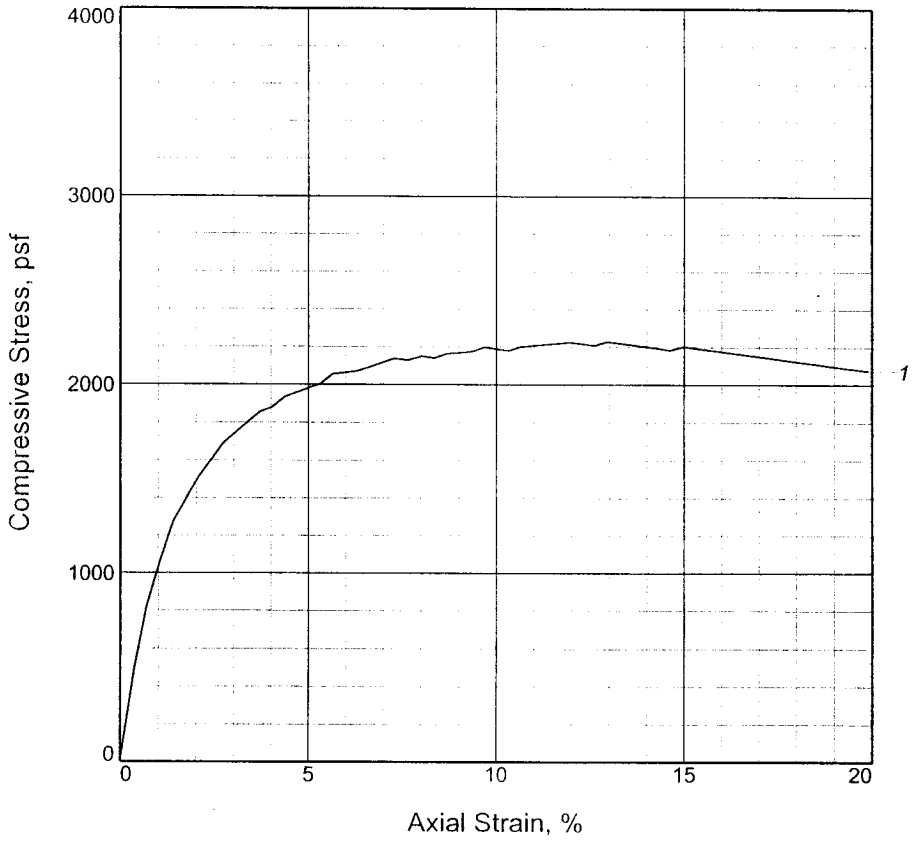
UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	2136.9			
Undrained shear strength, psf	1068.5			
Failure strain, %	7.3			
Strain rate, in./min.	0.058			
Water content, %	32.3			
Wet density, pcf	113.9			
Dry density, pcf	86.0			
Saturation, %	90.4			
Void ratio	0.9733			
Specimen diameter, in.	1.388			
Specimen height, in.	2.930			
Height/diameter ratio	2.11			

Description: VST GR & T CH3 W/ ARS SM, RT, SIF

LL =	PL =	PI =	**Assumed GS=** 2.72	**Type:** UNDISTURBED

Project No.: 19082
Date: 11/30/05

Remarks:
TORVANE = 0.550 TSF

Client: URS Corporation

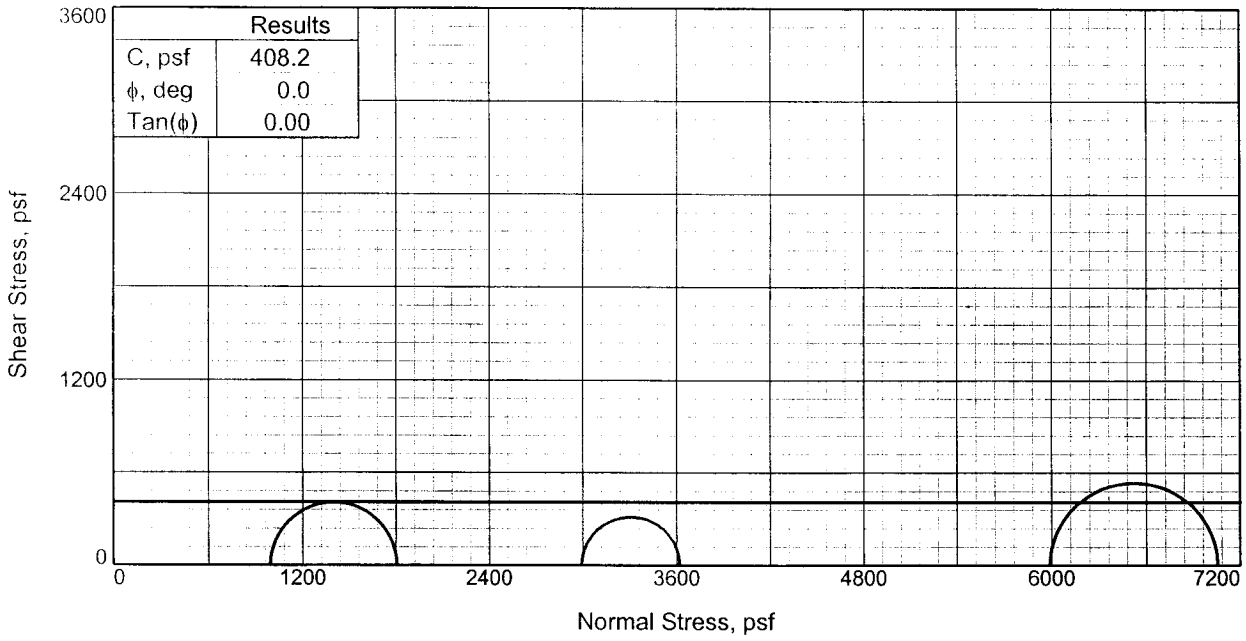
Project: U.S. Army Corps of Engineers
Inner Harbor Navigational Canal
Source of Sample: IHNC-TFG-2U **Depth:** 0.8
Sample Number: 1B

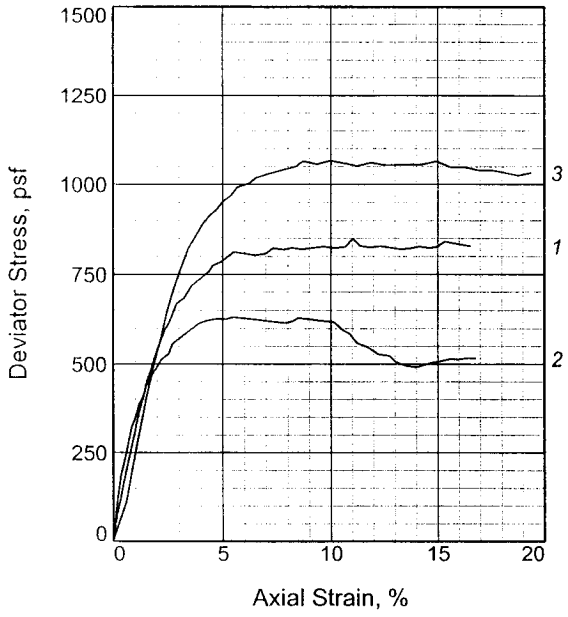
UNCONFINED COMPRESSION TEST

Figure 1

EUSTIS ENGINEERING COMPANY, INC.

Tested By: ZH **Checked By:** DP





Specimen No.		1	2	3
Initial	Water Content,	43.0	46.6	42.8
	Dry Density, pcf	73.3	70.1	76.1
	Saturation,	89.4	89.6	95.3
	Void Ratio	1.3002	1.4045	1.2138
	Diameter, in.	1.388	1.388	1.388
	Height, in.	2.930	2.930	2.930
At Test	Water Content,	47.8	51.9	44.5
	Dry Density, pcf	73.5	70.2	76.6
	Saturation,	100.0	100.0	100.0
	Void Ratio	1.2917	1.4010	1.2016
	Diameter, in.	1.386	1.387	1.385
	Height, in.	2.926	2.929	2.925
Strain rate, in./min.		0.023	0.030	0.052
Back Pressure, psf		0.0	0.0	0.0
Cell Pressure, psf		993.6	2995.2	5990.4
Fail. Stress, psf		811.4	625.9	1063.8
Ult. Stress, psf		828.1	515.3	1031.8
σ_1 Failure, psf		1805.0	3621.1	7054.2
σ_3 Failure, psf		993.6	2995.2	5990.4

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: SO GR CH2 W/ TR-WD

LL= 55 **PL=** 24 **PI=** 31
Assumed Specific Gravity= 2.7
Remarks:

Client: URS Corporation

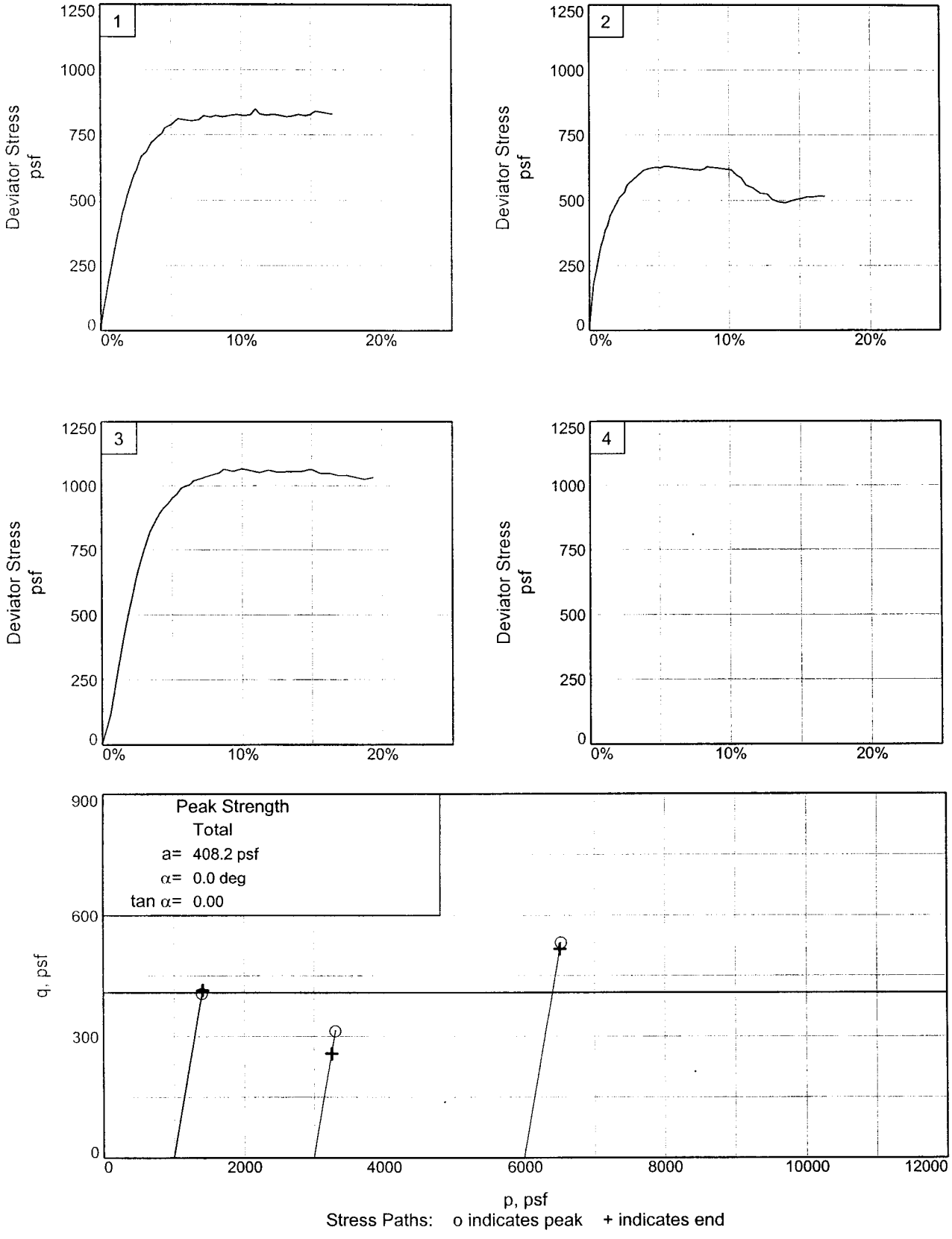
Project: U.S. Army Corps of Engineers
Inner Harbor Navigational Canal
Source of Sample: IHNC-TFG-2U **Depth:** 2.8
Sample Number: 2B
Proj. No.: 19082 **Date:** 11/30/05

TRIAXIAL SHEAR TEST REPORT

EUSTIS ENGINEERING COMPANY, INC.

Figure 1

Tested By: ZH **Checked By:** DP



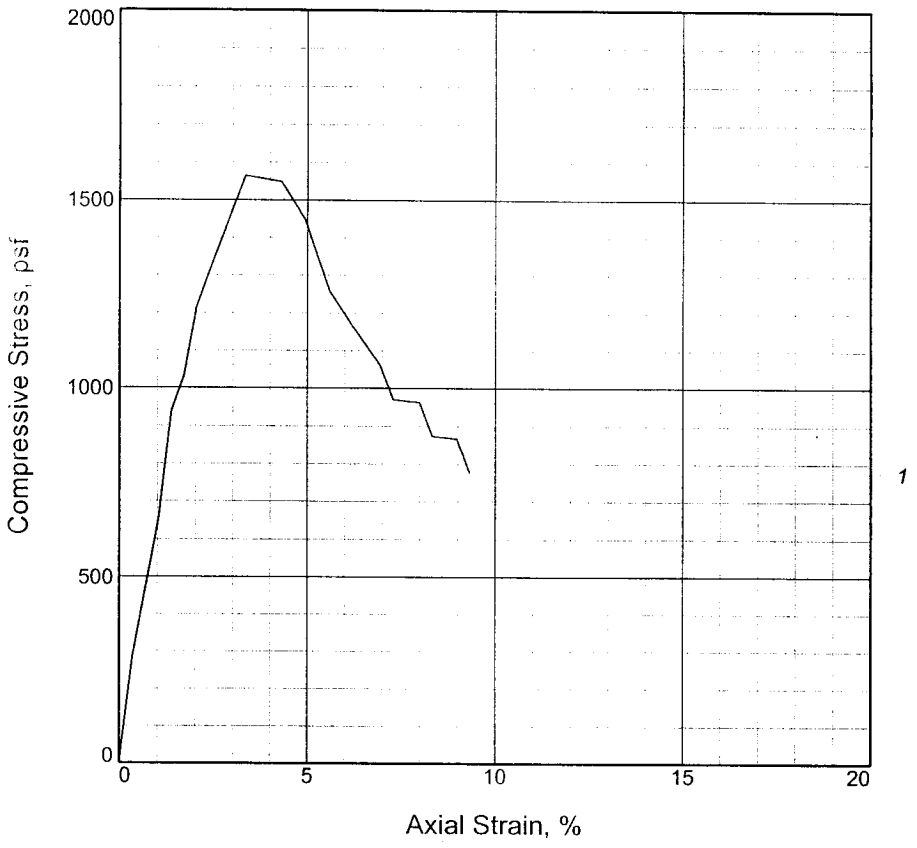
Client: URS Corporation
Project: U.S. Army Corps of Engineers
Source of Sample: IHNC-TFG-2U **Depth:** 2.8 **Sample Number:** 2B
Project No.: 19082

Figure 2

EUSTIS ENGINEERING COMPANY, INC.

