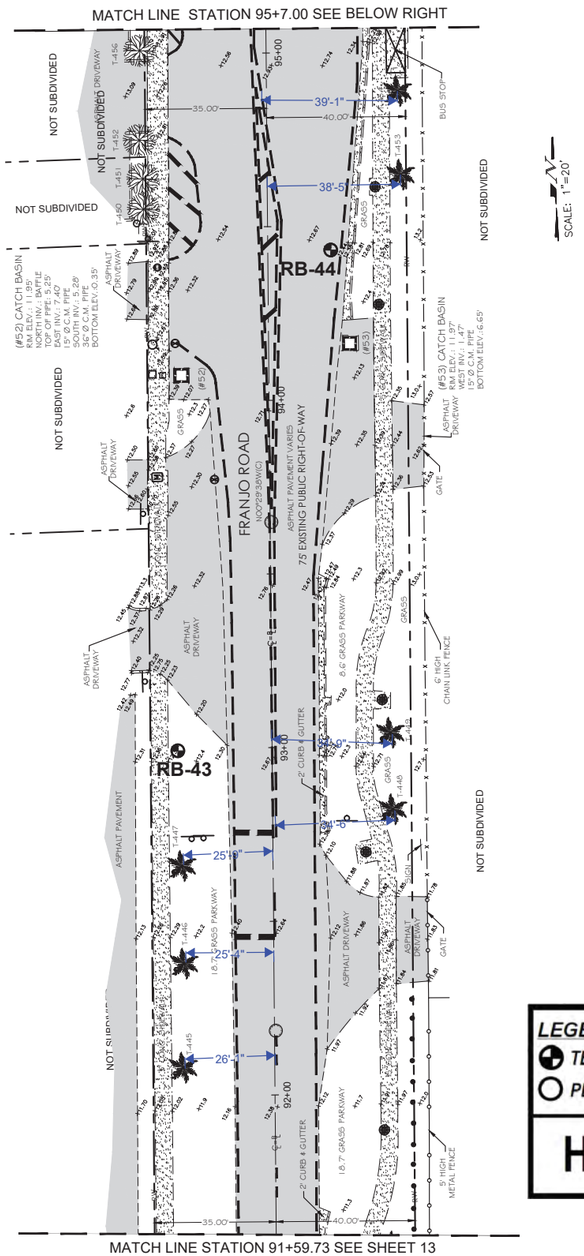
MAP OF TOPOGRAPHIC SURVEY

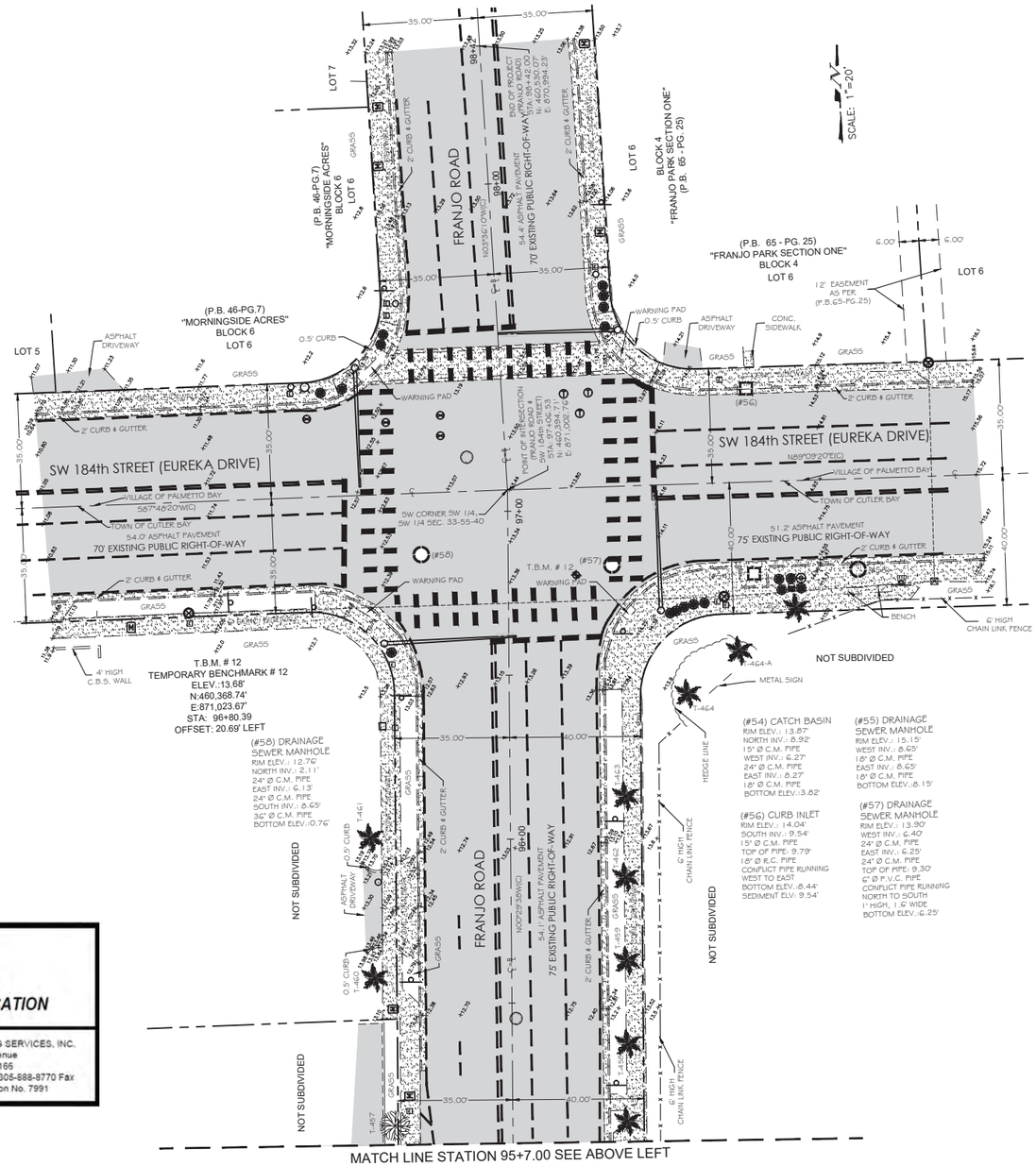
FRANJO ROAD BETWEEN SW 184 STREET AND OLD CUTLER ROAD

PROJECT NO. | SHEET 14 OF 15

LEGEND AND ABBREVIATIONS:

ELEV = ELEVATION
(T.B.M.) = TEMPORARY BENCHMARK
(CONC.) = CONCRETE
(PG.) = PAGE
(P.B.)= PLAT BOOK
(M) = MEASURED
(P) = By PLAT
F.F.Fd = FOUND
CND = CONCRETE NAIL & DISK
PKF = PK NAIL FOUND
CNF = CONCRETE NAIL & DISK FOUND
CNC = CONCRETE NAIL CUT
DHF = DRILL HOLE FOUND
NF = NAIL FOUND
PKDF = PK NAIL & DISK FOUND
R/W = RIGHT OF WAY
RBAC = ROCK BASE ASPHALT COMPOUND
℄ = BASE LINE
℄ = CENTER LINE
R = RADIUS
L = LENGTH OF CURVE
VG = VALLEY GUTTER
E/P = EDGE OF PAVEMENT
T/B = TOP OF BANK
E/W = EDGE OF WATER
PCP = PERMANENT CONTROL POINT
RLS = REGISTERED LAND SURVEYOR
PLS = PROFESSIONAL LAND SURVEYOR
= STREET SIGN
= ALUM. FLASHING SCHOOL LIGHT
= MAILBOX
= DECORATIVE LIGHT POLE
= METAL LIGHT POLE
= METAL TRAFFIC LIGHT POLE
= METAL POWER POLE
= CONCRETE LIGHT POLE
= CONCRETE POWER POLE
= WOOD LIGHT POLE
= WOOD POWER POLE
= WOOD TELEPHONE POLE
= FIBERGLASS LIGHT POLE
= WATER MANHOLE
= SANITARY MANHOLE
= SANITARY SEWER VALVE (FM)
= CABLE TV PEDESTRIAN
= TV CABLE RISER BOX
= TV CONTROL BOX
= CABLE BOX
= TELEPHONE HANDHOLE
= TELEPHONE MANHOLE
= TELEPHONE UTILITY BOX
= TELEPHONE RISER BOX
= TELEPHONE RISER CONTROL BOX
= TELEPHONE CONTROL BOX
= BOX
= CROSSING SIGN
= POST
= INTERCOM
= GAS VALVE
= PVC POST
= GUY WIRE
= SPRINKLE HEAD
= CENTRAL ANGLE OF CURVE
= MONITORING WELL
= PETROLEUM PIPELINE
= ELECTRIC HANDHOLE
= ELECTRIC MANHOLE
= FIRE HYDRANT
= WATER VALVE
= WATER METER
= R/W EXISTING
= SECTION LINE
= QUARTER SECTION LINE
= EASEMENT LINE
= BARBWIRE FENCE
= EDGE OF THE PAVEMENT
℄ = PROPERTY LINE
SEC. = SECTION
M = MONUMENT LINE
PVMT = PAVEMENT
ASPH. = ASPHALT
(R) = RADIUS
(L) = LENGTH
(CA) = CENTRAL ANGLE OF THE CURVE
(PT) = POINT OF TANGENCY
(PI) = POINT OF INTERSECTION
(PC) = POINT OF CURVATURE
= TRAFFIC SIGH MANHOLE
= TRAFFIC SIGH HANDHOLE
= TRAFFIC CONTROL BOX
= TRAFFIC SIGNAL BOX
= ELECTRICAL CONTROL BOX
= RAIL ROAD CROSSING (LIGHT)
= FIBER OPTIC MARKER SIGN
= FIBER OPTIC BOX
= CONCRETE
= ASPHALT
= UNIMPROVED DRIVEWAY
= GRAVEL
= BRICK
= TILE
= STAMPED CONCRETE
= CONCRETE BLOCK FENCE
= TREE DIAMETER
= EXISTING CATCH BASIN
= EXISTING STORMWATER MANHOLE
= BOLLARD
= ELECTRIC METER
= ELECTRIC PANEL
= BACKFLOW PREVENTER
= FIRE DEPARTMENT CONNECTION
= TRAFIC
= VALVE COVER SUGAR
= PEDESTRIAN SIGN
= GAS METER
= CLEAN OUT
= WOOD FENCE
= CHAIN LINK FENCE
= IRON FENCE
= EXISTING SIDEWALK
= F.P.L. OVERHEAD
= F.P.L. UNDERGROUND
= WATER LINE MAIN
= GAS MAIN
= FORCE MAIN
= CABLE TV
= BELL SOUTH TELEPHONE CONDUIT
= BASELINE
= SANITARY SEWER
= ELECTRIC EXISTING OVERHEAD
= UNKNOWN UTILITY UNDERGROUND
= TRASH
= ROCK
= BENCH
= FLOW LIGHT
= DUCTILE IRON PIPE
= PALM
= TREE
= ORNAMENTAL TREE





LEGEND:
- TEST BORING LOCATION
- PERCOLATION TEST LOCATION

HRES
HR ENGINEERING SERVICES, INC.
7815 NW 72nd Avenue
Medley, Florida 33166
Ph: 305-888-8880/305-888-8770 Fax
Cert. of Authorization No. 7991

