BACCHI ENGINEERING, PC

1 Triangle Drive, Suite 200 Durham, NC 27709

August 2, 2021

Mr. Steve Peters Ground Supervisor II State of North Carolina Department of Administration 431 N. Salisbury St Raleigh, NC 27603

Re.: Pavement Evaluation for ABC Warehouse Loading Dock 400 East Tryon Road Raleigh, NC Trimat Project 21-1633 Report # 21-1633.001

Mr. Peters,

As per your request, Trimat Materials Testing and Bacchi Engineering have visited the above referenced project and have performed a field evaluation of the pavement as described in our proposal number 21-1507A dated June 23rd, 2021. The onsite evaluation and sampling was conducted on July 22nd, 2021 and consisted of drilling into the concrete pavement at six locations, retrieving samples of the underlying subgrade, and estimating the strength of the subgrade soils. These services were performed at the request of the NCDOA and your verbal authorization to proceed.

The purpose of the exploration was to evaluate the general subsurface conditions within the existing lot and to recommend a pavement design to replace the failing pavement. This report presents our understanding of the project, description of the exploration procedures, findings, conclusions and recommendations, as well as construction considerations for the proposed project site.

We appreciates the opportunity to assist you during this phase of the project. Please contact the undersigned if you should have any questions concerning this report or if we may be of further assistance.

Sincerely,

BEPC/Trimat Materials Testing, Inc.

Christopher Bacchi, PE Senior Engineer NC PE License #026883



Project Information

The loading area and access roadway at the ABC Commission building consist of concrete pavement which was originally placed in the 1980's and has had multiple repairs over the last 40 years. The original pavement design called for a 4" thick unreinforced concrete pavement placed on an untreated soil subgrade. The subsequent repairs have required a much thicker slab over ABC stone. The depths of these repairs were not confirmed but it is believed they consisted of 8" of ABC stone and 12" of reinforced concrete. The primary use of this lot is for loading and unloading of large delivery trucks with varying axle arrangements with the majority being 5 axle dual unit trucks. The original pavement sections still in place are in poor condition with major faulting and cracking present (see Figure 1).



Figure 1 – Existing Loading Area and Entrance photos

Onsite Investigation

The onsite evaluation took place on July 22nd, 2021 and involved drilling through the existing concrete pavement at six locations using a 2.5" solid stem auger at the approximate locations shown in Figure 2, Boring Locations. The borings were located in the field by our project engineer. Ground surface elevations were estimated from online USGS maps. The soil test borings were extended to a depth of approximately 10 feet below the existing pavement surface using a Simco 2800 HS drill rig.

Standard Penetration Tests were performed at designated intervals in the soil test borings in general accordance with ASTM D 1586 in order to obtain data for estimating soil strength and consistency. In

Report of Subsurface Exploration ABC Warehouse Loading Area

conjunction with the penetration testing, split-spoon soil samples were recovered for soil classification and potential laboratory testing. No ground water was encountered during the drilling.

While in the field, the geotechnical engineer representative visually examined each sample to evaluate the type of soil encountered, soil plasticity, moisture condition, organic content, presence of lenses and seams, colors and apparent geological origin. The results of the visual soil classifications for the borings, as well as field test results, are presented on the individual borings logs included in the Appendix. Similar soils were grouped into strata on the logs. The strata lines represent approximate boundaries between the soil types; however, the actual transition between soil types in the field may be gradual in both the horizontal and vertical directions.



Figure 2 - Boring locations

Subsurface Conditions

Average concrete pavement thickness for the entrance and loading area was approximately 4.5". No ABC stone was present in any of the bore locations and the underlying soil consisted of silty and clayey sands at or slightly above optimum moisture content. Deleterious or organic matter were not observed in

and of the borings. N-values (penetrations) in the soils ranged from 2 blows per foot to 32 blows per foot.

Select samples of the on-site soils obtained during the field-testing program were tested in the laboratory. Tests performed included natural moisture contents, Atterberg limits, and grain size distribution. The limited testing program was designed to determine selected engineering properties of the on-site soils relative to their use for the project. Laboratory testing was performed in accordance with applicable ASTM and AASHTO Standards. The results of the soil tests performed for this study are presented in Table 1 below and the in the Appendix.

				N. to the second		A	tterberg lim	iits
Boring	Sample Type	Sample Depth (ft)	USCS Classification	Natural Moisture Content	Fines Content	LL	PL	PI
B1-S1	SS	1-2.5	СН	29.2	66.6	66	32	34
B2-S2	SS	3.5-5	SM	10.8	15.9	13	NP	NA
B2-S3	SS	6-7.5	SM	14.5	21.8	21	NP	NA
B3-S1	SS	1-2.5	ML	21.3	51.3	48	28	20
B3-S2	SS	3.5-5	SM	14.6	24.9	19	NP	NA
B4-S4	SS	8.5-10	SM	19.0	21.9	23	NP	NA
B5-S2	SS	3.5-5	MH	28.9	62.4	51	34	17
B5-S4	SS	8.5-10	SM	25.9	44.9	41	29	12
B6-S1	SS	1-2.5	SC	19.1	43.0	48	25	23
B6-S4	SS	8.5-10	SM	19.0	33.8	35	25	10

Table 1	-	Laboratory	Test	Results
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Conclusions and Recommendations

The following recommendations are based upon review of the exploration data, our understanding of the proposed construction, our engineering analyses, and past experience with similar projects and subsurface conditions. If subsurface conditions adverse to those indicated by this report are encountered during construction, those differences should be reported to us for review and comment.

The current concrete pavement in this loading area and entrance/exit roadways has failed due to underdesign and will need to be replaced. Distresses present include cracked slabs and faulting which is causing water infiltration into the underlying subgrade soils which will in time weaken the subgrade. Based on our findings and the anticipated traffic loads we performed a pavement designed using the following methods. AASHTO 1993 design guide was followed to do the rigid pavement design. The subbase and concrete slab thicknesses were designed for a plain jointed concrete pavement with dowel bars for load transfer. Standard Penetration test information from the field testing was used to estimate the subgrade resilient modulus. Current traffic at the site is 20 - 5 axle trucks per hour and an annual growth rate of 4% was used to estimate the design traffic. The proposed concrete was estimated to have a compressive strength of 5000 psi and flexural strength of 650 psi.

The concrete pavement was designed to have an eight-inch granular subbase (ABC stone). A recommended resilient modulus (M_r) value of 20,000 psi was used as per the AASHTO 1993 design guide.

Following design parameters were also used -

Load transfer coefficient - 3.2 Drainage coefficient -1.0

Design serviceability loss - 2.0

95% reliability

0.35% overall standard deviation

Estimating Subgrade Modulus

Standard Penetration test results were used to estimate the subgrade modulus. To estimate the subgrade resilient modulus (M_r), the location with the least number of blows was used. For every 1.5-foot depth, the number of blows for the first 6 inches was ignored and the blow count for the next one foot was used. Standard Penetration test was done on each location 4 times down to 10 foot depth. Location B5 had a total of 37 blows for 4 feet of penetration. This was converted into N-value i.e., number of blows required per foot. N-value for location B5 is 9.25. The N-value was then converted into DCP value which is the penetration depth in mm per blow. The DCP value for B5 was 33. The CBR for that location was estimated using this DCP value and the following equation developed by Kleyn and Harden:

$$\log CBR = 2.628 - 1.273 \log (DCP)$$

Using this equation, the CBR value for B5 was estimated to be 5. This CBR value was converted into resilient modulus (M_r) values using the equation in AASHTO 1993 design guide developed by Heukelom and Klomp.

 M_r (psi) = 1500 (CBR) for CBR values less than 20

A subgrade resilient modulus of 7500 psi was used for this design.

Estimating Design Traffic –

Current traffic is 20 - 5 axle trucks/hour which is 175,200 20 - 5 axle trucks per year. From AASHTO 1993 design guide, the growth factor for a 20-year design period and 4% growth is 29.78, and the ESAL factor for 5 axle truck is 2.3719. Using these the design traffic is 12,375,300 ESAL's. The slab thickness estimated from the design charts for rigid pavements from the AASHTO 1993 design guide was 11.2 inches. So, the recommended slab thickness for the concrete pavement is 12" with an 8" ABC subgrade. Joint spacing for the doweled concrete shall be a maximum of 12 feet in all directions and 1.5" dowel bars shall be placed at 12" spacing on center, 6" from the top of the slab. It is recommended that dowel bars be used on all sides of the slabs for load transfer since traffic direction is varied. Construction joints shall be cut ¼" wide to a depth equal to ¼ the depth of the concrete slab.

Material Type	Thickness, in.
ABC Stone	8"
5000 psi air entrained concrete pavement	12"

Limitations

This report has been prepared in accordance with generally accepted geotechnical engineering practice for specific application to this project. The conclusions and recommendations contained in this report are based upon applicable standards of our practice in this geographic area at the time this report was prepared. No other representation or warranty either express or implied, is made.

We relied on project information given to us to develop our conclusions and recommendations. If project information described in this report is not accurate, or if it changes during project development, we should be notified of the changes so that we can modify our recommendations based on this additional information if necessary.

Our conclusions and recommendations are based on data from a field exploration and laboratory testing program. Subsurface conditions can vary widely outside the explored area. Some variations may not become evident until construction. If conditions are encountered which appear different than those described in our report, we should be notified. This report should not be construed to represent subsurface conditions for the entire site.



