

Memorandum

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To: Vincent Griffith / Elion

From: Victoria Rhodes

Ronald Boyer, P.E.

Info: Michael Stellino / Elion

Kevin Rooney / Alston Chris Crane / Dynamic

Gregg Woodruff, Maaz Mansoor / Langan

Date: 20 May 2020

Re: Basin Flood Testing Results

Proposed Warehouse Development

Franklin Township, Somerset County, New Jersey

Langan Project No.: 100781401

This memorandum presents the results from our basin flood testing performed within the two proposed stormwater management basin locations and at accessible locations throughout the site for the Proposed Warehouse Development on Veronica Avenue in Somerset, New Jersey. A site location map is provided as Figure 1. The basin flood testing was performed following procedures provided in the NJ Stormwater BMP Manual (September 2009).

All elevations given in this memorandum are referenced to the North American Vertical Datum of 1988 (NAVD88), unless otherwise noted.

Basin Flooding Tests

Thirty-one basin flood tests, identified as TP-102 through TP-114 and TP-201 through TP-218, were performed at the site between 4 May and 15 May 2020. Tests were performed within the two proposed stormwater management basin areas and then within accessible areas throughout the site.

The test pits were excavated by Kelly Construction using a John Deere 330C LC track-mounted backhoe. The locations of the test pit excavations were selected by the project civil engineer. A profile test pit was excavated at each test location prior to performing each basin flood test. The depths of the profile pits generally ranged from approximately 7 feet to 15 feet, which was about 8 feet below the bottom of basin in proposed stormwater management basin areas, or at refusal in rock if encountered at a higher elevation. Our field engineer performed full-time engineering observation of each test pit and maintained a log for each investigation location, noting the soil and rock classifications and depths, observed mottling, and groundwater including any localized seepage. A second test pit was excavated adjacent to the initial profile pit at each location for the purpose of basin flood testing. The depths at which the basin flood tests were performed were determined by the project civil engineer after reviewing conditions in the corresponding profile test pits. Upon completion of each profile test pit and basin flood test, all excavations were backfilled with excavated soils, lightly compacted using the backhoe bucket.

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Basin Flood Testing Results Proposed Warehouse Development Franklin Township, Somerset County, New Jersey Langan Project No.: 100781401

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The locations of the tests are shown in Figure 2. The logs of the profile test pits and selected photographs are provided in Appendix A and Appendix B, respectively. The detailed results of the basin flood tests are provided in Tables 1 through 3 and a brief summary of the tests and results is provided below.

Stormwater Management Basin 1 Flood Tests

Basin 1 is located at the southern portion of the site. The proposed bottom of the basin is at approximate el 98.9 (or el 100 NGVD29) in the eastern and western portions and el 100.9 (or el 102 NGVD29) in the center. Basin flood tests TP-102 through TP-111 were performed within the proposed Basin 1 location. The basin flood tests were performed at excavated depths ranging from approximately 4.5 ft to 9 ft below surface grade, corresponding to test elevations of approximately el 98.9 to el 102.9, and were typically performed in the weathered shale rock or more competent shale rock.

A profile test pit and several shallower test pits were excavated near the proposed TP-101 location. Perched water between 3 ft and 5 ft below surface grade was encountered in all excavations. No basin flood test was conducted at this location.

The majority of the tests determined the limiting zone to be massive rock substratum. Two tests in the center of the basin determined the limiting stratum to be fractured rock. Detailed results are provided in Table 1.

Stormwater Management Basin 2 Flood Tests

Basin 2 is located at the southeastern portion of the site. The proposed bottom of the basin is at el 97.9 (or el 99 NGVD29). Basin flood tests TP-112 through TP-114 were performed within Basin 2 location. The basin flood tests were performed at excavated depths ranging from approximately 2.5 to 3 ft below surface grade, corresponding to test elevations of approximately el 94.4 and el 96.4, and were typically performed in the weathered shale rock or more competent shale rock.

One test determined the limiting zone to be massive rock substratum. Two tests determined the limiting stratum to be fractured rock. Detailed results are provided in Table 2.

Additional Site Basin Flood Tests

Eighteen additional basin flood tests identified as TP-201 through TP-218 were performed at accessible locations throughout the site. The tests were performed at excavated depths ranging from approximately 4 to 10.5 ft below surface grade, corresponding to test elevations of approximately el 94.9 and el 108.4, and were typically performed in the weathered shale rock or more competent shale rock.



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Basin Flood Testing Results
Proposed Warehouse Development
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All tests in site areas determined the limiting zone to be massive rock substratum. Detailed results are provided in Table 3.

Hydraulic Soil Group

Based on the information provided in the NRCS Soil Survey, the default hydraulic soil group (HSG) for the site is HSG C. Based on the proposed bottom of basin elevations, the typically shallow depth of restrictive features (rock and seasonal high water table as determined by observation of mottling), and the results of the basin flood tests, we recommend a HSG classification for this site of HSG D, per Table 1 of the NJ Stormwater BMP Manual Appendix E.

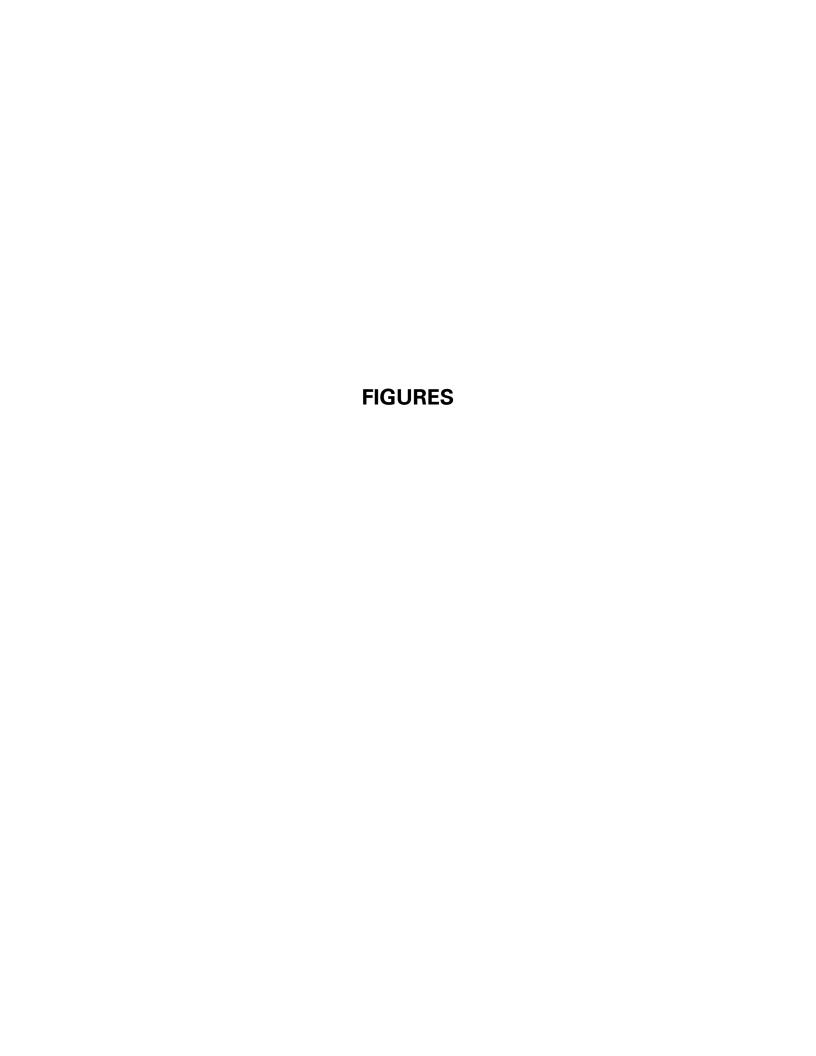
Closure

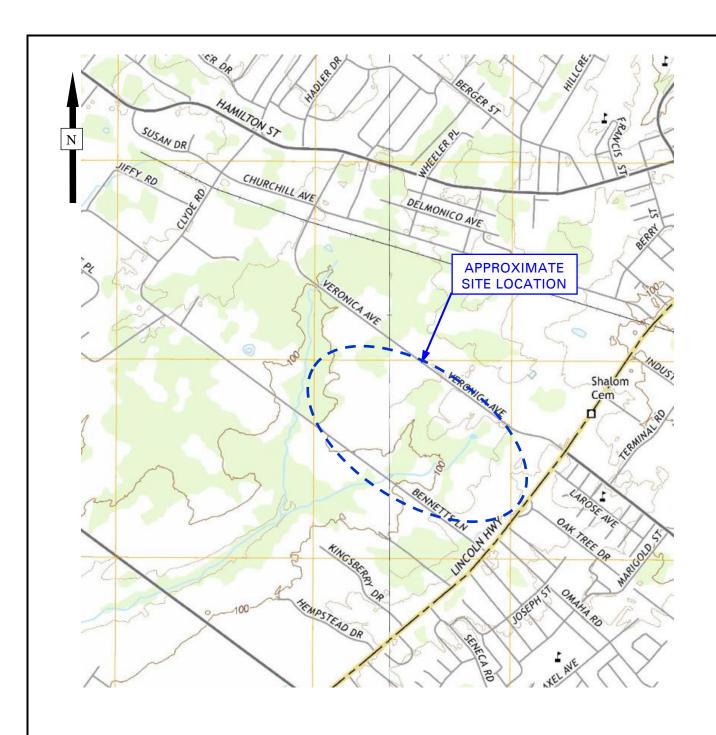
This memorandum provided the results from our basin flood testing performed within the two proposed stormwater management basin locations and at accessible site locations for the Proposed Warehouse Development. The information provided herein should be evaluated and utilized by the civil engineer for the proposed development as a component of the stormwater management design for the site.

