
	6	3	1-2-2	15"	Brown gravelly sand, trace of silt, moist - very loose.	21	60	14						4	A-1-b		
	8	4	1-1-2	14"	do	9	55	33						4	A-1-b		
974.4	10				do	11	44	41						4	A-1-b		
	12	5	1-2-2	17"	do	16	63	17						4	A-1-b		
	14	6	2-2-3	16"	Brown gravelly sand, trace of silt, moist - loose.	0	2	94						5	A-3		
	16	7	1-2-3	17"	Light brown fine sand, trace of coarse sand, trace of silt, moist - loose.												
966.4	20				Brown fine sand, little silt, trace of gravel, moist - loose.	4	0	71	19	6	-	0	13	A-3a			
	22	8	4-4-5	8"													
963.9	24				Brown silt, trace of fine sand, trace of gravel, very moist - medium stiff.	1	0	8	77	14	22	0	23	A-4b			
	26	9	6	4-5	4"	0	1	20	67	12	-	0	21	A-4b			
961.4	28	10		8"	Gray silt, some fine sand, wet - loose.												
	30																
	32	11	17-23-15	2"	Gray sandy gravel, little silt, wet - dense.												
	34																

AS A MUTUAL PROTECTION TO CLIENTS, THE PUBLIC, AND OURSELVES, ALL REPORTS AND TESTS SUBMITTED AS THE CONFIDENTIAL PROPERTY OF CLIENTS, AND AUTHORIZATION FOR PUBLICATION OF STATEMENTS, CONCLUSIONS, OR EXTRACTS FROM OR REBORDING OUR REPORTS IS RESERVED PENDING OUR WRITTEN APPROVAL.

LOG OF BORING Page 2 of 2

DATE STARTED 5-22-61 SAMPLER TYPE Spoon DIA. 2" O.D. WATER ELEV. IMMEDIATE None CLIENT: City of Akron, Ohio  
 DATE COMPLETED 5-22-61 CASING LENGTH 62.0' DIA. 3.5" I.D. AFTER HOURS Caved at 30' PROJECT: Akron Expressway, Sum 18-0506  
 BORING No. 7 STATION AND OFFSET 49+10, 76' R. of Centerline of SURFACE ELEV. 989.4 Over Manchester Rd. Part 13

ELEV.	DEPTH	SAMPLE No.	STD. PEN. (N)	% REC.	DESCRIPTION	Physical Characteristics							SHTL CLASS	
						AGG.	% C.S.	% F.S.	% SILT	% CLAY	LL	PL		W.C.
949.9	34													
	36	12	8-11-12	4"	Gray sandy gravel, little silt, wet - dense.	47	24	18		-11-	-	-	9	A-1-b
	38													
	40													
	42	13	20-21-24	8"	Gray silt, trace of sand, trace of gravel, moist - dense.	2	3	7	72	16	21	2	17	A-4b
928.4	44													
	46	14	13-13-15	8"	Gray silt, little fine sand, wet - dense.	0	0	16	74	10	-	0	22	A-4b
	48													
	50													
927.4	52	15	14-13-17	6"	Gray silt, trace of fine sand, wet - dense.	0	0	3	87	10	-	0	28	A-4b
	54													
	56	16	12-12-14	6"	Gray silt, trace of fine sand, wet - medium dense.	0	0	3	87	10	-	0	26	A-4b
925.4	58													
	60	17	28-90	8"	Gray silt, with clay lenses, little fine sand, wet - very dense.	0	0	14	76	10	-	0	22	A-4b
	62													
923.4	64				Light gray friable fine to medium grained sandstone (Core consists of 7", 4", 2 1/2" pieces plus foreign gravel).									
	66	18	NM	30%										
921.4	68	19	67-68 (Sample)	(Wash)	Gray gravelly sand, trace of silt, moist - very dense. Boring completed.	3	48	39		-10-	-	9	A-1-b	

NOTE: Unable to drive casing through sandstone layers. Boring terminated by City of Akron representative.

SUM-76-8.42  
SUM-77-9.77

SOIL PROFILE  
BRIDGE OVER MANCHESTER ROAD  
BORING LOG B-007-0-61

DRAWN SM  
CHECKED PAN

**TESTING ENGINEERS AND SOILS CONSULTANTS**

LOG OF BORING Page 1 of 3

DATE STARTED 5-30-61 SAMPLER: TYPE Spoon DIA. 2" O.D. WATER ELEV. IMMEDIATE None CLIENT: City of Akron, Ohio  
 DATE COMPLETED 6-1-61 CASING: LENGTH 72.5' DIA. 3.5" I.D. AFTER HOURS Backfilled (driveway) PROJECT: Akron Expressway, Sum. 18-0506  
 BORING No. 7A STATION AND OFFSET 48+94.69' R. of Centerline of SURFACE ELEV. 989.2

ELEV.	DEPTH	SAMPLE No.	STD. PEN. (N)	% REC.	DESCRIPTION	Physical Characteristics							SHTL CLASS	
						% AGG.	% C.S.	% F.S.	% SILT	% CLAY	LL	P.I.		W.C.
989.2	0				0.5' Blacktop	No tests performed.								
988.7	2	1	13-11-14	16"	Brown sandy clay and cinders, fill, moist - medium stiff.	4	32	43	12	9	25	10	14	A-2-4
986.7	4	2	6-5-4	14"	Brown silty sand, trace of gravel, moist - loose.	26	18	30	21	5	-	0	11	A-2-4
982.2	6	3	2-3-3	8"	Brown silty sand, some gravel, moist - loose.	32	49	14	-	-	-	-	5	A-1-b
979.2	8	4	3-1-1	14"	Brown gravelly sand, trace of silt, moist - very loose.	10	37	49	-	-	-	-	5	A-3
977.2	10	5	2-2-2	16"	Brown fine sand, and coarse sand, trace of gravel, trace of silt, moist - loose.	22	32	39	-	-	-	-	4	A-1-b
971.2	12	6	2-2-3	14"	Brown gravelly sand, trace of silt, moist - loose.	25	46	24	-	-	-	-	5	A-1-b
964.2	14	7	2-2-3	17"	do	0	2	84	11	3	-	0	10	A-3a
961.2	16	8	2-3-3	16"	Brown fine and coarse sand, little silt, moist - loose	49	10	25	13	3	-	0	13	A-1-b
	18	9	54-52	9"	Brown sandy gravel and sandstone fragments, little silt, moist - very dense.	5	3	6	59	27	22	5	14	A-4b
	20	10	15-17-21	14"	Gray silt, trace of sand, trace of gravel, moist - stiff.	(cont'd. next page)								

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**TESTING ENGINEERS AND SOILS CONSULTANTS**

LOG OF BORING Page 2 of 3

DATE STARTED 5-30-61 SAMPLER: TYPE Spoon DIA. 2" O.D. WATER ELEV. IMMEDIATE None CLIENT: City of Akron, Ohio  
 DATE COMPLETED 6-1-61 CASING: LENGTH 72.5' DIA. 3.5" I.D. AFTER HOURS Backfilled (Driveway) PROJECT: Akron Expressway, Sum. 18-0506  
 BORING No. 7A STATION AND OFFSET 48+94.69' R. of Centerline of SURFACE ELEV. 989.2