Project Location: Garner, NC

Project Number: 21-1633

Log of Boring B-1 Sheet 1 of 1

Date(s) Drilled	7-22-21						Logged By Darrell West	Bacchi					
Drilling Method	Solid Ste	em A	Auger				Drill Bit Size/Type 2.5 "	Total Depth of Borehole 10) feet				
Drill Rig Type	Simco H	IS 2	B00				Drilling Contractor CSI, Inc	ion 345					
Groundv and Date	vater Level e Measured	_d na	ı				Sampling Method(s) Auger	lbs, 30" drop					
Borehole Backfill	cutting	/con	crete	mix			Location Warehouse concrete lot						
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Elevation (feet)	□ □ Depth (feet)	Sample Type	Sample Number	Sampling Resistance blows/ft	Material Type	Graphic Log	MATERIAL DESCRIPTION		REMARKS AND OTHER TESTS				
0.10					Concrete CH		3.5" Concrete Pavement - Sandy Fat Clay						
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		I	B1-S2	4/4/6		× × × ×	- Micaceous Silt						
340 ·	5					*^*`*` *_***	-						
		ľ	B1-S3	6/10/10		*^*^ *~** *`*`	Sandy Silt -	-					
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Project Location: Garner, NC

Project Number: 21-1633

Log of Boring B-2 Sheet 1 of 1

Date(s) 7-22-21 Drilled	Logged By Darrell West	Checked By C Bacchi					
Drilling Method Solid Stem Auger	Drill Bit Size/Type 2.5 "	Total Depth of Borehole 10 feet					
Drill Rig Type Simco HS 2800	Drilling Contractor CSI, Inc	Approximate Surface Elevation 345					
Groundwater Level na and Date Measured	Sampling Method(s)	Hammer 140 lbs, 30" drop					
Borehole Backfill cutting/concrete mix	Location Warehouse concrete lot						
Elevation (feet) Depth (feet) Sample Type Sampling Resistance, blows/ft Material Type Graphic Log	MATERIAL DESCRIPTION	REMARKS AND OTHER TESTS					
345 0 Concrete V • • • • • • • • • • • • • • • • • •	4.5" Concrete Pavement Fat Clay						
B2-S2 10/14/18 SM	Micaceous Silty Sand	-					
B2-S3 12/14/18	Micaceous Silty Sand	-					
B2-S4 8/10/12 335 - 10							
315 _ 30							

Project Location: Garner, NC

Project Number: 21-1633

Log of Boring B-3 Sheet 1 of 1

Date(s) Drilled 7-22-21	Logged By Darrell West	Checked By C Bacchi					
Drilling Method Solid Stem Auger	Drill Bit Size/Type 2.5 "	Total Depth of Borehole 10 feet					
Drill Rig Type Simco HS 2800	Drilling Contractor CSI, Inc	Approximate Surface Elevation 345					
Groundwater Level and Date Measured na	Sampling Method(s)	Hammer Data 140 lbs, 30" drop					
Borehole Backfill cutting/concrete mix	ocation Warehouse concrete lot						
Elevation (feet) Depth (feet) Sample Type Sampling Resistance, blows/tt Material Type Graphic Log	MATERIAL DESCRIPTION	REMARKS AND OTHER TESTS					
	4" Concrete Pavement						
B3-S1 6/8/12	Sandy Silt						
B3-S2 8/10/14 SM	Micaceous Silty Sand	-					
B3-S3 6/10/14	Sandy Clay						
Image: state of the state o	Silt with Mica						
315 30							

Project Location: Garner, NC

Project Number: 21-1633

Log of Boring B-4 Sheet 1 of 1

Date(s) Drilled	7-22-21						Logged By Darrell West Checked By C Bacchi						
Drilling Method	Solid S	stem	Auger				Drill Bit Size/Type 2.5 "	Total Depth of Borehole) feet				
Drill Rig Type	Simco	HS 2	800				Drilling Contractor CSI, Inc	ion 345					
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Elevation (feet)	Depth (feet)	Sample Type	Sample Number	Sampling Resistanc blows/ft	Material Type	Graphic Log	MATERIAL DESCRIPTION		REMARKS AND OTHER TESTS				
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		ľ	B4-S3	8/10/16		* * * * * * * * * * * *	- -	-					
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Project Location: Garner, NC

Project Number: 21-1633

Log of Boring B-5 Sheet 1 of 1

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Dirt Rig Simco HS 2800 Defining CSI, Inc Approximation 345 Groundwater Level and Date Messared Ina Backelli Sampling Method(s) Hammer 140 lbs, 30° drop Date Borchold Backelli cutting/concrete mix Location Warehouse concrete lot	Drilling Method Solid S	Pr Drill Bit Size/Type 2.5" Total Depth of Borehole 10 feet	
Groundwater Level and Date Method(s) Hammer Date Hammer Date Hammer Date Bordeline Backfill cutting/concrete mix Location Warehouse concrete lot	Drill Rig Type Simco	Drilling Contractor CSI, Inc Approximate Surface Elevation 345	
Bothill Cutting/concrete mix Location Warehouse concrete lot Image: Section of the sect	Groundwater Lev and Date Measu	Sampling Method(s) Hammer Data 140 lbs, 30" dr	ор
Image: State of the state o	Borehole Backfill	e mix Location Warehouse concrete lot	
345 0 5 Soncrete 4.75° Concrete Pavement 340 0 85-S1 8/10/14 Cl Clay 340 5 85-S2 6/6/8 MH Sandy Elastic Silt 340 5 85-S3 8/10/14 Silty Clay 85-S3 8/10/16 SM Silty Sand 335 10 6 SM Silty Sand 330 15 1 1 1 330 15 1 1 1 330 15 1 1 1 330 15 1 1 1 330 15 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Elevation (feet) Depth (feet)	Sampling Resistance, Material Type Graphic Log WATELIAT DESCLIDION BEMARK	S AND OTHER TESTS
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Project Location: Garner, NC

Project Number: 21-1633

Log of Boring B-6 Sheet 1 of 1

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D M	rilling lethod So	olid Ste	em A	Auger				Drill Bit Size/Type 2.5 "	Total Depth of Borehole 10) feet				
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	5,0_	-0				Concrete SC	///	4.5" Concrete Pavement						
	-	-	Ľ	B6-S1	8/14/14			-	-					
		-		DC C2	10/4 4/40	SC		- - Clayey Sand						
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		-	P	B6-S3	4/6/8	SC		Clayey Sand						
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Project Location: Garner, NC

Project Number: 21-1633

Key to Log of Boring Sheet 1 of 1

Elevation (feet)	Depth (feet)	Sample Type	Sample Number	Sampling Resistance, blows/ft	Material Type	Graphic Log		MA	ATERIAL	DESCRIPTION			REMARKS AND OTHER TESTS	
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1 Elev 2 Dep 3 Sam shov 4 Sam 5 Sam sam usin	 1 Elevation (NSL, Teet). 2 Depth (feet): Depth in feet below the ground surface. 3 Sample Type: Type of soil sample collected at the depth interval shown. 4 Sample Number: Sample identification number. 5 Sampling Resistance, blows/ft: Number of blows to advance driven sampler one foot (or distance shown) beyond seating interval using the hammer identified on the boring log. 6 Material Type: Type of material encountered. 7 Graphic Log: Graphic depiction of the subsurface material encountered. 8 MATERIAL DESCRIPTION: Description of material encountered. 9 REMARKS AND OTHER TESTS: Comments and observations regarding drilling or sampling made by driller or field personnel. 													
FIELD A		BOR	ато	RY TE	ST ABB	REVI	ATIONS							
CHEM: COMP: CONS: LL: Liqu	CHEM: Chemical tests to assess corrosivity PI: Plasticity Index, percent COMP: Compaction test SA: Sieve analysis (percent passing No. 200 Sieve) CONS: One-dimensional consolidation test UC: Unconfined compressive strength test, Qu, in ksf LL: Liquid Limit, percent WA: Wash sieve (percent passing No. 200 Sieve)													
MATER	IAL GR	APH	IC SY	MBOL	<u>.s</u>									
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S	LT, SIL ⁻	Г w/\$	SANE), SANI	DY SILT	(MH))			Silty to Clayey S	AND (SM-SC	C)		
	L SAMF	PLEF	RGR	APHIC	SYMBC	<u>DLS</u>					OTHER GR	AP	HIC SYMBOLS	
	er sampl	er		Γ	СМЕ	Sam	oler		Pitcher S	ample	— [™] Water le	evel	(at time of drilling, ATD)	
Bulk	Bulk Sample									2-inch-OD unlined split spoon (SPT) → Water level (after waiting) Minor change in material properties				
billog 3-inc bras	h-OD C s rings	alifo	rnia v	v/	2.5-in Califo	ch-O rnia v	D Modified w/ brass liners		Shelby Tr fixed hea	ube (Thin-walled, d)	Inferred	l/grao	dational contact between strata	
	■ California W/ brass liners () tixed head) —?- Queried contact between strata													

gradual. Field descriptions may have been modified to reflect results of lab tests. 2: Descriptions on these logs apply only at the specific boring locations and at the time the borings were advanced. They are not warranted to be representative of subsurface conditions at other locations or times.

Project #: 21-1633 Report Date: 8/3/2021 Project #: APC Warehouse The top to (a) and (b) and (
Project Name:ABC WarehouseTest Date(s): 8/2/2021Client Name:NC Department of AdministrationReceived Date: 7/23/2021													
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Client A	Client Address:												
Refere AASHT AASHT	References: AASHTO M231, Weighing Devices Used in the Testing of Materials AASHTO R58, Dry Preparation of Disturbed Soil and Soil-Aggregate samples AASHTO T89, Determining the Liquid Limit of Soils												
AASHT	AASHTO T146, Wet Preparation of Disturbed Soil Samples for Test												
AASHT	0 T265. 1	Laborator	rv Determinat	ion of Mo	isture Co	ntent of a	Soils						
Lab #: 9608 Material: Yellowish Red Sandy Fat Clay Sample Date: 23-Jul													
Source: Sample #: B1-S1 Sampled By: DW												DW	
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		y Soil We	eight + A	23.98	22.71	0.00	0.00	0.00	0.00	26.93	27.51		
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E	Dry	Soil Wei	ight (C-A)	10.41	10.51	0.00	0.00	0.00	0.00	6.78	6.73		
F	%Moist	ure Cont	ent(D/E)*100	67%	67%					31.9%	32.1%		
N		# OF DF	ROPS	22	22					1			
LL	L	L = F * F	ACTOR	66.0%	66.0%								
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- (									0	1.000			
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Pl	lastic Li	imit	32										
Pl	astic In	dex	34										
Gro	oup Syn	nbol	CH										
										1			
Techn	ician:		Brett S	Junker	•	5	0740			Dres.	Late		
			Printed	l Name		Cer	tification #			Signature			