Tested By: ZH **Checked By:** DP

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	1563.9			
Undrained shear strength, psf	781.9			
Failure strain, %	3.3			
Strain rate, in./min.	0.059			
Water content, %	74.1			
Wet density, pcf	94.3			
Dry density, pcf	54.2			
Saturation, %	94.4			
Void ratio	2.1334			
Specimen diameter, in.	1.388			
Specimen height, in.	2.930			
Height/diameter ratio	2.11			

Description: M GR & DGR CH3 W/ LNS & ARS SM, TR-WD

LL =	PL =	PI =	**Assumed GS=** 2.72	**Type:** UNDISTURBED

Project No.: 19082
Date: 11/30/05
Remarks:

Client: URS Corporation

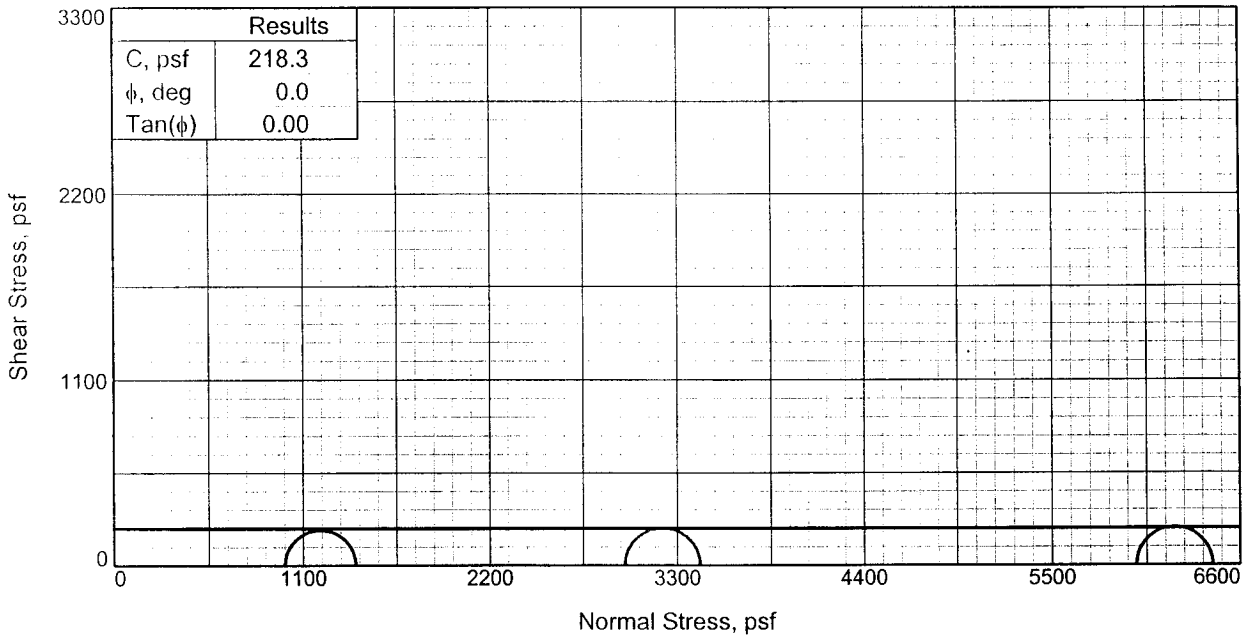
Project: U.S. Army Corps of Engineers
Inner Harbor Navigational Canal
Source of Sample: IHNC-TFG-2U **Depth:** 6.0
Sample Number: 3A

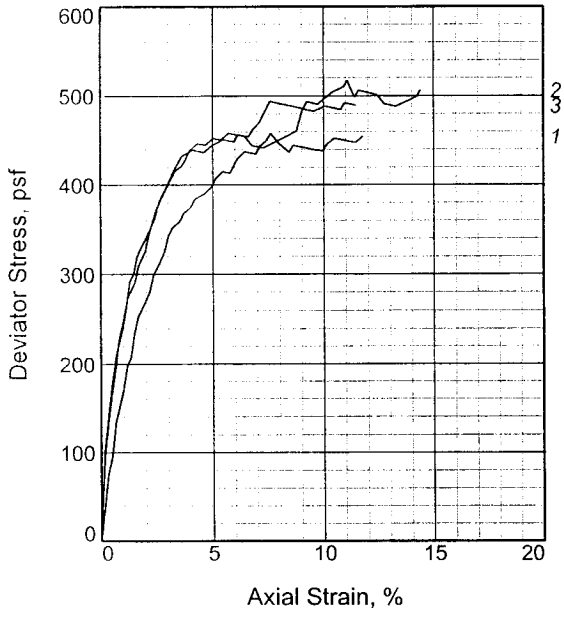
UNCONFINED COMPRESSION TEST

EUSTIS ENGINEERING COMPANY, INC.

Figure 1

Tested By: ZH **Checked By:** DP





Specimen No.		1	2	3
Initial	Water Content,	67.0	60.5	58.6
	Dry Density, pcf	57.8	60.3	61.3
	Saturation,	94.1	90.7	90.2
	Void Ratio	1.9380	1.8157	1.7681
	Diameter, in.	1.388	1.388	1.388
	Height, in.	2.930	2.930	2.930
At Test	Water Content,	71.0	66.5	64.9
	Dry Density, pcf	58.0	60.5	61.4
	Saturation,	100.0	100.0	100.0
	Void Ratio	1.9299	1.8079	1.7650
	Diameter, in.	1.387	1.387	1.387
	Height, in.	2.927	2.927	2.929
Strain rate, in./min.		0.029	0.027	0.030
Back Pressure, psf		0.0	0.0	0.0
Cell Pressure, psf		993.6	2995.2	5990.4
Fail. Stress, psf		414.7	438.8	446.4
Ult. Stress, psf			506.0	489.0
σ_1 Failure, psf		1408.3	3434.0	6436.8
σ_3 Failure, psf		993.6	2995.2	5990.4

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: VSO GR CH4 W/ LYS ML, RT, TR-WD

LL= 86 **PL=** 26 **PI=** 60

Assumed Specific Gravity= 2.72

Remarks: TORVANE = 0.150 TSF

Client: URS Corporation

Project: U.S. Army Corps of Engineers
Inner Harbor Navigational Canal

Source of Sample: IHNC-TFG-2U **Depth:** 10.8

Sample Number: 4B

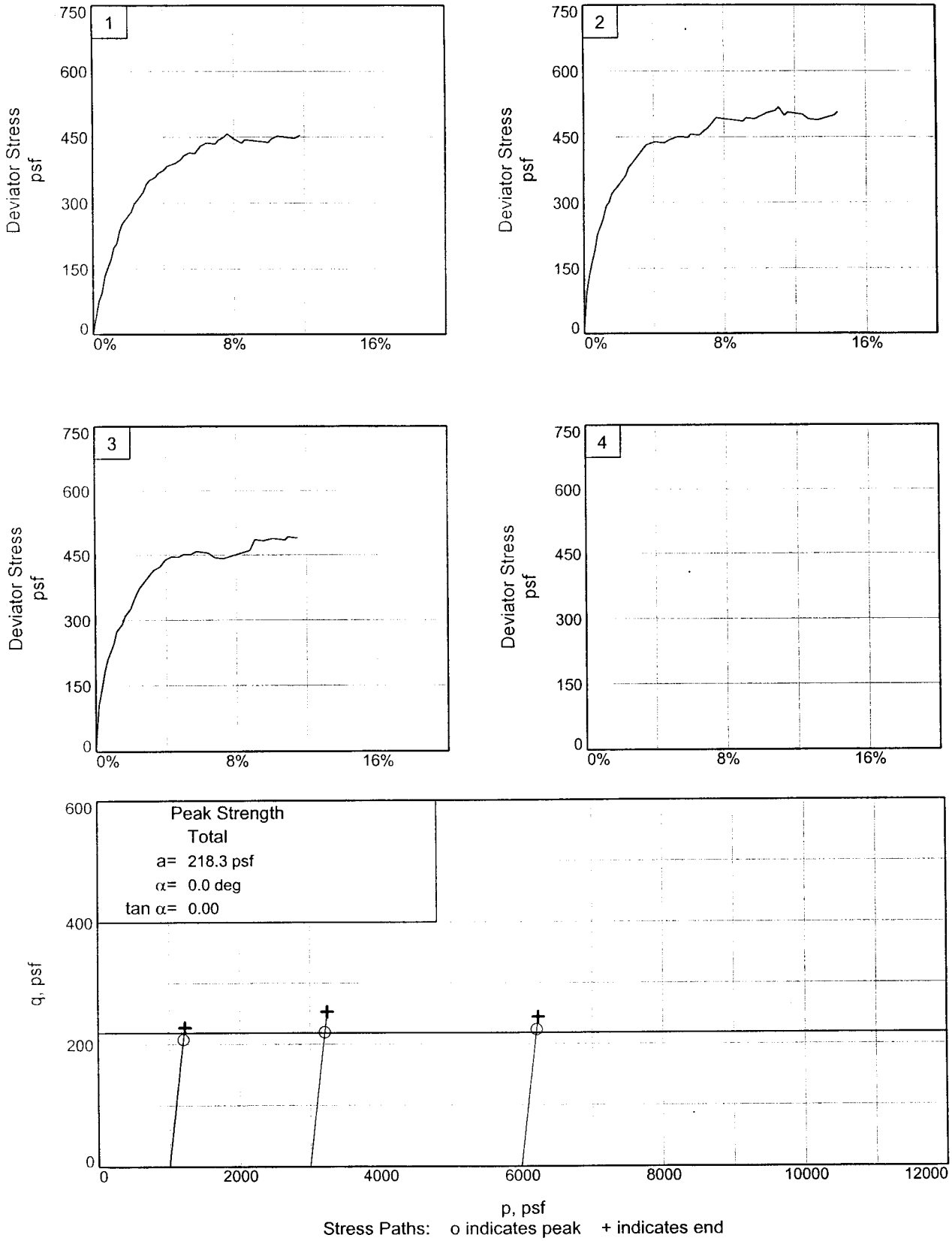
Proj. No.: 19082 **Date:** 11/30/05

TRIAXIAL SHEAR TEST REPORT

EUSTIS ENGINEERING COMPANY, INC.

Figure 1

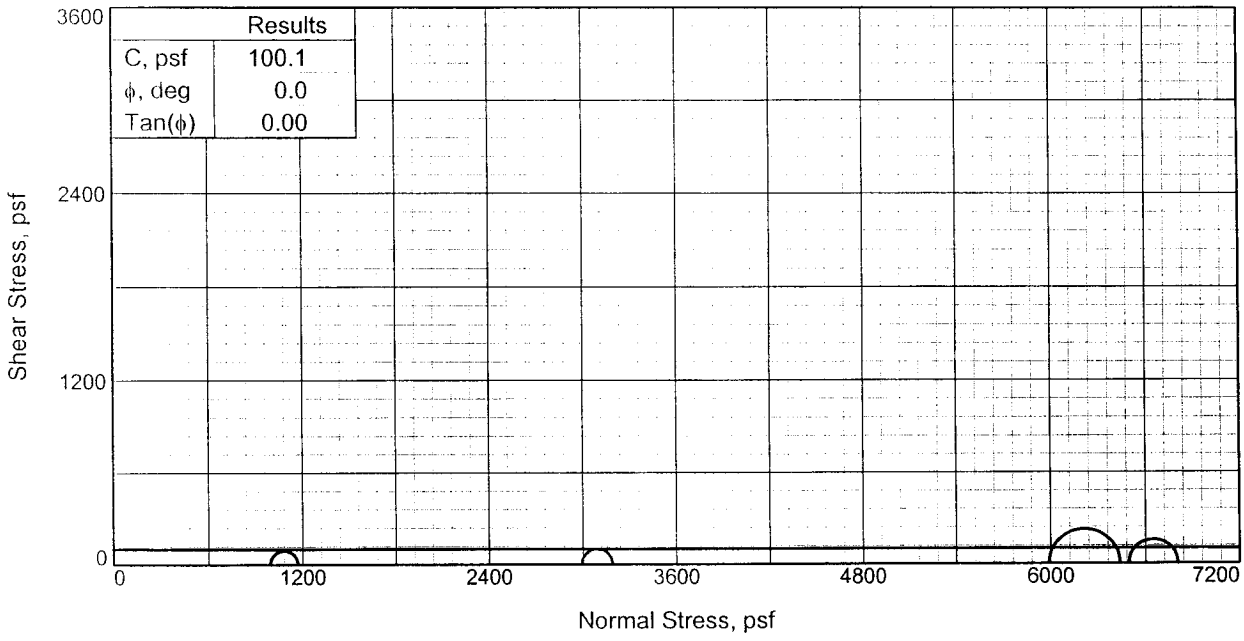
Tested By: ZH **Checked By:** DP

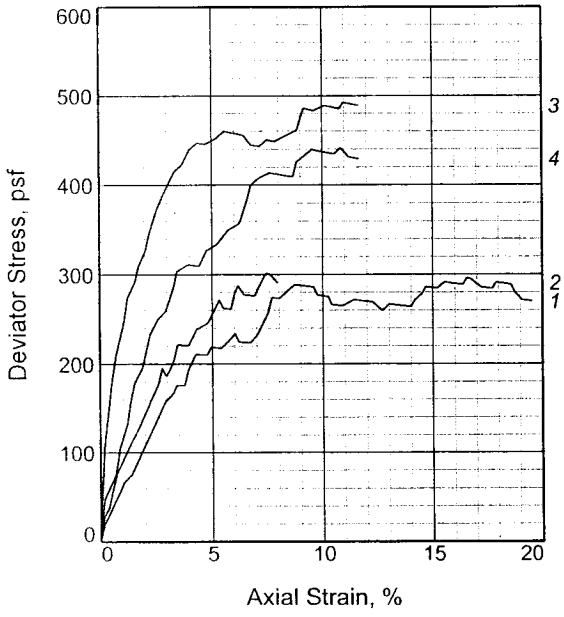


Client: URS Corporation
Project: U.S. Army Corps of Engineers
Source of Sample: IHNC-TFG-2U **Depth:** 10.8 **Sample Number:** 4B
Project No.: 19082 **Figure** 2

EUSTIS ENGINEERING COMPANY, INC.

Tested By: ZH **Checked By:** DP





Specimen No.		1	2	3	4
Initial	Water Content,	188.2	221.7	269.6	225.4
	Dry Density, pcf	24.5	20.9	18.2	22.8
	Saturation,	86.5	85.0	88.1	95.4
	Void Ratio	5.7642	6.9136	8.1065	6.2587
	Diameter, in.	1.388	1.388	1.388	1.388
	Height, in.	2.930	2.930	2.930	2.930
At Test	Water Content,	215.1	258.7	304.8	236.0
	Dry Density, pcf	24.7	21.1	18.2	22.8
	Saturation,	100.0	100.0	100.0	100.0
	Void Ratio	5.7006	6.8545	8.0767	6.2543
	Diameter, in.	1.384	1.385	1.386	1.388
	Height, in.	2.921	2.923	2.927	2.929
Strain rate, in./min.		0.029	0.029	0.000	0.030
Back Pressure, psf		0.0	0.0	0.0	0.0
Cell Pressure, psf		993.6	2995.2	5990.4	6494.4
Fail. Stress, psf		175.7	195.3	446.9	310.9
Ult. Stress, psf		269.7	290.5	488.6	428.9
σ_1 Failure, psf		1169.3	3190.5	6437.3	6805.3
σ_3 Failure, psf		993.6	2995.2	5990.4	6494.4

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: VSO DGR & BR CHOC W/ WD, RT

LL= 321 **PL=** 139 **PI=** 182
Assumed Specific Gravity= 2.65
Remarks: TORVANE = 0.090 TSF

Client: URS Corporation

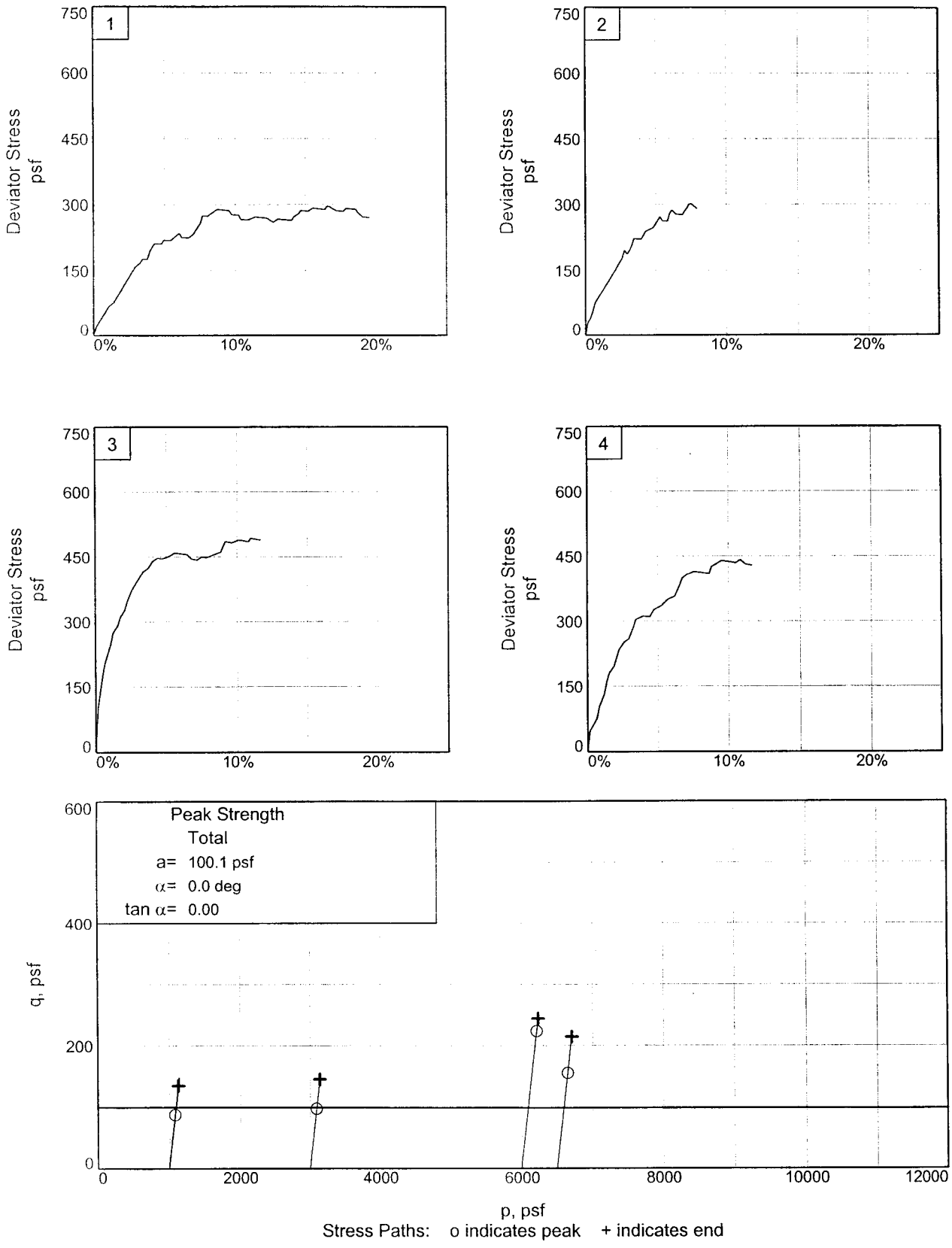
Project: U.S. Army Corps of Engineers
Inner Harbor Navigational Canal
Source of Sample: IHNC-TFG-2U **Depth:** 14.0
Sample Number: 5A
Proj. No.: 19082 **Date:** 11/30/05

TRIAXIAL SHEAR TEST REPORT

EUSTIS ENGINEERING COMPANY, INC.