If you have any questions, please call.

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Sources: New Brunswick 2014 Topographic Map and Monmouth Junction 2014 Topographic Map

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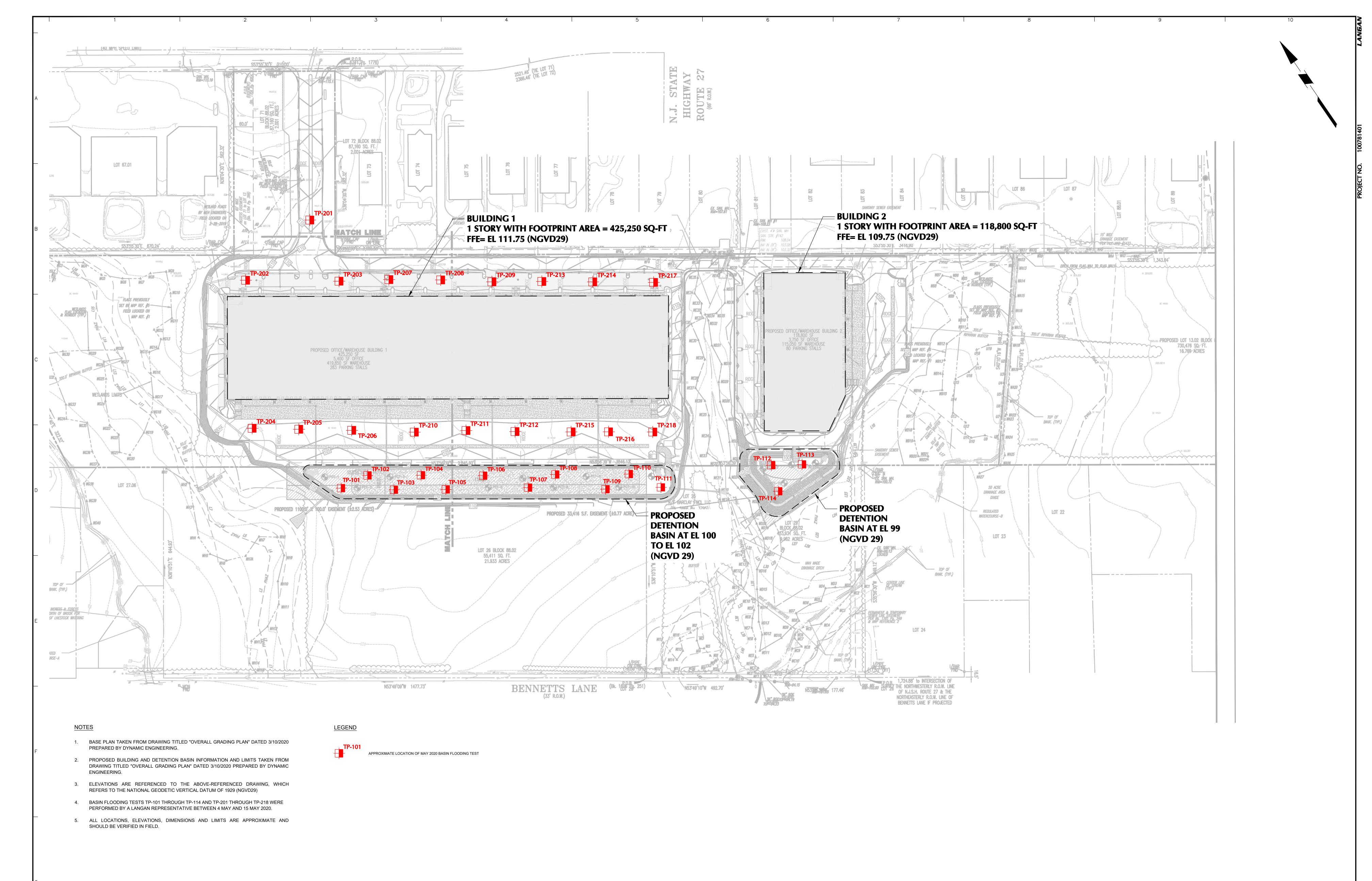
PROPOSED WAREHOUSE DEVELOPMENT

SITE LOCATION MAP

 FRANKLIN TOWNSHIP
 NEW JERSEY

 PROJECT NO.
 SCALE
 DATE
 FIGURE

 100781401
 N.T.S.
 05/15/2020
 1



100 0 50 100 SCALE IN FEET



NJ CERTIFICATE OF AUTHORIZATION No. 24GA27996400

PROPOSED
WAREHOUSE
DEVELOPMENT
FRANKLIN TOWNSHIP

SOMERSET COUNTY

LOCATION PLAN

Filename: \\langan.com\\data\PAR\\data4\100781401\Project Data\CAD\01\SheetFiles\GEOTECH\100781401-BL101-0105-2020-05-18 BFTs.dwg Date: 5/20/2020 Time: 12:57 User: vrhodes Style Table: Langan.stb Layout: ARCHF-SITE PLAN

Project No.