ELEV.	DEPTH	SAMPLE No.	STD. PEN. (N)	% REC.	DESCRIPTION	Physical Characteristics							SHTL CLASS	
						% AGG.	% C.S.	% F.S.	% SILT	% CLAY	LL	P.I.		W.C.
951.7	34				Gray silt, little sand, trace of gravel, moist - dense.	10	5	8	52	25	22	4	14	A-4b
945.2	36	11	16-19-22	10"	Gray gravelly sand, trace of silt, moist - medium dense.	27	30	34	-	-	-	-	13	A-1-b
941.2	38	12	10-12-15	8"	Gray sandy silt, and gravel and rock fragments, moist - very dense.	36	10	12	36	6	-	0	18	A-4a
931.2	40	13	21-22-30	8"	Gray silt, with clay lenses, trace of sand, trace of gravel, moist - dense.	4	1	7	74	14	20	0	10	A-4b
925.2	42	14	15-15-19	11"	Gray silt, little fine sand, wet - dense.	0	0	19	75	6	-	0	21	A-4b
	44	15	11-13-18	15"	Gray sandy silt, and gravel with rock fragments, wet - dense.	36	5	6	43	10	20	2	20	A-4a
	46	16	10-20-21	12"	Gray sandy shale and rock fragments, little silt, moist - very dense.	56	14	9	16	5	18	2	11	A-1-b

Form No. 530-16-59

**THE H. C. NUTTING COMPANY**

4120 AIRPORT ROAD  
CINCINNATI 26, OHIO

**TESTING ENGINEERS AND SOILS CONSULTANTS**

LOG OF BORING page 3 of 3

Split

DATE STARTED 5-30-61 SAMPLER TYPE Spoon DIA. 2" O.D. WATER ELEV. IMMEDIATE None CLIENT: City of Akron, Ohio  
 DATE COMPLETED 6-1-61 CASING LENGTH 72.5' DIA. 3.5" I.D. AFTER HOURS PROJECT: Akron Expressway, Sum. 18-0506  
 BORING No. 7A STATION AND OFFSET 48+94.69' R. of Centerline of SURFACE ELEV. 989.2  
 Backfilled (Driveway) Over Manchester Rd. Part 13

ELEV.	DEPTH	SAMPLE No.	STD. PEN. (N)	% REC.	DESCRIPTION	Physical Characteristics							SMTL CLASS				
						% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.		W.C.			
920.7	68																
916.7	70	18	NM	18%	(Core consists of broken pieces of sandstone, limestone, quartz, gravel and foreign gravel.)												
911.7	72																
	74																
	76	19	NM	100%	Gray, hard, siliceous, shale with 3 thin layers of limestone (Core consists of 1/4 to 3" pieces - avg. 2" with three 1" layers of limestone).												
	76																
	80				Boring completed.												

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**THE H. C. NUTTING COMPANY**

4120 AIRPORT ROAD  
CINCINNATI 26, OHIO

**TESTING ENGINEERS AND SOILS CONSULTANTS**

LOG OF BORING Page 1 of 3

DATE STARTED 5-18-61 SAMPLER: TYPE SPOON DIA. 2" O.D. WATER ELEV. IMMEDIATE Wet @ 17.5' CLIENT: City of Akron, Ohio  
DATE COMPLETED 5-19-61 CASING: LENGTH 74'-0" DIA. 3.5" I.D. AFTER 60 HOURS PROJECT: Akron Expressway, Sum 18-0506  
Caved Dry @ 31' Over Manchester Rd. Part 13

BORING No. 8 STATION AND OFFSET 48+48, 76' Rt. of Centerline of SURFACE ELEV. 988.2  
Manchester Rd.

ELEV.	DEPTH	SAMPLE No.	STD. PEN. (IN)	% REC.	DESCRIPTION	Physical Characteristics					SPTL CLASS						
						% AGG.	% C.S.	% F.S.	% SILT	% CLAY		L.L.	P.I.	W.C.			
988.2	0				0.4' Blacktop.												
987.8	2	1	6-3-2	10"	Brown sandy clay and cinders, fill, moist - medium stiff.												
	4	2	3-2-2	14"	do												
982.7	6	3	2-3-4	10"	Brown sandy silt, little gravel, moist - medium stiff.	14	9	41	22	14	17	2	12	A-4a			
981.2	8	4	3-3-3	16"	Brown silty sand, trace of gravel, moist - loose.	8	40	31	8	13	25	10	12	A-2-4			
978.2	10																
	12	5	3-4-3	16"	Brown fine sand, little coarse sand, trace of gravel, trace of silt, moist - loose.	5	16	70	-	-	-	-	10	A-3			
975.2	14	6	2-1-1	16"	Brown sandy gravel, trace of silt, moist - very loose.	56	31	7	-	-	-	-	13	A-1-a			
973.7	16	7	2-2-2	14"	Brown gravelly sand, trace of silt, moist - loose.	9	42	44	-	-	-	-	8	A-1-b			
	18	8	2-1-2	16"	do	9	41	39	6	5	-	0	18	A-1-b			
968.2	20	9	3-4-9	8"	Brown fine sand, some coarse sand, little gravel, very moist - medium dense.	15	30	46	-	-	-	-	16	A-3			
965.2	22																
	24																
	26	10	3-5-5	10"	Brown fine sand, little silt, trace of gravel, moist - medium dense.	2	0	77	17	4	-	0	18	A-3a			
	28																
957.7	30	11	8	5"	Gray fine and coarse sand, some silt, trace of gravel, wet - medium dense.	4	8	54	27	7	-	0	19	A-3a			
	32	12	5-6	5"	Gray silt, little fine sand, trace of gravel, wet - medium dense.	3	0	18	71	8	-	0	17	A-4b			
	34																

(cont'd. next page)

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LOG OF BORING Page 2 of 3

DATE STARTED 5-18-61 SAMPLER: TYPE SPOON DIA. 2" O.D. WATER ELEV. IMMEDIATE Wet @ 17.5' CLIENT: City of Akron, Ohio  
DATE COMPLETED 5-19-61 CASING: LENGTH 74'-0" DIA. 3.5" I.D. AFTER 60 HOURS PROJECT: Akron Expressway, Sum. 18-0506  
Caved Dry @ 31' Over Manchester Rd. Part 13

BORING No. 8 STATION AND OFFSET 48+48, 76' Rt. of Centerline of SURFACE ELEV. 988.2  
Manchester Rd.