Figure 1

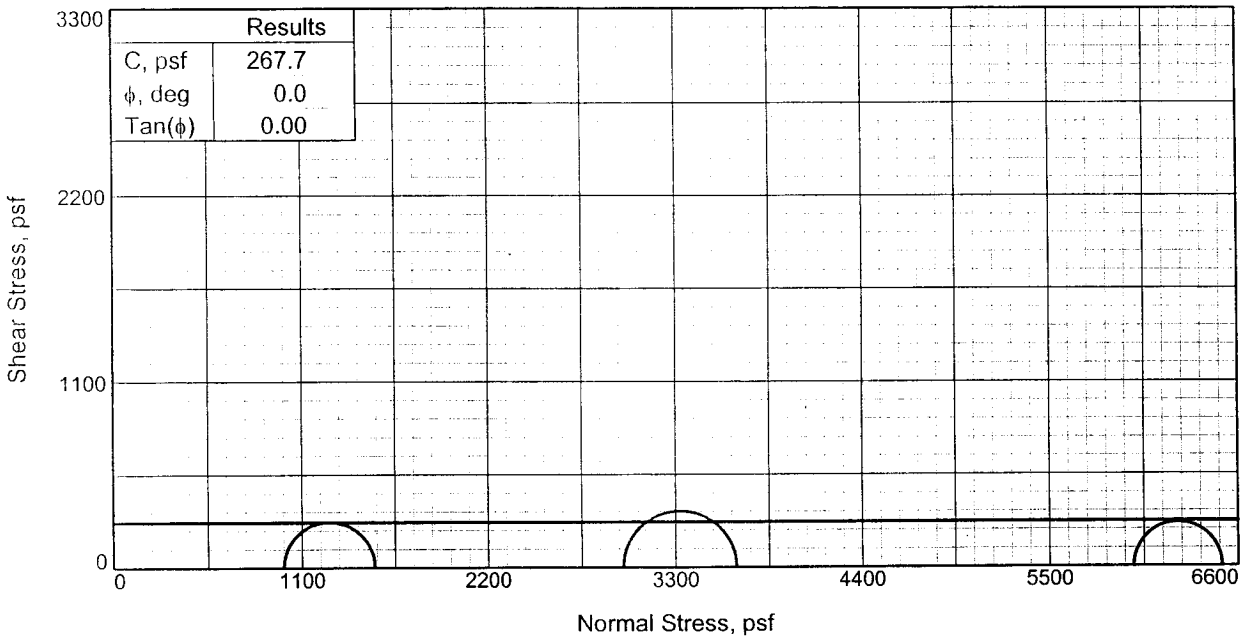
Tested By: ZH **Checked By:** DP

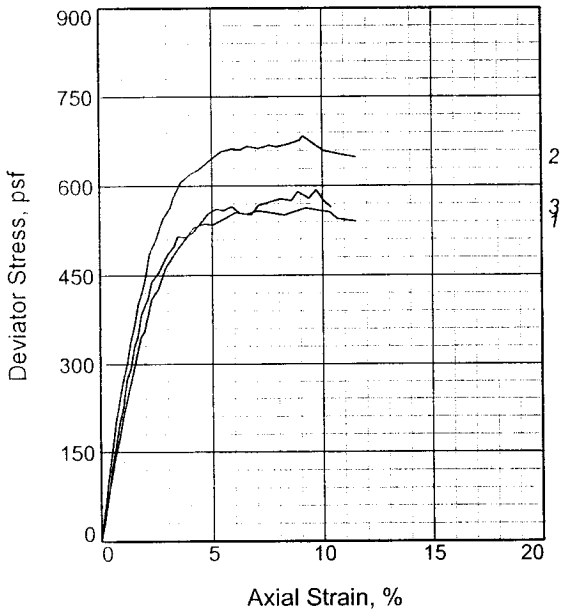


Client: URS Corporation
Project: U.S. Army Corps of Engineers
Source of Sample: IHNC-TFG-2U **Depth:** 14.0 **Sample Number:** 5A
Project No.: 19082 **Figure** 2

EUSTIS ENGINEERING COMPANY, INC.

Tested By: ZH **Checked By:** DP





Specimen No.		1	2	3
Initial	Water Content,	138.3	117.5	133.8
	Dry Density, pcf	33.8	37.6	34.2
	Saturation,	93.6	90.9	91.9
	Void Ratio	4.0192	3.5139	3.9611
	Diameter, in.	1.388	1.388	1.388
	Height, in.	2.930	2.930	2.930
At Test	Water Content,	147.4	129.1	145.2
	Dry Density, pcf	33.9	37.6	34.3
	Saturation,	100.0	100.0	100.0
	Void Ratio	4.0084	3.5112	3.9484
	Diameter, in.	1.387	1.388	1.387
	Height, in.	2.928	2.929	2.928
Strain rate, in./min.		0.029	0.029	0.029
Back Pressure, psf		0.0	0.0	0.0
Cell Pressure, psf		993.6	2995.2	5990.4
Fail. Stress, psf		535.9	662.8	515.3
Ult. Stress, psf		539.7	648.5	563.7
σ_1 Failure, psf		1529.5	3658.0	6505.7
σ_3 Failure, psf		993.6	2995.2	5990.4

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: SO GR & BR CHOB W/ WD

LL= 181 **PL=** 36 **PI=** 145
Assumed Specific Gravity= 2.72
Remarks: TORVANE = 0.180 TSF

Client: URS Corporation

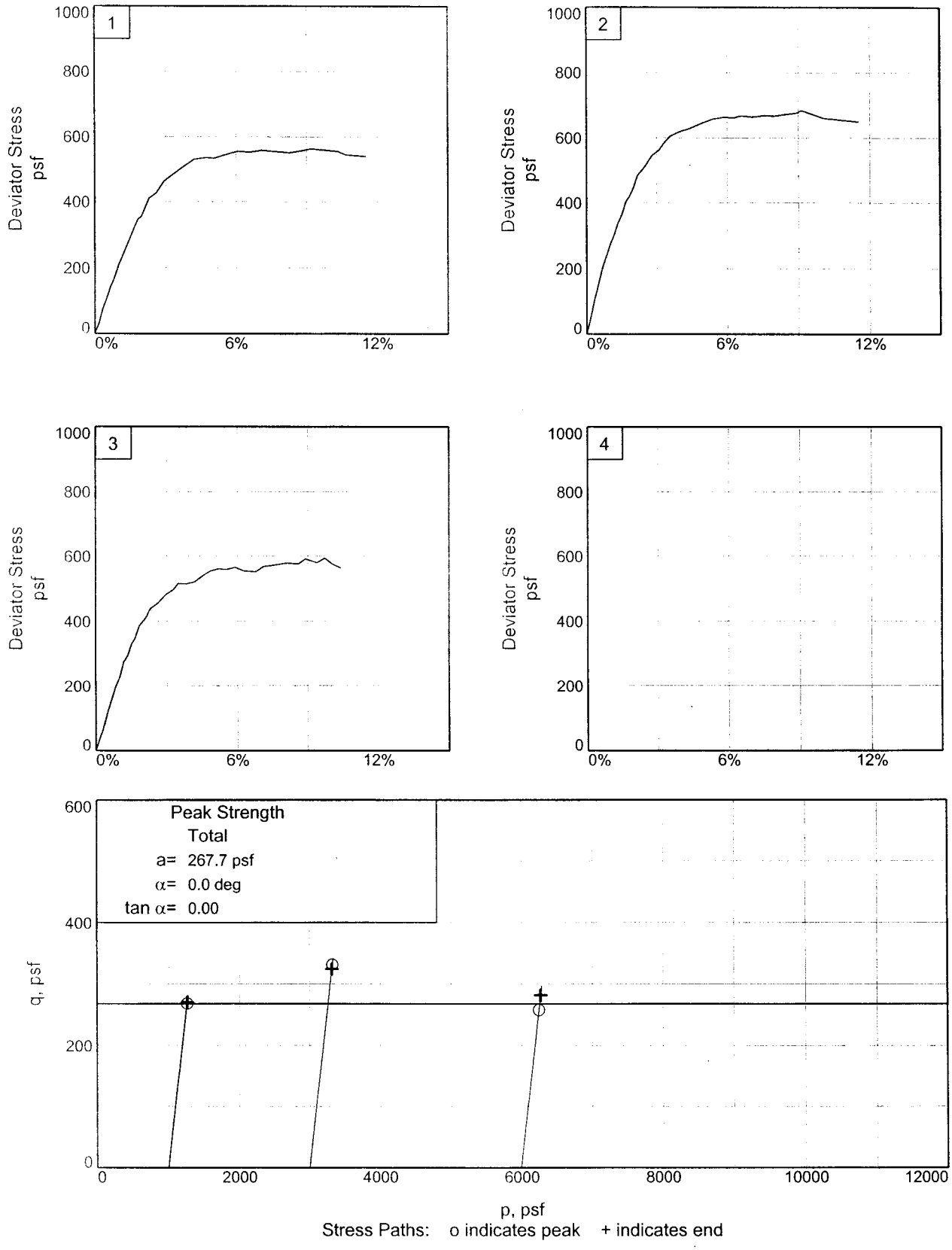
Project: U.S. Army Corps of Engineers
Inner Harbor Navigational Canal
Source of Sample: IHNC-TFG-2U **Depth:** 18.8
Sample Number: 6B
Proj. No.: 19082 **Date:** 11/30/05

TRIAXIAL SHEAR TEST REPORT

EUSTIS ENGINEERING COMPANY, INC.

Figure 1

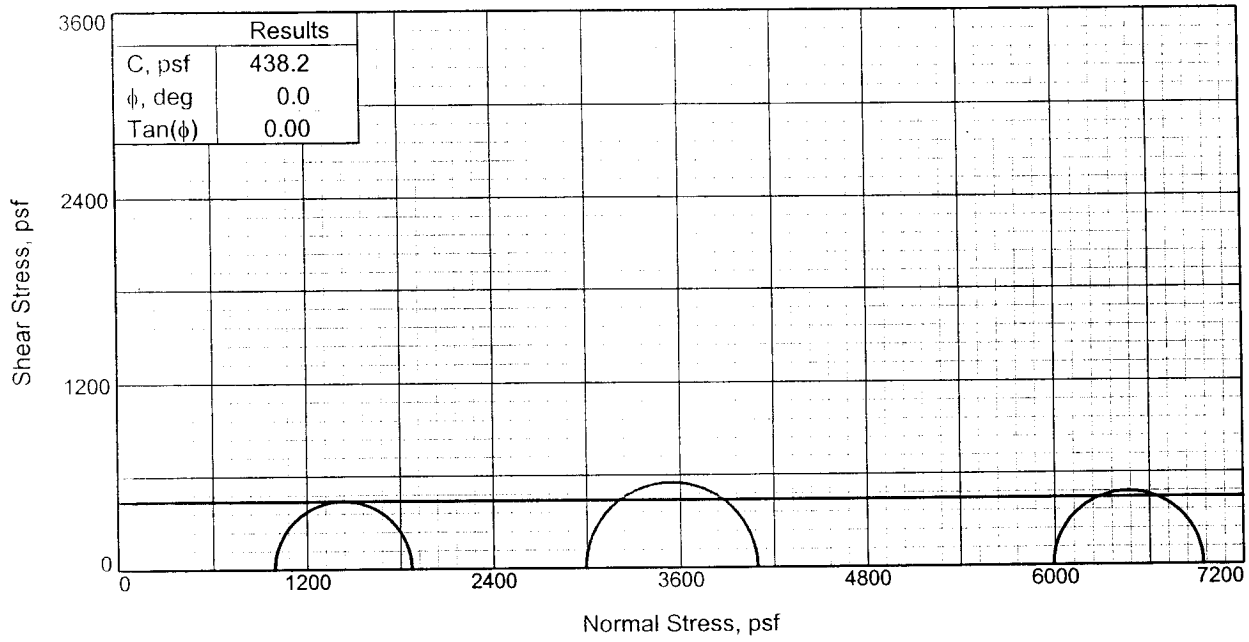
Tested By: RR **Checked By:** DP

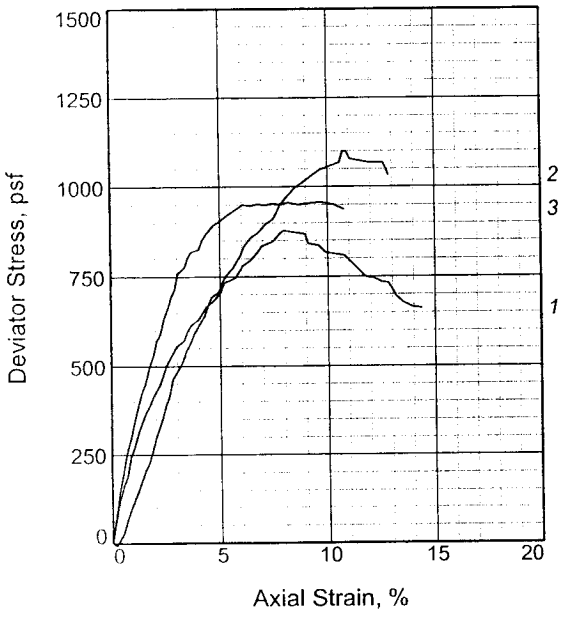


Client: URS Corporation
Project: U.S. Army Corps of Engineers
Source of Sample: IHNC-TFG-2U **Depth:** 18.8 **Sample Number:** 6B
Project No.: 19082 **Figure** _____

EUSTIS ENGINEERING COMPANY, INC.

Tested By: RR **Checked By:** DP





Specimen No.		1	2	3
Initial	Water Content,	222.2	242.4	203.9
	Dry Density, pcf	21.3	19.0	22.1
	Saturation,	87.3	83.5	83.1
	Void Ratio	6.6155	7.5463	6.6276
	Diameter, in.	1.388	1.388	1.388
	Height, in.	2.930	2.930	2.930
At Test	Water Content,	253.7	288.8	244.3
	Dry Density, pcf	21.4	19.1	22.2
	Saturation,	100.0	100.0	100.0
	Void Ratio	6.5960	7.5078	6.5956
	Diameter, in.	1.387	1.386	1.386
	Height, in.	2.928	2.926	2.926
Strain rate, in./min.		0.030	0.029	0.030
Back Pressure, psf		0.0	0.0	0.0
Cell Pressure, psf		993.6	2995.2	5990.4
Fail. Stress, psf		877.2	1099.0	950.2
Ult. Stress, psf		661.0	1031.3	936.4
σ_1 Failure, psf		1870.8	4094.2	6940.6
σ_3 Failure, psf		993.6	2995.2	5990.4

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: SO DGR CHOC W/ RT

LL= 364 **PL=** 179 **PI=** 185
Assumed Specific Gravity= 2.6
Remarks: TORVANE = 0.140 TSF

Client: URS Corporation

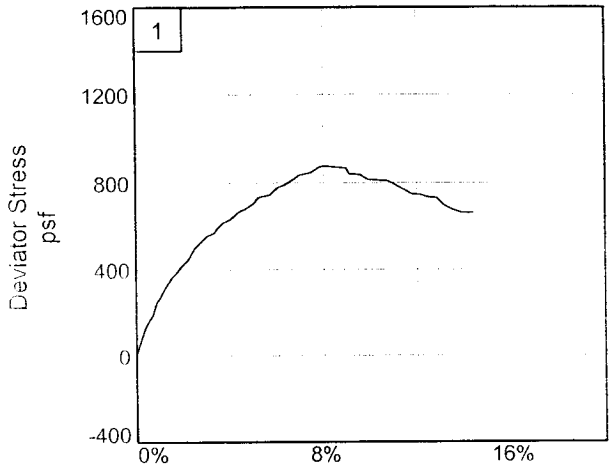
Project: U.S. Army Corps of Engineers
Inner Harbor Navigational Canal
Source of Sample: IHNC-TFG-2U **Depth:** 20.2
Sample Number: 6C2
Proj. No.: 19082 **Date:** 11/30/05

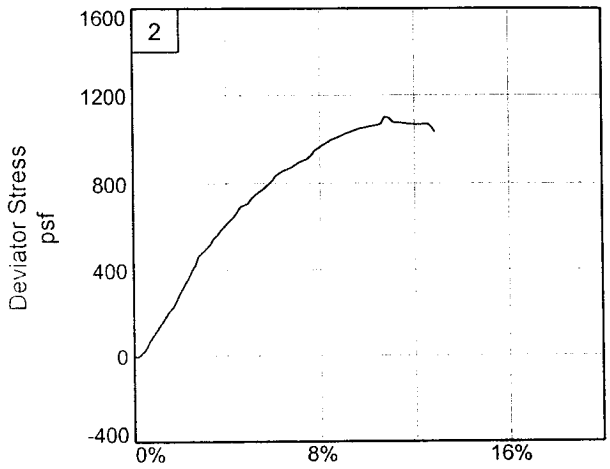
TRIAXIAL SHEAR TEST REPORT

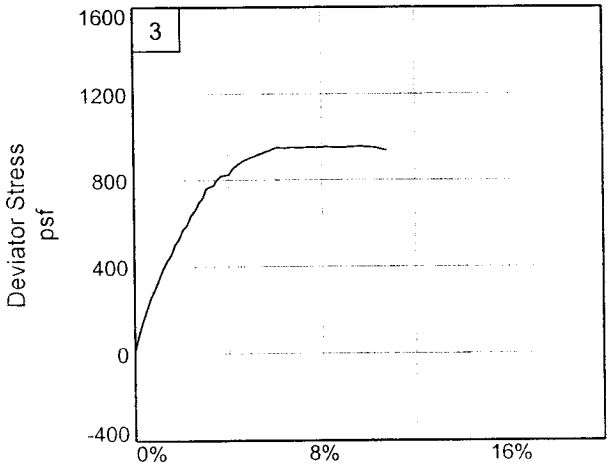
EUSTIS ENGINEERING COMPANY, INC.

