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Plans and Section Views of DSM Treated Sections

Product 0-5179-P3

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Performed in cooperation with the
Texas Department of Transportation and the
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PLANS AND SECTION VIEWS OF DSM TREATED SECTIONS

by

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DISCLAIMER

The contents of this report reflect the views of the authors, who are responsible for the facts and the accuracy of the data presented herein. The contents do not necessarily reflect the official view or policies of the Federal Highway Administration (FHWA) or the Texas Department of Transportation (TxDOT). This report does not constitute a standard, specification, or regulation. The researcher in charge was Anand J. Puppala, Department of Civil and Environmental Engineering, The University of Texas at Arlington, Arlington, Texas.

Details of Soil Profile, Plan and Sectional Views of DSM Treated Sites

The following provides various details of DSM column designs and configurations used in the TxDOT research project.

DSM Columns (Soil-Lime-Cement Columns):

Column diameter:		2.0 ft
Column spacing	:	3.5 ft c/c (for site 1)
	:	3.0 ft c/c (for site 2)

Anchor Rods:

Anchor rod length:	3 ft
Anchor rod diameter:	¾ in.
Material:	Galvanized Iron
Ultimate Strength:	19 ksi

Anchor Plates:

Size:	8 x 8 in.
Thickness:	½ in.
Material:	Polypropylene

Geogrid:

Type:	Biaxial geogrid
Tensile Strength:	20 kN/m or 1400 lb/ft (both in machine and cross-machine directions)
Material:	Polypropylene
Product used:	Tensar

This Product presents the following plans and drawings:

Figure 1: Bore Log Information of Test Site 1 (Low PI Site)

Figure 2: Bore Log Information of Test Site 2 (High PI Site)

Figure 3: Plan View of DSM Column Layout of Test Site 1

Figure 4: Plan View of DSM Column Layout of Test Site 2

Figure 5: Sectional Details of DSM Columns at Test Site 1

Figure 6: Sectional Details of DSM Columns at Test Site 2

Figure 7: Details of Anchor Rod/Plate and Geogrid Connections to the DSM Column (Detail A)

Figure 8: Typical Perspective View of the DSM Treatment Test Section

DRILLING LOG

1 of 1

WinCore Version 3.0

County Tarrant | Highway Loop 820 | CSJ DA6221 | Hole BH4-D1 | Structure Pavement | Station | Offset | District Fort Worth | Date 11/10/2004 | Grnd. Elev. 100.00 ft | GW Elev. N/A

