

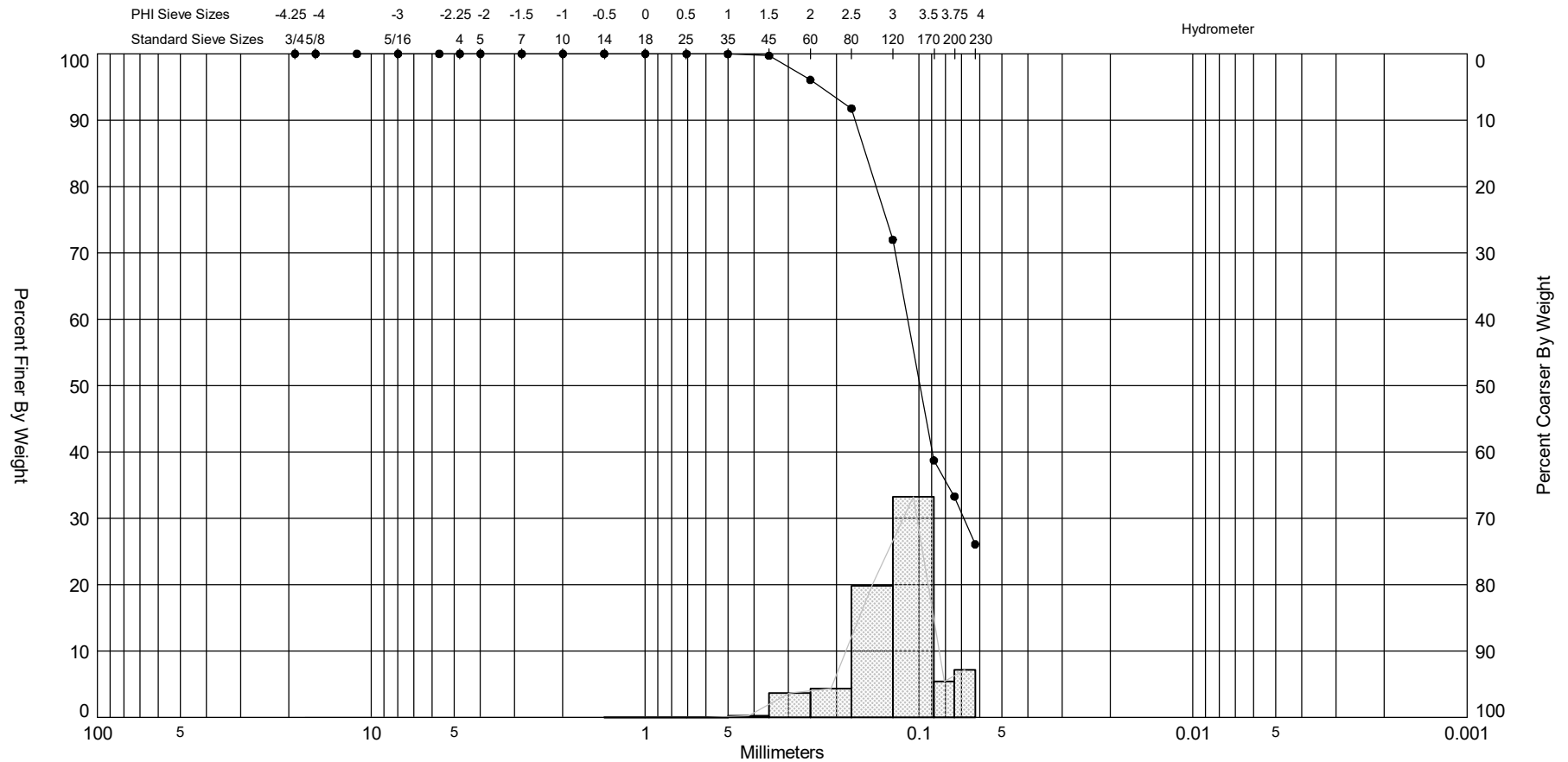
DRILLING LOG		DIVISION		INSTALLATION		SHEET 1 OF 1 SHEETS	
1. PROJECT McFaddin NWR Beach Ridge Restoration Jefferson County, Texas				9. SIZE AND TYPE OF BIT 3.0 In.			
2. BORING DESIGNATION JCVC-18-29				10. COORDINATE SYSTEM/DATUM Texas South Central		HORIZONTAL NAD 1983	
3. DRILLING AGENCY APTIM				11. MANUFACTURER'S DESIGNATION OF DRILL APTIM SEAS VC-700 Vibracore		VERTICAL NAVD88	
4. NAME OF DRILLER Francis Stankiewicz				12. TOTAL SAMPLES			
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED				13. TOTAL NUMBER CORE BOXES			
6. THICKNESS OF OVERBURDEN 0.0 Ft.				14. ELEVATION GROUND WATER			
7. DEPTH DRILLED INTO ROCK 0.0 Ft.				15. DATE BORING 05-22-18 07:57			
8. TOTAL DEPTH OF BORING 20.0 Ft.				16. ELEVATION TOP OF BORING -28.0 Ft.			
				17. TOTAL RECOVERY FOR BORING 16.5 Ft.			
				18. SIGNATURE AND TITLE OF INSPECTOR KM			
ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS	
-28.0	0.0						
-29.8	1.8		CLAY, trace rock, rocks up to 0.25", light olive brown (2.5Y-5/6), (CL).		T1	Sample #T1, Depth = 0.9' Ave. Field Vane (tsf): 0.90	