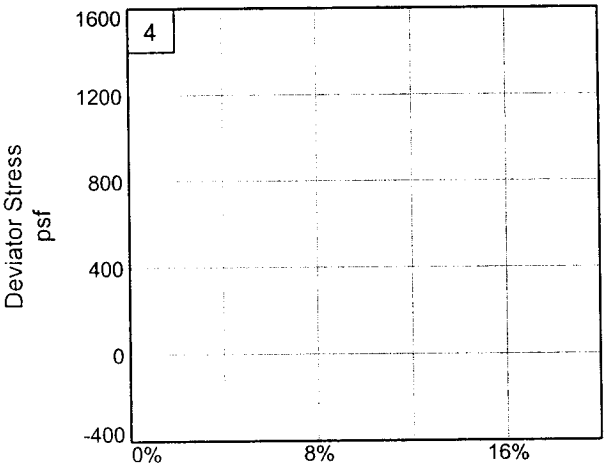
Figure 1

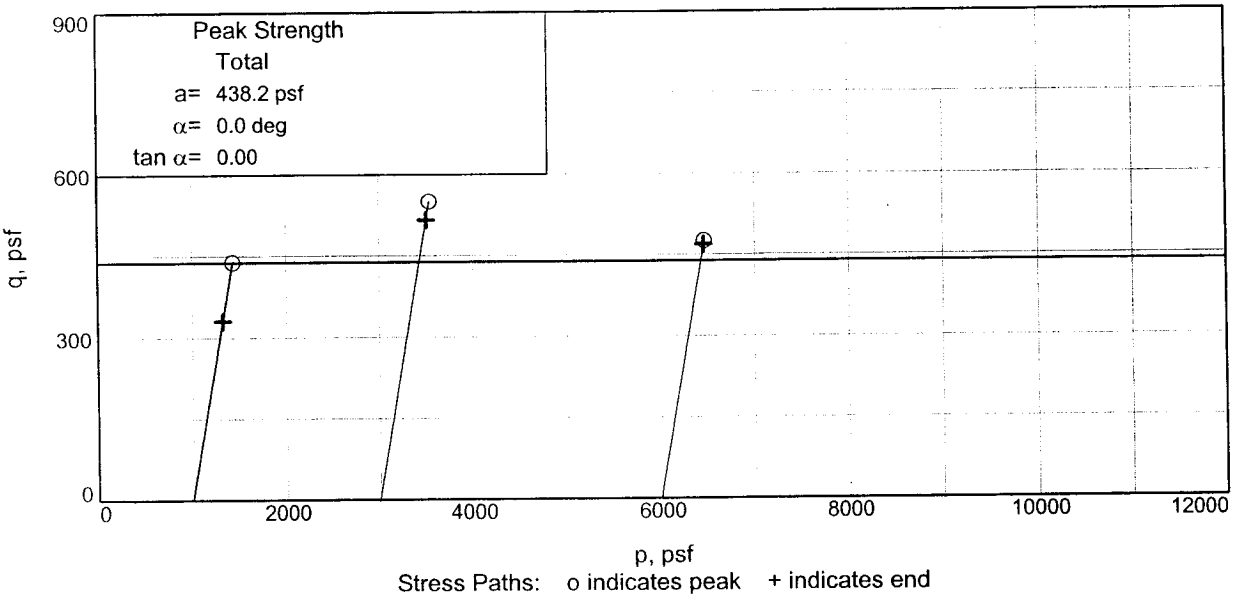
Tested By: RR **Checked By:** DP









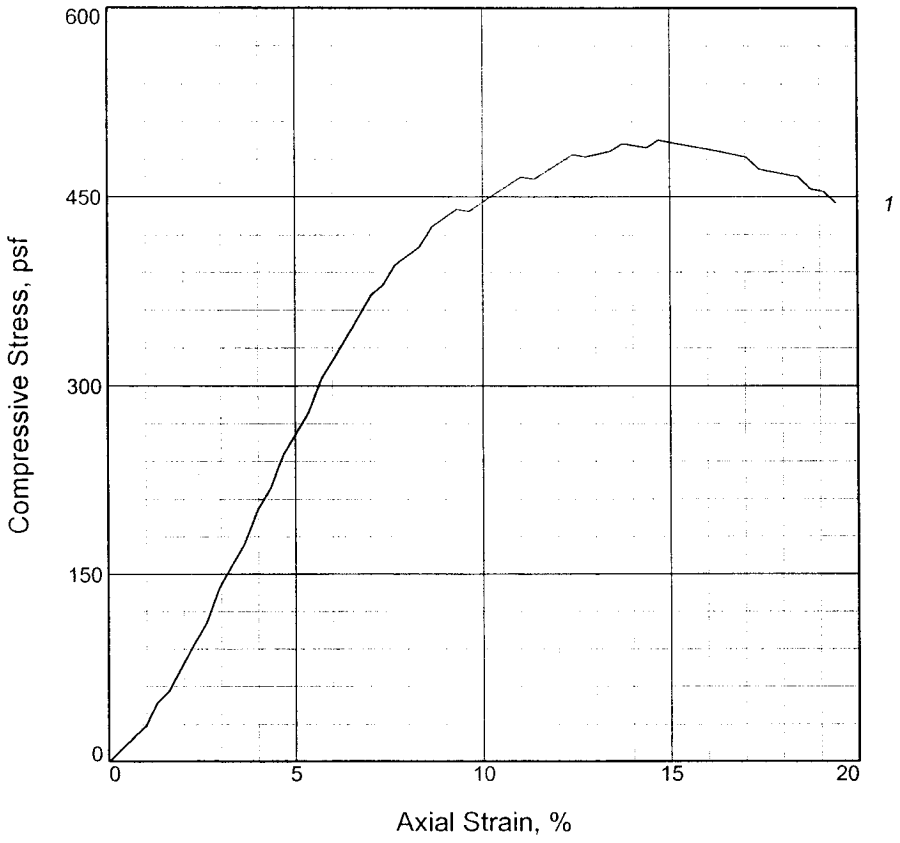


Client: URS Corporation
Project: U.S. Army Corps of Engineers
Source of Sample: IHNC-TFG-2U **Depth:** 20.2 **Sample Number:** 6C2
Project No.: 19082 **Figure** 2

EUSTIS ENGINEERING COMPANY, INC.

Tested By: RR **Checked By:** DP

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	440.1			
Undrained shear strength, psf	220.1			
Failure strain, %	9.3			
Strain rate, in./min.	0.058			
Water content, %	19.9			
Wet density, pcf	108.2			
Dry density, pcf	90.2			
Saturation, %	61.8			
Void ratio	0.8678			
Specimen diameter, in.	1.388			
Specimen height, in.	2.930			
Height/diameter ratio	2.11			

Description: VSO GR CL6 W/ LNS CH

LL =	PL =	PI =	**Assumed GS=** 2.7	**Type:** UNDISTURBED

Project No.: 19082
Date: 11/30/05

Remarks:
TORVANE = 0.100 TSF

Client: URS Corporation

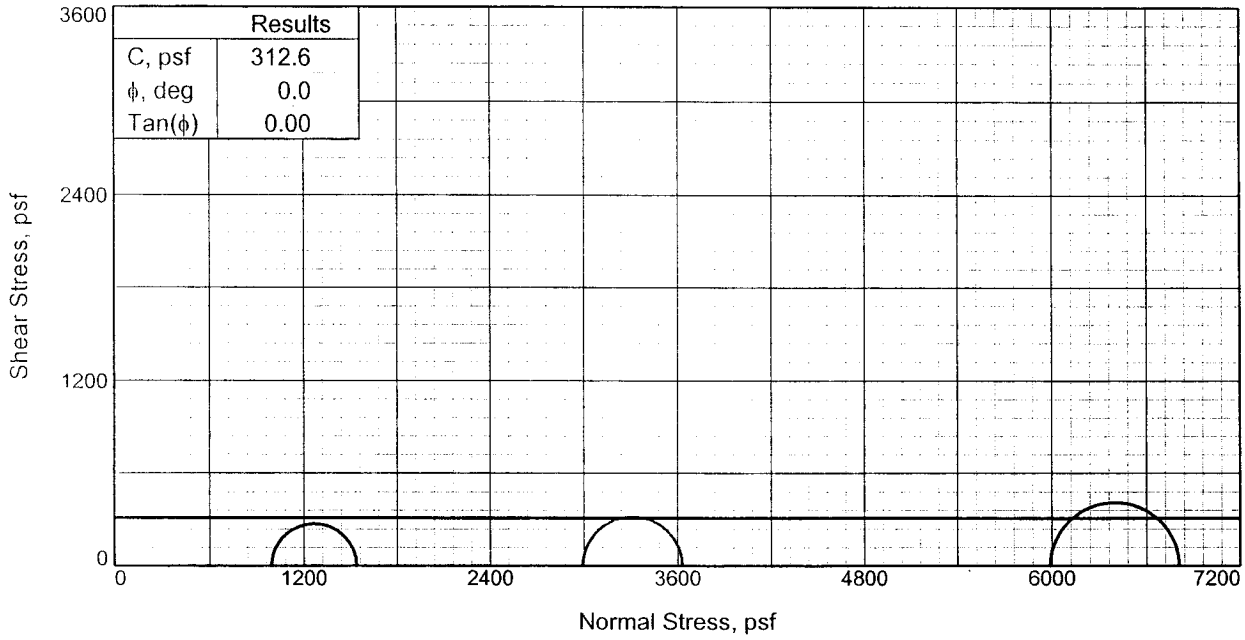
Project: U.S. Army Corps of Engineers
Inner Harbor Navigational Canal
Source of Sample: IHNC-TFG-2U **Depth:** 23.7
Sample Number: 7C

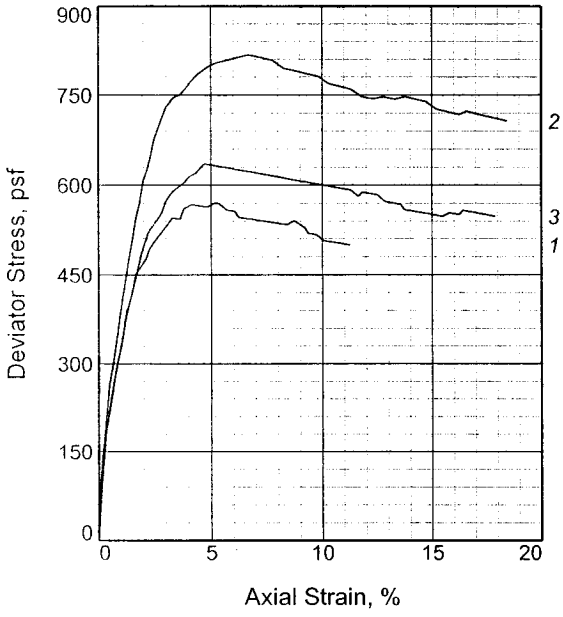
UNCONFINED COMPRESSION TEST

EUSTIS ENGINEERING COMPANY, INC.

Figure 1

Tested By: ZH **Checked By:** DP





Specimen No.		1	2	3
Initial	Water Content,	57.0	57.2	53.9
	Dry Density, pcf	64.8	64.6	67.1
	Saturation,	95.6	95.4	95.6
	Void Ratio	1.6216	1.6295	1.5324
	Diameter, in.	1.388	1.388	1.388
	Height, in.	2.930	2.930	2.930
At Test	Water Content,	59.2	59.9	56.2
	Dry Density, pcf	65.1	64.6	67.2
	Saturation,	100.0	100.0	100.0
	Void Ratio	1.6100	1.6290	1.5285
	Diameter, in.	1.386	1.388	1.387
	Height, in.	2.926	2.930	2.929
Strain rate, in./min.		0.030	0.029	0.030
Back Pressure, psf		0.0	0.0	0.0
Cell Pressure, psf		993.6	5990.4	2995.2
Fail. Stress, psf		544.6	817.1	635.5
Ult. Stress, psf		499.7	706.5	547.5
σ_1 Failure, psf		1538.2	6807.5	3630.7
σ_3 Failure, psf		993.6	5990.4	2995.2

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: SO GR CH3 W/ LNS & ARS ML

LL= 59 **PL=** 27 **PI=** 32
Assumed Specific Gravity= 2.72
Remarks: TORVANE = 0.150 TSF

Figure 1

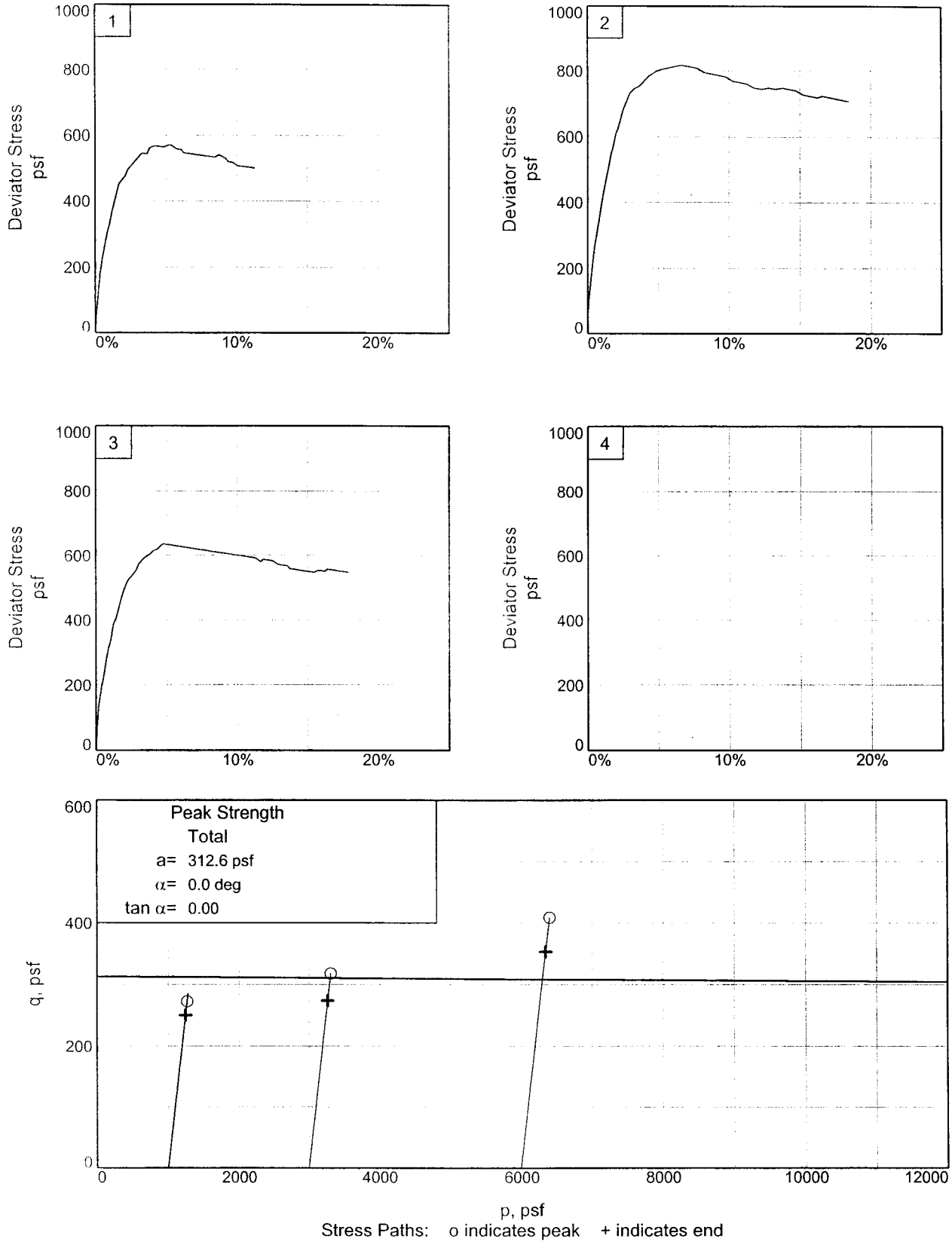
Client: URS Corporation

Project: U.S. Army Corps of Engineers
Inner Harbor Navigational Canal
Source of Sample: IHNC-TFG-2U **Depth:** 27.7
Sample Number: 8C
Proj. No.: 19082 **Date:** 11/30/05

TRIAXIAL SHEAR TEST REPORT

EUSTIS ENGINEERING COMPANY, INC.