100781401

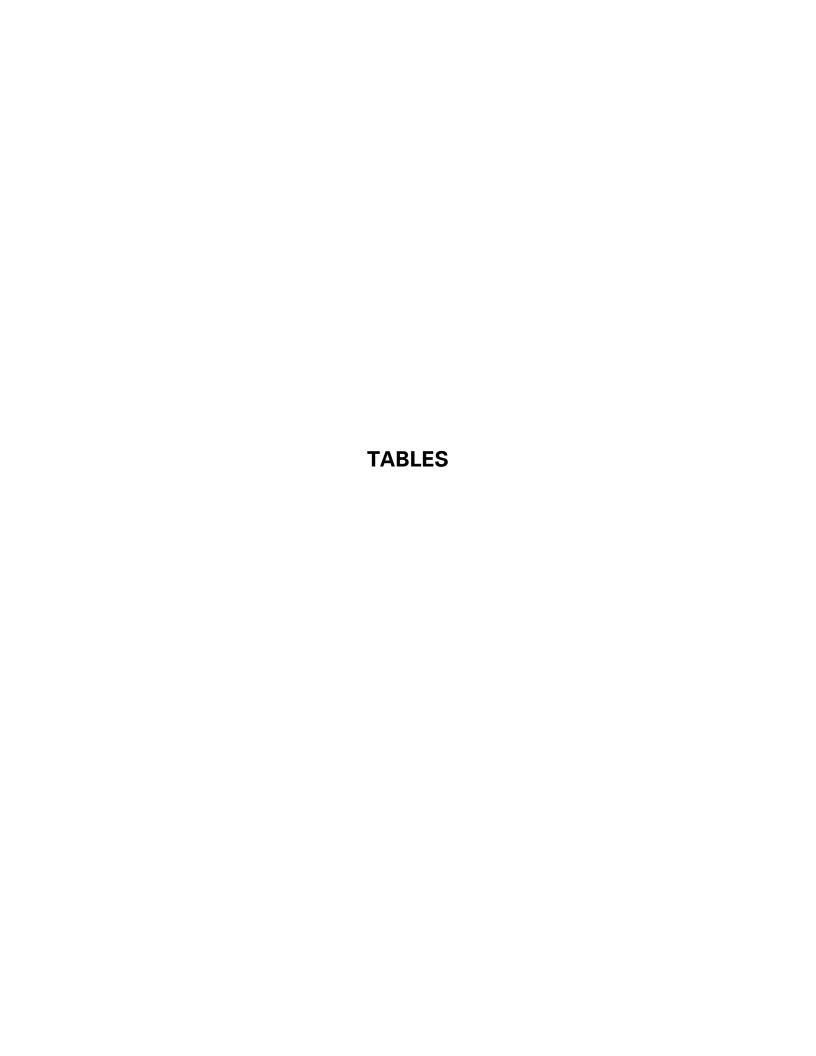
Date

5/18/2020

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Checked By



Basin Flood Testing 5/4/2020 to 5/15/2020 Franklin Township Somerset, NJ

Langan Project No.: 100781401

TABLE 1 - BASIN 1

	TABLE I - DASIN I							
	Approx. Test Elevation (NGVD29)	Date	Filled	Time	Duration (hrs)	Water Level Reading (inches)	Difference Between Readings (inches)	Determined Limiting Zone
12	el 101	5/4/2020	Х	11:00 AM	0	12	-	
TP-102		5/5/2020		7:30 AM	20.5	7.5	4.5	
Ε.		5/5/2020		11:00 AM	24	7	1	Massive Rock
3	el 100	5/4/2020	х	11:45 AM	0	12	-	
TP-103		5/5/2020		7:30 AM	19.75	12	0	
₽		5/5/2020		11:45 AM	24	12	0	Massive Rock
	el 104	5/5/2020	х	12:30 PM	0	12		
4		5/6/2020		7:30 AM	19	2	10	
TP-104		5/6/2020		12:30 PM	24	0	12	
占		5/6/2020	х	2:30 PM	0	12		
		5/7/2020		2:30 PM	24	5	7	Massive Rock
15	el 103.5	5/5/2020	х	11:30 AM	0	12		
TP-105		5/6/2020		7:30 AM	20	1	11	
TP		5/6/2020		11:30 AM	24	1	11	Massive Rock
	104.5	5/5/2020	х	3:45 PM	0	12		
TP-106		5/6/2020		7:30 AM	15.75	0	12	
<u>-</u>		5/6/2020	х	8:00 AM	0	12		
		5/6/2020		12:30 PM	4.5	0	12	Fractured Rock
	el 102	5/5/2020	х	3:30 PM	0	12		
107		5/5/2020		4:00 PM	2	0	12	
TP-107		5/5/2020	х	4:15 PM	0	12		
		5/6/2020		7:30 AM	15	0	12	Fractured Rock
80	el 102	5/4/2020	х	4:45 PM	0	12	-	
TP-108		5/5/2020		7:30 AM	14.75	9	3	
Ë		5/5/2020		4:45 PM	24.0	7	5	Massive Rock
60	el 100	5/4/2020	Х	2:45 PM	0	12	-	
TP-109		5/5/2020		7:30 AM	16.75	12	0	
Ħ		5/5/2020		2:45 PM	24	12	0	Massive Rock
07	el 101	5/4/2020	х	3:45 PM	0	12	-	
TP-110		5/5/2020		7:30 AM	15.75	6	6	
Ħ		5/5/2020		3:45 PM	24	5	7	Massive Rock
1	el 100	5/4/2020	х	4:15 PM	0.0	12	-	
TP-111		5/5/2020		7:30 AM	14.25	11.5	0.5	
Ξ.		5/5/2020		4:15 PM	24	11.5	0.5	Massive Rock

Basin Flood Testing 5/4/2020 to 5/15/2020 Franklin Township Somerset, NJ

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TABLE 2 - BASIN 2

	Approx. Test Elevation (NGVD29)	Date	Filled	Time	Duration (hrs)	Water Level Reading (inches)	Difference Between Readings (inches)	Determined Limiting Zone
112	el 97	5/6/2020	х	1:30 PM	0	12		
TP-13		5/7/2020		1:30 PM	24	1	11	Massive Rock
	el 97.5	5/6/2020	х	2:00 PM	0	12		
13		5/7/2020		10:00 AM	20	0	12	
TP-11		5/7/2020	х	1:00 PM	0	12		
_		5/7/2020		5:00 PM	4	4	8	
		5/8/2020		7:00 AM	18	0	12	Fractured Rock
	el 95.5	5/6/2020	х	1:00 PM	0	12		
114		5/7/2020		10:00 AM	21	0	12	
TP-114		5/7/2020	х	1:00 PM	0	12		
		5/7/2020		5:00 PM	4	0	12	Fractured Rock

Basin Flood Testing 5/4/2020 to 5/15/2020 Franklin Township Somerset, NJ

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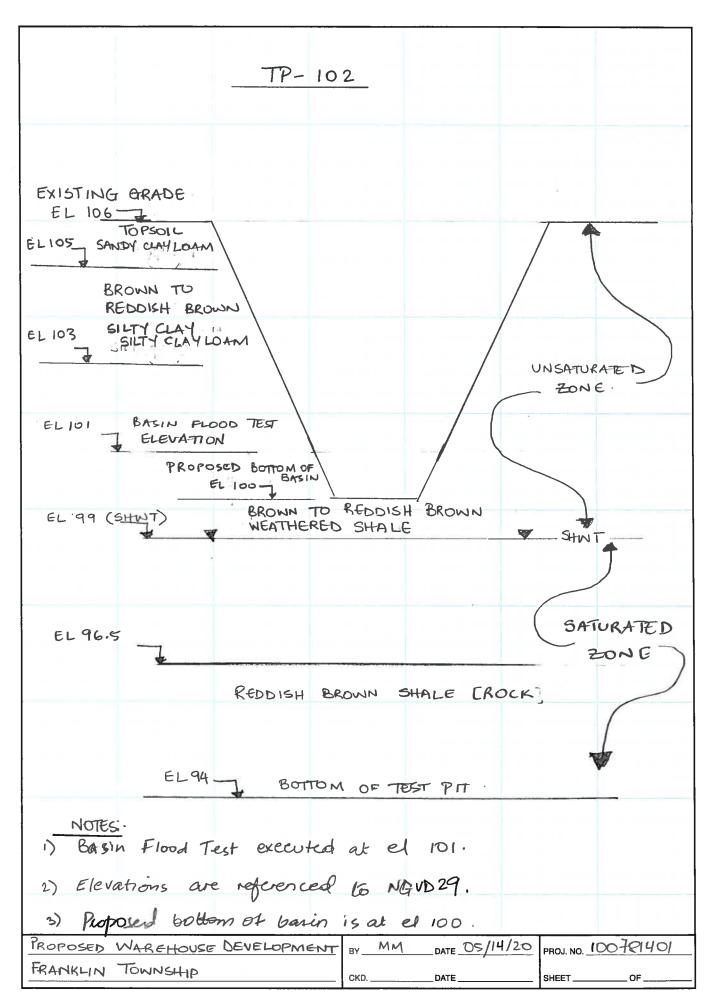
TABLE 3 - SITE BASIN FLOOD TESTS

	TABLE 3 - SITE BASIN FLOOD TESTS							
	Approx. Test Elevation (NGVD29)	Date	Filled	Time	Duration (hrs)	Water Level Reading (inches)	Difference Between Readings (inches)	Determined Limiting Zone
TP-201	el 105.5	5/11/2020	х	11:30 AM	0	12		
-d1		5/12/2020		11:30 AM	24	6	6	Massive Rock
	el 103.5	5/12/2020	х	9:15 AM	0	12		
TP-202		5/13/2020		9:15 AM	24	0	12	
TP-		5/13/2020	х	9:30 AM	0	12		
		5/14/2020		9:30 AM	24	4	8	Massive Rock
TP-203	el 103	5/11/2020	х	11:00 AM	0	12		
-d1		5/12/2020		11:00 AM	24	8	4	Massive Rock
	el 96	5/12/2020	х	10:00 AM	0	12		
204		5/13/2020		10:00 AM	24	0	12	
TP-204		5/13/2020	х	10:30 AM	24	12		
		5/14/2020		8:30 AM	22	0	12	Massive Rock
205	el 99	5/7/2020	×	10:00 AM	0	12		
TP-205		5/8/2020		10:00 AM	24	7	5	Massive Rock
506	el 99	5/7/2020	х	11:30 AM	0	12		
TP-206		5/8/2020		11:30 AM	24	7	5	Massive Rock
703	el 109.5	5/11/2020	х	10:15 AM	0	12		
TP-207		5/12/2020		10:15 AM	24	7	5	Massive Rock
80	el 109.5	5/9/2020	х	3:30 PM	0	12		
TP-208		5/10/2020		3:30 PM	24	4	8	Massive Rock
509	el 108.5	5/9/2020	х	12:30 PM	0	12		
TP-209		5/10/2020		12:30 PM	24	6.5	6	Massive Rock
10	el 101.7	5/12/2020	х	11:00 AM	0	12		
TP-210		5/13/2020		11:00 AM	24	7	5	Massive Rock
11	el 103	5/7/2020	х	2:00 PM	0	12		
TP-211		5/8/2020		2:00 PM	24	2	10	Massive Rock
12	el 101.5	5/14/2020	х	12:30 PM	0	12		
TP-212		5/15/2020		12:30 PM	24	3	9	Massive Rock
	el 107	5/12/2020	х	2:00 PM	0	12		
113		5/13/2020		11:00 AM	21	0	12	
TP-213		5/13/2020	x	11:30 AM	0	12		
		5/14/2020		11:30 AM	24	3	9	Massive Rock
114	el 104	5/12/2020	х	1:30 PM	0	12		
TP-214		5/13/2020		1:30 PM	24	4	8	Massive Rock
	el 100	5/7/2020	х	3:00 PM	0	12		
TP-215		5/8/2020		3:00 PM	24	6	6	Massive Rock
116	el 99	5/12/2020	х	12:00 PM	0	12		
TP-216		5/13/2020		12:00 PM	24	4	8	Massive Rock
	el 102	5/12/2020	х	1:00 PM	0	12		
TP-217		5/13/2020		1:00 PM	24	10	2	Massive Rock
	el 97	5/12/2020	х	12:30 PM	0	12		
TP-218		5/13/2020		12:30 PM	24	11	1	Massive Rock