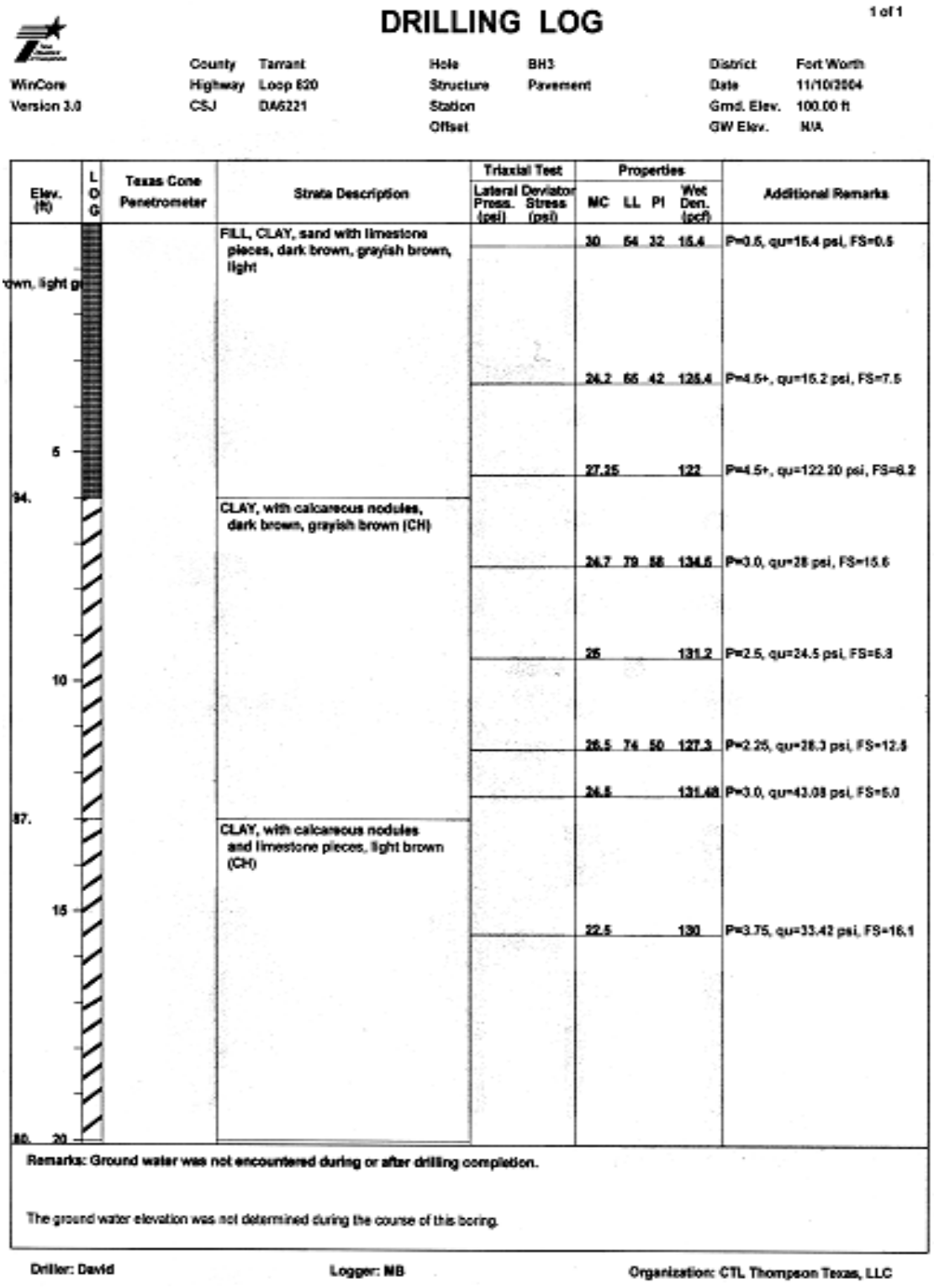
Elev. (ft)	LOG	Texas Cone Penetrometer	Strata Description	Triaxial Test: Lateral Press. (psi)	Triaxial Test: Deviator Stress (psi)	Properties: MC	LL	PI	Wet Den. (pcf)	Additional Remarks
			FILL, CLAY, sand with gravel and limestone pieces, dark brown, grayish brown,light brown, light gray (SC)			30	64	39	114.73	P = 2.0, qu=11.06 psi, FS=4.8
						18.65			140.2	P=1.5, qu=22.72 psi, FS=12.6
						23.27	61.5	39.5	129	P=4.5, qu=58.61, FS=20.4
5										
						24.22			134.5	P=3.0, qu=40.17 psi, FS=22
90. 10			CLAY, with calcareous nodules, dark brown, grayish brown (CH)							
						13			148.55	P=3.0, qu=75.3 psi, FS=12.1
						24	45	22	132.3	P=3.5, qu=41.67, FS=5.2
85. 15			WEATHERED LIMESTONE, with clay layers, light brown			23			125.2	P=4.0, qu=20.83, FS=0.8
83.5										
20										

Remarks: Ground water was not encountered during or after drilling completion.

The ground water elevation was not determined during the course of this boring.

Driller: David | Logger: MB | Organization: CTL Thompson Texas, LLC

Figure 1: Bore Log Information of Test Site 1 (Low PI site)



DRILLING LOG

1 of 1

WinCore Version 3.0	County	Tarrant	Hole	BH3	District	Fort Worth
	Highway	Loop 820	Structure	Pavement	Date	11/10/2004
	CSJ	DA6221	Station		Grnd. Elev.	100.00 ft
			Offset		GW Elev.	N/A

Elev. (ft)	LOG	Texas Cone Penetrometer	Strata Description	Triaxial Test: Lateral Press. (psi)	Triaxial Test: Deviator Stress (psi)	Properties: MC	LL	PI	Wet Den. (pcf)	Additional Remarks
			FILL, CLAY, sand with limestone pieces, dark brown, grayish brown, light			30	64	32	15.4	P=0.5, qu=15.4 psi, FS=0.5
						24.2	65	42	125.4	P=4.5+, qu=15.2 psi, FS=7.5
						27.25			122	P=4.5+, qu=122.20 psi, FS=6.2
			CLAY, with calcareous nodules, dark brown, grayish brown (CH)			24.7	79	58	134.5	P=3.0, qu=28 psi, FS=15.6
						25			131.2	P=2.5, qu=24.5 psi, FS=6.8
						26.5	74	50	127.3	P=2.25, qu=28.3 psi, FS=12.5
						24.5			131.48	P=3.0, qu=43.08 psi, FS=5.0
			CLAY, with calcareous nodules and limestone pieces, light brown (CH)			22.5			130	P=3.75, qu=33.42 psi, FS=16.1

Remarks: Ground water was not encountered during or after drilling completion.