Tested By: ZH **Checked By:** DP

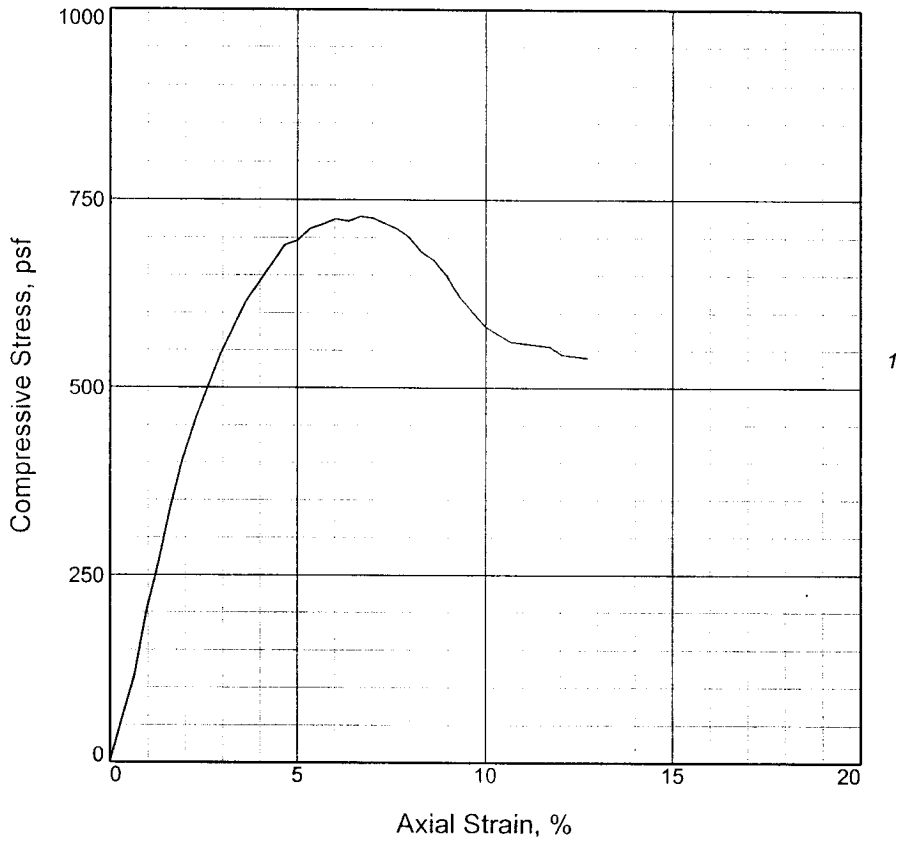


Client: URS Corporation
Project: U.S. Army Corps of Engineers
Source of Sample: IHNC-TFG-2U **Depth:** 27.7 **Sample Number:** 8C
Project No.: 19082 **Figure** 2

EUSTIS ENGINEERING COMPANY, INC.

Tested By: ZH **Checked By:** DP

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	724.4			
Undrained shear strength, psf	362.2			
Failure strain, %	6.0			
Strain rate, in./min.	0.059			
Water content, %	67.2			
Wet density, pcf	96.4			
Dry density, pcf	57.7			
Saturation, %	93.7			
Void ratio	1.9660			
Specimen diameter, in.	1.388			
Specimen height, in.	2.930			
Height/diameter ratio	2.11			

Description: SO GR CH4 W/ LNS ML, SL

LL =	PL =	PI =	**Assumed GS=** 2.74	**Type:** UNDISTURBED

Project No.: 19082
Date: 11/30/05

Remarks:
TORVANE = 0.200 TSF

Client: URS Corporation

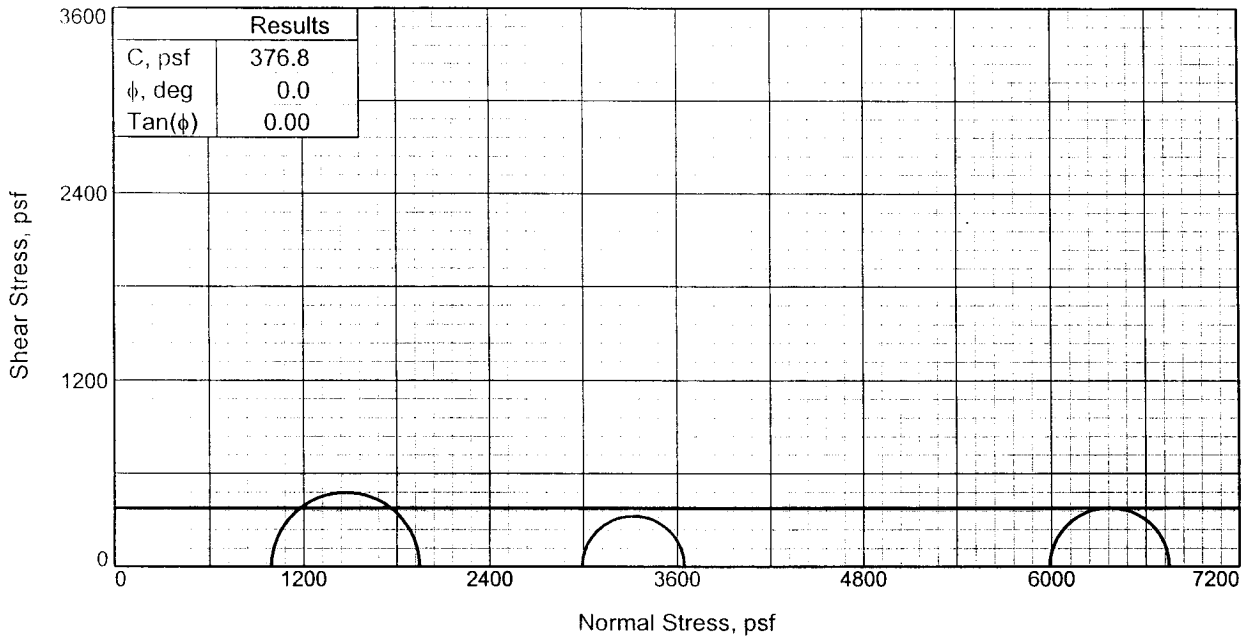
Project: U.S. Army Corps of Engineers
Inner Harbor Navigational Canal
Source of Sample: IHNC-TFG-2U **Depth:** 31.7
Sample Number: 9C

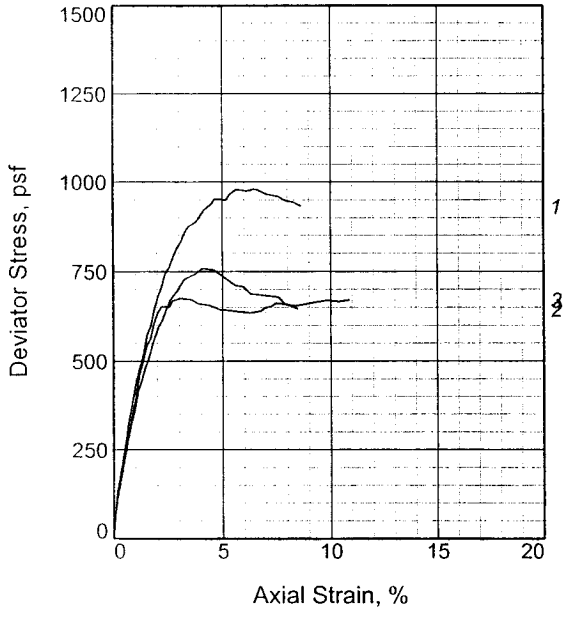
UNCONFINED COMPRESSION TEST

Figure 1

EUSTIS ENGINEERING COMPANY, INC.

Tested By: ZH **Checked By:** DP





Specimen No.		1	2	3
Initial	Water Content,	62.2	62.6	61.7
	Dry Density, pcf	62.2	61.0	60.3
	Saturation,	97.7	95.5	92.5
	Void Ratio	1.7312	1.7832	1.8143
	Diameter, in.	1.388	1.388	1.388
	Height, in.	2.930	2.930	2.930
At Test	Water Content,	63.6	65.4	66.7
	Dry Density, pcf	62.2	61.1	60.4
	Saturation,	100.0	100.0	100.0
	Void Ratio	1.7290	1.7798	1.8134
	Diameter, in.	1.388	1.387	1.388
	Height, in.	2.929	2.929	2.930
Strain rate, in./min.		0.030	0.029	0.029
Back Pressure, psf		0.0	0.0	0.0
Cell Pressure, psf		993.6	2995.2	5990.4
Fail. Stress, psf		953.2	652.0	757.8
Ult. Stress, psf		930.9	645.0	670.2
σ_1 Failure, psf		1946.8	3647.2	6748.2
σ_3 Failure, psf		993.6	2995.2	5990.4

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: SO GR CH4 W/ LNS ML, SL

LL= 83 **PL=** 31 **PI=** 52
Assumed Specific Gravity= 2.72
Remarks: TORVANE = 0.200 TSF

Client: URS Corporation

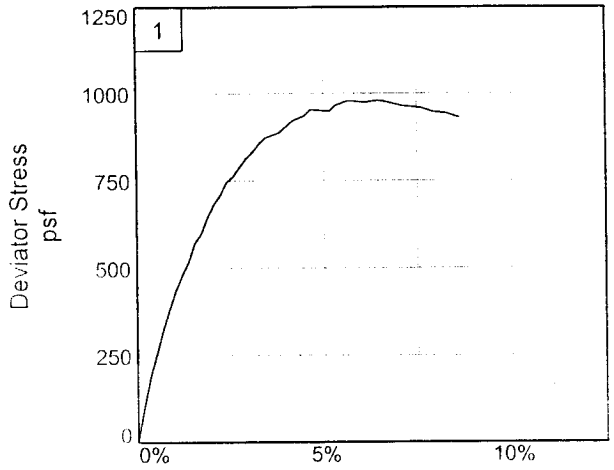
Project: U.S. Army Corps of Engineers
Inner Harbor Navigational Canal
Source of Sample: IHNC-TFG-2U **Depth:** 34.8
Sample Number: 10B
Proj. No.: 19082 **Date:** 11/30/05

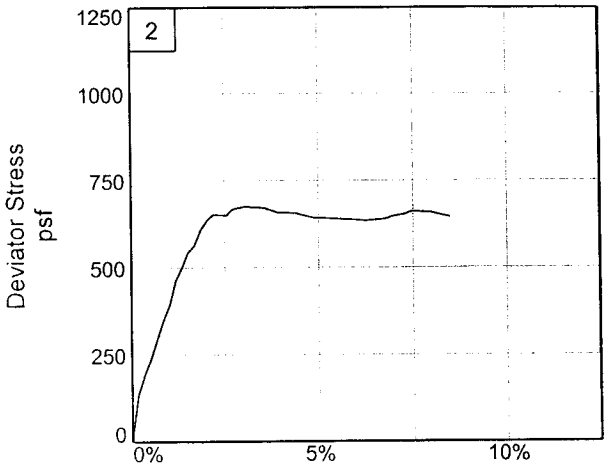
TRIAXIAL SHEAR TEST REPORT

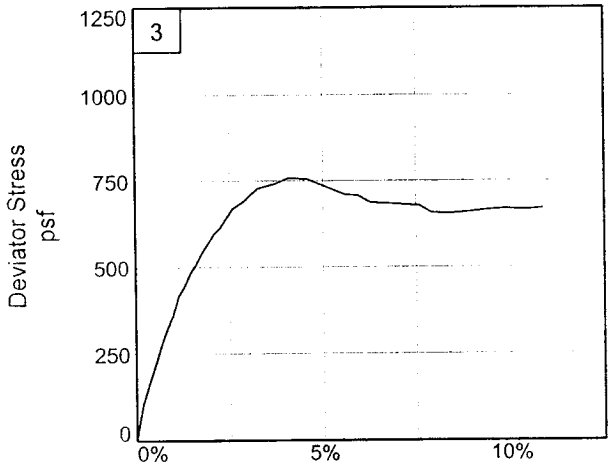
EUSTIS ENGINEERING COMPANY, INC.

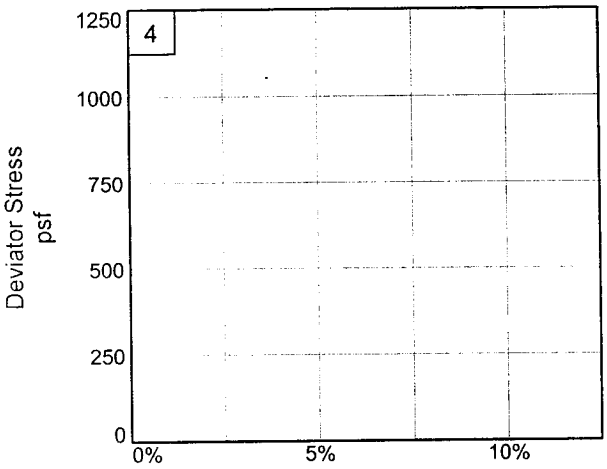
Figure 1

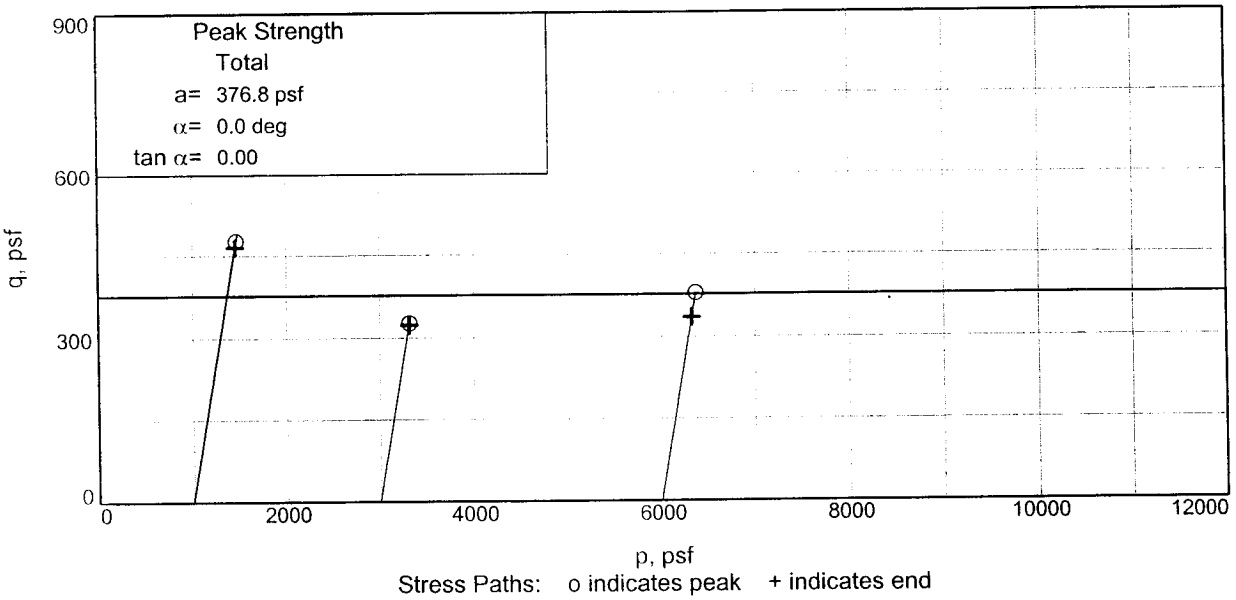
Tested By: RR **Checked By:** DP











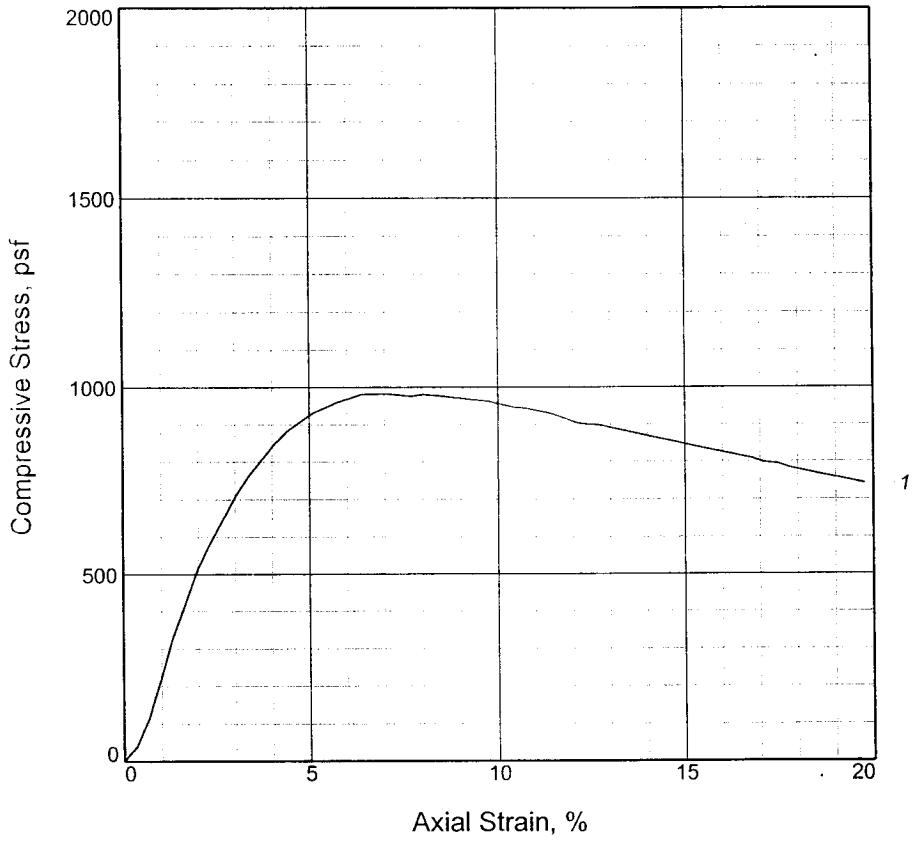
Stress Paths: o indicates peak + indicates end

Client: URS Corporation
Project: U.S. Army Corps of Engineers
Source of Sample: IHNC-TFG-2U **Depth:** 34.8 **Sample Number:** 10B
Project No.: 19082 **Figure** 2

EUSTIS ENGINEERING COMPANY, INC.