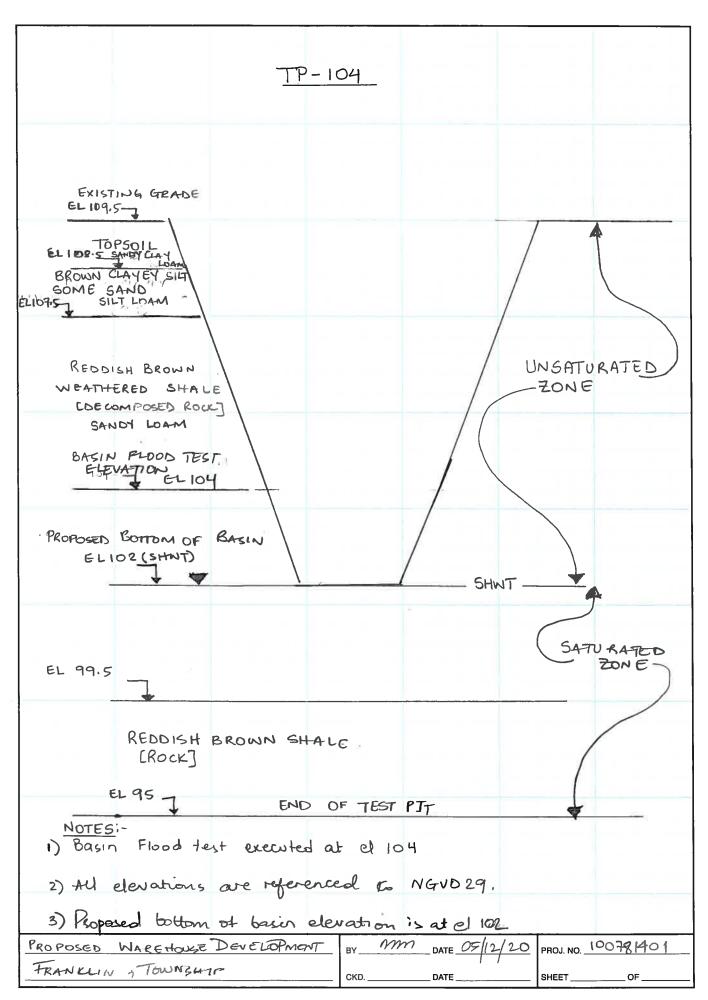
APPENDIX A

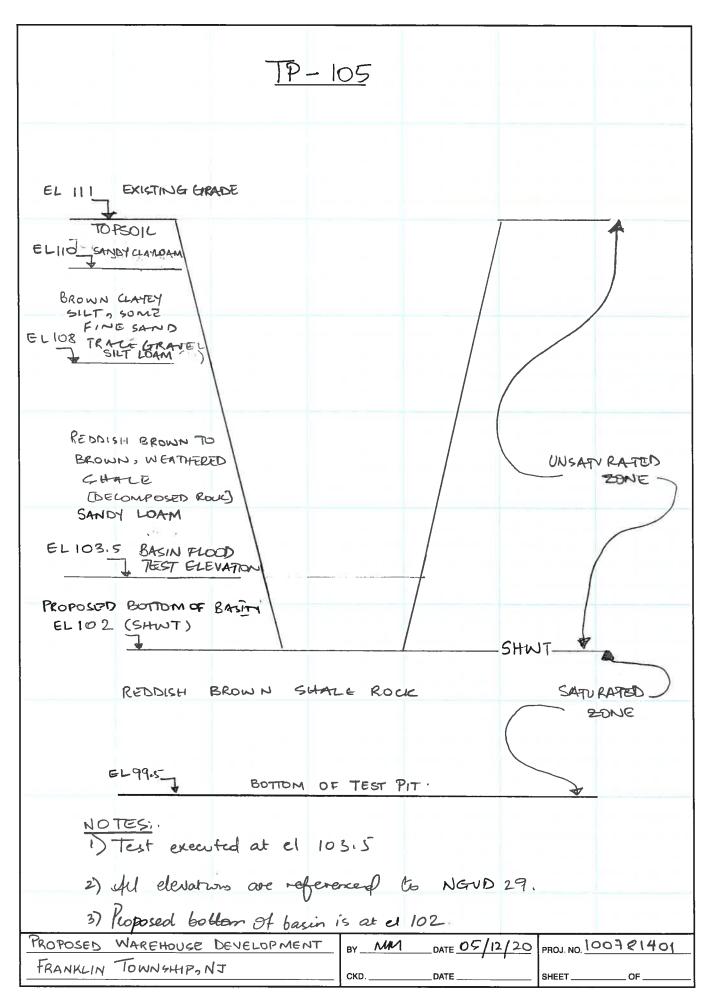
TEST PIT LOGS

TP-1	01_				
EXISTING GRADE EL 104] FL 103 — TOPSOIL SANDY CLAY WAY BROWN TO REDDISH BROWN SILTY SANDO SOME CLAY SANDY LOAM FLIOI (STIL) FL 100 PROPOSED BOTTOM OF BASE DARK BROWN SHALE.	N WEATHERED	UNSATURATED ZONE SATURATED BONE			
EL92 BOTTOM DE TES	-T P17 ·	V /			
NOTES: 1) Bosin Flood test was not conducted at This location. 2) All Elevations are referenced to NGUD29.					
3) Proposed sollow of bosin PROPOSED WAREHOUSE DEVELOPMENT FRANKLIN TOWNS HIP	is at el 100.	PROJ. NO. 10091 401 SHEET OF			



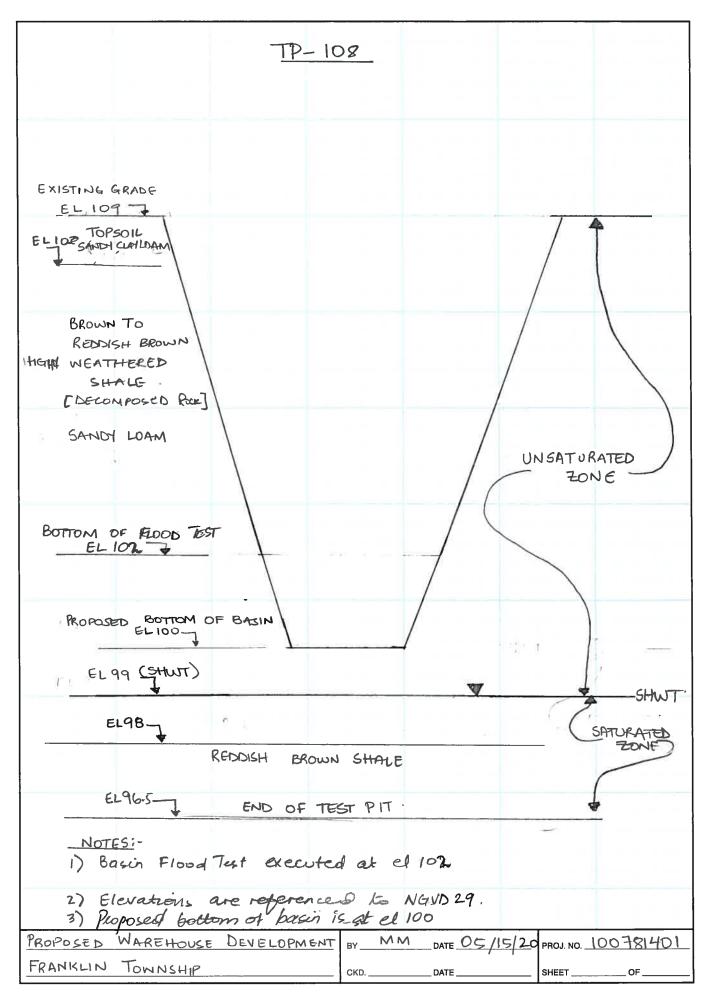
		
TP- IC	03	
BROWN SILTY SAND SOME CLAY, TRACE GRAVELS EL 104 SANDY LOAM		
REDDISH BROWN WEATHERED SHALE [DECOMPOSED ROCK] SANDY LOAM BOTTOM OF BALIN FLOOD TESTL PROPOSED BOTTOMOF SANN EL 100 J		UNSATURATE D ZONE
EL 98		
REDDISH BROWN CROCK) EL 96 BOTTOM OF		
NOTES:- 1) Basin Flood Test executed	at el 100.	
2) Elevations are reperences 3) Proposed tottom of basin is		
PROPOSED WAREHOUSE DEVELOPMENT FRANKLIN TONNSHIP	BY MM DATE 05/13/20	PROJ. NO. 100781401 SHEETOF