ELEV.	DEPTH	SAMPLE No.	STD. PEN. (IN)	% REC.	DESCRIPTION	Physical Characteristics					SPTL CLASS						
						% AGG.	% C.S.	% F.S.	% SILT	% CLAY		L.L.	P.I.	W.C.			
988.2	34																
	36	13	7-4-6	15"	Gray sandy silt with silt lenses, some sand, little gravel, moist - medium dense.	15	4	26	36	19	18	5	16	A-4a			
	38																
946.2	40	14	9-10-13	3"	Gray sandy silt, little gravel, moist - medium stiff.	15	12	12	36	25	21	6	17	A-4a			
	42																
	44																
	46	15	12-9-10	12"	Gray silt, little sand, little gravel, moist - medium dense.	11	3	7	50	29	23	6	16	A-4b			
	48																
936.2	50	16	5-5-6	13"	Gray silt, trace of fine sand, trace of gravel, wet - medium dense.	1	0	10	73	16	20	1	22	A-4b			
	52																
	54																
930.2	56	17	5-8-13	13"	Gray sandy silt, trace of gravel, wet - medium dense.	1	5	42	42	10	-	0	16	A-4a			
	58																
	60	18	16-22-28	16"	Gray silt, little fine sand, moist - dense.	0	0	14	58	28	19	2	18	A-4b			
926.2	62																
	64																
	66	19	45-50-68	12"	Gray gravelly sand, with clay seams, little silt, moist - very dense.	35	15	25	17	8	16	2	12	A-1-b			
920.2	68																

(cont'd. next page)

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**TESTING ENGINEERS AND SOILS CONSULTANTS**

LOG OF BORING Page 3 of 3

Split

DATE STARTED 5-18-61 SAMPLER TYPE SPOON DIA. 2" O.D. WATER ELEV. IMMEDIATELY @ 17.5' CLIENT: City of Akron, Ohio  
 DATE COMPLETED 5-19-61 CASING LENGTH 74.0' DIA. 3.5" I.D. AFTER 60 HOURS PROJECT: Akron Expressway, Sum. 18-0506  
 BORING No. 8 STATION AND OFFSET 48+28.76' RL. of Centerline of SURFACE ELEV. 988.2 Over Manchester Rd. Part 1.3

ELEV.	DEPTH	SAMPLE No.	STD. PEN. (N)	% REC.	DESCRIPTION	Physical Characteristics						SHTL. CLASS					
						% ARG.	% C.S.	% F.S.	% SILT	% CLAY	LL		PL	W.C.			
920.2	68																
	70	20	20-25-35	8%	Gray sandy silt, some shale and limestone fragments, moist - stiff.	23	7	15	37	18	19	4	15	A-4a			
914.2	74																
	76																
	78	21	NM	67%	Gray, hard, siliceous, shale (core consists of few broken to 2 1/2" pieces - avg. 2" core indicates heavy weathering at 76.5' with other seams).												
909.2	80				Boring completed.												

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DATE STARTED 11-4-79 SAMPLER; TYPE S.S. DIA. 2.0" O. D. WATER ELEVATION  
 DATE COMPLETED 11-4-79 CASING; LENGTH H.S.A. DIA. 3.5" I.D. IMMEDIATE 950.5  
 BORING NUMBER 4-S CORE BARREL; TYPE SIZE AFTER HRS. BACKFILLED  
 STATION & OFFSET 113+00, 14, RT. B.L. RAMP "EN" SURFACE ELEVATION 968.0

ELEV.	DEPTH	STN PEN (N)	DESCRIPTION	SA NO	PHYSICAL CHARACTERISTICS								
					% AGG CS	% FS	% SILT	% CLAY	LI	PI	WC		
968.0	0		BROWN SANDY SILTY CLAY WITH SOME GRAVEL, SAND, AND ROCK FRAGMENTS, ( FILL ), MOIST-STIFF	1								17.4	
	2	3-4-7											
963.0	4	6-7-8											
	6	5-12-12											
958.0	8	5-4-4	BROWN SANDY SILTY CLAY WITH SOME GRAVEL, CINDERS, AND CONCRETE FRAGMENTS (FILL), MOIST-STIFF	2								5.0	
	10												
	12	7-8-9											
950.5	14	9-10-12	BROWN FINE TO COARSE SAND WITH A LITTLE GRAVEL, MOIST-MEDIUM DENSE	3								5.6	
	16	12-14-16											6.5
	18												
948.0	20	7-7-7											21.9
943.0	22	6-8-10	GRAY SILTY FINE SAND, WET - MEDIUM DENSE	4									
	24												
	26	8-13-16											
	28												
933.0	30	9-15-23	GRAY FINE SAND, WET-DENSE	5									
	32												
	34												
	36	10-14-20											17.6
	38		GRAY FINE SAND WITH A LITTLE FINE GRAVEL, WET - DENSE	6									
	40												
	42	10-16-22											
	44												
918.0	46	14-21-28	GRAY FINE SAND, WET - VERY DENSE	7									
	48												
916.5	50	16-23-34		8								21.5	

BORING COMPLETED

ARVIN INGERSLEV  
SUM 94-00-00

DATE STARTED 10-10-79 SAMPLER TYPE S.S. DIA. 2.0" O.D. WATER ELEVATION IMMEDIATE 849.6  
DATE COMPLETED 10-11-79 CASING LENGTH H.S.A. DIA. 3.5" I.D. AFTER 24 HOURS 18.7'  
BORING NUMBER 5-5 CORE BARREL TYPE SIZE SURFACE ELEVATION 886.6  
STATION 1 OFFSET 114.00 FT. B.L. RAMP 4" R/W

DATE STARTED 11-4-79 SAMPLER TYPE S.S. DIA. 2.0" O.D. WATER ELEVATION IMMEDIATE 850.6  
DATE COMPLETED 11-4-79 CASING LENGTH H.S.A. DIA. 3.5" I.D. AFTER 24 HOURS 18.7'  
BORING NUMBER 4-5 CORE BARREL TYPE SIZE SURFACE ELEVATION 886.6  
STATION 1 OFFSET 113.00 FT. B.L. RAMP 4" R/W

ELEV. DEPTH	STN. PEN. (ft)	DESCRIPTION	PHYSICAL CHARACTERISTICS					
			SA	U	W	FL	PI	
886.6	0	BROWN SANDY SILTY CLAY WITH SOME SANDSTONE FRAGMENTS (FILL), MOIST - VERY STIFF	1					14.5
887.1	2							
888.6	4	DARK BROWN SANDY SILTY CLAY WITH SOME SANDSTONE FRAGMENTS (FILL), MOIST - VERY STIFF	2					12.2
889.1	6							
890.6	8	BROWN SILTY FINE TO COARSE SAND AND GRAVEL, MOIST - MEDIUM DENSE	3					9.7
891.1	10							
892.6	12							
893.1	14							
894.6	16							
895.1	18							
896.6	20							
897.1	22							
898.6	24							
899.1	26							
900.6	28							
901.1	30							
902.6	32							
903.1	34							
904.6	36							
905.1	38							
906.6	40							
907.1	42							
908.6	44							
909.1	46							
910.6	48							
911.1	50							
912.6	52							