REVISIONS						
DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

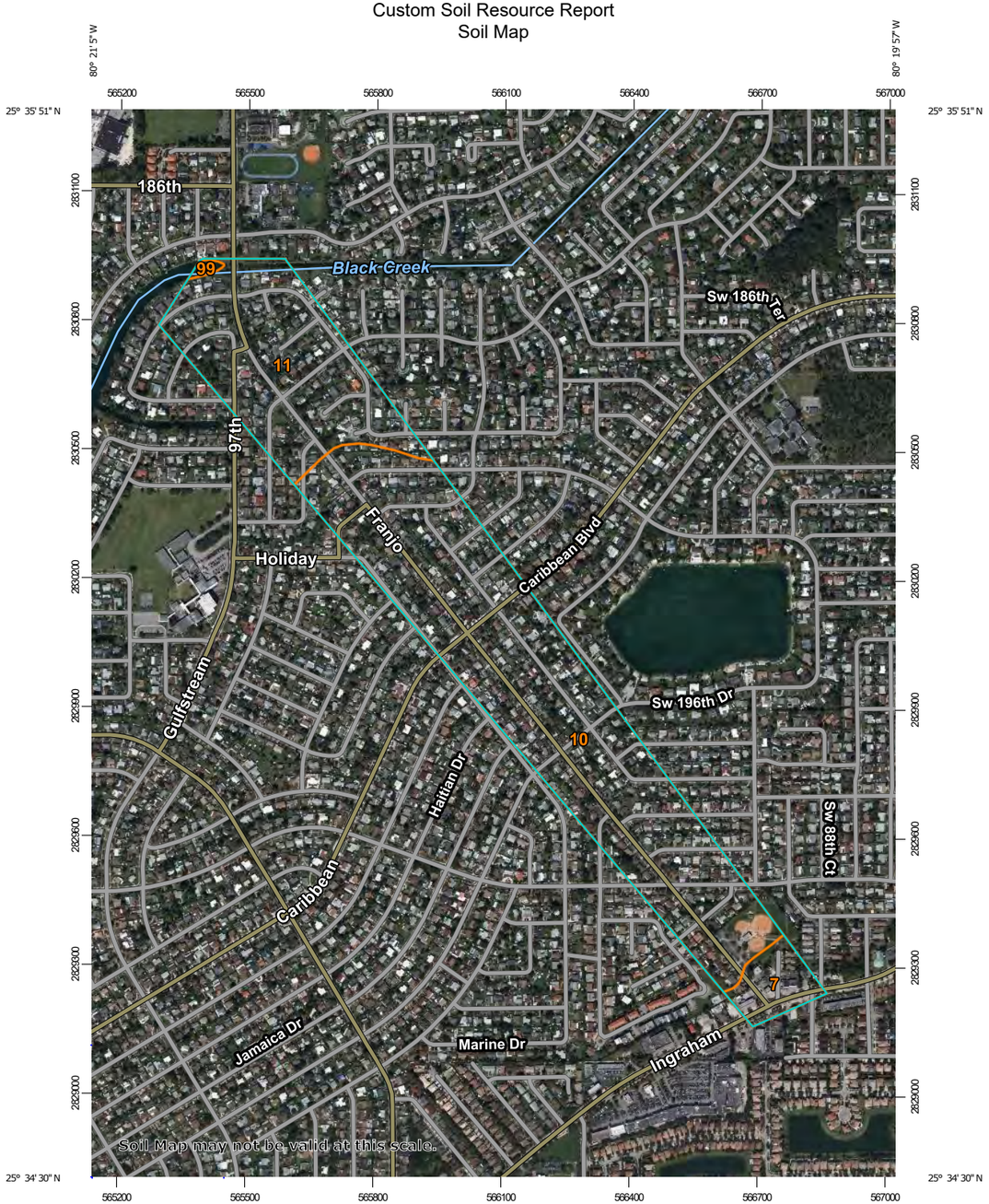
TOPOGRAPHIC SURVEY

	NAME	DATE		NAME	DATE
DESIGNED BY	X.X.		DRAWN BY	SF	10-13-2020
CHECKED BY	X.X.		CHECKED BY	GS	10-16-2020
SUPERVISED BY:					

MIAMI-DADE COUNTY
DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
ROADWAY ENGINEERING AND RIGHT OF WAY DIVISION

LEGEND, ABBREVIATION AND MAP OF TOPOGRAPHIC SURVEY

Custom Soil Resource Report
Soil Map



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

HERNANDO R. RAMOS, P.E.
P.E. LICENSE NUMBER 42045
HR ENGINEERING SERVICES, INC
7815 NW 72ND AVENUE
MEDLEY, FLORIDA 33166

DRAWN BY:	CHECKED BY:	DESIGNED BY:	CHECKED BY:
CS 01-21	HRR 01-21	CS 01-21	HRR 01-21

TOWN OF CUTLER BAY
DEPARTMENT OF PUBLIC WORKS

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
-	MIAMI-DADE	-

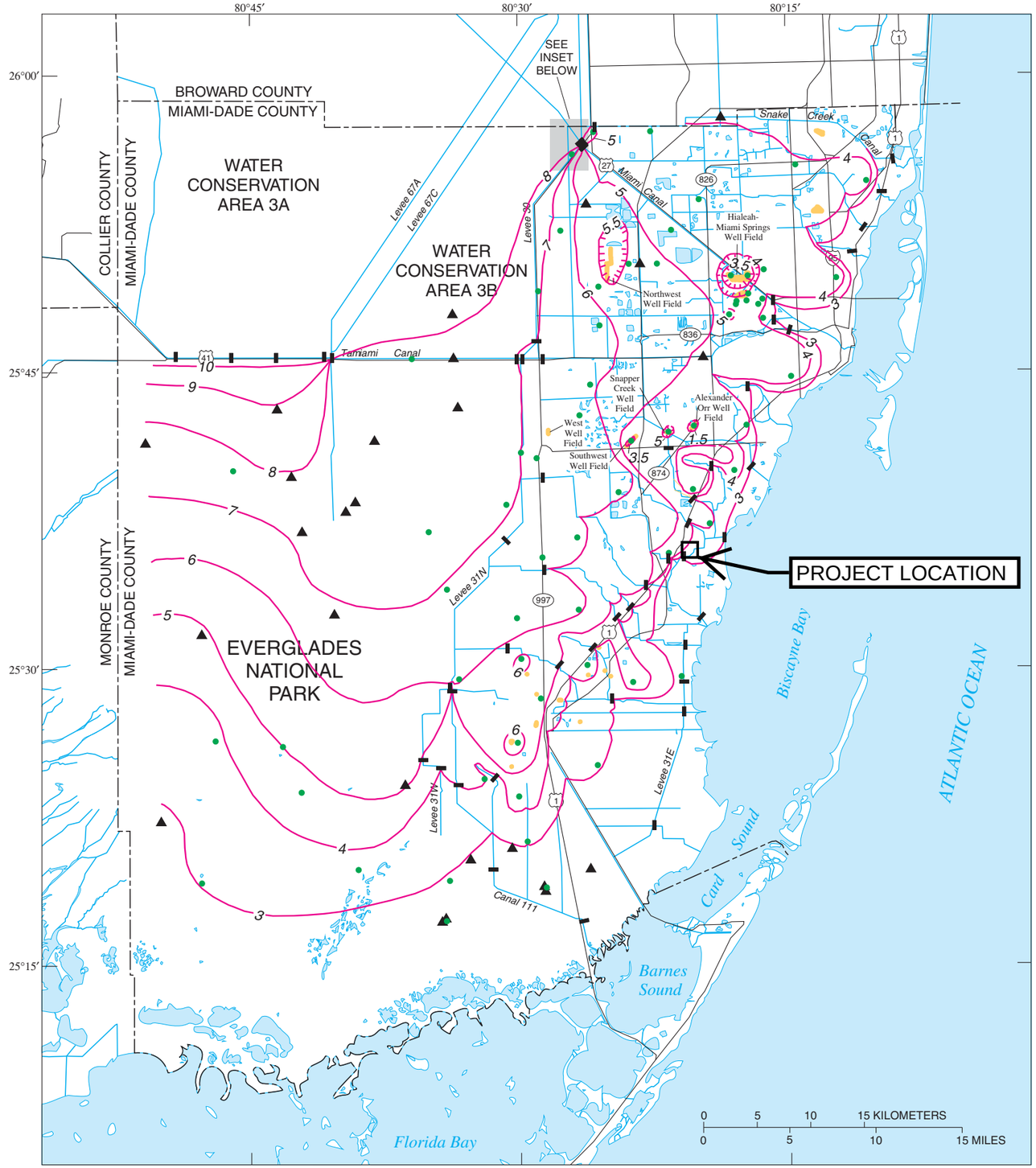
SHEET TITLE: MIAMI DADE COUNTY AREA SOIL SURVEY MAP

REF. DWG. NO.

PROJECT NAME: FRANJO ROAD, FROM OLD CUTLER ROAD TO SW 184 STREET

SHEET NO.

