SUMMARY OF SITE CONDITIONS

US 50 LY 14.00 TO LY 19.93
NEAR CHAVES ROAD TO NEAR ROYS ROAD
LYON COUNTY, NEVADA

NEVADA DOT

GEOTECHNICAL ENGINEERING
MATERIALS DIVISION

State of Nevada
Department of Transportation
Materials Division

Summary of Site Conditions for US 50 LY 14.00 to LY 19.93 From Near Chaves Lane to Near Roys Road

September 2010

E. A. No. 73475-1

Lyon County, Nevada

Summary by _____
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Approved by _____
Reid Kaiser, P.E., Chief Materials Engineer

TABLE OF CONTENTS

INTRODUCTION

This geotechnical summary has been produced for the US 50 widening project on US 50 from near Chaves Road to near Roy's Road LY 14.00 to LY 20.39. The purpose of this summary is to provide information regarding the subsurface soil and groundwater conditions along the project alignment. The investigation was conducted primarily for the roadway widening design. Site specific geotechnical work was also completed for the traffic cable barriers as well as roadway cut slopes.

PROJECT DESCRIPTION

The Nevada Department of Transportation has determined that a two-lane section of US 50 between near Chaves Road and near Roy's Road in Lyon County, Nevada will be widened to a four lane divided highway. Approximately 22,000 feet of traffic cable barrier is planned for construction for the median in 9 discreet segments. The majority of the project alignment, from about Station "X2" 884+00 to about Station "X2" 1131+00 is located on the relatively flat Misfits Flat. This segment is bordered by residential neighborhoods and irrigated fields. The western segment of the project alignment from about Station "L1" 796+00 to about Station "X2" 884+00 is located in the foothills of the Pine Nut Mountains. This portion of the project is bordered by undeveloped brushy, hilly terrain.

SITE CONDITIONS

Surficial Geology

According to available references (Geological Map of Lyon, Douglas and Ormsby Counties, Nevada: Nevada Bureau of Mines, 1969, Bulletin 75, Plate 1), the portion of the project site located within Misfits Flat is founded on Quaternary aged stream laid plain deposits composed of gravel, sand and silt, and the fine sand, silt and clay of river flood plains along with playa clay and sand. The exploratory borings completed along the project alignment within Misfits Flat confirm these findings. This map also indicates that the western portion of this project that climbs into the Pine Nut Mountain foothills is founded on the geologic unit "Kg". Unit "Kg" is described as granitic "nonporphyritic quartz monzonite, granodiorite and hybrid mafic rocks". Additionally, a portion of the foothills near the beginning of the project is founded on geologic unit "Th". Unit "Th" is described as "rhyolite pumice tuff-breccia and welded tuff" with a "welded black, glassy basal layer". The line sampling completed in the areas to be cut appears to confirm these findings along with more decomposed surficial materials.

Site Investigation

Site specific geotechnical information was gathered for the cable barrier design, cut slope rippability, pavement design and other purposes. Subsurface information was gathered during winter and spring of 2010. The cable barrier design borings (CA1-CA6) were drilled using a Deidrich D120 drill rig (unit #1082) equipped with an internal anvil automatic hammer utilizing Hollow Stem Continuous Flight Augering (HSA) drilling

methods. Boring depths ranged from 12.5 to 14.5 feet. Augured samples of subgrade native and embankment fill soils and driven samples were obtained were obtained from each boring. Driven samples were obtained using a Standard Penetration Test (SPT ASTM D 1586) sampler and a California Modified Sampler (CMS ASTM D 3550) by driving the sampler 18 inches (unless otherwise noted) into the bottom of the boring using a 30-inch drop of an automatic hammer weight of 140 pounds. The energy transfer from the automatic hammer into the drill string is 72% (SPT energy calibration by Gregg Drilling and Testing, Inc., June 11, 2009) with an approximate energy correction factor of 1.2. Sampler driving resistance (N-value), expressed as blows per the last foot of penetration are presented on the Exploration Logs at the respective depth. N-value is an indication of the apparent density of coarse-grained soils and the consistency of fine-grained soils. Blow counts presented on the Exploration Logs have not been corrected for rod length, hammer type, etc. Soils were classified by the Unified Soil Classification System (USCS), in the field according ASTM D 2488 and following laboratory analysis in accordance with ASTM D 2487. Bulk samples were also obtained.

Cut slope line sampling and roadway line sampling was performed with a Deidrich D120 drill rig (unit #1082) and a Mobile Drill B-52 (unit #1755) utilizing Hollow Stem Continuous Flight Augering (HSA) drilling methods. Bulk samples were obtained.

Exploration Logs and Line Sampling Data are included in Appendix A. Location maps have been provided for the CA1 - CA6 borings. Location maps have not been provided for the other borings; however they are identified by the "L1" and "X2" stationing of US 50 which are shown on the Plan Sheets. Laboratory Test Results from the borings are included in Appendix B. Seismic refraction survey data and Refraction Microtremor (ReMi) data was obtained from three lines of geophones placed in the two tallest cut areas of the project. Seismic refraction survey data and Refraction Microtremor (ReMi) data are included in Appendix C. Location maps have been provided for these data.

Laboratory Testing

Selected samples were tested at the NDOT headquarters laboratory facilities. Laboratory test results can be found in Appendix B. The laboratory testing program consisted of:

- Natural Moisture Content (AASHTO T-265)
- Particle Size Gradations (AASHTO T-87 & T-27)
- Hydrometer (AASHTO T-88)
- Unit Weight
- Specific Gravity (AASHTO T-100)
- Atterberg Limits (AASHTO T-89 & T-90)
- Consolidated Undrained Triaxial (AASHTO T-297)
- Direct Shear (AASHTO T-236)
- Resistance Value (R-Value Nevada T 115)
- Soil Chemistry:
  - Resistivity (AASHTO T-288)
  - pH (AASHTO T-289)
  - Conductivity

Embankment Fill

Existing roadway embankment fills are under the structural section and along the shoulder areas. They are generally classified as medium dense silty sands and range in depth from 0 feet to about 4 feet from the ground surface along the project alignment. Embankment fill is planned for placement to similar depths along the entire widening project and is required to be placed to not less than 90% of the maximum density.

Soil and Groundwater Conditions

Site soils consisted of native soil and bedrock along a majority of the project alignment with embankment fill in the depressions between foothills and in the transition area from foothills to valley floor. Bedrock typically underlies the roadbed in the foothills and native soil underlies the roadbed in the valley. Bedrock was encountered in the cable barrier boring CA6, and the cut slope line sampling borings C-1#1, C-2#1, C-2#3 and C-2#4.

Soils were generally moist during cable barrier boring sampling, which was accomplished with snow cover on the ground surface or recently melted. No ground water was encountered in any of the borings drilled along this project alignment during the subsurface investigation. However, the groundwater table elevation will fluctuate depending on the time of year and precipitation amounts. Surface water can be troublesome due to the low permeability of the surficial native clayey sand soils.

Soil Corrosivity

Selected samples from the cable barrier borings (CA) underwent chemical analysis. The pH values ranged from neutral (6.9) to slightly basic (8.4). Soil resistivity values ranged from moderately corrosive (2,092 Ohm-cm) to mildly corrosive (9,709 Ohm-cm) with samples fairly evenly divided between the moderately corrosive and mildly corrosive categories. Soil conductivity values are indicative of soil salinity and are typically inversely proportional to resistivity values. These conductivity values ranged from 103 to 485 µS/cm. Soil chemistry laboratory test results can be found in Appendix B.

DISCUSSION AND RECOMMENDATIONS

Frost Depth

Assume a frost depth of 1.5 feet for foundation design.

Foundation Design Profiles for Cable Barriers

The cable barrier exploration logs are numbered CA1 – CA6 in Appendix A. Borings are located at most of the planned cable barrier terminal locations: the beginning of the cable barrier rail project (CA6), Caroline Way (CA5), Turf Farm Road (CA4), Crow Lane (CA3), Boyer Lane (CA2), and the end of the cable barrier rail project (CA1). Note that the surface elevations are from the existing shoulder surface adjacent to the existing pavement. These may differ from the surface elevation at the time of cable barrier construction. Additional line sampling data for the project area is also located in

Appendix A. Bedrock was encountered at the beginning of the cable barrier rail project at a depth of 13 feet below ground surface, underneath bedrock that had decomposed to clay. Bedrock is likely to be encountered in the vicinity of rock cuts from the beginning of the cable rail barrier project to near Caroline Way. The Caroline Way and Turf Farm Road borings produced primarily silty sands with some clay and gravel components. The Boyer Lane boring produced silty and/or clayey sand for the full depth explored. The Crow Lane and end of the cable barrier rail borings produced primarily clayey sand in the upper 4.5 feet to 6 feet explored, overlying 3 feet to 5.5 feet of clays and then silty or clayey sand. The end of cable rail project boring also produced increasing amounts of gravel with depths starting at about 9 feet below ground surface.

Excavations

Much of the excavation is in the Pine Nut Mountain foothills near the beginning of the project, generally between stations "X2" 805+00 and "X2" 812+00 to the south, between "X2" 836+00 and "X2" 847+00 to the north and south, and between stations "X2" 865+00 and "X2" 876+00 to the north. Difficult excavation can be expected in these native soils, especially when nearing grade elevations. Additional ripping effort with heavier equipment may be required. Seismic velocities were recorded as high as 7000ft/s to 8000ft/s in native materials to be excavated between stations "X2" 840+40 and "X2" 842+30. Clay seams from weathered bedrock may also be encountered. The clay seams are not suitable material for use on the project and must be wasted. For additional information refer to seismic surveys for two of the cut slopes in Appendix C.

Testing showed that native soils in the south frontage road area from about "SFR" 1065+00 through its terminus at Roys Road and including Roys Road south of US 50 have very low R-values. Excavated materials from these areas do not meet borrow requirements and cannot be used elsewhere on the project. See the Plan Sheets for additional information.

Constructability

Based on the results of our field exploration, shallow bedrock may be encountered during construction, especially in areas of exposed rock cut. Review of the line sample and other exploratory borings conducted in early 2010 reveals no groundwater is likely to be encountered. However there is a high likelihood of surface water impacting construction during and following precipitation events due to observed low infiltration rates. Heavy rutting can be expected in saturated surficial soils following precipitation events until the surficial water has evaporated.

REFERENCES

Corrosion/Degradation of Soil Reinforcements for Mechanically Stabilized Earth Walls and Reinforced Soil Slopes, FHWA-SA-96-072, Victor Elias, P.E., 1997.

Geology and Mineral Deposits of Lyon, Douglas, and Ormsby Counties, Nevada, Nevada Bureau of Mines, Bulletin 75, James G. Moore, 1969.

Geotechnical Policies and Procedures Manual, Nevada Department of Transportation, 2005.

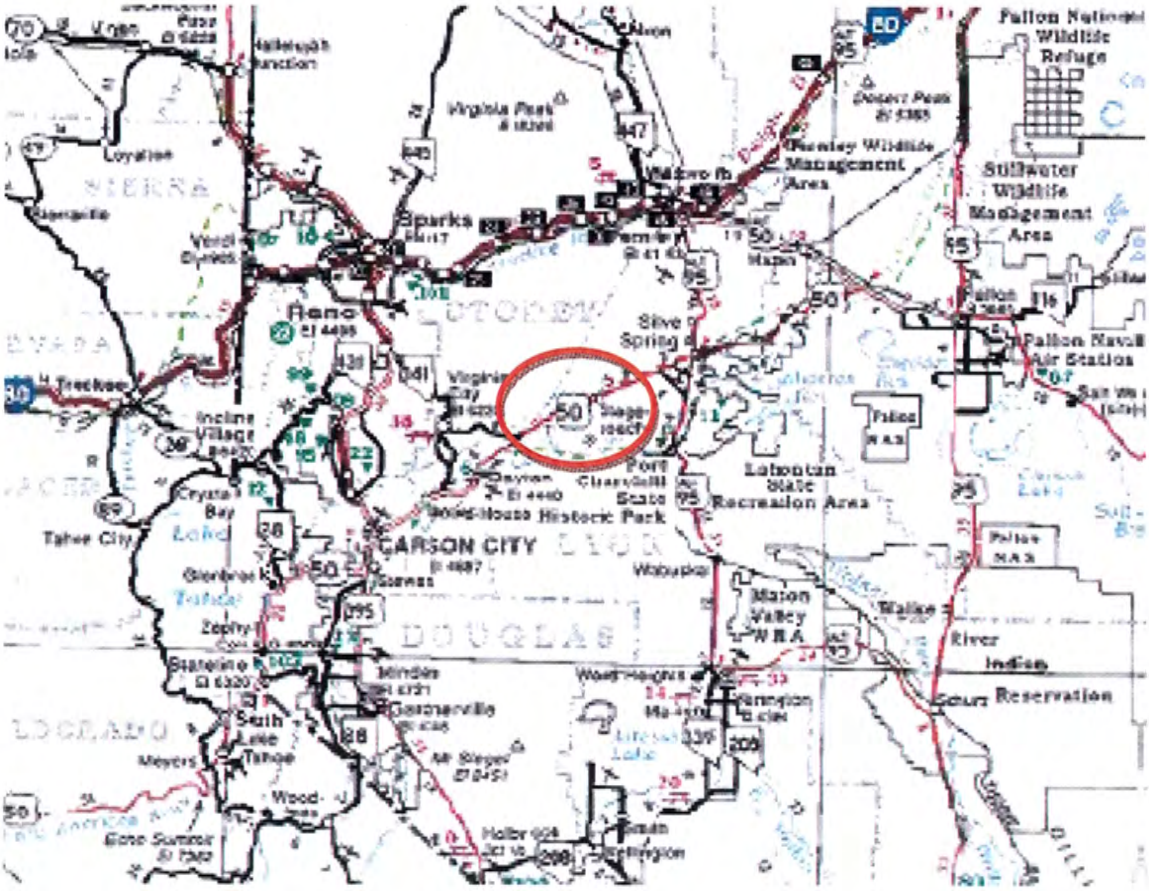
2007 Northern Nevada Code Amendments to the 2006 International Building Code, International Code Council.

Preliminary Construction Plans, Project No. SPF-050-2(019), Lyon County, Randolph Koniak, Designer, undated.

Appendix A

Line Sample and Exploration Log Sheets

Project Area Location Map
Cable Barrier Exploration Logs
Cable Barrier Line Sampling
Cut Slope Line Sampling
Roadway Line Sampling



Project Area Location Map

Cable Barrier Exploration Logs

KEY TO EXPLORATION LOGS

PARTICLE SIZE LIMITS								
CLAY	SILT	SAND			GRAVEL		COBBLES	BOULDERS
		FINE	MEDIUM	COARSE	FINE	COARSE		
.002 mm		#200	#40	#10	#4	¾ inch	3 inch	12 inch

USCS GROUP	TYPICAL SOIL DESCRIPTION
GW	Well graded gravels, gravel-sand mixtures, little or no fines
GP	Poorly graded gravels, gravel-sand mixtures, little or no fines
GC	Clayey gravels, poorly graded gravel-sand-clay mixtures
SW	Well graded sands, gravelly sands, little or no fines
SP	Poorly graded sands, gravelly sands, little or no fines
SM	Silty sands, poorly graded sand-silt mixtures
SC	Clayey sands, poorly graded sand-clay mixtures
ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands with slight plasticity
CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
OL	Organic silts and organic silt-clays of low plasticity
MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
CH	Inorganic clays of high plasticity, fat clays
OH	Organic clays of medium to high plasticity
PT	Peat and other highly organic soils

MOISTURE CONDITION CRITERIA

Description	Criteria
Dry	Absence of moisture, dusty, dry to touch.
Moist	Damp, no visible free water.
Wet	Visible free water, usually below groundwater table.
∇ ▼	Groundwater Elevation Symbols

SOIL CEMENTATION CRITERIA

Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Won't break or crumble w/finger pressure

STANDARD PENETRATION CLASSIFICATION*

GRANULAR SOIL		CLAYEY SOIL	
BLOWS/FT	DENSITY	BLOWS/FT	CONSISTENCY
0 - 4	VERY LOOSE	0 - 1	VERY SOFT
5 – 10	LOOSE	2 - 4	SOFT
11 - 30	MEDIUM DENSE	5 - 8	MEDIUM STIFF
31 - 50	DENSE	9 - 15	STIFF
OVER 50	VERY DENSE	16 - 30	VERY STIFF
		31 - 60	HARD
		OVER 60	VERY HARD

*Standard Penetration Test (N) 140 lb hammer 30 inch free fall on 2 inch O.D. x 1.4 inch I.D. sampler.

Field Blow counts on California Modified Sampler (N_{CMS}) can be converted to $N_{SPT\ field}$ by:

$(N_{CMS\ field})(0.62) = N_{SPT\ field}$

Blow counts from Automatic Hammer can be converted to Standard SPT N_{60} by:

Rig #1627: $(N_{SPT\ field})(1.2) = N_{60}$

Rig #1082: $(N_{SPT\ field})(1.45) = N_{60}$

TEST ABBREVIATIONS

CD	CONSOLIDATED DRAINED	OC	ORGANIC CONTENT
CH	CHEMICAL (CORROSIVENESS)	C	CONSOLIDATION
CM	COMPACTION	PI	PLASTICITY INDEX
CU	CONSOLIDATED UNDRAINED	RQD	ROCK QUALITY DESIGNATION
D	DISPERSIVE SOILS	RV	R-VALUE
DS	DIRECT SHEAR	S	SIEVE ANALYSIS
E	EXPANSIVE SOIL	SL	SHRINKAGE LIMIT
G	SPECIFIC GRAVITY	U	UNCONFINED COMPRESSION
H	HYDROMETER	UU	UNCONSOLIDATED UNDRAINED
HC	HYDRO-COLLAPSE	UW	UNIT WEIGHT
K	PERMEABILITY	W	MOISTURE CONTENT

SOIL COLOR DESIGNATIONS ARE FROM THE MUNSELL SOIL/ROCK COLOR CHARTS.

EXAMPLE: (7.5 YR 5/3) BROWN

SAMPLER NOTATION

CMS	CALIF. MODIFIED SAMPLER[1]
CPT	CONE PENETRATION TEST
CS	CONTINUOUS SAMPLER[2]
PB	PITCHER BARREL
RC	ROCK CORE[3]
SH	SHELBY TUBE[4]
SPT	STANDARD PENETRATION TEST
TP	TEST PIT

1- I.D.= 2.421 inch

2- I.D.=3.228 inch with tube; 3.50 inch w/o tube

3- NXB I.D.= 1.875 inch

4- I.D.= 2.875 inch

Revised August 2010

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PRELIMINARY

SUBJECT TO REVISION
9/29/2010 9:00:06 AM

STATE	PROJECT NO.	COUNTY	SHEET NO.
NEVADA	SPF-050-2(019)	LYON	27

"WB" 1069+15 INSTALL CABLE BARRIER. RT
"WB" 1109+22

"WB" 1097+97 CONSTRUCT 2103' TYPE A-5S FENCE. LT ON R/W
"X2" 1117+76 LINE. CONNECT TO FENCE POST.

"WB" 1097+08 REMOVE EXISTING FENCE. LT
"WB" 1117+77

T.17.N. R.23E.

"TWB" 1117+77.01 POT =
"X2" 1117+75.57 POT

R/W
EOP
8-30" HDPE
"TWB"
"X2"
N68°06'38"E 1088.16'
Test Hole # CA1
MEDIAN LINE CONTROL
1110
1115
1120
N65°09'38"E 53182.25'
N64°08'59"E 226.70'
M.P. 20.00
"TEB"
21'
18.5'

(4.0' RT) "X2" 1115+31.00 POT =
"TEB" 1115+31.00 POT

"TEB" 1117+57.71 POT =
"X2" 1117+57.67 POT

"X2" 1117+71.00 POT
END CONSTRUCTION

① INCLUDES: 515 (515) CUYD TO BE DISPOSED PER SUB SECTION 107.14
② INCLUDES: 126 (126) CUYD TO BE PLACED BETWEEN "X2" 877+00 TO "X2" 890+00. RT

D.N. "TWB" LT — SEE PROFILE SHEETS FOR DITCH NOTES
D.N. "TWB" RT — SEE MEDIAN ELEVATION CONTROL SHEETS
D.N. "X2" & "TEB" LT — SEE MEDIAN ELEVATION CONTROL SHEETS
D.N. "X2" & "TEB" RT — 6:1 FS 19', Thence 6:1 FS or 2:1 BS

+00 +71

"X2" & "TEB" LT	
EXCAVATION	515 (515) CUYD ①
BORROW	0 CUYD
EMBANKMENT	0 CUYD

"X2" & "TEB" RT	
EXCAVATION	513 (513) CUYD ②
BORROW	0 CUYD
EMBANKMENT	387 CUYD

Sec. 10, Sec. 11

100.000000:1.000000 PLOT SCALE h9010rek

NEVADA DEPARTMENT OF TRANSPORTATION
GEOTECHNICAL ENGINEERING

EXPLORATION LOG

START DATE 3/29/10
END DATE 3/29/10
JOB DESCRIPTION US 50 Stagecoach
LOCATION MP 14 to MP 20
BORING CA1
E.A. # 73475
GROUND ELEV (ft)
HAMMER DROP SYSTEM automatic

GROUNDWATER LEVEL		
DATE	DEPTH ft	ELEV. ft

STATION X2 1109+00
OFFSET 22L
ENGINEER Callaghan
EQUIPMENT D-120
OPERATOR Marshall
DRILLING METHOD hollow auger
BACKFILLED Yes DATE 3/29/10

ELEV. (ft)	DEPTH (ft)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT 6 inch Increments	BLOW COUNT Last 1 foot	Percent Recov'd	LAB TESTS	USCS Group	MATERIAL DESCRIPTION	REMARKS
									dark brown moist clayey sand	end cable rail edge of oil
								SC		
	3.50									
		A	SPT	3 6 9	15	80	sieve, pi, moisture			
	5.00									
	5 5.25									
		B	SH			100	sieve, pi, moisture, triaxial, unit weight			
	7.25									
								CL		
	8.00									
		C	SPT	4 6 14	20	93	sieve, pi, moisture, chem			
	9.50									
	10							SC		
	13.00							SM		
		D	SPT	9 14 12	26	100	sieve, pi, moisture, chem			
	14.50									

6.00 tan moist sandy lean clay

9.00 brown moist clayey sand with minor gravel

11.00 brown moist silty sand with gravel

14.50

NV_DOT_US 50 STAGECOACH.GPJ NV_DOT.GDT 6/3/10

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STATE	PROJECT NO.	COUNTY	SHEET NO.
NEVADA	SPF-050-2(019)	LYON	24

PRELIMINARY

SUBJECT TO REVISION

– LIMITS OF MISCELLANEOUS PAVEMENT

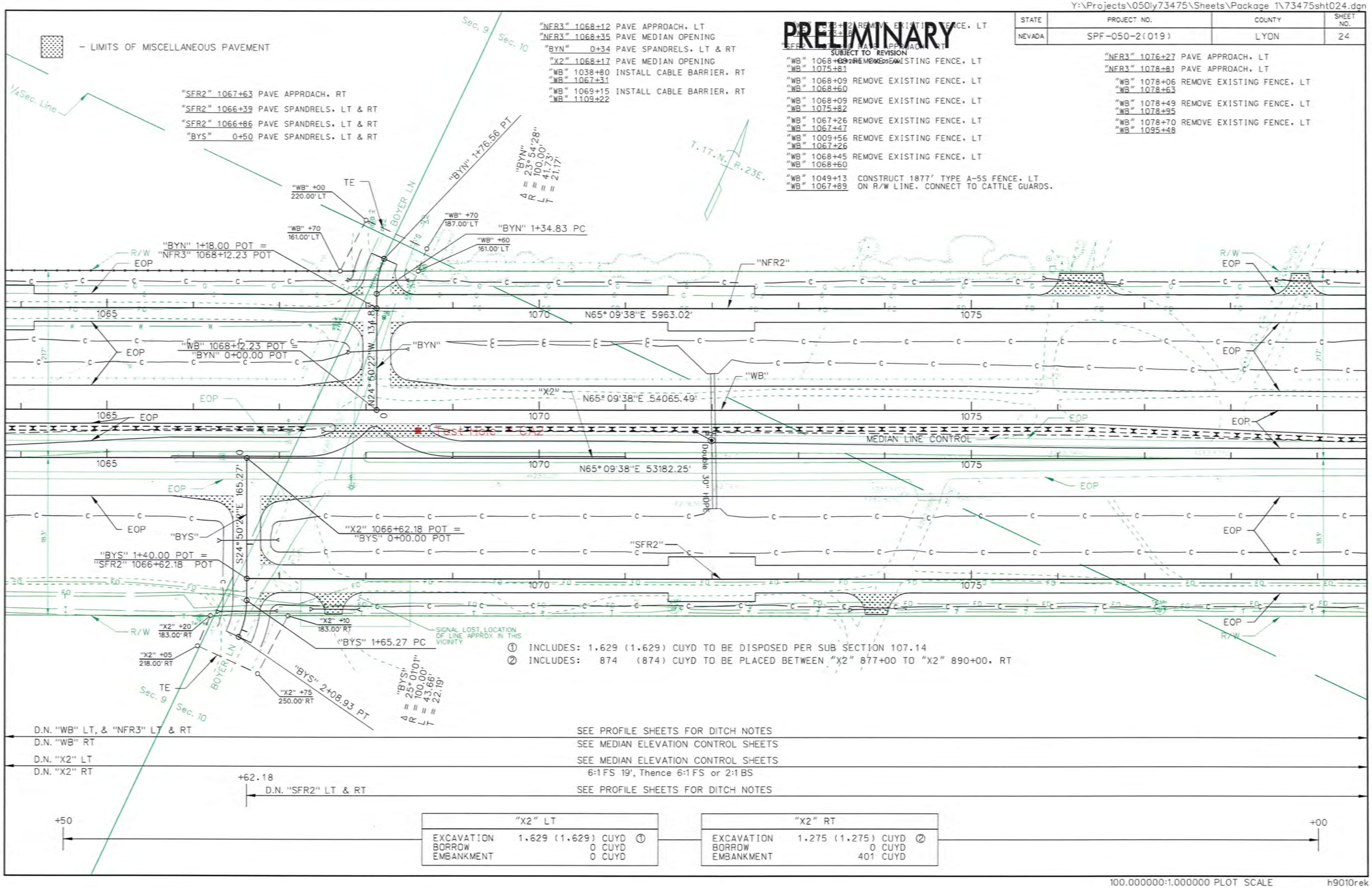
"NFR3" 1068+12 PAVE APPROACH, LT
"NFR3" 1068+35 PAVE MEDIAN OPENING
"BYN" 0+34 PAVE SPANDRELS, LT & RT
"X2" 1068+17 PAVE MEDIAN OPENING
"WB" 1038+80 INSTALL CABLE BARRIER, RT
"WB" 1067+31
"WB" 1069+15 INSTALL CABLE BARRIER, RT
"WB" 1109+22

"SFR2" 1067+63 PAVE APPROACH, RT
"SFR2" 1066+39 PAVE SPANDRELS, LT & RT
"SFR2" 1066+86 PAVE SPANDRELS, LT & RT
"BYS" 0+50 PAVE SPANDRELS, LT & RT

"WB" 1068+12 REMOVE EXISTING FENCE, LT
"WB" 1075+81
"WB" 1068+09 REMOVE EXISTING FENCE, LT
"WB" 1068+60
"WB" 1068+09 REMOVE EXISTING FENCE, LT
"WB" 1075+82
"WB" 1067+26 REMOVE EXISTING FENCE, LT
"WB" 1067+47
"WB" 1009+56 REMOVE EXISTING FENCE, LT
"WB" 1067+26
"WB" 1068+45 REMOVE EXISTING FENCE, LT
"WB" 1068+60

"WB" 1049+13 CONSTRUCT 1877' TYPE A-5S FENCE, LT
"WB" 1067+89 ON R/W LINE. CONNECT TO CATTLE GUARDS.

"NFR3" 1076+27 PAVE APPROACH, LT
"NFR3" 1078+81 PAVE APPROACH, LT
"WB" 1078+06 REMOVE EXISTING FENCE, LT
"WB" 1078+63
"WB" 1078+49 REMOVE EXISTING FENCE, LT
"WB" 1078+95
"WB" 1078+70 REMOVE EXISTING FENCE, LT
"WB" 1095+48



① INCLUDES: 1,629 (1,629) CUYD TO BE DISPOSED PER SUB SECTION 107.14
② INCLUDES: 874 (874) CUYD TO BE PLACED BETWEEN "X2" 877+00 TO "X2" 890+00, RT

D.N. "WB" LT, & "NFR3" LT & RT — SEE PROFILE SHEETS FOR DITCH NOTES
D.N. "WB" RT — SEE MEDIAN ELEVATION CONTROL SHEETS
D.N. "X2" LT — SEE MEDIAN ELEVATION CONTROL SHEETS
D.N. "X2" RT — 6:1 FS 19', Thence 6:1 FS or 2:1 BS
+62.18
D.N. "SFR2" LT & RT — SEE PROFILE SHEETS FOR DITCH NOTES

+50 +00

"X2" LT		
EXCAVATION	1,629 (1,629) CUYD	①
BORROW	0 CUYD	
EMBANKMENT	0 CUYD	

"X2" RT		
EXCAVATION	1,275 (1,275) CUYD	②
BORROW	0 CUYD	
EMBANKMENT	401 CUYD	

100.000000:1.000000 PLOT SCALE h9010rek

NEVADA DEPARTMENT OF TRANSPORTATION
GEOTECHNICAL ENGINEERING

EXPLORATION LOG

SHEET 1 OF 1

START DATE 3/29/10
END DATE 3/29/10
JOB DESCRIPTION US 50 Stagecoach
LOCATION MP 14 to MP 20
BORING CA2
E.A. # 73475
GROUND ELEV (ft)
HAMMER DROP SYSTEM automatic

GROUNDWATER LEVEL		
DATE	DEPTH ft	ELEV. ft

STATION X2 1068+60
OFFSET 29L
ENGINEER Callaghan
EQUIPMENT D-120
OPERATOR Marshall
DRILLING METHOD hollow auger
BACKFILLED Yes DATE 3/29/10

ELEV. (ft)	DEPTH (ft)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT 6 inch Increments	BLOW COUNT Last 1 foot	Percent Recov'd	LAB TESTS	USCS Group	MATERIAL DESCRIPTION	REMARKS
								SC SM	brown moist silty clayey sand	Boyer Lane edge of oil
	3.50									
		A	MC	3 3 5	8	93	sieve, pi, moisture, hydrometer, shear, unit weight			
	5.00								5.00	
5		B	SPT	2 4 7	11	87	sieve, pi, moisture, hydrometer, chem		brown moist clayey sand	
	6.50							SC		
									8.50	
									brown moist silty sand	
10										
	11.00							SM		
		C	SPT	8 12 18	30	100	sieve, pi, moisture, chem			
	12.50								12.50	

NV_DOT US 50 STAGECOACH.GPJ NV_DOT.GDT 6/3/10

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PRELIMINARY

SUBJECT TO REVISION
9/29/2010 9:00:04 AM

STATE	PROJECT NO.	COUNTY	SHEET NO.
NEVADA	SPF-050-2(019)	LYON	20

– LIMITS OF MISCELLANEOUS PAVEMENT

"WB" 1009+46 PAVE APPROACH. LT

"WB" 1009+56 REMOVE EXISTING FENCE. LT
"WB" 1067+26

"WB" 981+97 REMOVE EXISTING FENCE. LT
"WB" 1009+21

"X2" 1009+51 PAVE MEDIAN OPENING. LT

"BH" 0+50 PAVE SPANDRELS. LT

"SFR2" 1019+68 PAVE SPANDRELS. LT & RT

"WB" 982+30 CONSTRUCT 2769' TYPE A-5S FENCE. LT ON R/W
"WB" 1009+97 LINE. CONNECT TO GATE AND CATTLE GUARD.

"WB" 1009+97 CONSTRUCT GATE. LT CONNECT TO
"WB" 1010+07 FENCE POST AND CATTLE GUARD.

"CR" 1+52 CONSTRUCT 32' PRECAST CATTLE GUARD.

"WB" 1010+44 CONSTRUCT 2733' TYPE A-5S FENCE. LT ON R/W
"WB" 1037+74 LINE. CONNECT TO GATE AND CATTLE GUARD.

"WB" 1010+48 INSTALL CABLE BARRIER. RT
"WB" 1037+00

"X2" 1009+21 PAVE APPROACH. RT

"BH" 0+44 PAVE SPANDRELS. RT

"WB" 981+34 INSTALL CABLE BARRIER. RT
"WB" 1008+65

T.17.N., R.23E.

Sec. 8
Sec. 17
Sec. 9
Sec. 16

"WB" +45
241.00' LT

"CR" 2+00.00 POT

"CR" 1+92.80 PT

N19° 42'47"W 7.20'

TE

"WB" +65
161.00' LT

"WB" +25
161.00' LT

"CR" 1+15.04 PC

"CR"
Δ = 44° 33'09"
R = 100.00'
L = 77.76'
T = 40.96'

N24° 50'22"W 115.01'

"WB" 1010+18.68 POT =
"CR" 0+00.00 POT

Test Hole # CA3

N65° 09'38"E 54065.49'

"X2"

MEDIAN LINE CONTROL

"SFR1" 1008+64.86 POT
"SD" 0+00.00 POT

"SFR1"

S24° 50'22"E 41.00'

N65° 09'38"E 53182.25'

M.P. 18.00 EOP

"X2" 1019+45.67 POT =
"BH" 0+00.00 POT

"BH" 1+40.00 POT =
"SFR1" 1019+45.67 POT

"BH"

S24° 50'22"E 180.41'

"BH"
Δ = 10° 45'36"
R = 100.00'
L = 18.78'
T = 9.42'

"BH" 1+80.41 PC

"BH" 1+99.19 PT

"SD"
Δ = 24° 10'47"
R = 100.00'
L = 42.20'
T = 21.42'

"SD" 0+41.00 PC

"SD" 0+83.20 PT

"X2" +25
183.00' RT

"X2" +15
183.00' RT

"X2" +00
230.00' RT

"X2" +80
265.00' RT

"X2" +05
183.00' RT

"X2" +85
183.00' RT

"X2" +05
233.00' RT

"X2" +85
233.00' RT

TE

SAND TRAP

BREAK A HEART RD

① INCLUDES: 1.069 (1.069) CUYD TO BE DISPOSED PER SUB SECTION 107.14
② INCLUDES: 236 (236) CUYD TO BE PLACED BETWEEN "X2" 877+00 TO "X2" 890+00. RT

D.N. "WB" LT	SEE PROFILE SHEETS FOR DITCH NOTES
D.N. "WB" RT	SEE MEDIAN ELEVATION CONTROL SHEETS
D.N. "X2" LT	SEE MEDIAN ELEVATION CONTROL SHEETS
D.N. "X2" RT	6:1 FS 19', Thence 6:1 FS or 2:1 BS
D.N. "SFR1" LT	SEE PROFILE SHEETS FOR DITCH NOTES

"SFR1" 1019+17.13 PC

+50 +00

"X2" LT		"X2" RT	
EXCAVATION	1,111 (1,111) CUYD ①	EXCAVATION	970 (970) CUYD ②
BORROW	0 CUYD	BORROW	0 CUYD
EMBANKMENT	42 CUYD	EMBANKMENT	734 CUYD

100.000000:1.000000 PLOT SCALE h9010rek

NEVADA DEPARTMENT OF TRANSPORTATION
GEOTECHNICAL ENGINEERING

EXPLORATION LOG

START DATE 4/5/10
END DATE 4/5/10
JOB DESCRIPTION US 50 Stagecoach
LOCATION MP 14 to MP 20
BORING CA3
E.A. # 73475
GROUND ELEV (ft)
HAMMER DROP SYSTEM automatic

GROUNDWATER LEVEL		
DATE	DEPTH ft	ELEV. ft

STATION X2 1009+85
OFFSET 35L
ENGINEER Callaghan
EQUIPMENT D-120
OPERATOR Altamirano
DRILLING METHOD hollow auger
BACKFILLED Yes DATE 4/5/10

ELEV. (ft)	DEPTH (ft)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT 6 inch Increments	BLOW COUNT Last 1 foot	Percent Recov'd	LAB TESTS	USCS Group	MATERIAL DESCRIPTION	REMARKS
									brown moist silty clayey sand with gravel	Crow Lane edge of oil
	3.50							SC SM		
		A	MC	4 8 15	23	53	sieve, pi, moisture, hydrometer			
	5.00								4.50 brown moist sandy fat clay	
	5							CH		
	7.50								6.50 brown moist sandy lean clay	
		B	SPT	8 10 16	26	93	sieve, pi, moisture, chem, hydrometer	CL		
	9.00									
	10								10.00 dark brown moist silty clayey sand	
	12.50							SC SM		
		C	SPT	7 9 10	19	93	sieve, pi, moisture, chem, hydrometer			
	14.00								14.00	

NV_DOT US 50 STAGECOACH.GPJ NV_DOT.GDT 6/28/10

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PRELIMINARY

SUBJECT TO REVISION

STATE	PROJECT NO.	COUNTY	SHEET NO.
NEVADA	SPF-050-2(019)	LYON	16

- LIMITS OF MISCELLANEOUS PAVEMENT

"WB" 953+65 INSTALL CABLE BARRIER, RT
"WB" 979+51

"NFR2" 952+86 PAVE SPANDRELS, LT & RT

"TF" 0+34 PAVE SPANDRELS, LT & RT

"WB" 952+68 PAVE MEDIAN OPENING

"WB" 909+96 INSTALL CABLE BARRIER, RT
"WB" 951+85

"WB" 953+10 INSTALL:
(1) 12" CROSS 95.6'± LT ON EXIST WATER LINE
(4) 12" GATE VALVES
12" X 65' WATER LINE TO 160.6' LT
12" X 334' WATER LINE TO 238.4' RT
(2) 12" CAPS
THRUST BLOCKS

"NFR2" 956+40 PAVE APPROACH, LT

"WB" 930+75 CONSTRUCT [illegible] TYPE A-5S FENCE,
"WB" 952+36 ON R/W LINE. CONNECT TO GATES.

"WB" 952+36 CONSTRUCT GATE, RT CONNECT TO
"WB" 952+46 FENCE POST AND CATTLE GUARD.

"TFN" 1+53 CONSTRUCT 40' PRECAST CATTLE GUARD.

"WB" 952+92 CONSTRUCT 339' TYPE A-5S FENCE, LT
"WB" 956+24 ON R/W LINE. CONNECT TO CATTLE GUARDS.

"NFFR" 956+40 CONSTRUCT 24' PRECAST CATTLE GUARD, 37' LT.

"WB" 956+56 CONSTRUCT 1076' TYPE A-5S FENCE, LT
"WB" 967+28 ON R/W LINE. CONNECT TO CATTLE GUARDS.

"X2" 934+10 CONSTRUCT 1662' TYPE A-5S FENCE, RT
"X2" 950+56 ON R/W LINE. CONNECT TO GATES.

"X2" 950+56 CONSTRUCT GATE, RT CONNECT TO
"X2" 950+62 FENCE POST AND CATTLE GUARD.

"TFS" 1+44 CONSTRUCT 32' PRECAST CATTLE GUARD.

"X2" 951+02 CONSTRUCT 2888' TYPE A-5S FENCE, RT
"X2" 979+67 ON R/W LINE. CONNECT TO CATTLE GUARDS.

Sec. 16 Sec. 17
T. 17 N., R. 23 E.

"WB" +50 218.00' LT
"WB" +20 161.00' LT
"WB" +20 185.00' LT
"WB" +10 161.00' LT
TE
"TFN" 1+74.66 PT
"TFN" 24° 38' 38" 100.00' 43.01' 21.84' Δ RT
"TFN" 1+31.65 PC
"TFN" 1+18.00 POT = "NFR2" 952+62.70 POT
"TFN"
N24° 50' 22"W 131.65'
"WB" 952+62.70 POT = "TFN" 0+00.00 POT
"NFR2"
"WB"
"X2"
N65° 09' 38"E 2946.83'
N65° 09' 38"E 54065.49'
N65° 09' 38"E 53182.25'
955
960
950
R/W
EOP
MEDIAN LINE CONTROL
Test Hole CA4
M.P. 17.00
27" HDP
"X2" 950+82.06 POT = "TFS" 0+00.00 POT
"TFS" 1+55.99 PC
"TFS"
N24° 50' 22"E 155.99'
"X2" +35 183.00' RT
"X2" +25 210.00' RT
"X2" +24 183.00' RT
"X2" +95 242.00' RT
TE
TURF FARM RD
"TFS" 1+98.86 PT
"TFS" 24° 33' 56" 100.00' 42.87' 21.77' Δ RT
1/4 Sec. Line
"NFR2" 952+78.70 POT
Vault

① INCLUDES: 1.243 (1.243) CUYD TO BE DISPOSED PER SUB SECTION 107.14
② INCLUDES: 1.099 (1.099) CUYD TO BE PLACED BETWEEN "X2" 862+00 TO "X2" 877+00, RT

D.N. "NFR2" LT & RT — SEE PROFILE SHEETS FOR DITCH NOTES
D.N. "WB" LT — SEE PROFILE SHEETS FOR DITCH NOTES
D.N. "WB" RT — SEE MEDIAN ELEVATION CONTROL SHEETS
D.N. "X2" LT — SEE MEDIAN ELEVATION CONTROL SHEETS
D.N. "X2" RT — 6:1 FS 19', Thence 6:1 FS or 2:1 BS

+00 +00

"X2" LT		"X2" RT	
EXCAVATION	1,281 (1,281) CUYD ①	EXCAVATION	1,340 (1,340) CUYD ②
BORROW	0 CUYD	BORROW	0 CUYD
EMBANKMENT	36 CUYD	EMBANKMENT	241 CUYD

100.000000:1.000000 PLOT SCALE h9010rek

NEVADA DEPARTMENT OF TRANSPORTATION
GEOTECHNICAL ENGINEERING

EXPLORATION LOG

START DATE 4/5/10
END DATE 4/5/10
JOB DESCRIPTION US 50 Stagecoach
LOCATION MP 14 to MP 20
BORING CA4
E.A. # 73475
GROUND ELEV (ft)
HAMMER DROP SYSTEM automatic

GROUNDWATER LEVEL		
DATE	DEPTH ft	ELEV. ft

STATION X2 953+90
OFFSET 45L
ENGINEER Callaghan
EQUIPMENT D-120
OPERATOR Altamirano
DRILLING METHOD hollow auger
BACKFILLED Yes DATE 4/5/10

ELEV. (ft)	DEPTH (ft)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT 6 inch Increments	BLOW COUNT Last 1 foot	Percent Recov'd	LAB TESTS	USCS Group	MATERIAL DESCRIPTION	REMARKS
									brown moist silty sand	Turf Farm Road edge of oil
	1.50									
		A	SPT	8 4 4	8	93	sieve, pi, moisture			
	3.00									
	5							SM		
	6.00									
		B	SPT	6 7 12	19	100	sieve, pi, moisture			
	7.50									
	10									
									11.00	
									brown moist well graded gravel with sand	
	13.00							GW		
		C	MC	12 23 37	60	93	sieve, pi, moisture, chem			
	14.50								14.00	
									grey brown moist poorly graded sand with silt and gravel	
								SP SM	15.00	

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PRELIMINARY

SUBJECT TO REVISION
9/29/2010 9:00:02 AM

STATE	PROJECT NO.	COUNTY	SHEET NO.
NEVADA	SPF-050-2(019)	LYON	12

– LIMITS OF MISCELLANEOUS PAVEMENT

"WB" 887+61 CONSTRUCT 2115' TYPE A-5S FENCE, LT
"WB" 908+76 ON R/W LINE. CONNECT TO CATTLE GUARDS.
"X2" 894+36 PAVE MEDIAN OPENING, LT
"CW" 0+50 PAVE SPANDRELS, LT & RT
"SFR1" 894+53 PAVE SPANDRELS, LT & RT
"WB" 854+65 INSTALL CABLE BARRIER, RT
"WB" 893+27

"X2" 881+62 CONSTRUCT 1340' TYPE A-5S FENCE, RT
"X2" 894+04 ON R/W LINE. CONNECT TO GATES.
"X2" 894+04 CONSTRUCT GATE, RT CONNECT TO
"X2" 894+10 FENCE POST AND CATTLE GUARD.
"CW" 1+44 CONSTRUCT 32' PRECAST CATTLE GUARD.
"X2" 894+49 CONSTRUCT 2311' TYPE A-5S FENCE, RT ON R/W
"X2" 917+22 LINE. CONNECT TO GATE AND CATTLE GUARD.
"WB" 895+07 INSTALL CABLE BARRIER, RT
"WB" 908+16

T.17 N., R.22 E., Sec. 13
T.17 N., R.23 E., Sec. 18

R/W
EOP
"NFR1"
"WB"
"X2"
"CW"
"SFR1"
MEDIAN LINE CONTROL
N65° 09'38"E 2115.39'
N65° 09'38"E 54065.49'
N65° 09'38"E 53182.25'
890
895
900
Test Hole # CA5
M.P. 16.00
Double 10'X3' RCB
S2° 50'22"E 157.46'
"X2" 894+29.47 POT = "CW" 0+00.00 POT
"CW" 1+57.46 PC
"CW" 1+99.18 PT
"CW" 23°54'20" 100.00' 41.72' 21.17' R L T
"X2" +83 183.00' RT
"X2" +72 183.00' RT
"X2" +72 210.00' RT
"X2" +45 242.00' RT
TE
CAROLINE WY
183'
217'
Sec. 13 Sec. 18
Sec. 24 Sec. 19

① INCLUDES: 829 (829) CUYD TO BE DISPOSED PER SUB SECTION 107.14
② INCLUDES: 395 (395) CUYD TO BE PLACED BETWEEN "X2" 862+00 TO "X2" 877+00, RT

D.N. "WB" LT & "NFR1" LT & RT — SEE PROFILE SHEETS FOR DITCH NOTES
D.N. "WB" RT — SEE MEDIAN ELEVATION CONTROL SHEETS
D.N. "X2" LT — SEE MEDIAN ELEVATION CONTROL SHEETS
D.N. "X2" RT — 6:1 FS 19', Thence 6:1 FS or 2:1 BS

+00

"X2" LT		
EXCAVATION	829 (829) CUYD	①
BORROW	0 CUYD	
EMBANKMENT	0 CUYD	

"X2" RT		
EXCAVATION	918 (918) CUYD	②
BORROW	0 CUYD	
EMBANKMENT	523 CUYD	

+00

100.000000:1.000000 PLOT SCALE h9010rek

NEVADA DEPARTMENT OF TRANSPORTATION
GEOTECHNICAL ENGINEERING

EXPLORATION LOG

START DATE 4/12/10
END DATE 4/12/10
JOB DESCRIPTION US 50 Stagecoach
LOCATION MP 14 to MP 20
BORING CA5
E.A. # 73475
GROUND ELEV (ft)
HAMMER DROP SYSTEM automatic

GROUNDWATER LEVEL		
DATE	DEPTH ft	ELEV. ft

STATION X2 895+00
OFFSET 35L
ENGINEER Callaghan
EQUIPMENT D-120
OPERATOR Altamirano
DRILLING METHOD hollow auger
BACKFILLED Yes DATE 4/12/10

ELEV. (ft)	DEPTH (ft)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT 6 inch Increments	BLOW COUNT Last 1 foot	Percent Recov'd	LAB TESTS	USCS Group	MATERIAL DESCRIPTION	REMARKS
									brown moist silty clayey sand	Caroline Way edge of oil
	2.00									
		A	SPT	4 3 3	6	93	sieve, pi, moisture, chem	SC SM		
	3.50									
5									5.00 brown moist silty sand with minor gravel	
	6.00									
		B	MC	3 5 8	13	100	sieve, pi, moisture, shear, hydrometer, unit weight			
	7.50							SM		
10									10.00 brown moist clayey sand with gravel	
	11.00									
		C	SPT	6 8 9	17	100	sieve, pi, moisture, chem	SC		
	12.50								12.50	

NV_DOT US 50 STAGECOACH.GPJ NV_DOT.GDT 6/3/10

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PRELIMINARY

SUBJECT TO REVISION
9/29/2010 9:00:01 AM

STATE	PROJECT NO.	COUNTY	SHEET NO.
NEVADA	SPF-050-2(019)	LYON	8

"X2" 830+48 CONSTRUCT 2418' TYPE A-5S FENCE, LT ON R/W
"WB" 854+13 LINE. CONNECT TO GATE AND CATTLE GUARD.