-30.5	2.5		CLAY, grayish brown (2.5Y-5/2), (CL).		T2	Sample #T2, Depth = 2.2' Ave. Field Vane (tsf): 0.52	
-34.3	6.3		CLAY, little silty sand, silty sand pockets up to (0.5" x 0.25"), 0.25" rock @ 3.5', light olive brown (2.5Y-5/3), (CL).		T3	Sample #T3, Depth = 4.4' Ave. Field Vane (tsf): 0.73	
-35.8	7.8		SAND, fine grained, quartz, some silt, light olive brown (2.5Y-5/3), (SM).		1	Sample #1, Depth = 7.0' Mean (mm): 0.12, Phi Sorting: 0.56 Fines (230): 30.99% (SM)	
-38.4	10.4		SAND, fine grained, quartz, some silt, greenish gray (10Y-5/1), (SM).		2	Sample #2, Depth = 9.1' Mean (mm): 0.13, Phi Sorting: 0.46 Fines (230): 20.00% (SM)	
-39.4	11.4		SAND, fine grained, quartz, trace silt, grayish brown (2.5Y-5/2), (SP-SM).		3	Sample #3, Depth = 10.9' Mean (mm): 0.22, Phi Sorting: 0.53 Fines (230): 4.41% (SP-SM)	
-44.5	16.5		SAND, fine grained, quartz, some clay, trace organics, trace shell hash, (0.75" x 0.5") rock @ 11.9', 0.5" shell fragments @ 14.6' and 15.2', 0.75" shell fragment 15.3', very dark grayish brown (2.5Y-3/2), (SC).		4	Sample #4, Depth = 14.0' Mean (mm): 0.11, Phi Sorting: 0.36 Fines (230): 26.92% (SC)	
-48.0	20.0		No Recovery.				