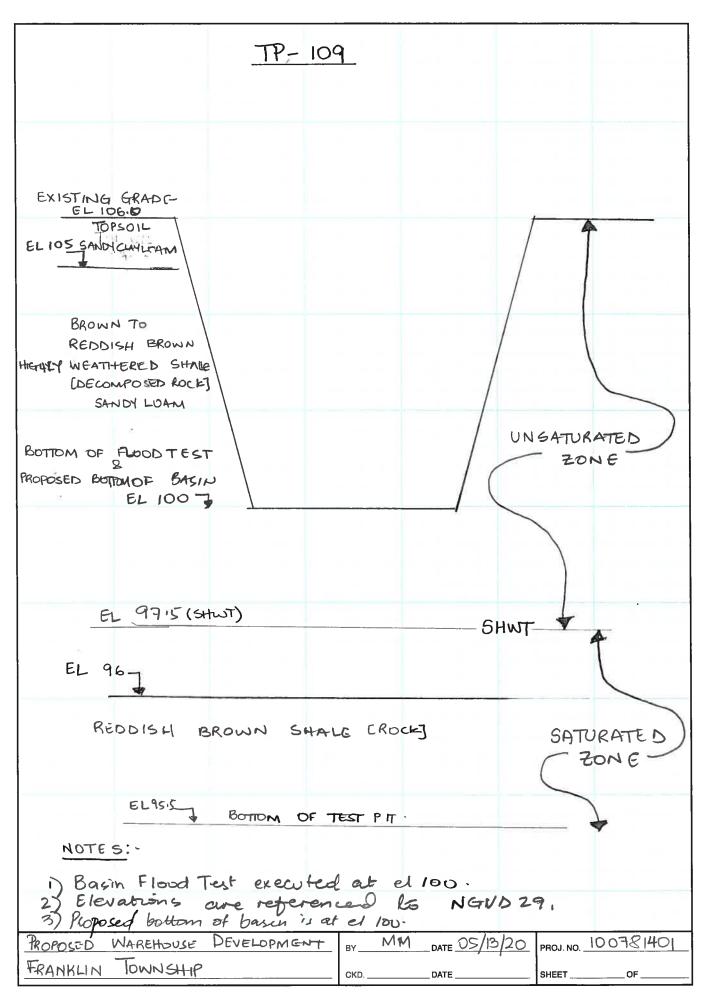


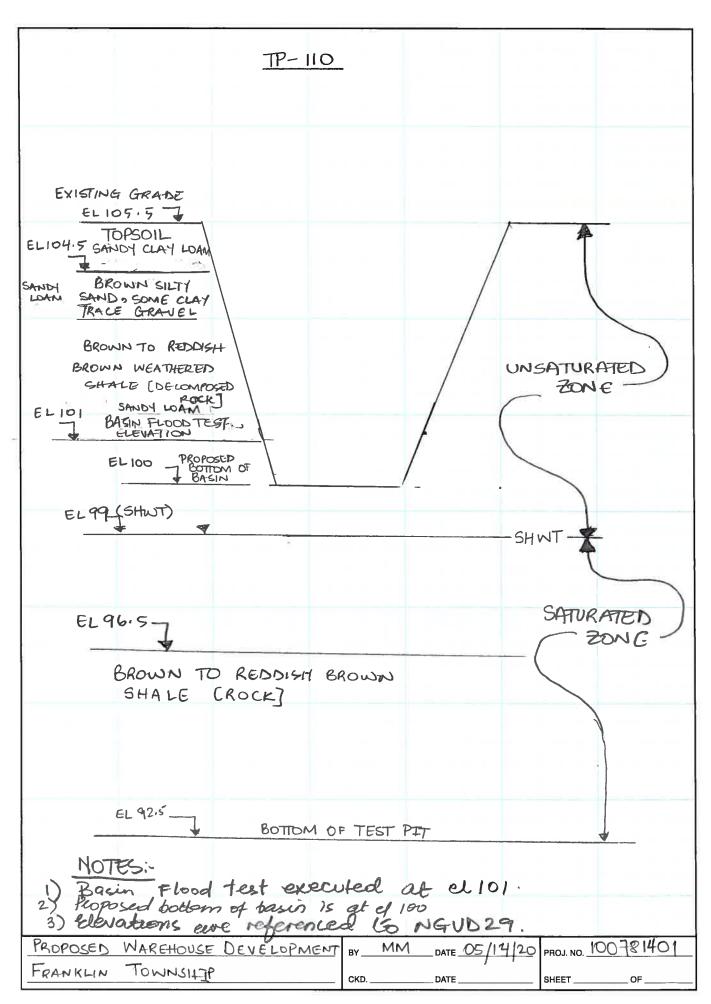


79 - 10	*	
TP-18	06	
EL 113 TEXISTING GRADE		
TOPSOIL EL 112 SANDY CLAY LOAM		A
——	/	
BROWN SILTY ISAND, SOME		/
CLAYS TRACE GRAVED		
	/	
BROWN TO REDDISH		
BROWN WEATHERED	1/	
SHALE	/ (uns	SATURATED _
		ZONE
	/	
e1104.5 BASIN		
FLOOD TEST ELEVATION		
EL 102 (REDD'ISH BROWN SHALE)	1	+ 1 - xi -
****		SHWT
EL 102 - PROPOSED BOTTOM OF BASIN		
EL 101.5 TEND OF TEST PIT		SATURATED ZONE
1) Basin Flood test executes	f at e1104.5	
2) Proposed bottom of basin i		
3) Elevations are referenced		
s) the various are 19		
	BY MM DATE 05/11/20	PROJ. NO. 100 73 1401
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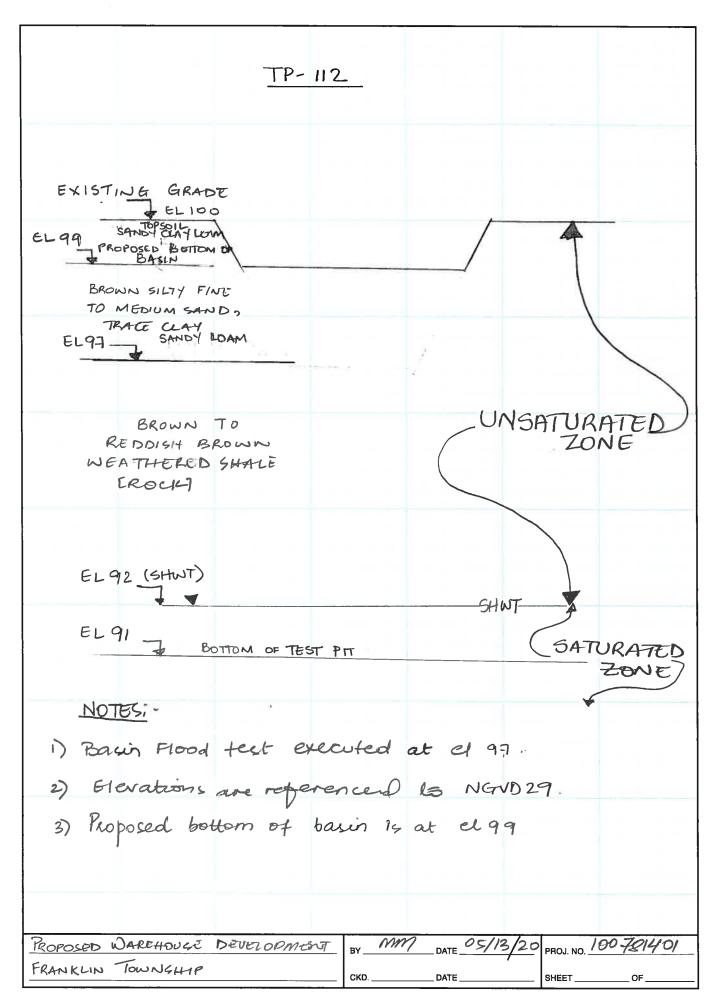
TP- 10	P	
EL III TOPSOIL EL IIO SANDY CLAY LOAN		
BROWN SILTY FINE SANDO SOME CLAYO		
TRACE GRAVEL EL 106.5 SANDY LOAM		INSATURATED ZONE
BROWN TO REDDISH BROWN WEATHERED SHALE EL 103.5		ZONE
REDDISH BROWN PROPOSED BOTTOM OF BASIN EL 102 BASIN FLOOD TEST ELEVATION		
EL 100 BOTTOM OF TEST PIT		
NOTES:		
i) Basin Flood Test exec 2) Proposed bottom of basin 3) All elevations are regen	is at el 102	29 .
Proposed Warehouse Development Franklin Journship.		PROJ. NO. 100781401