"X2" 830+48 CONSTRUCT 3229' TYPE A-5S FENCE, RT
"X2" 861+26 ON R/W LINE. CONNECT TO GATES.

"WB" 838+31 INSTALL CABLE BARRIER, RT
"WB" 852+85

"WB"
Δ = 4° 40'05"
R = 4144.39'
L = 337.66'
T = 168.92'

"X2"
Δ = 4° 40'05"
R = 15017.00'
L = 1223.50'
T = 612.09'

Sec. 23 Sec. 24
T. 17 N., R. 22E.

(20.00' LT.) "X2" 834+90.45 PC = "WB" 834+93.05 PC

"WB" 838+30.71 PT

R/W

EOP

Geophone Line 2 "WB"

Geophone Line 1

Test Hole # C86

"X2"

N65° 09'38"E 54065.49'

MEDIAN FLOW LINE

"EB"

N69° 49'43"E 2122.52'

"X2" +20
83.00' RT

"X2" +20
103.00' RT

PE

"X2"+68.83
103.00' RT

"X2" 834+90.45 PC

(20.00' RT.) "X2" 834+90.45 PC = "EB" 834+88.92 PC

"EB" 846+15.80 PT

"X2" 847+13.94 PT

"EB"
Δ = 4° 40'05"
R = 13831.15'
L = 1126.88'
T = 563.75'

"X2" 834+90.45 PC

D.N. "WB" LT	SEE PROFILE SHEETS FOR DITCH NOTES
D.N. "WB" RT	SEE MEDIAN ELEVATION CONTROL SHEETS
6:1 FS 19', Thence 6:1 FS or 2:1 BS D.N. "X2" LT & RT	
D.N. "EB" RT	SEE MEDIAN ELEVATION CONTROL SHEETS
D.N. "EB" LT	6:1 FS 19', Thence 6:1 FS or 2:1 BS

+50

"X2" LT		
EXCAVATION	575	(575) CUYD ①
BORROW		0 CUYD
EMBANKMENT		11 CUYD

"X2" RT		
EXCAVATION	656	(656) CUYD ②
BORROW		0 CUYD
EMBANKMENT		3 CUYD

① INCLUDES: 564 (564) CUYD TO BE PLACED BETWEEN "X2" 803+00 TO "X2" 803+00 TO "X2" 818+00, LT
② INCLUDES: 653 (653) CUYD TO BE PLACED BETWEEN "EB" 847+50 TO "EB" 862+00, RT

100.000000:1.000000 PLOT SCALE h9010rek

NEVADA DEPARTMENT OF TRANSPORTATION
GEOTECHNICAL ENGINEERING

EXPLORATION LOG

START DATE 4/12/10
END DATE 4/12/10
JOB DESCRIPTION US 50 Stagecoach
LOCATION MP 14 to MP 20
BORING CA6
E.A. # 73475
GROUND ELEV (ft)
HAMMER DROP SYSTEM automatic

GROUNDWATER LEVEL		
DATE	DEPTH ft	ELEV. ft

STATION X2 837+00
OFFSET 22L
ENGINEER Callaghan
EQUIPMENT D-120
OPERATOR Altamirano
DRILLING METHOD hollow auger
BACKFILLED Yes DATE 4/12/10

ELEV. (ft)	DEPTH (ft)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT 6 inch Increments	BLOW COUNT Last 1 foot	Percent Recov'd	LAB TESTS	USCS Group	MATERIAL DESCRIPTION	REMARKS
									brown moist silty sand	begin cable rail edge of oil
								SM		
	4.00								4.20	
		A	MC	4 8 15	23	100	sieve, pi, moisture, unit weight	CL	yellow tan moist sandy fat clay	gypsum crystals
	5								5.00	
	5.50								yellow tan and rust moist lean clay with sand	
	9.00							CL		
		B	SPT	7 10 14	24	100	sieve, pi, moisture, chem			gypsum crystals and pyrite
	10									
	10.50									
	13.00	C	NR	refusal	refusal				13.00	

NV_DOT US 50 STAGECOACH.GPJ NV_DOT.GDT 6/3/10

Cable Barrier Line Sampling

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-281-10, C-314-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **03/25/10**

Samplers: **Marshall, Wimer** Station **"X2" 1109+00** Route **US 50**

Location from oil (ft) Lt. **23'** Rt. ____

Sample No.: **CA1** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: SPT taken from 3½' to 5'. Shelby taken from 5¼ to 7¼

Submitted By: **R. Wimer**

Title: **Engineering Tech I**

Depth (ft)	Boring Description	PSI
0--		
2--		
4--	Sandy Clay	100
6--	Clay	PSI
8--		
10--		
12--		
14--		
16--		
18--		
20--		

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	
1/2"	
3/8"	**100**
No. 4	**98**
No. 10	**94**
No. 16	**90**
No. 40	**80**
No. 50	**75**
No. 100	**64**
No. 200	**51**

Liquid Limit **36**

Plastic Index **19**

Specific Gravity ____

Resistance Value **19**

Cover Thickness **22.6**

Expansion Pressure ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity **2,212**

pH Factor **7.3**

HRB Classification ____

Remarks: ____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-282-10, C-315-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **03/25/10**

Samplers: **Marshall, Wimer** Station **"X2" 1068+60** Route **US 50**

Location from oil (ft) Lt. **29'** Rt. _____

Sample No.: **CA2** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: CA sample taken 3½' to 5'. SPT taken from 5' to 6½

Submitted By: **R. Wimer**

Title: **Engineering Tech I**

Depth (ft)	Boring Description	PSI
0--		
2--		
4--	Silty	100
6--	Sandy Clay	PSI
8--		
10--		
12--		
14--		
16--		
18--		
20--		

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	
1/2"	
3/8"	**100**
No. 4	**97**
No. 10	**89**
No. 16	**84**
No. 40	**74**
No. 50	**69**
No. 100	**58**
No. 200	**46**

Liquid Limit **26**

Plastic Index **9**

Specific Gravity _____

Resistance Value **16**

Cover Thickness **23.5**

Expansion Pressure _____

Sand Equivalent _____

Natural Moisture, % _____

Resistivity **2,681**

pH Factor **7.6**

HRB Classification _____

Remarks: _____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-302-10, C-338-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **4/5/10**

Samplers: **Altamirano, Wimer** Station **"X2" 1009+85** Route **US 50**

Location from oil (ft) Lt. **35'** Rt. ____

Sample No.: **CA3** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ☐ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: CA sample taken 3½' to 5'. With blow counts of 4-8-15. SPT sample taken from 7½' to 9' with blow counts of 8-10-16 SPT sample taken from 12½' to 14' with blow counts of. 7-9-10.

Submitted By: **O. Altamirano**

Title: **Supervisor I**

Depth (ft)	Boring Description	PSI
0--		0--
2--	Silt, Sand, Gravel	2-- 100
4--		4--
6--		6--
8--		8--
10--		10--
12--		12--
14--		14--
16--		16--
18--		18--
20--		20--

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	**100**
3/4"	**95**
1/2"	**88**
3/8"	**83**
No. 4	**65**
No. 10	**48**
No. 16	**42**
No. 40	**30**
No. 50	**25**
No. 100	**18**
No. 200	**13**

Liquid Limit **22**

Plastic Index **4**

Specific Gravity ____

Resistance Value **77**

Cover Expansion Pressure

Thickness **4.1** ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity **2,506**

pH Factor **8.3**

HRB Classification ____

Remarks:

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-303-10, C-339-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **4/5/10**

Samplers: **Altamirano, Wimer** Station **"X2" 1009+85** Route **US 50**

Location from oil (ft) Lt. **35'** Rt. _____

Sample No.: **CA3A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ☐ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: CA sample taken 3½' to 5'. With blow counts of 4-8-15. SPT sample taken from 7½' to 9' with blow counts of 8-10-16 SPT sample taken from 12½' to 14' with blow counts of. 7-9-10.

Submitted By: **O. Altamirano**

Title: **Supervisor I**

Depth (ft)	Boring Description	PSI
0--		
2--		
4--	Silt, Sand, Very Lt. Gravel	
6--	Lt. Clay	200
8--		
10--		
12--		
14--		
16--		
18--		
20--		

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**93**
3/8"	**93**
No. 4	**89**
No. 10	**81**
No. 16	**77**
No. 40	**66**
No. 50	**60**
No. 100	**44**
No. 200	**30**

Liquid Limit **20**

Plastic Index **5**

Specific Gravity _____

Resistance Value **43**

Cover Thickness **14.9**

Expansion Pressure _____

Sand Equivalent _____

Natural Moisture, % _____

Resistivity **2,532**

pH Factor **7.9**

HRB Classification _____

Remarks: _____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-304-10, C-340-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **4/5/10**

Samplers: **Altamirano, Wimer** Station **"X2" 953+90** Route **US 50**

Location from oil (ft) Lt. **45'** Rt. ____

Sample No.: **CA4** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ☐ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: SPT sample taken from 1½ to 3', blow count 8-4-4.

SPT sample taken from 6' to 7½, blow count 6-7-12.

CA sample taken from 13' to 14½, blow count 12-23-37.

Submitted By: **O. Altamirano**

Title: **Supervisor I**

Depth (ft)	Boring Description	PSI
0--		0--
2--	Silt, Sand, Gravel	2-- 100
4--		4--
6--		6--
8--		8--
10--		10--
12--		12--
14--		14--
16--		16--
18--		18--
20--		20--

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**93**
3/8"	**85**
No. 4	**73**
No. 10	**59**
No. 16	**50**
No. 40	**33**
No. 50	**25**
No. 100	**12**
No. 200	**1**

Liquid Limit **21**

Plastic Index **NP**

Specific Gravity ____

Resistance Value **78**

Cover Thickness **3.8**

Expansion Pressure ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity **2,625**

pH Factor **8.2**

HRB Classification ____

Remarks: ____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-305-10, C-341-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **4/5/10**

Samplers: **Altamirano, Wimer** Station **"X2" 953+90** Route **US 50**

Location from oil (ft) Lt. **45'** Rt. ____

Sample No.: **CA4A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ☐ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: SPT sample taken from 1½ to 3', blow count 8-4-4.

SPT sample taken from 6' to 7½, blow count 6-7-12.

CA sample taken from 13' to 14½, blow count 12-23-37.

Submitted By: **O. Altamirano**

Title: **Supervisor I**

Depth (ft)	Boring Description	PSI
0--		
2--		
4--	Silt, Sand, Very Lt. Gravel	
6--	Lt. Clay	200
8--		
10--		
12--		
14--		
16--		
18--		
20--		

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**97**
3/8"	**96**
No. 4	**89**
No. 10	**77**
No. 16	**69**
No. 40	**48**
No. 50	**39**
No. 100	**20**
No. 200	**0**

Liquid Limit **20**

Plastic Index **4**

Specific Gravity ____

Resistance Value **67**

Cover Thickness **7.3**

Expansion Pressure ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity **2,463**

pH Factor **7.9**

HRB Classification ____

Remarks: ____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-307-10, C-347-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **4/12/10**

Samplers: **Altamirano, Wimer** Station **"X2" 895+00** Route **US 50**

Location from oil (ft) Lt. **35'** Rt. ____

Sample No.: **CA5** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ☐ Fill Section ■

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: SPT sample taken @ 2' blow counts= 4-3-3. CA sample taken @6', blow counts=3-5-8. SPT sample taken @ 11', blow counts = 6-8-9.

Submitted By: **O. Altamirano**

Title: **Supervisor I**

Depth (ft)	Boring Description	PSI
0--		0--
2--	Silt, Sand, Gravel	2-- 100
4--		4--
6--		6--
8--		8--
10--		10--
12--		12--
14--		14--
16--		16--
18--		18--
20--		20--

Sieve Size	% Passing
3"	
2"	
1.5"	**100**
1"	**93**
3/4"	**93**
1/2"	**79**
3/8"	**70**
No. 4	**52**
No. 10	**40**
No. 16	**35**
No. 40	**24**
No. 50	**20**
No. 100	**14**
No. 200	**10**

Liquid Limit **23**

Plastic Index **4**

Specific Gravity ____

Resistance Value **74**

Cover Thickness **5.1**

Expansion Pressure ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity ____

pH Factor ____

HRB Classification ____

Remarks: ____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-308-10, C-348-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **4/12/10**

Samplers: **Altamirano, Wimer** Station **"X2" 895+00** Route **US 50**

Location from oil (ft) Lt. **35'** Rt. ____

Sample No.: **CA5A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ☐ Fill Section ■

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: SPT sample taken @ 2' blow counts= 4-3-3. CA sample taken @6', blow counts=3-5-8. SPT sample taken @ 11', blow counts = 6-8-9.

Submitted By: **O. Altamirano**

Title: **Supervisor I**

Depth (ft)	Boring Description	PSI
0--		
2--		
4--	Silt, Sand	
6--	Very Lt. Gravel	100
8--		
10--		
12--		
14--		
16--		
18--		
20--		

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**96**
3/8"	**95**
No. 4	**89**
No. 10	**79**
No. 16	**72**
No. 40	**54**
No. 50	**45**
No. 100	**30**
No. 200	**19**

Liquid Limit **19**

Plastic Index **NP**

Specific Gravity ____

Resistance Value **67**

Cover Thickness **7.3** Expansion Pressure ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity ____

pH Factor ____

HRB Classification ____

Remarks: ____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-309-10, C-349-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **4/12/10**

Samplers: **Altamirano, Wimer** Station **"X2" 837+00** Route **US 50**

Location from oil (ft) Lt. **22'** Rt. ____

Sample No.: **CA6** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: CA sample taken @ 4' blow counts= 4-8-15. SPT sample taken @ 9', blow counts=7-10-14. PSI from 3' to 13' 6" was 300 PSI.

Submitted By: **O. Altamirano**

Title: **Supervisor I**

Depth (ft)	Boring Description		PSI
0--	Silt, Sand, Lt. Gravel	0--	
2--	Silty Clay	2	100
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**96**
3/8"	**91**
No. 4	**74**
No. 10	**57**
No. 16	**49**
No. 40	**36**
No. 50	**31**
No. 100	**24**
No. 200	**18**

Liquid Limit **22**

Plastic Index **3**

Specific Gravity ____

Resistance Value **61**

Cover Expansion Pressure

Thickness **9.2** ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity ____

pH Factor ____

HRB Classification ____

Remarks: ____

LINE SAMPLING DATA

Date Reported: **04/23/10**
Lab No.: **Soils10-01, RV-310-10, C-350-10**
E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**
Date Rec'd **4/12/10**
Samplers: **Altamirano, Wimer** Station **"X2" 837+00** Route **US 50**
Location from oil (ft) Lt. **22'** Rt. ____
Sample No.: **CA6A** County: **LYON**

Sample Type:
RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐
Taken Through Oil ☐ Taken on Shoulder ■
Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: CA sample taken @ 4' blow counts= 4-8-15.
SPT sample taken @ 9', blow counts=7-10-14. 300 PSI was applied from 13' to 13' 6".

Submitted By: **O. Altamirano**
Title: **Supervisor I**

Depth (ft)	Boring Description	PSI
0--		
2--		
4--	Silt, Sand, Clay	
6--		100
8--		
10--		
12--		
14--		
16--		
18--		
20--		

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	**100**
3/4"	**97**
1/2"	**95**
3/8"	**92**
No. 4	**86**
No. 10	**81**
No. 16	**78**
No. 40	**72**
No. 50	**69**
No. 100	**63**
No. 200	**59**

Liquid Limit **47**
Plastic Index **26**
Specific Gravity ____
Resistance Value **12**
Cover Thickness **24.8**
Expansion Pressure ____

Sand Equivalent ____
Natural Moisture, % ____
Resistivity ____
pH Factor ____
HRB Classification ____

Remarks: ____

Cut Slope Line Sampling

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-234-10, C-258-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/25/10**

Samplers: **Rigsby, Wimer, Sommers** Station **"X2" 810+20.00** Route **US 50 E.B.**

Location from oil (ft) Lt. _____ Rt. **100'**

Sample No.: **C-1 #1** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ☐

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: Drill hole is at top of cut. Drill hole ground elevation is 9' higher than edge of oil elevation. South side of US 50.

Submitted By: **R. Wimer**

Title: **Engineering Tech I**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--		0--	
2--	Silt, Sand, Lt. Clay	2--	100
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	
1/2"	
3/8"	**100**
No. 4	**99**
No. 10	**81**
No. 16	**63**
No. 40	**39**
No. 50	**34**
No. 100	**27**
No. 200	**22**

Liquid Limit **29**

Plastic Index **5**

Specific Gravity

Resistance Value **64**

Cover Thickness **6.0**

Expansion Pressure

Sand Equivalent

Natural Moisture, %

Resistivity **8,183**

pH Factor **7.5**

HRB Classification

Remarks:

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-235-10, C-259-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/25/10**

Samplers: **Rigsby, Wimer, Sommers** Station **"X2" 810+20.00** Route **US 50 E.B.**

Location from oil (ft) Lt. _____ Rt. **100'**

Sample No.: **C-1 #1A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ☐

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: Drill hole is at top of cut. Drill hole ground elevation is 9' higher than edge of oil elevation. South side of US 50.

Submitted By: **R. Wimer**

Title: **Engineering Tech I**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--		0--	
2--		2--	100
4--		4--	
6--	Silt, Sand, Lt. Clay	6--	100
8--	Fractured Bedrock	8--	300
10--	Silt, Sand, Gravel	10--	100
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**92**
3/8"	**86**
No. 4	**72**
No. 10	**52**
No. 16	**40**
No. 40	**26**
No. 50	**23**
No. 100	**19**
No. 200	**15**

Liquid Limit **26**

Plastic Index **5**

Specific Gravity

Resistance Value **57**

Cover Thickness **7.7**

Expansion Pressure

Sand Equivalent

Natural Moisture, %

Resistivity **7,825**

pH Factor **7.7**

HRB Classification

Remarks:

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-236-10, C-260-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/25/10**

Samplers: **Rigsby, Wimer, Sommers** Station **"X2" 810+20.00** Route **US 50 E.B.**

Location from oil (ft) Lt. _____ Rt. **100'**

Sample No.: **C-1 #1B** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ☐

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: Drill hole is at top of cut. Drill hole ground elevation is 9' higher than edge of oil elevation.

South side of US 50.

Submitted By: **R. Wimer**

Title: **Engineering Tech I**

Depth (ft)	Boring Description		PSI
0--		0--	
2--		2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--	Silt, Sand, Gravel	12--	100
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**96**
3/8"	**84**
No. 4	**65**
No. 10	**50**
No. 16	**42**
No. 40	**29**
No. 50	**25**
No. 100	**20**
No. 200	**17**

Liquid Limit **25**

Plastic Index **5**

Specific Gravity

Resistance Value **55**

Cover Expansion Pressure

Thickness **8.1**

Sand Equivalent

Natural Moisture, %

Resistivity **7,669**

pH Factor **7.5**

HRB Classification

Remarks:

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-237-10, C-261-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **3/2/10**

Samplers: **Rigsby, Wimer, Sommers** Station **"X2" 841+40.00** Route **US 50 W.B.**

Location from oil (ft) Lt. **80'** Rt. _____

Sample No.: **C-2 #1** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ☐ Trees ☐ Shrubs ☐ Brushy ■ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ☐

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: Drill hole is at top of cut. Drill hole ground elevation is 9' higher than edge of oil elevation. North side of US 50.

Submitted By: **R. Wimer**

Title: **Engineering Tech I**

Depth (ft)	Boring Description		PSI
0--	Gravel, Decomp. Granite	0--	100
2--		2--	
4--	Fractured Bedrock	4--	300
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	**100**
1"	**86**
3/4"	**84**
1/2"	**78**
3/8"	**73**
No. 4	**66**
No. 10	**60**
No. 16	**55**
No. 40	**42**
No. 50	**38**
No. 100	**31**
No. 200	**24**

Liquid Limit **19**

Plastic Index **3**

Specific Gravity _____

Resistance Value **62**

Cover Expansion Pressure

Thickness **6.5** _____

Sand Equivalent _____

Natural Moisture, % _____

Resistivity **6,489**

pH Factor **7.5**

HRB Classification _____

Remarks: _____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-238-10, C-262-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **3/2/10**

Samplers: **Rigsby, Wimer, Sommers** Station **"X2" 841+40.00** Route **US 50 W.B.**

Location from oil (ft) Lt. **80'** Rt. _____

Sample No.: **C-2 #1A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ☐ Trees ☐ Shrubs ☐ Brushy ■ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ☐

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: Drill hole is at top of cut. Drill hole ground elevation is 9' higher than edge of oil elevation. North side of US 50.

Submitted By: **R. Wimer**

Title: **Engineering Tech I**

Depth (ft)	Boring Description	PSI
0--		100
2--		
4--		
6--	Fractured Bedrock	300
8--		
10--	Decomposed Granite	100
12--		
14--		
16--		
18--		
20--		

Sieve Size	% Passing
3"	
2"	
1.5"	**100**
1"	**99**
3/4"	**99**
1/2"	**99**
3/8"	**97**
No. 4	**91**
No. 10	**79**
No. 16	**70**
No. 40	**56**
No. 50	**51**
No. 100	**44**
No. 200	**36**

Liquid Limit **18**

Plastic Index **2**

Specific Gravity _____

Resistance Value **76**

Cover Thickness **3.3**

Expansion Pressure _____

Sand Equivalent _____

Natural Moisture, % _____

Resistivity **7,220**

pH Factor **7.7**

HRB Classification _____

Remarks: _____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-239-10, C-263-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **3/2/10**

Samplers: **Rigsby, Wimer, Sommers** Station **"X2" 841+40.00** Route **US 50 W.B.**

Location from oil (ft) Lt. **80'** Rt. ____

Sample No.: **C-2 #1B** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ☐ Trees ☐ Shrubs ☐ Brushy ■ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ☐

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: Drill hole is at top of cut. Drill hole ground elevation is 9' higher than edge of oil elevation. North side of US 50.

Submitted By: **R. Wimer**

Title: **Engineering Tech I**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--	Gravel, Decomp. Granite	0--	
2--		2--	
4--	Fractured Bedrock	4--	
6--		6--	
8--		8--	
10--		10--	
12--	Decomposed Granite	12--	350
14--	Refusal @ 12'	14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	**100**
1"	**99**
3/4"	**96**
1/2"	**80**
3/8"	**65**
No. 4	**39**
No. 10	**25**
No. 16	**22**
No. 40	**18**
No. 50	**17**
No. 100	**16**
No. 200	**13**

Liquid Limit **22**

Plastic Index **5**

Specific Gravity ____

Resistance Value **76**

Cover Thickness **3.3**

Expansion Pressure ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity **7,252**

pH Factor **7.7**

HRB Classification ____

Remarks: ____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-240-10, C-264-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **3/2/10**

Samplers: **Rigsby, Wimer, Sommers** Station **"X2" 841+10.00** Route **US 50 E.B.**

Location from oil (ft) Lt. ____ Rt. **100'**

Sample No.: **C-2 #2** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ☐ Trees ☐ Shrubs ☐ Brushy ■ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ☐

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: Drill hole is at top of cut. Drill hole ground elevation is 15' higher than edge of oil elevation. South side of US 50.

Submitted By: **R. Wimer**

Title: **Engineering Tech I**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--		0--	
2--	Silt, Sand, Gravel	2--	100
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	**100**
1.5"	**97**
1"	**97**
3/4"	**95**
1/2"	**88**
3/8"	**82**
No. 4	**65**
No. 10	**49**
No. 16	**42**
No. 40	**30**
No. 50	**27**
No. 100	**22**
No. 200	**18**

Liquid Limit **29**

Plastic Index **9**

Specific Gravity ____

Resistance Value **55**

Cover Expansion Pressure

Thickness **8.1** ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity **5,068**

pH Factor **7.6**

HRB Classification ____

Remarks:

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-241-10, C-265-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **3/2/10**

Samplers: **Rigsby, Wimer, Sommers** Station **"X2" 841+10.00** Route **US 50 E.B.**

Location from oil (ft) Lt. _____ Rt. **100'**

Sample No.: **C-2 #2A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ☐ Trees ☐ Shrubs ☐ Brushy ■ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ☐

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: Drill hole is at top of cut. Drill hole ground elevation is 15' higher than edge of oil elevation. South side of US 50.

Submitted By: **R. Wimer**

Title: **Engineering Tech I**

Depth (ft)	Boring Description	PSI
0--		
2--		
4--		
6--		
8--	Silt, Sand, Gravel	100
10--		
12--		
14--		
16--		
18--		
20--		

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**95**
3/8"	**89**
No. 4	**71**
No. 10	**56**
No. 16	**48**
No. 40	**35**
No. 50	**31**
No. 100	**26**
No. 200	**22**

Liquid Limit **30**

Plastic Index **11**

Specific Gravity

Resistance Value **41**

Cover Thickness **11.4**

Expansion Pressure

Sand Equivalent

Natural Moisture, %

Resistivity **5,794**

pH Factor **7.8**

HRB Classification

Remarks:

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-254-10, C-284-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **3/2/10**

Samplers: **Rigsby, Wimer,** Station **"X2" 841+10.00** Route **US 50 E.B.**

Sommers Location from oil (ft) Lt. _____ Rt. **100'**

Sample No.: **C-2 #2B** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ☐ Trees ☐ Shrubs ☐ Brushy ■ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ☐

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: Drill hole is at top of cut. Drill hole ground elevation is 15' higher than edge of oil elevation. South side of US 50.

Submitted By: **R. Wimer**

Title: **Engineering Tech I**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--		0--	
2--		2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--	Silt, Sand, Gravel	14--	100
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	**100**
3/4"	**98**
1/2"	**90**
3/8"	**84**
No. 4	**66**
No. 10	**47**
No. 16	**39**
No. 40	**29**
No. 50	**26**
No. 100	**22**
No. 200	**19**

Liquid Limit **30**

Plastic Index **11**

Specific Gravity

Resistance Value **27**

Cover Expansion Pressure

Thickness **14.6**

Sand Equivalent

Natural Moisture, %

Resistivity **6,112**

pH Factor **7.9**

HRB Classification

Remarks:

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-255-10, C-285-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **3/2/10**

Samplers: **Rigsby, Wimer, Sommers** Station **"X2" 841+10.00** Route **US 50 E.B.**

Location from oil (ft) Lt. _____ Rt. **100'**

Sample No.: **C-2 #2C** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ☐ Trees ☐ Shrubs ☐ Brushy ■ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ☐

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: Drill hole is at top of cut. Drill hole ground elevation is 15' higher than edge of oil elevation. South side of US 50.

Submitted By: **R. Wimer**

Title: **Engineering Tech I**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--		0--	
2--		2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--	Silt, Sand, Gravel	18--	100
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**94**
3/8"	**88**
No. 4	**64**
No. 10	**42**
No. 16	**34**
No. 40	**25**
No. 50	**24**
No. 100	**21**
No. 200	**18**

Liquid Limit **30**

Plastic Index **13**

Specific Gravity

Resistance Value **42**

Cover Expansion Pressure

Thickness **11.2**

Sand Equivalent

Natural Moisture, %

Resistivity **6,596**

pH Factor **7.8**

HRB Classification

Remarks:

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-256-10, C-286-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/25/10**

Samplers: **Rigsby, Wimer, Sommers** Station **"X2" 838+70.00** Route **US 50 E.B.**

Location from oil (ft) Lt. _____ Rt. **100'**

Sample No.: **C-2 #3** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ☐ Trees ☐ Shrubs ☐ Brushy ■ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ☐

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: Drill hole is at top of cut. Drill hole ground elevation is 17' higher than edge of oil elevation. South side of US 50.

Submitted By: **R. Wimer**

Title: **Engineering Tech I**

Depth (ft)	Boring Description		PSI
0--		0--	
2--	Silt, Sand, Gravel	2--	100
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**97**
3/8"	**93**
No. 4	**76**
No. 10	**57**
No. 16	**48**
No. 40	**35**
No. 50	**31**
No. 100	**25**
No. 200	**20**

Liquid Limit	**30**
Plastic Index	**8**
Specific Gravity	
Resistance Value	**52**
Cover Thickness	**8.8**
Expansion Pressure	
Sand Equivalent	
Natural Moisture, %	
Resistivity	**5,995**
pH Factor	**7.8**
HRB Classification	

Remarks: _____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-257-10, C-287-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/25/10**

Samplers: **Rigsby, Wimer, Sommers** Station **"X2" 838+70.00** Route **US 50 E.B.**

Location from oil (ft) Lt. _____ Rt. **100'**

Sample No.: **C-2 #3A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ☐ Trees ☐ Shrubs ☐ Brushy ■ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ☐

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: Drill hole is at top of cut. Drill hole ground elevation is 17' higher than edge of oil elevation. South side of US 50.

Submitted By: **R. Wimer**

Title: **Engineering Tech I**

Depth (ft)	Boring Description		PSI
0--		0--	
2--		2--	
4--		4--	
6--		6--	
8--	Silt, Sand, Gravel	8--	100
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**97**
3/8"	**92**
No. 4	**72**
No. 10	**52**
No. 16	**43**
No. 40	**29**
No. 50	**26**
No. 100	**21**
No. 200	**17**

Liquid Limit	**30**
Plastic Index	**8**
Specific Gravity	
Resistance Value	**68**
Cover Thickness	**5.1**
Expansion Pressure	
Sand Equivalent	
Natural Moisture, %	
Resistivity	**1,565**
pH Factor	**7.5**
HRB Classification	

Remarks:

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-262-10, C-292-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/25/10**

Samplers: **Rigsby, Wimer, Sommers** Station **"X2" 838+70.00** Route **US 50 E.B.**

Location from oil (ft) Lt. _____ Rt. **100'**

Sample No.: **C-2 #3B** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ☐ Trees ☐ Shrubs ☐ Brushy ■ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ☐

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: Drill hole is at top of cut. Drill hole ground elevation is 17' higher than edge of oil elevation. South side of US 50.

Submitted By: **R. Wimer**

Title: **Engineering Tech I**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--		0--	
2--		2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--	Silt, Sand, Gravel	14--	100
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**93**
3/8"	**87**
No. 4	**78**
No. 10	**66**
No. 16	**59**
No. 40	**46**
No. 50	**42**
No. 100	**35**
No. 200	**30**

Liquid Limit **34**

Plastic Index **13**

Specific Gravity

Resistance Value **23**

Cover Expansion Pressure

Thickness **15.6**

Sand Equivalent

Natural Moisture, %

Resistivity **2,469**

pH Factor **7.8**

HRB Classification

Remarks:

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-264-10, C-294-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/25/10**

Samplers: **Rigsby, Wimer, Sommers** Station **"X2" 838+70.00** Route **US 50 E.B.**

Location from oil (ft) Lt. _____ Rt. **100'**

Sample No.: **C-2 #3C** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ☐ Trees ☐ Shrubs ☐ Brushy ■ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ☐

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: Drill hole is at top of cut. Drill hole ground elevation is 17' higher than edge of oil elevation. South side of US 50.

Submitted By: **R. Wimer**

Title: **Engineering Tech I**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--		0--	
2--		2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--	Silt, Sand, Gravel	16--	100
18--	Fractured Bedrock	18--	300
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	**100**
3/4"	**97**
1/2"	**89**
3/8"	**82**
No. 4	**63**
No. 10	**50**
No. 16	**45**
No. 40	**37**
No. 50	**34**
No. 100	**30**
No. 200	**26**

Liquid Limit **36**

Plastic Index **17**

Specific Gravity

Resistance Value **22**

Cover Expansion Pressure

Thickness **15.8**

Sand Equivalent

Natural Moisture, %

Resistivity **1,894**

pH Factor **7.7**

HRB Classification

Remarks:

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-265-10, C-295-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/23/10**

Samplers: **Rigsby, Wimer,** Station **"X2" 839+00.00** Route **US 50**

Altamirano Location from oil (ft) Lt. **70'** Rt. ____

Sample No.: **C-2 #4** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ☐

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: Drill hole was located @ top of cut. Sta Cap "E" 427+17.87 is 165' east of hole on top of cut, difficulties drilling from 2' to 5' (very hard) snow accumulation 6".

Submitted By: **R. Wimer**

Title: **Engineering Tech I**

Depth (ft)	Boring Description		PSI
0--	Fractured	0--	250
2--	Bedrock	2--	
4--		4--	350
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**99**
3/8"	**96**
No. 4	**89**
No. 10	**72**
No. 16	**62**
No. 40	**46**
No. 50	**41**
No. 100	**32**
No. 200	**26**

Liquid Limit **22**

Plastic Index **NP**

Specific Gravity ____

Resistance Value **65**

Cover Thickness **5.8** Expansion Pressure ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity **7,874**

pH Factor **7.9**

HRB Classification ____

Remarks: ____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-266-10, C-296-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/23/10**

Samplers: **Rigsby, Wimer,** Station **"X2" 839+00.00** Route **US 50**

Altamirano Location from oil (ft) Lt. **70'** Rt. ____

Sample No.: **C-2 #4A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ☐

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: Drill hole was located @ top of cut. Sta Cap "E" 427+17.87 is 165' east of hole on top of cut, difficulties drilling from 2' to 5' (very hard) snow accumulation 6".

Submitted By: **R. Wimer**

Title: **Engineering Tech I**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--		0--	
2--		2--	
4--		4--	
6--		6--	
8--	Fractured Bedrock	8--	300
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**92**
3/8"	**87**
No. 4	**69**
No. 10	**46**
No. 16	**36**
No. 40	**25**
No. 50	**23**
No. 100	**19**
No. 200	**16**

Liquid Limit	**24**
Plastic Index	**5**
Specific Gravity	
Resistance Value	**50**
Cover Thickness	**9.3**
Expansion Pressure	
Sand Equivalent	
Natural Moisture, %	
Resistivity	**8,772**
pH Factor	**8.0**
HRB Classification	

Remarks:

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-267-10, C-297-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/23/10**

Samplers: **Rigsby, Wimer,** Station **"X2" 839+00.00** Route **US 50**

Altamirano Location from oil (ft) Lt. **70'** Rt. ____

Sample No.: **C-2 #4B** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ☐

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: Drill hole was located @ top of cut. Sta Cap "E" 427+17.87 is 165' east of hole on top of cut, difficulties drilling from 2' to 5' (very hard) snow accumulation 6".

Submitted By: **R. Wimer**

Title: **Engineering Tech I**

Depth (ft)	Boring Description		PSI
0--		0--	
2--		2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--	Fractured bedrock	12--	
14--		14--	300
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**96**
3/8"	**85**
No. 4	**61**
No. 10	**41**
No. 16	**32**
No. 40	**22**
No. 50	**19**
No. 100	**16**
No. 200	**13**

Liquid Limit **25**

Plastic Index **6**

Specific Gravity ____

Resistance Value **58**

Cover Thickness **7.4**

Expansion Pressure ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity **8,475**

pH Factor **7.9**

HRB Classification ____

Remarks: ____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-268-10, C-298-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/23/10**

Samplers: **Rigsby, Wimer,** Station **"X2" 839+00.00** Route **US 50**

Altamirano Location from oil (ft) Lt. **70'** Rt. ____

Sample No.: **C-2 #4C** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ☐

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: Drill hole was located @ top of cut. Sta Cap "E" 427+17.87 is 165' east of hole on top of cut, difficulties drilling from 2' to 5' (very hard) snow accumulation 6".

Submitted By: **R. Wimer**

Title: **Engineering Tech I**

Depth (ft)	Boring Description	PSI
0--		
2--		
4--		
6--		
8--		
10--		
12--		
14--		
16--		
18--	Fractured bedrock	300
20--		

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**87**
3/8"	**78**
No. 4	**45**
No. 10	**18**
No. 16	**12**
No. 40	**9**
No. 50	**9**
No. 100	**8**
No. 200	**7**

Liquid Limit **28**

Plastic Index **10**

Specific Gravity

Resistance Value **69**

Cover Expansion Pressure

Thickness **4.9**

Sand Equivalent

Natural Moisture, %

Resistivity **8,547**

pH Factor **8.0**

HRB Classification

Remarks:

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-274-10, C-304-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/25/10**

Samplers: **Rigsby, Wimer,** Station **"X2" 866+35.00** Route **US 50**

Altamirano Location from oil (ft) Lt. **80'** Rt. ____

Sample No.: **C-3 #1** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ☐ Trees ☐ Shrubs ☐ Brushy ■ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ☐

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: Drill hole is at top of cut. Drill hole ground elevation is 7' higher than edge of oil elevation.

Submitted By: **R. Wimer**

Title: **Engineering Tech I**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--	Decomposed	0--	100
2--	Granite	2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	**100**
3/4"	**98**
1/2"	**87**
3/8"	**80**
No. 4	**61**
No. 10	**43**
No. 16	**35**
No. 40	**24**
No. 50	**21**
No. 100	**16**
No. 200	**13**

Liquid Limit **26**

Plastic Index **6**

Specific Gravity ____

Resistance Value **64**

Cover Thickness **6.0** Expansion Pressure ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity **9,091**

pH Factor **7.9**

HRB Classification ____

Remarks: ____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-275-10, C-308-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/25/10**

Samplers: **Rigsby, Wimer,** Station **"X2" 866+35.00** Route **US 50**

Altamirano Location from oil (ft) Lt. **80'** Rt. ____

Sample No.: **C-3 #1A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ☐ Trees ☐ Shrubs ☐

Brushy ■ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ☐

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: Drill hole is at top of cut. Drill hole ground elevation is 7' higher than edge of oil elevation.

Submitted By: **R. Wimer**

Title: **Engineering Tech I**

Depth (ft)	Boring Description	PSI
0--		
2--		
4--		
6--		
8--	Decomposed Granite	100
10--		
12--		
14--		
16--		
18--		
20--		

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**96**
3/8"	**89**
No. 4	**69**
No. 10	**50**
No. 16	**42**
No. 40	**29**
No. 50	**26**
No. 100	**20**
No. 200	**17**

Liquid Limit **29**

Plastic Index **9**

Specific Gravity ____

Resistance Value **72**

Cover Expansion Pressure

Thickness **4.2** ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity ____

pH Factor ____

HRB Classification ____

Remarks: ____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-276-10, C-309-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/25/10**

Samplers: **Rigsby, Wimer,** Station **"X2" 866+35.00** Route **US 50**

Altamirano Location from oil (ft) Lt. **80'** Rt. ____

Sample No.: **C-3 #1B** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ☐ Trees ☐ Shrubs ☐ Brushy ■ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ☐

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: Drill hole is at top of cut. Drill hole ground elevation is 7' higher than edge of oil elevation.

Submitted By: **R. Wimer**

Title: **Engineering Tech I**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--		0--	
2--		2--	
4--		4--	
6--		6--	
8--		8--	
10--		~~10~~	
12--	Decomposed Granite	12--	100
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**97**
3/8"	**95**
No. 4	**87**
No. 10	**68**
No. 16	**57**
No. 40	**40**
No. 50	**36**
No. 100	**29**
No. 200	**24**

Liquid Limit **33**

Plastic Index **14**

Specific Gravity ____

Resistance Value **36**

Cover Expansion Pressure

Thickness **12.5** ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity ____

pH Factor ____

HRB Classification ____

Remarks: ____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-277-10, C-310-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/25/10**

Samplers: **Rigsby, Wimer,** Station **"X2" 866+35.00** Route **US 50**

Altamirano Location from oil (ft) Lt. **80'** Rt. _____

Sample No.: **C-3 #1C** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ☐ Trees ☐ Shrubs ☐ Brushy ■ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ☐

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: Drill hole is at top of cut. Drill hole ground elevation is 7' higher than edge of oil elevation.

Submitted By: **R. Wimer**

Title: **Engineering Tech I**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--		0--	
2--		2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--	Decomposed Granite	18--	100
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	
1/2"	
3/8"	**100**
No. 4	**98**
No. 10	**84**
No. 16	**72**
No. 40	**53**
No. 50	**46**
No. 100	**35**
No. 200	**26**

Liquid Limit **26**

Plastic Index **7**

Specific Gravity _____

Resistance Value **49**

Cover Expansion Pressure

Thickness **9.5** _____

Sand Equivalent _____

Natural Moisture, % _____

Resistivity _____

pH Factor _____

HRB Classification _____

Remarks: _____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-278-10, C-311-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/25/10**

Samplers: **Rigsby, Wimer, Altamirano** Station **"X2" 871+00.00** Route **US 50**

Location from oil (ft) Lt. **100'** Rt. ____

Sample No.: **C-4 #1** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ☐ Trees ☐ Shrubs ☐ Brushy ■ Grassy ☐

Cut Section ■ Fill Section ☐

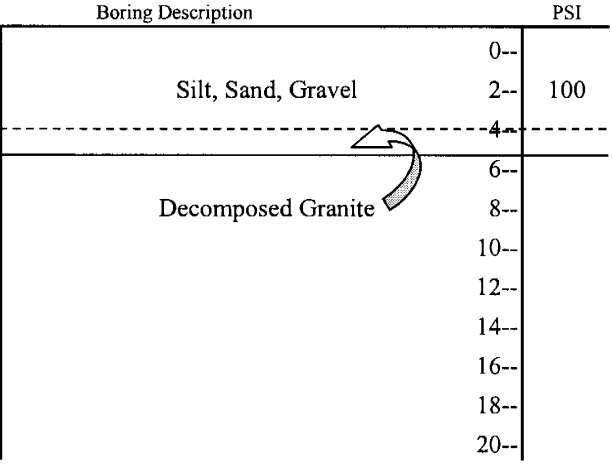
Taken Through Oil ☐ Taken on Shoulder ☐

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: Drill hole is at top of cut. Drill hole ground elevation is 15' higher than edge of oil elevation.

Submitted By: **R. Wimer**

Title: **Engineering Tech I**



Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	
1/2"	
3/8"	**100**
No. 4	**97**
No. 10	**78**
No. 16	**66**
No. 40	**44**
No. 50	**38**
No. 100	**26**
No. 200	**17**

Liquid Limit **23**

Plastic Index **NP**

Specific Gravity ____

Resistance Value **82**

Cover Thickness **1.9**

Expansion Pressure ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity ____

pH Factor ____

HRB Classification ____

Remarks: ____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-279-10, C-312-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/25/10**

Samplers: **Rigsby, Wimer,** Station **"X2" 871+00.00** Route **US 50**

Altamirano Location from oil (ft) Lt. **100'** Rt. ____

Sample No.: **C-4 #1A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ☐ Trees ☐ Shrubs ☐ Brushy ■ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ☐

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: Drill hole is at top of cut. Drill hole ground elevation is 15' higher than edge of oil elevation.