Tested By: RR **Checked By:** DP

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	982.0			
Undrained shear strength, psf	491.0			
Failure strain, %	7.0			
Strain rate, in./min.	0.059			
Water content, %	67.9			
Wet density, pcf	96.4			
Dry density, pcf	57.4			
Saturation, %	94.3			
Void ratio	1.9584			
Specimen diameter, in.	1.388			
Specimen height, in.	2.930			
Height/diameter ratio	2.11			

Description: SO GR CH4 W/ SL

LL =	PL =	PI =	**Assumed GS=** 2.72	**Type:** UNDISTURBED

Project No.: 19082
Date: 11/30/05

Remarks:
TORVANE = 0.210 TSF

Client: URS Corporation

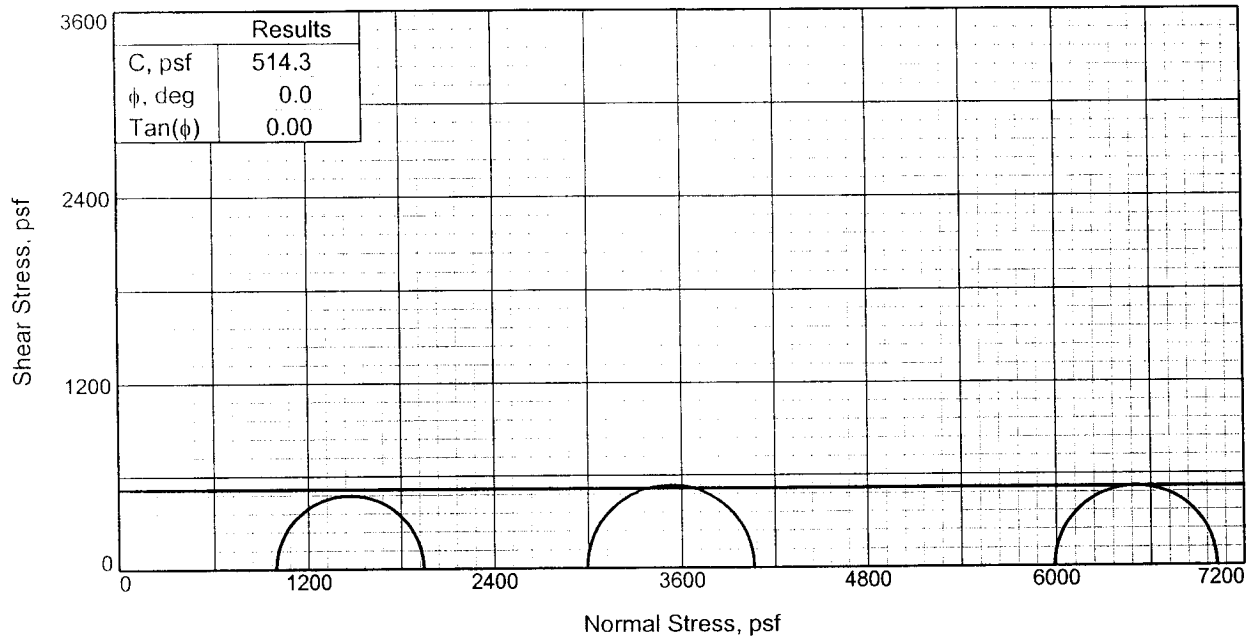
Project: U.S. Army Corps of Engineers
Inner Harbor Navigational Canal
Source of Sample: IHNC-TFG-2U **Depth:** 39.7
Sample Number: 11C

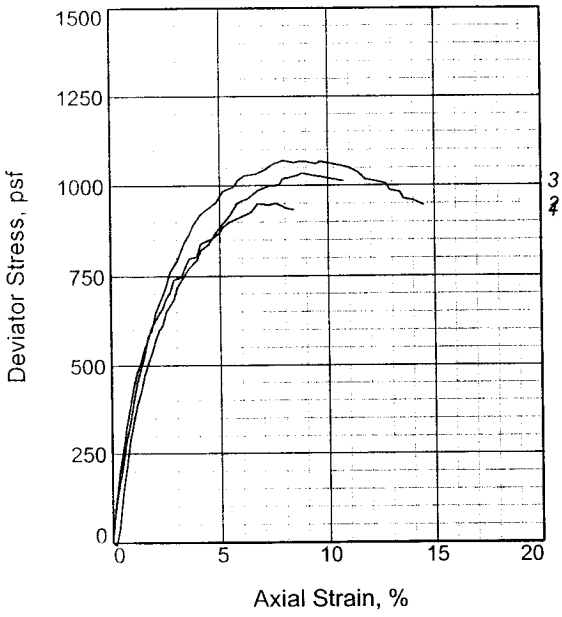
UNCONFINED COMPRESSION TEST

EUSTIS ENGINEERING COMPANY, INC.

Figure 1

Tested By: JL **Checked By:** DP





Specimen No.		1	2	3
Initial	Water Content,	65.7	66.6	65.6
	Dry Density, pcf	59.4	57.7	59.1
	Saturation,	96.2	93.1	95.1
	Void Ratio	1.8593	1.9445	1.8753
	Diameter, in.	1.388	1.388	1.388
	Height, in.	2.930	2.930	2.930
At Test	Water Content,	68.3	71.4	68.8
	Dry Density, pcf	59.4	57.7	59.1
	Saturation,	100.0	100.0	100.0
	Void Ratio	1.8590	1.9433	1.8727
	Diameter, in.	1.388	1.388	1.388
	Height, in.	2.930	2.930	2.929
Strain rate, in./min.		0.030	0.030	0.030
Back Pressure, psf		0.0	0.0	0.0
Cell Pressure, psf		993.6	2995.2	5990.4
Fail. Stress, psf		949.6	1069.3	1033.6
Ult. Stress, psf		932.5	943.8	1011.2
σ_1 Failure, psf		1943.2	4064.5	7024.0
σ_3 Failure, psf		993.6	2995.2	5990.4

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CH4 W/ SL, TR-WD

LL= 91 **PL=** 27 **PI=** 64
Assumed Specific Gravity= 2.72
Remarks: TORVANE = 0.190 TSF

Client: URS Corporation

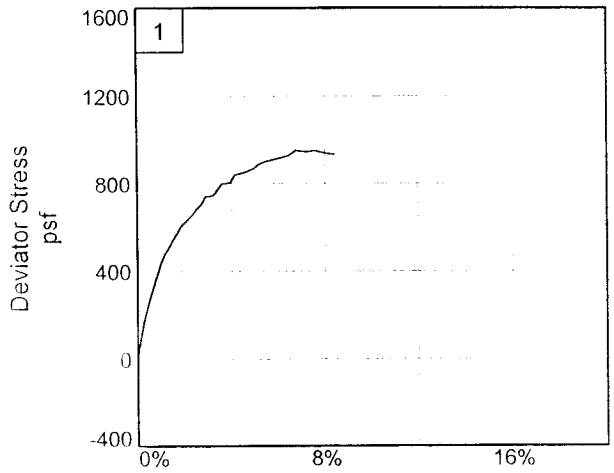
Project: U.S. Army Corps of Engineers
Inner Harbor Navigational Canal
Source of Sample: IHNC-TFG-2U **Depth:** 43.7
Sample Number: 12C
Proj. No.: 19082 **Date:** 11/30/05

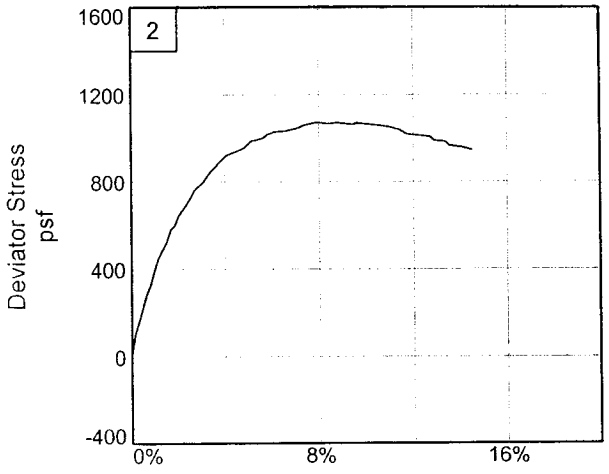
TRIAXIAL SHEAR TEST REPORT

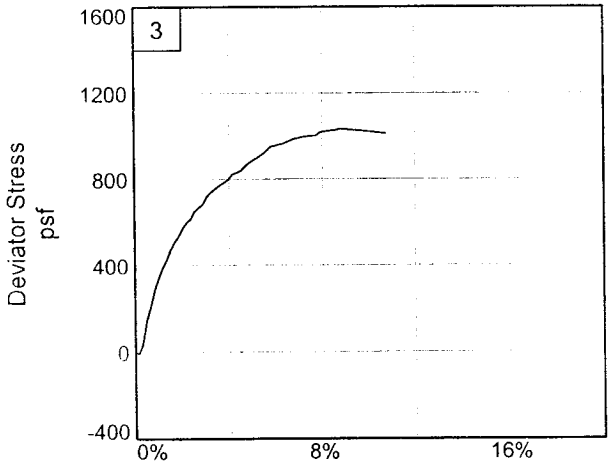
EUSTIS ENGINEERING COMPANY, INC.

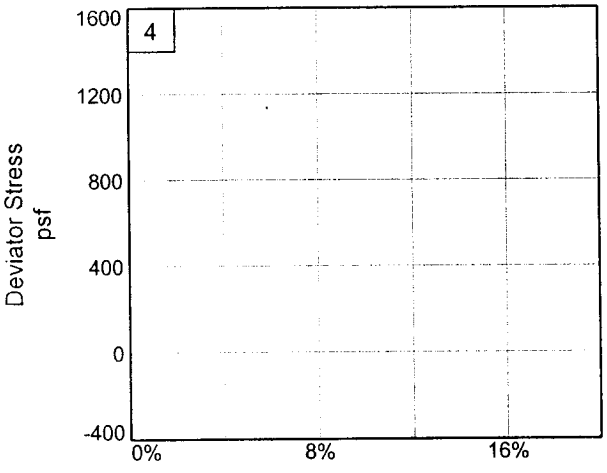
Figure 1

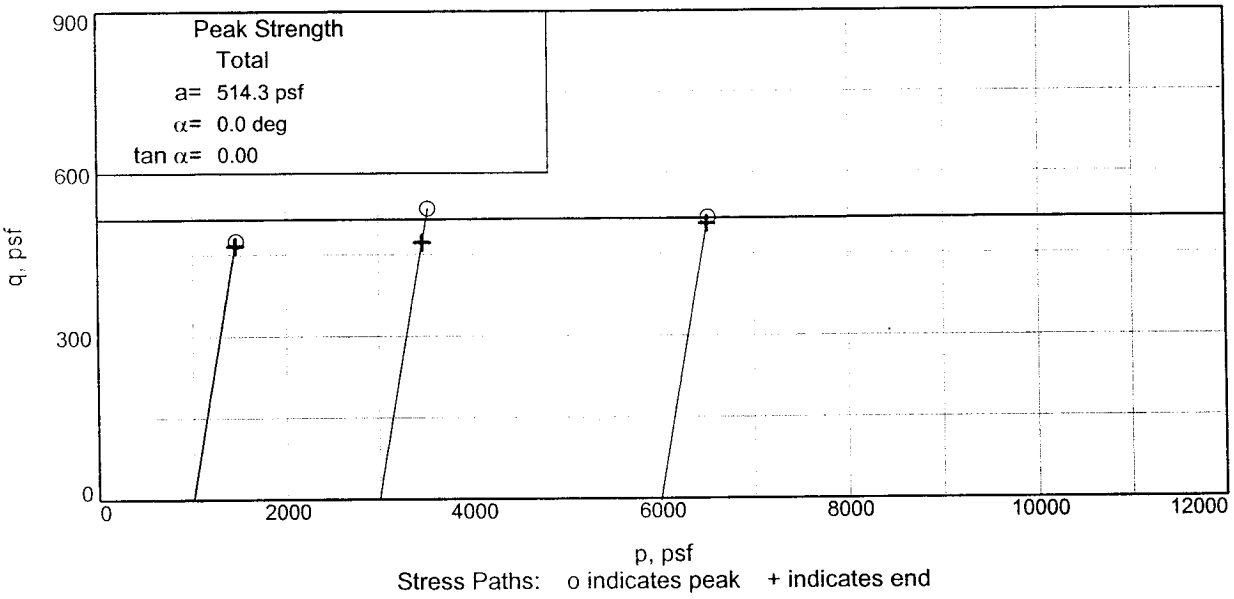
Tested By: RR **Checked By:** DP











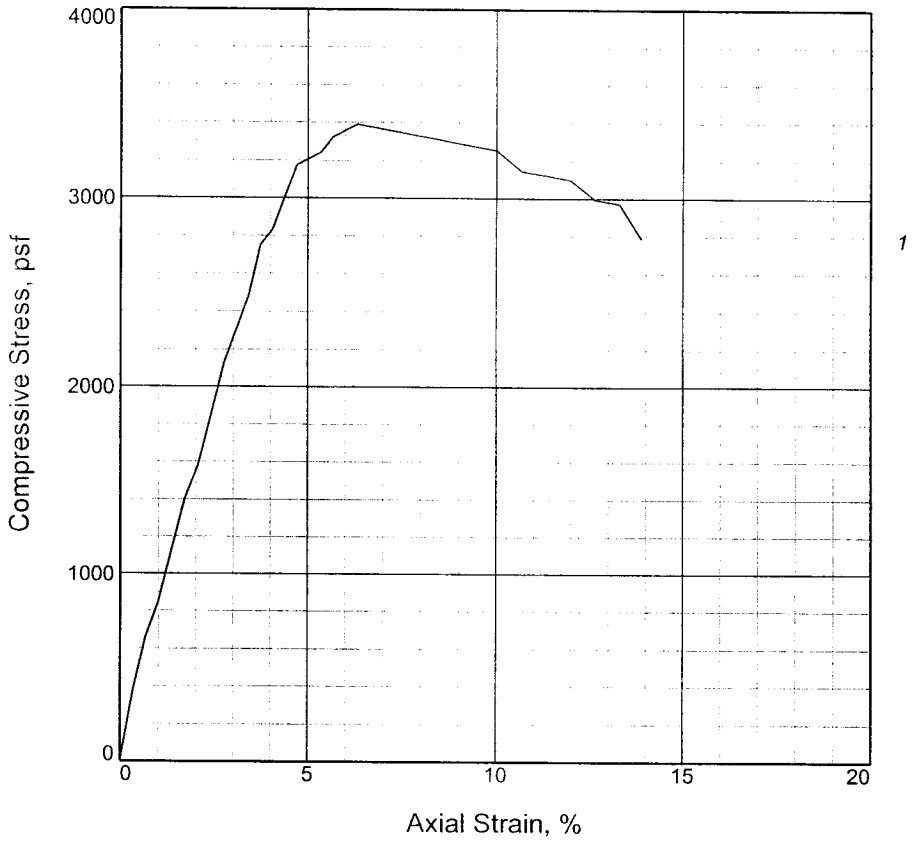
Stress Paths: o indicates peak + indicates end

Client: URS Corporation
Project: U.S. Army Corps of Engineers
Source of Sample: IHNC-TFG-2U **Depth:** 43.7 **Sample Number:** 12C
Project No.: 19082 **Figure** 2

EUSTIS ENGINEERING COMPANY, INC.

Tested By: RR **Checked By:** DP

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	3387.9			
Undrained shear strength, psf	1694.0			
Failure strain, %	6.3			
Strain rate, in./min.	0.058			
Water content, %	56.6			
Wet density, pcf	98.3			
Dry density, pcf	62.7			
Saturation, %	89.9			
Void ratio	1.7265			
Specimen diameter, in.	1.388			
Specimen height, in.	2.930			
Height/diameter ratio	2.11			

Description: ST GR CH4 W/ SL

LL =	PL =	PI =	**Assumed GS=** 2.74	**Type:** UNDISTURBED

Project No.: 19082
Date: 11/30/05

Remarks:
TORVANE = 0.240 TSF

Client: URS Corporation

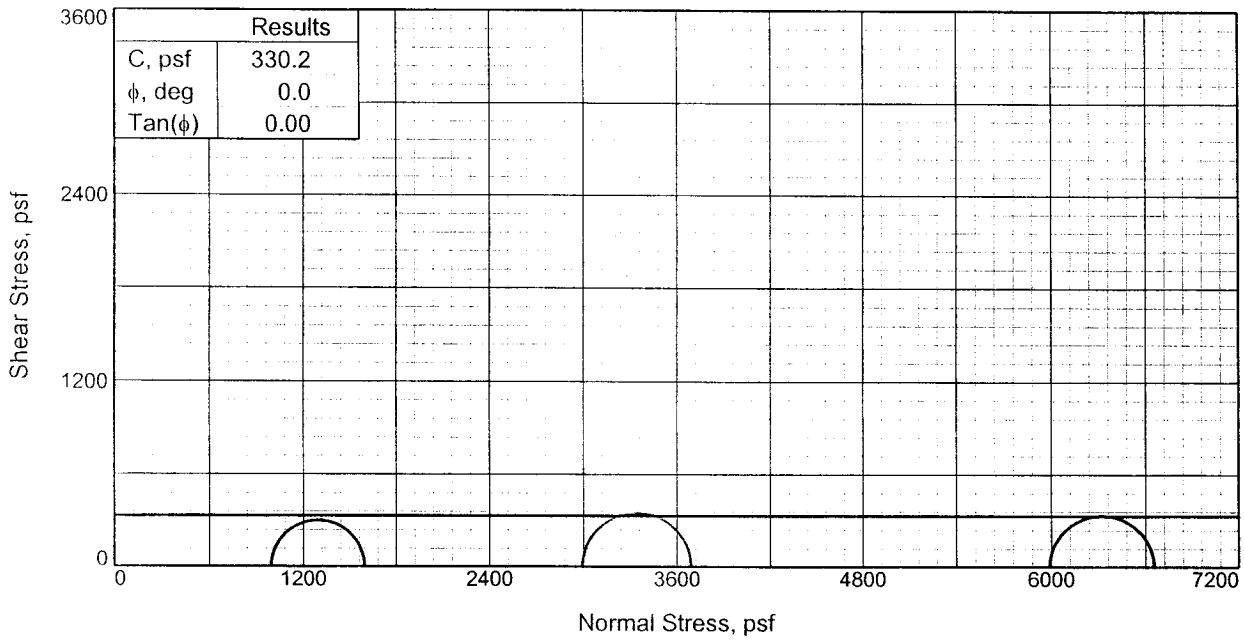
Project: U.S. Army Corps of Engineers
Inner Harbor Navigational Canal
Source of Sample: IHNC-TFG-2U **Depth:** 47.7
Sample Number: 13C

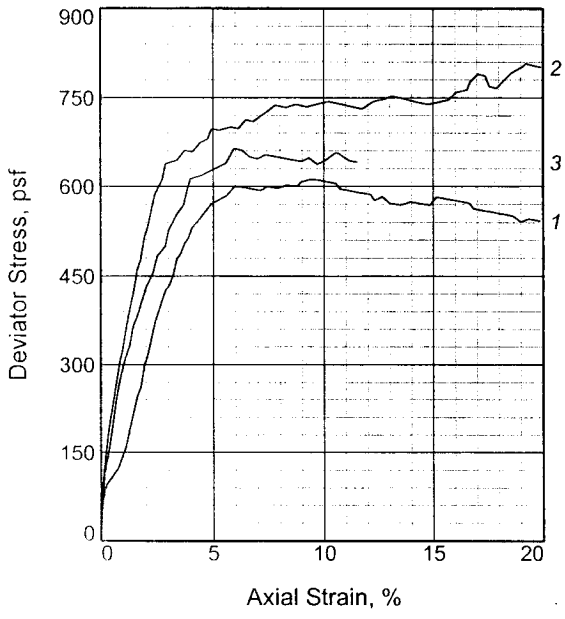
UNCONFINED COMPRESSION TEST

EUSTIS ENGINEERING COMPANY, INC.