$USER$ $DATE$ $TIME$ $FILE$



AVERAGE YEARLY HIGH WATER LEVELS 1990-99

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

HERNANDO R. RAMOS, P.E.
P.E. LICENSE NUMBER 42045
HR ENGINEERING SERVICES, INC
7815 NW 72ND AVENUE
MEDLEY, FLORIDA 33166

DRAWN BY: CS 01-21	
CHECKED BY: HRR 01-21	
DESIGNED BY: CS 01-21	
CHECKED BY: HRR 01-21	

TOWN OF CUTLER BAY
DEPARTMENT OF PUBLIC WORKS

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
-	MIAMI-DADE	-

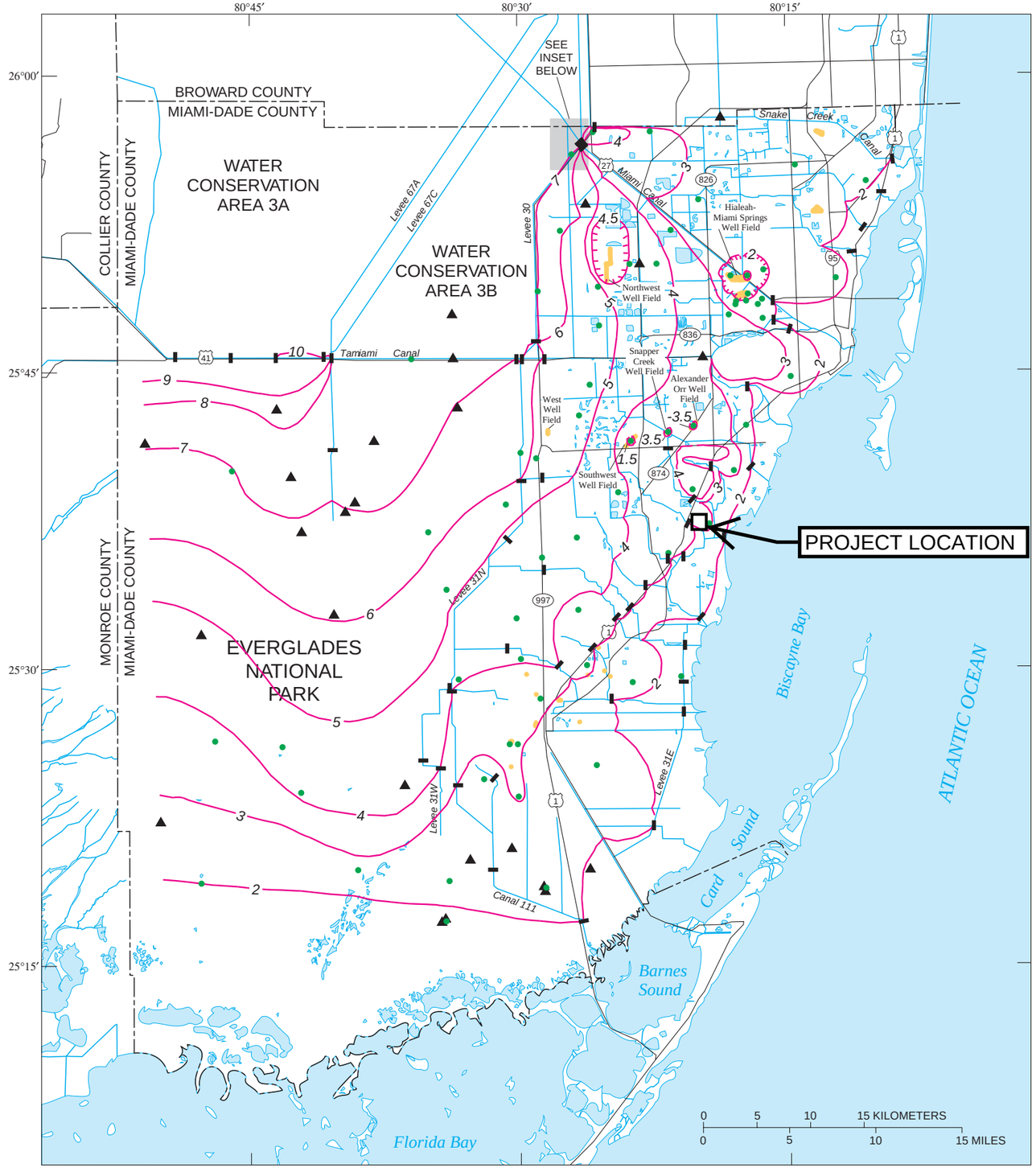
SHEET TITLE: USGS AVERAGE YEARLY HIGH WATER LEVELS (1990-1999)

PROJECT NAME: FRANJO ROAD, FROM OLD CUTLER ROAD TO SW 184 STREET

REF. DWG. NO.

SHEET NO.

$USER$ $DATE$ $TIME$ $FILE$



AVERAGE OCTOBER WATER LEVELS 1990-99

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

HERNANDO R. RAMOS, P.E.
P.E. LICENSE NUMBER 42045
HR ENGINEERING SERVICES, INC
7815 NW 72ND AVENUE
MEDLEY, FLORIDA 33166

DRAWN BY:	CHECKED BY:	DESIGNED BY:	CHECKED BY:
CS 01-21	HRR 01-21	CS 01-21	HRR 01-21

TOWN OF CUTLER BAY
DEPARTMENT OF PUBLIC WORKS

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
-	MIAMI-DADE	-

SHEET TITLE: USGS AVERAGE OCTOBER WATER LEVELS (1990-1999)

PROJECT NAME: FRANJO ROAD FROM OLD CUTLER ROAD TO SW 184 STREET

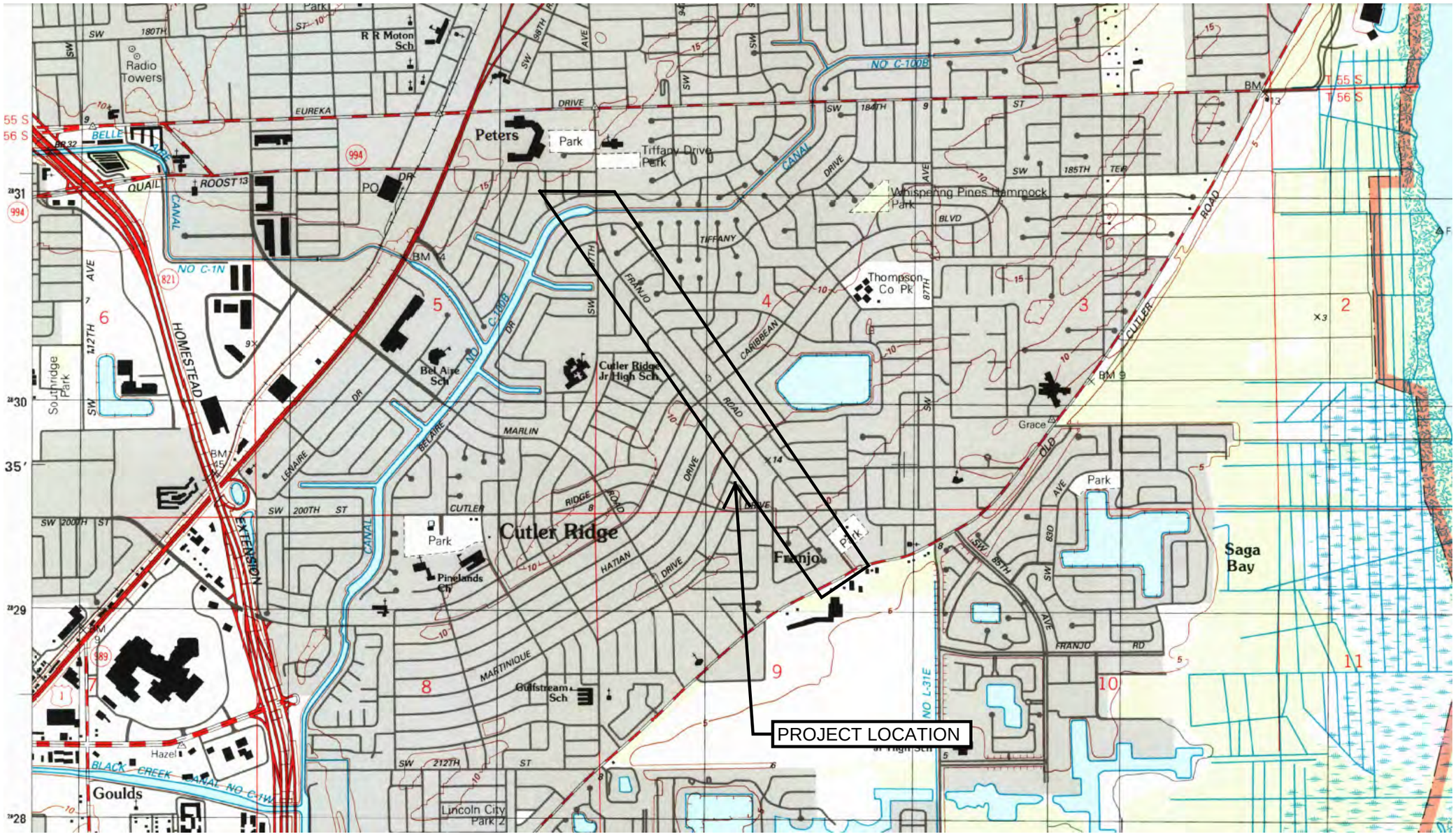
REF. DWG. NO.