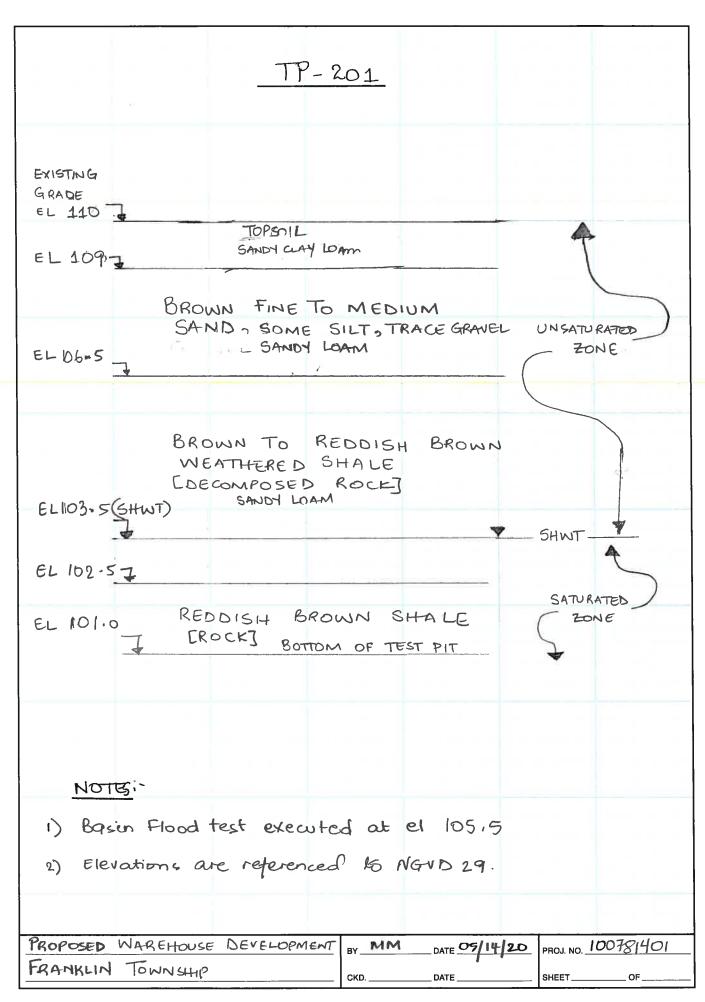


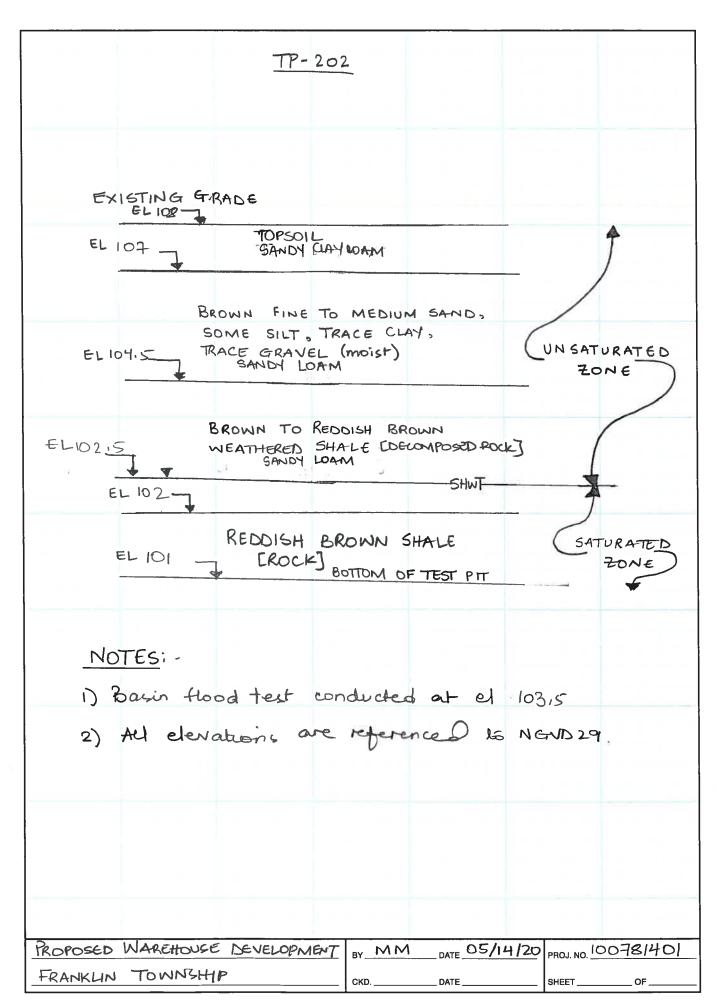
TP-1	11
EXISTING GRADE EL105	
TOPSOIL SANDY CLAYLOND	
BROWN FINE SILTY SAND TRAC ELIOZ.5 FINE GRAVEL SANDY LOAM	
BROWN TO REDDISH PROWN	
EL 100 PROPOSED BOTTOM OF BASIN	UNSATURATED
EL 98(shui)	SHWT
EL 95	SATURATED ZONE
REDDISH BROWN SHALE - [ROCK]	
EL92 BOTTOM OF TE	ST PIT
NOTES; i) Basin Flood Test executed	
2) Elevations are references 3) Proposed bottom of baser is at	el 100
FRANKLIN TOWNSHIP	BY DATE OF OF OF OF

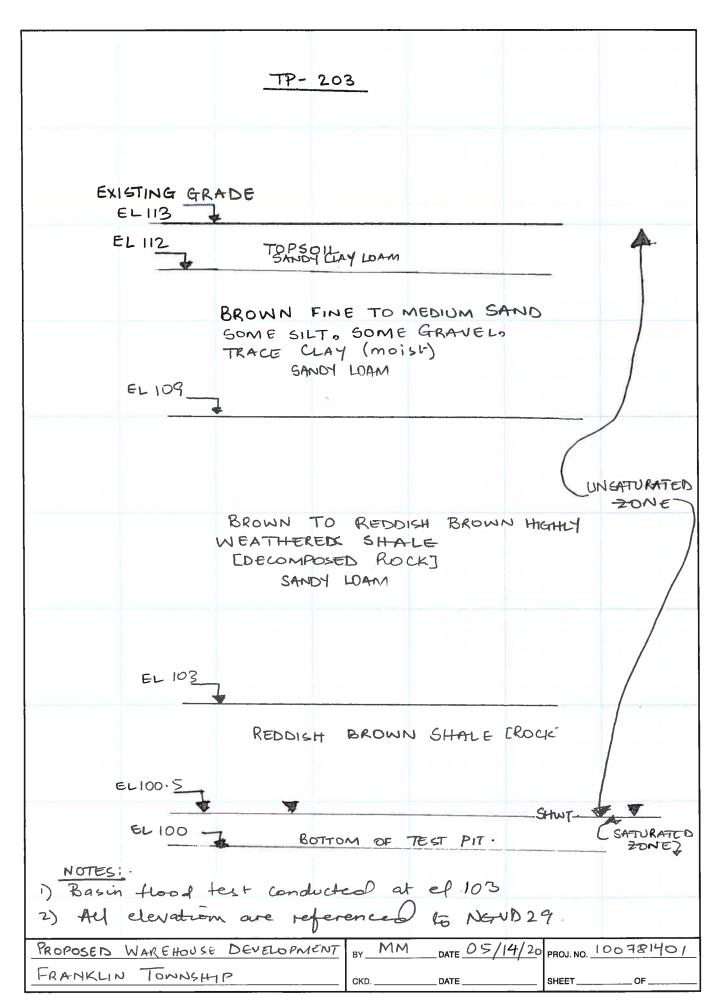


TP-1	13	
EXISTING GRADE EL 101		
BROWN SILTY FINE SAND? SOME CLAY SOME CLAY PROPOSED BOTTOM OF BASIN		
EL97.5 BASIN FLOOD TEG		UNSATURATED ZONE
EL 96.0 (SHWT)		SHWT
RENDISH BROWN SHALE [ROCK]		SATURATED ZONG
EL 92 BOTTOM OF	TEST PIT	
NOTES;- 1) Basin Flood Test executed	pat el 97.5	
2) Elevations ave reperenced 3) Peoposed bottom of basis	1 L NGUD 29.	
PROPOSED WAREHOUSE DEVELOPMENT FRANKLIN TOWNSHIP	T BY MM DATE 05/14	PROJ. NO. 100981401 SHEET OF