Project	#:	21-163	3			11101	110 100	750	Repo	ort Date:	8/3/2023	1	
Project Name:ABC WarehouseTest Date(s): 8/2/2021Client Name:NC Department of AdministrationReceived Date: 7/23/2021													
Client	Name:	NC Dep	partment	of A	Adminis	tration			Receiv	ed Date:	7/23/202	21	
Client	Address	•											
Refere	ences:												
AASHT	O M231,	Weighing	g Devices U	Jsea	l in the T	lesting of	Material	s					
AASHT	'O R58, L	Dry Prepa	ration of L	Disti	urbed Soi	l and Soi	l-Aggreg	ate samp	les				
AASHT	O T89, L	Determinir	ıg the Liqı	uid .	Limit of ,	Soils							
AASHT	O T146,	Wet Prepo	aration of .	Dist	turbed Se	oil Sampl	es for Te	st					
AASHT	O T265,	Laborator	ry Determi	inat	ion of Mo	isture Co	ontent of	Soils					
Lab	#: 96	09	Mat	eria	ıl: Pal	e Brown	Micace	ous Silty	' Sand	Sa	mple Da	te:	23-Jul
Source:     Sample #:     B2-S2     Sampled By:     DW													
							Liquio	d Limit			Pl	astic Li	mit
		Test	#		1	2	3	4	5	6	1	2	3
		Tare	#		4	23							
А		Tare We	eight		30.16	29.79							
В	W	et Soil We	eight + A		51.20	45.78							
С	Dr	y Soil We	eight + A		48.76	43.93							1
D	W	ater Weig	ht (B-C)		2.44	1.85	0.00	0.00	0.00	0.00			1
E	Dry	z Soil Wei	ght (C-A)		18.60	14.14	0.00	0.00	0.00	0.00			
F	%Moist	ture Conte	ent(D/E)*1	100	13%	13%							
N		# OF DR	OPS										
LL	L	L = F * F	ACTOR									NP	
Ave.		Avera	lge				13	.0%					
	900												
-	$\frac{20.0}{10.0}$												
t t	180									One	e Point L	iquid L	imit
ter										N	Factor	Ν	Factor
jon										20	0.974	26	1.005
e j	15.0									21	0.979	27	1.009
tur	14.0 🖡									22	0.985	28	1.014
ois	13.0 🖡									23	0.990	29	1.018
N I	12.0 📕									24	0.995	30	1.022
~	11.0 🖡									25	1.000		
1	10.0 투						-						
	10			# o	of Drops				100				
NP, 1	Non-Pla	astic		1	Notes:								
$\mathbf{L}$	iquid L	imit	13										
Pl	lastic L	imit	NP										
Pl	lastic Ir	ndex	~~~										
Gro	oup Syr	nbol	SM										
											,	2	
Techn	nician:		Bret	t S	Junker		5	0740			An S.	late	
			P	Printea	l Name		Cer	tification #			Signature	2	

Project	#: 2	1-1633		AADI	110 10.	<i>n</i> 50	Repo	ort Date:	8/3/202	L	
Project	ct Name:ABC WarehouseTest Date(s): 8/2/2021t Name:NC Department of AdministrationReceived Date: 7/23/2021										
Client N	Name: N	IC Department	of Admini	stration			Receiv	red Date:	7/23/202	21	
Client A	Address:										
Refere AASHTO AASHTO AASHTO AASHTO AASHTO	nces: O M231, W O R58, Dry O T89, Dete O T146, We O T265, La	eighing Devices U Preparation of D ermining the Liqu et Preparation of J boratory Determi	Jsed in the isturbed So id Limit o Disturbed S nation of M	Testing of pil and Sou f Soils Soil Sampl Ioisture Co	Material il-Aggreg les for Te ontent of	's ate samp st Soils	les				
Lab #	#: 9609	Mate	erial: Gi	ey Micac	eous Sil	ty Sand		Sa	mple Da	te:	23-Jul
Sourc	e:	Sam	ple#: B2	2-S3				Sa	ampled B	By:	DW
					т	11			-	т.	· · /
		<b>m</b> , , , ,	1	0	Liqui	d Limit	~	0		astic Li	imit
		Test#	1	2	3	4	5	6	1	Z	3
٨	Т	Tare #	3 19.47	Ð 19.91							
A	T W. (	are Weight	13.47	13.31							
В	wet	Soil Weight + A	30.46	32.20							_
	Dry S	Soll weight + A	27.94	28.91	0.00	0.00	0.00	0.00			_
D	wate D. C	er weight (B-C)	2.92	3.34	0.00	0.00	0.00	0.00			
E	Dry S	oil Weight (C-A)	14.07	15.60	0.00	0.00	0.00	0.00			
F	%Moistur	e Content(D/E)*1	00 21%	21%							
N	#	OF DROPS							1	NP	
LL	LL =	= F * FACTOR									
Ave.		Average			21	.0%					
% Moisture Content 1 1 1 1 1 1 1 1 1 1 1	20.0 9.0 8.0 7.0 6.0 5.0 4.0 3.0 2.0 1.0 10		# of Dro	ps			100	Ond N 20 21 22 23 24 25	e Point L Factor 0.974 0.979 0.985 0.990 0.995 1.000	iquid I N 26 27 28 29 30	imit Factor 1.005 1.009 1.014 1.018 1.022
NP, N Li Pla Gro	Non-Plast quid Lim astic Lim astic Inde oup Symb	ic it 21 it NP ex ol SM	Notes:			50740			Bro S.	Jak-	
Technician:     Brett S Junker     50740       Printed Name     Certification #					Signature	2					

Project	ject #: 21-1633 Report Date: 8/3/2021 ject Name: ABC Warehouse Test Date(s): 8/2/2021											
Project	Name: A	BC Warehou	lse					Test	Date(s):	8/2/202	1	
Client N	Name: N	C Departme	nt of A	Adminis	tration			Receiv	ed Date:	7/23/202	21	
Client A	Address:											
Refere: AASHT( AASHT( AASHT( AASHT(	nces: O M231, We O R58, Dry O T89, Dete O T146, We	righing Device Preparation o rmining the L t Preparation	s Usec f Distu iquid of Dist	l in the T urbed Soi Limit of S turbed So	lesting of l and Soi Soils pil Sampl	Material l-Aggrege es for Te	s ate samp st	les				
AASHTO	O T265, Lal	boratory Deter	minat	ion of Mo	oisture Co	ntent of	Soils					
Lab #	<i>‡</i> : 9610	M	ateria	al: Red	Sandy S	Silt			Sa	mple Da	te: 2	23-Jul
Sourc	e:	Sa	ample	#: B3-	S1				Sa	ampled I	By:	DW
						Liquio	d Limit			Pl	astic Lir	nit
		Test#		1	2	3	4	5	6	1	2	3
		Tare #		11	15					В	Ι	
А	Т	are Weight		12.21	12.19					20.39	21.00	
В	Wet S	Soil Weight + A	A	29.23	33.08					33.24	34.66	
С	Dry S	oil Weight + A	ł	23.69	26.30					30.47	31.71	
D	Wate	r Weight (B-C	)	5.54	6.78	0.00	0.00	0.00	0.00	2.77	2.95	
Е	Dry So	oil Weight (C-4	A)	11.48	14.11	0.00	0.00	0.00	0.00	10.08	10.71	
F	%Moisture	e Content(D/E	)*100	48%	48%					27.5%	27.5%	
Ν	# (	OF DROPS		23	23							
LL	LL =	F * FACTOR		47.5%	47.5%					1		
Ave.		Average				47	.5%				27.5%	
% Moisture Content 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	0.0         9.0         9.0         8.0         7.0         6.0         5.0         4.0         3.0         2.0         1.0         0.0         10		#	of Drog	5			100	Ond N 20 21 22 23 24 25	e Point I Factor 0.974 0.979 0.985 0.990 0.995 1.000	iquid Li N 26 27 28 29 30	mit Factor 1.005 1.009 1.014 1.018 1.022
NP, N Li Pla Gro	Non-Plast quid Lim astic Lim astic Inde up Symbo	ic it <u>48</u> it <u>28</u> ex <u>20</u> ol <u>ML</u>		Notes:								
Techn	Sechnician:         Brett S Junker         50740         Super S											

Project	#:	21-163	33			AADI	110 105	750	Repo	ort Date:	8/3/2021	L	
Project	Name	e: ABC W	Varehouse	Э					Test	Date(s):	8/2/2021	L	
Client 1	Name	: NC De	partment	t of a	Adminis	tration			Receiv	ed Date:	7/23/202	21	
Client A	Addre	ss:											
Refere	ences:												
AASHT	O M23	1, Weighin	g Devices	Usec	l in the T	esting of	Material	\$					
AASHT	O R58,	, Dry Prepa	ration of 1	Disti	ırbed Soi	l and Soi	l-Aggreg	ate samp	les				
AASHT	O T89,	Determini	ng the Liq	uid	Limit of .	Soils							
AASHT	O T14	6, Wet Prep	aration of _	Dist	turbed Sc	il Sampl	es for Tes	st					
AASHT	O T26	5, Laborato	ory Determ	inat	ion of Mo	oisture Co	ntent of l	Soils					
Lab	#: 9	610	Mat	eria	al: Gre	yish Bro	own Mic	aceous S	Silty San	d Sa	mple Da	te:	23-Jul
Sourc	ce:		San	nple	#: B3-	S2				Sa	ampled B	y:	DW
							Liquio	l Limit			Pla	astic Li	mit
		Test	;#		1	2	3	4	5	6	1	2	3
		Tare	e #		12	17							
А		Tare W	eight		12.14	12.31							
В	1	Wet Soil W	eight + A		37.55	32.10							
С	]	Dry Soil W	eight + A		33.44	28.89							
D		Water Wei	ght (B-C)		4.11	3.21	0.00	0.00	0.00	0.00			
Е	Γ	ry Soil We	ight (C-A)		21.30	16.58	0.00	0.00	0.00	0.00			
F	%Mo	isture Cont	tent(D/E)*	100	19%	19%							
Ν		# OF DI	ROPS									ND	
LL		LL = F * F	TACTOR									INI	
Ave.		Avera	age				19	.0%					
-	200 -												
-	19.0 -										<b>D</b> I I I		1
nt	18.0 -									One	e Point L	iquid L	1m1t
ate	17.0 -									<u>N</u>	Factor	N	Factor
<b>.</b> C	16.0 -									20	0.974	26	1.005
re	15.0 -									21	0.979	27	1.009
stu	14.0 -									22	0.985	20	1.014
Ioi	13.0 -									$\frac{23}{24}$	0.995	30	1.010
N 2	12.0 -									25	1 000	50	1.022
	11.0 -										1.000		
-	10.0 -	0	•		# of Dr	ops			100				
	VI T												
NP, I	Non-F	lastic	10	1	Notes:								
	Iquia	Limit	19 ND										
L I I		Limit Indox	NP										
F1 Gre	astic	muex	SM										
Gre	Jup S	y 111001	UNI UNI										
											1		
Techn	niciar	n:	Bre	tt S	Junker	•	5	0740			Dres	late	
					e rvante		Cer	ngicanon #			Signature		