SHEET NO.

WELL FIELD

WATER TABLE CONTOUR--Shows al
table. Hachures indicate depression.
approximately located. Contour inter

$USERS $FILES $TIMES $FILES



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

HERNANDO R. RAMOS, P.E.
P.E. LICENSE NUMBER 42045
HR ENGINEERING SERVICES, INC
7815 NW 72ND AVENUE
MEDLEY, FLORIDA 33166

DRAWN BY:	CS 01-21
CHECKED BY:	HRR 01-21
DESIGNED BY:	CS 01-21
CHECKED BY:	HRR 01-21

TOWN OF CUTLER BAY
DEPARTMENT OF PUBLIC WORKS

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
-	MIAMI-DADE	-

SHEET TITLE: USGS QUADRANGLE ELEVATION MAP

REF. DWG. NO.

PROJECT NAME: FRANJO ROAD, FROM OLD CUTLER ROAD TO SW 184 STREET

SHEET NO.

$USER$ $DATE$ $TIME$ $FILE$

SUMMARY OF BORINGS LOCATIONS
FRANJO ROAD, FROM OLD CUTLER ROAD TO SW 184^{IH} STREET
TOWN OF CUTLER BAY
MIAMI-DADE COUNTY, FLORIDA
DEPARTMENT OF PUBLIC WORKS
HR ENGINEERING SERVICES, INC.
HRES PROJECT No. HR19-1573R
JANUARY 29, 2021

Boring No.	Plane coordinates		Station	Offset ft.
	Latitude	Longitude		
RB-1	25.57913	-80.33584	11+40	18.0 R
RB-2	25.57955	-80.33621	13+30	17.0 R
RB-3	25.57999	-80.33663	15+40	15.0 R
RB-4	25.58028	-80.33689	16+75	15.0 R
P-1	25.58065	-80.33706	18+17	58.0 R
RB-5	25.58080	-80.33736	19+24	16.0 R
RB-6	25.58120	-80.33771	21+10	18.0 R
RB-7	25.58155	-80.33818	23+05	21.0 L
RB-8	25.58202	-80.33860	25+22	18.0 L
P-2	25.58248	-80.33888	27+15	18.0 L
RB-9	25.58246	-80.33900	27+35	18.0 L
RB-10	25.58276	-80.33935	28+88	43.0 L
RB-11	25.58321	-80.33970	30+90	22.0 L
RB-12	25.58361	-80.34004	32+70	22.0 L
RB-13	25.58400	-80.34038	34+53	22.0 L
P-3	25.58425	-80.34061	35+71	23.0 L
RB-14	25.58443	-80.34077	36+56	24.0 L
RB-15	25.58495	-80.34104	38+62	23.0 R
RB-16	25.58527	-80.34150	40+42	24.0 L
RB-17	25.58573	-80.34191	42+59	23.0 L
RB-18	25.58606	-80.34220	44+13	26.0 L
P-4	25.58607	-80.34221	44+16	26.0 L
RB-19	25.58638	-80.34248	45+61	26.0 L
RB-20	25.58708	-80.34293	48+54	18.0 R
RB-21	25.58748	-80.34329	50+41	17.0 R
RB-22	25.58795	-80.34369	52+58	18.0 R
P-5	25.58797	-80.34371	52+68	18.0 R
RB-23	25.58836	-80.34405	54+59	19.0 R

SUMMARY OF BORINGS LOCATIONS
FRANJO ROAD, FROM OLD CUTLER ROAD TO SW 184^{IH} STREET
TOWN OF CUTLER BAY
MIAMI-DADE COUNTY, FLORIDA
DEPARTMENT OF PUBLIC WORKS
HR ENGINEERING SERVICES, INC.
HRES PROJECT No. HR19-1573R
JANUARY 29, 2021

Boring No.	Plane coordinates		Station	Offset ft.
	Latitude	Longitude		
RB-24	25.58865	-80.34430	55+79	23.0 R
RB-25	25.58909	-80.34466	57+80	28.0 R
RB-26	25.58940	-80.34514	59+68	25.0 L
P-6	25.58998	-80.34531	61+65	64.0 R
RB-27	25.58996	-80.34560	62+21	18.0 L
RB-28	25.59031	-80.34589	63+78	17.0 L
RB-29	25.59079	-80.34619	65+77	19.0 R
RB-30	25.59115	-80.34651	67+42	19.0 R
RB-31	25.59154	-80.34682	69+14	24.0 R
P-7	25.59171	-80.34715	70+34	23.0 L
RB-32	25.59191	-80.34717	70+99	18.0 R
RB-33	25.59236	-80.34766	73+27	8.0 L
RB-34	25.59292	-80.34795	75+80	50.0 R
RB-35	25.59337	-80.34808	77+40	4.0 R
P-8	25.59390	-80.34804	79+30	23.0 R
RB-36	25.59392	-80.34804	79+38	23.0 R
RB-37	25.59453	-80.34815	81+59	15.0 L
RB-38	25.59591	-80.34819	83+77	28.0 L
RB-39	25.59556	-80.34818	85+12	26.0 L
RB-40	25.59616	-80.34822	87+45	38.0 L
P-9	25.59627	-80.34817	87+95	20.0 L
RB-41	25.59659	-80.34805	89+10	20.0 R
RB-42	25.59712	-80.34818	91+02	23.0 L
RB-43	25.59766	-80.34820	93+00	25.0 L
RB-44	25.59805	-80.34807	94+42	19.0 R

Notes:

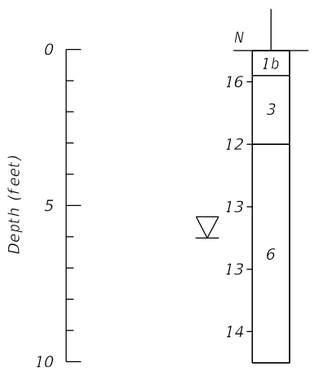
Plane coordinates were taken using a hand-held GPS and are approximate within 10 feet.

