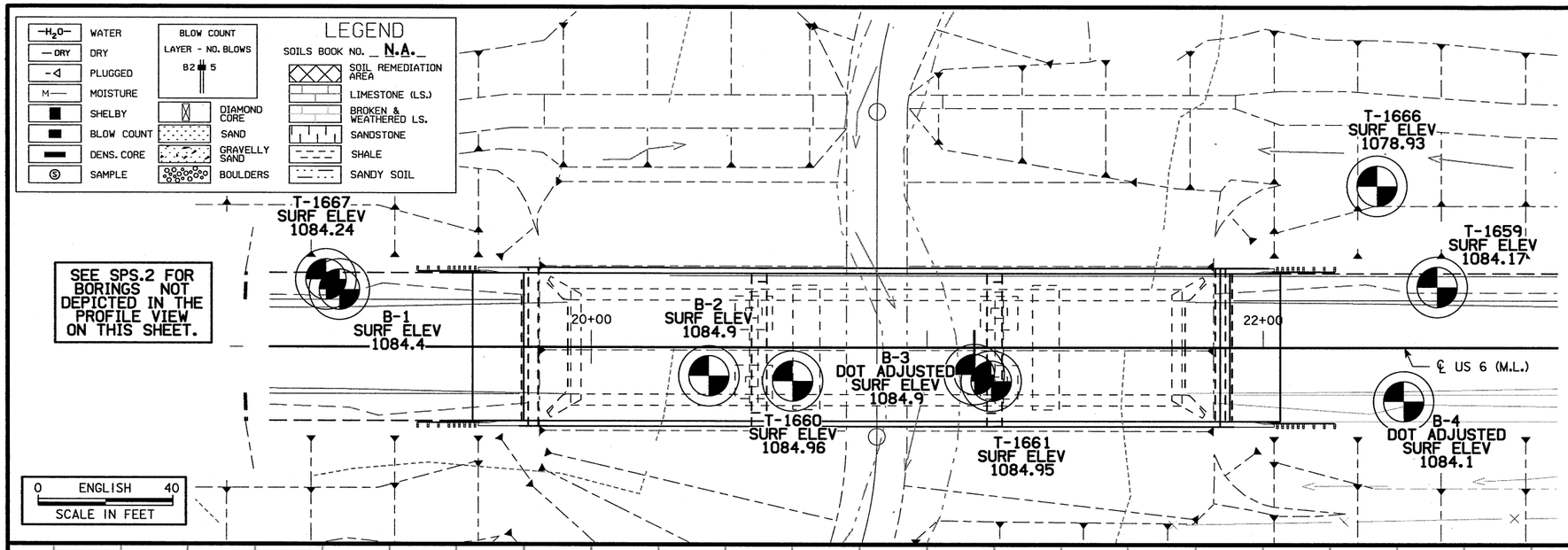
LEGEND

SOILS BOOK NO. N.A.

—H2O—	WATER	BLOW COUNT LAYER - NO. BLOWS B2 5	SOIL REMEDIATION AREA
— DRY	DRY	DIAMOND CORE	LIMESTONE (LS.)
—◁	PLUGGED	SAND	BROKEN & WEATHERED LS.
M—	MOISTURE	GRAVELLY SAND	SANDSTONE
	SHELBY	BOULDERS	SHALE
	BLOW COUNT		SANDY SOIL
	DENS. CORE		
Ⓢ	SAMPLE		



N

GEOTECHNICAL DESIGN

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

Robert Stanley 11-16-10
Signature Date
Robert L. Stanley
Printed or Typed Name
My license reneval date is December 31, 2010
Pages or sheets covered by this seal: SPS.1 - SPS.4