The ground water elevation was not determined during the course of this boring.

Driller: David Logger: MB Organization: CTL Thompson Texas, LLC

Figure 2: Bore Log Information of Test Site 2 (High PI site)

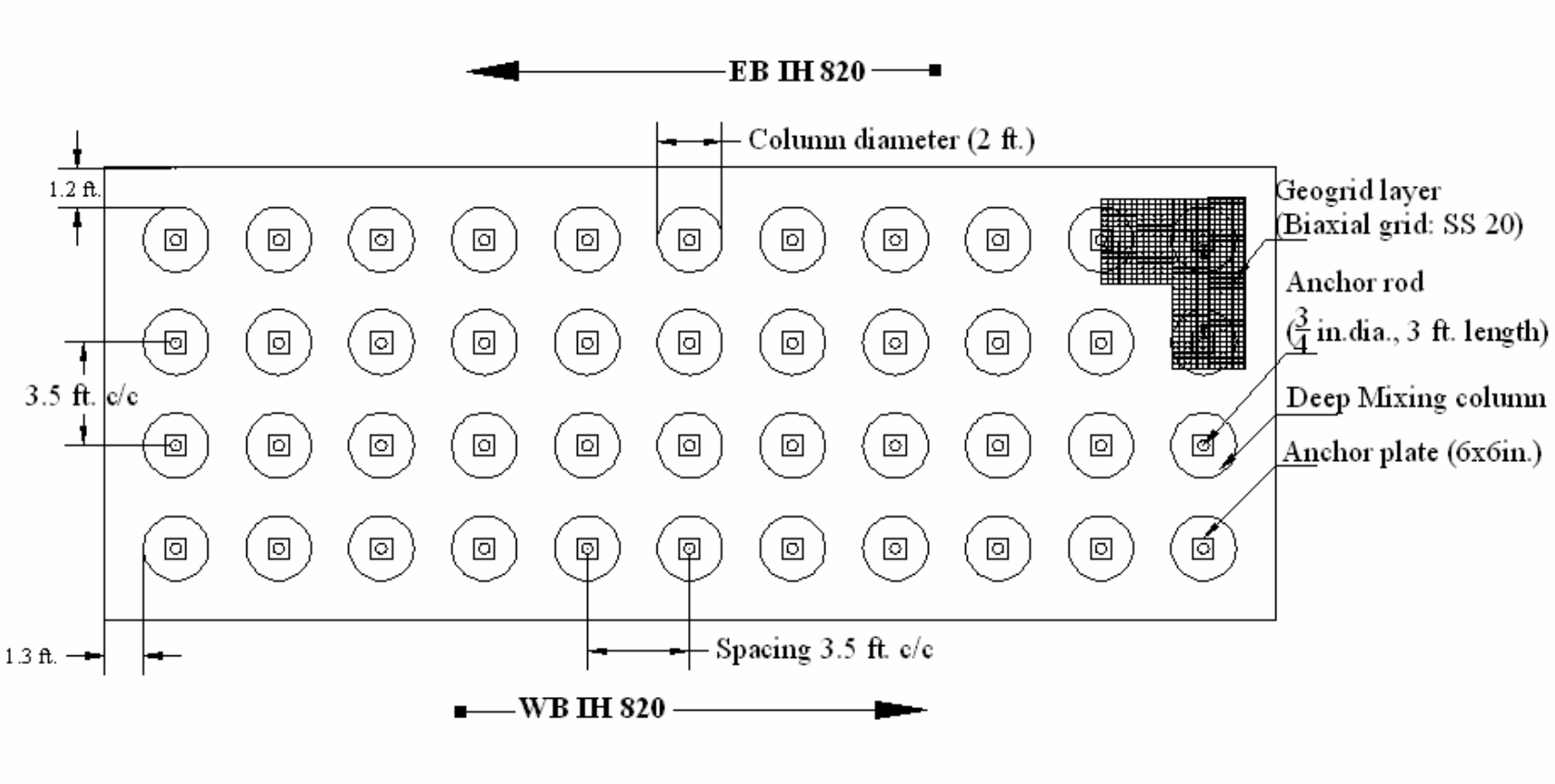


Figure 3: Plan View of DSM Column Layout of Test Site 1 (15 ft X 40 ft)