Project Name:         NC Warehouse         Test Date(s):         N2/2021           Client Name:         NC Department of Administration         Received Date:         7/23/2021           Client Address:         References:         ASHTO M23, Weighing Devices Used in the Testing of Materials           AASHTO 789, Determining the Liquid Limit of Soils         AASHTO 789, Determining the Liquid Limit of Soils         Sample Soils           AASHTO 7265, Laboratory Determination of Moisture Content of Soils         Sample Bze:         23-Jul           Source:         Sample #:         B4-S4         Sample Bze:         23-Jul           Source:         Sample #:         B4-S4         Sample Bze:         23-Jul           Source:         Sample #:         B4-S4         Sample Bze:         23-Jul           Tare #         M         N         4         5         6         1         2         3           A         Tare #         M         N         4         5         6         1         2         3           D         Water Weight (C-Q)         33.35         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         20         0.974         <	Project	#:	21-163	33			AADI	110 105	750	Repo	ort Date:	8/3/2021	L	
Client Address:       References:         ASHTO K52, Dry Preparation of Disturbed Soil and Soil-Aggregate samples       ASHTO K52, Dry Preparation of Disturbed Soil and Soil-Aggregate samples         ASHTO K52, Dry Preparation of Disturbed Soil and Soil-Aggregate samples       ASHTO K52, Dry Preparation of Disturbed Soil Samples for Test         ASHTO K52, Laboratory Determination of Moisture Content of Soile       Sample B2:       23-Jul         Source:       Sample #:       B4-54       Sample B2:       DW         Image: State Stat	Project	Name	e: ABC W	arehouse	<b>)</b>					Test	Date(s):	8/2/2021	L	
Client Address:         AASHTO M231, Weighing Devices Used in the Testing of Materials         AASHTO 785, Dry Preparation of Disturbed Soil and Soil-Aggregate samples         AASHTO 7146, We Preparation of Disturbed Soil Samples for Test         AASHTO 7265, Laboratory Determination of Moisture Content of Soils         Lab #: 9611       Material: Brownish Grey Micaceous Silty Sand       Sample Date: 23-Jul         Source:       Sample #: B4-S4       Sampled By: DW         Image: Source in the Tark #       1       2       3       4       5       6       1       2       3         A       Tarce #       M       N       Image: Source in the Tark #       1       2       3       4       5       6       1       2       3         A       Tarce #       M       N       Image: Source in the Tark #       1       2       3       4       5       6       1       2       3         C       Dry Soil Weight + A       33.71       3.55       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00	Client 1	Name	: NC De	partment	of A	Adminis	tration			Receiv	ed Date:	7/23/202	21	
References:         ASHTO NES, Dry Preparation of Disturbed Soil and Soil-Aggregate samples,         ASHTO 789, Determining the Liquid Limit of Soils         ASHTO 7265, Laboratory Determination of Moistarce Content of Soils         ASHTO 7265, Laboratory Determination of Moistarce Content of Soils         Lab #: 9611       Material: Brownish Grey Micaceous Silty Sand       Sample Date:       23-Jul.         Source:       Sample #: 84-54       Sample By:       DW         Integration of Disturbed Soil Aggregate samples, Sample Date:       23-Jul.         Source:       Sample #: 84-54       Sample By:       DW         Integration of Disturbed Soil Aggregate samples, Sample Date:       23-Jul.         Source:       Sample #: 84-54       Sample By:       DW         Integration of Disturbed Soil Aggregate samples, Sample Date:       23-Jul.         Output       Integration of Disturbed Soil Sample Date:       23-Jul.         Sample #: 84-54       Sample Date:       23-Jul.         Integration of Disturbed Soil Sample Date:       23-Jul.         Disturbed Soil Sample Date:       23-Jul.         Disturbed Soil Sample Date:       23-Jul.         Dis	Client A	Addre	ss:											
AASHTO M321, Weighting Devices Used in the Testing of Materials         AASHTO R5, Pro-Preparation of Disturbed Soil Samples for Test         AASHTO T265, Laboratory Determination of Moisture Content of Soils         ASHTO T265, Laboratory Determination of Moisture Content of Soils         Source:       Sample #:       84-S4         D       Wet Soil Weight + A       33.71         32.56       Image: Source	Refere	ences:												
AASHTO R53, Dry Preparation of Disturbed Soil and Soil-Aggregate samples         AASHTO 7265, Laboratory Determination of Moisture Content of Soils         Lab #: 9611       Material:       Brownish Grey Micaceous Silty Sand       Sample Date:       23-Jul         Source:       Sample #: B4-S4       Sampled By:       DW         Image: Content of Moisture Content of Soils       Sampled By:       DW         Image: Content of Moisture Content of Soils       Sampled By:       DW         Image: Content of Moisture Content of Soils       Sampled By:       DW         Image: Content of Moisture Content of Moisture Content of Soils       Sampled By:       DW         Image: Content of Moisture Content Of Part A and A	AASHT	O M23	1, Weighin	g Devices l	Usea	l in the T	esting of	Material	8					
AASHTO 7184, 6wt Preparation of Disturbed Soils         AASHTO 7186, Key Preparation of Ministure Content of Soils         AASHTO 7186, Laboratory Determination of Moisture Content of Soils         Source:       Sample #:       B4-S4       Sample By:       DW         Image: Source:       Sample #:       A1-2       3       A       5       6       1       2       3         Image: Source:       Sample #:       A1-32       13.38       Image: A1-32       Image: A1-32 </td <td>AASHT</td> <td>O R58,</td> <td>, Dry Prepa</td> <td>ration of L</td> <td>Disti</td> <td>ırbed Soi</td> <td>l and Soi</td> <td>l-Aggreg</td> <td>ate samp</td> <td>les</td> <td></td> <td></td> <td></td> <td></td>	AASHT	O R58,	, Dry Prepa	ration of L	Disti	ırbed Soi	l and Soi	l-Aggreg	ate samp	les				
AASHTO 7146, Wet Preparation of Disturbed Soil Samples for Test         AASHTO 7265, Laboratory Determination of Moisture Content of Soils         Lab #:       9611       Material:       Brownish Grey Micaceous Silty Sand       Sample Date:       23-Jul         Source:       Sample #:       84-S4       Sampled By:       DW         Image: Content of Soils       Image: Content of Soils       Sampled By:       DW         Image: Content of Soils       Image: Content of Soils       Sampled By:       DW         Image: Content of Soils       Image: Content of Soils       Sampled By:       DW         Image: Content of Soils       Image: Content of Soils       Image: Content of Soils       Image: Content of Soils         A       Tare #       M       N       Image: Content of Soils       Image: Content of Soils         A       Tare #       M       N       Image: Content of Soils       Image: Content of Soils         C       Dry Soil Weight + A       29.03       Image: Content of Soils       Image: Content of Soils       Image: Content of Soils         N       # OF DROPS       Image: Content of OF Soils         IL       LL = # * FACTOR       Image: Content of OF Soils       Image: Content of Content	AASHT	O T89,	Determini	ng the Liq	uid .	Limit of L	Soils							
AASITO 1265, Laboratory Determination of Moisture Content of Soits         Lab #:       9611       Material:       Brownish Grey Micaceous Silty Sand       Sample Date:       23-Jul         Source:       Sample #:       B4-S4       Sample Date:       23-Jul         Image: Content of Soits       Image: Content of Soits       Plastic Limit       Plastic Limit         Test #       1       2       3       4       5       6       1       2       3         A       Tare #       M       N       4       5       6       1       2       3         A       Tare #       M       N       4       5       6       1       2       3         B       Wet Soil Weight + A       33.71       32.58       1       1       1       1       2       3         D       Water Weight (B-O)       3.73       3.55       0.00       0.00       0.00       0.00       100         F       %Moisture Content(D/F)*100       23%       23%       1       1       1       N       N       Plastic       N       Plastic       N       Plastic       N       Plastic       N       Plastic       N       Plastic       N	AASHT	O T14	6, Wet Prep	aration of	Dist	turbed Sc	oil Sampl	es for Tes	st					
Lab #:         961         Material:         Brownish Grey Micaceous Silty Sand         Sample Date:         23-Jul           Source:         Sample #:         B4-S4         Sample By:         DW           Image: Control of the state of th	AASHT	O T26	5, Laborato	ory Determ	inat	ion of Mo	oisture Co	ntent of l	Soils					
Source:         Sample #:         B4-S4         Sampled By:         DW           Image: Constraint of the state of	Lab	#: 9	611	Mat	eria	al: Bro	wnish G	rey Mic	aceous S	Silty San	d Sa	mple Da	te:	23-Jul
Image: Constraint of the second sec	Sourc	ce:		Sam	ple	#: B4-	$\mathbf{S4}$				Sa	ampled B	y:	DW
Test #         1         2         3         4         5         6         1         2         3           A         Tare #         M         N         Image: Constraint of the state of the								Liquio	l Limit			Pla	astic Li	mit
Tare #         M         N         Image: Constraint of the second seco			Test	;#		1	2	3	4	5	6	1	2	3
A       Tare Weight       13.42       13.38       Image: Constraint of the state			Tare	e #		Μ	N							
B       Wet Soil Weight + A       33.71       32.58       Image: Constraint of the second	А		Tare W	eight		13.42	13.38							
C         Dry Soil Weight + A         29.98         29.03	В	1	Wet Soil W	eight + A		33.71	32.58							
D         Water Weight (B-C)         3.73         3.55         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00	С	]	Dry Soil W	eight + A		29.98	29.03							
E         Dry Soil Weight (C-A)         16.56         15.65         0.00         0.00         0.00         0.00         0.00           F         %Moisture Content(D/E)*100         23%         23%         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1 <th1< th=""> <th1< th="">         1</th1<></th1<>	D		Water Wei	ght (B-C)		3.73	3.55	0.00	0.00	0.00	0.00			
F       %Moisture Content(D/E)*100       23%       23%       Image: Content(D/E)*100       Content(D/E)*100       NP         ILL       LL = F * FACTOR       Image: Content(D/E)*100       Image: Content(D/E)*100       NP       NP         Ave.       Average       23.0%       Image: Content(D/E)*100       NP       NP         ILL       LL = F * FACTOR       Image: Content(D/E)*100       NP       NP         Ave.       Average       23.0%       Image: Content(D/E)*100       NP         ILL       LL = F * FACTOR       Image: Content(D/E)*100       NP         Ave.       Average       23.0%       Image: Content(D/E)*100       NP         ILL       LL = F * FACTOR       Image: Content(D/E)*100       Image: Content(D/E)*100       Image: Content(D/E)*100       Image: Content(D/E)*100         Image: Content	Е	Ľ	ry Soil We	ight (C-A)		16.56	15.65	0.00	0.00	0.00	0.00			
N         # OF DROPS         NP           LL         LL = F * FACTOR         NP           Ave.         Average         23.0%           10.0         19.0         18.0         NP           18.0         17.0         18.0         N           18.0         17.0         16.0         20.0/(20.0)         N           18.0         17.0         16.0         20.0/(20.0)         N           13.0         15.0         16.0         20.0/(20.0)         10.05           21         0.979         27         1.009           22         0.985         28         1.014           23         0.990         29         1.014           23         0.990         29         1.014           23         0.990         29         1.022           25         1.000         1.022         25         1.000           10         # of Drops         100         10         10         10           NP, Non-Plastic         Nets:	F	%Mo	isture Cont	tent(D/E)*	100	23%	23%							
LL       LL = F * FACTOR       Image	Ν		# OF DI	ROPS									ND	
Ave.       Average       23.0%         19.0       19.0       19.0       18.0       Image: State of the	LL		LL = F * F	TACTOR									INI	
20.0       Image: constraint of the second sec	Ave.		Avera	age				23	.0%					
Image: Second state index group Symbol       Notes:       Image: Second state index group Symbol       Image: Second state index group Symbol       Notes:         Technician:       Brett S Junker       50740       Second state index group Symbol       Second state index group Symbol	ş	20.0 -	-											
Is.0       One Point Liquid Limit         18.0       17.0       16.0         16.0       15.0         18.0       15.0         18.0       16.0         18.0       16.0         18.0       16.0         18.0       16.0         18.0       16.0         18.0       16.0         18.0       16.0         18.0       18.0         18.0       18.0         18.0       18.0         18.0       18.0         18.0       18.0         18.0       18.0         19.0       10         10       # of Drops         100       # o	-	19.0 -										D : / I	· · 1 T	· ·, 1
a       17.0       Image: constraint of the second	nt 1	18.0 -									One	e Point L	iquid L	1mit
0       16.0       15.0       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10	nte	17.0 -									<u>N</u>	Factor	N 9C	Factor
15.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0       14.0	Co Co	16.0 -									20	0.974	26	1.000
14.0       13.0       13.0       13.0       13.0       12.0       12.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0       10.0	re [	15.0 -									$\frac{21}{99}$	0.979	21	1.009
13.0       12.0       12.0       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10	stu	14.0 -									22	0.985	20	1.014
Ilentician:	Ioi	13.0 -									20	0.995	30	1.010 1.022
11.0     10     # of Drops     100       NP, Non-Plastic     Notes:     100       Liquid Limit     23       Plastic Limit     NP       Plastic Index     Group Symbol       Group Symbol     SM	N %	12.0 -									25	1 000	00	1.022
10     # of Drops     100       NP, Non-Plastic     Notes:	-	11.0 - 10.0										1.000		
NP, Non-Plastic       Notes:         Liquid Limit       23         Plastic Limit       NP         Plastic Index		10.0	0			# of Dro	ps			100				
NP, Non-Plastic       Notes:         Liquid Limit       23         Plastic Limit       NP         Plastic Index					_									
NP, Non-Plastic     Notes:       Liquid Limit     23       Plastic Limit     NP       Plastic Index     Group Symbol       Group Symbol     SM         Technician:     Brett S Junker     50740       Printed Name     Certification #		м. т	1		,	.T. /								
Eliquid Limit     25       Plastic Limit     NP       Plastic Index	NP, I	Non-F	Tastic	<b>9</b> 9	I	Notes:								
Technician:     Brett S Junker     50740       Printed Name     Certification #	L. Dl	Iquia	Limit	20 ND										
Technician:     Brett S Junker     50740       Printed Name     Certification #			Indox	INF										
Technician:     Brett S Junker     50740     Signature       Printed Name     Certification #     Signature	Gre	astic	umbol	SM										
Technician:     Brett S Junker     50740       Printed Name     Certification #	uit	յսի Օլ	, 111001 <u> </u>	<b>NINI</b>										
Technician:         Brett S Junker         50740           Printed Name         Certification #         Signature												1		
	Techn	niciar	n:	Bret	rinted	Junker	•	5 Cer	0740 tification #			Signature	late	