SUMMARY OF PERCOLATION TEST RESULTS
USUAL-OPEN HOLE PERCOLATION RESULTS
FRANJO ROAD, FROM OLD CUTLER ROAD TO SW 184 STREET
TOWN OF CUTLER BAY, DEPARTMENT OF PUBLIC WORKS
MIAMI-DADE COUNTY, FLORIDA
HR ENGINEERING SERVICES, INC.
HRES PROJECT NO. HR19-1573R
JANUARY 29, 2021

TEST No.	TEST DATE	LATITUDE	LONGITUDE	DEPTH TO WATER BEFORE TEST, H ft.	DEPTH TO WATER DURING TEST, ft.	HEAD, Du ft.	HOLE DEPTH, ft.	HOLE DIAMETER, d inches	RATE OF FLOW, P gpm	RATE OF FLOW, P cfs	k, HYDRAULIC CONDUCTIVITY cfs/ft^2-ft. Head
P-1	12/01/20	25.58065	-80.33706	5.8	0.0	5.8	15.0	6.0	35.0	0.07799	**7.1E-04**
P-2	12/01/20	25.58248	-80.33888	7.5	0.0	7.5	15.0	6.0	33.2	0.07398	**5.6E-04**
P-3	12/01/20	25.58425	-80.34061	9.2	0.0	9.2	15.0	6.0	2.0	0.00446	**3.0E-05**
P-4	12/02/20	25.58607	-80.34219	10.8	0.0	10.8	15.0	6.0	1.0	0.00223	**1.4E-05**
P-5	12/02/20	25.58797	-80.34371	7.5	0.0	7.5	15.0	6.0	1.0	0.00223	**1.7E-05**
P-6	12/02/20	25.58998	-80.34531	5.7	0.0	5.7	15.0	6.0	34.0	0.07576	**7.0E-04**
P-7	12/02/20	25.59171	-80.34715	6.2	0.0	6.2	15.0	6.0	19.3	0.04300	**3.7E-04**
P-8	12/03/20	25.59390	-80.34804	4.8	0.0	4.8	15.0	6.0	34.9	0.07776	**8.2E-04**
P-9	12/03/20	25.59627	-80.34817	5.8	0.0	5.8	15.0	6.0	20.0	0.04456	**4.0E-04**

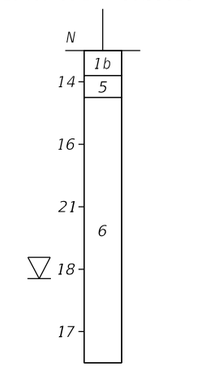
for 0 to 15 ft., $K_{15} = P / 3.1416 * d * Du \{ Du/2 + Ds \}$, where Ds = Hole Depth - H

BOR # RB-1
STA. 11+40
OFF. 18.0 RT
DATE 11/11/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.57913
LONGITUDE -80.33584



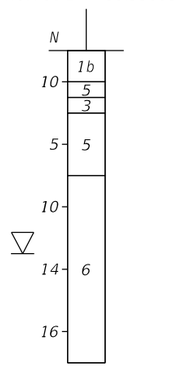
Boring Terminated at Depth of 10ft

BOR # RB-2
STA. 13+30
OFF. 17.0 RT
DATE 11/11/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.57955
LONGITUDE -80.33621



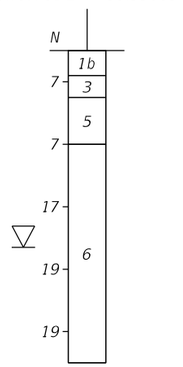
Boring Terminated at Depth of 10ft

BOR # RB-3
STA. 15+40
OFF. 15.0 RT
DATE 11/11/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.57999
LONGITUDE -80.33663



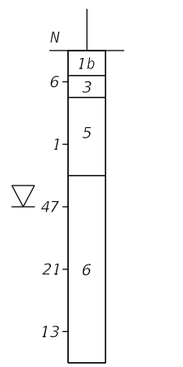
Boring Terminated at Depth of 10ft

BOR # RB-4
STA. 16+75
OFF. 15.0 RT
DATE 11/11/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.58028
LONGITUDE -80.33689



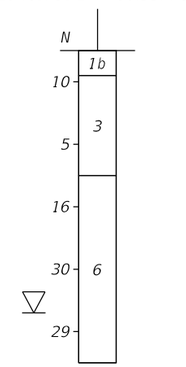
Boring Terminated at Depth of 10ft

BOR # RB-5
STA. 19+24
OFF. 16.0 RT
DATE 11/11/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.58080
LONGITUDE -80.33736



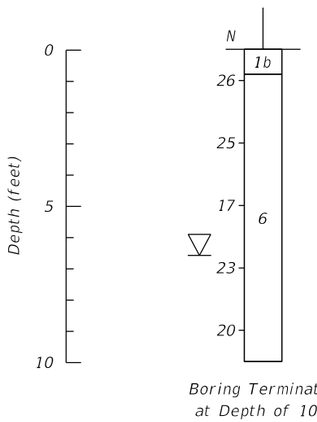
Boring Terminated at Depth of 10ft

BOR # RB-6
STA. 21+10
OFF. 18.0 RT
DATE 11/11/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.58120
LONGITUDE -80.33771



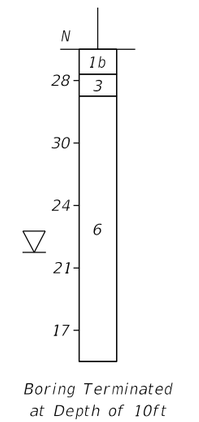
Boring Terminated at Depth of 10ft

BOR # RB-7
STA. 23+05
OFF. 21.0 LT
DATE 11/11/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.58155
LONGITUDE -80.33818



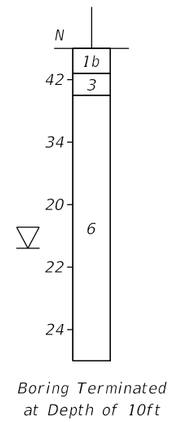
Boring Terminated at Depth of 10ft

BOR # RB-8
STA. 25+22
OFF. 18.0 LT
DATE 11/11/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.58202
LONGITUDE -80.33860



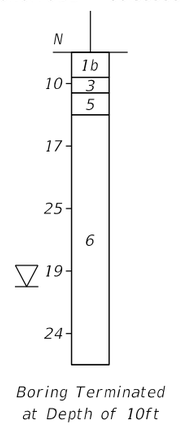
Boring Terminated at Depth of 10ft

BOR # RB-9
STA. 27+35
OFF. 18.0 LT
DATE 11/11/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.58246
LONGITUDE -80.33900