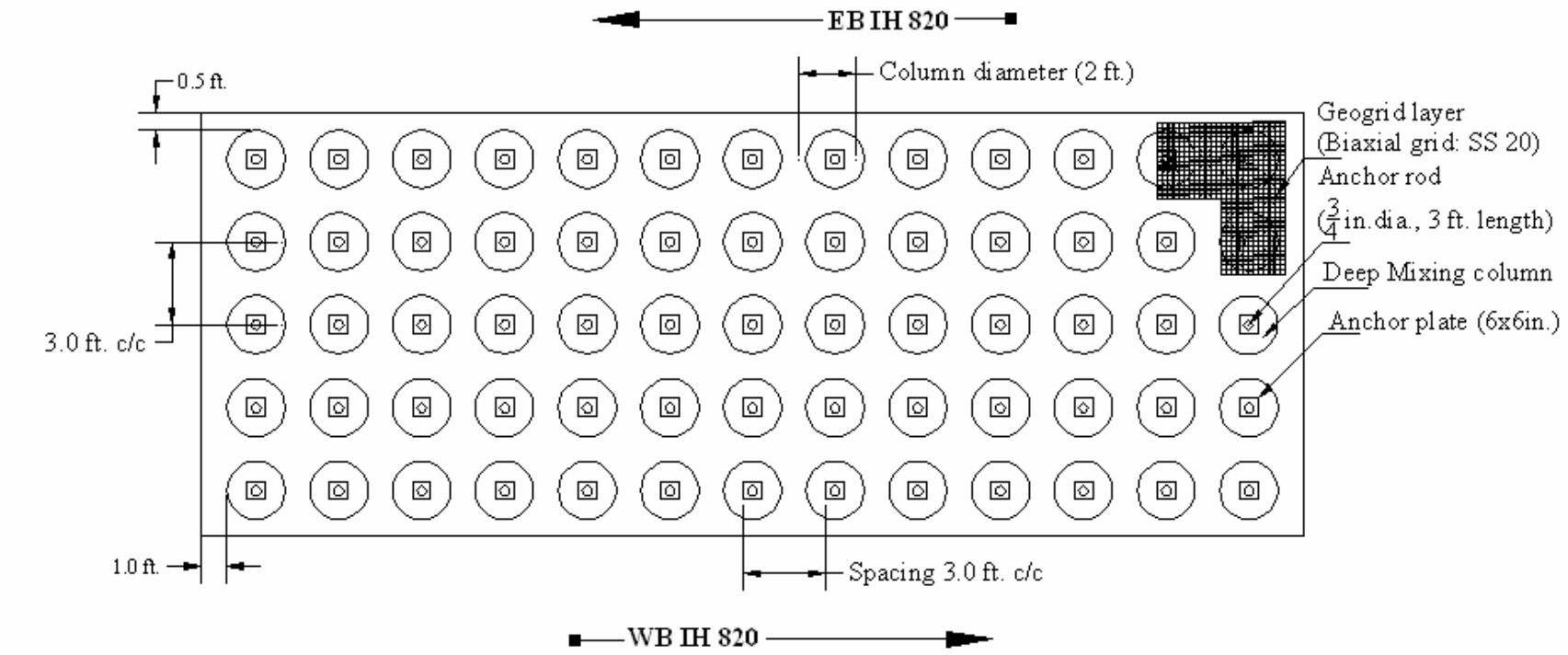


Figure 4: Plan View of DSM Column Layout of Test Site 2 (15 ft X 40 ft)