Submitted By: **R. Wimer**

Title: **Engineering Tech I**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--		0--	
2--		2--	
4--		4--	
6--	Silt, Sand, Gravel	6--	
8--	Decomposed Granite	8--	100
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**99**
3/8"	**98**
No. 4	**92**
No. 10	**68**
No. 16	**54**
No. 40	**34**
No. 50	**28**
No. 100	**19**
No. 200	**13**

Liquid Limit **23**

Plastic Index **NP**

Specific Gravity ____

Resistance Value **76**

Cover Expansion Pressure

Thickness **3.3** ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity ____

pH Factor ____

HRB Classification ____

Remarks: ____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-280-10, C-313-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/25/10**

Samplers: **Rigsby, Wimer,** Station **"X2" 871+00.00** Route **US 50**

Altamirano Location from oil (ft) Lt. **100'** Rt. ____

Sample No.: **C-4 #1B** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ☐ Trees ☐ Shrubs ☐ Brushy ■ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ☐

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: Drill hole is at top of cut. Drill hole ground elevation is 15' higher than edge of oil elevation.

Submitted By: **R. Wimer**

Title: **Engineering Tech I**

Depth (ft)	Boring Description		PSI
0--		0--	
2--		2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--	Silt, Sand, Gravel	12--	100
14--	Decomposed Granite	14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	
1/2"	**100**
3/8"	**99**
No. 4	**94**
No. 10	**75**
No. 16	**62**
No. 40	**40**
No. 50	**34**
No. 100	**23**
No. 200	**15**

Liquid Limit **23**

Plastic Index **NP**

Specific Gravity ____

Resistance Value **78**

Cover Thickness **2.8**

Expansion Pressure ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity ____

pH Factor ____

HRB Classification ____

Remarks: ____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-283-10, C-316-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/25/10**

Samplers: **Rigsby, Wimer,** Station **"X2" 871+00.00** Route **US 50**

Altamirano Location from oil (ft) Lt. **100'** Rt. ____

Sample No.: **C-4 #1C** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ☐ Trees ☐ Shrubs ☐ Brushy ■ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ☐

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: Drill hole is at top of cut. Drill hole ground elevation is 15' higher than edge of oil elevation.

Submitted By: **R. Wimer**

Title: **Engineering Tech I**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--		0--	
2--		2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--	Decomposed Granite	18--	100
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	
1/2"	
3/8"	**100**
No. 4	**93**
No. 10	**71**
No. 16	**58**
No. 40	**39**
No. 50	**33**
No. 100	**23**
No. 200	**16**

Liquid Limit **24**

Plastic Index **3**

Specific Gravity ____

Resistance Value **73**

Cover Expansion Pressure

Thickness **3.9** ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity **11,403**

pH Factor **7.8**

HRB Classification ____

Remarks: ____

Roadway Line Sampling

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-1-10, C-1-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer, Altamirano** Station **"L1" 782+25.00** Route **US 50**

Location from oil (ft) Lt. _____ Rt. **33'**

Sample No.: **1** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--	Silt, Sand, Gravel	0--	150
2--		2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**84**
3/8"	**79**
No. 4	**63**
No. 10	**48**
No. 16	**41**
No. 40	**30**
No. 50	**27**
No. 100	**21**
No. 200	**17**

Liquid Limit **25**

Plastic Index **8**

Specific Gravity

Resistance Value **59**

Cover Thickness **9.9**

Stabilometer

Expansion Pressure

Sand Equivalent

Natural Moisture, %

Resistivity **1,965**

pH Factor **8.4**

HRB Classification

Remarks: _____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-2-10, C-2-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer, Altamirano** Station **"L1" 782+25.00** Route **US 50**

Location from oil (ft) Lt. _____ Rt. **33'**

Sample No.: **1A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks:

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--		0--	150
2--		2--	
4--	Silt, Sand, Very Lt. Gravel	4--	
6--	Clay	6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**98**
3/8"	**98**
No. 4	**92**
No. 10	**79**
No. 16	**70**
No. 40	**54**
No. 50	**49**
No. 100	**38**
No. 200	**28**

Liquid Limit	**23**
Plastic Index	**7**
Specific Gravity	
Resistance Value	**44**
Cover Thickness	Stabilometer **14.6**
Expansion Pressure	
Sand Equivalent	
Natural Moisture, %	
Resistivity	**2,833**
pH Factor	**7.6**
HRB Classification	

Remarks:

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-3-10, C-3-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer, Altamirano** Station **"L1" 792+00.00** Route **US 50**

Location from oil (ft) Lt. _____ Rt. **26'**

Sample No.: **2** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--	Silt Sand Gravel	0--	150
2--		2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	**100**
3/4"	**94**
1/2"	**84**
3/8"	**77**
No. 4	**61**
No. 10	**47**
No. 16	**41**
No. 40	**30**
No. 50	**27**
No. 100	**21**
No. 200	**17**

Liquid Limit **24**

Plastic Index **8**

Specific Gravity

Resistance Value **53**

Cover Thickness **11.8**

Stabilometer

Expansion Pressure

Sand Equivalent

Natural Moisture, %

Resistivity **2,137**

pH Factor **8.4**

HRB Classification

Remarks: _____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-4-10, C-4-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer, Altamirano** Station **"L1" 792+00.00** Route **US 50**

Location from oil (ft) Lt. _____ Rt. **26'**

Sample No.: **2A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--		0--	150
2--		2--	
4--	Silt, Sand, Very Lt. Gravel	4--	
6--	Lt. Clay	6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	
1/2"	**100**
3/8"	**99**
No. 4	**94**
No. 10	**87**
No. 16	**81**
No. 40	**68**
No. 50	**63**
No. 100	**49**
No. 200	**33**

Liquid Limit **22**

Plastic Index **5**

Specific Gravity

Resistance Value **38**

Cover Thickness **16.5**

Stabilometer

Expansion Pressure

Sand Equivalent

Natural Moisture, %

Resistivity **1,919**

pH Factor **7.6**

HRB Classification

Remarks: _____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-5-10, C-5-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer, Altamirano** Station **"X2" 802+00.00** Route **US 50**

Location from oil (ft) Lt. _____ Rt. **26'**

Sample No.: **3** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--	Silt Sand Gravel	0--	150
2--		2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	**100**
3/4"	**95**
1/2"	**87**
3/8"	**83**
No. 4	**71**
No. 10	**58**
No. 16	**51**
No. 40	**36**
No. 50	**31**
No. 100	**20**
No. 200	**12**

Liquid Limit **18**

Plastic Index **NP**

Specific Gravity

Resistance Value **82**

Cover Stabilometer Expansion Pressure

Thickness **2.5**

Sand Equivalent

Natural Moisture, %

Resistivity **2,817**

pH Factor **8.2**

HRB Classification

Remarks: _____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-6-10, C-6-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer, Altamirano** Station **"X2" 802+00.00** Route **US 50**

Location from oil (ft) Lt. _____ Rt. **26'**

Sample No.: **3A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	PSI
0--		150
2--		
4--	Gravelly Sand	
6--	Silt, Sand, Gravel, Lt Clay	
8--		
10--		
12--		
14--		
16--		
18--		
20--		

Sieve Size	% Passing
3"	
2"	
1.5"	**100**
1"	**98**
3/4"	**91**
1/2"	**84**
3/8"	**76**
No. 4	**64**
No. 10	**52**
No. 16	**46**
No. 40	**36**
No. 50	**32**
No. 100	**24**
No. 200	**17**

Liquid Limit **23**

Plastic Index **6**

Specific Gravity

Resistance Value **50**

Cover Stabilometer Expansion Pressure

Thickness **12.7**

Sand Equivalent

Natural Moisture, %

Resistivity **2,857**

pH Factor **8.0**

HRB Classification

Remarks: _____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-7-10, C-7-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer,** Station **"X2" 812+00.00** Route **US 50**

Altamirano Location from oil (ft) Lt. _____ Rt. **25'**

Sample No.: **4** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--	Silt, Sand, Fine Gravel	0--	150
2--		2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**95**
3/8"	**93**
No. 4	**85**
No. 10	**76**
No. 16	**68**
No. 40	**45**
No. 50	**38**
No. 100	**25**
No. 200	**18**

Liquid Limit **17**

Plastic Index **NP**

Specific Gravity

Resistance Value **64**

Cover Stabilometer Expansion Pressure

Thickness **8.3**

Sand Equivalent

Natural Moisture, %

Resistivity **3,378**

pH Factor **8.3**

HRB Classification

Remarks: _____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**
Lab No.: **Soils10-01, RV-8-10, C-8-10**
E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**
Date Rec'd **01/06/10**
Samplers: **Hinton, Wimer, Altamirano** Station **"X2" 812+00.00** Route **US 50**
Location from oil (ft) Lt. ____ Rt. **25'**
Sample No.: **4A** County: **LYON**

Sample Type:
RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐
Taken Through Oil ☐ Taken on Shoulder ■
Gravel Depth (in) ____ Oil Depth (in) ____
Remarks:

Submitted By: **Maynard Hinton**
Title: **Engineering Tech III**

Depth (ft)	Boring Description	PSI
0--		150
2--		
4--	Gravelly Sand	
6--	Lt Clay	
8--		
10--		
12--		
14--		
16--		
18--		
20--		

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**99**
3/8"	**98**
No. 4	**96**
No. 10	**92**
No. 16	**86**
No. 40	**56**
No. 50	**44**
No. 100	**28**
No. 200	**19**

Liquid Limit **18**
Plastic Index **1**
Specific Gravity
Resistance Value **77**
Cover Stabilometer Expansion Pressure
Thickness **4.1**

Sand Equivalent
Natural Moisture, %
Resistivity **3,861**
pH Factor **8.4**
HRB Classification

Remarks:

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-9-10, C-9-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer, Altamirano** Station **"X2" 822+00.00** Route **US 50**

Location from oil (ft) Lt. ____ Rt. **25'**

Sample No.: **5** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks:

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--	Silt, Sand, Gravel, Lt. Clay	0--	150
2--		2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**90**
3/8"	**86**
No. 4	**73**
No. 10	**60**
No. 16	**53**
No. 40	**40**
No. 50	**35**
No. 100	**26**
No. 200	**20**

Liquid Limit	**23**	
Plastic Index	**5**	
Specific Gravity		
Resistance Value	**67**	
Cover	Stabilometer	Expansion Pressure
Thickness	**7.3**	
Sand Equivalent		
Natural Moisture, %		
Resistivity	**1,658**	
pH Factor	**8.2**	
HRB Classification		

Remarks:

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-10-10, C-10-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer, Altamirano** Station **"X2" 822+00.00** Route **US 50**

Location from oil (ft) Lt. _____ Rt. **25'**

Sample No.: **5A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--		0--	150
2--		2--	
4--	Gravelly Sand	4--	
6--	Lt. Clay	6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**98**
3/8"	**96**
No. 4	**88**
No. 10	**79**
No. 16	**73**
No. 40	**58**
No. 50	**52**
No. 100	**43**
No. 200	**35**

Liquid Limit **30**

Plastic Index **13**

Specific Gravity

Resistance Value **15**

Cover Thickness **23.9**

Stabilometer

Expansion Pressure

Sand Equivalent

Natural Moisture, %

Resistivity **2,016**

pH Factor **7.7**

HRB Classification

Remarks: _____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-11-10, C-11-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer,** Station **"X2" 832+00.00** Route **US 50**

Altamirano Location from oil (ft) Lt. _____ Rt. **25'**

Sample No.: **6** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--	Silt, Sand, Gravel	0--	150
2--		2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	**100**
1"	**99**
3/4"	**99**
1/2"	**89**
3/8"	**84**
No. 4	**71**
No. 10	**58**
No. 16	**52**
No. 40	**39**
No. 50	**34**
No. 100	**26**
No. 200	**19**

Liquid Limit	**21**	
Plastic Index	**1**	
Specific Gravity		
Resistance Value	**61**	
Cover Thickness	Stabilometer **9.2**	Expansion Pressure
Sand Equivalent		
Natural Moisture, %		
Resistivity	**2,092**	
pH Factor	**7.8**	
HRB Classification		

Remarks: _____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-12-10, C-12-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer, Altamirano** Station **"X2" 832+00.00** Route **US 50**

Location from oil (ft) Lt. _____ Rt. **25'**

Sample No.: **6A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	PSI
0--		150
2--		
4--	Silt, Sand Gravel	
6--	Decomposed Granite	500 PSI
8--		
10--		
12--		
14--		
16--		
18--		
20--		

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**91**
3/8"	**87**
No. 4	**76**
No. 10	**62**
No. 16	**55**
No. 40	**44**
No. 50	**39**
No. 100	**33**
No. 200	**28**

Liquid Limit **30**

Plastic Index **12**

Specific Gravity

Resistance Value **18**

Cover Stabilometer Expansion Pressure

Thickness **22.9**

Sand Equivalent

Natural Moisture, %

Resistivity **2,500**

pH Factor **8.3**

HRB Classification

Remarks: _____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-13-10, C-13-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer, Altamirano** Station **"EB" 842+00.00** Route **US 50**

Location from oil (ft) Lt. _____ Rt. **25'**

Sample No.: **7** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--	Silt, Sand, Gravel	0--	150
2--		2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	**100**
1"	**89**
3/4"	**83**
1/2"	**74**
3/8"	**69**
No. 4	**55**
No. 10	**44**
No. 16	**38**
No. 40	**27**
No. 50	**22**
No. 100	**15**
No. 200	**11**

Liquid Limit **20**

Plastic Index **NP**

Specific Gravity

Resistance Value **81**

Cover Thickness **2.9**

Expansion Pressure

Sand Equivalent

Natural Moisture, %

Resistivity **2,481**

pH Factor **7.6**

HRB Classification

Remarks: _____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-14-10, C-14-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer,** Station **"EB" 842+00.00** Route **US 50**

Altamirano Location from oil (ft) Lt. _____ Rt. **25'**

Sample No.: **7A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: Heavier gravel and harder drilling from 3½' to 4½'.

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--		0--	150
2--		2--	
4--	Silt, Sand Gravel	4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	**100**
3/4"	**95**
1/2"	**84**
3/8"	**76**
No. 4	**53**
No. 10	**37**
No. 16	**30**
No. 40	**21**
No. 50	**19**
No. 100	**16**
No. 200	**13**

Liquid Limit **25**

Plastic Index **6**

Specific Gravity

Resistance Value **64**

Cover Expansion Pressure

Thickness **8.3**

Sand Equivalent

Natural Moisture, %

Resistivity **4,167**

pH Factor **8.0**

HRB Classification

Remarks:

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-15-10, C-15-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer,** Station **"X2" 852+00.00** Route **US 50**

Altamirano Location from oil (ft) Lt. _____ Rt. **25'**

Sample No.: **8** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ☐ Fill Section ■

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--	Silt, Sand, Gravel, Lt. Oil	0--	150
2--		2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**92**
3/8"	**87**
No. 4	**69**
No. 10	**53**
No. 16	**46**
No. 40	**33**
No. 50	**27**
No. 100	**19**
No. 200	**14**

Liquid Limit **22**

Plastic Index **2**

Specific Gravity

Resistance Value **81**

Cover Expansion Pressure

Thickness **2.9**

Sand Equivalent

Natural Moisture, %

Resistivity **1,295**

pH Factor **7.6**

HRB Classification

Remarks: _____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-16-10, C-16-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer,** Station **"X2" 852+00.00** Route **US 50**

Altamirano Location from oil (ft) Lt. _____ Rt. **25'**

Sample No.: **8A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ☐ Fill Section ■

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--		0--	150
2--		2--	
4--	Silt, Sand Gravel	4--	
6--	Lt. Clay	6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	**100**
1"	**88**
3/4"	**88**
1/2"	**84**
3/8"	**75**
No. 4	**62**
No. 10	**50**
No. 16	**45**
No. 40	**35**
No. 50	**31**
No. 100	**23**
No. 200	**17**

Liquid Limit **29**

Plastic Index **13**

Specific Gravity

Resistance Value **39**

Cover Expansion Pressure

Thickness **16.2**

Sand Equivalent

Natural Moisture, %

Resistivity **1,287**

pH Factor **7.3**

HRB Classification

Remarks: _____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-17-10, C-17-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer, Altamirano** Station **"X2" 862+00.00** Route **US 50**

Location from oil (ft) Lt. _____ Rt. **26'**

Sample No.: **9** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ☐ Fill Section ■

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--	Silt, Sand, Gravel	0--	150
2--		2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**94**
3/8"	**86**
No. 4	**72**
No. 10	**56**
No. 16	**48**
No. 40	**34**
No. 50	**28**
No. 100	**19**
No. 200	**13**

Liquid Limit **20**

Plastic Index **NP**

Specific Gravity

Resistance Value **81**

Cover Thickness **2.9**

Expansion Pressure

Sand Equivalent

Natural Moisture, %

Resistivity **1,706**

pH Factor **7.7**

HRB Classification

Remarks: _____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-18-10, C-18-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer, Altamirano** Station **"X2" 862+00.00** Route **US 50**

Location from oil (ft) Lt. ____ Rt. **26'**

Sample No.: **9A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ☐ Fill Section ■

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks:

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--		0--	150
2--		2--	
4--	Silt, Sand Gravel	4--	
6--	Very Lt. Clay	6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	**100**
1"	**99**
3/4"	**95**
1/2"	**87**
3/8"	**79**
No. 4	**64**
No. 10	**51**
No. 16	**45**
No. 40	**33**
No. 50	**28**
No. 100	**20**
No. 200	**14**

Liquid Limit	**21**
Plastic Index	**2**
Specific Gravity	
Resistance Value	**76**
Cover Thickness	**4.5**
Expansion Pressure	
Sand Equivalent	
Natural Moisture, %	
Resistivity	**2,793**
pH Factor	**8.0**
HRB Classification	

Remarks:

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-19-10, C-19-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer, Altamirano** Station **"X2" 872+00.00** Route **US 50**

Location from oil (ft) Lt. _____ Rt. **25'**

Sample No.: **10** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ☐ Fill Section ■

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--	Silt, Sand, Gravel, Lt. Clay	0--	150
2--		2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	**100**
1"	**94**
3/4"	**94**
1/2"	**88**
3/8"	**84**
No. 4	**70**
No. 10	**57**
No. 16	**50**
No. 40	**36**
No. 50	**30**
No. 100	**21**
No. 200	**15**

Liquid Limit **22**

Plastic Index **2**

Specific Gravity _____

Resistance Value **80**

Cover Thickness **3.2**

Expansion Pressure _____

Sand Equivalent _____

Natural Moisture, % _____

Resistivity **1,912**

pH Factor **7.9**

HRB Classification _____

Remarks: _____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-20-10, C-20-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer, Altamirano** Station **"X2" 872+00.00** Route **US 50**

Location from oil (ft) Lt. _____ Rt. **25'**

Sample No.: **10A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ☐ Fill Section ■

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--		0--	150
2--		2--	
4--	Silt, Sand Gravel	4--	
6--	Very Lt. Clay	6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	**100**
1"	**94**
3/4"	**94**
1/2"	**86**
3/8"	**77**
No. 4	**61**
No. 10	**48**
No. 16	**41**
No. 40	**29**
No. 50	**25**
No. 100	**17**
No. 200	**12**

Liquid Limit **21**

Plastic Index **2**

Specific Gravity _____

Resistance Value **80**

Cover Thickness **3.2**

Expansion Pressure _____

Sand Equivalent _____

Natural Moisture, % _____

Resistivity **2,469**

pH Factor **8.0**

HRB Classification _____

Remarks: _____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-21-10, C-21-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer,** Station **"X2" 882+00.00** Route **US 50**

Altamirano Location from oil (ft) Lt. _____ Rt. **22'**

Sample No.: **11** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ☐ Fill Section ■

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks:

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--	Silt, Sand, Gravel	0--	150
2--		2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**89**
3/8"	**87**
No. 4	**74**
No. 10	**61**
No. 16	**54**
No. 40	**37**
No. 50	**30**
No. 100	**20**
No. 200	**14**

Liquid Limit	**20**
Plastic Index	**NP**
Specific Gravity	
Resistance Value	**81**
Cover Thickness	**2.9**
Expansion Pressure	
Sand Equivalent	
Natural Moisture, %	
Resistivity	**2,045**
pH Factor	**8.2**
HRB Classification	

Remarks:

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-22-10, C-22-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer, Altamirano** Station **"X2" 882+00.00** Route **US 50**

Location from oil (ft) Lt. _____ Rt. **22'**

Sample No.: **11A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ☐ Fill Section ■

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	PSI
0--		150
2--		
4--	Silt, Sand Gravel	
6--		
8--		
10--		
12--		
14--		
16--		
18--		
20--		

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**92**
3/8"	**85**
No. 4	**67**
No. 10	**52**
No. 16	**45**
No. 40	**32**
No. 50	**27**
No. 100	**19**
No. 200	**14**

Liquid Limit **21**

Plastic Index **2**

Specific Gravity

Resistance Value **84**

Cover Thickness **1.9**

Expansion Pressure

Sand Equivalent

Natural Moisture, %

Resistivity **2,653**

pH Factor **8.1**

HRB Classification

Remarks: _____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-23-10, C-23-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer, Altamirano** Station **"X2" 892+00.00** Route **US 50**

Location from oil (ft) Lt. _____ Rt. **30'**

Sample No.: **12** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--	Silt, Sand, Gravel	0--	150
2--	Very Lt. Clay	2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**83**
3/8"	**76**
No. 4	**58**
No. 10	**44**
No. 16	**38**
No. 40	**27**
No. 50	**23**
No. 100	**17**
No. 200	**13**

Liquid Limit	**25**
Plastic Index	**7**
Specific Gravity	
Resistance Value	**80**
Cover Thickness	**3.2**
Expansion Pressure	
Sand Equivalent	
Natural Moisture, %	
Resistivity	**3,745**
pH Factor	**7.9**
HRB Classification	

Remarks: _____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-24-10, C-24-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer, Altamirano** Station **"X2" 892+00.00** Route **US 50**

Location from oil (ft) Lt. _____ Rt. **30'**

Sample No.: **12A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks:

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--		0--	150
2--		2--	
4--	Silt, Sand Gravel	4--	
6--	Clay	6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**97**
3/8"	**96**
No. 4	**88**
No. 10	**78**
No. 16	**71**
No. 40	**57**
No. 50	**50**
No. 100	**38**
No. 200	**28**

Liquid Limit **27**

Plastic Index **12**

Specific Gravity

Resistance Value **41**

Cover Expansion Pressure

Thickness **15.6**

Sand Equivalent

Natural Moisture, %

Resistivity **3,106**

pH Factor **7.5**

HRB Classification

Remarks:

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-170-10, C-191-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer,** Station **"X2" 896+00.00** Route **US 50**

Altamirano Location from oil (ft) Lt. _____ Rt. **120'**

Sample No.: **13** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ☐

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--	Sandy Silt	0--	350
2--		2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	
1/2"	**100**
3/8"	**99**
No. 4	**95**
No. 10	**86**
No. 16	**80**
No. 40	**65**
No. 50	**58**
No. 100	**39**
No. 200	**26**

Liquid Limit	**21**
Plastic Index	**2**
Specific Gravity	
Resistance Value	**69**
Cover Thickness	**4.9**
Expansion Pressure	
Sand Equivalent	
Natural Moisture, %	
Resistivity	**5,394**
pH Factor	**7.7**
HRB Classification	

Remarks: _____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-27-10, C-27-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer,** Station **"X2" 902+00.00** Route **US 50**

Altamirano Location from oil (ft) Lt. _____ Rt. **28'**

Sample No.: **14** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--	Silt, Sand, Fine Gravel	0--	150
2--	Lt. Clay	2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	**100**
1"	**94**
3/4"	**94**
1/2"	**79**
3/8"	**73**
No. 4	**56**
No. 10	**44**
No. 16	**38**
No. 40	**28**
No. 50	**24**
No. 100	**18**
No. 200	**12**

Liquid Limit **22**

Plastic Index **3**

Specific Gravity

Resistance Value **81**

Cover Expansion Pressure

Thickness **2.9**

Sand Equivalent

Natural Moisture, %

Resistivity **2,494**

pH Factor **7.5**

HRB Classification

Remarks: _____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-28-10, C-28-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer, Altamirano** Station **"X2" 902+00.00** Route **US 50**

Location from oil (ft) Lt. _____ Rt. **28'**

Sample No.: **14A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--		0--	150
2--		2--	
4--	Silt, Sand Gravel	4--	
6--	Lt. Clay	6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**91**
3/8"	**88**
No. 4	**81**
No. 10	**70**
No. 16	**64**
No. 40	**50**
No. 50	**45**
No. 100	**34**
No. 200	**23**

Liquid Limit **20**

Plastic Index **1**

Specific Gravity

Resistance Value **71**

Cover Expansion Pressure

Thickness **6.0**

Sand Equivalent

Natural Moisture, %

Resistivity **3,311**

pH Factor **7.3**

HRB Classification

Remarks: _____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-171-10, C-192-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer,** Station **"X2" 907+00.00** Route **US 50**

Altamirano Location from oil (ft) Lt. _____ Rt. **125'**

Sample No.: **15** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ☐

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--	Sand	0--	100
2--	Sandy Silt	2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	
1/2"	**100**
3/8"	**99**
No. 4	**96**
No. 10	**86**
No. 16	**79**
No. 40	**62**
No. 50	**55**
No. 100	**38**
No. 200	**23**

Liquid Limit **20**

Plastic Index **NP**

Specific Gravity

Resistance Value **65**

Cover Thickness **5.8**

Expansion Pressure

Sand Equivalent

Natural Moisture, %

Resistivity **9,930**

pH Factor **7.5**

HRB Classification

Remarks: _____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-31-10, C-31-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer, Altamirano** Station **"X2" 912+00.00** Route **US 50**

Location from oil (ft) Lt. _____ Rt. **28'**

Sample No.: **16** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--	Silt, Sand, Gravel, Clay	0--	150
2--		2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**90**
3/8"	**81**
No. 4	**65**
No. 10	**51**
No. 16	**44**
No. 40	**31**
No. 50	**27**
No. 100	**19**
No. 200	**14**

Liquid Limit	**23**
Plastic Index	**4**
Specific Gravity	
Resistance Value	**64**
Cover Thickness	**8.3**
Expansion Pressure	
Sand Equivalent	
Natural Moisture, %	
Resistivity	**3,413**
pH Factor	**7.8**
HRB Classification	

Remarks: _____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-32-10, C-32-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer, Altamirano** Station **"X2" 912+00.00** Route **US 50**

Location from oil (ft) Lt. _____ Rt. **28'**

Sample No.: **16A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks:

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--		0--	150
2--		2--	
4--	Silt, Sand, Very Lt. Gravel	4--	
6--	Clay	6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**99**
3/8"	**98**
No. 4	**91**
No. 10	**81**
No. 16	**75**
No. 40	**64**
No. 50	**59**
No. 100	**46**
No. 200	**32**

Liquid Limit **23**

Plastic Index **5**

Specific Gravity

Resistance Value **65**

Cover Expansion Pressure

Thickness **8.0**

Sand Equivalent

Natural Moisture, %

Resistivity **3,584**

pH Factor **7.5**

HRB Classification

Remarks:

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-172-10, C-193-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer, Altamirano** Station **"X2" 917+00.00** Route **US 50**

Location from oil (ft) Lt. _____ Rt. **120'**

Sample No.: **17** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--	Sand	0--	100
2--	Sandy Silt	2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	
1/2"	**100**
3/8"	**99**
No. 4	**96**
No. 10	**89**
No. 16	**84**
No. 40	**72**
No. 50	**65**
No. 100	**46**
No. 200	**30**

Liquid Limit	**21**		
Plastic Index	**1**		
Specific Gravity			
Resistance Value	**69**		
Cover Thickness	**4.9**	Expansion Pressure	
Sand Equivalent			
Natural Moisture, %			
Resistivity	**9,862**		
pH Factor	**7.4**		
HRB Classification			

Remarks: _____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-35-10, C-35-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer, Altamirano** Station **"X2" 922+00.00** Route **US 50**

Location from oil (ft) Lt. _____ Rt. **27'**

Sample No.: **18** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--	Silt, Sand, Lt. Gravel Clay	0--	150
2--		2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**98**
3/8"	**95**
No. 4	**80**
No. 10	**64**
No. 16	**55**
No. 40	**39**
No. 50	**32**
No. 100	**22**
No. 200	**16**

Liquid Limit **21**

Plastic Index **2**

Specific Gravity

Resistance Value **77**

Cover Thickness **4.1**

Expansion Pressure

Sand Equivalent

Natural Moisture, %

Resistivity **2,874**

pH Factor **7.9**

HRB Classification

Remarks: _____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-36-10, C-36-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer,** Station **"X2" 922+00.00** Route **US 50**

Altamirano Location from oil (ft) Lt. _____ Rt. **27'**

Sample No.: **18A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--		0--	150
2--		2--	
4--	Very Lt. Gravelly Silt	4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**98**
3/8"	**97**
No. 4	**92**
No. 10	**83**
No. 16	**76**
No. 40	**63**
No. 50	**57**
No. 100	**44**
No. 200	**31**

Liquid Limit **22**

Plastic Index **NP**

Specific Gravity

Resistance Value **61**

Cover Expansion Pressure

Thickness **9.2**

Sand Equivalent

Natural Moisture, %

Resistivity **3,413**

pH Factor **7.7**

HRB Classification

Remarks: _____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-37-10, C-37-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer, Altamirano** Station **"X2" 932+00.00** Route **US 50**

Location from oil (ft) Lt. ____ Rt. **25'**

Sample No.: **19** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--	Silt, Sand, Gravel	0--	150
2--		2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	**100**
3/4"	**98**
1/2"	**86**
3/8"	**81**
No. 4	**67**
No. 10	**50**
No. 16	**42**
No. 40	**28**
No. 50	**23**
No. 100	**15**
No. 200	**11**

Liquid Limit **23**

Plastic Index **3**

Specific Gravity ____

Resistance Value **80**

Cover Thickness **3.2**

Expansion Pressure ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity **2,358**

pH Factor **7.7**

HRB Classification ____

Remarks: ____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-38-10, C-38-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer,** Station **"X2" 932+00.00** Route **US 50**

Altamirano Location from oil (ft) Lt. _____ Rt. **25'**

Sample No.: **19A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--		0--	150
2--		2--	
4--	Silt, Sand, Lt. Gravel	4--	
6--	Very Light Clay	6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**99**
3/8"	**95**
No. 4	**85**
No. 10	**75**
No. 16	**69**
No. 40	**54**
No. 50	**48**
No. 100	**36**
No. 200	**25**

Liquid Limit	**22**
Plastic Index	**3**
Specific Gravity	
Resistance Value	**75**
Cover Thickness	**4.8**
Expansion Pressure	
Sand Equivalent	
Natural Moisture, %	
Resistivity	**3,472**
pH Factor	**7.8**
HRB Classification	

Remarks: _____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-39-10, C-39-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer, Altamirano** Station **"X2" 942+00.00** Route **US 50**

Location from oil (ft) Lt. _____ Rt. **25'**

Sample No.: **20** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--	Silt, Sand, Lt. Gravel	0--	150
2--	Very Light Clay	2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**85**
3/8"	**80**
No. 4	**66**
No. 10	**54**
No. 16	**47**
No. 40	**34**
No. 50	**28**
No. 100	**19**
No. 200	**13**

Liquid Limit **22**

Plastic Index **1**

Specific Gravity _____

Resistance Value **81**

Cover Expansion Pressure

Thickness **2.9** _____

Sand Equivalent _____

Natural Moisture, % _____

Resistivity **2,188**

pH Factor **7.8**

HRB Classification _____

Remarks: _____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-40-10, C-40-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer, Altamirano** Station **"X2" 942+00.00** Route **US 50**

Location from oil (ft) Lt. _____ Rt. **25'**

Sample No.: **20A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks:

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--		0--	150
2--		2--	
4--	Lt. Gravelly Silt	4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**97**
3/8"	**97**
No. 4	**90**
No. 10	**80**
No. 16	**74**
No. 40	**62**
No. 50	**57**
No. 100	**43**
No. 200	**27**

Liquid Limit	**22**
Plastic Index	**NP**
Specific Gravity	
Resistance Value	**77**
Cover Thickness	**4.1**
Expansion Pressure	
Sand Equivalent	
Natural Moisture, %	
Resistivity	**2,874**
pH Factor	**7.8**
HRB Classification	

Remarks:

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-41-10, C-41-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer,** Station **"X2" 952+00.00** Route **US 50**

Altamirano Location from oil (ft) Lt. _____ Rt. **33'**

Sample No.: **21** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--	Gravelly Silt	0--	150
2--		2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	**100**
3/4"	**97**
1/2"	**92**
3/8"	**89**
No. 4	**80**
No. 10	**71**
No. 16	**65**
No. 40	**51**
No. 50	**45**
No. 100	**33**
No. 200	**21**

Liquid Limit **21**

Plastic Index **1**

Specific Gravity

Resistance Value **77**

Cover Expansion Pressure

Thickness **4.1**

Sand Equivalent

Natural Moisture, %

Resistivity **4,016**

pH Factor **7.8**

HRB Classification

Remarks: _____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-42-10, C-42-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer,** Station **"X2" 952+00.00** Route **US 50**

Altamirano Location from oil (ft) Lt. _____ Rt. **33'**

Sample No.: **21A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks:

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--		0--	150
2--		2--	
4--	Gravelly Silt, Lt. Clay	4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**99**
3/8"	**98**
No. 4	**92**
No. 10	**82**
No. 16	**76**
No. 40	**64**
No. 50	**58**
No. 100	**46**
No. 200	**32**

Liquid Limit **23**

Plastic Index **5**

Specific Gravity

Resistance Value **61**

Cover Expansion Pressure

Thickness **9.2**

Sand Equivalent

Natural Moisture, %

Resistivity **3,774**

pH Factor **7.7**

HRB Classification

Remarks:

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-43-10, C-43-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer, Altamirano** Station **"X2" 962+00.00** Route **US 50**

Location from oil (ft) Lt. _____ Rt. **25'**

Sample No.: **22** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--	Silt, Sand, Lt. Gravel	0--	150
2--	Very Lt. Clay	2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**96**
3/8"	**91**
No. 4	**75**
No. 10	**61**
No. 16	**54**
No. 40	**39**
No. 50	**34**
No. 100	**23**
No. 200	**15**

Liquid Limit	**19**
Plastic Index	**NP**
Specific Gravity	
Resistance Value	**79**
Cover Thickness	**3.5**
Expansion Pressure	
Sand Equivalent	
Natural Moisture, %	
Resistivity	**2,577**
pH Factor	**7.8**
HRB Classification	

Remarks: _____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-44-10, C-44-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer, Altamirano** Station **"X2" 962+00.00** Route **US 50**

Location from oil (ft) Lt. _____ Rt. **25'**

Sample No.: **22A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--		0--	150
2--		2--	
4--	Silt, Sand, Lt. Gravel	4--	
6--	Clay	6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**98**
3/8"	**98**
No. 4	**92**
No. 10	**85**
No. 16	**80**
No. 40	**69**
No. 50	**63**
No. 100	**51**
No. 200	**35**

Liquid Limit	**23**
Plastic Index	**6**
Specific Gravity	
Resistance Value	**39**
Cover Thickness	**16.2**
Expansion Pressure	
Sand Equivalent	
Natural Moisture, %	
Resistivity	**2,994**
pH Factor	**7.9**
HRB Classification	

Remarks: _____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-45-10, C-45-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer, Altamirano** Station **"X2" 972+00.00** Route **US 50**

Location from oil (ft) Lt. ____ Rt. **25'**

Sample No.: **23** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--	Silt, Sand, Lt. Gravel	0--	150
2--	Very Lt. Clay	2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**95**
3/8"	**90**
No. 4	**74**
No. 10	**59**
No. 16	**51**
No. 40	**37**
No. 50	**32**
No. 100	**22**
No. 200	**15**

Liquid Limit	**22**
Plastic Index	**NP**
Specific Gravity	
Resistance Value	**80**
Cover Thickness	**3.2**
Expansion Pressure	
Sand Equivalent	
Natural Moisture, %	
Resistivity	**3,195**
pH Factor	**8.0**
HRB Classification	

Remarks: ____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-25-10, C-25-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer,** Station **"X2" 972+00.00** Route **US 50**

Altamirano Location from oil (ft) Lt. _____ Rt. **25'**

Sample No.: **23A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--		0--	150
2--		2--	
4--	Gravelly Silt	4--	
6--	Lt. Clay	6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**99**
3/8"	**99**
No. 4	**94**
No. 10	**90**
No. 16	**87**
No. 40	**80**
No. 50	**76**
No. 100	**56**
No. 200	**33**

Liquid Limit **21**

Plastic Index **3**

Specific Gravity

Resistance Value **71**

Cover Expansion Pressure

Thickness **6.0**

Sand Equivalent

Natural Moisture, %

Resistivity **3,086**

pH Factor **7.6**

HRB Classification

Remarks: _____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-26-10, C-26-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer, Altamirano**

Station **"X2" 982+00.00** Route **US 50**

Location from oil (ft) Lt. _____ Rt. **25'**

Sample No.: **24** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--	Silt, Sand, Lt. Gravel	0--	150
2--	Very Lt. Clay	2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	**100**
3/4"	**97**
1/2"	**96**
3/8"	**91**
No. 4	**77**
No. 10	**66**
No. 16	**59**
No. 40	**45**
No. 50	**39**
No. 100	**26**
No. 200	**17**

Liquid Limit **20**

Plastic Index **2**

Specific Gravity

Resistance Value **80**

Cover Expansion Pressure

Thickness **3.2**

Sand Equivalent

Natural Moisture, %

Resistivity **1,776**

pH Factor **8.2**

HRB Classification

Remarks: _____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-29-10, C-29-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer, Altamirano** Station **"X2" 982+00.00** Route **US 50**

Location from oil (ft) Lt. _____ Rt. **25'**

Sample No.: **24A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	PSI
0--		150
2--		
4--	Gravelly Silt, Lt. Clay	
6--	Silt, Sand, Lt. Gravel	
8--		
10--		
12--		
14--		
16--		
18--		
20--		

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**99**
3/8"	**99**
No. 4	**93**
No. 10	**86**
No. 16	**82**
No. 40	**74**
No. 50	**70**
No. 100	**58**
No. 200	**42**

Liquid Limit **24**

Plastic Index **7**

Specific Gravity

Resistance Value **53**

Cover Expansion Pressure

Thickness **11.8**

Sand Equivalent

Natural Moisture, %

Resistivity **2,445**

pH Factor **7.9**

HRB Classification

Remarks: _____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-30-10, C-30-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer,** Station **"X2" 992+00.00** Route **US 50**

Altamirano Location from oil (ft) Lt. _____ Rt. **25'**

Sample No.: **25** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--	Gravelly Silt	0--	150
2--		2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**93**
3/8"	**85**
No. 4	**67**
No. 10	**52**
No. 16	**45**
No. 40	**33**
No. 50	**28**
No. 100	**20**
No. 200	**14**

Liquid Limit **22**

Plastic Index **6**

Specific Gravity _____

Resistance Value **79**

Cover Expansion Pressure

Thickness **3.5** _____

Sand Equivalent _____

Natural Moisture, % _____

Resistivity _____

pH Factor _____

HRB Classification _____

Remarks: _____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-33-10, C-33-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer, Altamirano** Station **"X2" 992+00.00** Route **US 50**

Location from oil (ft) Lt. _____ Rt. **25'**

Sample No.: **25A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--		0--	150
2--		2--	
4--	Silt, Clay	4--	
6--	Gravelly Silt	6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**97**
3/8"	**97**
No. 4	**94**
No. 10	**90**
No. 16	**87**
No. 40	**78**
No. 50	**72**
No. 100	**58**
No. 200	**41**

Liquid Limit **23**

Plastic Index **6**

Specific Gravity

Resistance Value **39**

Cover Thickness **16.2**

Expansion Pressure

Sand Equivalent

Natural Moisture, %

Resistivity

pH Factor

HRB Classification

Remarks: _____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-34-10, C-34-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer, Altamirano** Station **"X2" 1002+00.00** Route **US 50**

Location from oil (ft) Lt. _____ Rt. **25'**

Sample No.: **26** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--	Silt, Sand, Lt. Gravel	0--	150
2--	Very Lt. Clay	2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**95**
3/8"	**90**
No. 4	**75**
No. 10	**58**
No. 16	**50**
No. 40	**36**
No. 50	**30**
No. 100	**21**
No. 200	**14**

Liquid Limit **23**

Plastic Index **3**

Specific Gravity

Resistance Value **79**

Cover Thickness **3.5**

Expansion Pressure

Sand Equivalent

Natural Moisture, %

Resistivity

pH Factor

HRB Classification

Remarks: _____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-141-10, C-161-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer, Altamirano** Station **"X2" 1002+00.00** Route **US 50**

Location from oil (ft) Lt. ____ Rt. **25'**

Sample No.: **26A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--		0--	150
2--		2--	
4--	Gravelly Silt	4--	
6--	Lt. Clay	6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**96**
3/8"	**93**
No. 4	**86**
No. 10	**73**
No. 16	**67**
No. 40	**54**
No. 50	**48**
No. 100	**35**
No. 200	**23**

Liquid Limit	**19**
Plastic Index	**NP**
Specific Gravity	
Resistance Value	**74**
Cover Thickness	**5.1**
Expansion Pressure	
Sand Equivalent	
Natural Moisture, %	
Resistivity	**3,663**
pH Factor	**7.8**
HRB Classification	

Remarks: ____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-142-10, C-162-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer, Altamirano** Station **"X2" 1012+00.00** Route **US 50**

Location from oil (ft) Lt. _____ Rt. **26'**

Sample No.: **27** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--	Lt. Gravel, Sandy Clay	0--	150
2--		2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**97**
3/8"	**94**
No. 4	**85**
No. 10	**74**
No. 16	**68**
No. 40	**52**
No. 50	**45**
No. 100	**31**
No. 200	**22**

Liquid Limit	**20**
Plastic Index	**4**
Specific Gravity	
Resistance Value	**70**
Cover Thickness	**6.4**
Expansion Pressure	
Sand Equivalent	
Natural Moisture, %	
Resistivity	**2,959**
pH Factor	**7.8**
HRB Classification	

Remarks: _____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-143-10, C-163-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer, Altamirano** Station **"X2" 1012+00.00** Route **US 50**

Location from oil (ft) Lt. _____ Rt. **26'**

Sample No.: **27A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks:

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--		0--	150
2--		2--	
4--	Silt, Sand, Very Lt. Gravel	4--	
6--	Lt. Clay	6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**99**
3/8"	**99**
No. 4	**95**
No. 10	**91**
No. 16	**88**
No. 40	**80**
No. 50	**74**
No. 100	**59**
No. 200	**43**

Liquid Limit **24**

Plastic Index **9**

Specific Gravity

Resistance Value **25**

Cover Thickness **20.7**

Expansion Pressure

Sand Equivalent

Natural Moisture, %

Resistivity **3,333**

pH Factor **7.8**

HRB Classification

Remarks:

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-173-10, C-194-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer, Altamirano** Station **"X2" 1020+00.00** Route **US 50**

Location from oil (ft) Lt. _____ Rt. **130'**

Sample No.: **28** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--		0--	100
2--	Sandy Silt	2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	
1/2"	
3/8"	**100**
No. 4	**95**
No. 10	**82**
No. 16	**76**
No. 40	**65**
No. 50	**59**
No. 100	**47**
No. 200	**34**

Liquid Limit **28**

Plastic Index **10**

Specific Gravity

Resistance Value **35**

Cover Thickness **12.8**

Expansion Pressure

Sand Equivalent

Natural Moisture, %

Resistivity **305**

pH Factor **8.4**

HRB Classification

Remarks: _____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-144-10, C-164-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer,** Station **"X2" 1022+00.00** Route **US 50**

Altamirano Location from oil (ft) Lt. _____ Rt. **25'**

Sample No.: **29** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--	Silt, Sand, Fine Gravel	0--	150
2--		2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**97**
3/8"	**93**
No. 4	**78**
No. 10	**64**
No. 16	**56**
No. 40	**41**
No. 50	**34**
No. 100	**24**
No. 200	**16**

Liquid Limit **21**

Plastic Index **2**

Specific Gravity

Resistance Value **75**

Cover Expansion Pressure

Thickness **4.8**

Sand Equivalent

Natural Moisture, %

Resistivity **2,375**

pH Factor **7.8**

HRB Classification

Remarks: _____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-145-10, C-165-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer, Altamirano** Station **"X2" 1022+00.00** Route **US 50**

Location from oil (ft) Lt. _____ Rt. **25'**

Sample No.: **29A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--		0--	150
2--		2--	
4--	Silt, Sand, Lt. Clay	4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**97**
3/8"	**95**
No. 4	**88**
No. 10	**78**
No. 16	**72**
No. 40	**60**
No. 50	**54**
No. 100	**40**
No. 200	**29**

Liquid Limit **26**

Plastic Index **9**

Specific Gravity

Resistance Value **26**

Cover Thickness **20.4**

Expansion Pressure

Sand Equivalent

Natural Moisture, %

Resistivity **2,740**

pH Factor **8.1**

HRB Classification

Remarks: _____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-174-10, C-195-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer, Altamirano** Station **"X2" 1027+00.00** Route **US 50**

Location from oil (ft) Lt. _____ Rt. **120'**

Sample No.: **30** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--	Silt, Sand, Gravel	0--	100
2--		2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	
1/2"	
3/8"	**100**
No. 4	**95**
No. 10	**90**
No. 16	**87**
No. 40	**78**
No. 50	**69**
No. 100	**43**
No. 200	**24**