ELEV. DEPTH	STN. PEN. (ft)	DESCRIPTION	PHYSICAL CHARACTERISTICS					
			SA	U	W	FL	PI	
886.0	0	BROWN SANDY SILTY CLAY WITH SOME GRAVEL SAND, AND ROCK FRAGMENTS (FILL), MOIST-STIFF	1					7.4
887.0	2							
888.0	4							
889.0	6							
890.0	8	BROWN SANDY SILTY CLAY WITH SOME GRAVEL, CONCRETE AND CONCRETE FRAGMENTS (FILL), MOIST-STIFF	2					5.0
891.0	10							
892.0	12							
893.0	14							
894.0	16							
895.0	18							
896.0	20							
897.0	22							
898.0	24							
899.0	26							
900.0	28							
901.0	30							
902.0	32							
903.0	34							
904.0	36							
905.0	38							
906.0	40							
907.0	42							
908.0	44							
909.0	46							
910.0	48							
911.0	50							
912.0	52							

BORING COMPLETED

BORING COMPLETED

THE H. C. MULLING COMPANY  
GEOTECHNICAL ENGINEERS  
AIRPORT ROAD CINCINNATI, OHIO

STRUCTURE FOUNDATION INVESTIGATION  
REMAINING WALL BETWEEN SOUTH  
STREET & RAMP 4" R/W  
STATION 100+55 TO 14+20  
SEC. ARVIN INGERSLEV SUM-94-00-00

BORING DATA  
DRAWN BY: JAS  
CHECKED BY: CHL  
DATE: 4/8/80

SUM-76-8.42  
SUM-77-9.77

SOIL PROFILE  
BRIDGE OVER BOWERY  
BORING LOG S-005-0-79

DRAWN SM  
CHECKED PAN

DATE STARTED 10-10-79 SAMPLER: TYPE S.S. DIA. 2.0" O.D. WATER ELEVATION  
 DATE COMPLETED 10-10-79 CASING: LENGTH H.S.A O.A. 3.5' I.D. IMMEDIATE 19.0'  
 BORING NUMBER 6-S CORE BARREL: TYPE \_\_\_\_\_ AFTER 24 HOURS 18.2'  
 STATION & OFFSET 114+81 7' RI. BL RAMP EN SURFACE ELEVATION 970.1

ELEV.	DEPTH	STN. PEN (N)	DESCRIPTION	SA. NO.	PHYSICAL CHARACTERISTICS							
					AGG.	% S	% F	% CLAY	LI	PI	WC	
970.1	0											
967.6	2	4-18-6	DARK BROWN SANDY SILTY CLAY W/SOME GRAVEL, CINDERS, AND ROCK FRAGMENTS (FILL). MOIST - VERY STIFF	1				VISUAL				11.4
965.1	4	11-12-14	BROWN SANDY SILTY CLAY W/SOME GRAVEL (FILL). MOIST - VERY STIFF	2				VISUAL				12.0
962.6	6	4-4-5	GRAY AND BROWN SANDY SILT W/SOME CLAY AND SANDSTONE FRAGMENTS, (FILL) MOIST - STIFF	3				VISUAL				
960.1	8	6-7-6	BROWN SILTY FINE SAND W/A LITTLE GRAVEL, MOIST - MEDIUM DENSE	4				VISUAL				
957.6	10	3-3-4	GRAY SILTY FINE SAND, TRACE GRAVEL, MOIST - LOOSE	5				VISUAL				
952.6	12	7-7-7	GRAY FINE TO COARSE SAND W/SOME GRAVEL, MOIST - MEDIUM DENSE	6				VISUAL				
951.1	14	7-7-8	DO	7				VISUAL				
945.1	16	5-6-7	GRAY SILTY FINE SAND, MOIST - MEDIUM DENSE	8				VISUAL				
	18	6-6-6	DARK BROWN FINE TO COARSE SAND W/SOME GRAVEL, WET - MEDIUM DENSE	9	33	36	26	- 5 -				17.8
	20	4-7-11	GRAY FINE SAND, WET - MEDIUM DENSE	10				VISUAL				17.7
	22	12-12-14	DO	11				VISUAL				
935.1	24	6-11-15	GRAY FINE SAND, WET - MEDIUM DENSE	12				VISUAL				
930.1	26	7-13-18	GRAY FINE SAND, WET - DENSE	13				VISUAL				17.4
925.1	28	20-30-36	GRAY FINE SAND, WET - VERY DENSE	14				VISUAL				
	30	10-18-27	GRAY FINE SAND, WET - DENSE	15				VISUAL				20.2
	32	12-12-28	DO	16				VISUAL				
	34	18-47-68	DO	17				VISUAL				
910.1	36	12-23-39	GRAY SILTY FINE SAND, WET - VERY DENSE	18				VISUAL				
	38	11-18-26	GRAY SILTY FINE SAND, WET - DENSE	19				VISUAL				20.8
	40	12-21-36	GRAY SILTY FINE SAND, WET - VERY DENSE	20				VISUAL				

BORING COMPLETED



DATE STARTED 9-15-79 SAMPLER: TYPE S.S DIA. 2.0'' O.D. WATER ELEVATION  
 DATE COMPLETED 9-16-79 CASING: LENGTH H.S.A DIA. 3.5'' I.D. IMMEDIATE 20.0'  
 BORING NUMBER Z-S CORE BARREL: TYPE \_\_\_\_\_ SIZE \_\_\_\_\_ AFTER 24 HOURS 18.0'  
 STATION & OFFSET 115+74 13' LT. BL RAMP EN SURFACE ELEVATION 969.9

ELEV.	DEPTH	STN. PEN (N)	DESCRIPTION	SA NO	% AGG	% CS	% FS	% SILT	% CLAY	CHARACTERISTICS	LL	PI	WC
969.9	0			1						VISUAL			
967.4	2	7-8-5	BLACKTOP AND SAND W/SOME GRAVEL (FILL). MOIST - MEDIUM DENSE							VISUAL			
964.9	4	3-3-3	BROWN SANDY SILTY CLAY W/SOME GRAVEL AND SAND (FILL). MOIST - MEDIUM STIFF	2						VISUAL			13.8
962.4	6	1-1-2	BROWN SILTY FINE SAND W/SOME ORGANICS. MOIST - VERY LOOSE	3						VISUAL			13.6
959.9	8	2-3-4	BROWN SILTY FINE TO COARSE SAND AND GRAVEL. MOIST - LOOSE	4						VISUAL			13.4
957.4	10	3-3-3	BROWN SILTY FINE TO COARSE SAND AND GRAVEL. MOIST - LOOSE	5	47	32	11	6	4	N.P.			9.4
	12	6-6-8	BROWN FINE TO COARSE SAND AND GRAVEL. MOIST - MEDIUM DENSE	6						VISUAL			4.5
952.4	14	6-6-7	BROWN FINE TO COARSE SAND AND GRAVEL. MOIST - MEDIUM DENSE	7	51	32	12	2	3				4.4
	16	5-7-7	DO	8						VISUAL			4.4
949.9	18	5-6-7	BROWN SILTY FINE TO COARSE SAND W/SOME GRAVEL. WET - MEDIUM DENSE	9	52	28	17	-	3				1.8
	20		BROWN FINE TO COARSE SAND AND GRAVEL WET - MEDIUM DENSE										
944.9	22												
	24												
	26	9-10-13	GRAY SANDY SILT W/FINE SAND SEAMS. WET - MEDIUM DENSE	10						VISUAL			4.8
	28												
	30												
	32	6-10-16	DO	11						VISUAL			18.6
934.9	34												
	36	8-9-10	GRAY SANDY SILT, WET - MEDIUM DENSE	12	0	1	35	56	8	N.P.			19.8
	38												
929.9	40												
	42	11-18-25	GRAY SILTY FINE SAND, WET - DENSE	13						VISUAL			22.4
	44												
924.9	46	19-25-30	GRAY SANDY SILT, WET - VERY DENSE	14						VISUAL			18.8
	48												
919.9	50												
	52	11-19-25	GRAY SILTY FINE SAND, WET - DENSE	15						VISUAL			17.9
	54												
	56	9-13-20	DO	16	5	4	58	25	8				6.7
	58												
909.9	60												
	62	15-24-36	GRAY SILTY FINE SAND, WET - VERY DENSE	17						VISUAL			13.3
	64												
904.9	66	13-20-27	GRAY SILTY FINE SAND, WET - DENSE	18						VISUAL			15.3
	68												
899.9	70												
	72	11-25-41	GRAY SILTY FINE SAND, WET - VERY DENSE	19						VISUAL			19.5
	74												
	76	19-40-63	DO	20						VISUAL			18.3
	78												
889.9	80												
888.4	82	9-19-34	GRAY FINE SAND, WET - VERY DENSE	21	0	1	89	-	10				20.5