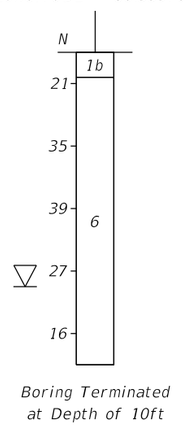
Boring Terminated at Depth of 10ft

BOR # RB-10
STA. 28+88
OFF. 43.0 LT
DATE 11/17/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.58276
LONGITUDE -80.33935



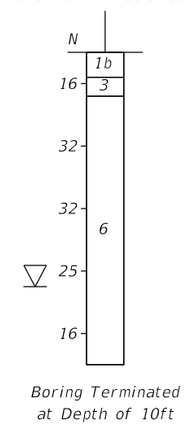
Boring Terminated at Depth of 10ft

BOR # RB-11
STA. 30+90
OFF. 22.0 LT
DATE 11/17/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.58321
LONGITUDE -80.33970



Boring Terminated at Depth of 10ft

BOR # RB-12
STA. 32+70
OFF. 22.0 LT
DATE 11/17/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.58361
LONGITUDE -80.34004



Boring Terminated at Depth of 10ft

LEGEND

1a. ASPHALT
1b. ORGANIC SILTY FINE SAND (TOPSOIL), A-8
2. LIMEROCK WITH SILTY FINE SAND, A-1-b
3. SILTY FINE SAND, A-2-4
4. SANDY SILT/SLIGHTLY ORGANIC SANDY SILT, A-4
5. FINE SAND, A-3
6. POROUS SANDY LIMESTONE AND CALCAREOUS FINE SAND

VERTICAL SCALE: 0 5
HORIZONTAL SCALE: NTS
HRES PROJECT No.: HR19-1573R

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

HERNANDO R. RAMOS, P.E.
P.E. LICENSE NUMBER 42045
HR ENGINEERING SERVICES, INC.
7815 NW 72ND AVENUE
MEDLEY, FLORIDA 33166

DRAWN BY: CS 01-21
CHECKED BY: HRR 01-21
DESIGNED BY: CS 01-21
CHECKED BY: HRR 01-21

TOWN OF CUTLER BAY
DEPARTMENT OF PUBLIC WORKS

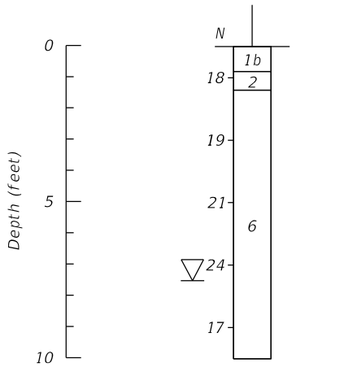
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
-	MIAMI-DADE	-

SHEET TITLE: SOIL PROFILES
REF. DWG. NO.:
PROJECT NAME: FRANJO ROAD, FROM OLD CUTLER ROAD TO SW 184 STREET
SHEET NO.:

HRESUser 2/4/2021 11:09:09 AM Y:\HR19-1573_Franjo Road, from Cutler Road to SW 184 Street - D6 - RB - Working\Boring

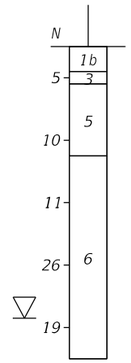
THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

BOR # RB-13
STA. 34+53
OFF. 22.0 LT
DATE 11/17/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.58400
LONGITUDE -80.34038



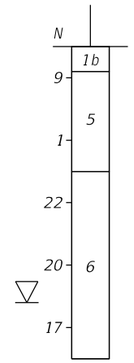
Boring Terminated at Depth of 10ft

BOR # RB-14
STA. 36+56
OFF. 24.0 LT
DATE 11/17/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.58443
LONGITUDE -80.34077



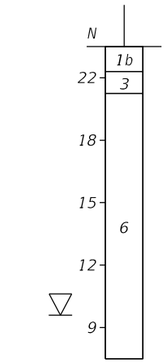
Boring Terminated at Depth of 10ft

BOR # RB-15
STA. 38+62
OFF. 23.0 RT
DATE 11/17/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.58495
LONGITUDE -80.34104



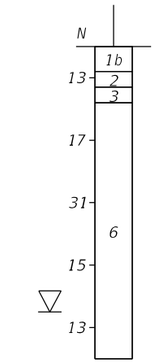
Boring Terminated at Depth of 10ft

BOR # RB-16
STA. 40+42
OFF. 24.0 LT
DATE 11/17/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.58527
LONGITUDE -80.34150



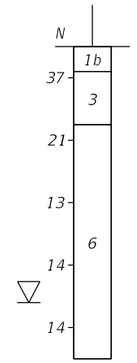
Boring Terminated at Depth of 10ft

BOR # RB-17
STA. 42+59
OFF. 23.0 LT
DATE 11/17/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.58573
LONGITUDE -80.34191

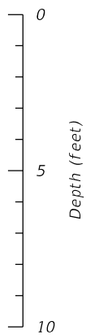


Boring Terminated at Depth of 10ft

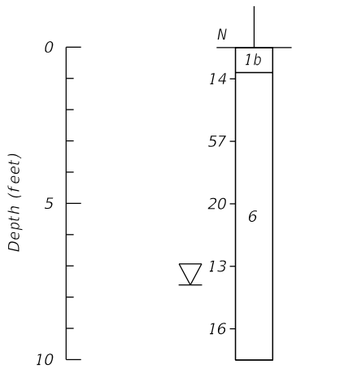
BOR # RB-18
STA. 44+13
OFF. 26.0 LT
DATE 11/17/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.58606
LONGITUDE -80.34220



Boring Terminated at Depth of 10ft

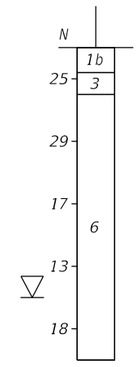


BOR # RB-19
STA. 45+61
OFF. 26.0 LT
DATE 11/17/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.58638
LONGITUDE -80.34248



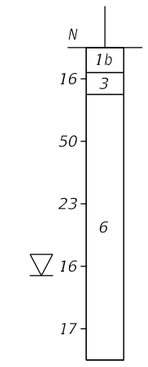
Boring Terminated at Depth of 10ft

BOR # RB-20
STA. 48+54
OFF. 18.0 RT
DATE 11/18/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.58708
LONGITUDE -80.34293



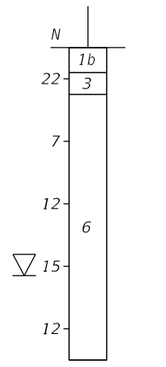
Boring Terminated at Depth of 10ft

BOR # RB-21
STA. 50+41
OFF. 17.0 RT
DATE 11/18/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.58748
LONGITUDE -80.34329



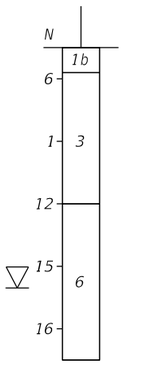
Boring Terminated at Depth of 10ft

BOR # RB-22
STA. 52+58
OFF. 18.0 RT
DATE 11/18/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.58795
LONGITUDE -80.34369