Liquid Limit **22**

Plastic Index **2**

Specific Gravity

Resistance Value **71**

Cover Thickness **4.4**

Expansion Pressure

Sand Equivalent

Natural Moisture, %

Resistivity **312**

pH Factor **8.5**

HRB Classification

Remarks: _____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-146-10, C-166-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer,** Station **"X2" 1032+00.00** Route **US 50**

Altamirano Location from oil (ft) Lt. _____ Rt. **25'**

Sample No.: **31** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--	Silt, Sand, Gravel	0--	150
2--		2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**97**
3/8"	**91**
No. 4	**74**
No. 10	**59**
No. 16	**51**
No. 40	**37**
No. 50	**32**
No. 100	**22**
No. 200	**14**

Liquid Limit	**22**
Plastic Index	**3**
Specific Gravity	
Resistance Value	**77**
Cover Thickness	**4.1**
Expansion Pressure	
Sand Equivalent	
Natural Moisture, %	
Resistivity	**2,347**
pH Factor	**7.8**
HRB Classification	

Remarks: _____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**
Lab No.: **Soils10-01, RV-147-10, C-167-10**
E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**
Date Rec'd **01/06/10**
Samplers: **Hinton, Wimer,** Station **"X2" 1032+00.00** Route **US 50**
Altamirano Location from oil (ft) Lt. ____ Rt. **25'**
Sample No.: **31A** County: **LYON**

Sample Type:
RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐
Taken Through Oil ☐ Taken on Shoulder ■
Gravel Depth (in) ____ Oil Depth (in) ____
Remarks: ____

Submitted By: **Maynard Hinton**
Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--		0--	150
2--		2--	
4--	Silt, Sand, Lt. Gravel	4--	
6--	Very Lt. Clay	6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	
1/2"	**100**
3/8"	**99**
No. 4	**91**
No. 10	**80**
No. 16	**74**
No. 40	**62**
No. 50	**56**
No. 100	**41**
No. 200	**30**

Liquid Limit **26**
Plastic Index **7**
Specific Gravity
Resistance Value **23**
Cover Expansion Pressure
Thickness **21.3**

Sand Equivalent
Natural Moisture, %
Resistivity **3,125**
pH Factor **7.9**
HRB Classification

Remarks: ____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-175-10, C-196-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer, Altamirano** Station **"X2" 1037+00.00** Route **US 50**

Location from oil (ft) Lt. ____ Rt. **130'**

Sample No.: **32** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--	Gravelly Silt	0--	100
2--		2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	**100**
1"	**99**
3/4"	**99**
1/2"	**99**
3/8"	**98**
No. 4	**88**
No. 10	**73**
No. 16	**65**
No. 40	**52**
No. 50	**45**
No. 100	**29**
No. 200	**18**

Liquid Limit **23**

Plastic Index **2**

Specific Gravity ____

Resistance Value **76**

Cover Expansion Pressure

Thickness **3.3** ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity **1,969**

pH Factor **8.0**

HRB Classification ____

Remarks: ____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-148-10, C-168-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer,** Station **"X2" 1042+00.00** Route **US 50**

Altamirano Location from oil (ft) Lt. _____ Rt. **25'**

Sample No.: **33** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--	Silt, Sand, Gravel	0--	150
2--		2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	**100**
3/4"	**97**
1/2"	**92**
3/8"	**86**
No. 4	**69**
No. 10	**56**
No. 16	**49**
No. 40	**36**
No. 50	**31**
No. 100	**21**
No. 200	**14**

Liquid Limit	**22**
Plastic Index	**2**
Specific Gravity	
Resistance Value	**77**
Cover Thickness	**4.1**
Expansion Pressure	
Sand Equivalent	
Natural Moisture, %	
Resistivity	**2,299**
pH Factor	**7.8**
HRB Classification	

Remarks: _____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-149-10, C-169-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer, Altamirano** Station **"X2" 1042+00.00** Route **US 50**

Location from oil (ft) Lt. ____ Rt. **25'**

Sample No.: **33A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--		0--	150
2--		2--	
4--	Gravelly Silt, Lt. Clay	4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	**100**
1"	**90**
3/4"	**89**
1/2"	**83**
3/8"	**81**
No. 4	**76**
No. 10	**64**
No. 16	**57**
No. 40	**45**
No. 50	**40**
No. 100	**30**
No. 200	**20**

Liquid Limit **21**

Plastic Index **3**

Specific Gravity ____

Resistance Value **64**

Cover Thickness **8.3**

Expansion Pressure ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity **3,559**

pH Factor **7.7**

HRB Classification ____

Remarks: ____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-176-10, C-197-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer,** Station **"X2" 1047+00.00** Route **US 50**

Altamirano Location from oil (ft) Lt. _____ Rt. **125'**

Sample No.: **34** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--	Gravelly Silt	0--	100
2--		2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**99**
3/8"	**99**
No. 4	**93**
No. 10	**83**
No. 16	**78**
No. 40	**66**
No. 50	**59**
No. 100	**42**
No. 200	**27**

Liquid Limit	**22**
Plastic Index	**4**
Specific Gravity	
Resistance Value	**42**
Cover Thickness	**11.2**
Expansion Pressure	
Sand Equivalent	
Natural Moisture, %	
Resistivity	**3,344**
pH Factor	**8.0**
HRB Classification	

Remarks: _____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-150-10, C-170-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer, Altamirano** Station **"X2" 1052+00.00** Route **US 50**

Location from oil (ft) Lt. ____ Rt. **25'**

Sample No.: **35** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--	Silt, Sand, Gravel	0--	150
2--		2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	**100**
3/4"	**90**
1/2"	**80**
3/8"	**75**
No. 4	**59**
No. 10	**45**
No. 16	**39**
No. 40	**27**
No. 50	**23**
No. 100	**16**
No. 200	**12**

Liquid Limit **25**

Plastic Index **4**

Specific Gravity ____

Resistance Value **83**

Cover Expansion Pressure

Thickness **2.2** ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity **2,028**

pH Factor **8.1**

HRB Classification ____

Remarks: ____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-151-10, C-171-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer,** Station **"X2" 1052+00.00** Route **US 50**

Altamirano Location from oil (ft) Lt. _____ Rt. **25'**

Sample No.: **35A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	PSI
0--		0-- 150
2--		2--
4--	Silt, Sand, Fine Gravel	4--
6--		6--
8--		8--
10--		10--
12--		12--
14--		14--
16--		16--
18--		18--
20--		20--

Sieve Size	% Passing
3"	
2"	
1.5"	**100**
1"	**93**
3/4"	**93**
1/2"	**88**
3/8"	**84**
No. 4	**71**
No. 10	**56**
No. 16	**49**
No. 40	**38**
No. 50	**33**
No. 100	**25**
No. 200	**17**

Liquid Limit	**22**
Plastic Index	**3**
Specific Gravity	
Resistance Value	**73**
Cover Thickness	**5.4**
Expansion Pressure	
Sand Equivalent	
Natural Moisture, %	
Resistivity	**3,096**
pH Factor	**7.9**
HRB Classification	

Remarks: _____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-177-10, C-198-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer,** Station **"X2" 1057+00.00** Route **US 50**

Altamirano Location from oil (ft) Lt. _____ Rt. **120'**

Sample No.: **36** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--	Gravelly Silt	0--	100
2--		2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	
1/2"	
3/8"	**100**
No. 4	**96**
No. 10	**89**
No. 16	**83**
No. 40	**72**
No. 50	**66**
No. 100	**50**
No. 200	**33**

Liquid Limit **20**

Plastic Index **3**

Specific Gravity

Resistance Value **35**

Cover Thickness **12.8**

Expansion Pressure

Sand Equivalent

Natural Moisture, %

Resistivity **3,472**

pH Factor **8.2**

HRB Classification

Remarks: _____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-152-10, C-172-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer, Altamirano** Station **"X2" 1062+00.00** Route **US 50**

Location from oil (ft) Lt. _____ Rt. **25'**

Sample No.: **37** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--	Silt, Sand, Gravel	0--	150
2--	Lt. Clay	2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**86**
3/8"	**76**
No. 4	**58**
No. 10	**45**
No. 16	**39**
No. 40	**28**
No. 50	**24**
No. 100	**18**
No. 200	**13**

Liquid Limit **25**

Plastic Index **5**

Specific Gravity

Resistance Value **67**

Cover Thickness **7.3**

Expansion Pressure

Sand Equivalent

Natural Moisture, %

Resistivity **1,953**

pH Factor **8.3**

HRB Classification

Remarks: _____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-153-10, C-173-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer, Altamirano** Station **"X2" 1062+00.00** Route **US 50**

Location from oil (ft) Lt. ____ Rt. **25'**

Sample No.: **37A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks:

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	PSI
0--		150
2--		
4--	Silt, Sand Gravel	
6--		
8--		
10--		
12--		
14--		
16--		
18--		
20--		

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**97**
3/8"	**93**
No. 4	**78**
No. 10	**62**
No. 16	**55**
No. 40	**44**
No. 50	**40**
No. 100	**30**
No. 200	**21**

Liquid Limit	**23**
Plastic Index	**4**
Specific Gravity	
Resistance Value	**56**
Cover Thickness	**10.8**
Expansion Pressure	
Sand Equivalent	
Natural Moisture, %	
Resistivity	**2,353**
pH Factor	**8.1**
HRB Classification	

Remarks:

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-284-10, C-317-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **03/25/10**

Samplers: **Altamirano, Marshall** Station **"X2" 1068+40** Route **US 50 E.B.**

Location from oil (ft) Lt. _____ Rt. **100'**

Sample No.: **38** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ☐ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ■

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Altamirano**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--		0--	
2--	Silt	2--	
4--	Sand	4--	100
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	
1/2"	
3/8"	**100**
No. 4	**96**
No. 10	**88**
No. 16	**82**
No. 40	**68**
No. 50	**62**
No. 100	**47**
No. 200	**31**

Liquid Limit **23**

Plastic Index **5**

Specific Gravity _____

Resistance Value **7**

Cover Expansion Pressure

Thickness **19.3** _____

Sand Equivalent _____

Natural Moisture, % _____

Resistivity **6,645**

pH Factor **7.6**

HRB Classification _____

Remarks: _____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-154-10, C-174-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer, Altamirano** Station **"X2" 1072+00.00** Route **US 50**

Location from oil (ft) Lt. _____ Rt. **25'**

Sample No.: **39** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--	Silt, Sand, Gravel	0--	150
2--		2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	**100**
3/4"	**95**
1/2"	**84**
3/8"	**74**
No. 4	**57**
No. 10	**44**
No. 16	**39**
No. 40	**29**
No. 50	**25**
No. 100	**18**
No. 200	**13**

Liquid Limit **24**

Plastic Index **4**

Specific Gravity

Resistance Value **74**

Cover Expansion Pressure

Thickness **5.1**

Sand Equivalent

Natural Moisture, %

Resistivity **2,183**

pH Factor **8.1**

HRB Classification

Remarks: _____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-155-10, C-176-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer, Altamirano** Station **"X2" 1072+00.00** Route **US 50**

Location from oil (ft) Lt. ____ Rt. **25'**

Sample No.: **39A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--		0--	150
2--		2--	
4--	Silt, Sand, Gravel	4--	
6--	Lt. Clay	6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**92**
3/8"	**90**
No. 4	**86**
No. 10	**80**
No. 16	**75**
No. 40	**65**
No. 50	**60**
No. 100	**49**
No. 200	**36**

Liquid Limit	**26**
Plastic Index	**9**
Specific Gravity	
Resistance Value	**47**
Cover Thickness	**13.7**
Expansion Pressure	
Sand Equivalent	
Natural Moisture, %	
Resistivity	**2,571**
pH Factor	**8.0**
HRB Classification	

Remarks: ____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-178-10, C-199-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Wimer, Altamirano** Station **"X2" 1077+00.00** Route **US 50**

Location from oil (ft) Lt. _____ Rt. **120'**

Sample No.: **40** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--	Gravelly Silt	0--	100
2--		2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**99**
3/8"	**97**
No. 4	**91**
No. 10	**85**
No. 16	**81**
No. 40	**72**
No. 50	**68**
No. 100	**58**
No. 200	**47**

Liquid Limit	**28**
Plastic Index	**11**
Specific Gravity	
Resistance Value	**6**
Cover Thickness	**19.5**
Expansion Pressure	
Sand Equivalent	
Natural Moisture, %	
Resistivity	**5,285**
pH Factor	**7.6**
HRB Classification	

Remarks: _____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-156-10, C-177-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer,** Station **"X2" 1082+00.00** Route **US 50**

Altamirano Location from oil (ft) Lt. _____ Rt. **25'**

Sample No.: **41** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--	Silt, Sand, Fine Gravel	0--	150
2--	Very Lt. Clay	2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	**100**
3/4"	**89**
1/2"	**75**
3/8"	**71**
No. 4	**57**
No. 10	**44**
No. 16	**38**
No. 40	**28**
No. 50	**24**
No. 100	**18**
No. 200	**13**

Liquid Limit **24**

Plastic Index **4**

Specific Gravity

Resistance Value **78**

Cover Expansion Pressure

Thickness **3.8**

Sand Equivalent

Natural Moisture, %

Resistivity **1,887**

pH Factor **8.0**

HRB Classification

Remarks: _____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-157-10, C-178-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer,** Station **"X2" 1082+00.00** Route **US 50**

Altamirano Location from oil (ft) Lt. _____ Rt. **25'**

Sample No.: **41A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--		0--	150
2--		2--	
4--	Gravelly Silt, Lt. Clay	4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**95**
3/8"	**92**
No. 4	**86**
No. 10	**76**
No. 16	**71**
No. 40	**60**
No. 50	**56**
No. 100	**45**
No. 200	**34**

Liquid Limit **27**

Plastic Index **10**

Specific Gravity

Resistance Value **22**

Cover Thickness **21.6**

Expansion Pressure

Sand Equivalent

Natural Moisture, %

Resistivity **2,092**

pH Factor **7.8**

HRB Classification

Remarks: _____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-179-10, C-200-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **02/17/10**

Samplers: **Rigsby, Wimer,** Station **"X2" 1085+00.00** Route **US 50**

Location from oil (ft) Lt. _____ Rt. **109'**

Sample No.: **42** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ☐ Trees ☐ Shrubs ■

Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: SPT taken 1'-2 1/2 '

Submitted By: **R. Wimer**

Title: **Engineering Tech I**

Depth (ft)	Boring Description		PSI
0--	Sandy Silt	0--	100
2--		2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	
1/2"	
3/8"	**100**
No. 4	**97**
No. 10	**91**
No. 16	**87**
No. 40	**77**
No. 50	**74**
No. 100	**68**
No. 200	**63**

Liquid Limit **39**

Plastic Index **14**

Specific Gravity

Resistance Value **16**

Cover Thickness **17.2**

Expansion Pressure

Sand Equivalent

Natural Moisture, %

Resistivity **3,390**

pH Factor **8.4**

HRB Classification

Remarks:

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-158-10, C-179-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer, Altamirano** Station **"X2" 1092+00.00** Route **US 50**

Location from oil (ft) Lt. _____ Rt. **25'**

Sample No.: **43** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks:

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--	Silt, Sand, Gravel	0--	150
2--		2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	**100**
3/4"	**95**
1/2"	**81**
3/8"	**71**
No. 4	**56**
No. 10	**43**
No. 16	**38**
No. 40	**27**
No. 50	**23**
No. 100	**17**
No. 200	**12**

Liquid Limit **24**

Plastic Index **4**

Specific Gravity

Resistance Value **76**

Cover Expansion Pressure

Thickness **4.5**

Sand Equivalent

Natural Moisture, %

Resistivity **1,582**

pH Factor **8.1**

HRB Classification

Remarks:

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-159-10, C-180-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer, Altamirano** Station **"X2" 1092+00.00** Route **US 50**

Location from oil (ft) Lt. _____ Rt. **25'**

Sample No.: **43A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	PSI
0--		150
2--		
4--	Gravelly Silt, Lt. Clay	
6--		
8--		
10--		
12--		
14--		
16--		
18--		
20--		

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**95**
3/8"	**91**
No. 4	**77**
No. 10	**67**
No. 16	**62**
No. 40	**52**
No. 50	**48**
No. 100	**40**
No. 200	**30**

Liquid Limit **26**

Plastic Index **9**

Specific Gravity

Resistance Value **24**

Cover Expansion Pressure

Thickness **21.0**

Sand Equivalent

Natural Moisture, %

Resistivity **2,188**

pH Factor **8.1**

HRB Classification

Remarks: _____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-180-10, C-201-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **02/17/10**

Samplers: **Rigsby, Wimer** Station **"X2" 1095+00.00** Route **US 50**

Location from oil (ft) Lt. _____ Rt. **95'**

Sample No.: **44** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: SPT taken 1'-2 1/2'

Submitted By: **R. Wimer**

Title: **Engineering Tech I**

Depth (ft)	Boring Description		PSI
0--	Sandy Silt	0--	100
2--		2--	Blow
4--		4--	Count
6--		6--	6-9-9
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	
1/2"	
3/8"	
No. 4	**100**
No. 10	**97**
No. 16	**93**
No. 40	**85**
No. 50	**81**
No. 100	**73**
No. 200	**60**

Liquid Limit **34**

Plastic Index **14**

Specific Gravity

Resistance Value **14**

Cover Thickness **17.7**

Expansion Pressure

Sand Equivalent

Natural Moisture, %

Resistivity **969**

pH Factor **7.9**

HRB Classification

Remarks:

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-160-10, C-181-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer, Altamirano** Station **"X2" 1102+00.00** Route **US 50**

Location from oil (ft) Lt. _____ Rt. **25'**

Sample No.: **45** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--	Silt, Sand, Gravel	0--	150
2--		2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**83**
3/8"	**73**
No. 4	**55**
No. 10	**42**
No. 16	**37**
No. 40	**27**
No. 50	**23**
No. 100	**18**
No. 200	**13**

Liquid Limit **25**

Plastic Index **5**

Specific Gravity

Resistance Value **79**

Cover Expansion Pressure

Thickness **3.5**

Sand Equivalent

Natural Moisture, %

Resistivity **2,445**

pH Factor **8.3**

HRB Classification

Remarks: _____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**
Lab No.: **Soils10-01, RV-162-10, C-183-10**
E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**
Date Rec'd **01/06/10**
Samplers: **Hinton, Wimer, Altamirano** Station **"X2" 1102+00.00** Route **US 50**
Location from oil (ft) Lt. ____ Rt. **25'**
Sample No.: **45A** County: **LYON**

Sample Type:
RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐
Taken Through Oil ☐ Taken on Shoulder ■
Gravel Depth (in) ____ Oil Depth (in) ____
Remarks: ____

Submitted By: **Maynard Hinton**
Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--		0--	150
2--		2--	
4--	Gravelly Silt, Lt. Clay	4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**99**
3/8"	**96**
No. 4	**87**
No. 10	**75**
No. 16	**67**
No. 40	**54**
No. 50	**49**
No. 100	**39**
No. 200	**29**

Liquid Limit **23**
Plastic Index **5**
Specific Gravity
Resistance Value **33**
Cover Expansion Pressure
Thickness **18.1**

Sand Equivalent
Natural Moisture, %
Resistivity **2,088**
pH Factor **7.8**
HRB Classification

Remarks: ____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-163-10, C-184-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer,** Station **"X2" 1112+00.00** Route **US 50**

Altamirano Location from oil (ft) Lt. _____ Rt. **25'**

Sample No.: **46** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--	Silt, Sand, Gravel	0--	150
2--		2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	**100**
3/4"	**96**
1/2"	**82**
3/8"	**71**
No. 4	**53**
No. 10	**41**
No. 16	**36**
No. 40	**27**
No. 50	**23**
No. 100	**18**
No. 200	**13**

Liquid Limit **26**

Plastic Index **6**

Specific Gravity

Resistance Value **77**

Cover Expansion Pressure

Thickness **4.1**

Sand Equivalent

Natural Moisture, %

Resistivity **1,681**

pH Factor **8.3**

HRB Classification

Remarks: _____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-164-10, C-185-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer, Altamirano** Station **"X2" 1112+00.00** Route **US 50**

Location from oil (ft) Lt. ____ Rt. **25'**

Sample No.: **46A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: Exremely soft drilling.

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	PSI
0--		150
2--		
4--	Gravelly Silt, Lt. Clay	
6--	Fat Clay	
8--		
10--		
12--		
14--		
16--		
18--		
20--		

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**93**
3/8"	**90**
No. 4	**80**
No. 10	**72**
No. 16	**68**
No. 40	**60**
No. 50	**55**
No. 100	**47**
No. 200	**39**

Liquid Limit **27**

Plastic Index **10**

Specific Gravity

Resistance Value **36**

Cover Expansion Pressure

Thickness **17.2**

Sand Equivalent

Natural Moisture, %

Resistivity **1,672**

pH Factor **8.3**

HRB Classification

Remarks:

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-165-10, C-186-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer,** Station **"X2" 1122+00.00** Route **US 50**

Altamirano Location from oil (ft) Lt. _____ Rt. **25'**

Sample No.: **47** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--	Silt, Sand, Gravel	0--	150
2--		2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	**100**
3/4"	**98**
1/2"	**88**
3/8"	**76**
No. 4	**58**
No. 10	**44**
No. 16	**38**
No. 40	**29**
No. 50	**26**
No. 100	**21**
No. 200	**17**

Liquid Limit **25**

Plastic Index **6**

Specific Gravity

Resistance Value **74**

Cover Expansion Pressure

Thickness **5.1**

Sand Equivalent

Natural Moisture, %

Resistivity **1,577**

pH Factor **7.9**

HRB Classification

Remarks: _____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-166-10, C-187-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer, Altamirano** Station **"X2" 1122+00.00** Route **US 50**

Location from oil (ft) Lt. _____ Rt. **25'**

Sample No.: **47A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks:

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--		0--	150
2--		2--	
4--	Lt. Silty Clay	4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**98**
3/8"	**94**
No. 4	**89**
No. 10	**82**
No. 16	**78**
No. 40	**71**
No. 50	**68**
No. 100	**61**
No. 200	**51**

Liquid Limit **32**

Plastic Index **15**

Specific Gravity

Resistance Value **25**

Cover Thickness **20.7**

Expansion Pressure

Sand Equivalent

Natural Moisture, %

Resistivity **894**

pH Factor **8.0**

HRB Classification

Remarks:

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-167-10, C-188-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer, Altamirano** Station **"X2" 1131+00.00** Route **US 50**

Location from oil (ft) Lt. _____ Rt. **25'**

Sample No.: **48** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--	Silt, Sand, Gravel	0--	150
2--		2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	**100**
3/4"	**98**
1/2"	**83**
3/8"	**73**
No. 4	**54**
No. 10	**41**
No. 16	**36**
No. 40	**27**
No. 50	**24**
No. 100	**19**
No. 200	**15**

Liquid Limit **27**

Plastic Index **8**

Specific Gravity

Resistance Value **77**

Cover Expansion Pressure

Thickness **4.1**

Sand Equivalent

Natural Moisture, %

Resistivity **1,506**

pH Factor **8.0**

HRB Classification

Remarks: _____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-168-10, C-189-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **01/06/10**

Samplers: **Hinton, Wimer, Altamirano** Station **"X2" 1131+00.00** Route **US 50**

Location from oil (ft) Lt. _____ Rt. **25'**

Sample No.: **48A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	PSI
0--		150
2--		
4--	Lt. Silty Clay	
6--		
8--		
10--		
12--		
14--		
16--		
18--		
20--		

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**98**
3/8"	**95**
No. 4	**89**
No. 10	**81**
No. 16	**76**
No. 40	**65**
No. 50	**61**
No. 100	**50**
No. 200	**38**

Liquid Limit **32**

Plastic Index **16**

Specific Gravity

Resistance Value **29**

Cover Thickness **19.4**

Expansion Pressure

Sand Equivalent

Natural Moisture, %

Resistivity **1,104**

pH Factor **8.0**

HRB Classification

Remarks: _____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-181-10, C-202-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2" 1126+50.00** Route **US 50**

Location from oil (ft) Lt. **20'** Rt. ____

Sample No.: **49** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--	Silt, Sand, Gravel	0--	300
2--		2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	**100**
3/4"	**96**
1/2"	**81**
3/8"	**68**
No. 4	**48**
No. 10	**34**
No. 16	**29**
No. 40	**21**
No. 50	**18**
No. 100	**14**
No. 200	**10**

Liquid Limit **25**

Plastic Index **6**

Specific Gravity ____

Resistance Value **79**

Cover Expansion Pressure

Thickness **3.5** ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity **2,358**

pH Factor **8.1**

HRB Classification ____

Remarks: ____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-182-10, C-203-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2" 1126+50.00** Route **US 50**

Location from oil (ft) Lt. **20'** Rt. ____

Sample No.: **49A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	PSI
0--		300
2--		
4--	Clay	
6--		
8--		
10--		
12--		
14--		
16--		
18--		
20--		

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	**100**
3/4"	**98**
1/2"	**98**
3/8"	**96**
No. 4	**92**
No. 10	**87**
No. 16	**83**
No. 40	**74**
No. 50	**71**
No. 100	**63**
No. 200	**53**

Liquid Limit **35**

Plastic Index **18**

Specific Gravity ____

Resistance Value **24**

Cover Expansion Pressure

Thickness **21.0** ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity **1,883**

pH Factor **7.9**

HRB Classification ____

Remarks: ____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-183-10, C-204-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2" 1117+00.00** Route **US 50**

Location from oil (ft) Lt. **20'** Rt. ____

Sample No.: **50** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--	Silt, Sand, Gravel	0--	350
2--		2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	**100**
3/4"	**98**
1/2"	**82**
3/8"	**71**
No. 4	**48**
No. 10	**33**
No. 16	**27**
No. 40	**20**
No. 50	**17**
No. 100	**13**
No. 200	**9**

Liquid Limit **25**

Plastic Index **3**

Specific Gravity ____

Resistance Value **77**

Cover Expansion Pressure

Thickness **4.1** ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity **1,653**

pH Factor **8.3**

HRB Classification ____

Remarks: ____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-184-10, C-205-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2" 1117+00.00** Route **US 50**

Location from oil (ft) Lt. **20'** Rt. ____

Sample No.: **50A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	PSI
0--		0-- 350
2--		2--
4--		4-- Sandy
6--	Clay	6-- Clay
8--		8--
10--		10--
12--		12--
14--		14--
16--		16--
18--		18--
20--		20--

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**95**
3/8"	**92**
No. 4	**87**
No. 10	**78**
No. 16	**73**
No. 40	**63**
No. 50	**60**
No. 100	**51**
No. 200	**40**

Liquid Limit **33**

Plastic Index **16**

Specific Gravity ____

Resistance Value **26**

Cover Thickness **20.4**

Expansion Pressure ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity **1,965**

pH Factor **8.1**

HRB Classification ____

Remarks: ____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-185-10, C-206-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2"1107+00.00** Route **US 50**

Location from oil (ft) Lt. **40'** Rt. ____

Sample No.: **51** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--		0--	300
2--	Clay	2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	**100**
1"	**98**
3/4"	**97**
1/2"	**91**
3/8"	**89**
No. 4	**82**
No. 10	**75**
No. 16	**70**
No. 40	**59**
No. 50	**54**
No. 100	**46**
No. 200	**39**

Liquid Limit **30**

Plastic Index **14**

Specific Gravity ____

Resistance Value **17**

Cover Thickness **23.2**

Expansion Pressure ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity **3,067**

pH Factor **8.1**

HRB Classification ____

Remarks: ____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-186-10, C-207-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2"1097+00.00** Route **US 50**

Location from oil (ft) Lt. **40'** Rt. ____

Sample No.: **52** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--	Silt, Sand, Gravel	0--	300
2--	Clay	2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	**100**
3/4"	**95**
1/2"	**90**
3/8"	**88**
No. 4	**84**
No. 10	**79**
No. 16	**77**
No. 40	**70**
No. 50	**67**
No. 100	**60**
No. 200	**48**

Liquid Limit **30**

Plastic Index **13**

Specific Gravity ____

Resistance Value **22**

Cover Expansion Pressure

Thickness **21.6** ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity **2,740**

pH Factor **7.5**

HRB Classification ____

Remarks: ____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-187-10, C-208-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2"1095+00.00** Route **US 50**

Location from oil (ft) Lt. **135'** Rt. ____

Sample No.: **53** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks:

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--		0--	100
2--	Silty Sand	2--	
4--	Sand	4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	
1/2"	
3/8"	**100**
No. 4	**99**
No. 10	**93**
No. 16	**86**
No. 40	**72**
No. 50	**66**
No. 100	**53**
No. 200	**37**

Liquid Limit **24**

Plastic Index **6**

Specific Gravity

Resistance Value **29**

Cover Thickness **14.2**

Expansion Pressure

Sand Equivalent

Natural Moisture, %

Resistivity **4,902**

pH Factor **8.0**

HRB Classification

Remarks:

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-188-10, C-209-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2"1087+00.00** Route **US 50**

Location from oil (ft) Lt. **40'** Rt. ____

Sample No.: **54** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--		0--	300
2--	Sandy Clay	2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	
1/2"	**100**
3/8"	**99**
No. 4	**96**
No. 10	**91**
No. 16	**88**
No. 40	**78**
No. 50	**74**
No. 100	**66**
No. 200	**60**

Liquid Limit	**41**
Plastic Index	**22**
Specific Gravity	
Resistance Value	**24**
Cover Thickness	**21.0**
Expansion Pressure	
Sand Equivalent	
Natural Moisture, %	
Resistivity	**3,922**
pH Factor	**7.9**
HRB Classification	

Remarks: ____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-189-10, C-210-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2"1082+00.00** Route **US 50**

Location from oil (ft) Lt. **145'** Rt. ____

Sample No.: **55** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--	Silt, Sand	0--	100
2--	Very Lt. Clay	2--	
4--	Sand	4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	
1/2"	
3/8"	**100**
No. 4	**99**
No. 10	**94**
No. 16	**89**
No. 40	**77**
No. 50	**72**
No. 100	**62**
No. 200	**50**

Liquid Limit **32**

Plastic Index **12**

Specific Gravity ____

Resistance Value **24**

Cover Expansion Pressure

Thickness **15.3** ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity **7,278**

pH Factor **7.5**

HRB Classification ____

Remarks: ____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-190-10, C-211-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2"1077+00.00** Route **US 50**

Location from oil (ft) Lt. **40'** Rt. ____

Sample No.: **56** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--	Silt Sand Gravel	0--	300
2--	Very Lt. Clay	2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**99**
3/8"	**98**
No. 4	**96**
No. 10	**90**
No. 16	**86**
No. 40	**74**
No. 50	**70**
No. 100	**58**
No. 200	**44**

Liquid Limit **27**

Plastic Index **11**

Specific Gravity ____

Resistance Value **28**

Cover Thickness **19.7**

Expansion Pressure ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity **2,770**

pH Factor **7.8**

HRB Classification ____

Remarks: ____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-191-10, C-212-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2"1072+00.00** Route **US 50**

Location from oil (ft) Lt. **140'** Rt. ____

Sample No.: **57** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--	Silt,Sand,Very Lt Clay	0--	100
2--		2--	
4--	Gravelly Sand	4--	
6--		6--	← Silt
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	
1/2"	
3/8"	**100**
No. 4	**98**
No. 10	**89**
No. 16	**83**
No. 40	**69**
No. 50	**62**
No. 100	**47**
No. 200	**31**

Liquid Limit **23**

Plastic Index **3**

Specific Gravity ____

Resistance Value **64**

Cover Expansion Pressure

Thickness **6.0** ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity **7,874**

pH Factor **6.9**

HRB Classification ____

Remarks: ____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-193-10, C-214-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2"1067+00.00** Route **US 50**

Location from oil (ft) Lt. **40'** Rt. ____

Sample No.: **58** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--	Silty Sandy	0--	300
2--	Clay	2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**98**
3/8"	**97**
No. 4	**93**
No. 10	**82**
No. 16	**76**
No. 40	**64**
No. 50	**59**
No. 100	**48**
No. 200	**37**

Liquid Limit	**26**
Plastic Index	**9**
Specific Gravity	
Resistance Value	**32**
Cover Thickness	**18.4**
Expansion Pressure	
Sand Equivalent	
Natural Moisture, %	
Resistivity	**3,436**
pH Factor	**7.2**
HRB Classification	

Remarks: ____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-194-10, C-215-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2"1062+00.00** Route **US 50**

Location from oil (ft) Lt. **145'** Rt. ____

Sample No.: **59** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--	Silty Sand	0--	100
2--	Very Lt. Clay	2--	
4--	Sandy Silt	4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**99**
3/8"	**97**
No. 4	**92**
No. 10	**82**
No. 16	**76**
No. 40	**64**
No. 50	**58**
No. 100	**42**
No. 200	**25**

Liquid Limit **21**

Plastic Index **NP**

Specific Gravity ____

Resistance Value **69**

Cover Expansion Pressure

Thickness **4.9** ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity **5,271**

pH Factor **7.4**

HRB Classification ____

Remarks: ____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-195-10, C-216-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2"1057+00.00** Route **US 50**

Location from oil (ft) Lt. **40'** Rt. _____

Sample No.: **60** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--	Silty Sandy	0--	300
2--	Clay	2--	
4--		4--	
6--		6--	Clay
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**99**
3/8"	**97**
No. 4	**91**
No. 10	**83**
No. 16	**78**
No. 40	**66**
No. 50	**60**
No. 100	**45**
No. 200	**31**

Liquid Limit **21**

Plastic Index **4**

Specific Gravity _____

Resistance Value **31**

Cover Thickness **18.8**

Expansion Pressure _____

Sand Equivalent _____

Natural Moisture, % _____

Resistivity **4,587**

pH Factor **7.6**

HRB Classification _____

Remarks: _____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-196-10, C-217-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2"1052+00.00** Route **US 50**

Location from oil (ft) Lt. **145'** Rt. ____

Sample No.: **61** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--	Silt,Sand,Gravel	0--	100
2--	Very Lt. Clay	2--	
4--	Gravelly Silt	4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	
1/2"	
3/8"	**100**
No. 4	**94**
No. 10	**83**
No. 16	**76**
No. 40	**62**
No. 50	**56**
No. 100	**42**
No. 200	**28**

Liquid Limit **20**

Plastic Index **2**

Specific Gravity ____

Resistance Value **40**

Cover Expansion Pressure

Thickness **11.6** ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity **10,604**

pH Factor **7.1**

HRB Classification ____

Remarks: ____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-197-10, C-218-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2"1047+00.00** Route **US 50**

Location from oil (ft) Lt. **40'** Rt. ____

Sample No.: **62** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--		0--	300
2--	Sandy Clay	2--	
4--	Clay	4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	
1/2"	
3/8"	**100**
No. 4	**95**
No. 10	**87**
No. 16	**83**
No. 40	**72**
No. 50	**66**
No. 100	**49**
No. 200	**33**

Liquid Limit	**20**
Plastic Index	**3**
Specific Gravity	
Resistance Value	**40**
Cover Thickness	**15.9**
Expansion Pressure	
Sand Equivalent	
Natural Moisture, %	
Resistivity	**4,695**
pH Factor	**7.6**
HRB Classification	

Remarks: ____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-198-10, C-219-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2"1042+00.00** Route **US 50**

Location from oil (ft) Lt. **145'** Rt. ____

Sample No.: **63** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--	Silt Sand Gravel	0--	100
2--		2--	
4--	Silt Sand Fine Gravel	4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**98**
3/8"	**96**
No. 4	**85**
No. 10	**69**
No. 16	**61**
No. 40	**48**
No. 50	**43**
No. 100	**30**
No. 200	**20**

Liquid Limit **24**

Plastic Index **5**

Specific Gravity ____

Resistance Value **32**

Cover Expansion Pressure

Thickness **13.5** ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity **6,131**

pH Factor **7.7**

HRB Classification ____

Remarks: ____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-199-10, C-220-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2"1037+00.00** Route **US 50**

Location from oil (ft) Lt. **40'** Rt. ____

Sample No.: **64** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--		0--	300
2--	Sandy Clay	2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**91**
3/8"	**83**
No. 4	**65**
No. 10	**49**
No. 16	**42**
No. 40	**29**
No. 50	**24**
No. 100	**14**
No. 200	**9**

Liquid Limit **19**

Plastic Index **NP**

Specific Gravity ____

Resistance Value **81**

Cover Expansion Pressure

Thickness **2.9** ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity **5,285**

pH Factor **7.8**

HRB Classification ____

Remarks: ____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-200-10, C-221-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2"1027+00.00** Route **US 50**

Location from oil (ft) Lt. **43'** Rt. ____

Sample No.: **65** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks:

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	PSI
0--		300
2--	Clay	
4--	Silt Sand Lt. Clay	
6--		
8--		
10--		
12--		
14--		
16--		
18--		
20--		

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**99**
3/8"	**97**
No. 4	**93**
No. 10	**85**
No. 16	**80**
No. 40	**68**
No. 50	**62**
No. 100	**45**
No. 200	**29**

Liquid Limit **22**

Plastic Index **3**

Specific Gravity

Resistance Value **60**

Cover Expansion Pressure

Thickness **9.5**

Sand Equivalent

Natural Moisture, %

Resistivity **5,000**

pH Factor **7.8**

HRB Classification

Remarks:

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-201-10, C-222-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2"1017+00.00** Route **US 50**

Location from oil (ft) Lt. **42'** Rt. ____

Sample No.: **66** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--		0--	300
2--	Sandy Silt	2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	
1/2"	**100**
3/8"	**99**
No. 4	**95**
No. 10	**89**
No. 16	**84**
No. 40	**74**
No. 50	**67**
No. 100	**52**
No. 200	**37**

Liquid Limit	**28**
Plastic Index	**8**
Specific Gravity	
Resistance Value	**23**
Cover Thickness	**21.3**
Expansion Pressure	
Sand Equivalent	
Natural Moisture, %	
Resistivity	**149**
pH Factor	**7.8**
HRB Classification	

Remarks: ____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-202-10, C-223-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2"1007+00.00** Route **US 50**

Location from oil (ft) Lt. **40'** Rt. ____

Sample No.: **67** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--	Silt Sand	0--	300
2--	Lt. Clay	2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**99**
3/8"	**98**
No. 4	**96**
No. 10	**89**
No. 16	**85**
No. 40	**73**
No. 50	**65**
No. 100	**43**
No. 200	**26**

Liquid Limit **21**

Plastic Index **4**

Specific Gravity ____

Resistance Value **36**

Cover Expansion Pressure

Thickness **17.2** ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity **1,751**

pH Factor **8.8**

HRB Classification ____

Remarks: ____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-203-10, C-224-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2"997+00.00** Route **US 50**

Location from oil (ft) Lt. **40'** Rt. ____

Sample No.: **68** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--		0--	300
2--	Silt Sand Clay	2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	
1/2"	**100**
3/8"	**98**
No. 4	**94**
No. 10	**89**
No. 16	**86**
No. 40	**74**
No. 50	**63**
No. 100	**38**
No. 200	**23**

Liquid Limit **20**

Plastic Index **3**

Specific Gravity ____

Resistance Value **58**

Cover Expansion Pressure

Thickness **10.2** ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity **3,559**

pH Factor **8.4**

HRB Classification ____

Remarks: ____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-204-10, C-225-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2"987+00.00** Route **US 50**

Location from oil (ft) Lt. **40'** Rt. ____

Sample No.: **69** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--		0--	300
2--	Silt Sand Gravel	2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**94**
3/8"	**89**
No. 4	**74**
No. 10	**60**
No. 16	**54**
No. 40	**43**
No. 50	**38**
No. 100	**28**
No. 200	**19**

Liquid Limit **21**

Plastic Index **3**

Specific Gravity ____

Resistance Value **29**

Cover Expansion Pressure

Thickness **19.4** ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity **4,149**

pH Factor **8.0**

HRB Classification ____

Remarks: ____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-205-10, C-226-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2"982+00.00** Route **US 50**

Location from oil (ft) Lt. **145'** Rt. _____

Sample No.: **70** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--	Silty Clay	0--	100
2--		2--	
4--	Gravelly Silt	4--	
6--		6--	Silt
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	
1/2"	
3/8"	**100**
No. 4	**99**
No. 10	**97**
No. 16	**95**
No. 40	**89**
No. 50	**85**
No. 100	**59**
No. 200	**36**

Liquid Limit **24**

Plastic Index **7**

Specific Gravity _____

Resistance Value **44**

Cover Expansion Pressure

Thickness **10.7** _____

Sand Equivalent _____

Natural Moisture, % _____

Resistivity **7,008**

pH Factor **7.3**

HRB Classification _____

Remarks: _____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-206-10, C-227-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2"977+00.00** Route **US 50**

Location from oil (ft) Lt. **40'** Rt. ____

Sample No.: **71** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--	Silt Sand	0--	300
2--	Lt. Gravel	2--	
4--	Lt. Clay	4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**97**
3/8"	**94**
No. 4	**87**
No. 10	**79**
No. 16	**75**
No. 40	**66**
No. 50	**61**
No. 100	**49**
No. 200	**33**

Liquid Limit **25**

Plastic Index **7**

Specific Gravity ____

Resistance Value **48**

Cover Expansion Pressure

Thickness **13.4** ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity **4,926**

pH Factor **7.7**

HRB Classification ____

Remarks: ____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-207-10, C-228-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2"972+00.00** Route **US 50**

Location from oil (ft) Lt. **145'** Rt. ____

Sample No.: **72** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--	Silt Sand Very Lt. Clay	0--	100
2--		2--	
4--	Sandy Silt	4--	
6--		6--	Silt
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	
1/2"	
3/8"	**100**
No. 4	**99**
No. 10	**97**
No. 16	**95**
No. 40	**87**
No. 50	**80**
No. 100	**55**
No. 200	**32**

Liquid Limit **18**

Plastic Index **2**

Specific Gravity ____

Resistance Value **68**

Cover Thickness **5.1**

Expansion Pressure ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity **6,468**

pH Factor **7.5**

HRB Classification ____

Remarks: ____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-208-10, C-229-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2"967+00.00** Route **US 50**

Location from oil (ft) Lt. **40'** Rt. ____

Sample No.: **73** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--	Silt Sand	0--	300
2--	Gravel	2--	
4--	Lt. Clay	4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	**100**
1"	**97**
3/4"	**97**
1/2"	**93**
3/8"	**91**
No. 4	**84**
No. 10	**78**
No. 16	**74**
No. 40	**62**
No. 50	**56**
No. 100	**40**
No. 200	**24**

Liquid Limit **19**

Plastic Index **1**

Specific Gravity ____

Resistance Value **73**

Cover Expansion Pressure

Thickness **5.4** ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity **4,831**

pH Factor **7.8**

HRB Classification ____

Remarks: ____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-209-10, C-230-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2"962+00.00** Route **US 50**

Location from oil (ft) Lt. **145'** Rt. _____

Sample No.: **74** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	PSI
0--	Silt Sand Very Lt. Clay	100
2--		
4--	Silt Sand Gravel	
6--		Silt
8--		
10--		
12--		
14--		
16--		
18--		
20--		

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	**100**
3/4"	**97**
1/2"	**97**
3/8"	**95**
No. 4	**88**
No. 10	**76**
No. 16	**71**
No. 40	**59**
No. 50	**53**
No. 100	**38**
No. 200	**25**

Liquid Limit **21**

Plastic Index **3**

Specific Gravity _____

Resistance Value **55**

Cover Expansion Pressure

Thickness **8.1** _____

Sand Equivalent _____

Natural Moisture, % _____

Resistivity **8,217**

pH Factor **7.5**

HRB Classification _____

Remarks: _____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-210-10, C-231-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2"957+00.00** Route **US 50**

Location from oil (ft) Lt. **40'** Rt. ____

Sample No.: **75** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--	Silt Sand	0--	300
2--	Very Lt. Gravel	2--	
4--	Lt. Clay	4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**98**
3/8"	**98**
No. 4	**95**
No. 10	**91**
No. 16	**87**
No. 40	**76**
No. 50	**71**
No. 100	**59**
No. 200	**42**

Liquid Limit **24**

Plastic Index **7**

Specific Gravity ____

Resistance Value **55**

Cover Expansion Pressure

Thickness **11.1** ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity **5,302**

pH Factor **7.4**

HRB Classification ____

Remarks: ____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-211-10, C-232-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2"952+65.00** Route **US 50**

Location from oil (ft) Lt. **145'** Rt. ____

Sample No.: **76** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--	Sandy Silt	0--	100
2--		2--	
4--	Gravelly Silt	4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**99**
3/8"	**99**
No. 4	**94**
No. 10	**89**
No. 16	**85**
No. 40	**76**
No. 50	**72**
No. 100	**58**
No. 200	**37**

Liquid Limit	**22**
Plastic Index	**3**
Specific Gravity	
Resistance Value	**69**
Cover Thickness	**4.9**
Expansion Pressure	
Sand Equivalent	
Natural Moisture, %	
Resistivity	**6,770**
pH Factor	**7.2**
HRB Classification	

Remarks: ____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-212-10, C-233-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2"947+00.00** Route **US 50**

Location from oil (ft) Lt. **41'** Rt. ____

Sample No.: **77** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--	Silty Sandy	0--	300
2--	Clay	2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**99**
3/8"	**99**
No. 4	**94**
No. 10	**85**
No. 16	**81**
No. 40	**69**
No. 50	**64**
No. 100	**50**
No. 200	**34**

Liquid Limit **21**

Plastic Index **2**

Specific Gravity ____

Resistance Value **73**

Cover Expansion Pressure

Thickness **5.4** ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity **5,333**

pH Factor **7.6**

HRB Classification ____

Remarks: ____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-213-10, C-234-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2"937+00.00** Route **US 50**

Location from oil (ft) Lt. **40'** Rt.