MCFADDIN 2018 VC.GPJ 8/3/18

MCFADDIN_COMPOSITE_20181008.GPJ 11/19/18

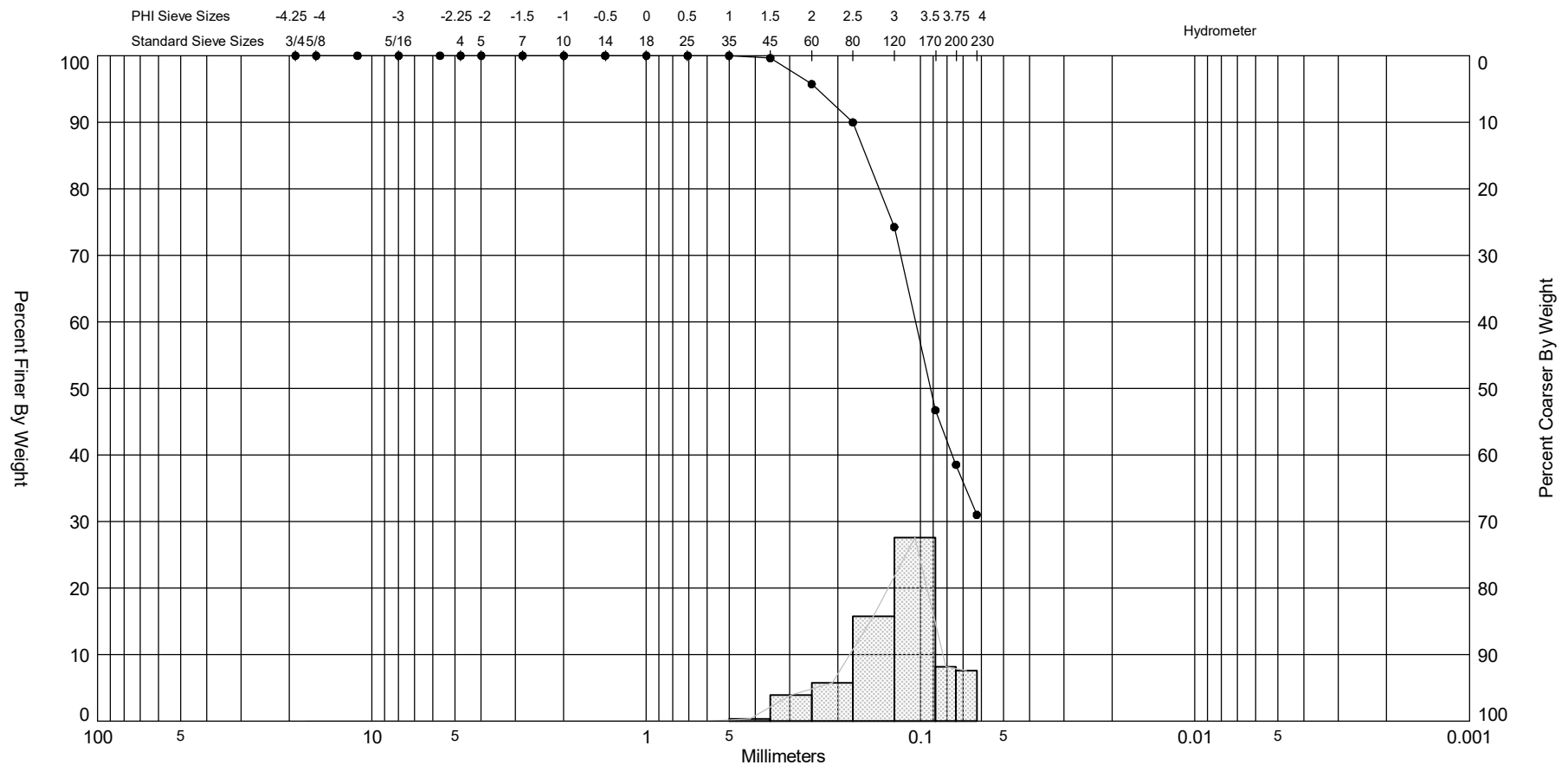
Granularmetric Report Depths and elevations based on measured values				 APTIM 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391-8102			
Project Name: McFaddin NWR Beach Ridge Restoration							
Sample Name: JCVC-18-29 COMP							
Analysis Date: 11-19-18							
Analyzed By: KM							
Easting (ft): 3,480,280		Northing (ft): 13,786,163		Coordinate System: Texas South Central		Elevation (ft):	
USCS: SC		Munsell:		Comments: COMPOSITE			
Dry Weight (g): 100.00	Wash Weight (g): 100.00	Pan Retained (g): 26.06	Sieve Loss (%): 0.03	Fines (%): #200 - 33.29 #230 - 26.09	Organics (%):	Carbonates (%):	Shell Hash (%):
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00	
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00	
3.5	-2.50	5.66	0.00	0.00	0.00	0.00	
4	-2.25	4.76	0.00	0.00	0.00	0.00	
5	-2.00	4.00	0.00	0.00	0.00	0.00	
7	-1.50	2.83	0.00	0.00	0.00	0.00	
10	-1.00	2.00	0.00	0.00	0.00	0.00	
14	-0.50	1.41	0.00	0.00	0.00	0.00	
18	0.00	1.00	0.01	0.01	0.01	0.01	
25	0.50	0.71	0.01	0.01	0.02	0.02	
35	1.00	0.50	0.02	0.02	0.04	0.04	
45	1.50	0.35	0.25	0.25	0.29	0.29	
60	2.00	0.25	3.64	3.64	3.93	3.93	
80	2.50	0.18	4.30	4.30	8.23	8.23	
120	3.00	0.13	19.81	19.81	28.04	28.04	
170	3.50	0.09	33.24	33.24	61.28	61.28	
200	3.75	0.07	5.43	5.43	66.71	66.71	
230	4.00	0.06	7.20	7.20	73.91	73.91	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
			3.33	2.92	2.70	2.12	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	3.06	0.12	0.52	-0.83	4.1		