Project	#:	21-163	33		11101	110 100		Repo	ort Date:	8/3/202	1	
Project	Name:	ABC W	arehouse					Test	Date(s):	8/2/202	1	
Client l	Name:	NC De	partment of A	Adminis	tration			Receiv	red Date:	7/23/202	21	
Client A	Address	:										
<b>Refere</b> AASHT	nces: O M231,	Weighing	g Devices Used	l in the T	esting of	Material	\$	_				
AASHT	0 R58, L	Dry Prepa	ration of Distu	ırbed Soi	l and Soi	l-Aggreg	ate samp	les				
AASHT	O T89, L O T1 40	Determinii W · D	ng the Liquid	Limit of S	Soils	с т						
AASHT	О Т146, О Т9ст	Wet Prep	aration of Dist	urbed So	il Sampl	es for Tes	st a. 1					
AASHT	0 T265,	Laborato	ry Determinati	ion of Mo	isture Co	ontent of i	Soils					
Lab 7	#: 96	12	Materia	l: Yell	lowish R S2	led Sand	ly Elasti	c Silt	Sa Sa	mple Da	te: 2	23-Jul
Sourc	je.		Sample	#. DJ-	62				50	ampieu I	у.	DW
	-					Liquio	l Limit			Pl	astic Lir	nit
		Test	#	1	2	3	4	5	6	1	2	3
		Tare	#	10	20					D	Η	
Α		Tare We	eight	30.28	29.93					20.93	20.39	
В	W	et Soil We	eight + A	47.77	49.87					34.96	32.00	
С	Dr	ry Soil We	eight + A	41.78	43.02					31.39	29.05	
D	W	ater Weig	ght (B-C)	5.99	6.85	0.00	0.00	0.00	0.00	3.57	2.95	
Е	Dry	y Soil Wei	ight (C-A)	11.50	13.09	0.00	0.00	0.00	0.00	10.46	8.66	
F	%Moist	ture Cont	ent(D/E)*100	52%	52%					34.1%	34.1%	
Ν		# OF DF	ROPS	21	21							
LL	L	L = F * F	ACTOR	50.9%	50.9%							
Ave.		Avera	age			50	.9%				34.1%	
F	550											
F	540 E											
t f	53.0 E								One	e Point L	iquid Li	mit
Ite	52.0		8						N	Factor	N	Factor
0.5	51.0 🖡								20	0.974	26	1.005
မ္ ၅	50.0 📕								21	0.979	27	1.009
inta 4	19.0 🗄								22	0.985	28	1.014
4 Iois	18.0 🗄								23	0.990	29	1.018
N 4	17.0								24	0.995	30	1.022
• 4	16.0								20	1.000		
4	15.0 ⊨		!									
	10		#	of Drops	8			100				
		-										
NP, 1	Non-Pla	astic	1	Notes:								
Li	iquid L	1m1t	51									
PI	astic L	1m1t	34									
	astic Ir	idex	17 MII									
Gro	oup Syr	1001	WIH									
											22	
Techn	ician:		Brett S	Junker		5	0740			An S.	Late	
			Printed	Name		Cer	tification #			Signatur	8	

Project	AASIIIO 189/90       ect #:     21-1633       ect Name:     ABC Warehouse       Tost Date(a):     8/2/2021												
Project	Name:	ABC W	arehou	se					Test	Date(s):	8/2/202	1	
Client N	Name:	NC Dep	partmen	nt of A	Adminis	tration			Receiv	ed Date:	7/23/202	21	
Client A	Address:												
Refere	nces:												
AASHTO	O M231,	Weighing	d Devices	s Usec	l in the T	lesting of	Material	S					
AASHTO	O R58, D	ry Prepai	ration of	^c Distı	urbed Soi	l and Soi	l-Aggreg	ate samp	les				
AASHTO	O T89, D	eterminin	ng the Li	iquid	Limit of L	Soils							
AASHTO	O T146, V	Wet Prepo	aration o	of Dist	turbed So	oil Sampl	es for Tes	st					
AASHTO	O T265, 1	Laborator	y Deteri	minat	ion of Mo	oisture Co	ntent of	Soils					
Lab #	#: 961	2	Ma	ateria	ıl: Red	dish Ye	llow Silt	y Sand		Sa	mple Da	te: 2	23-Jul
Sourc	e:		Sa	mple	#: B5-	S4				Sa	ampled E	By:	DW
							Liquio	d Limit			Pl	astic Lii	mit
		Test	#		1	2	3	4	5	6	1	2	3
		Tare	#		6	Y					19	22	
A		Tare We	eight		13.22	14.18					30.04	30.38	
В	We	t Soil We	ight + A	1	34.36	33.84					41.06	42.61	
С	Dr	y Soil We	ight + A	7	28.21	28.13					38.61	39.90	
D	Wa	ter Weig	ht (B-C)	)	6.15	5.71	0.00	0.00	0.00	0.00	2.45	2.71	
Е	Dry	Soil Wei	ght (C-A	<b>(</b> )	14.99	13.95	0.00	0.00	0.00	0.00	8.57	9.52	
F	%Moist	ure Conte	ent(D/E)	*100	41%	41%					28.6%	28.5%	
N		# OF DR	OPS		25	25							
LL	LI	L = F * FA	ACTOR		41.0%	41.0%							
Ave.		Avera	ge				41	.0%				28.5%	
4	5.0 -												
4	4.0										D : / I	· · 1 T ·	· ·, 1
<b>t</b> 4	3.0									- Une	e Point L	Iquid Li	imit
t ute	2.0									<u>N</u>	Factor	N 9C	Factor
- ⁵ 2 4	1.0				•					20	0.974	26	1.000
e 4	0.0									<u></u> 	0.979	21	1.009
stu 8	^{9.0}									22	0.985	20	1.014
Ioi 3	8.0									$\frac{23}{24}$	0.995	30	1.010 1.022
										25	1.000	50	1.022
- 3											1.000		
ថ	50.0 <del> </del>					-							
	10				# 01 Dro	ps			100				
ND N	Ion Dla	atio		,	.T_+								
NP, N	on-Fla	stic mit	41	1	Notes:								
	quiu Li ostie Li	mit	<u>41</u> 90	_									
	astic In	dov	$\frac{23}{12}$	_									
Gro	un Svm	ucx	SM	_									
510	-r ~j 11			_									
											/	2	
Techn	Sechnician:   Brett S Junker   50740												
	Direct S outliner         Outline           Printed Name         Certification #         Signature												