LOCATION

U.S. 6 OVER KEG CREEK
T-75 N R-42 W
SECTION 15
HARDIN TOWNSHIP
POTTAWATTAMIE COUNTY
MAINT. NO. 7814.2S006
FHWA NO. 43230

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

DESIGN FOR 0° SKEW

204'-6 X 44'-0 STEEL MODULAR BRIDGE

67'-3 END SPANS 70'-0 INTERIOR SPAN

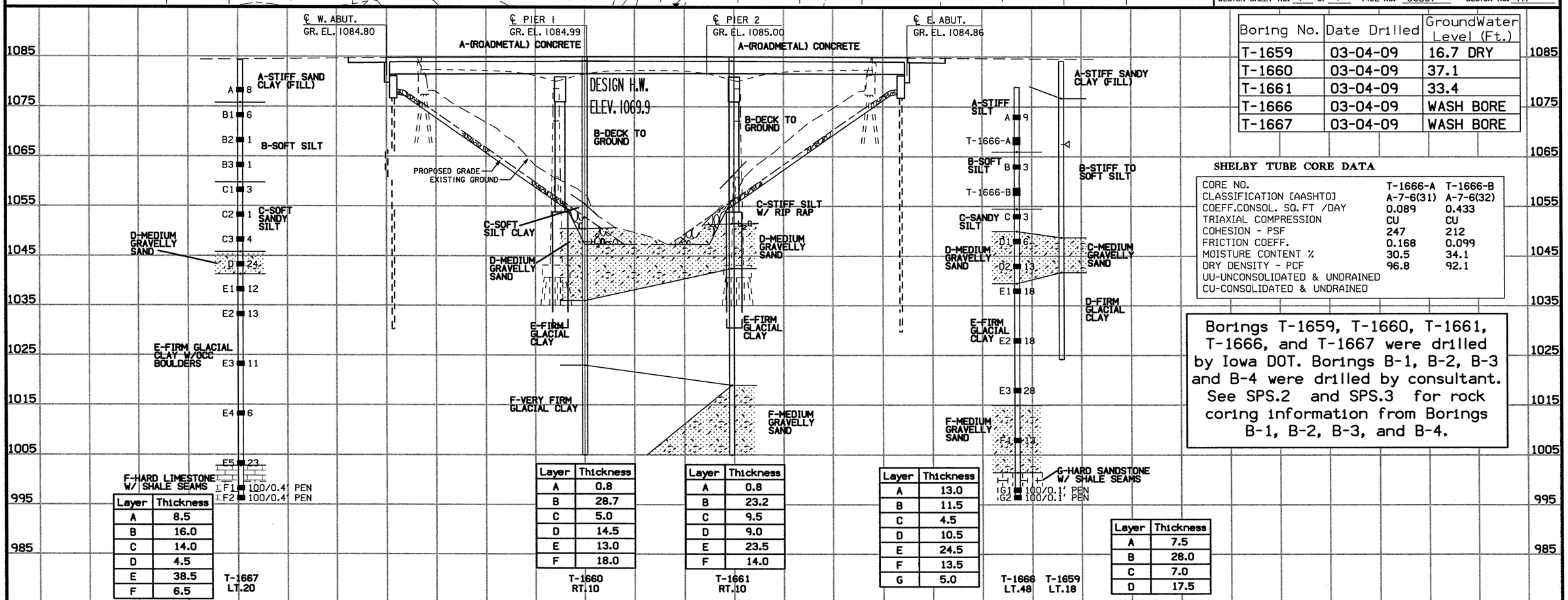
SOIL PROFILE SHEET

STA. 20+85.00 OCTOBER, 2010

POTTAWATTAMIE COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 4 FILE NO. 30387 DESIGN NO. 111



Layer	Thickness
A	8.5
B	16.0
C	14.0
D	4.5
E	38.5
F	6.5

T-1667 LT.20

Layer	Thickness
A	0.8
B	28.7
C	5.0
D	14.5
E	13.0
F	18.0

T-1660 RT.10

Layer	Thickness
A	0.8
B	23.2
C	9.5
D	9.0
E	23.5
F	14.0

T-1661 RT.10

Layer	Thickness
A	13.0
B	11.5
C	4.5
D	10.5
E	24.5
F	13.5
G	5.0

T-1666 LT.48

Layer	Thickness
A	7.5
B	28.0
C	7.0
D	17.5

T-1659 LT.18

Boring No.	Date Drilled	GroundWater Level (Ft.)
T-1659	03-04-09	16.7 DRY
T-1660	03-04-09	37.1
T-1661	03-04-09	33.4
T-1666	03-04-09	WASH BORE
T-1667	03-04-09	WASH BORE

