GEOLOGICAL STATEMENT

Division Five of the "Engineering Classification of Geological Materials", published by the Oklahoma Department of Transportation (ODOT) indicates the project site is located over Terrace Deposits (Qts) underlain by the Rush Springs Unit (Prs).
Terrace deposits consist of sand, silt, clay, gravel and/or mixtures of these. Terrace materials occur adjacent to or near streams at higher elevations than the flood plain (bottom land). Most Terrace deposits will have seepage where the underlying geologic material is less pervious.

The Rush Springs unit consists dominantly of soft, reddish–brown, massive, crossbedded to regular–bedded silty sandstone which weathers rapidly, producing a sandy soil which is often blown about by the wind and in some localities is piled into sand A few dolomite and gypsum beds occur in the upper portions. These beds are generally less than 2 feet thick. One marker bed (Weatherford Dolomite) occurs some 24 to 52 feet below the top of the unit. It varies from 1 foot to 8 feet in thickness and grade from dolomite in eastern Custer and northern Washita Counties to gypsum elsewhere. The Weatherford Dolomite was previously correlated as the base of the Cloud Chief Unit as is the case in the Division 7 publication. The Rush Springs Unit is one of the best water aquifers in western Oklahoma.

The total thickness of the unit varies from 186 to 430 feet with the unit generally thinning northwestward from the Custer–Washita Counties area.

In Division 5 the Rush Springs Unit outcrops in the east–west band two to six miles wide on the south flank of the Anadarko Basin in Southern Washita and northeaster Kiowa Counties. On the north flank of the basin, it outcrops over broad band which extend across northeastern Washita, western Blaine, Custer Dewey, and eastern Roger Mills Counties. In Beckham, Greet, and Harmon Counties, the strata of the Rush Springs Unit and the underlying Marlow Unit are similar and are mapped together as the Whitehorse Unit.

The Rush Springs Unit forms broad gently rolling topography dissected locally by rugged canyons throughout most of its outcrop. Rolling hills are prominent near its base with massive bluffs to rounded hills overlooking the underlying Marlow Unit.

According to the Geologic Map of the "Hydrologic Atlas 5 of Oklahoma," Reconnaissance of the Water Resources of the Clinton quadrangle, west–central Oklahoma," by Jerry E.Carr and DeRoy L. Bergman, U.S. Geological Survey, 1976, indicates that the project site is located over Terrace Deposits (Qt) underlain by Rush Springs Formation (Pr) of the Whitehorse Group.

Terrace deposits consists of stream–laid deposits of sand, silt, clay, and gravel which ranges in thickness from 0 to about 170 feet.

Rush Springs Formation consists of orange–brown, cross–bedded, fine–grained sandstone with some dolomite and gypsum beds. Thickness, about 300 feet, thinning northward to about 186 feet.

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BORING NUMBER B-1

CLIENT CEC
PROJECT NAME I-40 Mast Light
PROJECT NUMBER 15153
PROJECT LOCATION Weatherford, Custer County, Oklahoma
DATE STARTED 10/20/15 COMPLETED 10/20/15
GROUND ELEVATION _____ STATION _____ OFFSET _____
DRILLING CONTRACTOR DSO – Drilling Services of Oklahoma
GROUND WATER LEVELS:
DRILLING METHOD 4.5" augers – CME 55
DURING DRILLING none
LOGGED BY RAG CHECKED BY KKB
0 hrs AFTER DRILLING none
NOTES 27911(06)
Cave In Depth open

ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE	BLOW COUNTS	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	PASSING #200 SIEVE (%)
	0		SILTY SAND, red, medium dense	SPT	20	2	0	0	NP	13.8
				AU						
			POORLY GRADED SAND with SILT, red, loose	SPT	8	9	0	0	NP	5.1
				AU						
	5		SILTY SAND, red, loose to medium dense	SPT	6	13	0	0	NP	23.0
				AU						
	10			SPT	20	13	0	0	NP	20.4
				AU						
			SILTY SANDSTONE, red, very well cemented	SPT	50/4"	21	0	0	NP	16.1
	15			TC	50/0.5" 50/0.3"					
				AU						
	20			TC	50/0.5" 50/0.3"					
				AU						
			Boring Termination Depth = 24.5 feet Boring Completed and Grouted on 10/20/15	TC	50/0.4" 50/0.3"					

1 DURING AFTER CAVE IN NO ELEV 15153 LOGS.GPJ DATA TEMPLATE.GDT 2/9/16

MAIN ST. CUSTER COUNTY

HIGH MAST LIGHT FOUNDATION REPORT

JOB PIECE NO. 27911(06) SHEET NO. 84