Project	Project #: 21-1633 Report Date: 8/3/2021 Project Name: ABC Warehouse Test Date(s): 8/2/2021											
Project	Name:	ABC W	arehouse					Test	Date(s):	8/2/202	1	
Client	Name:	NC Dep	partment of A	Adminis	tration			Receiv	ed Date:	7/23/20	21	
Client A	Address	3:										
Refere	ences:											
AASHT	O M231,	Weighing	g Devices Used	l in the T	esting of	Material	8	-				
AASHT	O R58, I	Dry Prepa	ration of Distu	rbed Soi	l and Soi	l-Aggrege	ate samp	les				
AASHT	O T89, L	)eterminii	ng the Liquid	Limit of L	Soils	<i>.</i>						
AASHT	О <i>Т</i> 146,	Wet Prepo	aration of Dist	urbed Sc	nl Sampl	es for Tes	$a \cdot b$					
AASHT	0.1265,	Laborator	ry Determinati	on of Mo	oisture Co	ontent of L	Soils					
Lab ;	#: 96	13	Materia	l: Red	Micace	ous Clay	ey Sand	l	Sa	mple Da	te: 2	23-Jul
Sourc	ce:		Sample	#: B6-	S1				Sa	impled E	By:	DW
						Liquio	l Limit			Pl	astic Lir	nit
		Test	#	1	2	3	4	5	6	1	2	3
		Tare	#	1	Z					2	21	
А		Tare We	eight	13.44	13.39					29.80	30.14	
В	W	et Soil We	eight + A	31.92	32.82					43.41	44.13	
С	Di	ry Soil We	eight + A	25.84	26.42					40.70	41.31	
D	W	ater Weig	ght (B-C)	6.08	6.40	0.00	0.00	0.00	0.00	2.71	2.82	
Е	Dr	y Soil Wei	ight (C-A)	12.40	13.03	0.00	0.00	0.00	0.00	10.90	11.17	
F	%Mois	ture Cont	ent(D/E)*100	49%	49%					24.9%	25.2%	
Ν		# OF DF	ROPS	20	21							
LL	L	L = F * F	ACTOR	47.7%	48.0%							
Ave.		Avera	age			47	.9%				25.1%	
-	50.0											
•	190 E											
	18.0								One	e Point L	iquid Li	mit
iter	47.0 E								N	Factor	N	Factor
	46.0 <b>⊨</b>								20	0.974	26	1.005
မ္ <u>န</u>	45.0 📕								21	0.979	27	1.009
etun 4	44.0 🛓								22	0.985	28	1.014
	43.0 🗄								23	0.990	29	1.018
	^{42.0}								24	0.995	30	1.022
<b>2</b>	41.0 <b>E</b>								20	1.000		
4	40.0 <b>⊨</b>				+ +							
	10			# of I	Drops			100				
NP, I	Non-Pla	astic	N	Notes:								
Li	iquid L	amit	48									
PI	lastic L	amit	25									
PI O	astic Ii	naex	23									
Gro	Jup Syr	1001	30									
										,	00	
Techn	nician:		Brett S	Junker	•	5	0740			Ans.	Lake	
			Printed	Name		Cer	tification #			Signatur	e	

Project	#: 21-16	533		ААЗП	110 189	/90	Repo	ort Date:	8/3/202	1	
Project	Name: ABC	Warehouse					Test	Date(s):	8/2/202	1	
Client N	Name: NC D	Department of A	Adminis	tration			Receiv	ed Date:	7/23/20	21	
Client A	Address:										
Refere AASHT( AASHT(	<b>nces:</b> O M231, Weighi O R58, Dry Prep	ing Devices Used paration of Distu	l in the T urbed Soi	esting of l and Soi	Material l-Aggrege	s ate samp	les				
AASHI	) 189, Delermin T146, Wet Dra	ning the Liquia . manation of Dist		50115 il Samul	as for Ta	- <i>t</i>					
AASHT(	9 1146, wet Fre 9 T265, Laborat	tory Determinat	ion of Mo	isture Co	ontent of L	si Soils					
Lab #	<b>#</b> : 9613	Materia	l: Red	dish Ye	llow Silt	y Sand		Sa	imple Da	ite: 2	23-Jul
Sourc	e:	Sample	#: B6-	S4				Sa	ampled H	By:	DW
					Liquio	l Limit			Pl	astic Lir	nit
	Tes	st#	1	2	3	4	5	6	1	2	3
	Tai	re#	14	Х					F	Р	
А	Tare V	Weight	12.23	14.16					21.30	20.86	
В	Wet Soil V	Weight + A	31.92	35.43					37.38	35.66	
С	Dry Soil V	Weight + A	26.77	29.83					34.13	32.68	
D	Water We	eight (B-C)	5.15	5.60	0.00	0.00	0.00	0.00	3.25	2.98	
Е	Dry Soil W	/eight (C-A)	14.54	15.67	0.00	0.00	0.00	0.00	12.83	11.82	
F	%Moisture Co	ntent(D/E)*100	35%	36%					25.3%	25.2%	
N	# OF I	DROPS	20	20							
LL	LL = F *	FACTOR	34.1%	35.1%							
Ave.	Ave	erage			34	.6%				25.3%	
1	0.0										
4											
t 3	8.0							One	e Point I	iquid Li	mit
e te	57.0							<u>N</u>	Factor	N	Factor
- <mark>5</mark> 3	6.0							20	0.974	26	1.005
શું <u>ક</u> ુ 3	5.0	•						21	0.979	27	1.009
stu 3	4.0							22	0.985	28	1.014
iol 3	3.0							23	0.990	29	1.018
≥ 3 %	32.0							24	1.000	- 30	1.022
<u> </u>								20	1.000		
3	30.0 <del>f</del>										
	10		# o	f Drops			100				
NP N	Jon-Plastic	1	Notes:								
Li	auid Limit	35									
Pl	astic Limit	25									
Pla	astic Index	10									
Gro	up Symbol	SM									
	• - •	D C	Travel		~	0740			bress	lake .	
Technician:Brett S Junker50740Dress fabrePrinted NameCertification #Signature											

Pro	ject #:	21-1633				Report Date:	8/1/202	1
Pro	ject Name:	ABC Warehouse				Test Date(s):	7/30/202	21
Clie	ent Name:	NC Department of A	Adm	inistration		Received Date:	7/23/202	21
Clie	ent Address:							
Sar	nple #: 9608	Sample	d By	7: DW		Depth (ft):		
Loc	ation: B1-S1							
Sar	nple Description	: Yellowish Red S	Sand	ly Fat Clay				
Re	ferences:	AASHTO Stand	lard	s:				
M9	2 Wire-Cloth	Sieves for Testing P	urpo	oses				
M2	31 Weighing D	evices Used in the T	'esti	ng of Materials				
T2 T27	Sampling of	f Aggregates		mmomotos				
127 T $24$	18 Reducing S	amples of Aggregate	to 1	Vesting Size				
]	Particle Size Ana	alysis / Without Hyd	rom	eter Analysis		Moisture Content	-	Natural
	Tare Number			В		Tare #		В
Α	Tare Weight			136.7	Α	Tare Weight		136.70
В	Total Sample Dry	v Wt. + Tare Wt.		325.6	В	Wet Weight + Tare W	t.	380.70
С	Total Sample Dry	v Weight (B-A)		188.9	С	Dry Weight + Tare W	t.	325.60
D	After Wash Weig	ht + Tare		199.7	D	Water Wt. (B-C)		55.10
Е	Total Sample Wt.	. After #200 Wash		63.0	Е	Dry Wt.(C-A)		188.90
	Percent Passing #	#200 (1-E/C)x100		66.6%	M	oisture Content (100 x I	D/E) (%)	29.2%
S	ieve Size (mm)	Sieve Size	R	etained Weight		Percent Retained	Pero To	cent Passing tal Sample
	50.00	2.0"				0%		100%
	37.50	1.5"				0%		100%
	25.00	1.0"				0%		100%
	19.00	3/4"				0%		100%
	12.50	1/2"				0%		100%
	9.50	3/8"				0%		100%
	4.75	#4		0.7		0%		100%
	2.36	#8				0%		100%
	1.18	#16				0%		100%
0.60 #30				0% 100%			100%	
0.30 #50				0% 100%			100%	
0.15 #100					0.0% 100.0%			
0.075 #200					0.0% 100.0%			

Notes:

Reviewed by:			
Technician:	Brett S Junker	50740	Sur S. Jak
	Printed Name	Certificate #	Signature