Sample No.: **78** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) Oil Depth (in)

Remarks:

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--	Silt Sand	0--	300
2--	Clay	2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	
1/2"	**100**
3/8"	**98**
No. 4	**97**
No. 10	**94**
No. 16	**90**
No. 40	**79**
No. 50	**74**
No. 100	**58**
No. 200	**39**

Liquid Limit **22**

Plastic Index **3**

Specific Gravity

Resistance Value **68**

Cover Expansion Pressure

Thickness **7.0**

Sand Equivalent

Natural Moisture, %

Resistivity **4,630**

pH Factor **7.6**

HRB Classification

Remarks:

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-214-10, C-235-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2"927+00.00** Route **US 50**

Location from oil (ft) Lt. **42'** Rt. ____

Sample No.: **79** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--		0--	300
2--	Silt Sand Lt. Clay	2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**99**
3/8"	**97**
No. 4	**94**
No. 10	**87**
No. 16	**82**
No. 40	**70**
No. 50	**63**
No. 100	**46**
No. 200	**28**

Liquid Limit **19**

Plastic Index **NP**

Specific Gravity ____

Resistance Value **71**

Cover Expansion Pressure

Thickness **6.0** ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity **5,721**

pH Factor **7.6**

HRB Classification ____

Remarks: ____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-215-10, C-236-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2"917+00.00** Route **US 50**

Location from oil (ft) Lt. **40'** Rt. ____

Sample No.: **80** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	PSI
0--		0-- 300
2--	Silty Sand	2--
4--		4-- ←
6--		6-- Sand
8--		8--
10--		10--
12--		12--
14--		14--
16--		16--
18--		18--
20--		20--

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	
1/2"	**100**
3/8"	**99**
No. 4	**94**
No. 10	**82**
No. 16	**74**
No. 40	**56**
No. 50	**49**
No. 100	**34**
No. 200	**22**

Liquid Limit **19**

Plastic Index **NP**

Specific Gravity ____

Resistance Value **78**

Cover Thickness **3.8**

Expansion Pressure ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity **5,225**

pH Factor **7.5**

HRB Classification ____

Remarks: ____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-230-10, C-254-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/23/10**

Samplers: **Wimer, Altamirano** Station **"X2" 908+00.00** Route **US 50**

Location from oil (ft) Lt. **40'** Rt. ____

Sample No.: **81** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ☐ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■ 20'Wof Clof

Gravel Depth (in) ____ Oil Depth (in) ____ Iron Mt. Rd

Remarks: Location of drill hole is 30' Rt of C.L. of fr. Road SPT sample taken from 1'-2 1/2'. Snow acc. @ location 6"-8".

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	PSI
0--		150
2--	Sand Silt	
4--		
6--	Sand	
8--		
10--		
12--		
14--		
16--		
18--		
20--		

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**99**
3/8"	**98**
No. 4	**93**
No. 10	**79**
No. 16	**70**
No. 40	**51**
No. 50	**44**
No. 100	**32**
No. 200	**22**

Liquid Limit **21**

Plastic Index **NP**

Specific Gravity

Resistance Value **79**

Cover Expansion Pressure

Thickness **3.5**

Sand Equivalent

Natural Moisture, %

Resistivity **5,981**

pH Factor **6.8**

HRB Classification

Remarks:

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-216-10, C-239-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2"907+00.00** Route **US 50**

Location from oil (ft) Lt. **43'** Rt. ____

Sample No.: **82** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--	Silt Sand	0--	300
2--	Very Lt. Clay	2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**95**
3/8"	**94**
No. 4	**88**
No. 10	**77**
No. 16	**70**
No. 40	**55**
No. 50	**49**
No. 100	**34**
No. 200	**23**

Liquid Limit **21**

Plastic Index **2**

Specific Gravity ____

Resistance Value **67**

Cover Thickness **7.3**

Expansion Pressure ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity ____

pH Factor ____

HRB Classification ____

Remarks: ____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-231-10, C-255-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/23/10**

Samplers: **Wimer, Altamirano** Station **"X2"902+00.00** Route **US 50**

Location from oil (ft) Lt. **140'** Rt. ____

Sample No.: **83** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ☐ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: Location of drill hole is 20' Rt of CL of FR Road

SPT sample taken 1'-2 1/2' Snow cover @ location

6"-8"

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--	Sand Silt	0--	150
2--		2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**99**
3/8"	**98**
No. 4	**93**
No. 10	**81**
No. 16	**74**
No. 40	**57**
No. 50	**51**
No. 100	**37**
No. 200	**24**

Liquid Limit **23**

Plastic Index **5**

Specific Gravity ____

Resistance Value **65**

Cover Thickness **5.8**

Expansion Pressure ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity **10,142**

pH Factor **6.8**

HRB Classification ____

Remarks: ____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-217-10, C-240-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2"897+00.00** Route **US 50**

Location from oil (ft) Lt. **42'** Rt. ____

Sample No.: **84** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--	Silt Sand	0--	300
2--		2--	
4--	Gravelly Sand	4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**98**
3/8"	**97**
No. 4	**92**
No. 10	**78**
No. 16	**69**
No. 40	**50**
No. 50	**42**
No. 100	**29**
No. 200	**19**

Liquid Limit **21**

Plastic Index **4**

Specific Gravity ____

Resistance Value **69**

Cover Expansion Pressure

Thickness **6.7** ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity ____

pH Factor ____

HRB Classification ____

Remarks: ____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-232-10, C-256-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/23/10**

Samplers: **Rigsby, Wimer** Station **"X2"892+00.00** Route **US 50**

Location from oil (ft) Lt. **132'** Rt. ____

Sample No.: **85** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ☐ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■ 40' from

Gravel Depth (in) ____ Oil Depth (in) ____ Fr. Road

Remarks: SPT 1' to 2 1/2' SPT blow count 7-10-22.

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--	Silt Sand	0--	100
2--	Gravel	2--	Blow
4--	Silty Sand	4--	Count
6--		6--	7
8--		8--	10
10--		10--	22
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	**100**
3/4"	**95**
1/2"	**89**
3/8"	**85**
No. 4	**73**
No. 10	**58**
No. 16	**50**
No. 40	**36**
No. 50	**30**
No. 100	**20**
No. 200	**14**

Liquid Limit **23**

Plastic Index **3**

Specific Gravity

Resistance Value **69**

Cover Expansion Pressure

Thickness **4.9**

Sand Equivalent

Natural Moisture, %

Resistivity **6,406**

pH Factor **7.5**

HRB Classification

Remarks:

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-233-10, C-257-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/23/10**

Samplers: **Rigsby, Wimer** Station **"X2" 887+78.04** Route **US 50**

Location from oil (ft) Lt. **140'** Rt. ____

Sample No.: **86** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ☐ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■ 40' from

Gravel Depth (in) ____ Oil Depth (in) ____ Fr. Road

Remarks: SPT 1' to 2 1/2' SPT blow count 3-8-16.

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--	Silt Sand	0--	100
2--	Gravel	2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	**100**
1.5"	**95**
1"	**89**
3/4"	**77**
1/2"	**65**
3/8"	**61**
No. 4	**51**
No. 10	**43**
No. 16	**40**
No. 40	**33**
No. 50	**29**
No. 100	**21**
No. 200	**17**

Liquid Limit **28**

Plastic Index **12**

Specific Gravity

Resistance Value **31**

Cover Expansion Pressure

Thickness **13.7**

Sand Equivalent

Natural Moisture, %

Resistivity **6,020**

pH Factor **6.9**

HRB Classification

Remarks:

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-218-10, C-241-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2"887+00.00** Route **US 50**

Location from oil (ft) Lt. **40'** Rt. ____

Sample No.: **87** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ☐ Fill Section ■

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--		0--	100
2--	Silt, Sand, Gravel	2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**95**
3/8"	**91**
No. 4	**80**
No. 10	**67**
No. 16	**60**
No. 40	**46**
No. 50	**40**
No. 100	**28**
No. 200	**20**

Liquid Limit **23**

Plastic Index **5**

Specific Gravity ____

Resistance Value **45**

Cover Expansion Pressure

Thickness **14.3** ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity ____

pH Factor ____

HRB Classification ____

Remarks: ____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-219-10, C-242-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2" 887+00.00** Route **US 50**

Location from oil (ft) Lt. **40'** Rt. ____

Sample No.: **87A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ☐ Fill Section ■

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks:

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--		0--	100
2--		2--	
4--	Sandy Clay	4--	
6--	Silt, Sand, Gravel	6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	**100**
1"	**85**
3/4"	**85**
1/2"	**72**
3/8"	**66**
No. 4	**46**
No. 10	**32**
No. 16	**26**
No. 40	**17**
No. 50	**14**
No. 100	**8**
No. 200	**5**

Liquid Limit **21**

Plastic Index **NP**

Specific Gravity ____

Resistance Value **77**

Cover Expansion Pressure

Thickness **4.1** ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity ____

pH Factor ____

HRB Classification ____

Remarks:

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-220-10, C-243-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2"877+00.00** Route **US 50**

Location from oil (ft) Lt. **40'** Rt. ____

Sample No.: **88** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--		0--	100
2--	Silt, Sand, Gravel	2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	**100**
3/4"	**92**
1/2"	**86**
3/8"	**82**
No. 4	**72**
No. 10	**59**
No. 16	**51**
No. 40	**34**
No. 50	**28**
No. 100	**17**
No. 200	**10**

Liquid Limit **18**

Plastic Index **NP**

Specific Gravity ____

Resistance Value **77**

Cover Thickness **4.1**

Expansion Pressure ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity ____

pH Factor ____

HRB Classification ____

Remarks: ____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-221-10, C-244-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2" 877+00.00** Route **US 50**

Location from oil (ft) Lt. **40'** Rt. ____

Sample No.: **88A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks:

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	PSI
0--		100
2--		
4--	Sand	
6--	Silt, Sand, Lt. Clay	
8--		
10--		
12--		
14--		
16--		
18--		
20--		

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	**100**
3/4"	**98**
1/2"	**97**
3/8"	**96**
No. 4	**91**
No. 10	**81**
No. 16	**70**
No. 40	**48**
No. 50	**42**
No. 100	**31**
No. 200	**24**

Liquid Limit **29**

Plastic Index **8**

Specific Gravity

Resistance Value **58**

Cover Thickness **10.2**

Expansion Pressure

Sand Equivalent

Natural Moisture, %

Resistivity

pH Factor

HRB Classification

Remarks:

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-224-10, C-248-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2"867+00.00** Route **US 50**

Location from oil (ft) Lt. **38'** Rt. ____

Sample No.: **89** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--	Silt Sand	0--	100
2--	Fine Gravel	2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	**100**
3/4"	**97**
1/2"	**92**
3/8"	**86**
No. 4	**61**
No. 10	**43**
No. 16	**34**
No. 40	**19**
No. 50	**14**
No. 100	**8**
No. 200	**4**

Liquid Limit **21**

Plastic Index **NP**

Specific Gravity ____

Resistance Value **80**

Cover Thickness **3.2**

Expansion Pressure ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity **6,057**

pH Factor **7.1**

HRB Classification ____

Remarks: ____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-225-10, C-249-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2" 867+00.00** Route **US 50**

Location from oil (ft) Lt. **38'** Rt. ____

Sample No.: **89A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	PSI
0--		100
2--		
4--	Gravel	
6--	Decomposed Granite	
8--		
10--		
12--		
14--		
16--		
18--		
20--		

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**96**
3/8"	**91**
No. 4	**75**
No. 10	**52**
No. 16	**40**
No. 40	**24**
No. 50	**20**
No. 100	**12**
No. 200	**7**

Liquid Limit **20**

Plastic Index **NP**

Specific Gravity ____

Resistance Value **76**

Cover Thickness **4.5**

Expansion Pressure ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity **9,911**

pH Factor **7.9**

HRB Classification ____

Remarks: ____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-285-10, C-318-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2" 857+00.00** Route **US 50**

Location from oil (ft) Lt. **40'** Rt. ____

Sample No.: **90** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ☐ Fill Section ■

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--	Silt, Sand	0--	100
2--	Fine Gravel	2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**89**
3/8"	**78**
No. 4	**49**
No. 10	**34**
No. 16	**27**
No. 40	**17**
No. 50	**13**
No. 100	**8**
No. 200	**4**

Liquid Limit **21**

Plastic Index **NP**

Specific Gravity ____

Resistance Value **80**

Cover Expansion Pressure

Thickness **3.2** ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity **4,292**

pH Factor **7.4**

HRB Classification ____

Remarks: ____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-226-10, C-250-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2" 857+00.00** Route **US 50**

Location from oil (ft) Lt. **40'** Rt. ____

Sample No.: **90A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	PSI
0--		100
2--		
4--	Silt, Sand, Gravel	
6--	Decomposed Granite	
8--		
10--		
12--		
14--		
16--		
18--		
20--		

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	**100**
3/4"	**96**
1/2"	**77**
3/8"	**65**
No. 4	**46**
No. 10	**36**
No. 16	**32**
No. 40	**26**
No. 50	**23**
No. 100	**18**
No. 200	**14**

Liquid Limit **26**

Plastic Index **9**

Specific Gravity ____

Resistance Value **41**

Cover Expansion Pressure

Thickness **15.6** ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity **3,610**

pH Factor **7.8**

HRB Classification ____

Remarks: ____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-290-10, C-323-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2" 847+00.00** Route **US 50**

Location from oil (ft) Lt. **40'** Rt. ____

Sample No.: **91** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--	Silt, Sand, Gravel	0--	100
2--		2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	**100**
3/4"	**97**
1/2"	**85**
3/8"	**73**
No. 4	**42**
No. 10	**24**
No. 16	**17**
No. 40	**10**
No. 50	**8**
No. 100	**5**
No. 200	**3**

Liquid Limit **24**

Plastic Index **NP**

Specific Gravity ____

Resistance Value **80**

Cover Thickness **3.2**

Expansion Pressure ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity **3,636**

pH Factor **7.8**

HRB Classification ____

Remarks: ____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-227-10, C-251-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2" 847+00.00** Route **US 50**

Location from oil (ft) Lt. **40'** Rt. ____

Sample No.: **91A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--		0--	100
2--	Silt, Sand, Lt. Clay	2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	
1/2"	**100**
3/8"	**99**
No. 4	**94**
No. 10	**86**
No. 16	**78**
No. 40	**56**
No. 50	**49**
No. 100	**38**
No. 200	**28**

Liquid Limit	**24**
Plastic Index	**4**
Specific Gravity	
Resistance Value	**75**
Cover Thickness	**4.8**
Expansion Pressure	
Sand Equivalent	
Natural Moisture, %	
Resistivity	**2,941**
pH Factor	**7.8**
HRB Classification	

Remarks: ____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-291-10, C-324-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2" 837+00.00** Route **US 50**

Location from oil (ft) Lt. **20'** Rt. ____

Sample No.: **92** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--	Silt, Sand, Fine Gravel	0--	100
2--	Oil	2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	**100**
1"	**93**
3/4"	**91**
1/2"	**85**
3/8"	**80**
No. 4	**59**
No. 10	**43**
No. 16	**35**
No. 40	**23**
No. 50	**19**
No. 100	**12**
No. 200	**7**

Liquid Limit **19**

Plastic Index **NP**

Specific Gravity ____

Resistance Value **79**

Cover Thickness **3.5**

Expansion Pressure ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity **2,174**

pH Factor **8.4**

HRB Classification ____

Remarks: ____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-228-10, C-252-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2" 837+00.00** Route **US 50**

Location from oil (ft) Lt. **20'** Rt. ____

Sample No.: **92A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	PSI
0--		100
2--		
4--	Silt, Sand, Gravel	
6--	Lt. Clay	
8--		
10--		
12--		
14--		
16--		
18--		
20--		

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	**100**
3/4"	**97**
1/2"	**92**
3/8"	**85**
No. 4	**61**
No. 10	**42**
No. 16	**34**
No. 40	**24**
No. 50	**22**
No. 100	**18**
No. 200	**16**

Liquid Limit **31**

Plastic Index **13**

Specific Gravity

Resistance Value **66**

Cover Expansion Pressure

Thickness **7.6**

Sand Equivalent

Natural Moisture, %

Resistivity **3,096**

pH Factor **8.2**

HRB Classification

Remarks: ____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-293-10, C-326-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2" 827+00.00** Route **US 50**

Location from oil (ft) Lt. **20'** Rt. ____

Sample No.: **93** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--	Silt Sand, Fine Gravel	0--	100
2--		2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	**100**
3/4"	**98**
1/2"	**94**
3/8"	**88**
No. 4	**67**
No. 10	**51**
No. 16	**43**
No. 40	**29**
No. 50	**24**
No. 100	**16**
No. 200	**10**

Liquid Limit **19**

Plastic Index **NP**

Specific Gravity

Resistance Value **81**

Cover Thickness **2.9**

Expansion Pressure ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity **1,111**

pH Factor **7.5**

HRB Classification ____

Remarks: ____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-229-10, C-253-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2" 827+00.00** Route **US 50**

Location from oil (ft) Lt. **20'** Rt. ____

Sample No.: **93A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	Depth (ft)	PSI
0--		0--	100
2--		2--	
4--	Sandy Silt	4--	
6--	Gravelly Sand	6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	
1/2"	**100**
3/8"	**97**
No. 4	**89**
No. 10	**81**
No. 16	**76**
No. 40	**60**
No. 50	**52**
No. 100	**39**
No. 200	**29**

Liquid Limit **24**

Plastic Index **5**

Specific Gravity ____

Resistance Value **37**

Cover Thickness **16.9**

Expansion Pressure ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity **1,215**

pH Factor **7.3**

HRB Classification ____

Remarks: ____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-294-10, C-327-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2" 817+00.00** Route **US 50**

Location from oil (ft) Lt. **20'** Rt. ____

Sample No.: **94** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--	Silt, Sand, Gravel	0--	100
2--		2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	**100**
3/4"	**96**
1/2"	**87**
3/8"	**79**
No. 4	**58**
No. 10	**41**
No. 16	**34**
No. 40	**23**
No. 50	**19**
No. 100	**13**
No. 200	**9**

Liquid Limit **20**

Plastic Index **NP**

Specific Gravity ____

Resistance Value **80**

Cover Expansion Pressure

Thickness **3.2** ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity **2,146**

pH Factor **8.1**

HRB Classification ____

Remarks: ____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-295-10, C-328-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2" 817+00.00** Route **US 50**

Location from oil (ft) Lt. **20'** Rt. ____

Sample No.: **94A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks:

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	PSI
0--		100
2--		
4--	Silt, Sand	
6--	Lt. Clay	
8--		
10--		
12--		
14--		
16--		
18--		
20--		

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**99**
3/8"	**97**
No. 4	**91**
No. 10	**81**
No. 16	**73**
No. 40	**56**
No. 50	**51**
No. 100	**41**
No. 200	**29**

Liquid Limit **24**

Plastic Index **4**

Specific Gravity

Resistance Value **43**

Cover Expansion Pressure

Thickness **14.9**

Sand Equivalent

Natural Moisture, %

Resistivity **3,067**

pH Factor **7.7**

HRB Classification

Remarks:

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-296-10, C-329-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2" 807+00.00** Route **US 50**

Location from oil (ft) Lt. **20'** Rt. ____

Sample No.: **95** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--	Silt, Sand, Gravel	0--	100
2--		2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	**100**
3/4"	**95**
1/2"	**90**
3/8"	**82**
No. 4	**65**
No. 10	**49**
No. 16	**42**
No. 40	**27**
No. 50	**22**
No. 100	**13**
No. 200	**8**

Liquid Limit **20**

Plastic Index **NP**

Specific Gravity ____

Resistance Value **80**

Cover Expansion Pressure

Thickness **3.2** ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity **2,398**

pH Factor **8.0**

HRB Classification ____

Remarks: ____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-297-10, C-330-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2" 807+00.00** Route **US 50**

Location from oil (ft) Lt. **20'** Rt. ____

Sample No.: **95A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	PSI
0--		100
2--		
4--	Sandy Silt	
6--	Gravelly Silty Sand	
8--		
10--		
12--		
14--		
16--		
18--		
20--		

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**99**
3/8"	**96**
No. 4	**87**
No. 10	**77**
No. 16	**69**
No. 40	**51**
No. 50	**45**
No. 100	**28**
No. 200	**23**

Liquid Limit **21**

Plastic Index **3**

Specific Gravity ____

Resistance Value **54**

Cover Expansion Pressure

Thickness **11.4** ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity **3,922**

pH Factor **7.5**

HRB Classification ____

Remarks: ____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-298-10, C-331-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2" 797+00.00** Route **US 50**

Location from oil (ft) Lt. **20'** Rt. ____

Sample No.: **96** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--	Silt, Sand, Gravel	0--	100
2--		2--	
4--		4--	
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	**100**
3/4"	**98**
1/2"	**93**
3/8"	**88**
No. 4	**74**
No. 10	**58**
No. 16	**48**
No. 40	**29**
No. 50	**23**
No. 100	**13**
No. 200	**7**

Liquid Limit **20**

Plastic Index **NP**

Specific Gravity ____

Resistance Value **81**

Cover Expansion Pressure

Thickness **2.9** ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity **2,924**

pH Factor **8.1**

HRB Classification ____

Remarks: ____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-299-10, C-335-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **2/9/10**

Samplers: **Hinton, Larracuente** Station **"X2" 797+00.00** Route **US 50**

Location from oil (ft) Lt. **20'** Rt. ____

Sample No.: **96A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Maynard Hinton**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--		0--	100
2--		2--	
4--	Silt, Sand	4--	
6--	Lt. Clay	6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	
3/4"	**100**
1/2"	**98**
3/8"	**97**
No. 4	**91**
No. 10	**81**
No. 16	**73**
No. 40	**56**
No. 50	**49**
No. 100	**37**
No. 200	**25**

Liquid Limit **22**

Plastic Index **3**

Specific Gravity ____

Resistance Value **44**

Cover Thickness **14.6**

Expansion Pressure ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity **3,226**

pH Factor **7.7**

HRB Classification ____

Remarks: ____

NDOT 027, Rev. 05-01

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-300-10, C-336-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **03/25/10**

Samplers: **Altamirano, Marshall** Station **"L1" 787+00** Route **US 50** **W.B.**

Location from oil (ft) Lt. **30** Rt. ____

Sample No.: **97** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) ____ Oil Depth (in) ____

Remarks: ____

Submitted By: **Altamirano**

Title: **Engineering Tech III**

Depth (ft)	Boring Description	PSI
0--		
2--	Silt, Sand, Gravel	100
4--		
6--		
8--		
10--		
12--		
14--		
16--		
18--		
20--		

Sieve Size	% Passing
3"	
2"	
1.5"	**100**
1"	**99**
3/4"	**97**
1/2"	**82**
3/8"	**73**
No. 4	**58**
No. 10	**46**
No. 16	**40**
No. 40	**29**
No. 50	**25**
No. 100	**19**
No. 200	**15**

Liquid Limit **22**

Plastic Index **5**

Specific Gravity ____

Resistance Value **64**

Cover Expansion Pressure

Thickness **8.3** ____

Sand Equivalent ____

Natural Moisture, % ____

Resistivity **2,053**

pH Factor **8.4**

HRB Classification ____

Remarks: ____

LINE SAMPLING DATA

Date Reported: **04/23/10**

Lab No.: **Soils10-01, RV-301-10, C-337-10**

E.A.: **73475** Job Description: **US 50 from LY 14.00 to 20.39**

Date Rec'd **03/25/10**

Samplers: **Altamirano, Marshall** Station **"L1" 787+00** Route **US 50** **W.B.**

Location from oil (ft) Lt. **30** Rt. _____

Sample No.: **97A** County: **LYON**

Sample Type:

RV ■ Sub ☐ Chem ☐ DC ☐ Other ☐

Vegetation: None ■ Trees ☐ Shrubs ☐ Brushy ☐ Grassy ☐

Cut Section ■ Fill Section ☐

Taken Through Oil ☐ Taken on Shoulder ■

Gravel Depth (in) _____ Oil Depth (in) _____

Remarks: _____

Submitted By: **Altamirano**

Title: **Engineering Tech III**

Depth (ft)	Boring Description		PSI
0--		0--	
2--		2--	
4--	Silt, Sand, Gravel	4--	100
6--		6--	
8--		8--	
10--		10--	
12--		12--	
14--		14--	
16--		16--	
18--		18--	
20--		20--	

Sieve Size	% Passing
3"	
2"	
1.5"	
1"	**100**
3/4"	**96**
1/2"	**96**
3/8"	**94**
No. 4	**90**
No. 10	**83**
No. 16	**77**
No. 40	**63**
No. 50	**56**
No. 100	**44**
No. 200	**31**

Liquid Limit **24**

Plastic Index **6**

Specific Gravity

Resistance Value **48**

Cover Expansion Pressure

Thickness **13.4**

Sand Equivalent

Natural Moisture, %

Resistivity **3,401**

pH Factor **7.3**

HRB Classification

Remarks: _____

Appendix B
Laboratory Test Results

Summary of Results
Particle Size Distribution Reports
Triaxial Test Results
Direct Shear Test Reports
Chemical Analyses

SUMMARY OF RESULTS
N.D.O.T. GEOTECHNICAL SECTION

EA/Cont # 73475 **Job Description** US 50 Widening - Stagecoach

Boring No. CA 1 **Elevation (ft)** **Station** "X2" 1109 + 00 **Date** 04/05/2010

SAMPLE NO.	SAMPLE DEPTH (ft)	SAMP-LER TYPE	N BLOWS per ft.	SOIL GROUP	W%	DRY UW pcf	% PASS #200	LL %	PL %	PI %	STRENGTH TEST					COMMENTS
											TEST TYPE	Φ deg. (Peak)	C psi (Peak)	Φ deg. (Residual)	C psi (Residual)	
A	3.5 - 5.0	SPT		SC	17.3		45.6	35	17	18						
B	5.3 - 7.3	Sh		CL	26.3	85.6	64.2	47	21	26						H, CU, UW, G = 2.69
C	8.0 - 9.5	SPT		SC	11.6		21.1	27	16	11						Ch
D	13.0 - 14.5	SPT		SM	10.6		21.7	23	20	3						Ch

CMS = California Modified Sampler 2.42" ID
SPT = Standard Penetration 1.38" ID
CS = Continuous Sample 3.23" ID
RC = Rock Core
PB = Pitcher Barrel
CSS = Calif. Split Spoon 2.42" ID
CPT = Cone Penetration Test
TP = Test Pit
P = Pushed, not driven
R = Refusal
Sh = Shelby Tube 2.87" ID

U = Unconfined Compressive
UU = Unconsolidated Undrained
CD = Consolidated Drained
CU = Consolidated Undrained
DS = Direct Shear
Φ = Friction
C = Cohesion
N = No. of blows per ft., sampler

N = Field SPT N = $(N_{CSS})(0.62)$

H = Hydrometer
S = Sieve
G = Specific Gravity
PI = Plasticity Index
LL = Liquid Limit
PL = Plastic Limit
NP = Non-Plastic
OC = Consolidation
Ch = Chemical
RV = R - Value
MD = Moisture Density

CM = Compaction
E = Swell/Pressure on Expansive Soils
SL = Shrinkage Limit
UW= Unit Weight
W = Moisture Content
K = Permeability
O = Organic Content
D = Dispersive
RQD = Rock Quality Designation
X = X-Ray Defraction
HCpot = Hydro-Collapse Potential

*** = Average of subsamples**

SUMMARY OF RESULTS
N.D.O.T. GEOTECHNICAL SECTION

EA/Cont # 73475 **Job Description** US 50 Widening - Stagecoach

Boring No. CA 2 **Elevation (ft)** **Station** "X2" 1068 + 60 **Date** 04/05/2010

SAMPLE NO.	SAMPLE DEPTH (ft)	SAMP-LER TYPE	N BLOWS per ft.	SOIL GROUP	W%	DRY UW pcf	% PASS #200	LL %	PL %	PI %	STRENGTH TEST					COMMENTS
											TEST TYPE	Φ deg.	C psi	Φ deg.	C psi	
												Peak		Residual		
A1	4.0 - 4.5	CMS		SC-SM	15.2	96.1	24.7	23	19	4	DS	34	0	34	0	H, DS, UW, G = 2.68
A2	4.5 - 5.0	CMS		SC-SM	11.6	96.3	23.5	22	17	5	DS	32	2	32	2	H, DS, UW, G = 2.68
B	5.0 - 6.5	SPT		SC	16.8		44.8	29	18	11						H, Ch
C	11.0 - 12.5	SPT		SM	9.0		12.1	21	NP	NP						H, Ch

CMS = California Modified Sampler 2.42" ID
SPT = Standard Penetration 1.38" ID
CS = Continuous Sample 3.23" ID
RC = Rock Core
PB = Pitcher Barrel
CSS = Calif. Split Spoon 2.42" ID
CPT = Cone Penetration Test
TP = Test Pit
P = Pushed, not driven
R = Refusal
Sh = Shelby Tube 2.87" ID

U = Unconfined Compressive
UU = Unconsolidated Undrained
CD = Consolidated Drained
CU = Consolidated Undrained
DS = Direct Shear
Φ = Friction
C = Cohesion
N = No. of blows per ft., sampler

N = Field SPT $N = (N_{CSS})(0.62)$

H = Hydrometer
S = Sieve
G = Specific Gravity
PI = Plasticity Index
LL = Liquid Limit
PL = Plastic Limit
NP = Non-Plastic
OC = Consolidation
Ch = Chemical
RV = R - Value
MD = Moisture Density

CM = Compaction
E = Swell/Pressure on Expansive Soils
SL = Shrinkage Limit
UW= Unit Weight
W = Moisture Content
K = Permeability
O = Organic Content
D = Dispersive
RQD = Rock Quality Designation
X = X-Ray Defraction
HCpot = Hydro-Collapse Potential

*** = Average of subsamples**

SUMMARY OF RESULTS
N.D.O.T. GEOTECHNICAL SECTION

EA/Cont # 73475 **Job Description** US 50 Widening - Stagecoach

Boring No. CA 3 **Elevation (ft)** **Station** "X2" 1009 + 85 **Date** 04/12/2010

SAMPLE NO.	SAMPLE DEPTH (ft)	SAMP-LER TYPE	N BLOWS per ft.	SOIL GROUP	W%	DRY UW pcf	% PASS #200	LL %	PL %	PI %	STRENGTH TEST					COMMENTS
											TEST TYPE	Φ deg.	C psi	Φ deg.	C psi	
												Peak		Residual		
A1	4.0 - 4.5	CMS		SC-SM	10.5		30.6	19	12	7						H, G = 2-68
A2	4.5 - 5.0	CMS		CH	26.1		70.3	50	19	31						H, G = 2.69
B	7.5 - 9.0	SPT		CL	18.8		53.4	40	20	20						H, Ch
C	12.5 - 14.0	SPT		SC-SM	12.3		25.4	26	22	4						H, Ch

CMS = California Modified Sampler 2.42" ID
SPT = Standard Penetration 1.38" ID
CS = Continuous Sample 3.23" ID
RC = Rock Core
PB = Pitcher Barrel
CSS = Calif. Split Spoon 2.42" ID
CPT = Cone Penetration Test
TP = Test Pit
P = Pushed, not driven
R = Refusal
Sh = Shelby Tube 2.87" ID

U = Unconfined Compressive
UU = Unconsolidated Undrained
CD = Consolidated Drained
CU = Consolidated Undrained
DS = Direct Shear
Φ = Friction
C = Cohesion
N = No. of blows per ft., sampler

N = Field SPT N = $(N_{css})(0.62)$

H = Hydrometer
S = Sieve
G = Specific Gravity
PI = Plasticity Index
LL = Liquid Limit
PL = Plastic Limit
NP = Non-Plastic
OC = Consolidation
Ch = Chemical
RV = R - Value
MD = Moisture Density

CM = Compaction
E = Swell/Pressure on Expansive Soils
SL = Shrinkage Limit
UW= Unit Weight
W = Moisture Content
K = Permeability
O = Organic Content
D = Dispersive
RQD = Rock Quality Designation
X = X-Ray Defraction
HCpot = Hydro-Collapse Potential

*** = Average of subsamples**

SUMMARY OF RESULTS
N.D.O.T. GEOTECHNICAL SECTION

EA/Cont # 73475 **Job Description** US 50 Widening - Stagecoach

Boring No. CA 4 **Elevation (ft)** **Station** "X2" 945 + 85 **Date** 04/12/2010

SAMPLE NO.	SAMPLE DEPTH (ft)	SAMP-LER TYPE	N BLOWS per ft.	SOIL GROUP	W%	DRY UW pcf	% PASS #200	LL %	PL %	PI %	STRENGTH TEST					COMMENTS
											TEST TYPE	Φ deg.	C psi	Φ deg.	C psi	
												Peak		Residual		
A	1.5 - 3.0	SPT		SM	9.8		28.4	21	19	2						
B	6.0 - 7.5	SPT		SM	6.7		17.5	18	NP	NP						
C1	13.5 - 14.0	CMS_{bag}		GW	4.4		4.0	20	NP	NP						Ch
C2	14.0 - 15.0	CMS		SP-SM	4.7		10.4	19	NP	NP						Ch

CMS = California Modified Sampler 2.42" ID
SPT = Standard Penetration 1.38" ID
CS = Continuous Sample 3.23" ID
RC = Rock Core
PB = Pitcher Barrel
CSS = Calif. Split Spoon 2.42" ID
CPT = Cone Penetration Test
TP = Test Pit
P = Pushed, not driven
R = Refusal
Sh = Shelby Tube 2.87" ID

U = Unconfined Compressive
UU = Unconsolidated Undrained
CD = Consolidated Drained
CU = Consolidated Undrained
DS = Direct Shear
Φ = Friction
C = Cohesion
N = No. of blows per ft., sampler

N = Field SPT $N = (N_{css})(0.62)$

H = Hydrometer
S = Sieve
G = Specific Gravity
PI = Plasticity Index
LL = Liquid Limit
PL = Plastic Limit
NP = Non-Plastic
OC = Consolidation
Ch = Chemical
RV = R - Value
MD = Moisture Density

CM = Compaction
E = Swell/Pressure on Expansive Soils
SL = Shrinkage Limit
UW= Unit Weight
W = Moisture Content
K = Permeability
O = Organic Content
D = Dispersive
RQD = Rock Quality Designation
X = X-Ray Defraction
HCpot = Hydro-Collapse Potential

*** = Average of subsamples**

SUMMARY OF RESULTS
N.D.O.T. GEOTECHNICAL SECTION

EA/Cont # 73475 **Job Description** US 50 Widening - Stagecoach

Boring No. CA 5 **Elevation (ft)** **Station** "X2" 895 + 00 **Date** 04/12/2010

SAMPLE NO.	SAMPLE DEPTH (ft)	SAMP-LER TYPE	N BLOWS per ft.	SOIL GROUP	W%	DRY UW pcf	% PASS #200	LL %	PL %	PI %	STRENGTH TEST					COMMENTS
											TEST TYPE	Φ deg.	C psi	Φ deg.	C psi	
												Peak		Residual		
A	2.0 - 3.5	SPT		SC-SM	10.6		22.0	22	18	4						Ch
B1	6.5 - 7.0	CMS		SM	6.6	109.7	19.1	16	NP	NP	DS	36	0	36	0	H, DS, UW, G = 2.69
B2	7.0 - 7.5	CMS		SM	7.3		16.9	22	19	3						H, G = 2.69
C	11.0 - 12.5	SPT		SC	12.3		23.0	27	18	9						Ch

CMS = Califomia Modified Sampler 2.42" ID
SPT = Standard Penetration 1.38" ID
CS = Continuous Sample 3.23" ID
RC = Rock Core
PB = Pitcher Barrel
CSS = Calif. Split Spoon 2.42" ID
CPT = Cone Penetration Test
TP = Test Pit
P = Pushed, not driven
R = Refusal
Sh = Shelby Tube 2.87" ID

U = Unconfined Compressive
UU = Unconsolidated Undrained
CD = Consolidated Drained
CU = Consolidated Undrained
DS = Direct Shear
Φ = Friction
C = Cohesion
N = No. of blows per ft., sampler

N = Field SPT $N = (N_{css})(0.62)$

H = Hydrometer
S = Sieve
G = Specific Gravity
PI = Plasticity Index
LL = Liquid Limit
PL = Plastic Limit
NP = Non-Plastic
OC = Consolidation
Ch = Chemical
RV = R - Value
MD = Moisture Density

CM = Compaction
E = Swell/Pressure on Expansive Soils
SL = Shrinkage Limit
UW= Unit Weight
W = Moisture Content
K = Permeability
O = Organic Content
D = Dispersive
RQD = Rock Quality Designation
X = X-Ray Defraction
HCpot = Hydro-Collapse Potential

*** = Average of subsamples**

SUMMARY OF RESULTS
N.D.O.T. GEOTECHNICAL SECTION

EA/Cont # 73475 **Job Description** US 50 Widening - Stagecoach

Boring No. CA 6 **Elevation (ft)** **Station** "X2" 837 + 20 **Date** 04/12/2010

SAMPLE NO.	SAMPLE DEPTH (ft)	SAMP-LER TYPE	N BLOWS per ft.	SOIL GROUP	W%	DRY UW pcf	% PASS #200	LL %	PL %	PI %	STRENGTH TEST					COMMENTS
											TEST TYPE	Φ deg. (Peak)	C psi (Peak)	Φ deg. (Residual)	C psi (Residual)	
A1	4.5 - 5.0	CMS		CH	14.5	114.8	57.4	52	22	30						UW
A2	5.0 - 5.5	CMS		CL	11.7	110.4	77.5	46	21	25						UW
B	9.0 - 10.5	SPT		CL	13.2		71.3	48	26	22						Ch, G = 2.70

CMS = California Modified Sampler 2.42" ID
SPT = Standard Penetration 1.38" ID
CS = Continuous Sample 3.23" ID
RC = Rock Core
PB = Pitcher Barrel
CSS = Calif. Split Spoon 2.42" ID
CPT = Cone Penetration Test
TP = Test Pit
P = Pushed, not driven
R = Refusal
Sh = Shelby Tube 2.87" ID

U = Unconfined Compressive
UU = Unconsolidated Undrained
CD = Consolidated Drained
CU = Consolidated Undrained
DS = Direct Shear
Φ = Friction
C = Cohesion
N = No. of blows per ft., sampler

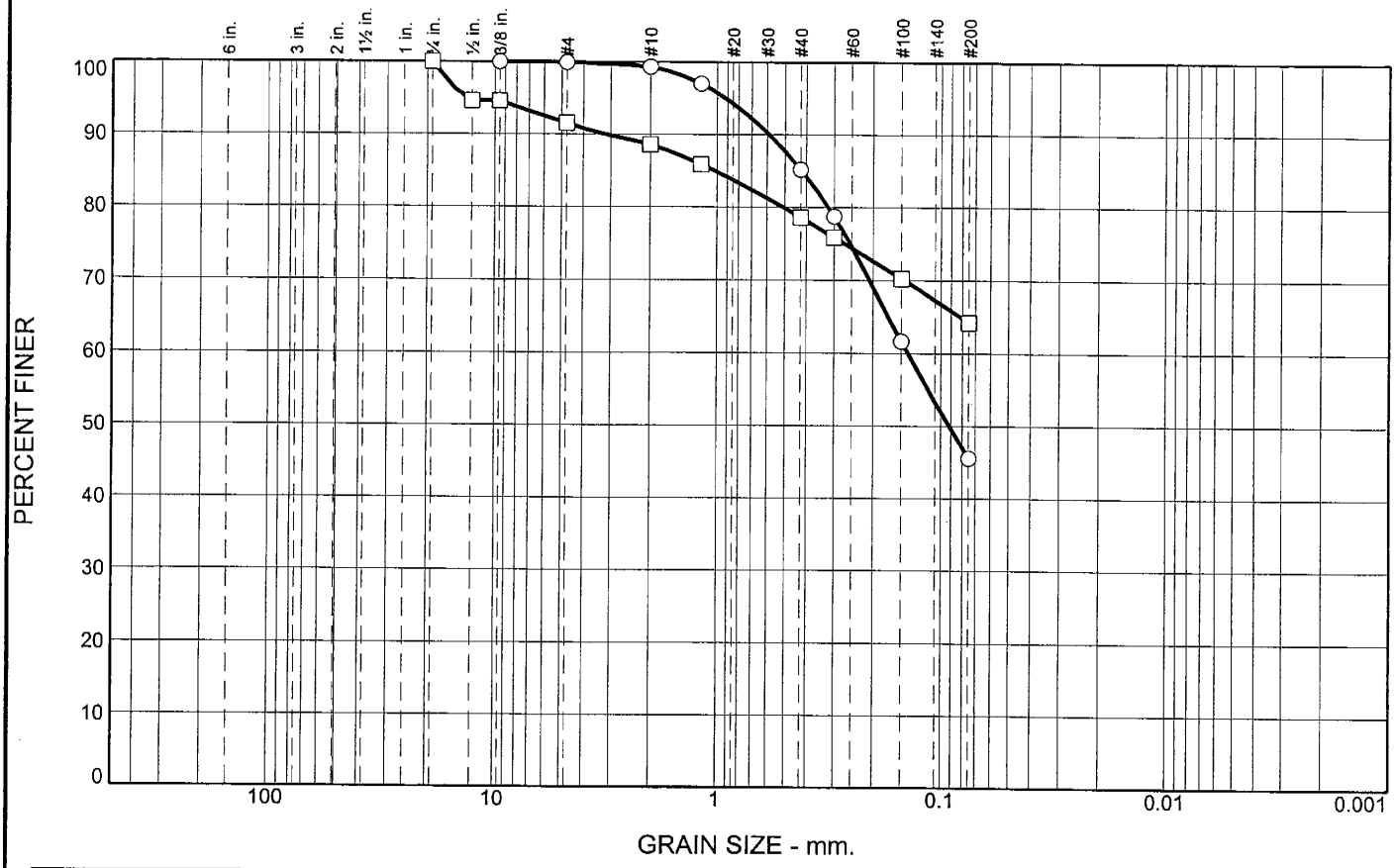
N = Field SPT $N = (N_{css})(0.62)$

H = Hydrometer
S = Sieve
G = Specific Gravity
PI = Plasticity Index
LL = Liquid Limit
PL = Plastic Limit
NP = Non-Plastic
OC = Consolidation
Ch = Chemical
RV = R - Value
MD = Moisture Density

CM = Compaction
E = Swell/Pressure on Expansive Soils
SL = Shrinkage Limit
UW= Unit Weight
W = Moisture Content
K = Permeability
O = Organic Content
D = Dispersive
RQD = Rock Quality Designation
X = X-Ray Defraction
HCpot = Hydro-Collapse Potential

*** = Average of subsamples**

Particle Size Distribution Report



	+3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	0.0	0.0	54.4	45.6		SC	A-6(4)	17	35
□	0.0	8.4	27.4	64.2		CL	A-7-6(15)	21	47

SIEVE inches size	○	□	
3/4"		100.0	
1/2"		94.6	
3/8"	100.0	94.6	
	GRAIN SIZE		
D_{60}	0.1403		
D_{30}			
D_{10}			
	COEFFICIENTS		
C_c			
C_u			

SIEVE number size	○	□	
#4	100.0	91.6	
#10	99.3	88.6	
#16	97.0	85.9	
#40	85.2	78.6	
#50	78.7	75.9	
#100	61.7	70.3	
#200	45.6	64.2	

Material Description

○ clayey sand

□ sandy lean clay

REMARKS:

○

□

○ Source of Sample: CA-1 Depth: 3.5-5.0' Sample Number: A

□ Source of Sample: CA-1 Depth: 5.25-7.25' Sample Number: B

NEVADA DEPARTMENT OF TRANSPORTATION

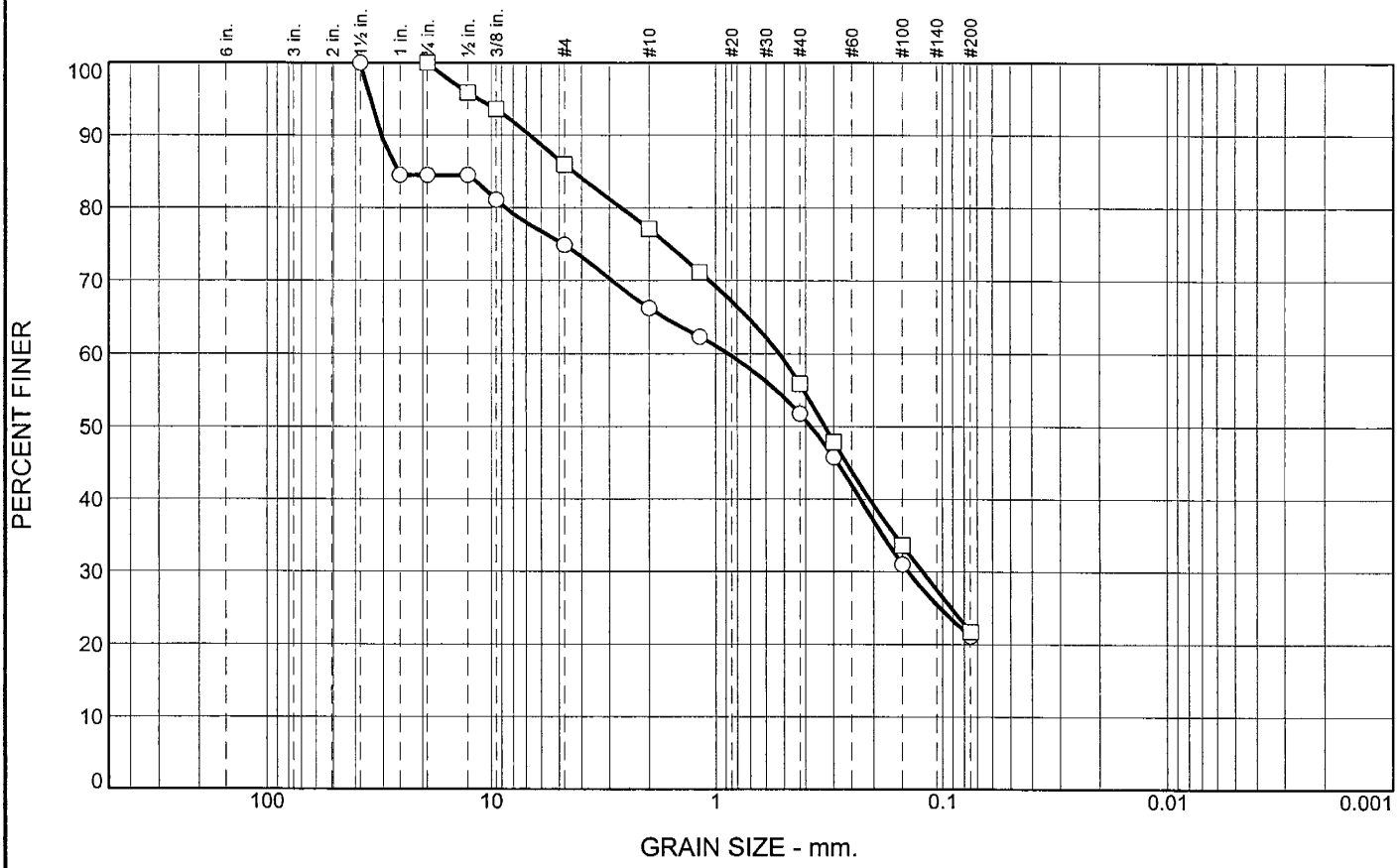
Client: C. Callaghan

Project: US 50 Widening - Stagecoach

Project No.: FL-4-10, EA 73475

Figure

Particle Size Distribution Report



	+3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	0.0	25.1	53.8	21.1		SC	A-2-6(0)	16	27
□	0.0	14.0	64.3	21.7		SM	A-2-4(0)	20	23

SIEVE inches size	PERCENT FINER ○	□
1.5"	100.0	
1"	84.5	
3/4"	84.5	100.0
1/2"	84.5	95.9
3/8"	81.1	93.6
	GRAIN SIZE	
D_{60}	0.8804	0.5245
D_{30}	0.1418	0.1224
D_{10}		
	COEFFICIENTS	
C_c		
C_u		

SIEVE number size	PERCENT FINER ○	□
#4	74.9	86.0
#10	66.3	77.1
#16	62.3	71.2
#40	51.8	55.9
#50	45.8	47.9
#100	31.0	33.6
#200	21.1	21.7

Material Description

○ clayey sand with gravel

□ silty sand

REMARKS:

○

□

○ Source of Sample: CA-1 Depth: 8.0-9.5' Sample Number: C

□ Source of Sample: CA-1 Depth: 13.0-14.5' Sample Number: D

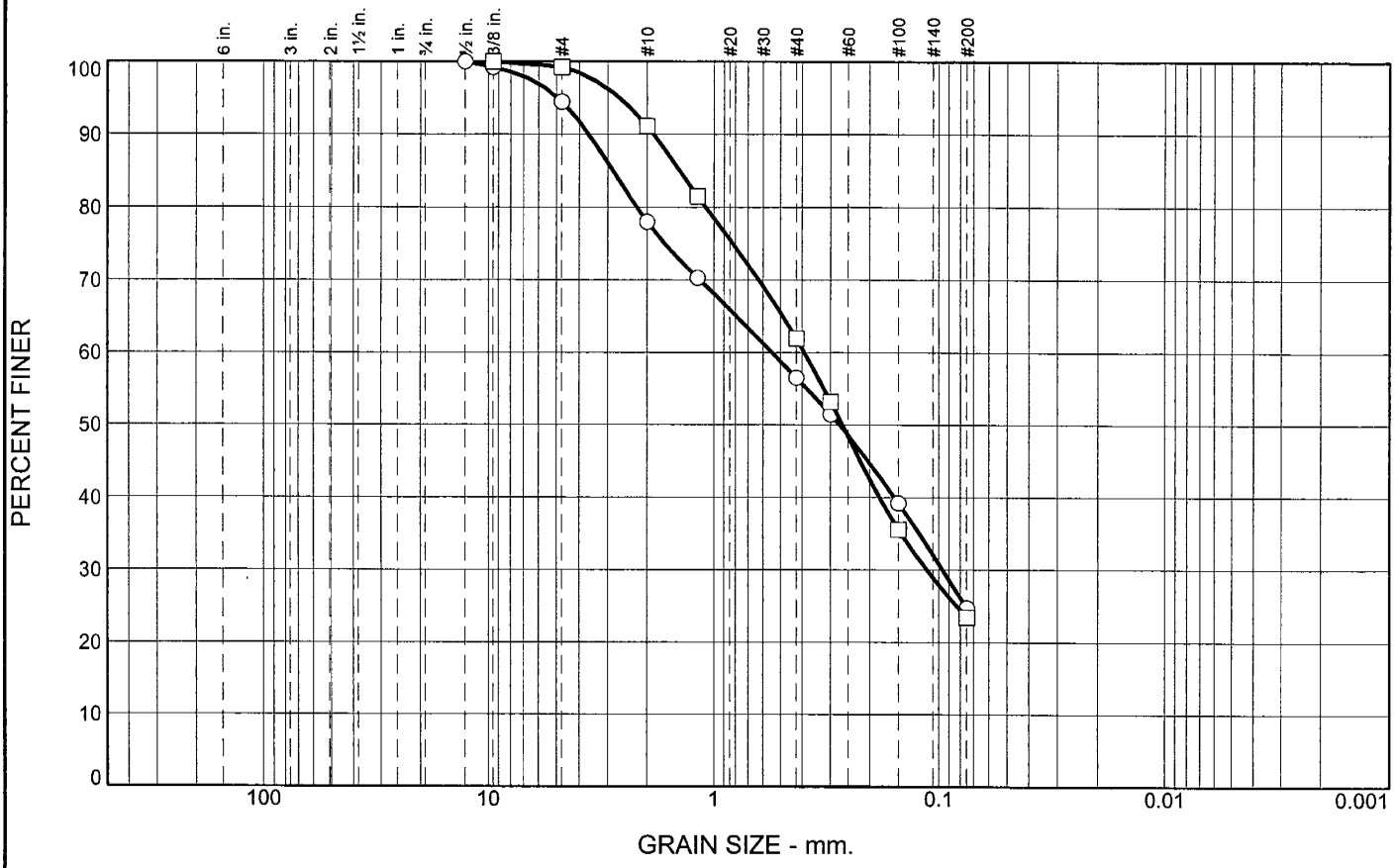
NEVADA DEPARTMENT OF TRANSPORTATION

Client: C. Callaghan

Project: US 50 Widening - Stagecoach

Project No.: FL-4-10, EA 73475 Figure

Particle Size Distribution Report



	+3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	0.0	5.5	69.8	24.7		SC-SM	A-2-4(0)	19	23
□	0.0	0.7	75.8	23.5		SC-SM	A-2-4(0)	17	22

SIEVE inches size	○	□
1/2"	100.0	
3/8"	99.2	100.0
GRAIN SIZE		
D_{60}	0.5455	0.3911
D_{30}	0.0959	0.1127
D_{10}		
COEFFICIENTS		
C_C		
C_u		

SIEVE number size	○	□
#4	94.5	99.3
#10	78.0	91.1
#16	70.3	81.5
#40	56.5	62.0
#50	51.5	53.2
#100	39.2	35.6
#200	24.7	23.5

Material Description

○ silty, clayey sand

□ silty, clayey sand

REMARKS:

○

□

○ Source of Sample: CA-2 Depth: 4.0-4.5' Sample Number: A1

□ Source of Sample: CA-2 Depth: 4.5-5.0' Sample Number: A2

NEVADA DEPARTMENT OF TRANSPORTATION

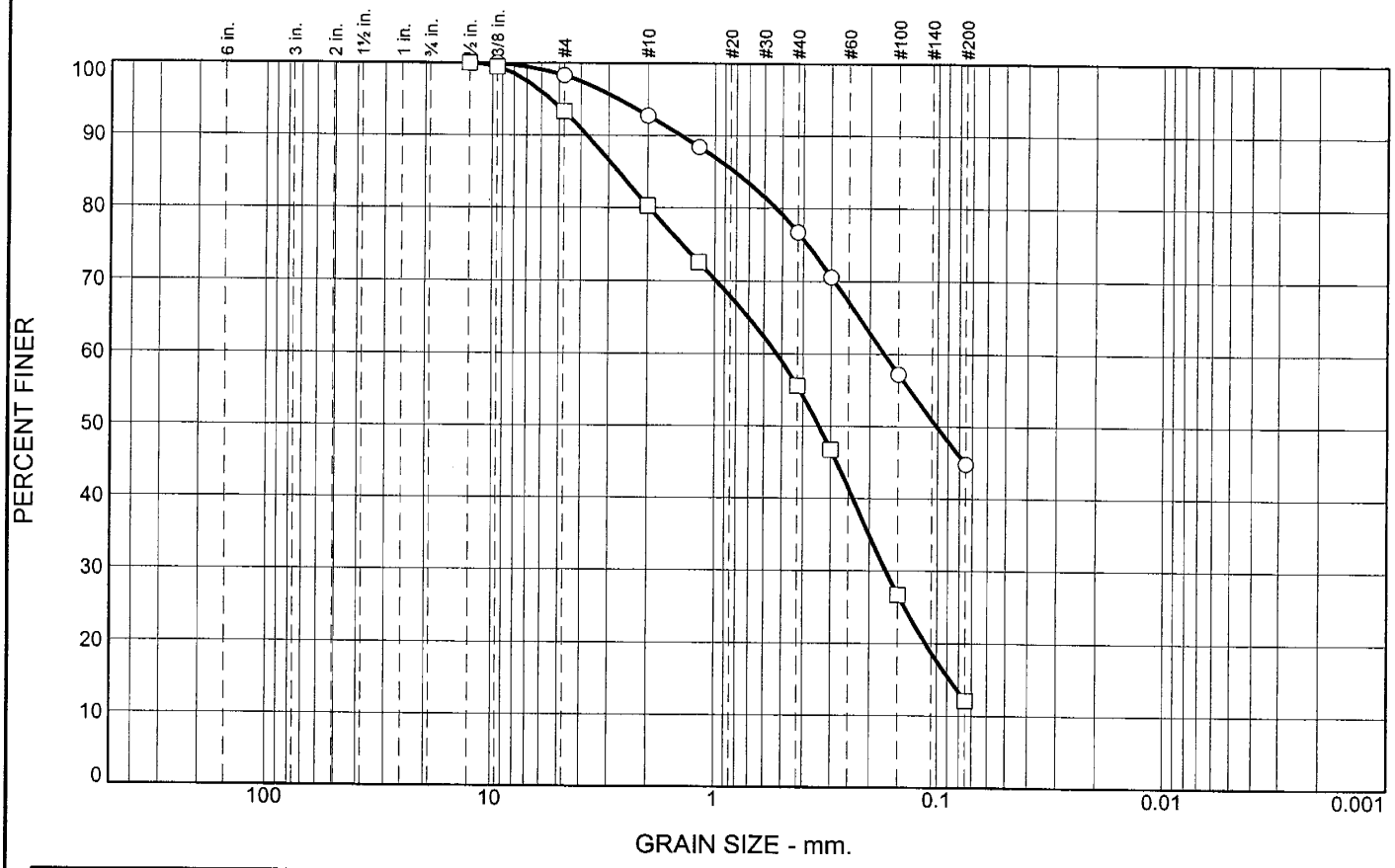
Client: C. Callaghan

Project: US 50 Widening - Stagecoach

Project No.: FL-4-10, EA 73475

Figure

Particle Size Distribution Report



	+3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	0.0	1.7	53.5	44.8		SC	A-6(2)	18	29
□	0.0	6.7	81.2	12.1		SM	A-2-4(0)	NP	21

SIEVE inches size	○	□
1/2"		100.0
3/8"	100.0	99.5
	GRAIN SIZE	
D_{60}	0.1733	0.5257
D_{30}		0.1696
D_{10}		
	COEFFICIENTS	
C_c		
C_u		

SIEVE number size	○	□
#4	98.3	93.3
#10	92.8	80.3
#16	88.4	72.6
#40	76.7	55.6
#50	70.6	46.8
#100	57.2	26.7
#200	44.8	12.1

Material Description

○ clayey sand

□ silty sand

REMARKS:

○

□

○ Source of Sample: CA-2 Depth: 5.0-6.5' Sample Number: B

□ Source of Sample: CA-2 Depth: 11.0-12.5' Sample Number: C

NEVADA DEPARTMENT OF TRANSPORTATION

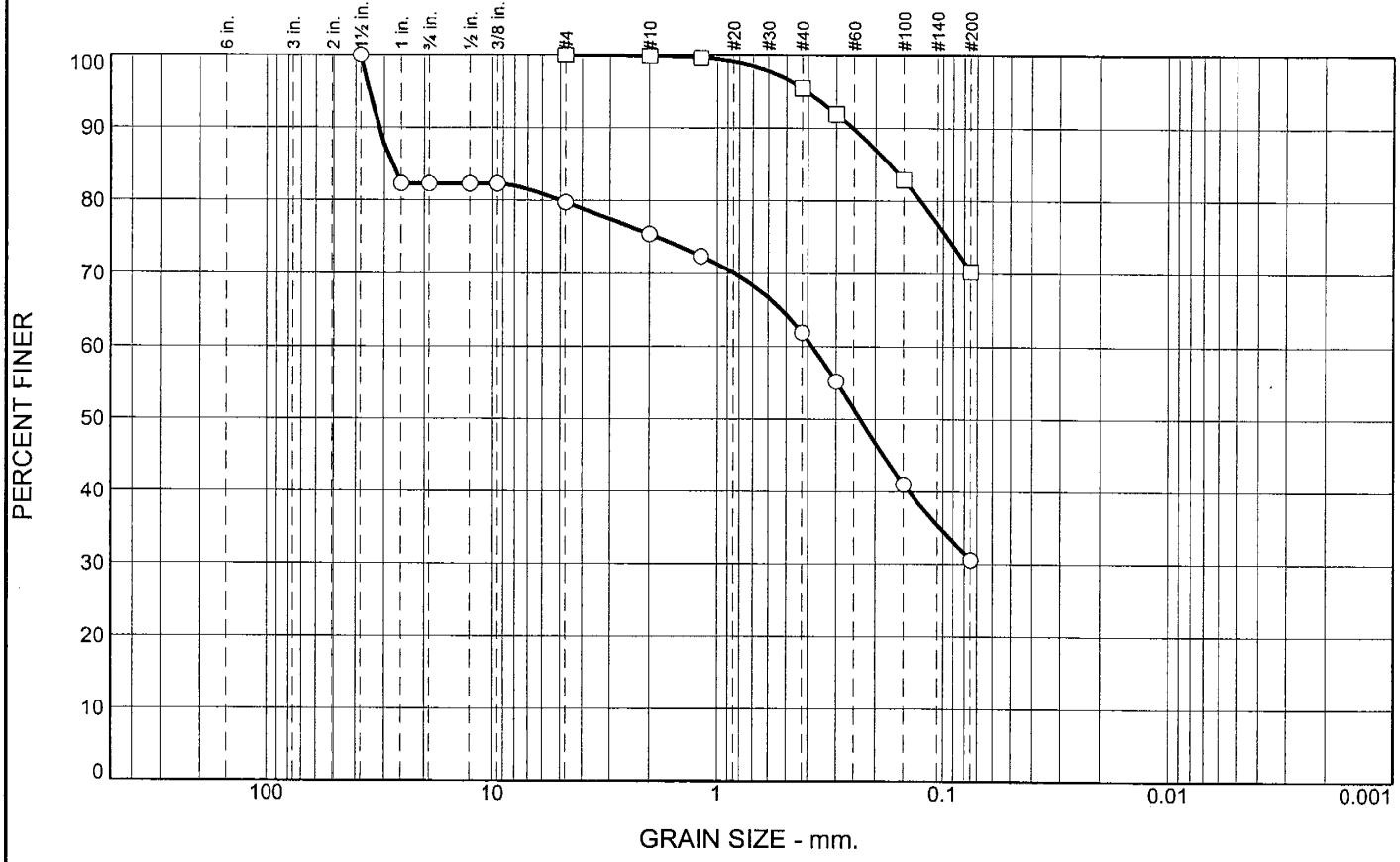
Client: C. Callaghan

Project: US 50 Widening - Stagecoach

Project No.: FL-4-10, EA 73475

Figure

Particle Size Distribution Report



	+3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	0.0	20.2	49.2	30.6		SC-SM	A-2-4(0)	12	19
□	0.0	0.0	29.7	70.3		CH	A-7-6(20)	19	50

SIEVE inches size	PERCENT FINER ○	□
1.5"	100.0	
1"	82.3	
3/4"	82.3	
1/2"	82.3	
3/8"	82.3	
GRAIN SIZE		
D_{60}	0.3819	
D_{30}		
D_{10}		
COEFFICIENTS		
C_c		
C_u		

SIEVE number size	PERCENT FINER ○	□
#4	79.8	100.0
#10	75.4	99.9
#16	72.4	99.6
#40	61.9	95.5
#50	55.2	91.9
#100	41.0	82.9
#200	30.6	70.3

Material Description

○ silty, clayey sand with gravel

□ sandy fat clay

REMARKS:

○

□

○ Source of Sample: CA-3 Depth: 4.0-4.5' Sample Number: A1

□ Source of Sample: CA-3 Depth: 4.5-5.0' Sample Number: A2

NEVADA DEPARTMENT OF TRANSPORTATION

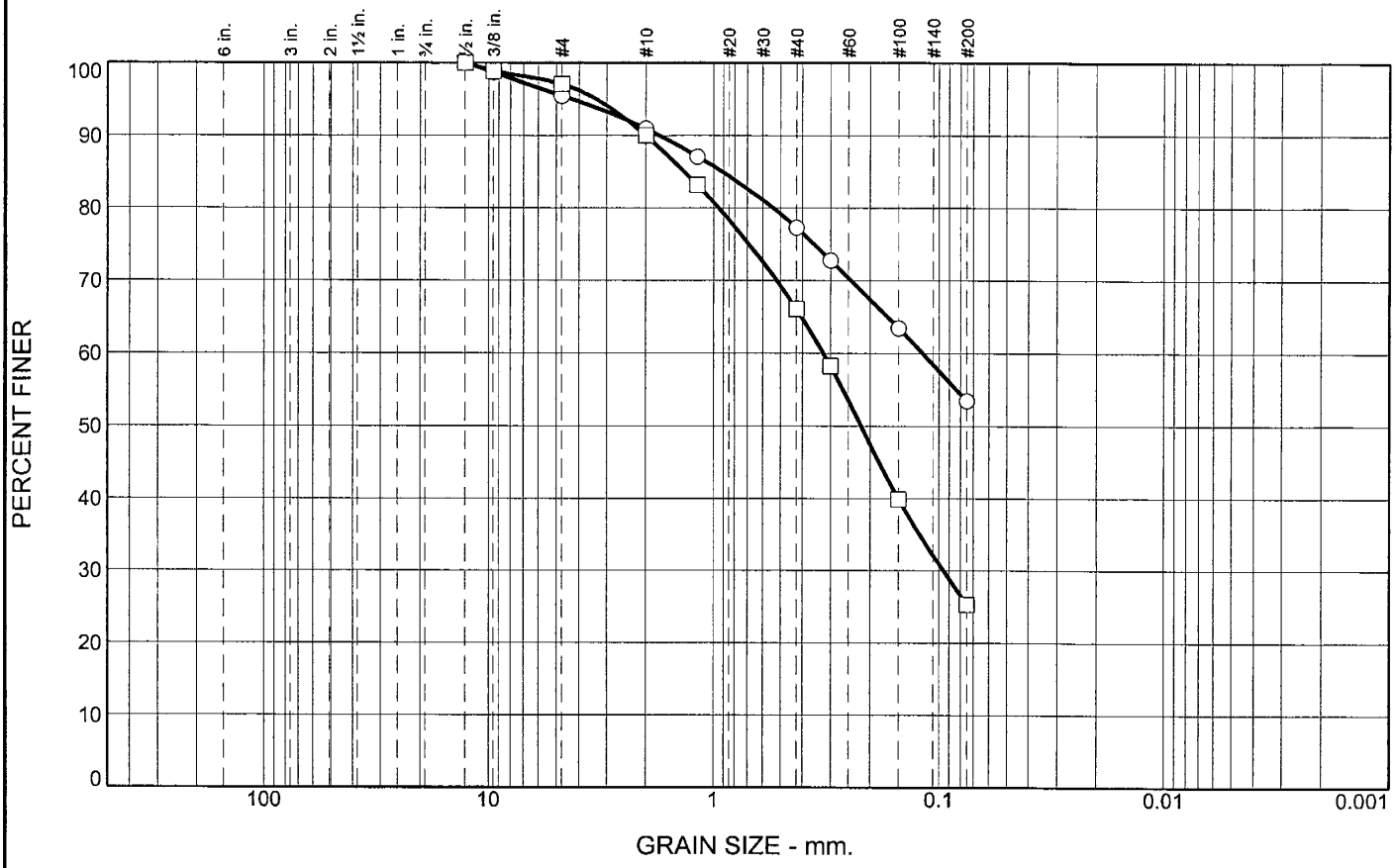
Client: C. Callaghan

Project: US 50 Widening - Stagecoach

Project No.: FL-4-10, EA 73475

Figure

Particle Size Distribution Report



	+3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	0.0	4.6	42.0	53.4		CL	A-6(7)	20	40
□	0.0	2.9	71.7	25.4		SC-SM	A-2-4(0)	22	26

SIEVE inches size	○	□
1/2"	100.0	100.0
3/8"	98.7	98.9
	GRAIN SIZE	
D_{60}	0.1176	0.3226
D_{30}		0.0953
D_{10}		
	COEFFICIENTS	
C_c		
C_u		

SIEVE number size	○	□
#4	95.4	97.1
#10	90.9	90.0
#16	87.1	83.1
#40	77.3	66.1
#50	72.8	58.2
#100	63.4	39.9
#200	53.4	25.4

Material Description

○ sandy lean clay

□ silty, clayey sand

REMARKS:

○

□

○ Source of Sample: CA-3 Depth: 7.5-9.0' Sample Number: B

□ Source of Sample: CA-3 Depth: 12.5-14.0' Sample Number: C

NEVADA DEPARTMENT OF TRANSPORTATION

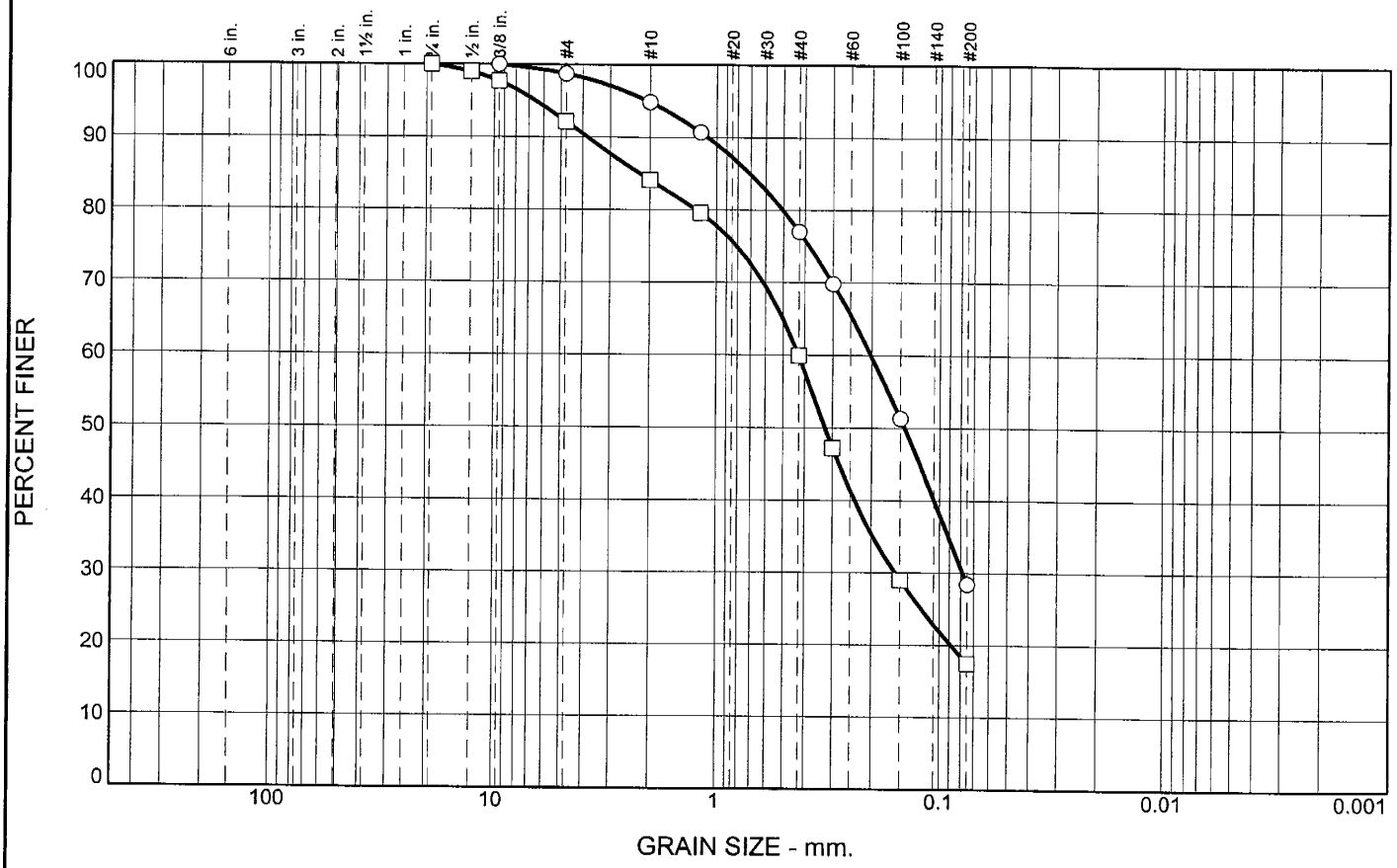
Client: C. Callaghan

Project: US 50 Widening - Stagecoach

Project No.: FL-4-10, EA 73475

Figure

Particle Size Distribution Report



	+3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	0.0	1.3	70.3	28.4		SM	A-2-4(0)	19	21
□	0.0	7.9	74.6	17.5		SM	A-2-4(0)	NP	18

SIEVE inches size	○	□
3/4"		100.0
1/2"		99.0
3/8"	100.0	97.7
	GRAIN SIZE	
D_{60}	0.2024	0.4255
D_{30}	0.0785	0.1575
D_{10}		
	COEFFICIENTS	
C_c		
C_u		

SIEVE number size	○	□
#4	98.7	92.1
#10	94.9	84.1
#16	90.7	79.6
#40	77.0	60.0
#50	69.8	47.2
#100	51.3	29.0
#200	28.4	17.5

Material Description

○ silty sand

□ silty sand

REMARKS:

○

□

○ Source of Sample: CA-4 Depth: 1.5-3.0' Sample Number: A

□ Source of Sample: CA-4 Depth: 6.0-7.5' Sample Number: B

NEVADA DEPARTMENT OF TRANSPORTATION

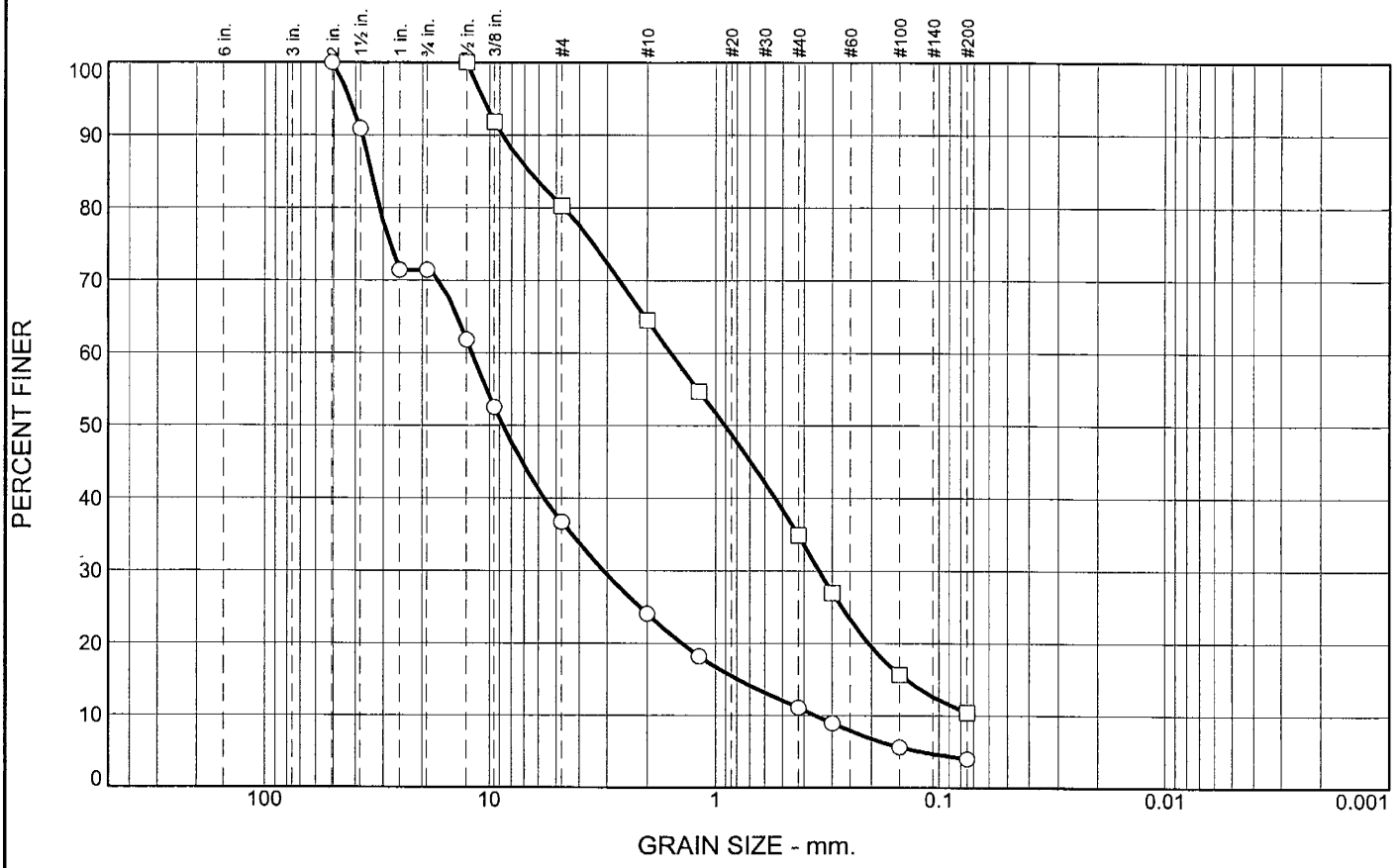
Client: C. Callaghan

Project: US 50 Widening - Stagecoach

Project No.: FL-4-10, EA 73475

Figure

Particle Size Distribution Report



	+3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	0.0	63.3	32.7	4.0		GW	A-1-a	NP	20
□	0.0	19.7	69.9	10.4		SP-SM	A-1-b	NP	19

SIEVE inches size	PERCENT FINER ○	□
2"	100.0	
1.5"	90.9	
1"	71.5	
3/4"	71.5	
1/2"	61.8	100.0
3/8"	52.5	91.8
	GRAIN SIZE	
D_{60}	12.0282	1.5735
D_{30}	3.1088	0.3432
D_{10}	0.3571	
	COEFFICIENTS	
C_c	2.25	
C_u	33.69	

SIEVE number size	PERCENT FINER ○	□
#4	36.7	80.3
#10	24.1	64.5
#16	18.2	54.7
#40	11.1	34.9
#50	8.9	27.0
#100	5.6	15.7
#200	4.0	10.4

Material Description

○ well-graded gravel with sand

□ poorly graded sand with silt and gravel

REMARKS:

○

□

○ Source of Sample: CA-4 Depth: 13.5-14.0' Sample Number: C1

□ Source of Sample: CA-4 Depth: 14.0-14.5' Sample Number: C2

NEVADA DEPARTMENT OF TRANSPORTATION

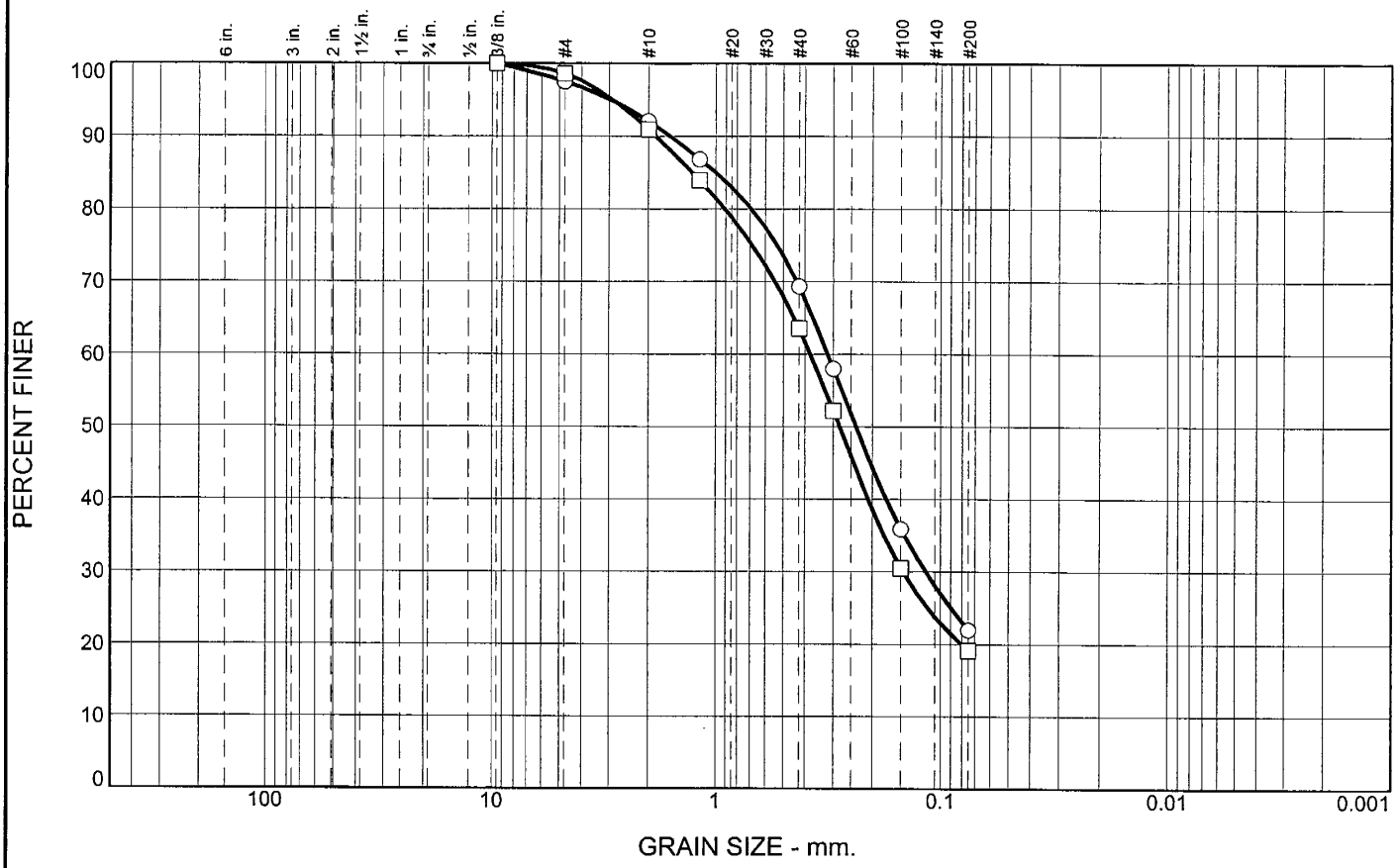
Client: C. Callaghan

Project: US 50 Widening - Stagecoach

Project No.: FL-4-10, EA 73475

Figure

Particle Size Distribution Report



	+3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	0.0	2.5	75.5	22.0		SC-SM	A-2-4(0)	18	22
□	0.0	1.4	79.5	19.1		SM	A-2-4(0)	NP	16

SIEVE inches size	PERCENT FINER ○	□	
3/8"	100.0	100.0	
	GRAIN SIZE		
D_{60}	0.3180	0.3786	
D_{30}	0.1163	0.1469	
D_{10}			
	COEFFICIENTS		
C_c			
C_u			

SIEVE number size	PERCENT FINER ○	□	
#4	97.5	98.6	
#10	92.1	90.9	
#16	86.8	83.9	
#40	69.4	63.6	
#50	58.0	52.2	
#100	35.9	30.5	
#200	22.0	19.1	

Material Description
○ silty, clayey sand

□ silty sand

REMARKS:
○

□

○ Source of Sample: CA-5 Depth: 2.0-3.5' Sample Number: A

□ Source of Sample: CA-5 Depth: 6.5-7.0' Sample Number: B1

NEVADA DEPARTMENT OF TRANSPORTATION

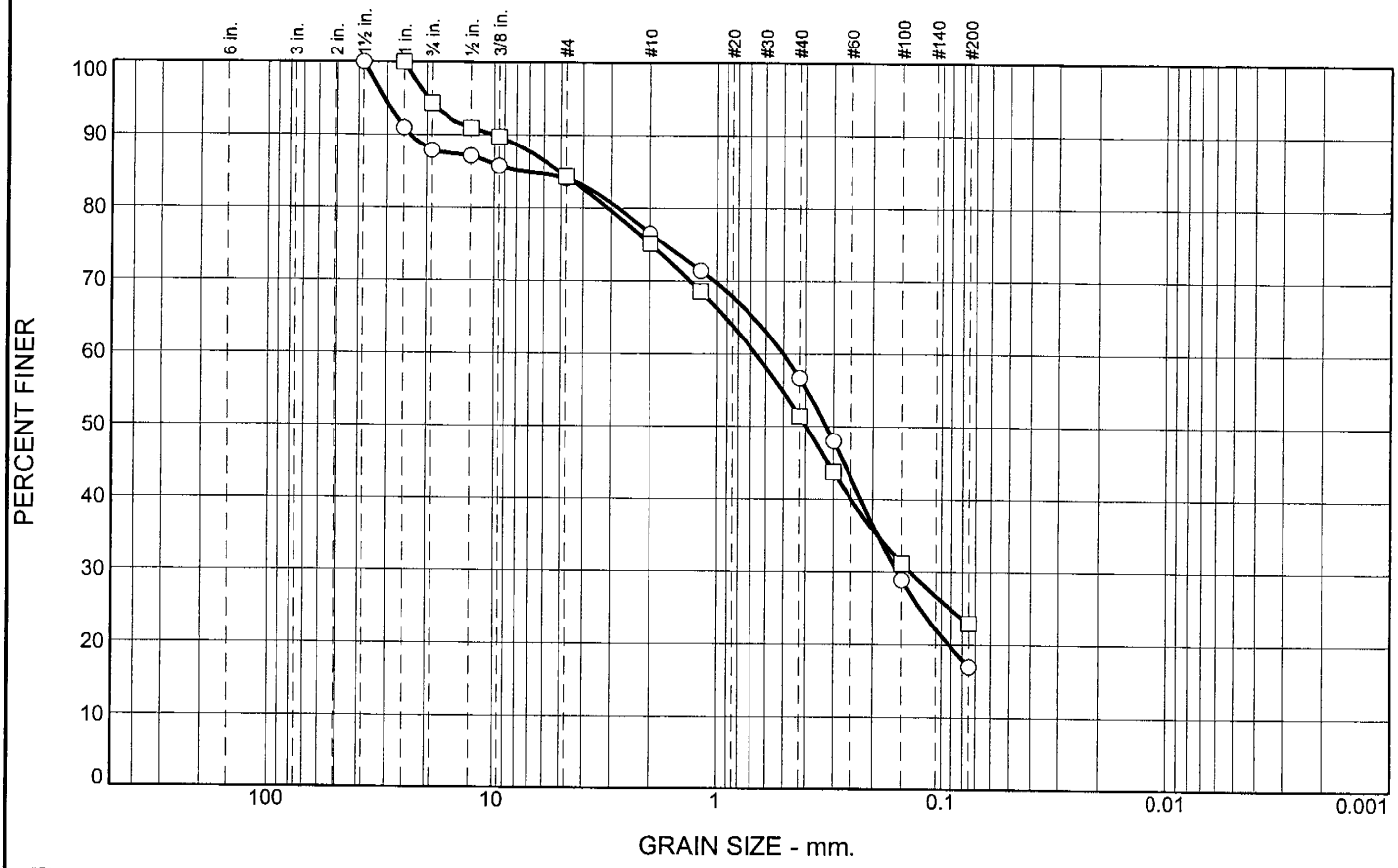
Client: C. Callaghan

Project: US 50 Widening - Stagecoach

Project No.: FL-4-10, EA 73475

Figure

Particle Size Distribution Report



	+3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	0.0	15.9	67.2	16.9		SM	A-2-4(0)	19	22
□	0.0	15.7	61.3	23.0		SC	A-2-4(0)	18	27

SIEVE inches size	○	□
1.5"	100.0	
1"	91.0	100.0
3/4"	87.8	94.3
1/2"	87.1	91.0
3/8"	85.7	89.7
GRAIN SIZE		
D_{60}	0.5004	0.6652
D_{30}	0.1570	0.1376
D_{10}		
COEFFICIENTS		
C_c		
C_u		

SIEVE number size	○	□
#4	84.1	84.3
#10	76.6	75.1
#16	71.4	68.6
#40	56.7	51.5
#50	48.0	43.7
#100	28.9	31.2
#200	16.9	23.0

Material Description

○ silty sand with gravel

□ clayey sand with gravel

REMARKS:

○

□

○ Source of Sample: CA-5 Depth: 7.0-7.5' Sample Number: B2

□ Source of Sample: CA-5 Depth: 11.0-12.5' Sample Number: C

NEVADA DEPARTMENT OF TRANSPORTATION

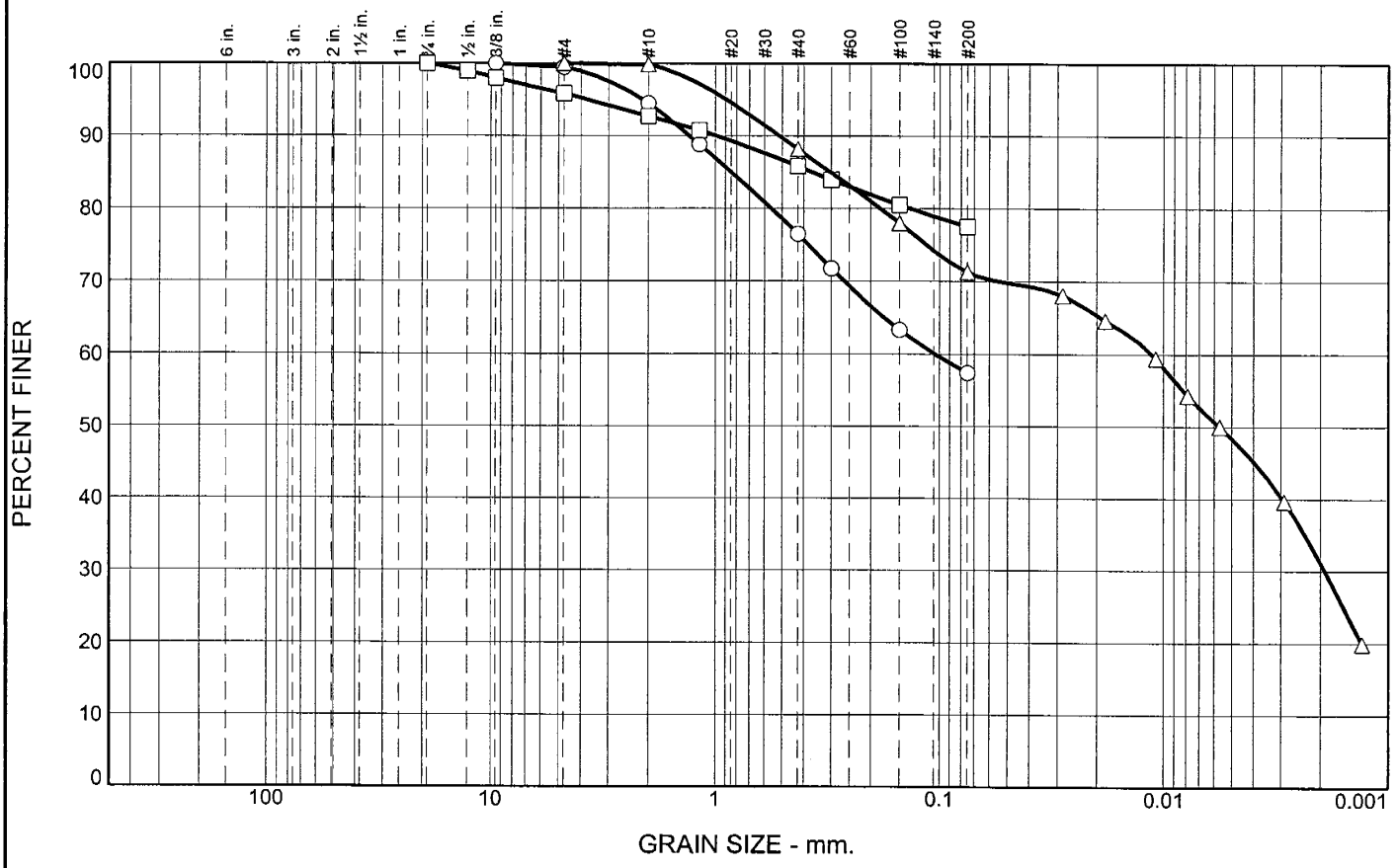
Client: C. Callaghan

Project: US 50 Widening - Stagecoach

Project No.: FL-4-10, EA 73475

Figure

Particle Size Distribution Report



	+3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	0.0	0.6	42.0	57.4		CH	A-7-6(14)	22	52
□	0.0	4.2	18.3	77.5		CL	A-7-6(19)	21	46
△	0.0	0.0	28.7	40.1	31.2	CL	A-7-6(15)	26	48