BORING COMPLETED

6  
11

DATE STARTED 9-14-79 SAMPLER: TYPE S.S. DIA. 2.0'' O.D. WATER ELEVATION  
 DATE COMPLETED 9-15-79 CASING: LENGTH H.S.A. DIA. 3.5'' I.D. IMMEDIATE 20.0'  
 BORING NUMBER 8-S CORE BARREL: TYPE SIZE AFTER 24 HOURS 19.0'  
 STATION & OFFSET 116+50 10' LT RL RAMP EN SURFACE ELEVATION 870.1

ELEV.	DEPTH	STN. PEN. (N)	DESCRIPTION	SA. NO.	PHYSICAL CHARACTERISTICS								
					% AGG.	% CS	% FS	% SILT	% CLAY	LL	PI	WC	
970.1	0		BROWN FINE TO COARSE SAND W/SOME GRAVEL, CINDERS, AND CLAY LENSES (FILL), MOIST - MEDIUM DENSE	1					VISUAL				15.5
967.6	2	3-4-7		2					VISUAL				15.8
965.1	4	3-3-3	BROWN SILTY FINE SAND, VERY MOIST - LOOSE	3					VISUAL				
962.6	6	4-2-2	BROWN CLAYEY FINE TO COARSE SAND AND GRAVEL, MOIST - LOOSE	4					VISUAL				
955.1	8	6-6-6	BROWN FINE TO COARSE SAND W/SOME GRAVEL, MOIST - MEDIUM DENSE	5					VISUAL				
	10	3-5-7	DO	6					VISUAL				
952.6	12	13-13-10	DO	7					VISUAL				
	14	24-9-6	BROWN SILTY FINE TO COARSE SAND W/SOME GRAVEL, MOIST - MEDIUM DENSE	8	2	24	69	0	5				3.7
945.1	16	4-6-7	BROWN FINE SAND, MOIST - MEDIUM DENSE	9	2	28	66	0	4				19.4
	18	5-6-7	BROWN FINE SAND, WET - MEDIUM DENSE	10					VISUAL				
938.6	20	7-9-12	BROWN FINE SAND, TRACE GRAVEL, WET - MEDIUM DENSE	11					VISUAL				
	22	9-7-11	BROWN AND GRAY FINE SAND, WET - MEDIUM DENSE	12					VISUAL				
930.1	24			13					VISUAL				
	26	6-7-9	GRAY FINE SAND, WET - MEDIUM DENSE	14					VISUAL				
915.1	28	9-15-23	GRAY FINE SAND, WET - DENSE	15					VISUAL				
	30			16					VISUAL				
910.1	32			17					VISUAL				
	34	11-17-25	DO	18					VISUAL				
905.1	36	10-14-22	DO	19					VISUAL				
	38			20					VISUAL				
900.1	40								VISUAL				
	42	14-31-39	GRAY FINE SAND, TRACE ORGANICS, WET - VERY DENSE						VISUAL				
895.1	44	31-74-87	GRAY FINE SAND, WET - VERY DENSE						VISUAL				
	46	9-18-33	GRAY SANDY SILT WITH A LITTLE CLAY, VERY DENSE						VISUAL				
	48								VISUAL				
	50	12-21-33	DO						VISUAL				
	52								VISUAL				
	54								VISUAL				
	56								VISUAL				
	58								VISUAL				
	60								VISUAL				
	62								VISUAL				
	64								VISUAL				
	66								VISUAL				
	68								VISUAL				
	70								VISUAL				
	72								VISUAL				
	74								VISUAL				
	76								VISUAL				
	78								VISUAL				