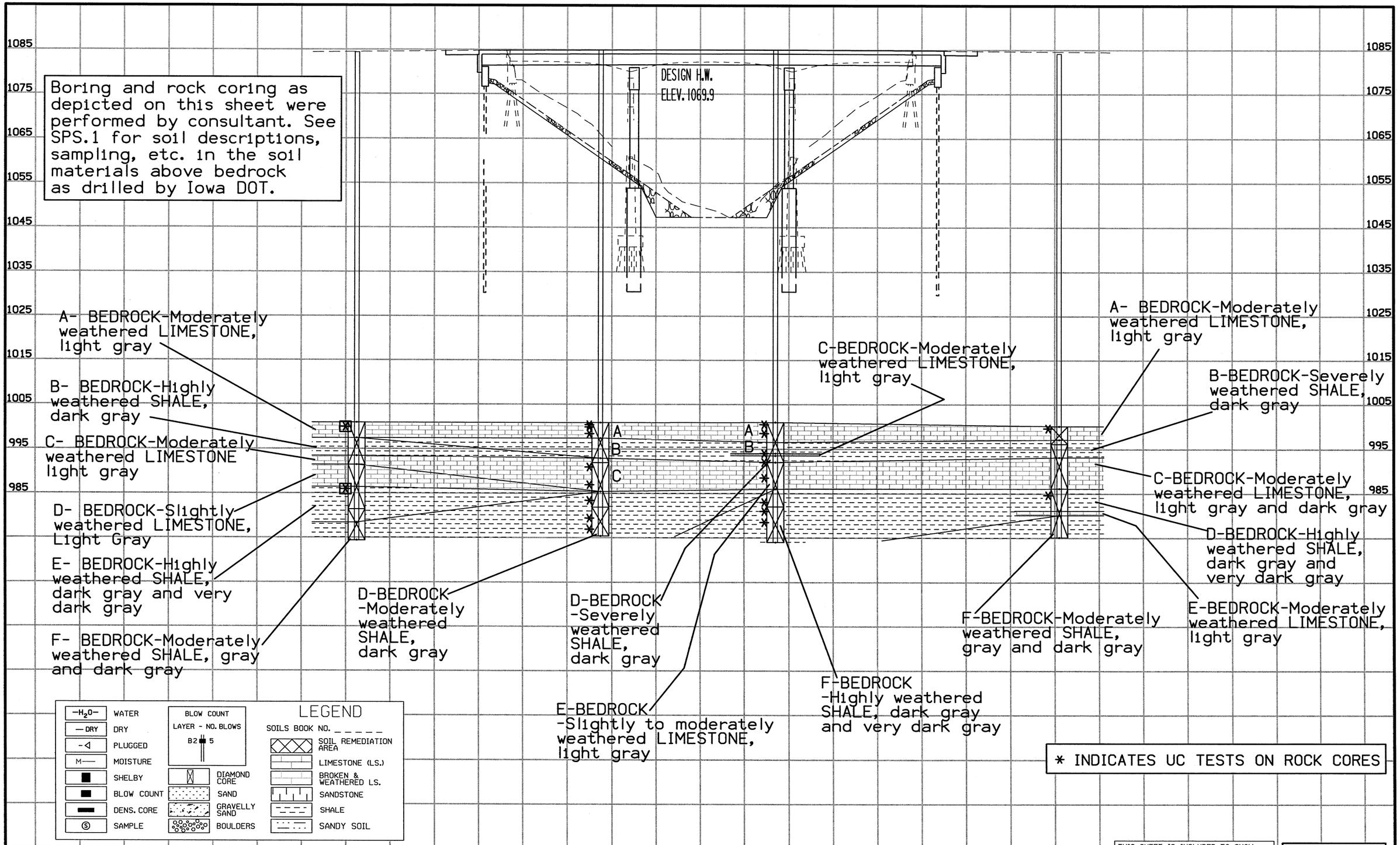
SHELBY TUBE CORE DATA

CORE NO.	T-1666-A	T-1666-B
CLASSIFICATION [AASHTO]	A-7-6(31)	A-7-6(32)
COEFF.CONSOL. SQ.FT /DAY	0.089	0.433
TRIAXIAL COMPRESSION	CU	CU
COHESION - PSF	247	212
FRICTION COEFF.	0.168	0.099
MOISTURE CONTENT %	30.5	34.1
DRY DENSITY - PCF	96.8	92.1