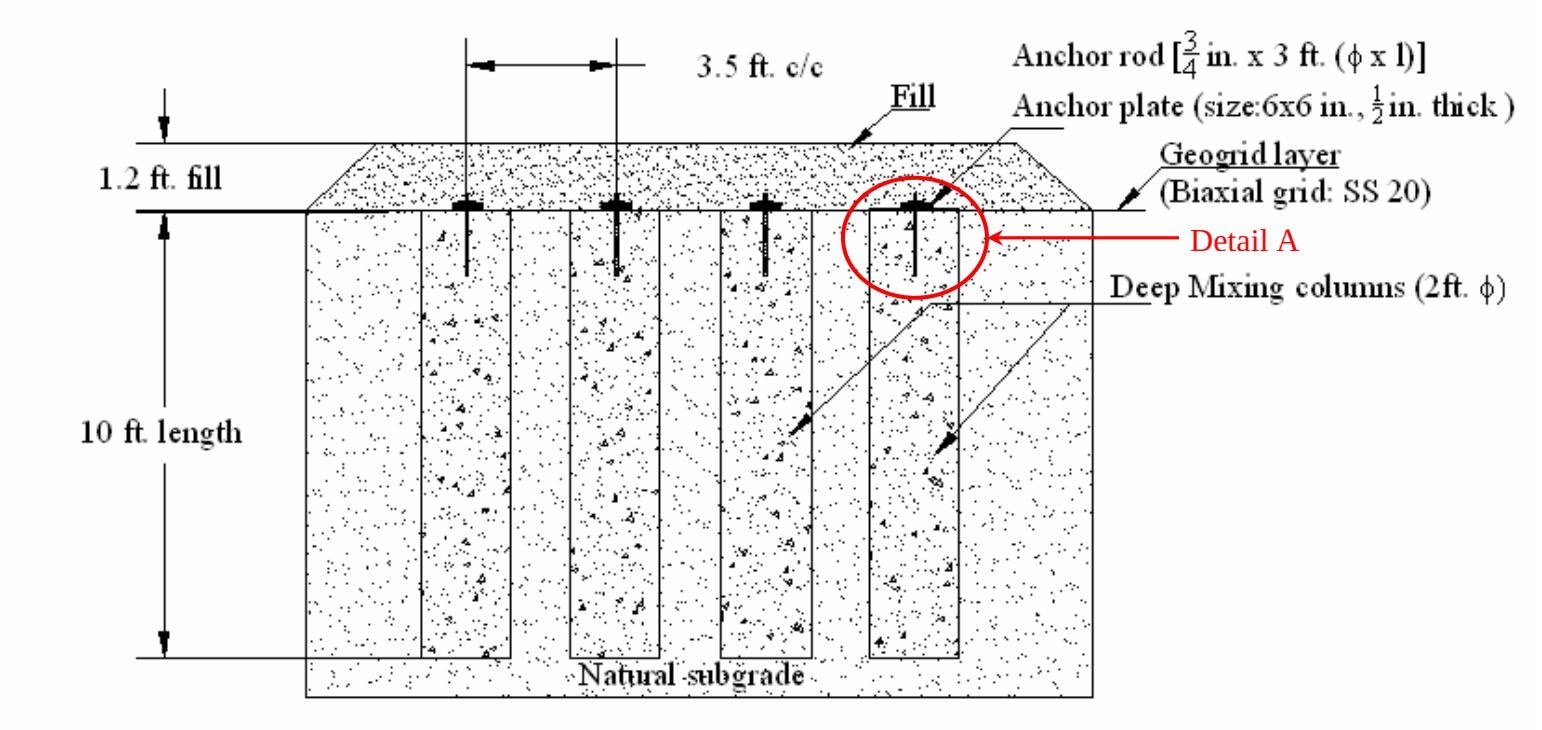


Figure 5: Sectional Details of DSM Columns at Site 1

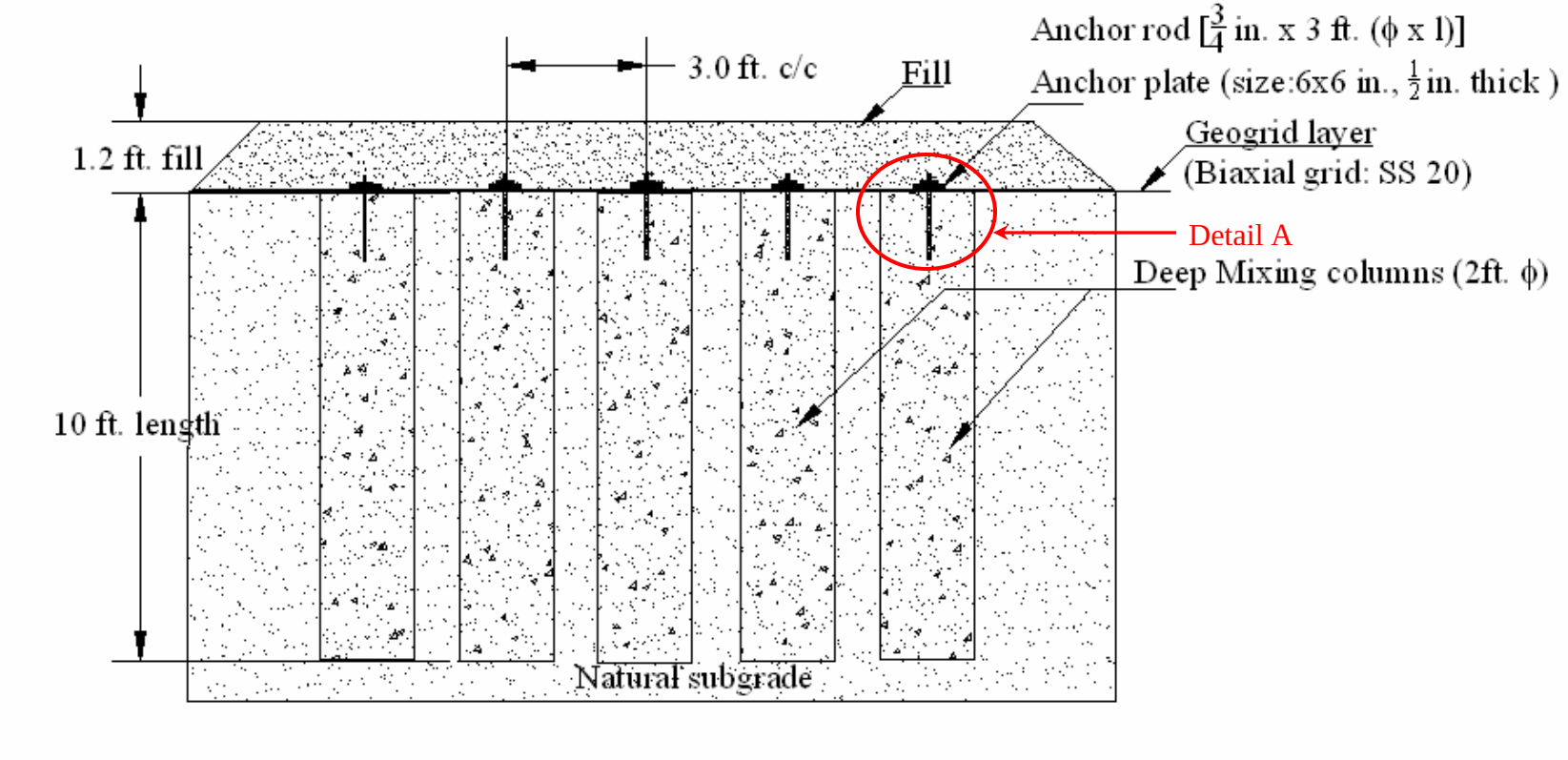