SIEVE inches size	PERCENT FINER ○	□	△
3/4"		100.0	
1/2"		98.9	
3/8"	100.0	98.0	
	GRAIN SIZE		
D_{60}	0.1044		0.0113
D_{30}			0.0019
D_{10}			
	COEFFICIENTS		
C_C			
C_u			

SIEVE number size	PERCENT FINER ○	□	△
#4	99.4	95.8	100.0
#10	94.5	92.7	99.8
#16	88.8	90.7	
#40	76.5	85.8	88.2
#50	71.8	84.0	
#100	63.3	80.5	78.0
#200	57.4	77.5	71.3

Material Description

○ sandy fat clay

□ lean clay with sand

△ lean clay with sand

REMARKS:

○

□

△

○ Source of Sample: CA-6 Depth: 4.5-5.0' Sample Number: A1

□ Source of Sample: CA-6 Depth: 5.0-5.5' Sample Number: A2

△ Source of Sample: CA-6 Depth: 9.0-10.5' Sample Number: B

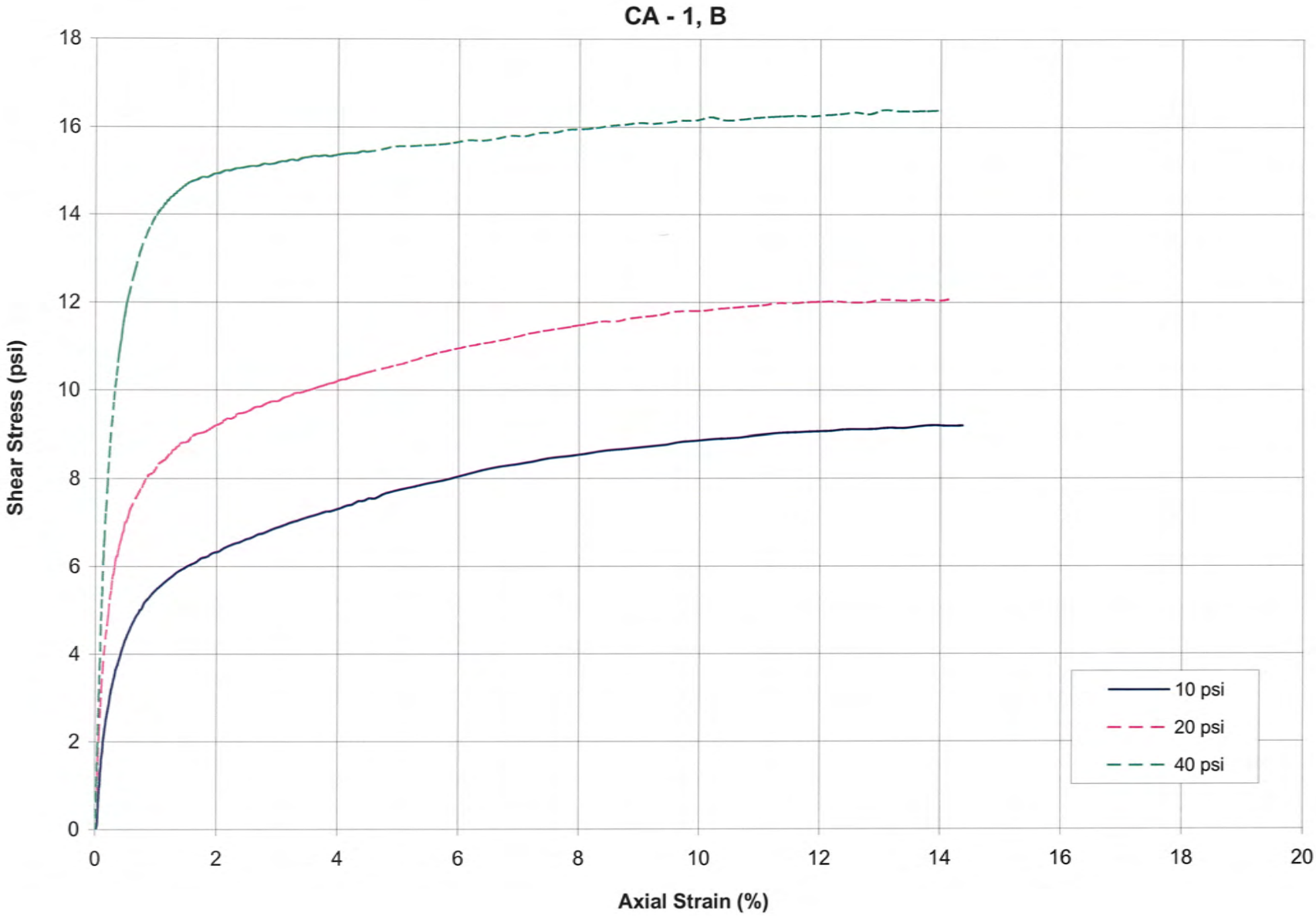
NEVADA DEPARTMENT OF TRANSPORTATION

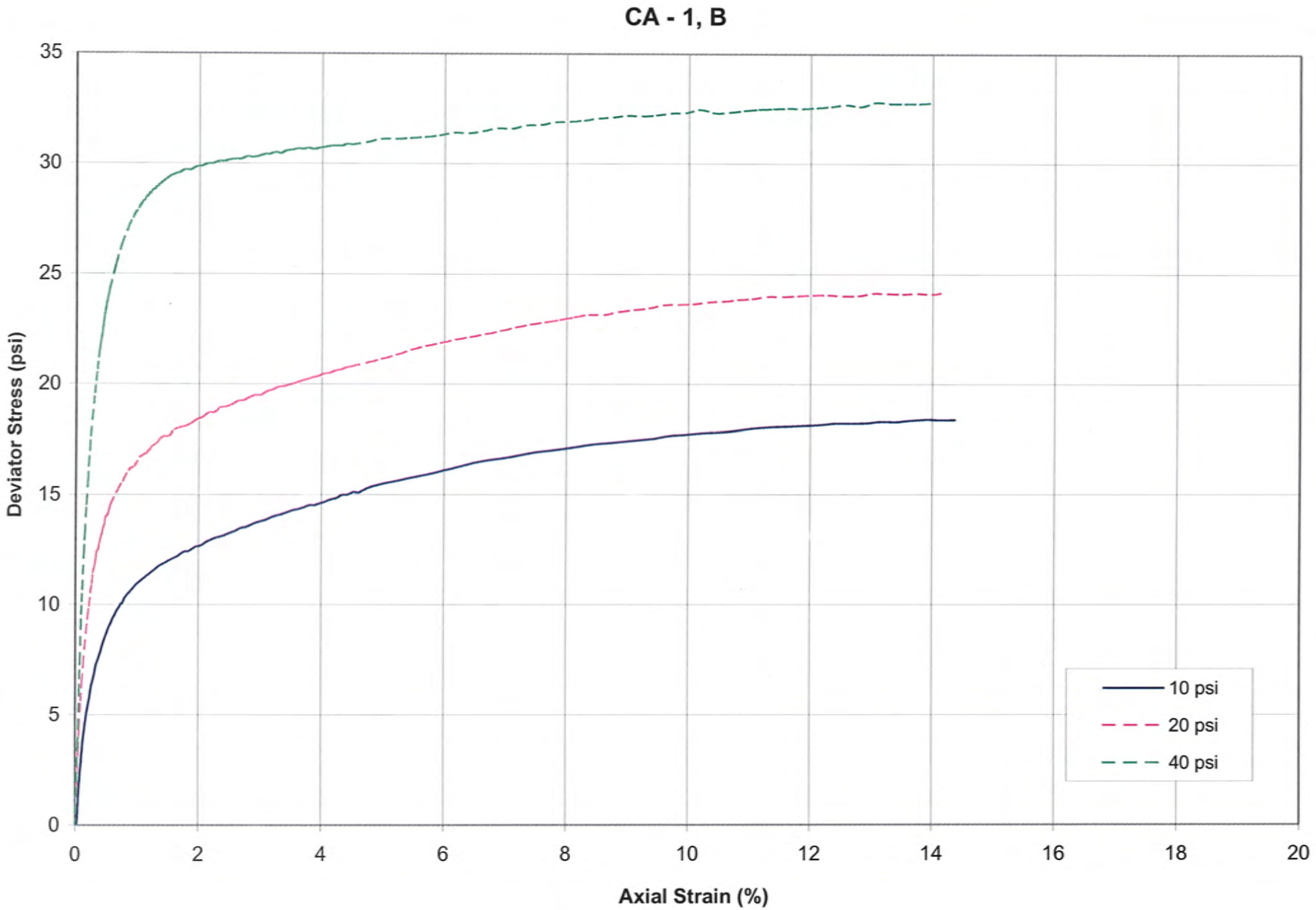
Client: C. Callaghan

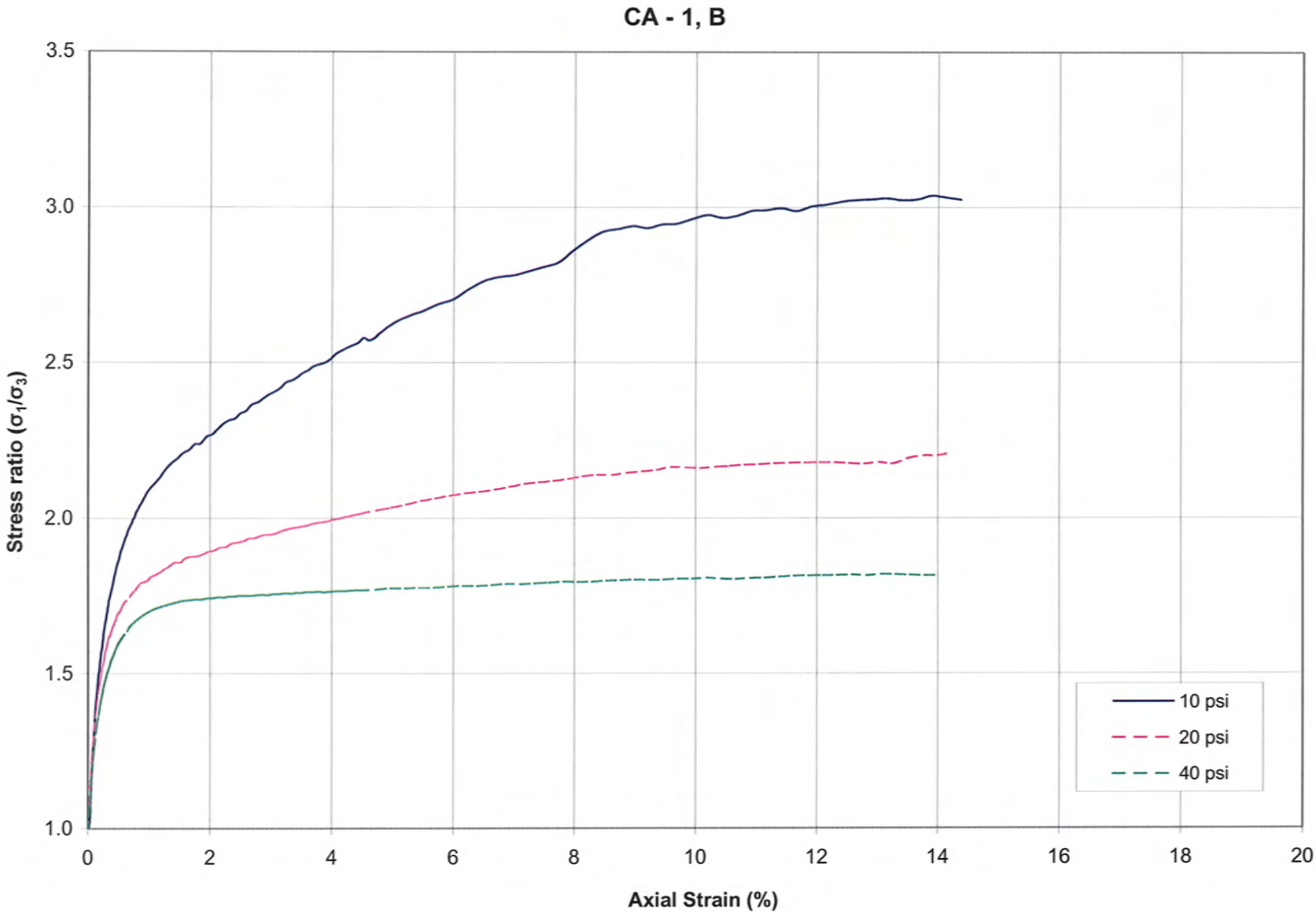
Project: US 50 Widening - Stagecoach

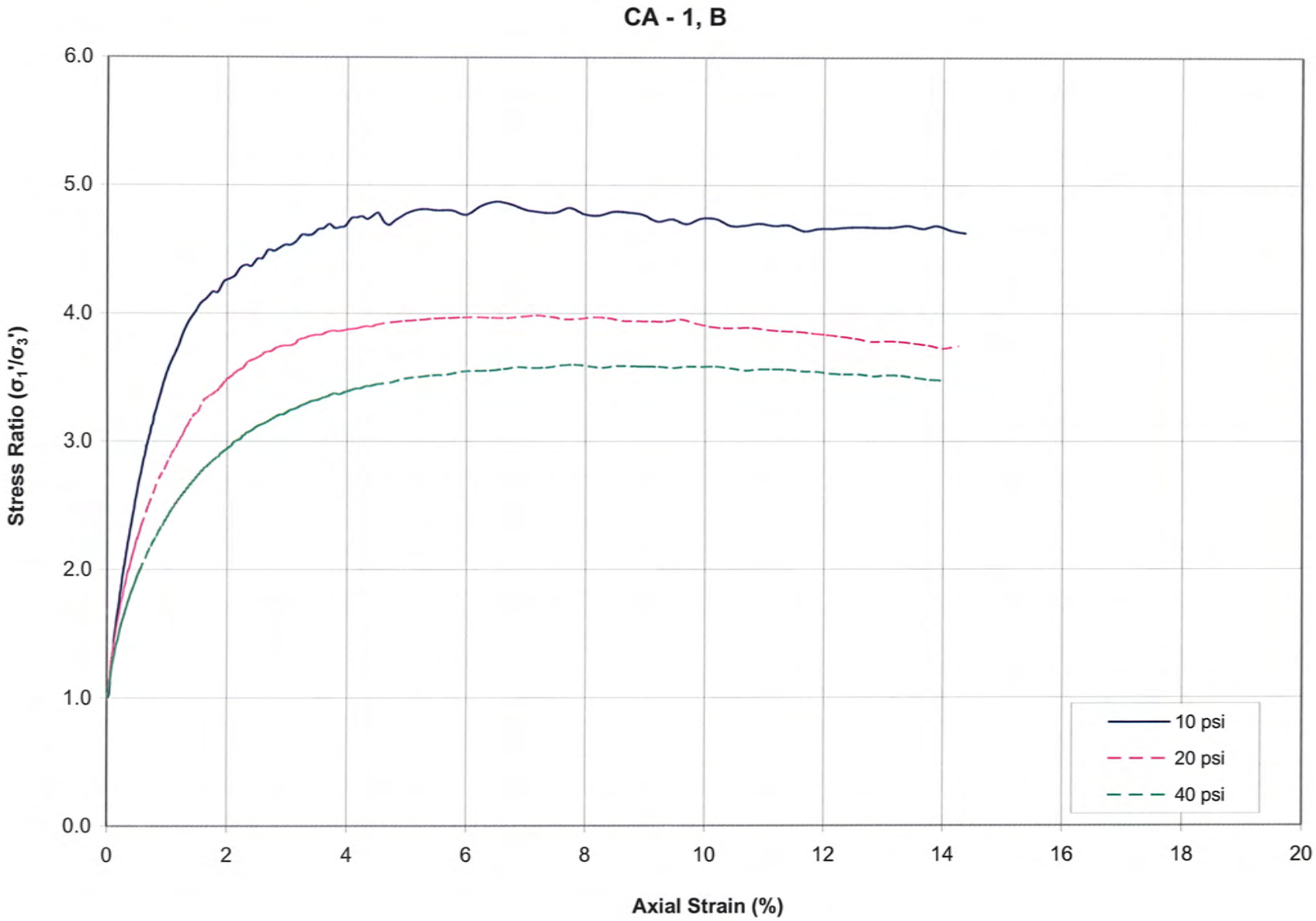
Project No.: FL-4-10, EA 73475

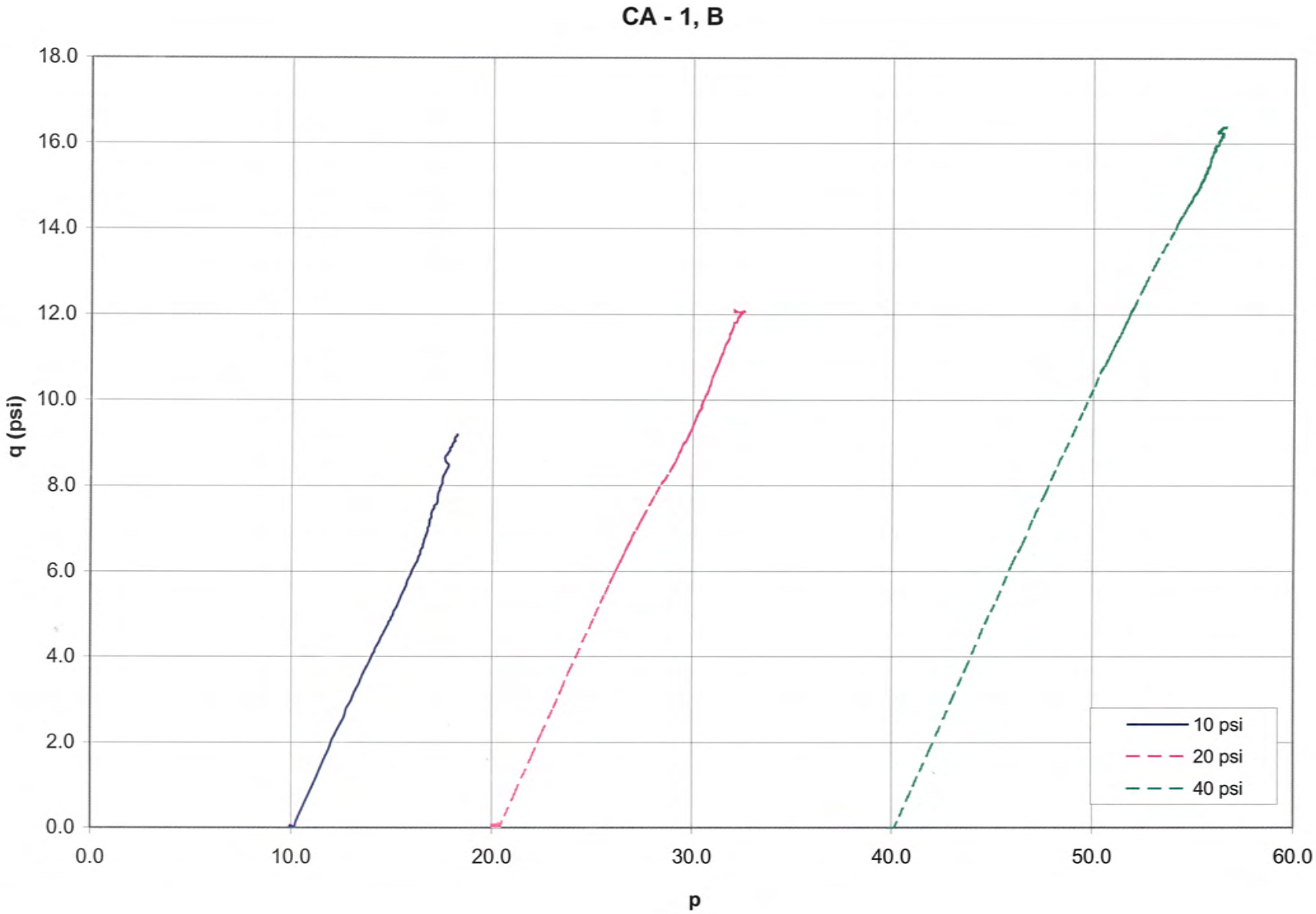
Figure

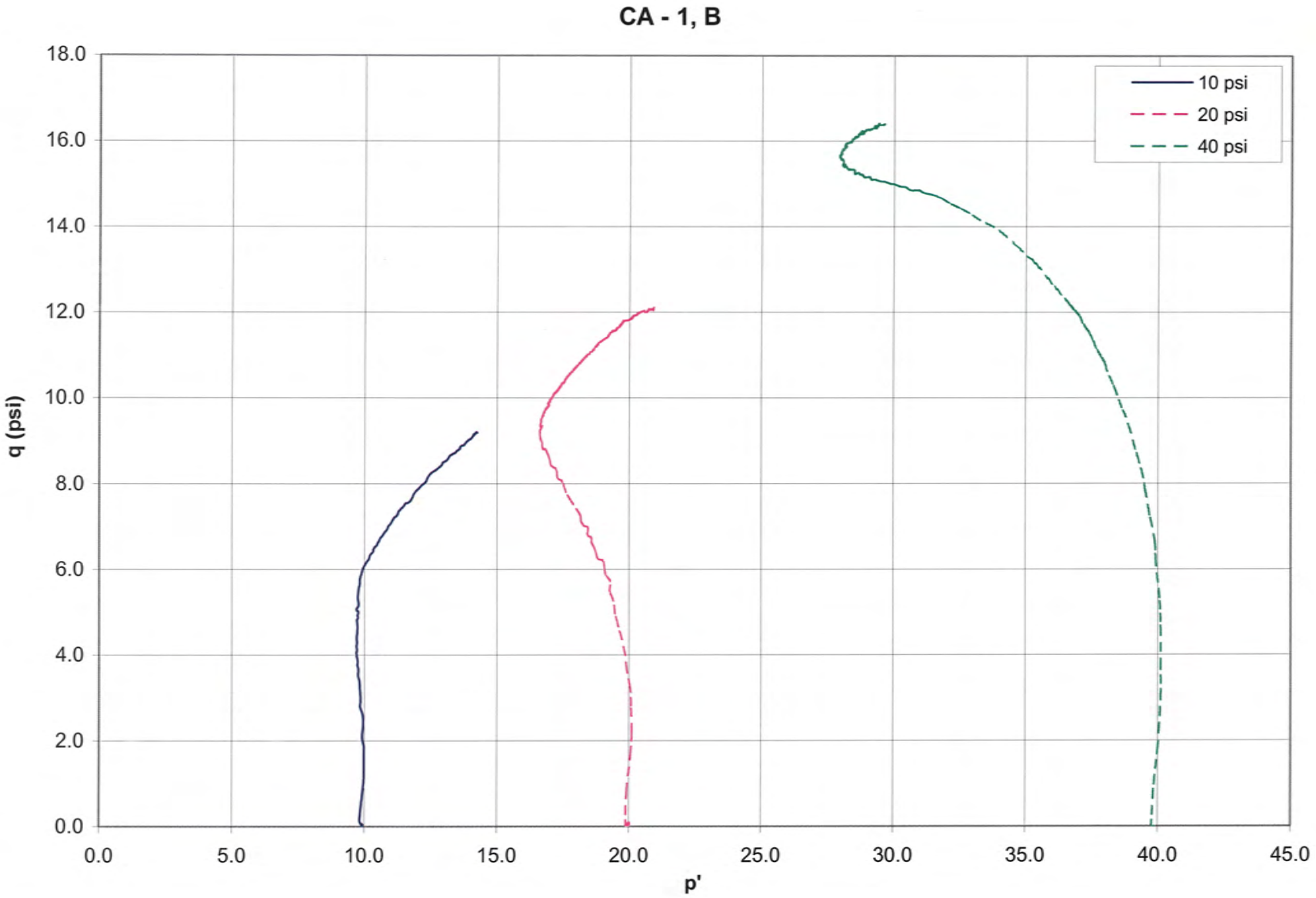

CA - 1, B
Shear Stress (psi)
Axial Strain (%)
0
2
4
6
8
10
12
14
16
18
20
10 psi
20 psi
40 psi

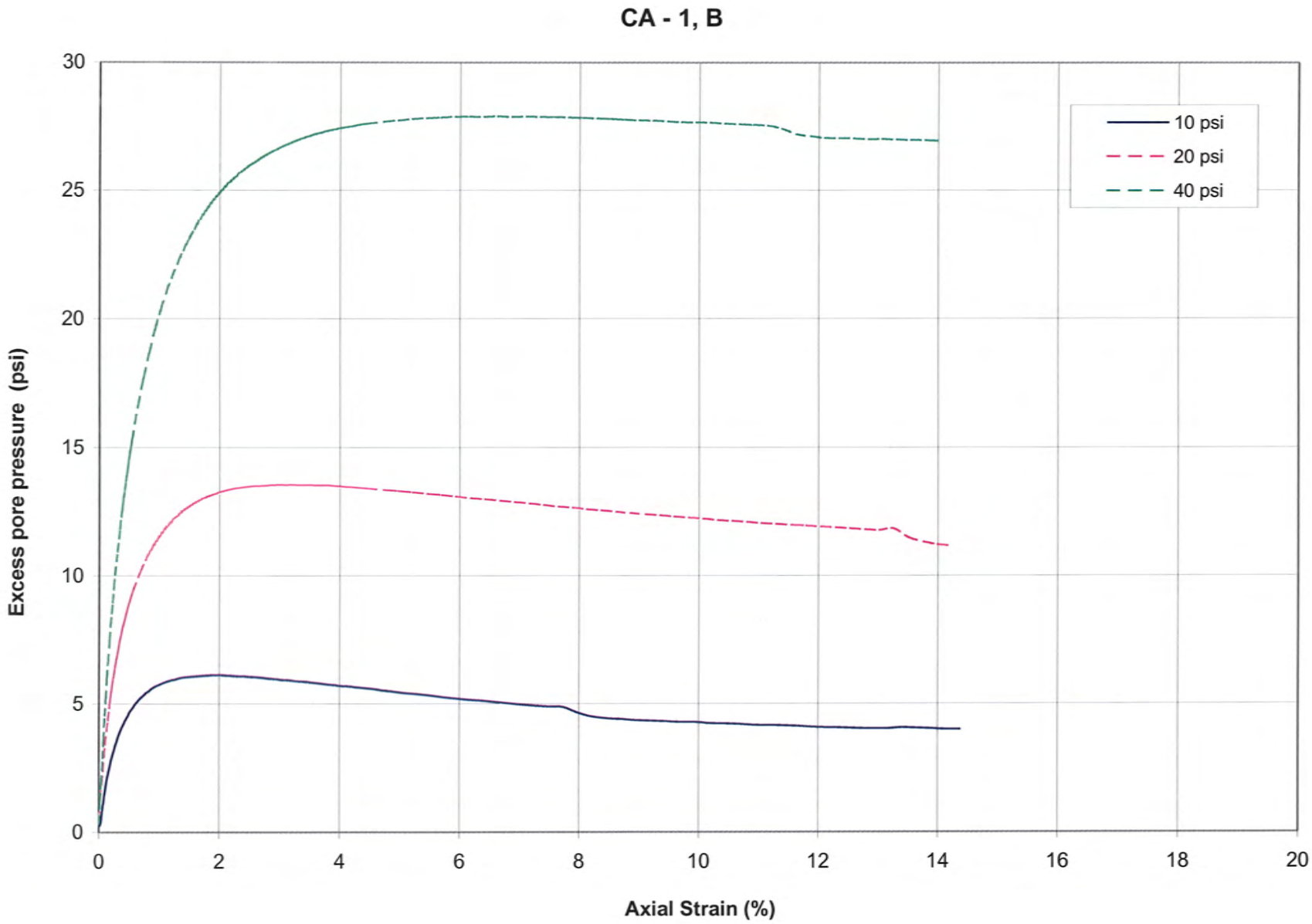

CA - 1, B
Deviator Stress (psi)
Axial Strain (%)
0
5
10
15
20
25
30
35
0
2
4
6
8
10
12
14
16
18
20
10 psi
20 psi
40 psi


CA - 1, B
Stress ratio (σ_1/σ_3)
3.5
3.0
2.5
2.0
1.5
1.0
0
2
4
6
8
10
12
14
16
18
20
Axial Strain (%)
10 psi
20 psi
40 psi

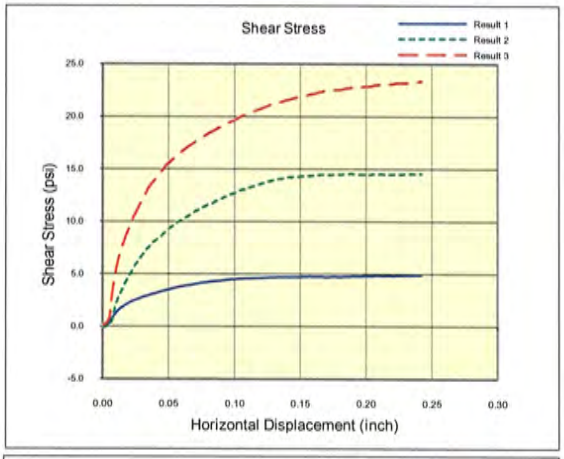

CA - 1, B
Stress Ratio (σ1'/σ3')
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0
2
4
6
8
10
12
14
16
18
20
Axial Strain (%)
10 psi
20 psi
40 psi

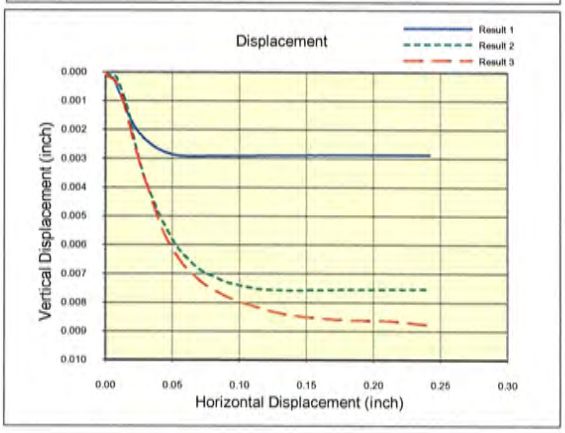

CA - 1, B
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
q (psi)
0.0
10.0
20.0
30.0
40.0
50.0
60.0
p
10 psi
20 psi
40 psi

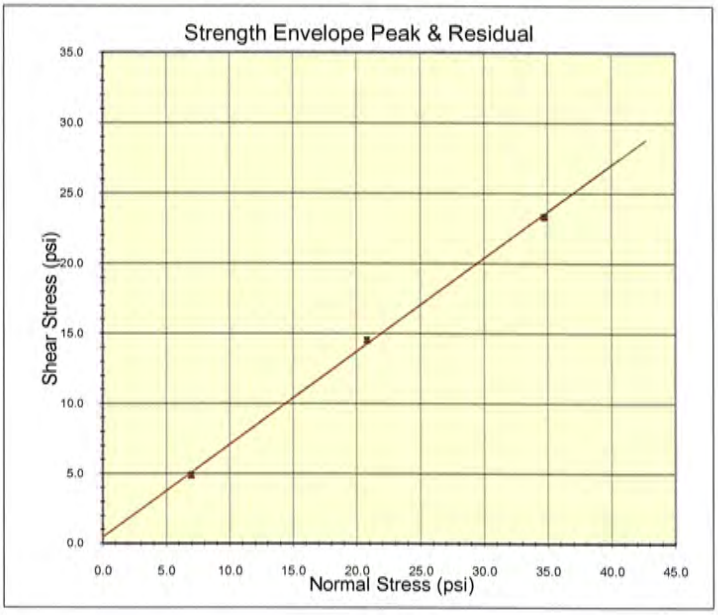

CA - 1, B
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
q (psi)
0.0
5.0
10.0
15.0
20.0
25.0
30.0
35.0
40.0
45.0
p'
10 psi
20 psi
40 psi


CA - 1, B
Excess pore pressure (psi)
Axial Strain (%)
10 psi
20 psi
40 psi
0
5
10
15
20
25
30
0
2
4
6
8
10
12
14
16
18
20

DIRECT SHEAR TEST REPORT







Strength Parameters

	Peak		Residual
Friction Angle =	34	degrees	34
Cohesion =	0.47	psi	0.45

Project: FL-4-10 Boring: CA-2 Sample: A1

	Result 1	Result 2	Result 3
Specimen:	a	b	C
Date Tested	04/22/2010	04/21/2010	04/20/2010
Diameter (inch):	2.42	2.42	2.42
Height (inch):	1.00	1.00	1.00
Depth (ft):	4.50	4.50	4.50
Moisture (%)	15.0	15.0	15.6
Dry Unit Wt (pcf)	96.6	96.2	95.5
SHEAR			
Displacement Rate($^{in}/_{min}$)	0.0054	0.0055	0.0053
Normal Stress (psi)	6.93	20.79	34.70
Peak Shear Stress(psi)	4.92	14.58	23.36
Residual Shear Stress(psi)	4.9	14.5	23.3
Residual Point Picked @(in)	0.242	0.242	0.242
Time @ Peak Failure (min)	43.5	34.3	43.2

Specimen Comments

a Medium brown clayey sand shear @ 1000 psf

b Medium brown clayey sand shear @ 3000 psf

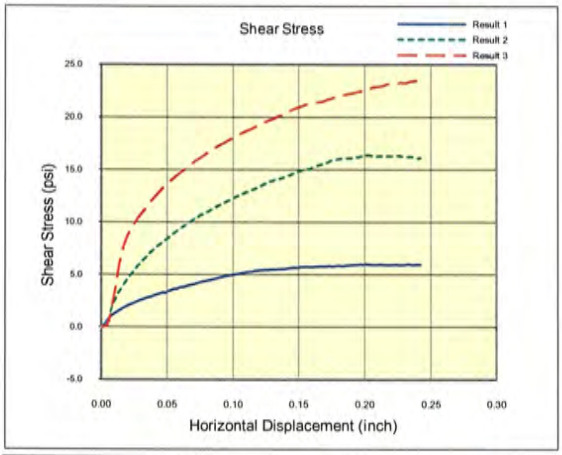
C Medium brown clayey sand shear @ 5000 psf

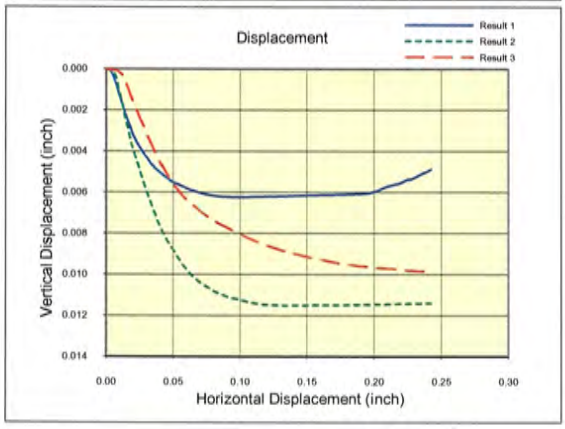
Geotechnical Section

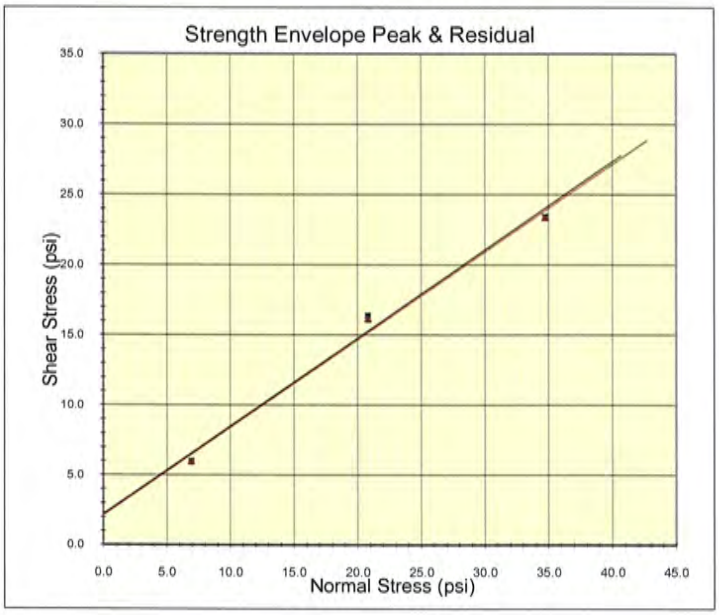
NEVADA DOT

DigiShear Report v4b __ CA2-A1-10.xls

DIRECT SHEAR TEST REPORT







Strength Parameters	Peak		Residual
Friction Angle =	32	degrees	32
Cohesion =	2.20	psi	2.11

Project: FL-4-10 Boring: CA-2 Sample: A2

	Result 1	Result 2	Result 3
Specimen:	a	b	c
Date Tested	04/27/2010	04/27/2010	04/26/2010
Diameter (inch):	2.42	2.42	2.42
Height (inch):	1.00	1.00	1.00
Depth (ft):	5.00	5.00	5.00
Moisture (%)	11.2	10.6	13.1
Dry Unit Wt (pcf)	98.0	95.1	95.8
SHEAR			
Displacement Rate($^{in}/_{min}$)	0.0053	0.0054	0.0054
Normal Stress (psi)	6.91	20.79	34.71
Peak Shear Stress(psi)	5.98	16.38	23.45
Residual Shear Stress(psi)	6.0	16.1	23.4
Residual Point Picked @(in)	0.242	0.242	0.242
Time @ Peak Failure (min)	42.5	36.9	43.5

Specimen Comments

a Medium brown silty sand shear @ 1000 psf

b Medium brown clayey sand shear @ 3000 psf

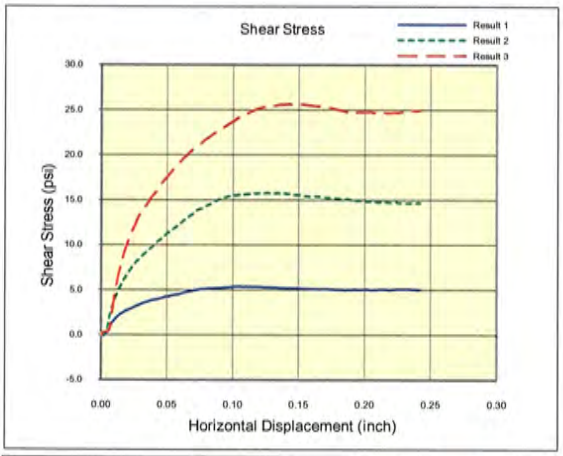
c Medium brown clayey sand shear @ 5000 psf

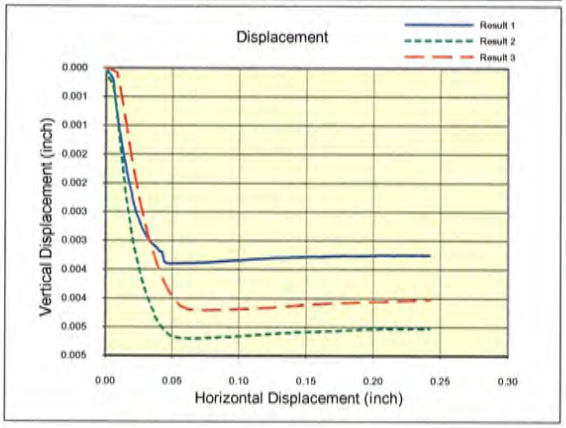
Geotechnical Section

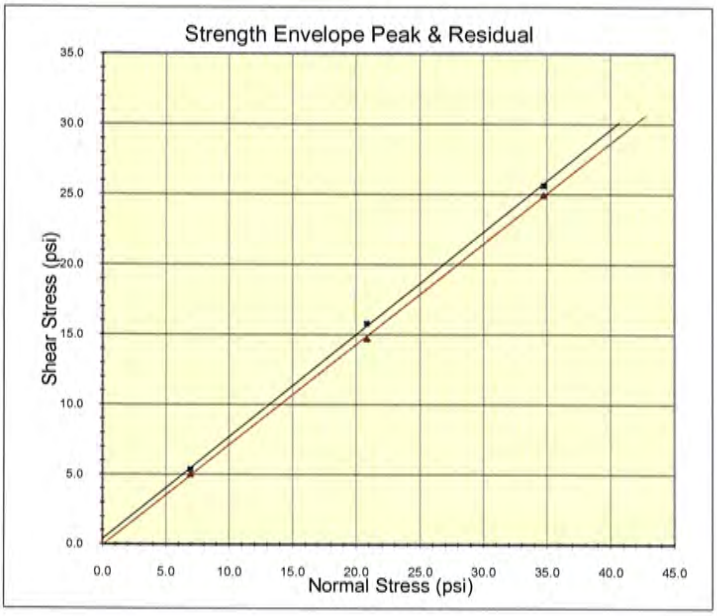
NEVADA DOT

DigiShear Report v4b __ CA2-A2-10.xls

DIRECT SHEAR TEST REPORT







Strength Parameters	Peak		Residual
Friction Angle =	36	degrees	36
Cohesion =	0.38	psi	-0.05

Project: FL-4-10 Boring: CA-5 Sample: B1

	Result 1	Result 2	Result 3
Specimen:	a	b	c
Date Tested	04/30/2010	04/29/2010	04/29/2010
Diameter (inch):	2.42	2.42	2.42
Height (inch):	1.00	1.00	1.00
Depth (ft):	7.00	7.00	7.00
Moisture (%)	6.6	6.6	6.6
Dry Unit Wt (pcf)	109.7	109.7	109.6
SHEAR			
Displacement Rate($^{in}/_{min}$)	0.0055	0.0057	0.0055
Normal Stress (psi)	6.94	20.82	34.71
Peak Shear Stress(psi)	5.35	15.78	25.64
Residual Shear Stress(psi)	5.0	14.7	25.0
Residual Point Picked @(in)	0.242	0.242	2.420
Time @ Peak Failure (min)	19.1	23.0	25.8

Specimen Comments

a Medium brown sandy shear @ 1000 psf
b Medium brown sandy shear @ 3000 psf
c Medium brown sandy shear @ 5000 psf

Geotechnical Section
NEVADA DOT

DigiShear Report v4b __ CA5-B1-10.xls

NEVADA DEPARTMENT OF TRANSPORTATION
GEOTECHNICAL SECTION

CHEMICAL ANALYSIS

E.A. No. 73475

PROJECT US 50 Widening - Stagecoach

BORING # CA 1, CA 2, CA 3, CA 4, CA 5, CA 6

Sample No.	Chlorides * ppm	Sulfates * ppm	Ph	Resistivity Ohm - cm	Conductivity µS
CA 1, C			7.2	3,509	285
CA 1, D			7.3	2,862	485
CA 2, B			6.9	3,534	283
CA 2, C			7.6	5,076	197
CA 3, B			8.4	2,092	478
CA 3, C			8.1	2,809	356
CA 4, C1			7.7	9,709	103
CA 4, C2			7.8	7,813	128
CA 5, A			7.0	5,495	182
CA 5, C			6.9	5,319	188
CA 6, B			6.9	3,831	261

* Can be tested under special request.

Appendix C
Seismic Refraction and ReMi Results

Y:\Projects\050ly73475\Sheets\Package 1\73475sht008.dgn

PRELIMINARY

SUBJECT TO REVISION
9/29/2010 9:00:01 AM

STATE	PROJECT NO.	COUNTY	SHEET NO.
NEVADA	SPF-050-2(019)	LYON	8

"X2" 830+48 CONSTRUCT 2418' TYPE A-5S FENCE, LT ON R/W
"WB" 854+13 LINE. CONNECT TO GATE AND CATTLE GUARD.