UU-UNCONSOLIDATED & UNDRAINED
CU-CONSOLIDATED & UNDRAINED

Borings T-1659, T-1660, T-1661, T-1666, and T-1667 were drilled by Iowa DOT. Borings B-1, B-2, B-3 and B-4 were drilled by consultant. See SPS.2 and SPS.3 for rock coring information from Borings B-1, B-2, B-3, and B-4.

Boring and rock coring as depicted on this sheet were performed by consultant. See SPS.1 for soil descriptions, sampling, etc. in the soil materials above bedrock as drilled by Iowa DOT.



* INDICATES UC TESTS ON ROCK CORES

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Design No. 111
File No. 30387

ENGLISH	IOWA DOT	DESIGN TEAM	STANLEY/SCHAPPAUGH	POTTAWATTAMIE	COUNTY	PROJECT NUMBER	BRF-006-1(114)--38-78	SHEET NUMBER	SPS.2

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ROCK CORE COMPRESSIVE STRENGTH AND TESTING REPORT

Sample Number	Boring Number	Length of Sample (in)	Elevation	Material Description (See profile for additional details.)	Unit Load (psi)	Moisture(%)	Dry Density(PCF)
#1	B-1	3.943	999.9	LIMESTONE	4,461	7.2	146.1
#2	B-1	4.024	985.9	SHALE	81	17.4	117.6
#3	B-2	4.053	1000.4	LIMESTONE	6,345	3.4	153.8
#4	B-2	4.082	998.4	LIMESTONE	1,803	8.5	140.7
#5	B-2	3.975	999.9	LIMESTONE	5,532	15.8	137.2
#6	B-2	4.158	990.9	LIMESTONE	5,292	5.7	148.8
#7	B-2	4.088	986.9	LIMESTONE	5,156	2.6	157.3
#8	B-2	4.163	983.4	SHALE	438	11.6	117.2
#9	B-2	4.217	979.4	SHALE	309	13.5	123.2
#10	B-2	4.093	976.9	SHALE	2,024	8.3	140.9
#11	B-3	4.119	1000.4	LIMESTONE	4,302	3.6	154.6
#12	B-3	4.026	998.4	LIMESTONE	3,224	3.8	150.2
#13	B-3	3.906	993.9	LIMESTONE	4,265	2.5	156.1
#14	B-3	3.89	991.9	LIMESTONE	4,851	4.8	149.6
#15	B-3	4.014	988.4	LIMESTONE	12,745	4.8	155.6
#16	B-3	3.324	982.9	SHALE	423	17.0	111.0
#17	B-3	4.073	980.9	SHALE	350	15.7	117.5
#18	B-3	4.012	978.4	SHALE	626	12.3	124.5
#19	B-4	3.998	999.6	LIMESTONE	563	7.1	141.2
#20	B-4	4.013	984.6	SHALE	243	20.4	111.6

ROCK CORE INFORMATION

Boring	Approx.Surf.El.(ft)	Run No.	Interval(ft)	Recovery(%)	RQD(%)
B-1	1084.4	1	83.5-93.0	68	31
		2	93.0-103.0	93	62
		3	103.0-110.0	98	85
B-2	1084.9	1	84.0-93.0	94	28
		2	93.0-103.0	91	59
		3	103.0-109.5	97	68
B-3	1084.9	1	84.0-93.0	70	27
		2	93.0-103.0	89	61
		3	103.0-111.0	98	72
B-4	1084.1	1	84.0-88.0	90	58
		2	88.0-98.0	79	53
		3	98.0-109.0	88	62