Figure 1

Tested By: RR **Checked By:** DP





Specimen No.		1	2	3
Initial	Water Content,	33.7	36.8	33.8
	Dry Density, pcf	84.3	80.1	83.7
	Saturation,	90.9	89.9	90.0
	Void Ratio	0.9998	1.1039	1.0127
	Diameter, in.	1.388	1.388	1.388
	Height, in.	2.930	2.930	2.930
At Test	Water Content,	36.9	40.8	37.4
	Dry Density, pcf	84.4	80.2	83.9
	Saturation,	100.0	100.0	100.0
	Void Ratio	0.9968	1.1024	1.0098
	Diameter, in.	1.387	1.388	1.387
	Height, in.	2.929	2.929	2.929
Strain rate, in./min.		0.029	0.029	0.031
Back Pressure, psf		0.0	0.0	0.0
Cell Pressure, psf		993.6	2995.2	5990.4
Fail. Stress, psf		600.1	696.9	663.0
Ult. Stress, psf		542.0	800.6	640.6
σ_1 Failure, psf		1593.7	3692.1	6653.4
σ_3 Failure, psf		993.6	2995.2	5990.4

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: SO GR CL3 W/ LYS CH, SIF

LL= 29 **PL=** 19 **PI=** 10
Assumed Specific Gravity= 2.7
Remarks: TORVANE = 0.140 TSF

Client: URS Corporation

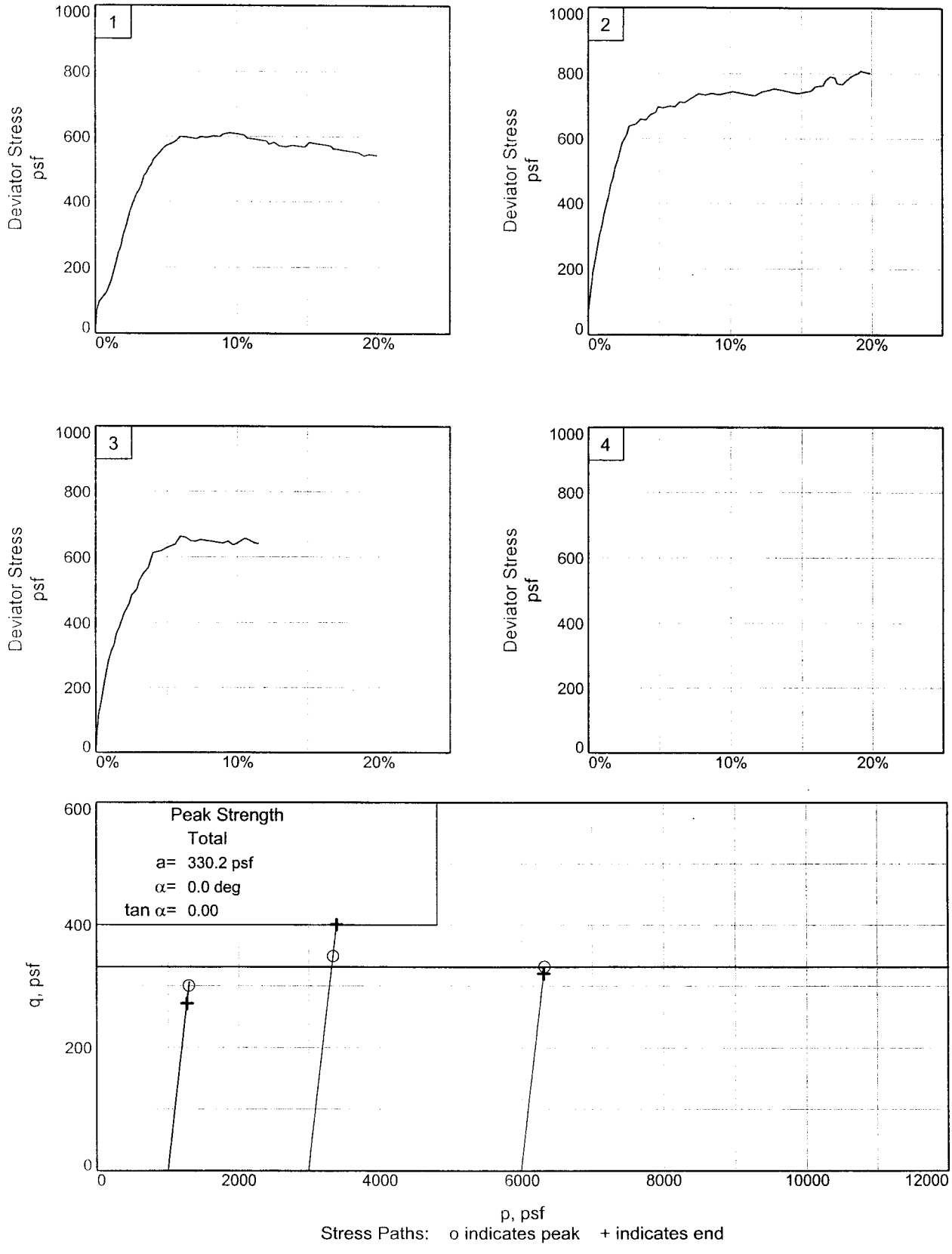
Project: U.S. Army Corps of Engineers
Inner Harbor Navigational Canal
Source of Sample: IHNC-TFG-2U **Depth:** 50.8
Sample Number: 14B
Proj. No.: 19082 **Date:** 12/01/05

TRIAXIAL SHEAR TEST REPORT

EUSTIS ENGINEERING COMPANY, INC.

Figure 1

Tested By: JL **Checked By:** DP



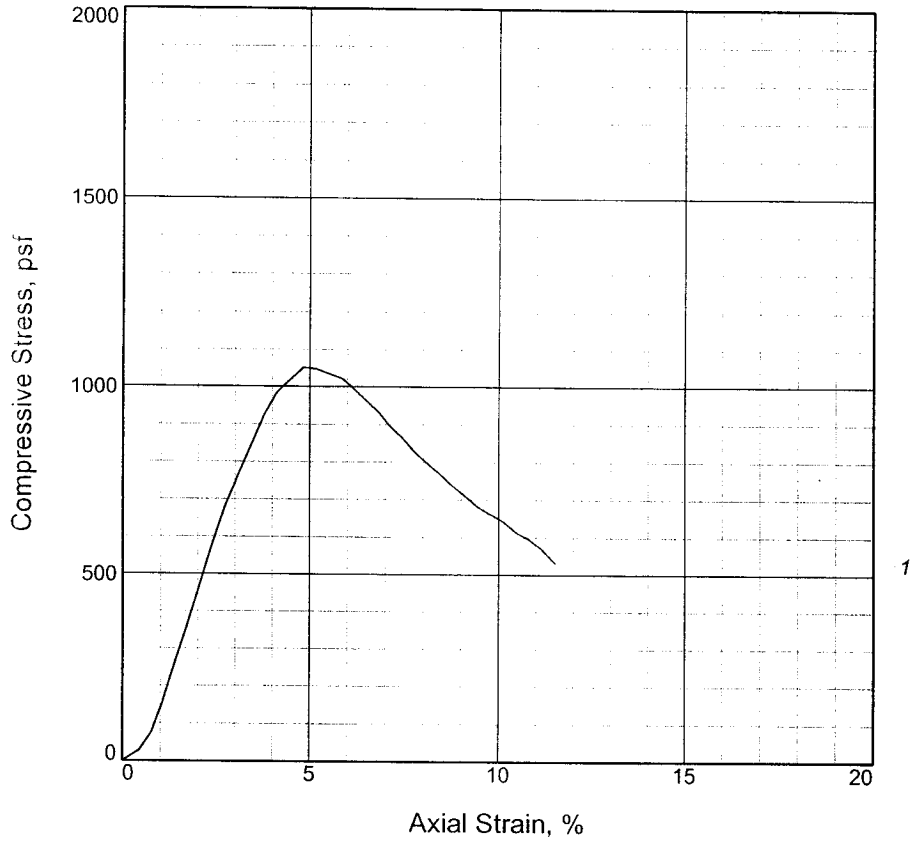
Client: URS Corporation
Project: U.S. Army Corps of Engineers
Source of Sample: IHNC-TFG-2U **Depth:** 50.8 **Sample Number:** 14B
Project No.: 19082

Figure 2

EUSTIS ENGINEERING COMPANY, INC.

Tested By: JL **Checked By:** DP

UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	1050.6			
Undrained shear strength, psf	525.3			
Failure strain, %	4.8			
Strain rate, in./min.	0.060			
Water content, %	40.5			
Wet density, pcf	107.4			
Dry density, pcf	76.4			
Saturation, %	90.8			
Void ratio	1.2058			
Specimen diameter, in.	1.388			
Specimen height, in.	2.930			
Height/diameter ratio	2.11			

Description: M GR CH4 W/ LNS & ARS SP, SIF

LL =	PL =	PI =	**Assumed GS=** 2.7	**Type:** UNDISTURBED

Project No.: 19082
Date: 11/30/05

Remarks:
TORVANE = 0.250 TSF

Client: URS Corporation

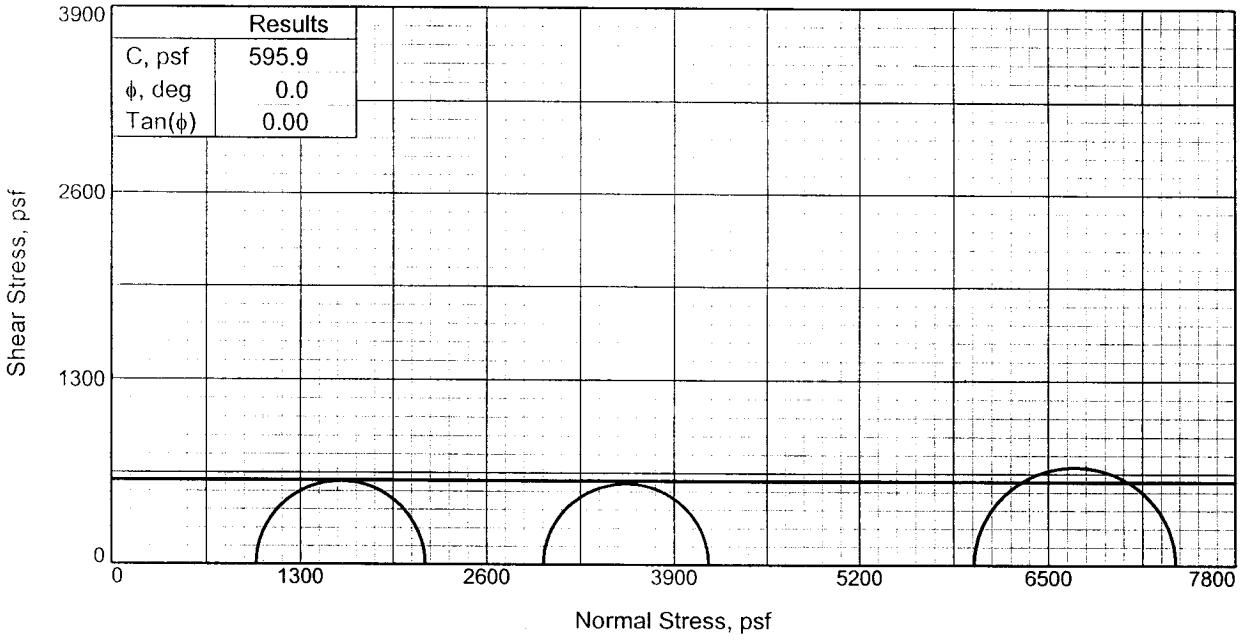
Project: U.S. Army Corps of Engineers
Inner Harbor Navigational Canal
Source of Sample: IHNC-TFG-2U **Depth:** 54.8
Sample Number: 15B

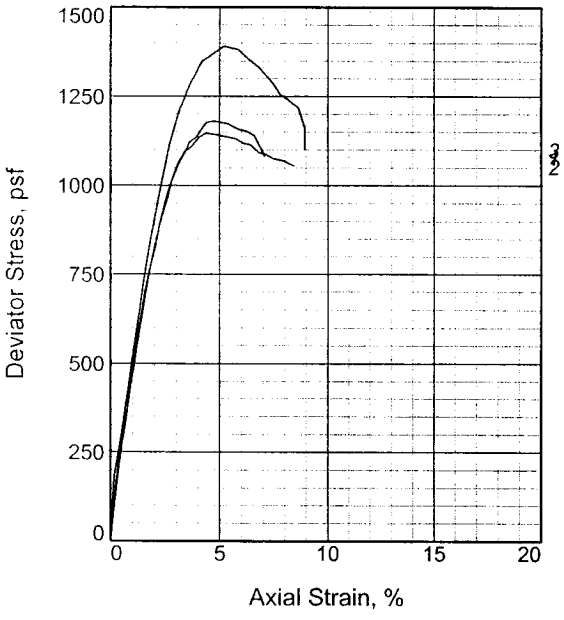
UNCONFINED COMPRESSION TEST

EUSTIS ENGINEERING COMPANY, INC.