Pro	ject #:	21-1633				Report Date:	8/1/202	1
Pro	ject Name:	ABC Warehouse				Test Date(s):	7/30/202	21
Clie	ent Name:	NC Department of A	Adm	inistration		Received Date:	7/23/20	21
Clie	ent Address:							
Sar	nple #: 9609	Sample	d By	v: DW		Depth (ft):		
Loc	ation: B2-S2							
Sar	nple Description	: Pale Brown Mic	eace	ous Silty Sand				
Re	ferences:	AASHTO Stand	lard	s:				
M9	2 Wire-Cloth	Sieves for Testing P	urpo	oses				
M2	31 Weighing D	evices Used in the T	'esti	ng of Materials				
T2 T25	Sampling of	f Aggregates		arroratos				
127 T24	8 Reducing S	amples of Aggregate	to T	Sesting Size				
]	Particle Size Ana	alysis / Without Hyd	rom	eter Analysis		Moisture Content	5	Natural
	Tare Number			G		Tare #		G
А	Tare Weight			136.6	Α	Tare Weight		136.60
В	Total Sample Dry	v Wt. + Tare Wt.		427.0	В	Wet Weight + Tare W	t.	458.50
С	Total Sample Dry	v Weight (B-A)		290.4	С	Dry Weight + Tare W	t.	427.00
D	After Wash Weig	ht + Tare		380.8	D	Water Wt. (B-C)		31.50
Е	Total Sample Wt.	After #200 Wash		244.2	Е	Dry Wt.(C-A)		290.40
	Percent Passing #	#200 (1-E/C)x100		15.9%	Μ	oisture Content (100 x I	D/E) (%)	10.8%
S	ieve Size (mm)	Sieve Size	R	etained Weight		Percent Retained	Pero To	cent Passing tal Sample
	50.00	2.0"				0%		100%
	37.50	1.5"				0%		100%
	25.00	1.0"				0%		100%
	19.00	3/4"				0%		100%
	12.50	1/2"				0%		100%
	9.50	3/8"				0%		100%
	4.75	#4		2.0		1%		99%
	2.36	#8				0%		100%
	1.18	#16				0%		100%
	0.60	#30				0%		100%
0.30 #50				0% 100%			100%	
0.15 #100					0.0%		100.0%	
Ļ	0.075 #200					0.0%		100.0%

Notes:

Reviewed by:			
Technician:	Brett S Junker	50740	Sur S. Jak
	Printed Name	Certificate #	Signature

Project #:         21-1633         Report Date: 8/1							1	
Project Name: ABC Warehouse					Test Date(s): 7/30/2021			
Client Name: NC Department of Administration					Received Date:	7/23/202	21	
Client Address:								
Sample #: 9609	Sample	d By	v: DW		Depth (ft):			
Location: B2-S3								
Sample Description	n: Grey Micaceous	Sil	ty Sand					
<b>References:</b>	AASHTO Stand	lard	s:					
M92 Wire-Cloth	Sieves for Testing P	urpo	oses					
M231 Weighing I	Devices Used in the T	'esti	ng of Materials					
T2 Sampling of T27 Signa Anal	of Aggregates		arrarataa					
T248 Reducing S	Samples of Aggregate	to 1	Aggregates Pesting Size					
Particle Size An	alysis / Without Hyd	rom	eter Analysis	Γ	Moisture Content	-	Natural	
Tare Number			WW		Tare #		WW	
A Tare Weight			155.4	А	Tare Weight		155.40	
B Total Sample Dr	ry Wt. + Tare Wt.		509.3	В	B Wet Weight + Tare Wt.		560.60	
C Total Sample Dr	ry Weight (B-A)		353.9	С	C Dry Weight + Tare Wt. 509.		509.30	
D After Wash Weight + Tare 432.2				D	D Water Wt. (B-C) 51.30			
E Total Sample W	t. After #200 Wash		276.8	E Dry Wt.(C-A) 353.90				
Percent Passing	#200 (1-E/C)x100		21.8%	Moisture Content (100 x D/E) (%) 14.5%			14.5%	
Sieve Size (mm)	Sieve Size	R	etained Weight		Percent Retained	Percent Passing Total Sample		
50.00	2.0"				0%		100%	
37.50	1.5"				0%		100%	
25.00	1.0"				0%		100%	
19.00	3/4"				0%		100%	
12.50	1/2"				0%		100%	
9.50	3/8"				0%		100%	
4.75	#4		16.3		5%		95%	
2.36 #8					0%		100%	
1.18	#16				0%		100%	
0.60	#30			0%			100%	
0.30	#50				0%		100%	
0.15	#100				0.0%		100.0%	
0.075	#200				0.0%		100.0%	

Notes:

Reviewed by:			
Technician:	Brett S Junker	50740	Sur S. Jak
	Printed Name	Certificate #	Signature

Pro	Project #: 21-1633 Report Date: 8/1/2021							1	
Project Name: ABC Warehouse					Test Date(s): 7/30/2021				
Client Name: NC Department of Administration						Received Date:	7/23/202	21	
Client Address:									
Sar	nple #: 9610	Sample	d By	r: DW		Depth (ft):			
Loc	ation: B3-S1								
Sar	nple Description	: Red Sandy Silt							
Re	ferences:	AASHTO Stand	ard	s:					
M9	2 Wire-Cloth	Sieves for Testing P	arpo	oses					
M2	31 Weighing D	evices Used in the T	esti	ng of Materials					
T2 T25	Sampling of Siovo Analy	f Aggregates	an /	agragatas					
T24	8 Reducing S	amples of Aggregate	to T	esting Size					
]	Particle Size Ana	alysis / Without Hydi	rom	eter Analysis		Moisture Content	;	Natural	
	Tare Number			HH		Tare #		НН	
А	Tare Weight			152.4	А	Tare Weight		152.40	
В	Total Sample Dry	Wt. + Tare Wt.		436.5	B Wet Weight + Tare Wt. 497.		497.00		
С	Total Sample Dry	v Weight (B-A)		284.1	С	Dry Weight + Tare W	t.	436.50	
D	After Wash Weig	ht + Tare		290.7	D	D Water Wt. (B-C) 60.50			
Е	Total Sample Wt.	After #200 Wash		138.3	E Dry Wt.(C-A) 284.10			284.10	
	Percent Passing #	#200 (1-E/C)x100		51.3%	Moisture Content (100 x D/E) (%) 21.3%			21.3%	
s	ieve Size (mm)	Sieve Size	R	etained Weight	Percent Retained		Pero To	Percent Passing Total Sample	
	50.00	2.0"				0%		100%	
	37.50	1.5"				0%		100%	
	25.00	1.0"				0%		100%	
	19.00	3/4"				0%		100%	
	12.50	1/2"				0%		100%	
	9.50	3/8"				0%		100%	
	4.75	#4		3.2		1%		99%	
	2.36 #8					0%		100%	
	1.18	#16				0%		100%	
	0.60	#30				0%		100%	
	0.30	#50			0% 1		100%		
	0.15	#100				0.0%		100.0%	
	0.075	#200				0.0%		100.0%	

Notes:

Reviewed by:			
Technician:	Brett S Junker	50740	Sur S. Jak
	Printed Name	Certificate #	Signature

Pro	ject #:	21-1633	Report Date: 8/1/2021					
Project Name: ABC Warehouse T					Test Date(s):	7/30/202	21	
Client Name: NC Department of Administration						Received Date:	7/23/202	21
Clie	ent Address:							
Sar	nple #: 9610	Sample	d By	7: DW		Depth (ft):		
Loc	ation: B3-S2							
Sar	nple Description	: Greyish Brown	Mic	aceous Silty Sar	ıd			
Re	ferences:	AASHTO Stand	lard	s:				
M9	2 Wire-Cloth	Sieves for Testing P	urpo	oses				
M2	31 Weighing D	evices Used in the T	'esti	ng of Materials				
T2	Sampling of	f Aggregates		mmomotos				
120 T $24$	18 Reducing S	amples of Aggregate	to T	Vesting Size				
	Particle Size Ana	alysis / Without Hyd	rom	eter Analysis		Moisture Content	5	Natural
	Tare Number			MM		Tare #		ММ
А	Tare Weight			155.8	А	Tare Weight		155.80
В	Total Sample Dry	v Wt. + Tare Wt.		448.1	В	B Wet Weight + Tare Wt. 49		490.80
С	Total Sample Dry	v Weight (B-A)		292.3	С	C Dry Weight + Tare Wt. 448.1		448.10
D	After Wash Weig	ht + Tare		375.3	D	D Water Wt. (B-C) 42.70		42.70
Е	Total Sample Wt.	After #200 Wash		219.5	E Dry Wt.(C-A) 292.30			
	Percent Passing #	#200 (1-E/C)x100		24.9%	Μ	oisture Content (100 x I	)/E) (%)	14.6%
S	ieve Size (mm)	Sieve Size	R	etained Weight	Percent Retained		Percent Passing Total Sample	
	50.00	2.0"				0%		100%
	37.50	1.5"				0%		100%
	25.00	1.0"				0%		100%
	19.00	3/4"				0%		100%
	12.50	1/2"				0%		100%
	9.50	3/8"				0%		100%
	4.75	#4		0.5		0%		100%
	2.36	#8				0%		100%
	1.18	#16				0%		100%
0.60 #30				0%			100%	
	0.30	#50			0% 100%			100%
	0.15	#100				0.0%		100.0%
	0.075	#200				0.0%		100.0%

Notes:

Reviewed by:			
Technician:	Brett S Junker	50740	Bron S. Jak
	Printed Name	Certificate #	Signature

Pro	ject #:	21-1633	Report Date: 8/1/2021					
Project Name: ABC Warehouse					Test Date(s): 7/30/2021			
Client Name: NC Department of Administration						Received Date:	7/23/202	21
Clie	Client Address:							
Sar	nple #: 9611	Sample	d By	v: DW		Depth (ft):		
Loc	ation: B4-S4							
Sar	nple Description	: Brownish Grey	Mic	aceous Silty Sar	ıd			
Rei	ferences:	AASHTO Stand	lard	s:				
M9	2 Wire-Cloth	Sieves for Testing P	urpo	oses				
M2	31 Weighing D	evices Used in the T	esti	ng of Materials				
T2 T27	Sampling of	f Aggregates		armoratos				
T24	8 Reducing S	amples of Aggregate	to T	Sesting Size				
]	Particle Size Ana	alysis / Without Hyd	rom	eter Analysis		Moisture Content	5	Natural
	Tare Number			Z		Tare #		Z
А	Tare Weight			151.1	А	Tare Weight		151.10
В	Total Sample Dry	v Wt. + Tare Wt.		518.1	В	Wet Weight + Tare Wt. 587		587.90
С	Total Sample Dry	v Weight (B-A)		367.0	С	CDry Weight + Tare Wt.518.2		518.10
D After Wash Weight + Tare 437.6				437.6	D	D Water Wt. (B-C) 69.80		
Е	Total Sample Wt.	After #200 Wash		286.5	E Dry Wt.(C-A) 367.00			
	Percent Passing #	#200 (1-E/C)x100		21.9%	Μ	oisture Content (100 x D	D/E) (%)	19.0%
S	ieve Size (mm)	Sieve Size	R	etained Weight		Percent Retained	Pero To	cent Passing tal Sample
	50.00	2.0"				0%		100%
	37.50	1.5''				0%		100%
	25.00	1.0"				0%		100%
	19.00	3/4"				0%		100%
	12.50	1/2"				0%		100%
	9.50	3/8"				0%		100%
	4.75	#4		0.0		0%		100%
	2.36	#8				0%		100%
	1.18	#16				0%		100%
	0.60	#30				0%		100%
	0.30	#50				0%		100%
	0.15	#100				0.0%		100.0%
Ļ	0.075	#200				0.0%		100.0%