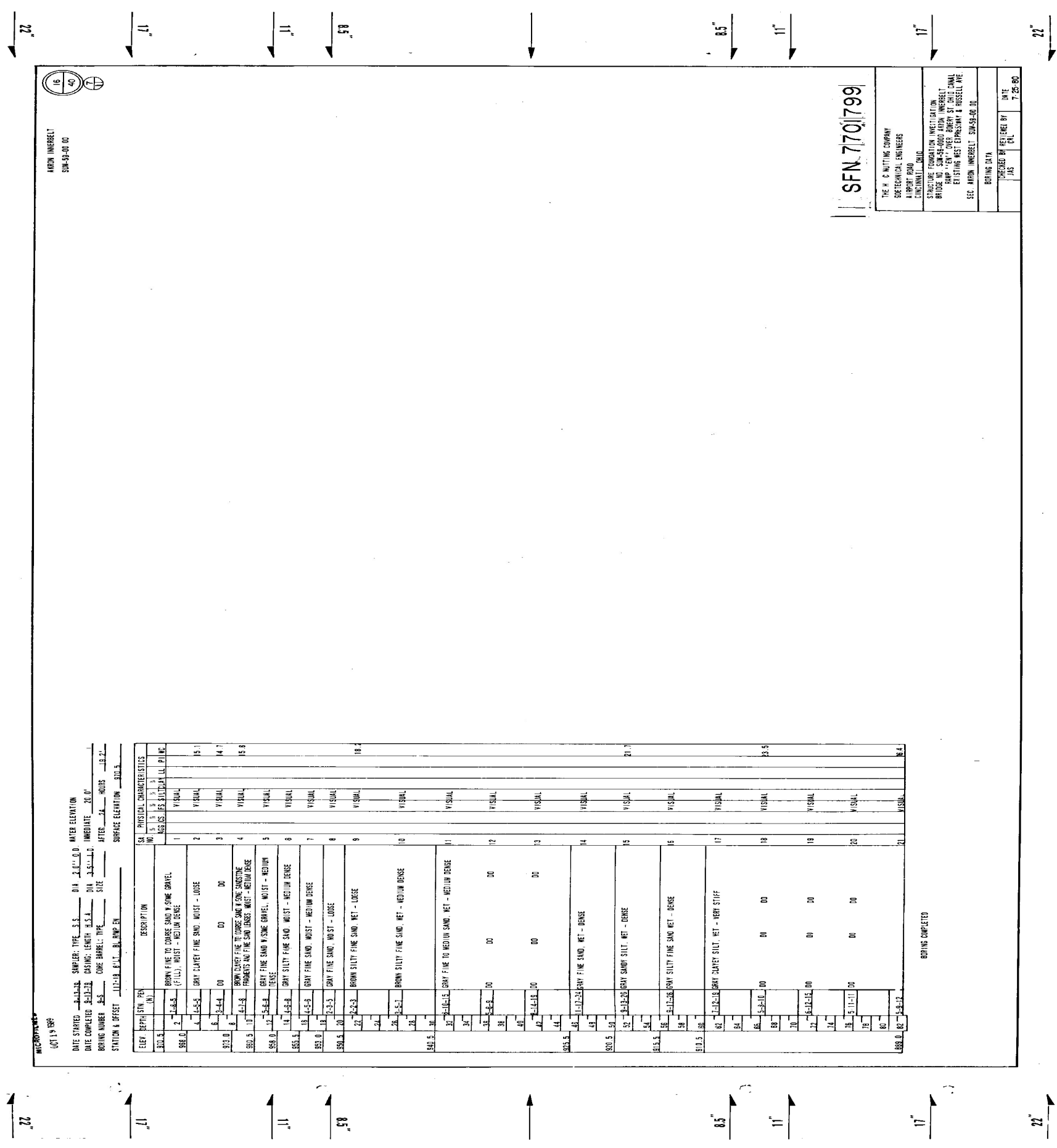
BORING COMPLETED

THE H.C. NUTTING COMPANY  
 GEOTECHNICAL ENGINEERS  
 AIRPORT ROAD  
 CINCINNATI, OHIO

SUM-76-8.42  
 SUM-77-9.77

SOIL PROFILE  
 BRIDGE OVER BOWERY  
 BORING LOG S-008-0-79

DRAWN SM  
 CHECKED PAN



DATE STARTED 10/19/89  
 DATE COMPLETED 3-12-90  
 BORING NUMBER 8-5  
 STATION & OFFSET 1117+38.4 P.C. 8' JUMP EN  
 DATE TESTED 3-12-90  
 CORE NUMBER 8-5  
 TYPE OF TEST IMMEDIATE  
 SIZE 24  
 HOURS 18.2  
 SURFACE ELEVATION 810.5

ELEV. (FEET)	DEPTH (FEET)	SYMBOL	DESCRIPTION	SK. PHYSICAL CHARACTERISTICS			
				NO.	1	2	3
810.5	0		BROWN FINE TO COARSE SAND W/ SOME GRAVEL (F.L.), MOIST - MEDIUM DENSE	1	VISUAL		15.1
808.0	2			2	VISUAL		14.7
813.0	6			3	VISUAL		15.8
805.5	13		BROWN CLAYEY FINE TO COARSE SAND & SOME SANDSTONE FRAGMENTS W/ FINE SAND DENSE, MOIST - MEDIUM DENSE	4	VISUAL		
808.0	17			5	VISUAL		
808.0	17		GRAY FINE SAND W/ SOME GRAVEL, MOIST - MEDIUM DENSE	6	VISUAL		
805.5	19			7	VISUAL		
805.0	18		GRAY FINE SAND, MOIST - MEDIUM DENSE	8	VISUAL		
800.5	20			9	VISUAL		18.2
805.5	22		BROWN SILTY FINE SAND, NET - LOOSE	10	VISUAL		
805.5	24			11	VISUAL		
805.5	26		GRAY FINE TO MEDIUM SAND, NET - MEDIUM DENSE	12	VISUAL		
800.5	30			13	VISUAL		
805.5	32			14	VISUAL		
805.5	34		BROWN SILTY FINE SAND, NET - DENSE	15	VISUAL		21.7
810.5	38			16	VISUAL		
810.5	40		BROWN SANDY SILT, NET - DENSE	17	VISUAL		
810.5	42			18	VISUAL		33.5
810.5	44			19	VISUAL		
810.5	46		BROWN SANDY SILT, NET - VERY STIFF	20	VISUAL		
810.5	48			21	VISUAL		38.4
810.5	50			22	VISUAL		

**SFN 7701799**  
 THE H. C. WHITING COMPANY  
 GEOTECHNICAL ENGINEERS  
 AIRPORT ROAD  
 CINCINNATI, OHIO  
 STRUCTURE FOUNDATION INVESTIGATION  
 BRIDGE NO. SUM-58-000 OVER MICHIGAN INDIANA  
 RAMP "EN" OVER ROBERT ST. CHILD CANAL  
 EXISTING WEST EXPRESSWAY & RUSSELL AVE.  
 SEE: AIRMEN INMARBELT, SUM-58-00-01  
 BORING DATA  
 CHECKED BY: JAS  
 DATE: 7-26-90

BORING COMPLETED

DATE STARTED 9-21-79 SAMPLER: TYPE S.S. DIA. 2.0" O.D. WATER ELEVATION' 974.2  
 DATE COMPLETED 10-1-79 CASING: LENGTH H.S.A. DIA. 3.5" I.D. IMMEDIATE 25.0'  
 BORING NUMBER 10-S CORE BARREL: TYPE SIZE AFTER 24 HOURS 24.7'

STATION & OFFSET 118+52 14' RT. BL RAMP "EN" SURFACE ELEVATION 974.2

ELEV.	DEPTH	STN. PEN. (N)	DESCRIPTION	PHYSICAL CHARACTERISTICS									
				SA. NO.	% AGG.	% CS	% FS	% SILT	CLAY LU	PI	WC		
974.2	0		DARK BROWN SILTY FINE TO COARSE SAND W/SOME GRAVEL AND CLAY LENSES, TRACE SLAG (FILL), MOIST - MEDIUM DENSE										
	2	3-6-6											
	4	7-6-7	DO										
	6	6-6-6	DO										11.6
966.7	8												
964.2	10	6-9-4	BROWN FINE TO COARSE SAND W/SOME GRAVEL, ORGANICS, AND ROCK FRAGMENTS, TRACE BRICK (FILL), MOIST - MEDIUM DENSE										15.6
961.7	12	2-2-3	BLACK FINE TEXTURED PEAT, VERY MOIST - LOOSE										
	14	2-3-4	BROWN SILTY FINE SAND W/CLAY LENSES, MOIST - LOOSE										15.6
959.2	16	2-3-4	BROWN AND GRAY FINE TO COARSE SAND W/SOME GRAVEL, MOIST - LOOSE										15.6
	18	9-7-18	BROWN AND GRAY FINE TO COARSE SAND W/SOME GRAVEL, MOIST - MEDIUM DENSE										11.8
954.2	20	5-9-13	BROWN AND GRAY FINE TO COARSE SAND AND GRAVEL, MOIST - MEDIUM DENSE										14.0
949.2	24												
	26	7-9-12	GRAY FINE SAND, TRACE GRAVEL, WET - MEDIUM DENSE										17.3
944.2	28												
	30												
	32	7-9-9	GRAY CLAYEY SILT, WET - STIFF										
	34												
	36	6-7-9	DO										18.1
	38												
934.2	40												
	42	8-10-12	GRAY CLAYEY SILT, TRACE GRAVEL WET - VERY STIFF										
	44												
929.2	46	5-8-9	GRAY CLAYEY SILT, WET - STIFF										
	48												
	50	4-5-7	DO										12.3
	52												
	54												
	56	4-6-8	DO										
	58												
914.2	60	5-6-7	GRAY CLAYEY SILT, TRACE GRAVEL, WET - STIFF										
	62												
	64												
	66	4-4-4	DO										13.5
	68												
904.2	70												