MCFADDIN_COMPOSITE_20181008.GPJ 11/19/18



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

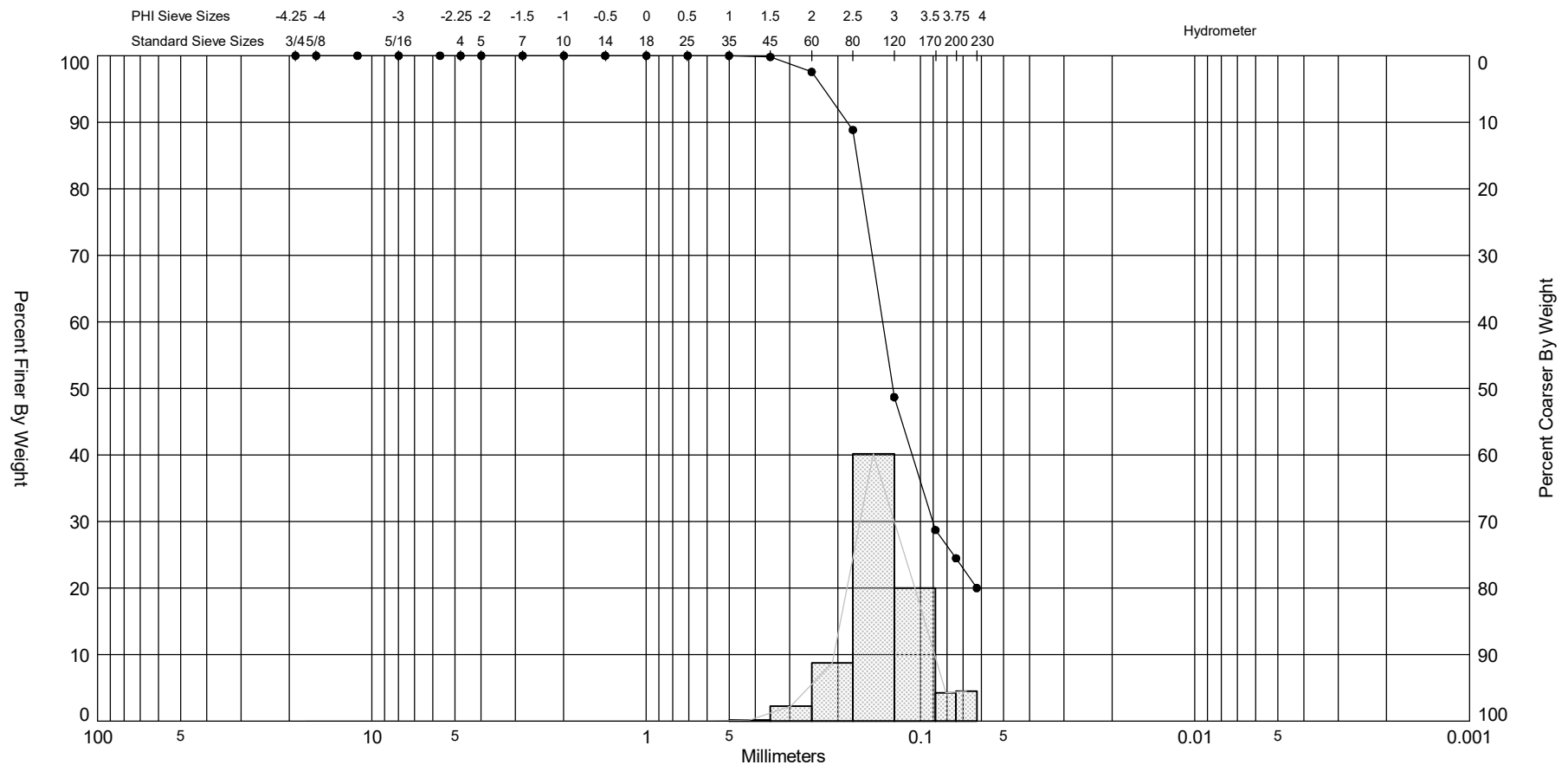
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
JCVC-18-29 COMP	—●—		SC	#200 - 33.29 #230 - 26.09			3.33	3.06	-0.83	4.1	0.52	Project Name:	McFaddin NWR Beach Ridge Restoration
Comments: COMPOSITE												Analysis Date:	11-19-18
Depths and elevations based on measured values												Analyzed By:	KM
							APTIM 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391-8102					Easting (X, ft):	3,480,280
												Northing (Y, ft):	13,786,163
												Horizontal Datum:	NAD 1983
												Vertical Datum:	NAVD 88