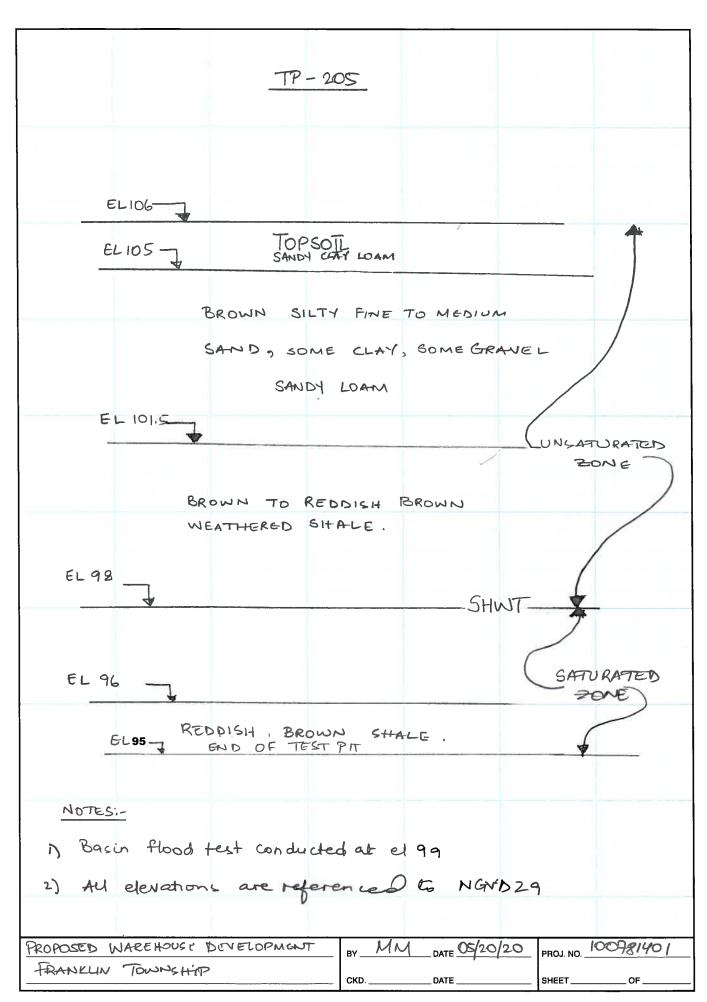
TP-114	<u> </u>	
EXISTING GRADE EL 98		
EL 97 SANDY CLAY LOAM		
BROWN SILTY FINGTO		
MEDIUM SAND, SOME CLAY SANDY LOAM		
EL 95.5 BARN FLOOD TEST ELEVATION	,	
REDDISH BROWN WEATHERED		UNSATURATED ZONE.
SHALE		
EL 92 (54NT)		
•	SHWT	4
EL 91 BOTTOM OF TEST P	п	SATURATED
NOTES: 1) Basin Flood Test executed 2) All elevations are my 3) Peoposed bottom of bearing	ferencel to NG	-VB 29
PROPOSED WAREHOUSE DEVELOPMENTS FRANKLINTOWNSHIP	′	1/20 PROJ. NO. 100791401
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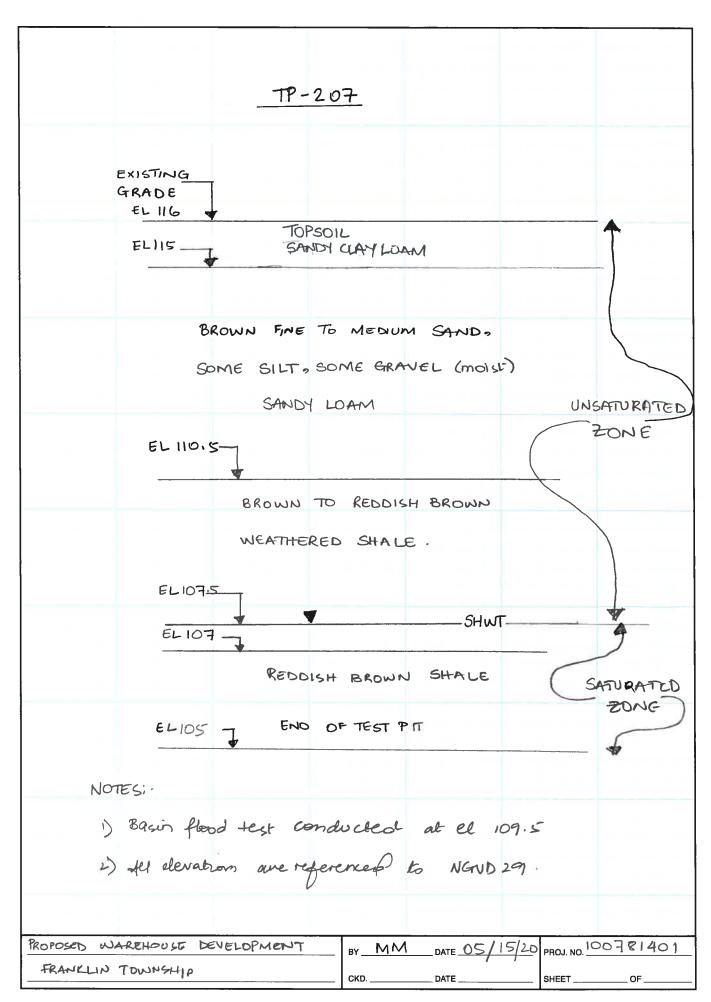


TP-204
EXISTING GRADE:
EL 103 BANDY CLAY LOAM
BROWN SILTY FINE TO MEDIUM
SANDO SOME CLAYOTRACE GRAVEL.
EL 101 (SANDY LOAM)
UNSATURATED
BROWN TO REDDISH BROWN
WEATHERED ROCK
EL 97 7
REDDISH BROWN SHALE
EL95.5 (SHWT) [ROCK]
EL 95 7 BOTTOM OF TEST PIT.
SATURATED SATURATED
zone?
✓
NOTESI
1) Basin Flood test conducted at el .96
2) All devations some reference of 15 NGVD 29.
PROPOSED WAREHOUSE DEVELOPMENT BY MM DATE 05/15/20 PROJ. NO. 100781401
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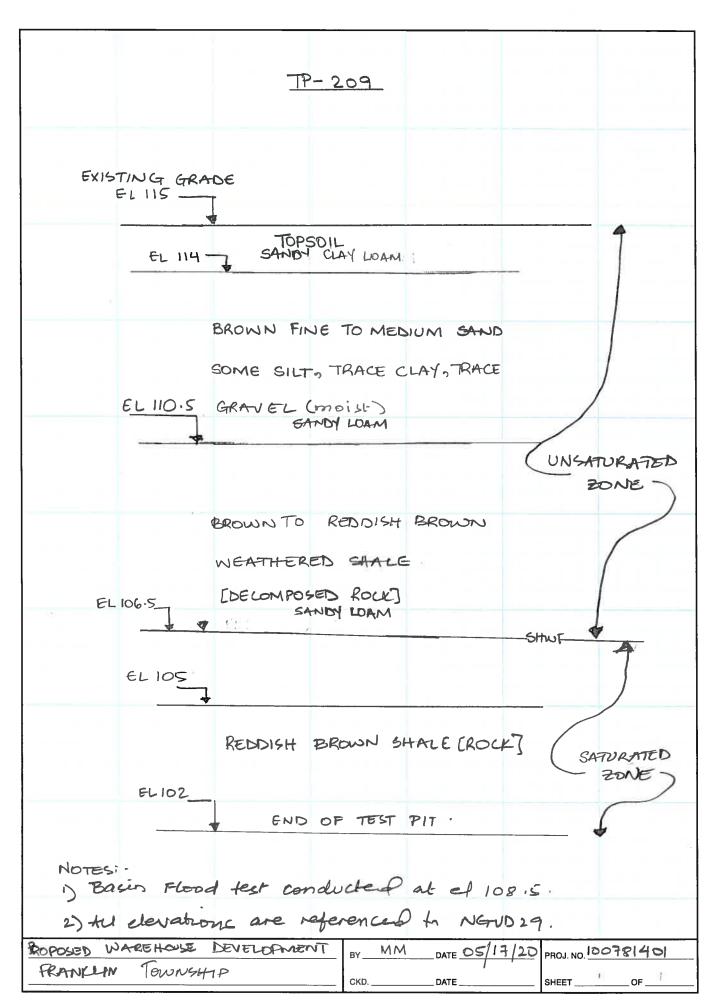
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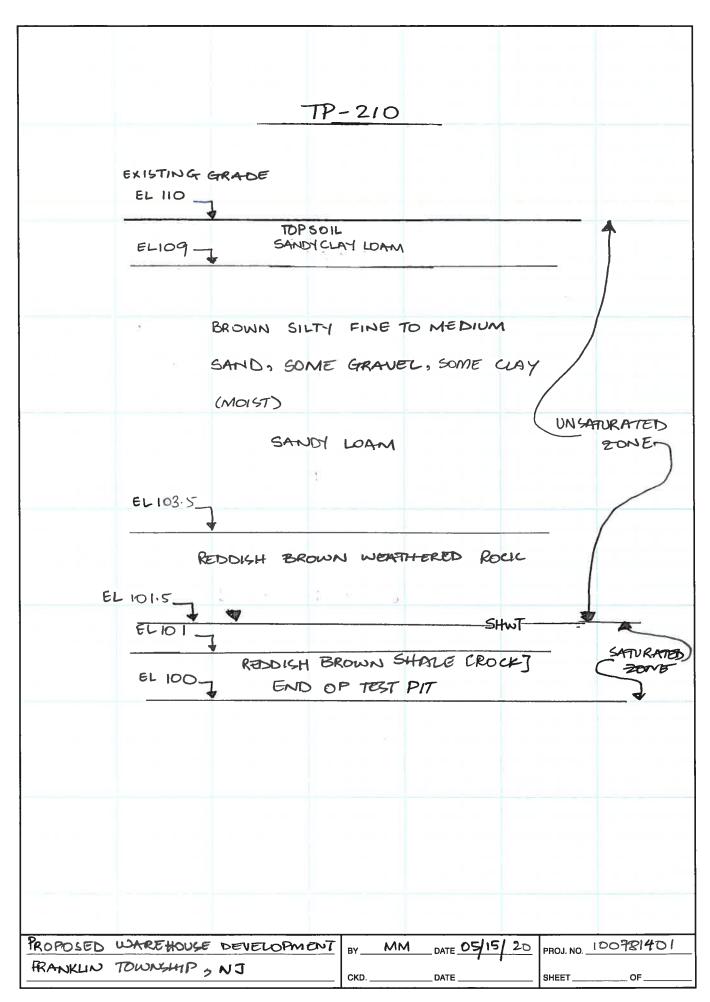
	TP-206
EXISTING GI	
EL 106_	SANDY CLAY LOAM
	BROWN TO REDDISH BROWN
	FINE TO MEDIUM SAND, SOME
EL 102	SILT, SOME GRAVEL, TRACE CLAY SANDY LOAM
	UNSATURATED ZONE
	REDDISH BROWN WEATHERED
	SHALE [DECOMPOSED ROCK]
	SANDI LOAM
EL 97.5	
EL 915.5	REDOISH BROWN SHALE
13:3	END OF TEST PIT .
No Tes:	
	ad test conducted at el 99
2) All elevan	tions are vaperence P to NGVD 29.
PROPOSED WAREHOUSE FRANKLIN TOWNSHIP	
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TP-208	
EXISTING GRADE EL 116]	
TOPSOIL	•
EL 115 _ SANDY CLAY, LOAM	
FINE REDDISH BROWN FINE TO GARSE SAND,	
SOME CLAYS TRACE GRAVEL (most)	
REDDISH BROWN DECOMPOSED SHALE.	UNSATURATED
SANDY LOAM	ZONE
ELIOS	
	/
EL 107.5	
	SHWT
REDDISH BROWN WEATHERED SHALE.	
RUSSIAH BROWN WEATHERED STATE.	
	SATURATED
	ZONE
EL 104_	
	_ /
REDDISH BROWN SHALE (
Eurzic	4
ENO OF ICSI 111	Y
NOTES: 1) Basin flood test conducted at el 109.5	
2) All devations are refrenced to NGVD 29	
PROPOSED WAREHOUSE BEVELOPMENT BY MM DATE 05/17/20	PROJ. NO. 100781401
BRANK DINN TOWNSHIP 2 N.T	SHEET OF