Figure 6: Sectional Details of DSM Columns at Site 2

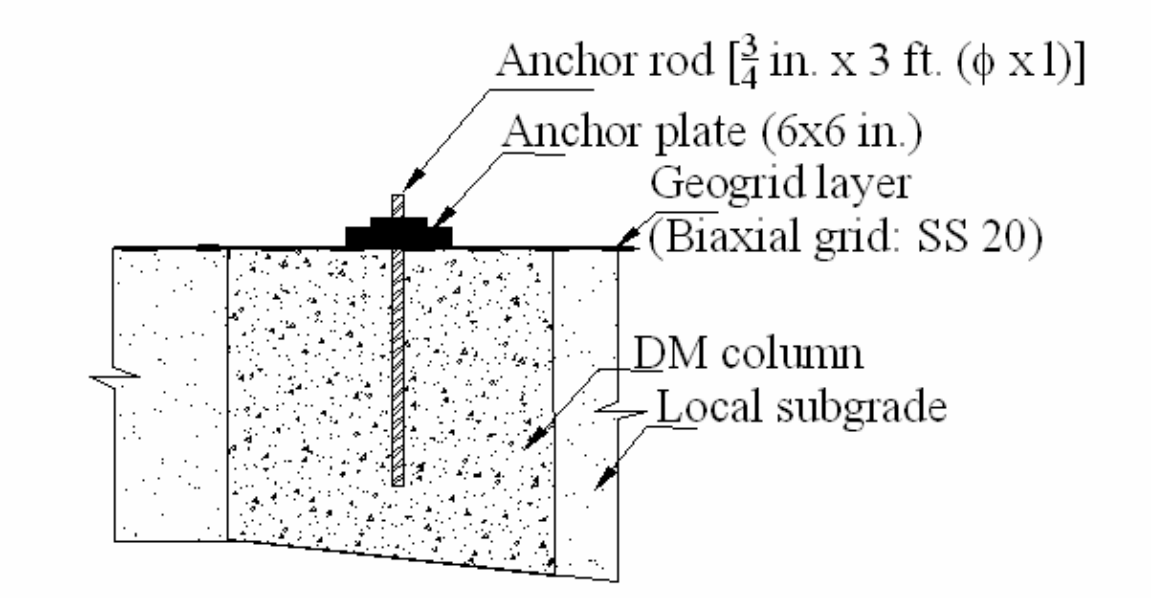


Figure 7: Details of Anchor Rod/Plate and Geogrid Connections