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

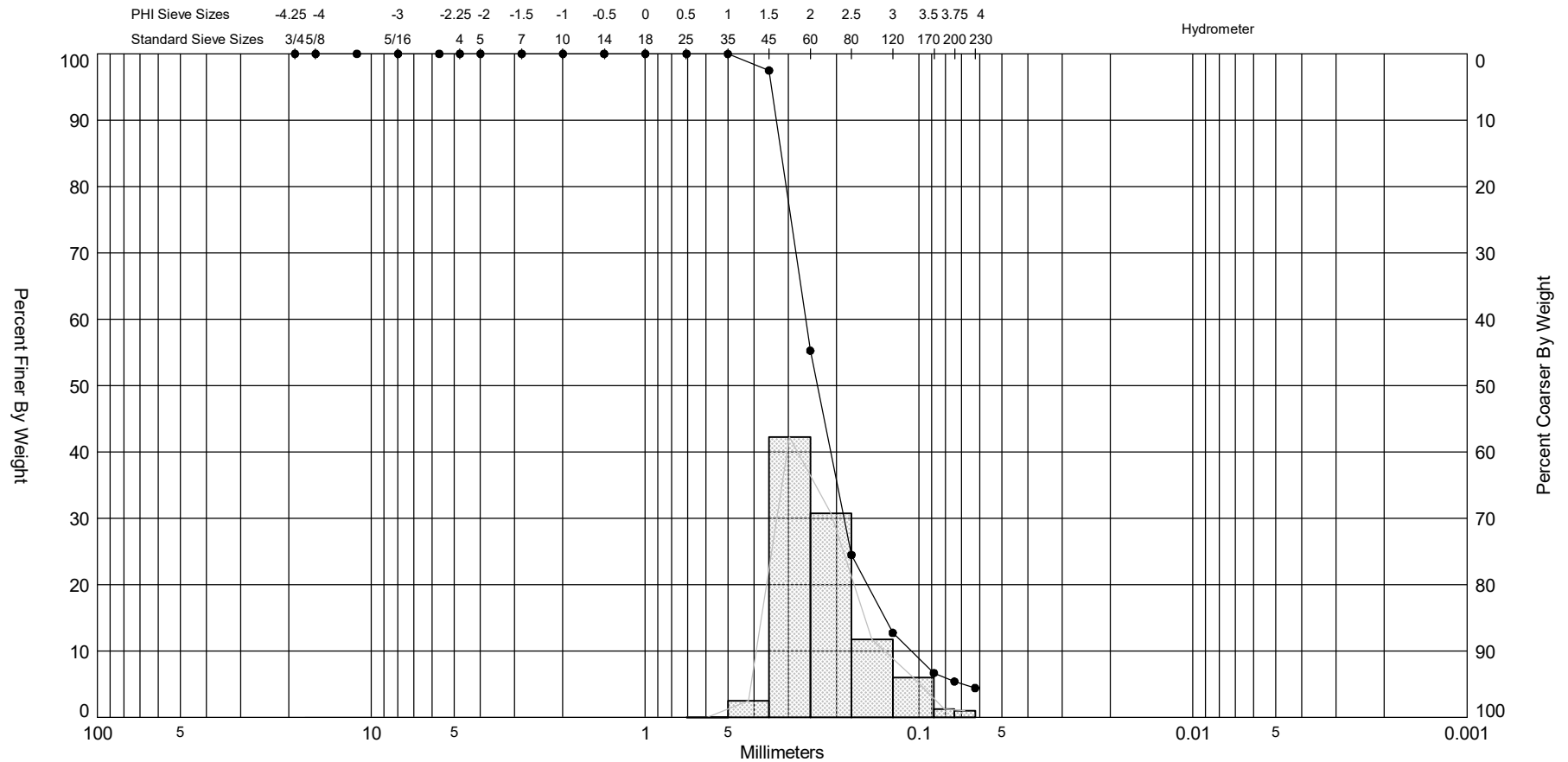
Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
JCVC-18-29 #1	—●—	-35.0	SM	#200 - 38.54 #230 - 30.99			3.44	3.07	-0.76	3.28	0.56	Project Name:	McFaddin NWR Beach Ridge Restoration
Comments:												Analysis Date:	06-22-18
Depths and elevations based on measured values												Analyzed By:	SMT
							APTIM 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391-8102					Easting (X, ft):	3,480,280
												Northing (Y, ft):	13,786,163
												Horizontal Datum:	NAD 1983
												Vertical Datum:	NAVD88