GroundWater (Ft.)		Water level While Drilling	Water level 24 Hours
Boring No.	Date Drilled		
B-1	07/01/10	--	--
B-2	06/30/10	--	30'
B-3	06/29/10	31'	31'
B-4	07/28/10	--	22'

BORING	B-1	B-2	B-3	B-4
Layer	Thickness	Thickness	Thickness	Thickness
A	3.5	3.5	4.5	3.0
B	4.0	4.5	2.5	4.0
C	2.0	7.5	0.5	7.0
D	5.0	10.0	1.5	5.0
E	8.0	--	6.0	1.0
F	4.0	--	12.0	5.0

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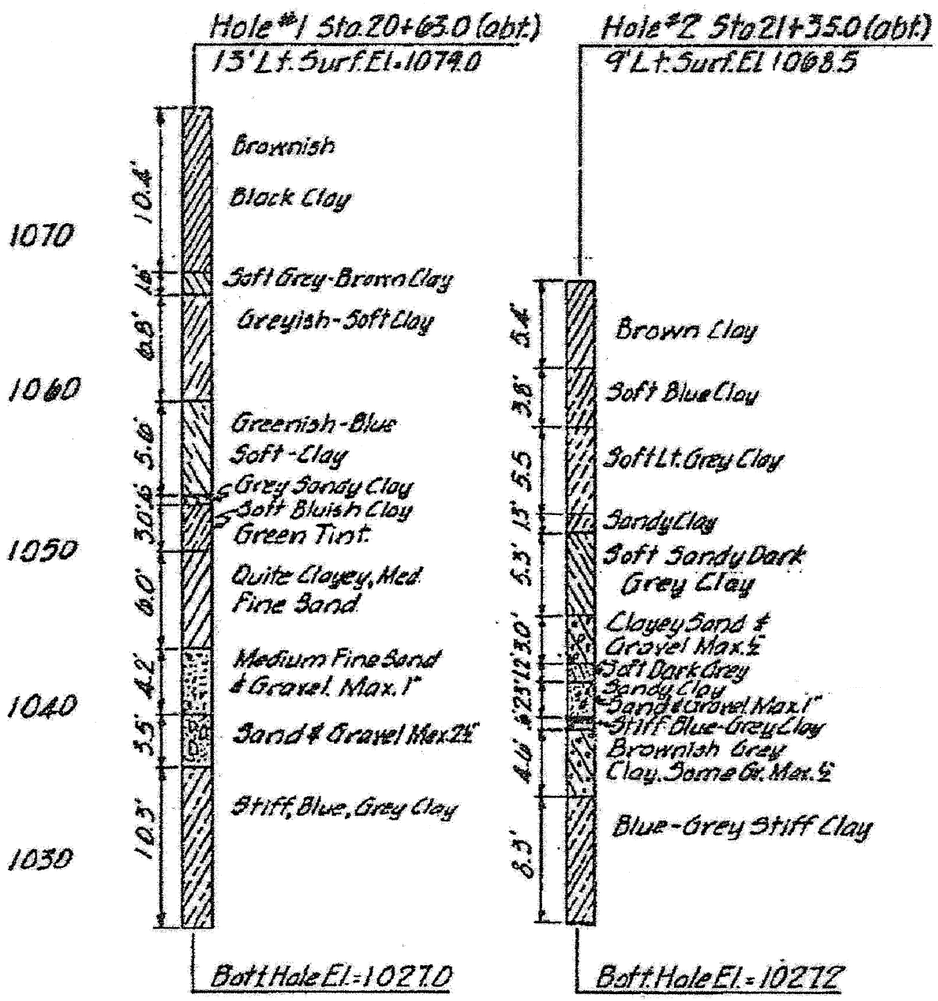
FOR INFORMATION ONLY. PORTION OF SITUATION PLAN (DECEMBER, 1952) FOR EXISTING BRIDGE.