Figure 1

Tested By: ZH **Checked By:** DP





Specimen No.		1	2	3
Initial	Water Content,	33.8	32.9	32.6
	Dry Density, pcf	85.7	87.0	87.7
	Saturation,	93.7	94.0	94.8
	Void Ratio	0.9811	0.9524	0.9356
	Diameter, in.	1.388	1.388	1.388
	Height, in.	2.930	2.930	2.930
At Test	Water Content,	35.9	35.0	34.3
	Dry Density, pcf	85.9	87.0	87.8
	Saturation,	100.0	100.0	100.0
	Void Ratio	0.9772	0.9512	0.9336
	Diameter, in.	1.387	1.388	1.388
	Height, in.	2.928	2.929	2.929
Strain rate, in./min.		0.030	0.029	0.029
Back Pressure, psf		0.0	0.0	0.0
Cell Pressure, psf		993.6	2995.2	5990.4
Fail. Stress, psf		1180.4	1147.2	1390.1
Ult. Stress, psf		1080.3	1054.4	1101.3
σ_1 Failure, psf		2174.0	4142.4	7380.5
σ_3 Failure, psf		993.6	2995.2	5990.4

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CL6 W/ SIF

LL= 39 **PL=** 15 **PI=** 24
Assumed Specific Gravity= 2.72
Remarks: TORVANE = 0.230 TSF

Client: URS Corporation

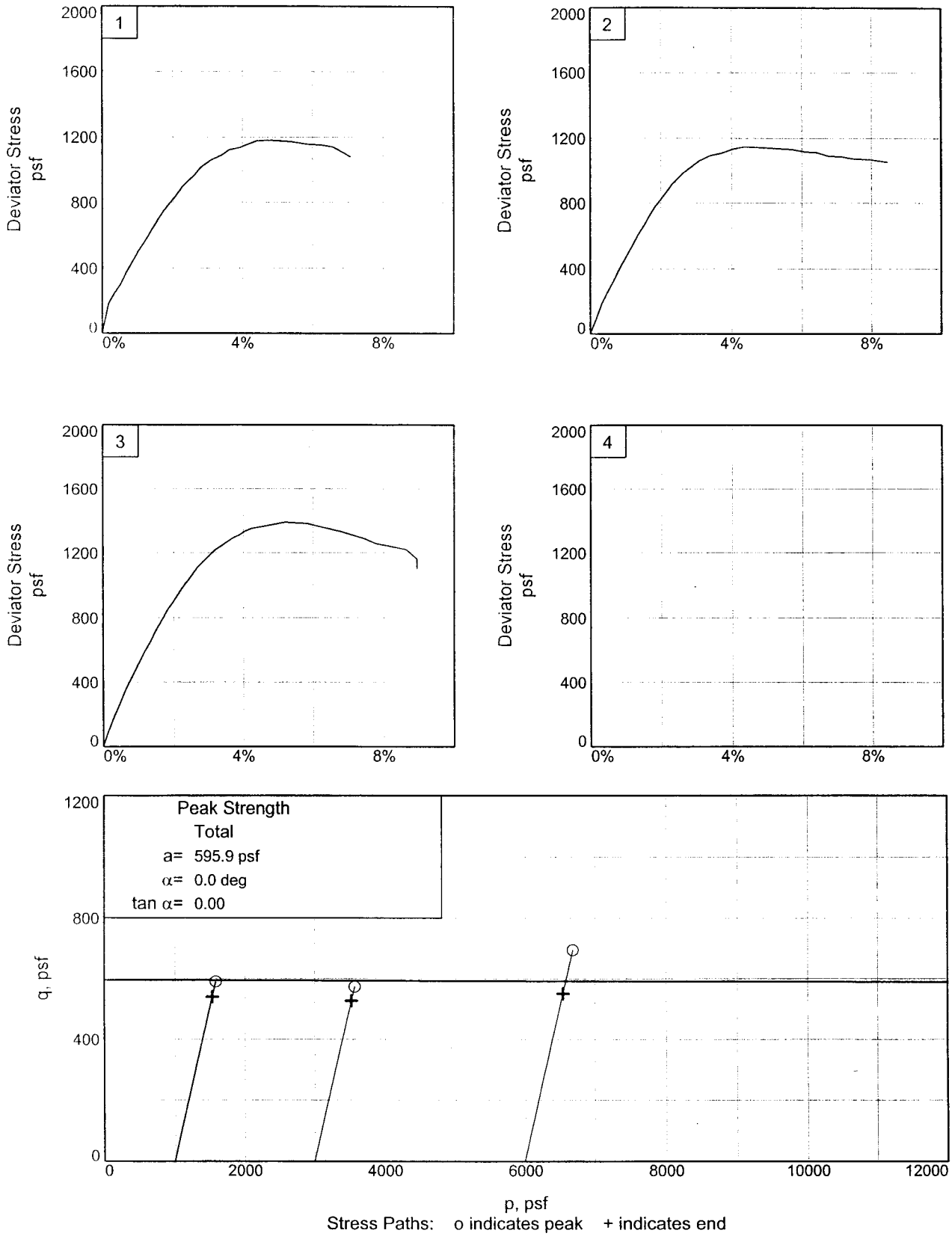
Project: U.S. Army Corps of Engineers
Inner Harbor Navigational Canal
Source of Sample: IHNC-TFG-2U **Depth:** 66.7
Sample Number: 19C
Proj. No.: 19082 **Date:** 11/30/05

TRIAXIAL SHEAR TEST REPORT

EUSTIS ENGINEERING COMPANY, INC.

Figure 1

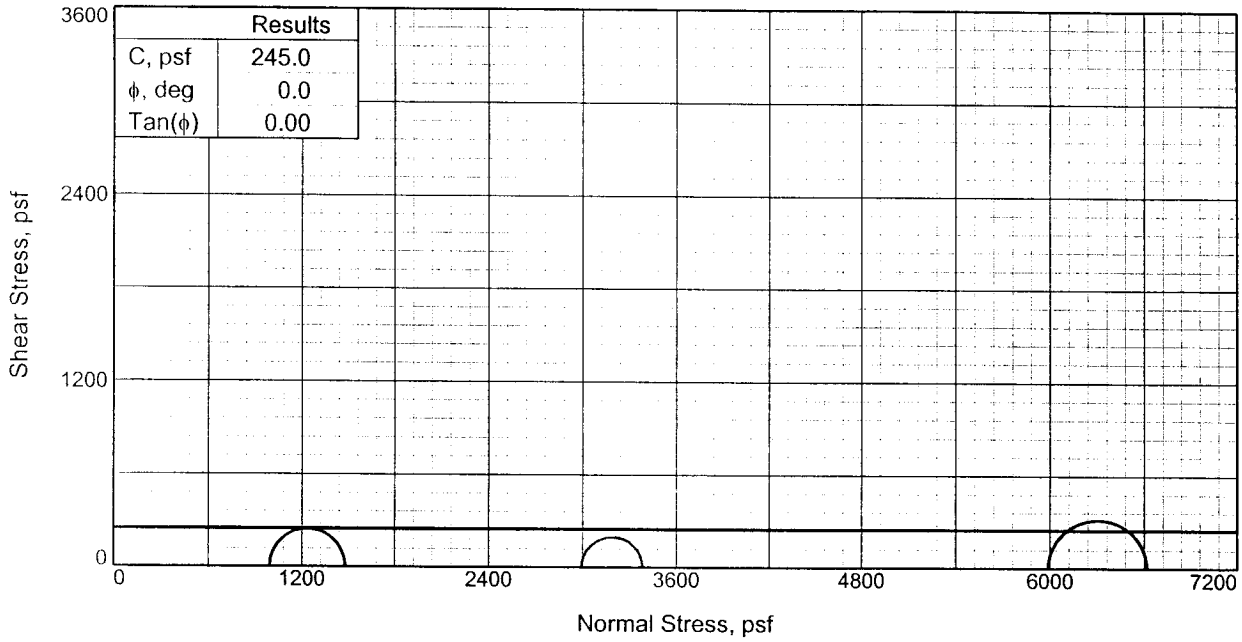
Tested By: RR **Checked By:** DP

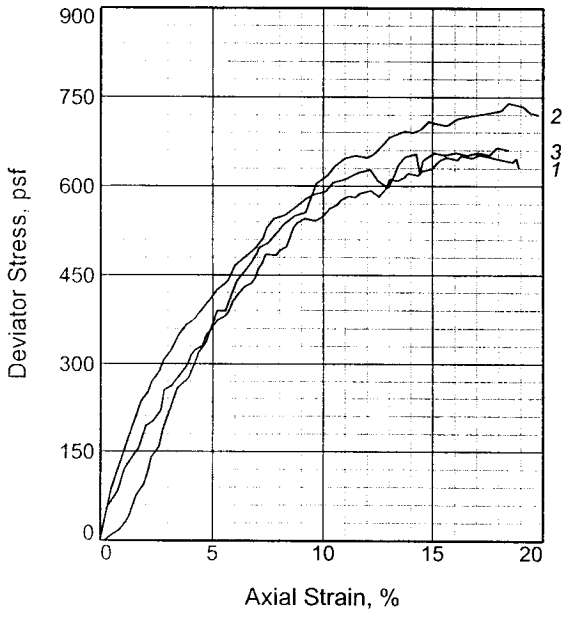


Client: URS Corporation
Project: U.S. Army Corps of Engineers
Source of Sample: IHNC-TFG-2U **Depth:** 66.7 **Sample Number:** 19C
Project No.: 19082 **Figure** 2

EUSTIS ENGINEERING COMPANY, INC.

Tested By: RR **Checked By:** DP





Specimen No.		1	2	3
Initial	Water Content,	28.7	28.9	29.5
	Dry Density, pcf	94.8	95.6	93.8
	Saturation,	99.5	102.4	99.9
	Void Ratio	0.7785	0.7627	0.7968
	Diameter, in.	1.400	1.388	1.388
	Height, in.	2.930	2.930	2.930
At Test	Water Content,	28.7	27.9	29.4
	Dry Density, pcf	94.9	96.1	93.9
	Saturation,	100.0	100.0	100.0
	Void Ratio	0.7755	0.7532	0.7945
	Diameter, in.	1.399	1.385	1.387
	Height, in.	2.928	2.925	2.929
Strain rate, in./min.		0.029	0.030	0.029
Back Pressure, psf		0.0	0.0	0.0
Cell Pressure, psf		993.6	2995.2	5990.4
Fail. Stress, psf		485.7	389.3	627.4
Ult. Stress, psf		630.2	720.0	660.3
σ_1 Failure, psf		1479.3	3384.5	6617.8
σ_3 Failure, psf		993.6	2995.2	5990.4

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: VSO GNGR CL4-S

LL= 27 **PL=** 7 **PI=** 20
Assumed Specific Gravity= 2.7
Remarks: TORVANE = 0.060 TSF

Client: URS Corporation

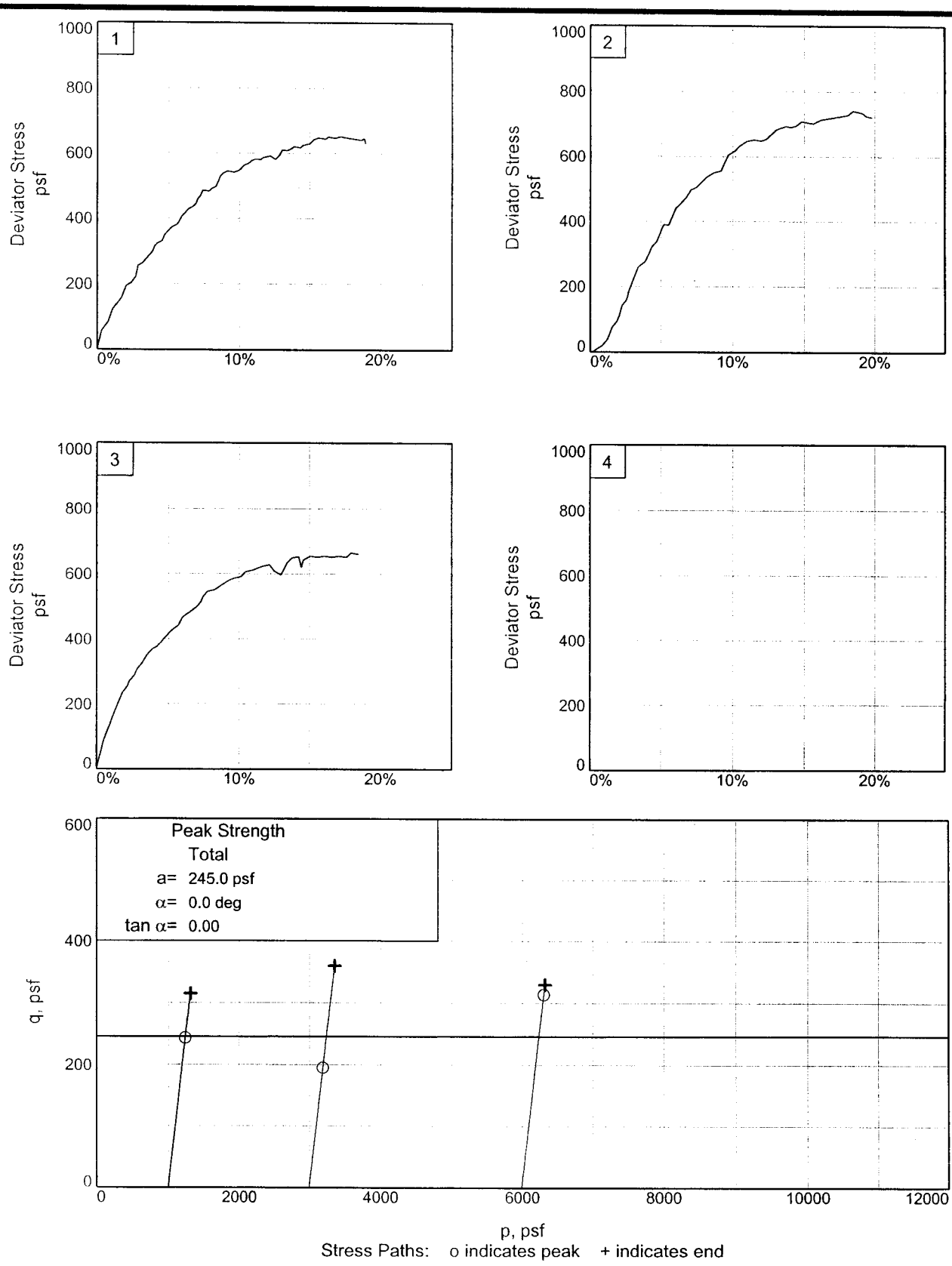
Project: U.S. Army Corps of Engineers
Inner Harbor Navigational Canal
Source of Sample: IHNC-TFG-2U **Depth:** 69.8
Sample Number: 20B
Proj. No.: 19082 **Date:** 11/30/05

TRIAXIAL SHEAR TEST REPORT

EUSTIS ENGINEERING COMPANY, INC.

Figure 1

Tested By: RR **Checked By:** DP

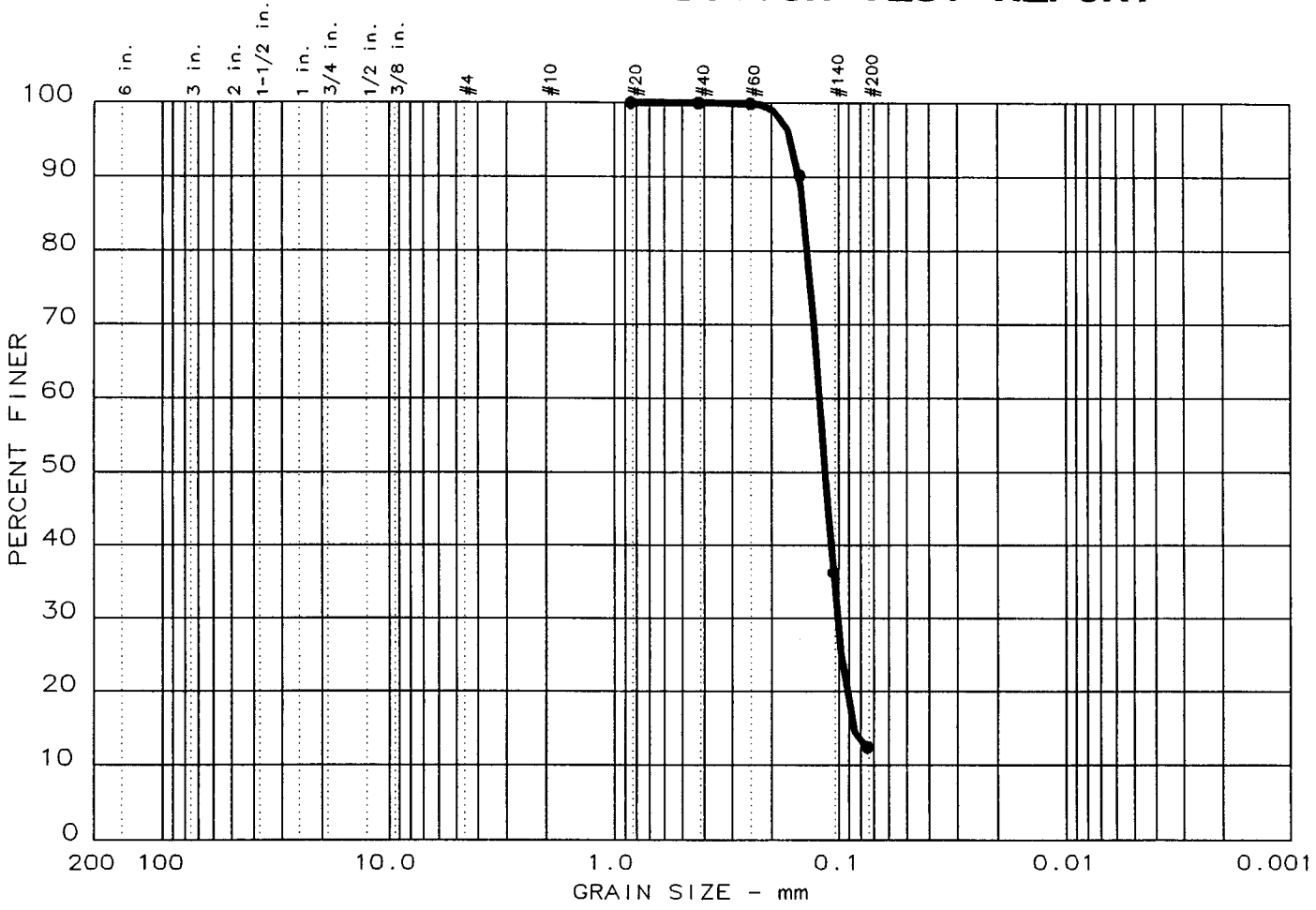


Client: URS Corporation
Project: U.S. Army Corps of Engineers
Source of Sample: IHNC-TFG-2U **Depth:** 69.8 **Sample Number:** 20B
Project No.: 19082 **Figure** 2

EUSTIS ENGINEERING COMPANY, INC.

Tested By: RR **Checked By:** DP

PARTICLE SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS	LL	PI
●	0.0	0.0	87.6	12.4		SM1-s		

SIEVE inches size	PERCENT FINER ●		
	GRAIN SIZE		
D_{60} D_{30} D_{10}	0.12 0.10		
	COEFFICIENTS		
C_c C_u			

SIEVE number size	PERCENT FINER ●
20	100.0
40	99.9
60	99.9
100	90.2
140	36.2
200	12.4

Sample information:
● BorIHNC-TFC2U, Sample 23
Gr SM1-s

Remarks:
Sample depth 78.0'

Eustis Engineering Company, Inc.

Project No.: 19082
Project: USACE - IHNC

Date: 12-6-05 Data Sheet No. ——