MCFADDIN_2018_VC.GPJ 8/14/18



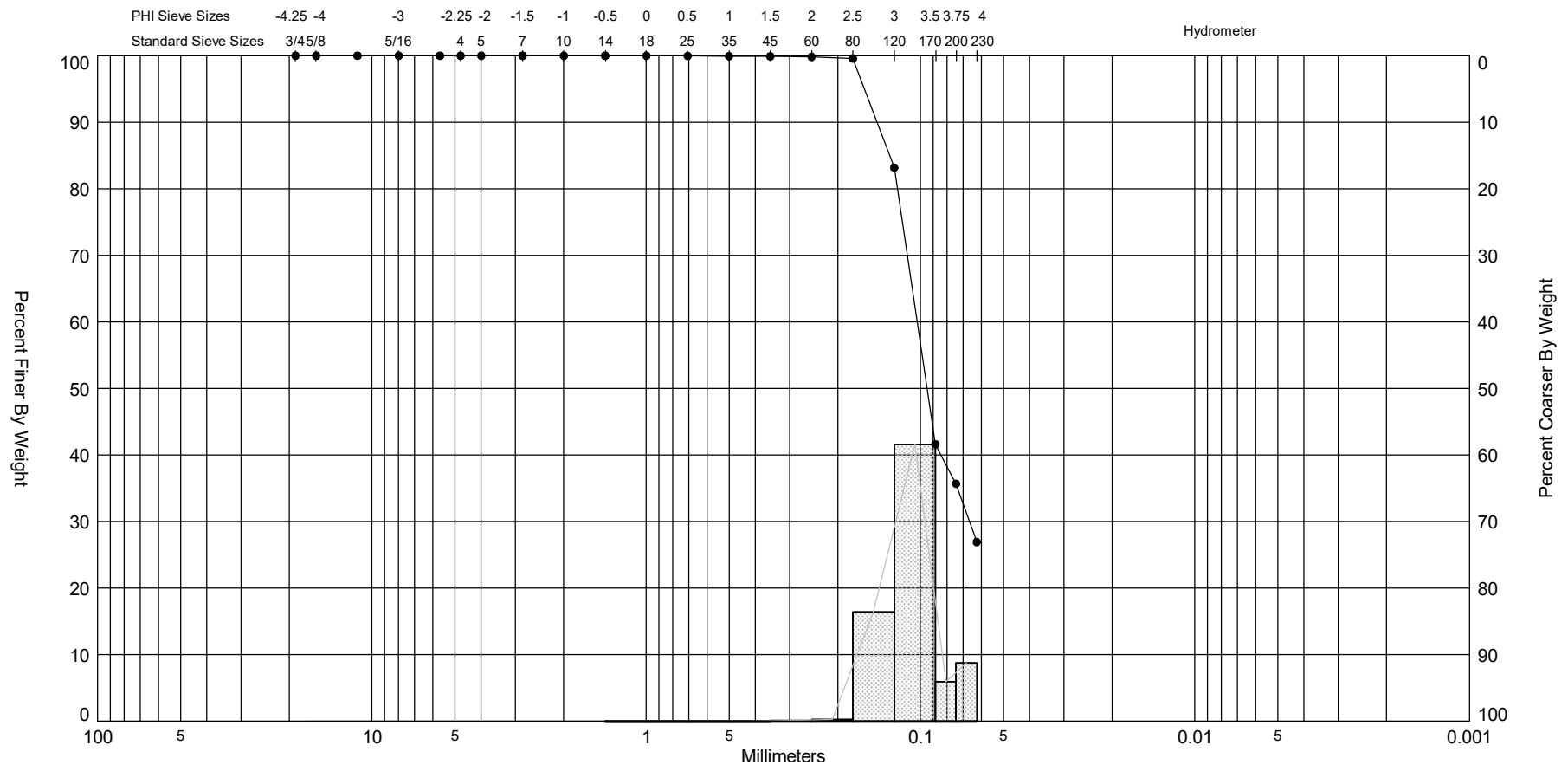
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
JCVC-18-29 #2	—●—	-37.1	SM	#200 - 24.46 #230 - 20.00			2.98	2.9	-0.01	3.43	0.46	Project Name:	McFaddin NWR Beach Ridge Restoration
Comments:												Analysis Date:	06-22-18
Depths and elevations based on measured values												Analyzed By:	SP
						APTIM 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391-8102						Easting (X, ft):	3,480,280
												Northing (Y, ft):	13,786,163
												Horizontal Datum:	NAD 1983
												Vertical Datum:	NAVD88



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
JCVC-18-29 #3	—●—	-38.9	SP-SM	#200 - 5.40 #230 - 4.41			2.09	2.16	1.03	3.74	0.53	Project Name:	McFaddin NWR Beach Ridge Restoration
Comments:												Analysis Date:	06-22-18
Depths and elevations based on measured values												Analyzed By:	SP
							APTIM 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391-8102					Easting (X, ft):	3,480,280
												Northing (Y, ft):	13,786,163
												Horizontal Datum:	NAD 1983
												Vertical Datum:	NAVD88



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
JCVC-18-29 #4	—●—	-42.0	SC	#200 - 35.68 #230 - 26.92			3.4	3.24	-0.42	6.59	0.36	Project Name:	McFaddin NWR Beach Ridge Restoration
Comments:												Analysis Date:	06-22-18
Depths and elevations based on measured values												Analyzed By:	SP
												Easting (X, ft):	3,480,280
												Northing (Y, ft):	13,786,163
												Horizontal Datum:	NAD 1983
												Vertical Datum:	NAVD88