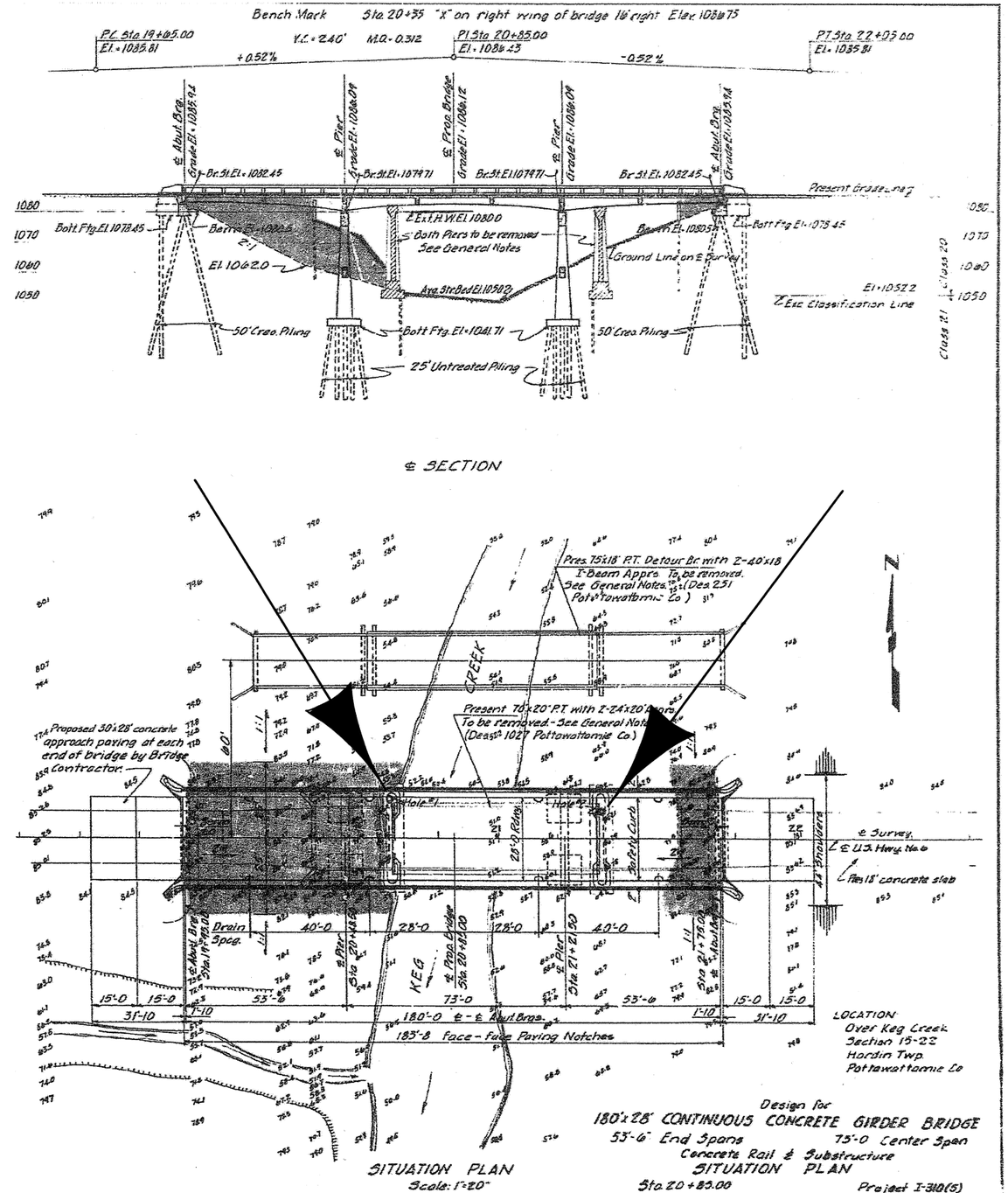
DO NOT SCALE.



SOUNDING DATA

Scale: 1" = 10'

No water shown. Soundings taken from Des. 1027, Pottawattamie Co. Sounding data June 22, 1927.



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ENGLISH	IOWA DOT	DESIGN TEAM	STANLEY/SCHAPPAUGH	POTTAWATTAMIE	COUNTY	PROJECT NUMBER	BRF-006-1(114)--38-78	SHEET NUMBER SPS.4

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