TP-211
EXISTING GRADE
TOPSOIL
EL III SANDY CLAY LOAM
}
BROWN FINE TO MEDIUM SAND
SOME SILT, SOME CLAY, SOME GRAVEL
CMOIST) SANDY LOAM
EL 107
UNSATURATED
REDDISH BROWN HIGHLY WEATHERED
SHALE [DECOMPOSED ROCK]
EL 103 _ SANDI LOAM
REDDISH BROWN SHALE [ROCK]
EL 10 1 _ END OF TEST PIT .
NOTES: .
1) Basin flood test conducted at el 103
2) All elevations are referenced to NEUD29.
PROPOSED WARTHOUSE DEVELOPMENT BY MM DATE 05/15/20 PROJ. NO. 100781401

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TP-2	212_	
EXISTING GRADE EL 112		
ELIII SANDLO	IL LIAN LOAM	
BROWN FINE TO SOME SILT, SOME CLAY (MOIST)		
SANDY LO	AM	
EL 107		UNSATURATED
BROWN TO RE WEATHERED SI	DOIGH BROWN	SONG
EL 102:5		
REDDISH BROW	WN SHALE	
FLIODIS T END OF	TEST PIF .	SARV RATED
NOTES:		
1) Basin flood best cond 2) All elevations are refus		
PROPOSED WAREHOUSE DEVELOPMENT	BY MM DATE 05/18/20	PROJ. NO. 100721451
FRANKLIN TOWNSHIP	CKD DATE	SHEET OF

TP-213
EXISTING GRADE EL 115 —
ELII4 TOPSOIL SANDY CLAY LOAM
BROWN FINE TO MEDIUM SAND, SOME SILT, SOME GRAVEL, TRACE CLAY (moist)
SANDY LOAM
EL 109,5
BROWN TO REDDISH BROWN WEATHERED SHALE
EL 106
ELIOS - REDDICH BROWN SHALE (ROUE) GND OF TEST PIT.
NOTES: 1) Basin flood test conducted at cl 107 2) Ay elevations referenced to NGVD29
PROPOSED WAREHOUSE DEVELOPMENT BY MM DATE 05/16/20 PROJ. NO. 100 78 140/
FRANKLIN TOWNSHIP CKD. DATE SHEET OF

	<u> </u>
TP-214	
EXISTING GRADE	
EL 109 SANDY CLAYLOAM	
BROWN FINE TO MEDIUM SAND	
SOME SILT, TRACE CLAY, TRACE GRAVEL ELIOGISTIS SANDY LOAM	
	TURATED ONE
EL 103 (SHWT) SHWT	7
REDNISH BROWN SHALE (ROCK) (SAF) ELIONS END OF TEST PIT.	NRATED ZONE
NOTES: 1) Basin flood fest conducted at el 104 2) All elevations are referenced to NGND 29.	
FRANKLIN TOWNSHIP, NJ CKD. DATE 05/17/20 PROJ. NO. 10079	340/ _0F

TP-215	
EXISTING GRADE EL 108	
TOPSOIL	
ELIOT SANDY, GLAY LOAM	
BROWN FINE TO MEDIUM SAN EL 105 SOME SILTS SOME CLAYS TRACE GRE SANDY LOAM	
REDDICH BROWN WEATHERED SHALE.	UNSATURATED ZONE
EL 99 (SHW7) EL 98 _ END OF TEST PIT.	SHWT SATURATED
NOTES i) Basin flood test conducted at el 100 2) the devations are repenenced to NGVD 29	
FRANKLIN TOWNSHIP	PROJ. NO. 100781401
CKD. DATE	SHEET OF

TP-	-216		
EXISTING GRADE			
EL 104 SAND	OIL Y CLAY LOAM		1
SOME SILT, S	O MEDIUM SAND	CLAY	
	LOAM		UNSATURATED ZONE
KEDDISH BRO	WEATHERED	SHALL	
EL 97 (SHWT) EL 96		SHWT-)
REDDISH BROW		(SATURATEDS FONE
		4	*
NOTES i) Bacin flood test cond 2) AU elevations reference			
PROPOSED WAREHOUSE DEVELOPMENT FRANKLING TOWNSHIP	BY MM DATE 05/2	-1/20 PROJ. NO.	00781401 of

TP-217	
EXISTING GRADE EL 106 TOPSOIL SANDY CLAY LOAM BROWN FINE TO MEDIUM SAND EL 103 _ SOME SILT, SOME GRAVEL, TRACECLAY SANDY LOAM	UNSATURATED ZONE
REDDISH BROWN WEATHERED SHALE EL 101 (SHWT) EL 100 REDDISH BROWN SHALE EL 99 END OF TEST PIT:	SATURATED ZONE
NOTES: 1) Basin flood fest conducted at el 102 2) All elevations are repenenced to NGVD2	-9
PROPOSED WAREHOUSE DEVELOPMENT BY MM DATE OS /18/20 FRANKLIN TOWNSHIP CKD. DATE	PROJ. NO OF

TP-218	
EL 103	
TOPSOIL SANDY CLAY LOAM	
BROWN FINE TO COARSE SAND SOME SILT, SOME GRAVEL, TRACE CLAY (moist)	
EL 98.5	(\tau \ 0 \tau \ \
	SATURATED
EL95:5 (SHWT) EL 95 —	*
REDDISH BROWN SHALE EL93.5— END OF TEST PIT.	SATURATED ZONE
Notes	
NOTES:- i) Bacin flood test conducted at el 97.	
2) Ay elevation are referenced to NGND29	
	2011
PROPOSED WAREHOUSE DEVELOPMENT BY MM DATE 05/19/20 PROJ. NO. 11 FRANKLIN TOWNSHIP CKD. DATE SHEET	00781401 0F

APPENDIX B SELECT TEST PIT PHOTOGRAPHS



Photo 1: TP-101 Profile pit



Photo 2: TP-101 Basin Flood Test excavation and water seepage

PN: 100781401



Photo 3: TP-102 Profile pit



Photo 4: TP-102 Basin Flood Test set up



Photo 5: TP-103 Profile pit



Photo 6: TP-103 Basin Flood Test set up



Photo 7: TP-104 Profile pit



Photo 8: TP-105 Profile pit



Photo 9: TP-106 Profile pit



Photo 10: TP-107 Profile pit



Photo 11: TP-108 Profile pit



Photo 12: TP-108 Basin Flood Test set up



Photo 13: TP-109 Profile pit



Photo 14: TP-110 Profile pit



Photo 15: TP-111 Profile pit



Photo 16: TP-112 Profile pit



Photo 17: TP-113 Profile pit



Photo 18: TP-114 Profile pit



Photo 19: TP-201 Profile pit



Photo 20: TP-201 Excavated material



Photo 21: TP-202 Profile pit



Photo 22: TP-202 Basin Flood Test set up



Photo 23: TP-203 Profile pit



Photo 24: TP-204 Profile pit



Photo 25: TP-205 Profile pit



Photo 26: TP-206 Profile pit



Photo 27: TP-207 Profile pit



Photo 28: TP-208 Profile pit

PN: 100781401



Photo 29: TP-209 Profile pit



Photo 30: TP-209 Excavated material



Photo 31: TP-210 Profile pit



Photo 32: TP-211 Profile pit



Photo 33: TP-212 Profile pit



Photo 34: TP-213 Profile pit



Photo 35: TP-214 Profile pit



Photo 36: TP-215 Profile pit



Photo 37: TP-216 Profile pit



Photo 38: TP-217 Profile pit



Photo 39: TP-218 Profile pit



Photo 40: TP-218 Excavated material