Granularmetric Report Depths and elevations based on measured values				 APTIM 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391-8102			
Project Name: McFaddin NWR Beach Ridge Restoration							
Sample Name: JCVC-18-29 #1							
Analysis Date: 06-22-18							
Analyzed By: SMT							
Easting (ft): 3,480,280		Northing (ft): 13,786,163		Coordinate System: Texas South Central		Elevation (ft): -35.0 NAVD88	
USCS: SM		Munsell: Wet - 2.5Y-5/3 Dry - 2.5Y-6/4 Washed - 10YR-6/2		Comments:			
Dry Weight (g): 98.43	Wash Weight (g): 72.16	Pan Retained (g): 4.18	Sieve Loss (%): 0.06	Fines (%): #200 - 38.54 #230 - 30.99	Organics (%):	Carbonates (%):	Shell Hash (%):
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00	
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00	
3.5	-2.50	5.66	0.00	0.00	0.00	0.00	
4	-2.25	4.76	0.00	0.00	0.00	0.00	
5	-2.00	4.00	0.00	0.00	0.00	0.00	
7	-1.50	2.83	0.00	0.00	0.00	0.00	
10	-1.00	2.00	0.00	0.00	0.00	0.00	
14	-0.50	1.41	0.00	0.00	0.00	0.00	
18	0.00	1.00	0.00	0.00	0.00	0.00	
25	0.50	0.71	0.00	0.00	0.00	0.00	
35	1.00	0.50	0.00	0.00	0.00	0.00	
45	1.50	0.35	0.35	0.36	0.35	0.36	
60	2.00	0.25	3.85	3.91	4.20	4.27	
80	2.50	0.18	5.66	5.75	9.86	10.02	
120	3.00	0.13	15.47	15.72	25.33	25.74	
170	3.50	0.09	27.12	27.55	52.45	53.29	
200	3.75	0.07	8.04	8.17	60.49	61.46	
230	4.00	0.06	7.43	7.55	67.92	69.01	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
			3.44	2.98	2.69	2.06	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	3.07	0.12	0.56	-0.76	3.28		

Granularmetric Report Depths and elevations based on measured values				 APTIM 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391-8102			
Project Name: McFaddin NWR Beach Ridge Restoration							
Sample Name: JCVC-18-29 #2							
Analysis Date: 06-22-18							
Analyzed By: SP							
Easting (ft): 3,480,280		Northing (ft): 13,786,163		Coordinate System: Texas South Central		Elevation (ft): -37.1 NAVD88	
USCS: SM		Munsell: Wet - 10Y-5/1 Dry - 2.5Y-6/2 Washed - 10YR-6/2		Comments:			
Dry Weight (g): 93.54	Wash Weight (g): 77.22	Pan Retained (g): 2.33	Sieve Loss (%): 0.05	Fines (%): #200 - 24.46 #230 - 20.00	Organics (%):	Carbonates (%):	Shell Hash (%):
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00	
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00	
3.5	-2.50	5.66	0.00	0.00	0.00	0.00	
4	-2.25	4.76	0.00	0.00	0.00	0.00	
5	-2.00	4.00	0.00	0.00	0.00	0.00	
7	-1.50	2.83	0.00	0.00	0.00	0.00	
10	-1.00	2.00	0.00	0.00	0.00	0.00	
14	-0.50	1.41	0.00	0.00	0.00	0.00	
18	0.00	1.00	0.00	0.00	0.00	0.00	
25	0.50	0.71	0.00	0.00	0.00	0.00	
35	1.00	0.50	0.00	0.00	0.00	0.00	
45	1.50	0.35	0.17	0.18	0.17	0.18	
60	2.00	0.25	2.10	2.25	2.27	2.43	
80	2.50	0.18	8.16	8.72	10.43	11.15	
120	3.00	0.13	37.57	40.16	48.00	51.31	
170	3.50	0.09	18.69	19.98	66.69	71.29	
200	3.75	0.07	3.98	4.25	70.67	75.54	
230	4.00	0.06	4.17	4.46	74.84	80.00	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
		3.72	2.98	2.67	2.56	2.15	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	2.9	0.13	0.46	-0.01	3.43		