to the DSM Column (Detail A)

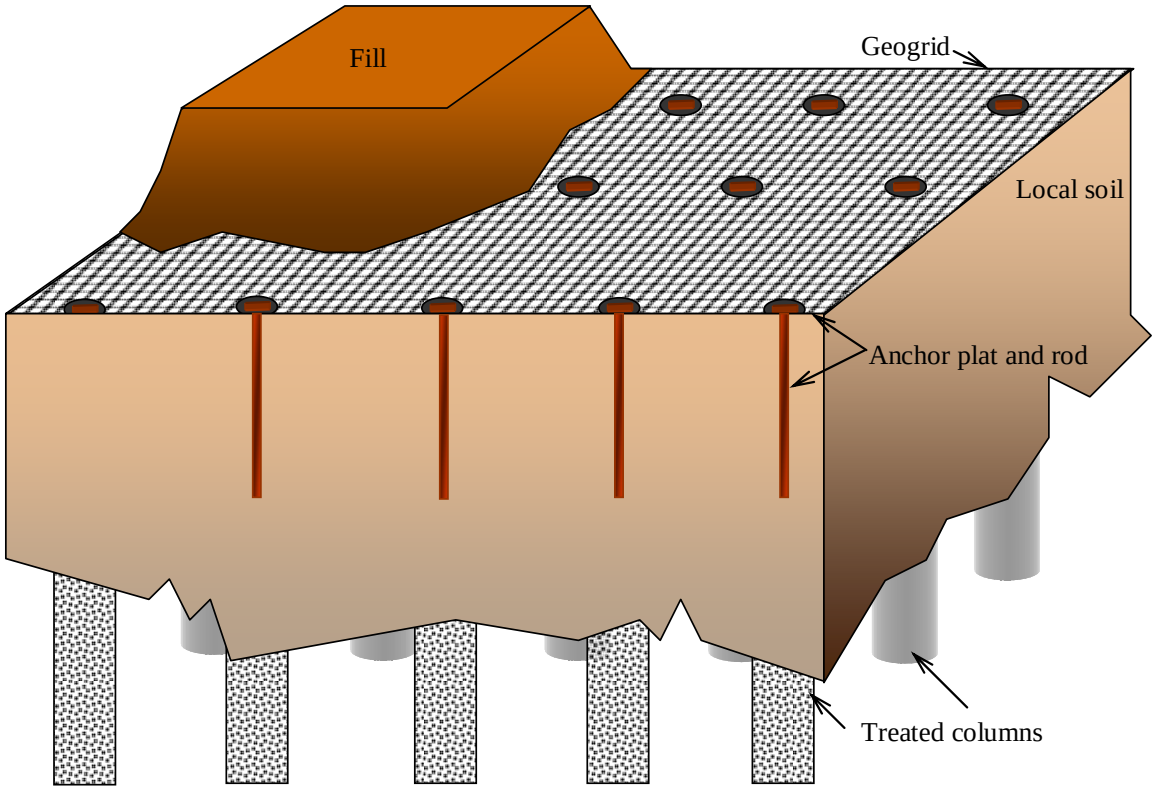


Figure 8: Typical Perspective View of the DSM Treatment Test Section