DATE STARTED 10-1-79 SAMPLER; TYPE S.S. DIA. 2.0" O.D. WATER ELEVATION  
 DATE COMPLETED 10-2-79 CASING; LENGTH H.S.A. DIA. 3.5" I.D. IMMEDIATE 7.5 & 17.5'  
 BORING NUMBER 11-S CORE BARREL; TYPE \_\_\_\_\_ SIZE \_\_\_\_\_ AFTER 24 HRS. 17 W.  
 STATION & OFFSET 120+17, 14' RT. B.L. RAMP "EN" SURFACE ELEVATION 972.3

ELEV.	DEPTH	STN PEN (N)	DESCRIPTION	SA NO.	PHYSICAL CHARACTERISTICS																
					% AGG	% CS	% FS	% SILT	% CLAY	LL	PI	WC									
972.3	0		BROWN SILTY FINE TO COARSE SAND WITH SOME GRAVEL TRACE SLAG AND CLAY LENSES (FILL), MOIST - MEDIUM DENSE	1																	
967.3	2	4-11-17	DO	2																	10.9
964.8	4	2-11-9	DO	3																	
962.3	6	17-17-9	SLAG AND BRICK FRAGMENTS WITH SOME SAND AND GRAVEL (FILL), MOIST - MEDIUM DENSE	4																	
959.8	8	21-11-7	BROWN AND GRAY FINE SAND WITH LITTLE CONCRETE FRAGMENTS (FILL) WET - MEDIUM DENSE	5																	15.0
957.3	10	4-5-5	BROWN SILTY FINE SAND WITH A LITTLE GRAVEL, MOIST - MEDIUM DENSE	6																	11.8
954.8	12	3-4-8	BROWN FINE SAND, MOIST - MEDIUM DENSE	7																	6.0
	14			8																	4.8
	16	5-9-12	BROWN FINE TO COARSE SAND, TRACE GRAVEL, MOIST- MEDIUM DENSE	9																	16.3
	18			10																	
	20	7-9-10	GRAY SANDY SILT, WET - MEDIUM DENSE																		
	22	5-9-12	DO																		
	24																				
	26	5-8-9	DO																		
	28																				
942.3	30																				
	32																				

11 - S CONTINUED

32	5-7-10	GRAY SILT, WET- MEDIUM DENSE	11	0	1	28	58	13	N. P.	19.9
34										
36	6-8-11	GRAY SILT WITH SOME CLAY, WET - MEDIUM DENSE	12	0	0	2	78	29	N. P.	25.1
38										
40										
42	17-18-19	GRAY FINE SAND, WET-DENSE	13	1	12	73	10	4		13.4
44										
46	17-23-26	DO	14			VISUAL				10.2
48										
50										
52	6-8-10	GRAY CLAYEY SILT, MOIST-STIFF	15			VISUAL				15.7
54										
56										
58	9-12-15	GRAY SILT WITH A LITTLE CLAY AND GRAVEL	16			VISUAL				15.4
60	S-T	WET - MEDIUM DENSE	S-1	17	5	12	47	19	N. P.	15.3
62	5-7-8		17		(CONSOLIDATION TEST)	VISUAL				15.8
64			18			VISUAL				12.2
66	4-7-10	GRAY CLAYEY SILT WITH SAND LENSES, WET- VERY STIFF	19			VISUAL				15.4
68										
70	32-11-14	DO	20			VISUAL				15.7
72										
74	5-7-10	DO	21			VISUAL				16.4
76										
78	12-10-13	DO	22			VISUAL				16.5
80										
82	12-14-21	GRAY CLAYEY SILT, VERY MOIST- VERY STIFF	23			VISUAL				15.2
84										
86	12-15-20	DO	24			VISUAL				
88										
90										
92	16-28-28	GRAY SILTY FINE SAND, WET - VERY DENSE								
94										

PORING COMPLETED

DATE STARTED 10-16-79 SAMPLER: TYPE S.S. DIA. 2.0" O.D. WATER ELEVATION  
 DATE COMPLETED 10-17-79 CASING: LENGTH H.S.A. DIA. 3.5" I.D. IMMEDIATE 10.0'  
 BORING NUMBER 14-S CORE BARREL: TYPE NXM SIZE \_\_\_\_\_ AFTER 24 HOURS 9.5'

STATION & OFFSET 127+45 16' LT. BL RAMP "EN" SURFACE ELEVATION 987.5

ELEV.	DEPTH	STN. PEN (N)	DESCRIPTION	PHYSICAL CHARACTERISTICS											
				SA NO	% AGG	% CS	% FS	% SILT	% CLAY	LL PI	WC				
982.5	0		DARK BROWN SANDY SILTY CLAY W/SOME CINDERS AND SANDSTONE FRAGMENTS, TRACE ORGANICS (FILL), MOIST - STIFF	1					VISUAL						13.6
980.0	2	2-7-8		2					VISUAL						12.3
977.5	4	6-9-12	BROWN CLAYEY FINE SAND W/LITTLE GRAVEL, MOIST - MEDIUM DENSE	3					VISUAL						13.8
972.5	6	6-6-9	BROWN SILTY FINE SAND, TRACE GRAVEL, MOIST - MEDIUM DENSE	4					VISUAL						11.8
970.0	8	6-6-6	DO	5	10	20	49	12	9						20.0
970.0	10	4-4-4	BROWN SILTY FINE SAND, TRACE GRAVEL, VERY MOIST - LOOSE	6					VISUAL						18.7
967.5	12	7-7-10	GRAY SILTY FINE SANDY W/A LITTLE GRAVEL, VERY MOIST - MEDIUM DENSE	7					VISUAL						18.2
957.5	14	8-8-9	GRAY CLAYEY SILT WITH SOME SAND, WET - STIFF	8					VISUAL						17.0
	16	5-7-7	DO	9					VISUAL						16.3
	18	5-6-7	DO	10	2	4	13	57	24	N.P					16.7
	20	4-5-6	GRAY SILT WITH SOME CLAY, LITTLE SAND, TRACE GRAVEL, WET - MEDIUM DENSE	11					VISUAL						
952.5	22	126-293	GRAY VERY SOFT SHALE												
947.5	24														
	26														
	28														
	30														
	32														
	34														
	36	CORE RECOVERY	INTERBEDDED GRAY FIRM SHALE AND GRAY HARD SILICEOUS SHALE, SHALE, 80%, SILICEOUS SHALE, 20% OCCURRING IN 1/2" TO 3" LAYERS, AVERAGE 1"												
	38	97%													
942.5	40														