"X2" 830+48 CONSTRUCT 3229' TYPE A-5S FENCE, LT
"X2" 861+26 ON R/W LINE. CONNECT TO GATES

"WB" 838+31 INSTALL CABLE BARRIER, RT
"WB" 852+85

"WB"
Δ = 4°40'05"
R = 4144.39'
L = 337.66'
T = 168.92'

"X2"
Δ = 4°40'05"
R = 15017.00'
L = 1223.50'
T = 612.09'

Sec. 23 Sec. 24
T. 17 N., R. 22E.

(20.00' LT.) "X2" 834+90.45 PC = "WB" 834+93.05 PC

"WB" 838+30.71 PT

R/W

EOP

Geophone Line 2 "WB"

Geophone Line 1

Test Hole # C86

"X2"

N69°49'43"E 2122.52'

N65°09'38"E 54065.49'

MEDIAN FLOW LINE

"EB"

"X2" +20
83.00' RT

"X2" +20
103.00' RT

PE

"X2"+68.83
103.00' RT

"X2" 834+90.45 PC

(20.00' RT.) "X2" 834+90.45 PC = "EB" 834+88.92 PC

"EB" 846+15.80 PT

"X2" 847+13.94 PT

"EB"
Δ = 4°40'05"
R = 13831.15'
L = 1126.88'
T = 563.75'

"X2" 834+90.45 PC

D.N. "WB" LT	SEE PROFILE SHEETS FOR DITCH NOTES
D.N. "WB" RT	SEE MEDIAN ELEVATION CONTROL SHEETS
6:1 FS 19', Thence 6:1 FS or 2:1 BS D.N. "X2" LT & RT	
D.N. "EB" RT	SEE MEDIAN ELEVATION CONTROL SHEETS
D.N. "EB" LT	6:1 FS 19', Thence 6:1 FS or 2:1 BS

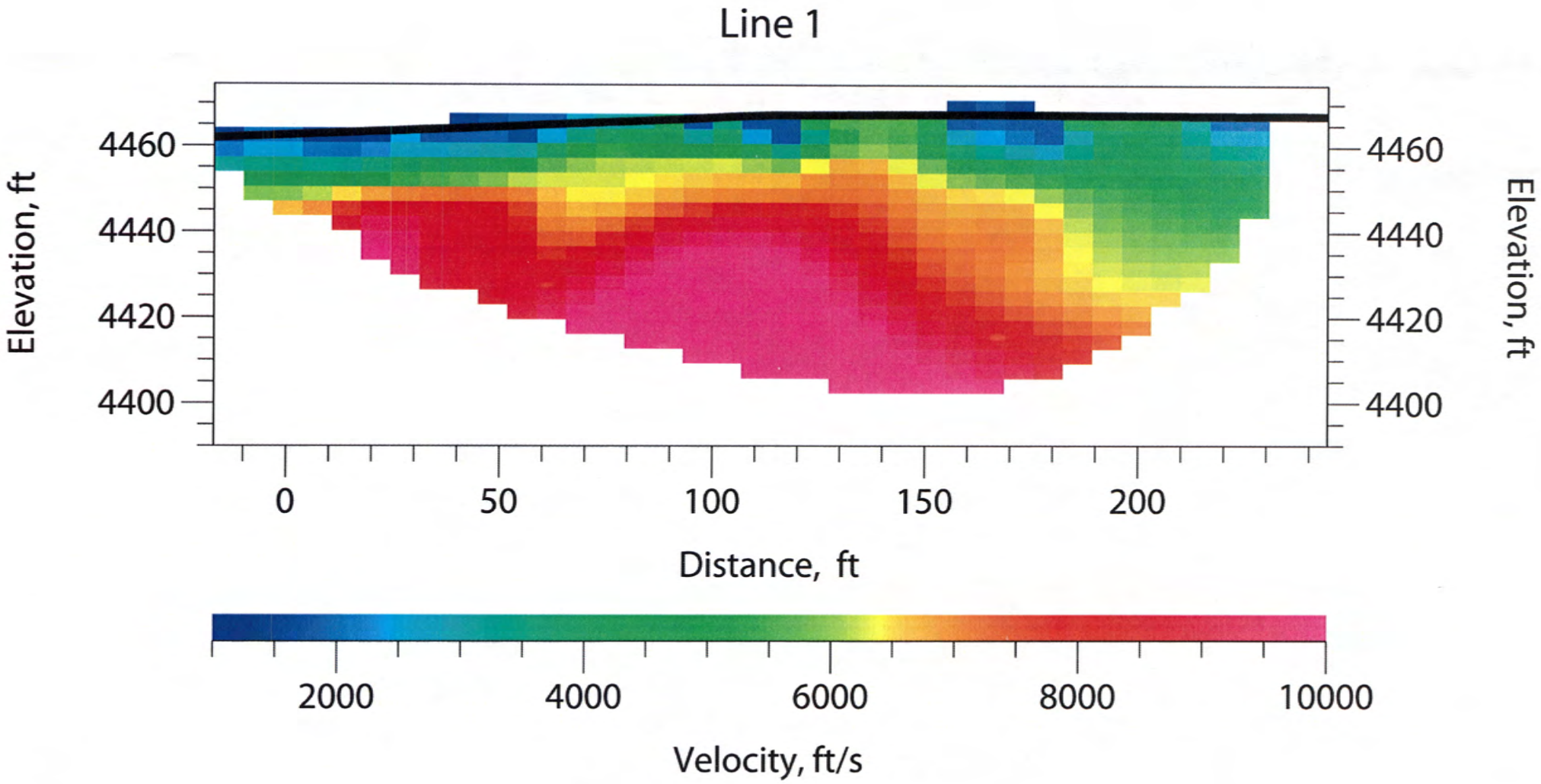
+50

"X2" LT		
EXCAVATION	575	(575) CUYD ①
BORROW		0 CUYD
EMBANKMENT		11 CUYD

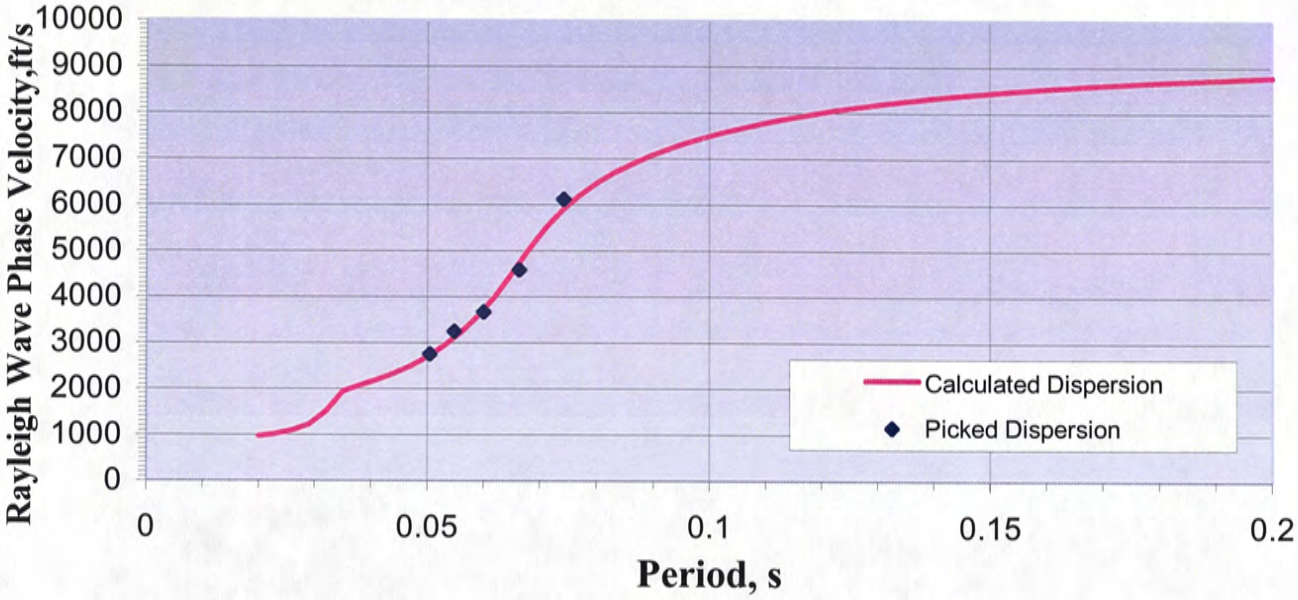
"X2" RT		
EXCAVATION	656	(656) CUYD ②
BORROW		0 CUYD
EMBANKMENT		3 CUYD

① INCLUDES: 564 (564) CUYD TO BE PLACED BETWEEN "X2" 803+00 TO "X2" 803+00 TO "X2" 818+00, LT
② INCLUDES: 653 (653) CUYD TO BE PLACED BETWEEN "EB" 847+50 TO "EB" 862+00, RT

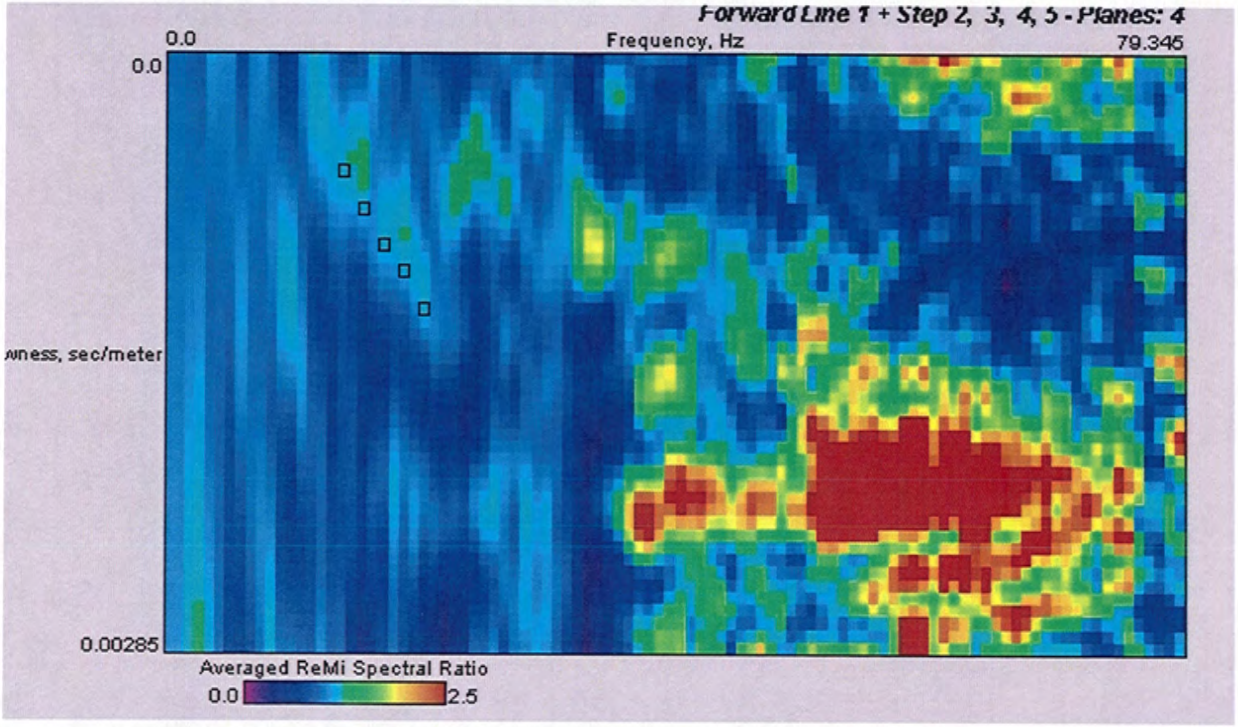
100.000000:1.000000 PLOT SCALE h9010rek

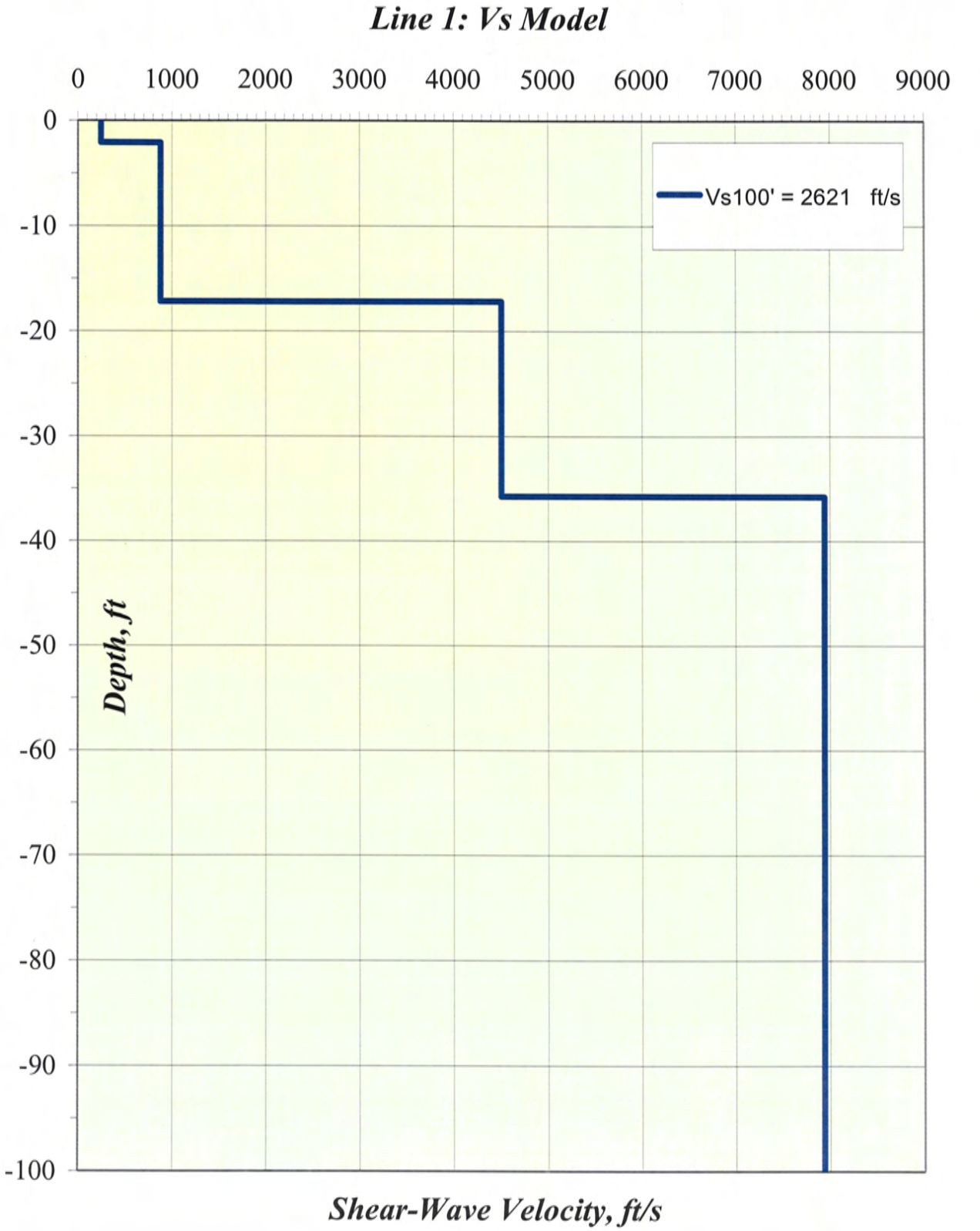

Line 1
Elevation, ft
4460
4440
4420
4400
0
50
100
150
200
Distance, ft
2000
4000
6000
8000
10000
Velocity, ft/s

Line 1: Supportive Illustration
Dispersion Curve and Fits



p-f Image with Dispersion Modeling Picks




Line 1: Vs Model
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
-100
Vs100' = 2621 ft/s
Depth, ft
Shear-Wave Velocity, ft/s

Y:\Projects\050ly73475\Sheets\Package 1\73475sht008.dgn

PRELIMINARY

SUBJECT TO REVISION
9/29/2010 9:00:01 AM

STATE	PROJECT NO.	COUNTY	SHEET NO.
NEVADA	SPF-050-2(019)	LYON	8

"X2" 830+48 CONSTRUCT 2418' TYPE A-5S FENCE, LT ON R/W
"WB" 854+13 LINE. CONNECT TO GATE AND CATTLE GUARD.

"X2" 830+48 CONSTRUCT 3229' TYPE A-5S FENCE, RT
"X2" 861+26 ON R/W LINE. CONNECT TO GATES.

"WB" 838+31 INSTALL CABLE BARRIER, RT
"WB" 852+85

"WB"
Δ = 4°40'05"
R = 4144.39'
L = 337.66'
T = 168.92'

"X2"
Δ = 4°40'05"
R = 15017.00'
L = 1223.50'
T = 612.09'

Sec. 23 Sec. 24
T.17.N. R.22E.

(20.00' LT.) "X2" 834+90.45 PC =
"WB" 834+93.05 PC

"WB" 838+30.71 PT

R/W

EOP

Geophone Line 2

"WB"

Geophone Line 1

Test Hole # C46

"X2"

N69°49'43"E 2122.52'

N65°09'38"E 54065.49'

MEDIAN FLOW LINE

"EB"

"X2" +20
83.00' RT

"X2" +20
103.00' RT

PE

"X2" +68.83
103.00' RT

"EB" 846+15.80 PT

"X2" 847+13.94 PT

(20.00' RT.) "X2" 834+90.45 PC =
"EB" 834+88.92 PC

"EB"
Δ = 4°40'05"
R = 13831.15'
L = 1126.88'
T = 563.75'

"X2" 834+90.45 PC

D.N. "WB" LT	SEE PROFILE SHEETS FOR DITCH NOTES
D.N. "WB" RT	SEE MEDIAN ELEVATION CONTROL SHEETS
6:1 FS 19', Thence 6:1 FS or 2:1 BS D.N. "X2" LT & RT	
D.N. "EB" RT	SEE MEDIAN ELEVATION CONTROL SHEETS
D.N. "EB" LT	6:1 FS 19', Thence 6:1 FS or 2:1 BS

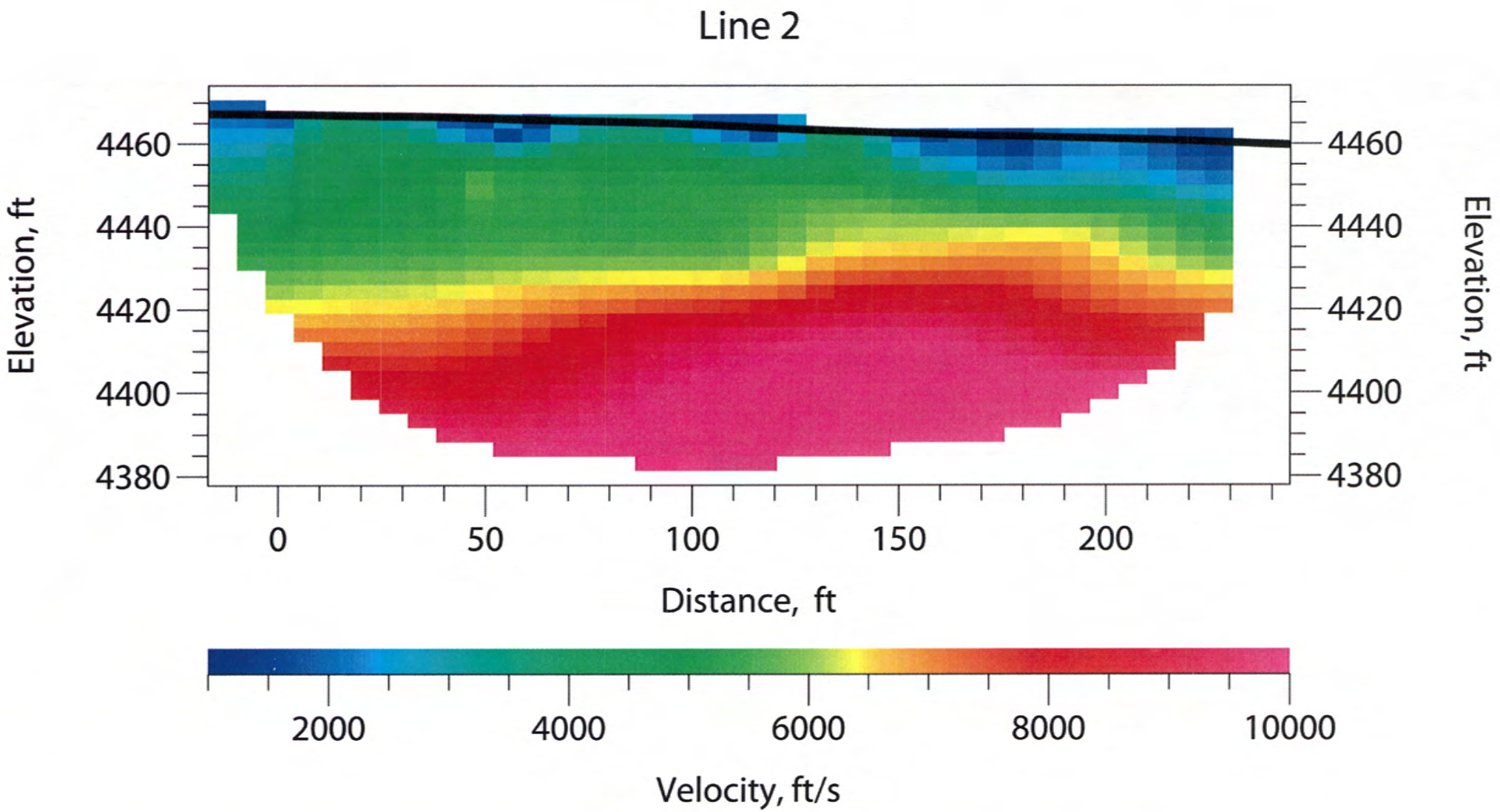
+50

"X2" LT			
EXCAVATION	575	(575) CUYD	①
BORROW		0 CUYD	
EMBANKMENT		11 CUYD	

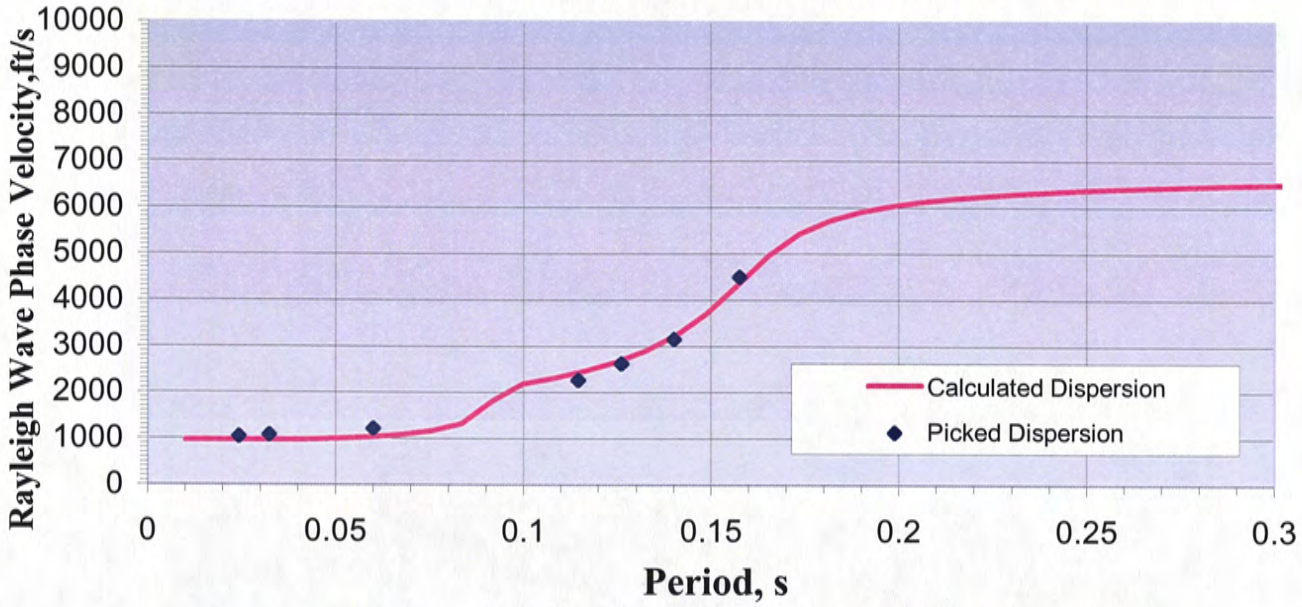
"X2" RT			
EXCAVATION	656	(656) CUYD	②
BORROW		0 CUYD	
EMBANKMENT		3 CUYD	

① INCLUDES: 564 (564) CUYD TO BE PLACED BETWEEN "X2" 803+00 TO "X2" 803+00 TO "X2" 818+00, LT
② INCLUDES: 653 (653) CUYD TO BE PLACED BETWEEN "EB" 847+50 TO "EB" 862+00, RT

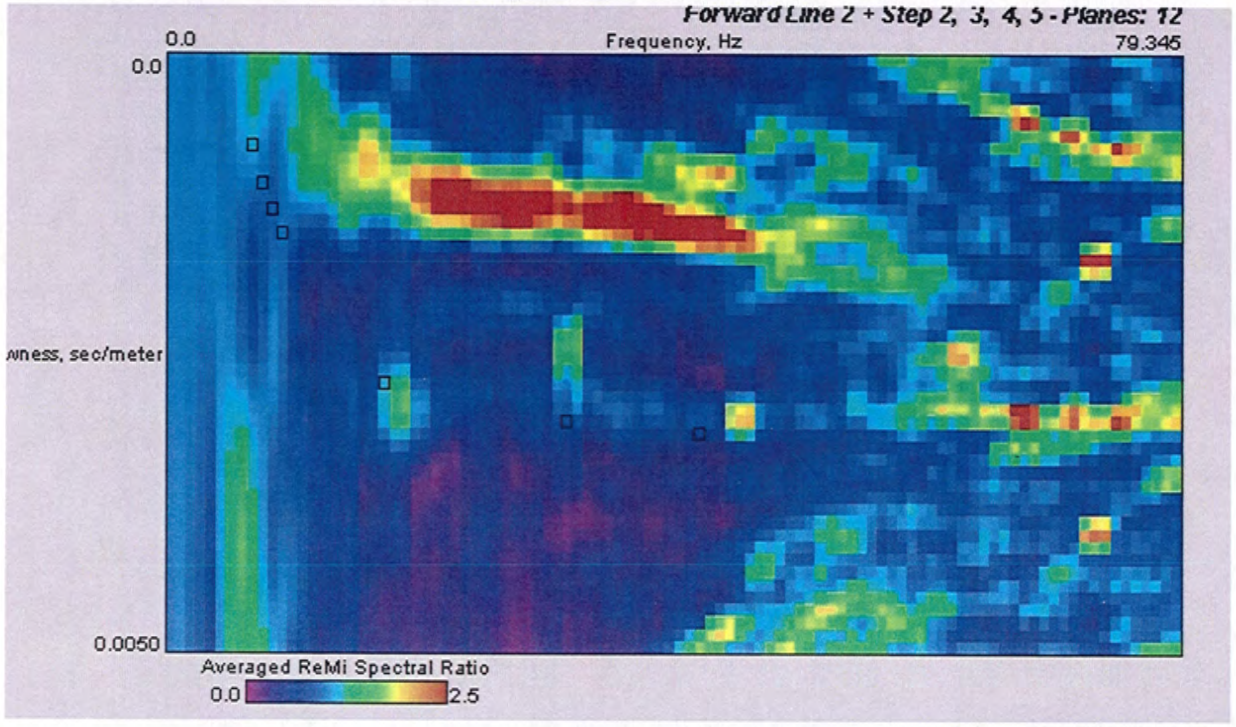
100.000000:1.000000 PLOT SCALE h9010rek


Line 2
Elevation, ft
4460
4440
4420
4400
4380
0
50
100
150
200
Distance, ft
2000
4000
6000
8000
10000
Velocity, ft/s

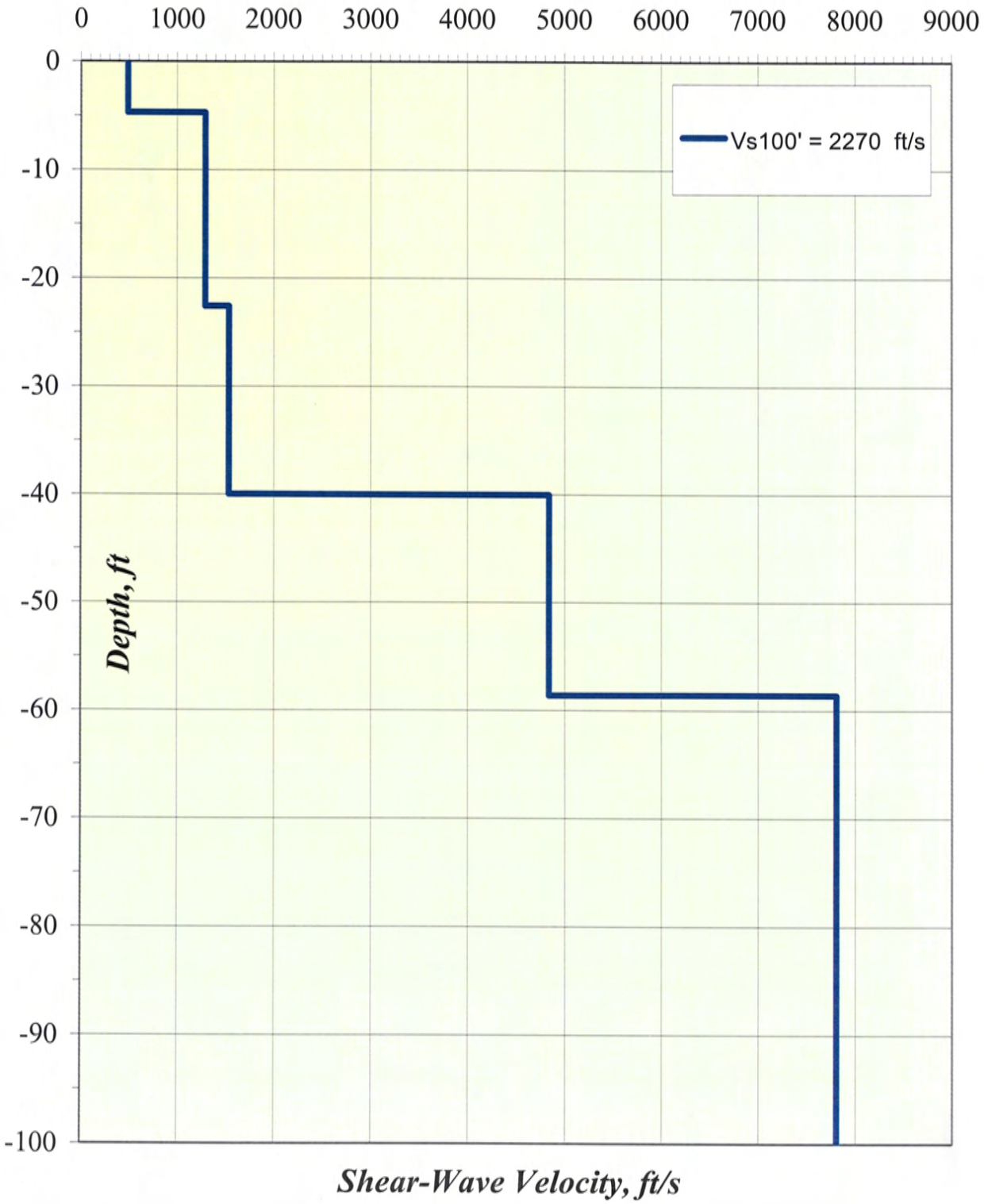
Line 2: Supportive Illustration
Dispersion Curve and Fits



p-f Image with Dispersion Modeling Picks



Line 2: Vs Model



Y:\Projects\050ly73475\Sheets\Package 1\73475sht006.dgn

PRELIMINARY

SUBJECT TO REVISION

STATE	PROJECT NO.	COUNTY	SHEET NO.
NEVADA	SPF-050-2(019)	LYON	6

- LIMITS OF MISCELLANEOUS PAVEMENT

"L1" 776+39 CONSTRUCT 2995' TYPE A-5S FENCE, LT
"X2" 804+23 ON R/W LINE. CONNECT TO GATE.

"X2" 804+23 CONSTRUCT GATE, LT CONNECT TO
"X2" 804+32 FENCE POST AND CATTLE GUARD.

"DL" 1+08 CONSTRUCT 32' PRECAST CATTLE GUARD.

"X2" 804+69 CONSTRUCT 2594' TYPE A-5S FENCE, LT ON R/W
"X2" 830+38 LINE. CONNECT TO GATE AND CATTLE GUARD.

"X2" 804+45 PAVE APPROACH, RT
"X2" 816+47 PAVE APPROACH, RT

"L1" 776+25 CONSTRUCT 1213' TYPE A-5S FENCE, RT
"X2" 804+13 ON R/W LINE. CONNECT TO GATE.

"X2" 804+13 CONSTRUCT GATE, RT CONNECT TO
"X2" 804+21 FENCE POST AND CATTLE GUARD.

"X2" 804+45 CONSTRUCT 40' PRECAST CATTLE GUARD, 62' RT.

"X2" 804+69 CONSTRUCT 1270' TYPE A-5S FENCE, RT
"X2" 816+23 ON R/W LINE. CONNECT TO CATTLE GUARDS.

"X2" 816+47 CONSTRUCT 40' PRECAST CATTLE GUARD, 64' RT.

"X2" 816+71 CONSTRUCT 1377' TYPE A-5S FENCE, RT ON R/W
"X2" 830+38 LINE. CONNECT TO GATE AND CATTLE GUARD.

"DL" 2+14.12 PRC
"DL" 19°17'
67°00'00"
117.50'
66.59'
RT
"DL" 80°03'27"
80°00'00"
139.73'
84.00'
RT
TE
"X2" +75
290.00' LT
"X2" +35
275.00' LT
"DL" 3+31.62 PT
T.17.N., R.22E.
Sec. 23
1/4Sec. Line
1/4Sec. Line
"X2" 813+67.92 PT
TE
"X2" +35
117.00' LT
R/W
"DL" 0+74.39 PC
EOP
N30°46'59"W 74.39'
"X22"
EOP
EOP
805
810
815
N69°49'43"E 2122.52'
EOP
EOP
Double 24" HDP
EOP
EOP
"X2" 804+45.02 POC =
"DL" 0+00.00 POT
R/W
Geophone Line 3
"X2" +45
83.00' RT
"X2" +45
145.00' RT
PE
"X2" +95
93.00' RT
"X2" +95
145.00' RT
PE
"X2"
Δ = 16°17'28"
R = 4983.00'
L = 1416.84'
T = 713.23'
R/W
"X2" +85
83.00' RT
"X2" +85
93.00' RT

① ADDITIONAL: 1,222 (1,222) CUYD EXCAVATION FROM "L1" 782+25 TO "L1" 788+50, LT
1,236 (1,236) CUYD EXCAVATION FROM "L1" 788+50 TO "X2" 803+00, LT
564 (564) CUYD EXCAVATION FROM "X2" 832+50 TO "X2" 834+90, LT
471 (471) CUYD EXCAVATION FROM "WB" 834+93 TO "WB" 847+50
3,493 (3,493) CUYD TOTAL

② INCLUDES: 7,953 (7,953) CUYD TO BE PLACED BETWEEN "EB" 847+50 TO "EB" 862+00, RT

D.N. "X2" LT & RT

6:1 FS 19', Thence 6:1 FS or 2:1 BS

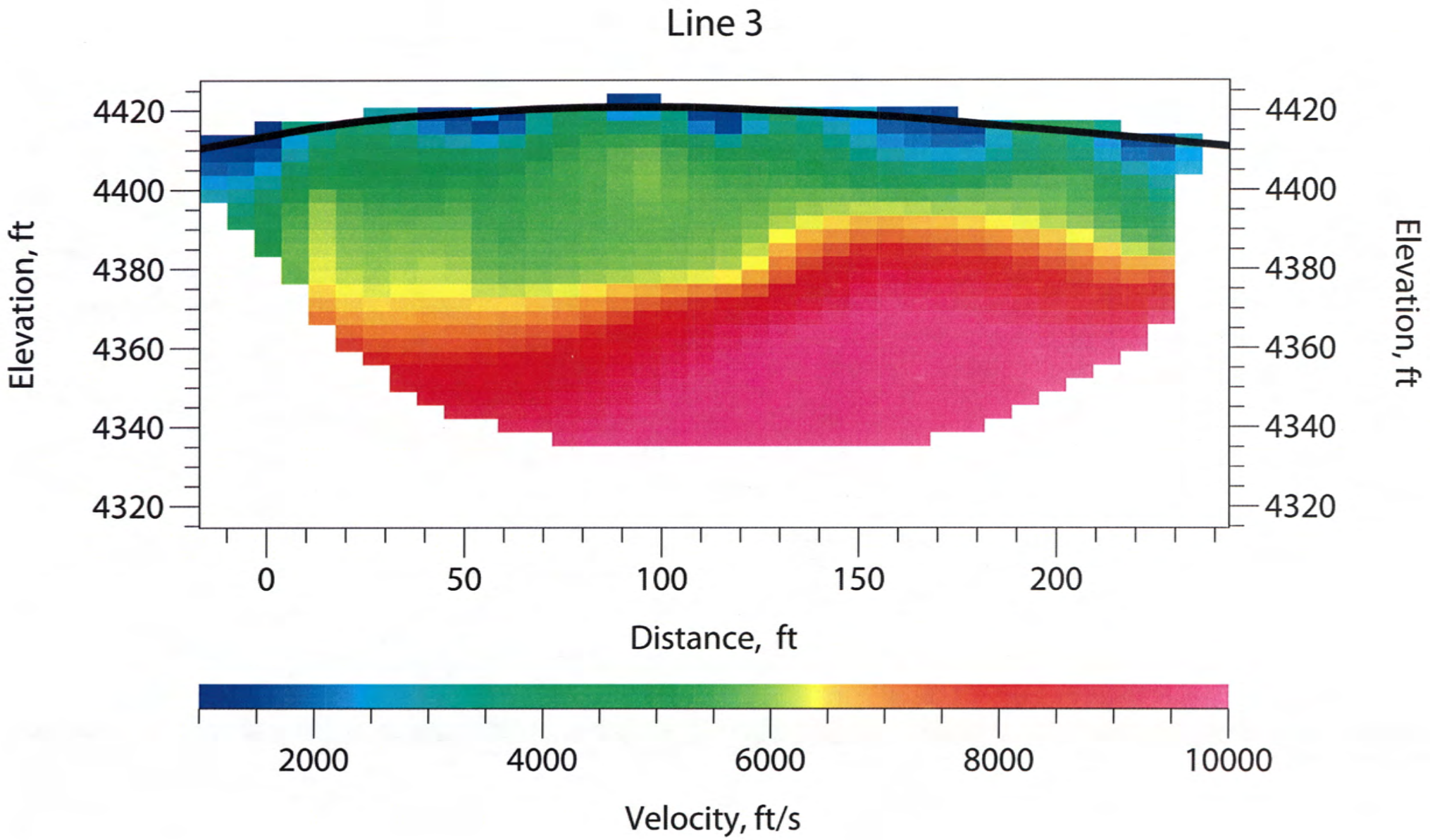
+00

"X2" LT	
EXCAVATION	1,053 (1,053) CUYD
BORROW	0 CUYD
EMBANKMENT	4,546 CUYD ①

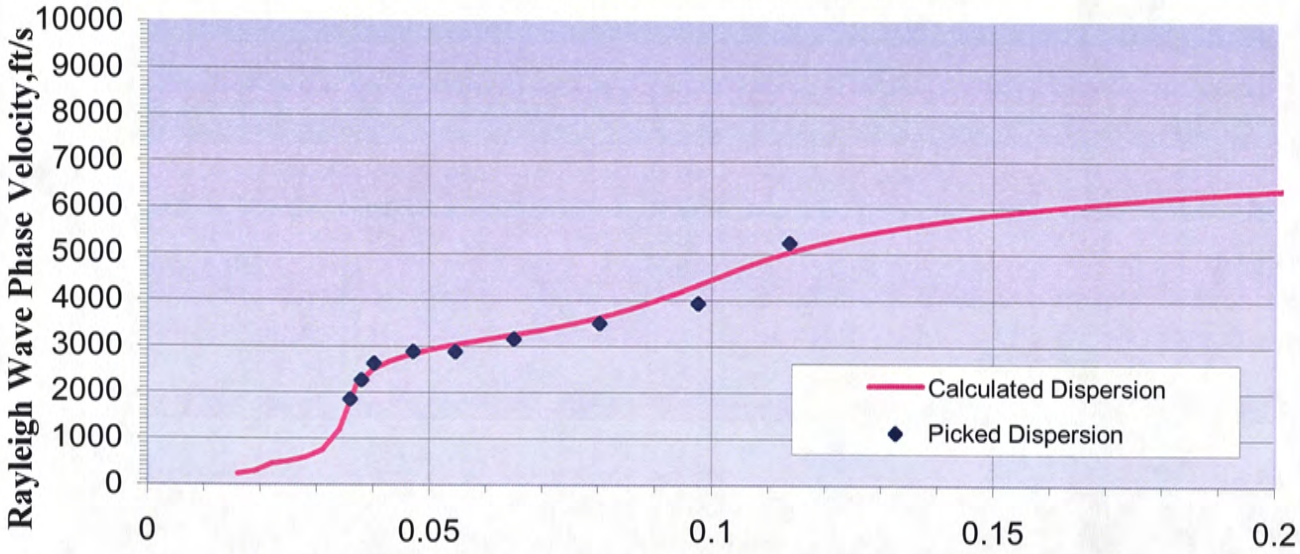
"X2" RT	
EXCAVATION	8,228 (8,228) CUYD ②
BORROW	0 CUYD
EMBANKMENT	275 CUYD

+00

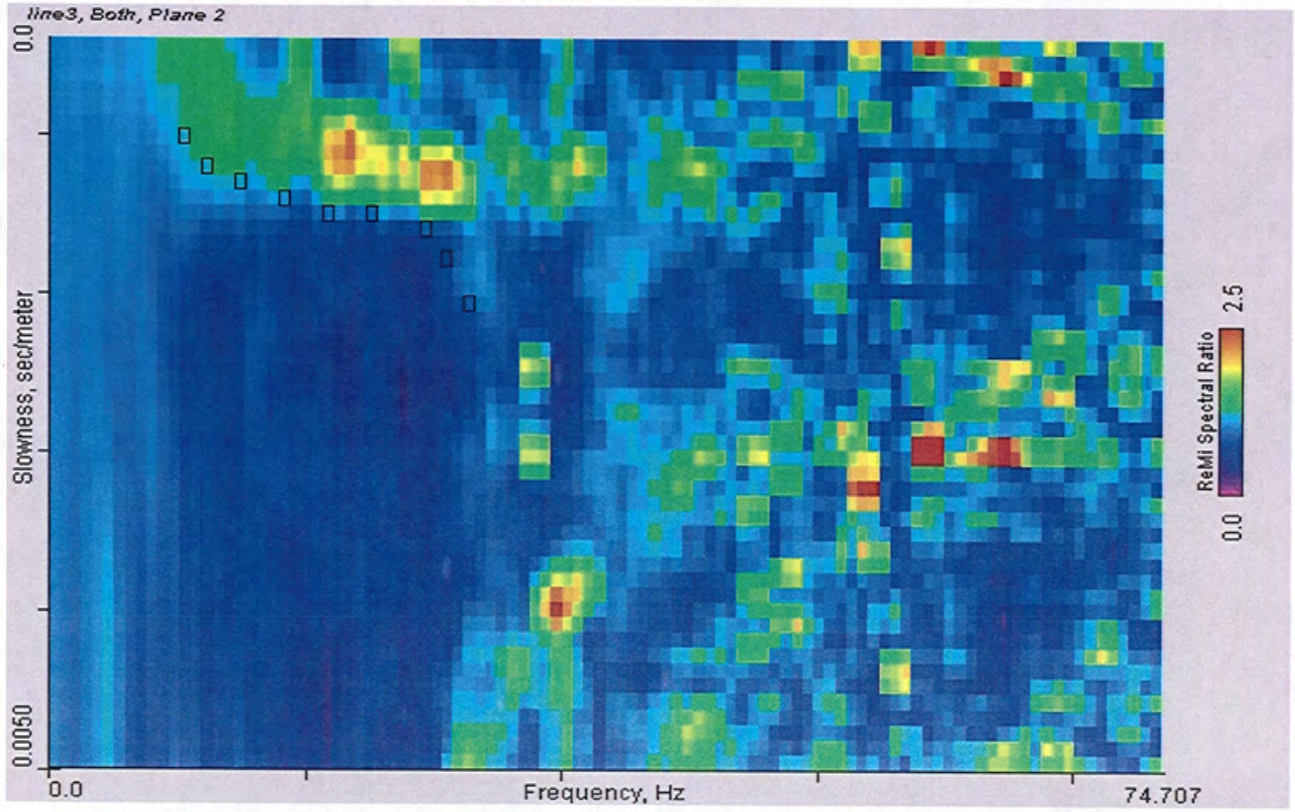
100.000000:1.000000 PLOT SCALE h9010rek


Line 3
Elevation, ft
4420
4400
4380
4360
4340
4320
0
50
100
150
200
Distance, ft
2000
4000
6000
8000
10000
Velocity, ft/s

Line 3: Supportive Illustration
Dispersion Curve and Fits



p-f Image with Dispersion Modeling Picks



Line 3: Vs Model