Granularmetric Report Depths and elevations based on measured values				 APTIM 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391-8102			
Project Name: McFaddin NWR Beach Ridge Restoration							
Sample Name: JCVC-18-29 #3							
Analysis Date: 06-22-18							
Analyzed By: SP							
Easting (ft): 3,480,280		Northing (ft): 13,786,163		Coordinate System: Texas South Central		Elevation (ft): -38.9 NAVD88	
USCS: SP-SM		Munsell: Wet - 2.5Y-5/2 Dry - 2.5Y-6/2 Washed - 10YR-6/1		Comments:			
Dry Weight (g): 94.32	Wash Weight (g): 90.41	Pan Retained (g): 0.24	Sieve Loss (%): 0.01	Fines (%): #200 - 5.40 #230 - 4.41	Organics (%):	Carbonates (%):	Shell Hash (%):
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00	
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00	
3.5	-2.50	5.66	0.00	0.00	0.00	0.00	
4	-2.25	4.76	0.00	0.00	0.00	0.00	
5	-2.00	4.00	0.00	0.00	0.00	0.00	
7	-1.50	2.83	0.00	0.00	0.00	0.00	
10	-1.00	2.00	0.00	0.00	0.00	0.00	
14	-0.50	1.41	0.00	0.00	0.00	0.00	
18	0.00	1.00	0.00	0.00	0.00	0.00	
25	0.50	0.71	0.00	0.00	0.00	0.00	
35	1.00	0.50	0.02	0.02	0.02	0.02	
45	1.50	0.35	2.35	2.49	2.37	2.51	
60	2.00	0.25	39.82	42.22	42.19	44.73	
80	2.50	0.18	29.04	30.79	71.23	75.52	
120	3.00	0.13	11.09	11.76	82.32	87.28	
170	3.50	0.09	5.70	6.04	88.02	93.32	
200	3.75	0.07	1.21	1.28	89.23	94.60	
230	4.00	0.06	0.93	0.99	90.16	95.59	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
3.85	2.86	2.49	2.09	1.77	1.66	1.53	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	2.16	0.22	0.53	1.03	3.74		

Granularmetric Report Depths and elevations based on measured values				 APTIM 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391-8102			
Project Name: McFaddin NWR Beach Ridge Restoration							
Sample Name: JCVC-18-29 #4							
Analysis Date: 06-22-18							
Analyzed By: SP							
Easting (ft): 3,480,280		Northing (ft): 13,786,163		Coordinate System: Texas South Central		Elevation (ft): -42.0 NAVD88	
USCS: SC		Munsell: Wet - 2.5Y-3/2 Dry - 2.5Y-5/2 Washed - 10YR-6/2		Comments:			
Dry Weight (g): 96.60	Wash Weight (g): 77.11	Pan Retained (g): 6.48	Sieve Loss (%): 0.03	Fines (%): #200 - 35.68 #230 - 26.92	Organics (%):	Carbonates (%):	Shell Hash (%):
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00	
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00	
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00	
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00	
3.5	-2.50	5.66	0.00	0.00	0.00	0.00	
4	-2.25	4.76	0.00	0.00	0.00	0.00	
5	-2.00	4.00	0.00	0.00	0.00	0.00	
7	-1.50	2.83	0.00	0.00	0.00	0.00	
10	-1.00	2.00	0.00	0.00	0.00	0.00	
14	-0.50	1.41	0.00	0.00	0.00	0.00	
18	0.00	1.00	0.01	0.01	0.01	0.01	
25	0.50	0.71	0.02	0.02	0.03	0.03	
35	1.00	0.50	0.03	0.03	0.06	0.06	
45	1.50	0.35	0.03	0.03	0.09	0.09	
60	2.00	0.25	0.07	0.07	0.16	0.16	
80	2.50	0.18	0.24	0.25	0.40	0.41	
120	3.00	0.13	15.84	16.40	16.24	16.81	
170	3.50	0.09	40.17	41.58	56.41	58.39	
200	3.75	0.07	5.73	5.93	62.14	64.32	
230	4.00	0.06	8.46	8.76	70.60	73.08	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
			3.40	3.10	2.98	2.64	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	3.24	0.11	0.36	-0.42	6.59		



MCFADDIN NWR BEACH
RIDGE RESTORATION
PHASE II
JCVC-18-29
0.0' - 2.0'



MCFADDIN NWR BEACH
RIDGE RESTORATION
PHASE II
JCVC-18-29
2.0' - 4.0'



MCFADDIN NWR BEACH
RIDGE RESTORATION
PHASE II
JCVC-18-29
4.0' - 6.0'



MCFADDIN NWR BEACH
RIDGE RESTORATION
PHASE II
JCVC-18-29
6.0' - 8.0'





MCFADDIN NWR BEACH
RIDGE RESTORATION
PHASE II
JCVC-18-29
8.0'-10.0'



MCFADDIN NWR BEACH
RIDGE RESTORATION
PHASE II
JCVC-18-29
10.0'-12.0'



MCFADDIN NWR BEACH
RIDGE RESTORATION
PHASE II
JCVC-18-29
12.0'-14.0'



MCFADDIN NWR BEACH
RIDGE RESTORATION
PHASE II
JCVC-18-29
14.0'-16.0'





MCFADDIN NWR BEACH
RIDGE RESTORATION
PHASE II
JCVC-18-29
16.0'-16.5'