BORING COMPLETED



DATE STARTED 11-6-79 SAMPLER: TYPE S.S. DIA. 2.0" O.D. WATER ELEVATION  
 DATE COMPLETED 11-6-79 CASING: LENGTH H.S.A. DIA. 3.5" I.D. IMMEDIATE 12.5'  
 BORING NUMBER 15-S CORE BARREL: TYPE NXM SIZE 9.8' HOURS 24

STATION & OFFSET 128+19 10' LT BL RAMP "EN" SURFACE ELEVATION 984.7

ELEV.	DEPTH STN (N)	PEN	DESCRIPTION	SA. NO.	PHYSICAL CHARACTERISTICS								
					AGG %	CS %	FS %	SILT %	CLAY %	LL	PI	WC	
984.7	0		BROWN SILTY FINE SAND W/SANDSTONE FRAGMENTS (FILL) MOIST - MEDIUM DENSE	1					VISUAL				14.8
982.2	2	4-5-8	BROWN SANDY SILTY CLAY W/TOPSOIL AND GRAVEL (FILL), MOIST - STIFF	2					VISUAL				11.5
979.7	4	5-8-9	BROWN CLAYEY FINE SAND, TRACE FINE GRAVEL, VERY MOIST - MEDIUM DENSE	3	4	22	56	5	13	N.P.			11.9
977.2	6	6-11-11	BROWN SILTY FINE SAND, VERY MOIST - MEDIUM DENSE	4	0	13	62	13	12				15.4
974.7	8	6-7-9	BROWN SANDY SILT WITH LITTLE CLAY, MOIST - LOOSE	5	0	2	38	47	13	N.P.			23.8
972.2	10	3-4-4	GRAY CLAYEY SILT, WET - MEDIUM STIFF	6					VISUAL				21.8
969.7	12	3-3-4	GRAY SANDY SILT, MOIST - LOOSE	7	0	0	22	69	9	N.P.			19.6
967.2	14	2-3-4	GRAY SANDY SILT WITH LITTLE CLAY VERY MOIST - MEDIUM DENSE	8					VISUAL				13.7
	16	3-5-7	GRAY SANDY SILT WITH LITTLE CLAY VERY MOIST - MEDIUM DENSE	9					VISUAL				17.1
	18	4-5-7	GRAY VERY SOFT SHALE	10					VISUAL				6.9
960.7	20	38-60	INTERBEDDED GRAY FIRM SHALE AND GRAY HARD SILICEOUS SHALE. SHALE 65% SILICEOUS SHALE 35% OCCURRING IN 1/2" TO 4" LAYERS, AVERAGE 2" HIGH ANGLE JOINTING EVIDENCED.										
955.7	22												
	24												
	26												
	28												
	30	CORE RECOVERY											
	32	100%											
950.7	34												

BORING COMPLETED

DATE STARTED 10-13-79 SAMPLER: TYPE S.S. DIA. 2.0" O.D. WATER ELEVATION \_\_\_\_\_  
 DATE COMPLETED 10-14-79 CASING: LENGTH H.S.A. DIA. 3.5" I.D. IMMEDIATE 17.5'  
 BORING NUMBER 19-S CORE BARREL: TYPE \_\_\_\_\_ SIZE \_\_\_\_\_ AFTER 24 HOURS 17.2'  
 STATION & OFFSET 123+92 4' RT. BL RAMP SW SURFACE ELEVATION 975.2

ELEV. DEPTH	STN. PEN. (N)	DESCRIPTION	SA. NO.	PHYSICAL CHARACTERISTICS																
				% AGG. CS	% FS	% LT	% CLAY	LL	PI	WC										
975.2	0	BROWN CLAYEY FINE SAND W/SOME SANDSTONE FRAGMENTS, TRACE GRAVEL (FILL), MOIST - MEDIUM DENSE	1																	
	2	DO	2																	
970.2	4	DO	3																	
	6	BROWN SILTY FINE SAND W/A LITTLE GRAVEL, MOIST - MEDIUM DENSE	4																	
	8	DO	5																	
965.2	10	DO	6																	
	12	BROWN FINE SAND, TRACE GRAVEL, MOIST - LOOSE	7																	
962.7	14	GRAY SILTY FINE SAND, MOIST - MEDIUM DENSE	8																	
	16	DO	9																	
	18	DO	10																	
957.7	20	GRAY SILTY FINE SAND, WET - MEDIUM DENSE	11																	
	22	DO	12																	
	24	DO	13																	
	26	DO	14																	
	28	DO	15																	
	30	DO	16																	
	32	GRAY SILTY FINE SAND, WET - DENSE	17																	
	34	DO	18																	
	36	DO	19																	
	38	DO	20																	
	40	DO	21																	
	42	DO	22																	
	44	DO	23																	
930.2	46	GRAY CLAYEY SILT, VERY MOIST - STIFF	24																	
	48	DO	25																	
925.2	50	GRAY SILT WITH SOME CLAY AND LITTLE SAND, VERY MOIST - MEDIUM DENSE	26																	
	52	DO	27																	
	54	DO	28																	
920.2	56	GRAY CLAYEY SILT WITH SOME SAND, TRACE GRAVEL, VERY MOIST - STIFF	29																	
	58	DO	30																	
	60	DO	31																	
	62	GRAY SILT SOME CLAY AND SAND, TRACE GRAVEL, VERY MOIST - MEDIUM DENSE	32																	
	64	DO	33																	
	66	DO	34																	
	68	DO	35																	
	70	DO	36																	
	72	DO	37																	
	74	DO	38																	
900.2	75	GRAY FINE SAND W/SILT SEAMS, TRACE GRAVEL, WET - VERY DENSE	39																	
	78	DO	40																	
	80	DO	41																	
	82	DO	42																	
	84	DO	43																	
890.2		DO	44																	

SUM-76-8.42  
SUM-77-9.77

SOIL PROFILE  
BRIDGE OVER LAKESHORE  
BORING LOG S-019-0-79

DRAWN  
SM  
CHECKED  
PAN

172  
173

19-S CONTINUED

850.2	86	28-93-59	GRAY FINE SAND; WET - VERY DENSE	22	VISUAL	16.1
	88					
885.2	90		GRAY FINE SAND, WET - VERY DENSE	23	VISUAL	19.7
	92	37-57-75				
	94					
	96	18-41-65				
875.2	98		GRAY SILTY FINE SAND, WET - VERY DENSE	24	VISUAL	17.5
	100	00				
873.7	102	21-40-41		25	VISUAL	18.3

BORING COMPLETED