Notes:

Reviewed by:			
Technician:	Brett S Junker	50740	Sur S. Jak
	Printed Name	Certificate #	Signature

Pro	roject #: 21-1633 Report Date: 8/1/2021						1	
Project Name: ABC Warehouse					Test Date(s): 7/30/2021			
Client Name: NC Department of Administration						Received Date:	7/23/20	21
Clie	ent Address:							
Sar	nple #: 9612	Sample	d By	v: DW		Depth (ft):		
Loc	ation: B5-S2							
Sar	nple Description	: Yellowish Red S	and	ly Elastic Silt				
Re	ferences:	AASHTO Stand	ard	s:				
M9	2 Wire-Cloth	Sieves for Testing P	urpo	oses				
M2	31 Weighing D	evices Used in the T	esti	ng of Materials				
T2 T2	Sampling of	f Aggregates		armoratos				
12 T $24$	8 Reducing S	amples of Aggregate	to T	Sesting Size				
	Particle Size Ana	alysis / Without Hyd	rom	eter Analysis		Moisture Content	;	Natural
	Tare Number			00		Tare #		00
А	Tare Weight			152.0	Α	Tare Weight		152.00
В	Total Sample Dry	Wt. + Tare Wt.		489.7	B Wet Weight + Tare Wt. 58		587.40	
С	Total Sample Dry	v Weight (B-A)		337.7	C Dry Weight + Tare Wt. 489		489.70	
D	After Wash Weig	ht + Tare		279.1	D Water Wt. (B-C) 97.70			97.70
Е	Total Sample Wt.	After #200 Wash		127.1	E Dry Wt.(C-A) 337.70			337.70
	Percent Passing #	#200 (1-E/C)x100		62.4%	Moisture Content (100 x D/E) (%) 28.9%			
S	ieve Size (mm)	Sieve Size	R	etained Weight	Percent Retained		Percent Passing Total Sample	
	50.00	2.0"				0%		100%
	37.50	1.5"				0%		100%
	25.00	1.0"				0%		100%
	19.00	3/4"			0%		100%	
	12.50	1/2"				0%		100%
	9.50	3/8"			0%			100%
	4.75	#4		1.5		0%		100%
	2.36	#8				0%		100%
1.18 #16					0%		100%	
0.60 #30				0%		100%		
	0.30	#50				0%		100%
	0.15	#100				0.0%		100.0%
	0.075	#200				0.0%		100.0%

Notes:

Reviewed by:			
Technician:	Brett S Junker	50740	Sur S. Jak
	Printed Name	Certificate #	Signature

Project #:         21-1633         Report Date: 8/1/2021							1	
Project Name: ABC Warehouse					Test Date(s): 7/30/2021			
Client Name: NC Department of Administration					Received Date:	7/23/202	21	
Client Address:								
Sample #: 9612	Sampleo	d By	v: DW		Depth (ft):			
Location: B5-S	4							
Sample Descripti	on: Reddish Yellow	Silt	y Sand					
<b>References:</b>	AASHTO Stand	ard	s:					
M92 Wire-Clo	th Sieves for Testing Pu	arpo	oses					
M231 Weighing	Devices Used in the T	esti	ng of Materials					
T2 Sampling	of Aggregates	~~ /	mmomotos					
T248 Reducing	Samples of Aggregate	se / to 7	Vesting Size					
Particle Size A	nalysis / Without Hydi	rom	eter Analysis		Moisture Content	-	Natural	
Tare Number			BB		Tare #		BB	
A Tare Weight			150.5	А	Tare Weight		150.50	
B Total Sample I	Dry Wt. + Tare Wt.		421.5	В	B Wet Weight + Tare Wt.		491.80	
C Total Sample I	Dry Weight (B-A)		271.0	С	C Dry Weight + Tare Wt. 421.8		421.50	
D After Wash Weight + Tare 299.7				D	D Water Wt. (B-C) 70.30		70.30	
E Total Sample	Wt. After #200 Wash		149.2	E Dry Wt.(C-A) 271.00				
Percent Passir	g #200 (1-E/C)x100		44.9%	Moisture Content (100 x D/E) (%) 25.9%			25.9%	
Sieve Size (mm)	Sieve Size	R	etained Weight		Percent Retained		Percent Passing Total Sample	
50.00	2.0"				0%		100%	
37.50	1.5"				0%		100%	
25.00	1.0"				0%		100%	
19.00	3/4"				0%		100%	
12.50	1/2"				0%		100%	
9.50	3/8"				0%		100%	
4.75	#4		0.0		0%		100%	
2.36	#8				0%		100%	
1.18	#16				0%		100%	
0.60	#30			0%		100%		
0.30	#50				0%		100%	
0.15	#100				0.0%		100.0%	
0.075	#200				0.0%		100.0%	

Notes:

Reviewed by:			
Technician:	Brett S Junker	50740	Bron S. Jak
	Printed Name	Certificate #	Signature

Project #: 21-1633					Report Date: 8/1/2021			
Project Name: ABC Warehouse				Test Date(s): 7/30/2021				
Client Name: NC Department of Administration				Received Date: 7/23/2021				
Clie	Client Address:							
Sample #:9613Sampled By:DWDepth (ft):								
Loca	Location: B6-S1							
Sample Description: Red Micaceous Clayey Sand								
References: AASHTO Standards:								
M92	M92 Wire-Cloth Sieves for Testing Purposes							
M23	81 Weighing D	evices Used in the T	esti	ng of Materials				
T2 727	Sampling of	f Aggregates						
T27 T94	Sieve Analy Boducing Science	sis of Fine and Cour	se F	Aggregates				
124 F	article Size Ana	amples of Aggregate	rom	eter Analysis	Moisture Content Natural			Natural
	Tare Number		. 0111	CC		Tare #	,	CC
А	Tare Weight			150.4	А	Tare Weight	Tare Weight 150	
В	Total Sample Dry	v Wt. + Tare Wt.		466.8	В	Wet Weight + Tare Wt.		527.10
С	C Total Sample Dry Weight (B-A)			316.4	С	C Dry Weight + Tare Wt.		466.80
D	D After Wash Weight + Tare			330.6	D	D Water Wt. (B-C) 60		60.30
Е	E Total Sample Wt. After #200 Wash			180.2	Е	E Dry Wt.(C-A)		316.40
Percent Passing #200 (1-E/C)x100				43.0%	Moisture Content (100 x D/E) (%) 19		19.1%	
Sieve Size (mm) Sieve Size R		etained Weight	Percent Retained		Percent Passing Total Sample			
50.00 2.0"			0%		100%			
37.50 1.5"			0%		100%			
25.00 1.0"				0%		100%		
19.00 3/4"			0%		100%			
12.50 1/2"			0%		100%			
9.50 3/8"			0%		100%			
4.75 #4		0.9	0%		100%			
2.36 #8			0%		100%			
1.18 #16				0%		100%		
0.60 #30		#30			0%		100%	
0.30 #50			0%			100%		
0.15 #100			0.0%			100.0%		
0.075 #200						0.0%		100.0%

Notes:

Reviewed by:			
Technician:	Brett S Junker	50740	Sur S. Jak
	Printed Name	Certificate #	Signature

Project #: 21-1633				Report Date: 8/1/2021			
Project Name: ABC Warehouse				Test Date(s): 7/30/2021			
Client Name: NC Department of Administration				Received Date: 7/23/2021			
Client Address:							
Sample #:9613Sampled By:DWDepth (ft):							
Location: B6-S4	Location: B6-S4						
Sample Description: Reddish Yellow Silty Sand							
References: AASHTO Standards:							
M92 Wire-Cloth Sieves for Testing Purposes							
M231 Weighing Devices Used in the Testing of Materials							
T2 Sampling	of Aggregates						
T21 Sleve Ana	Samples of Aggregate	se / to 7	Aggregates Posting Sizo				
Particle Size A	nalysis / Without Hydi	rom	eter Analysis	Moisture Content Natural			Natural
Tare Number			EE		Tare #	Tare #	
A Tare Weight			151.4	А	Tare Weight 151.		151.40
B Total Sample D	B Total Sample Dry Wt. + Tare Wt.			В	B Wet Weight + Tare Wt.		699.90
C Total Sample D	C Total Sample Dry Weight (B-A)			С	Dry Weight + Tare Wt.		612.20
D After Wash We	D After Wash Weight + Tare			D	D Water Wt. (B-C) 87.		87.70
E Total Sample Wt. After #200 Wash			304.9	Е	E Dry Wt.(C-A) 460.		460.80
Percent Passing	33.8%	M	Moisture Content (100 x D/E) (%)		19.0%		
Sieve Size (mm) Sieve Size R		etained Weight	Percent Retained		Percent Passing Total Sample		
50.00 2.0"			0%		100%		
37.50 1.5"			0%		100%		
25.00 1.0"				0%		100%	
19.00 3/4"				0%		100%	
12.50 1/2"			0%		100%		
9.50 3/8"			0%		100%		
4.75 #4		27.9	6%		94%		
2.36 #8			0%		100%		
1.18 #16				0%		100%	
0.60 #30				0%		100%	
0.30 #50			0%			100%	
0.15 #100			0.0%			100.0%	
0.075			0.0%		100.0%		

Notes:

Reviewed by:			
Technician:	Brett S Junker	50740	Sur S. Jak
	Printed Name	Certificate #	Signature