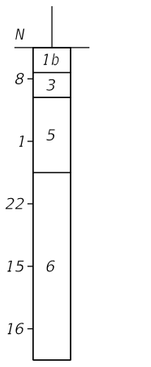
Boring Terminated at Depth of 10ft

BOR # RB-23
STA. 54+59
OFF. 19.0 RT
DATE 11/18/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.58836
LONGITUDE -80.34405

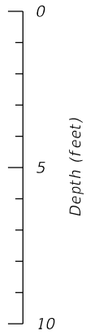


Boring Terminated at Depth of 10ft

BOR # RB-24
STA. 55+79
OFF. 23.0 RT
DATE 11/18/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.58865
LONGITUDE -80.34430



Boring Terminated at Depth of 10ft



LEGEND

1a. ASPHALT
1b. ORGANIC SILTY FINE SAND (TOPSOIL), A-8
2. LIMEROCK WITH SILTY FINE SAND, A-1-b
3. SILTY FINE SAND, A-2-4
4. SANDY SILT/SLIGHTLY ORGANIC SANDY SILT, A-4
5. FINE SAND, A-3
6. POROUS SANDY LIMESTONE AND CALCAREOUS FINE SAND

VERTICAL SCALE: 0 5
HORIZONTAL SCALE: NTS
HRES PROJECT No.: HR19-1573R

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

HERNANDO R. RAMOS, P.E.
P.E. LICENSE NUMBER 42045
HR ENGINEERING SERVICES, INC.
7815 NW 72ND AVENUE
MEDLEY, FLORIDA 33166

DRAWN BY: CS 01-21
CHECKED BY: HRR 01-21
DESIGNED BY: CS 01-21
CHECKED BY: HRR 01-21

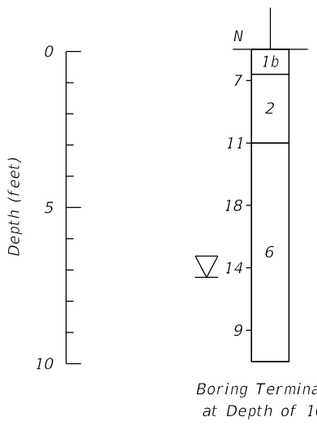
TOWN OF CUTLER BAY
DEPARTMENT OF PUBLIC WORKS

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
-	MIAMI-DADE	-

SHEET TITLE: SOIL PROFILES
REF. DWG. NO.:
PROJECT NAME: FRANJO ROAD, FROM OLD CUTLER ROAD TO SW 184 STREET
SHEET NO.:

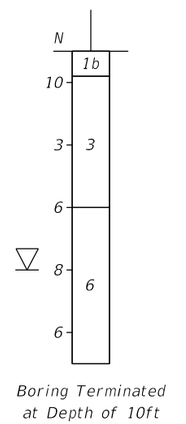
HRESUser 2/4/2021 11:11:07 AM Y:\HR19-1573_Franjo Road, from Cutler Road to SW 184 Street - D6 - RB - Working\Boring

BOR # RB-25
STA. 57+80
OFF. 28.0 RT
DATE 11/18/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.58909
LONGITUDE -80.34466



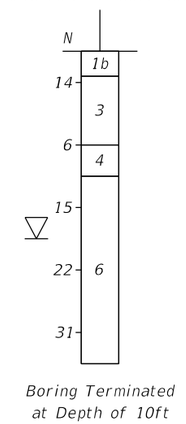
Boring Terminated at Depth of 10ft

BOR # RB-26
STA. 59+68
OFF. 25.0 LT
DATE 11/18/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.58940
LONGITUDE -80.34514



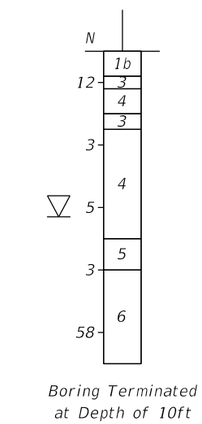
Boring Terminated at Depth of 10ft

BOR # RB-27
STA. 62+21
OFF. 18.0 LT
DATE 11/18/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.58996
LONGITUDE -80.34560



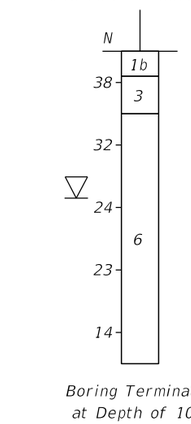
Boring Terminated at Depth of 10ft

BOR # RB-28
STA. 63+78
OFF. 17.0 LT
DATE 11/18/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.59031
LONGITUDE -80.34589



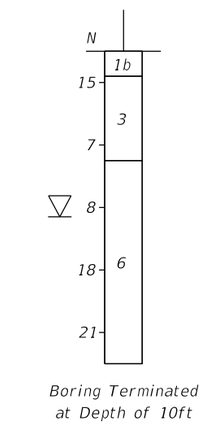
Boring Terminated at Depth of 10ft

BOR # RB-29
STA. 65+77
OFF. 19.0 RT
DATE 11/18/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.59079
LONGITUDE -80.34619



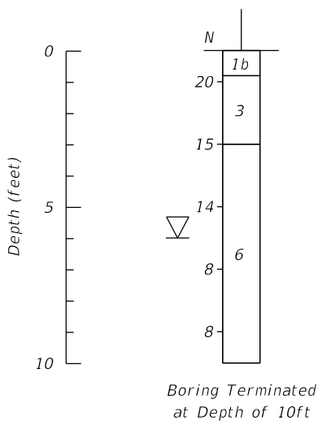
Boring Terminated at Depth of 10ft

BOR # RB-30
STA. 67+42
OFF. 19.0 RT
DATE 11/19/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.59115
LONGITUDE -80.34651



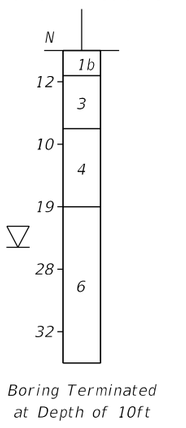
Boring Terminated at Depth of 10ft

BOR # RB-31
STA. 69+14
OFF. 24.0 RT
DATE 11/19/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.59154
LONGITUDE -80.34682



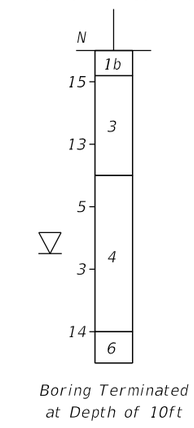
Boring Terminated at Depth of 10ft

BOR # RB-32
STA. 70+99
OFF. 18.0 RT
DATE 11/19/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.59191
LONGITUDE -80.34717



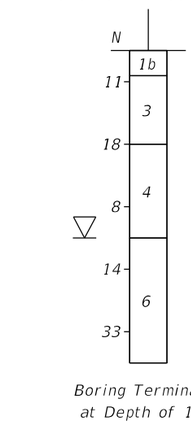
Boring Terminated at Depth of 10ft

BOR # RB-33
STA. 73+27
OFF. 8.0 LT
DATE 11/18/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.59236
LONGITUDE -80.34766



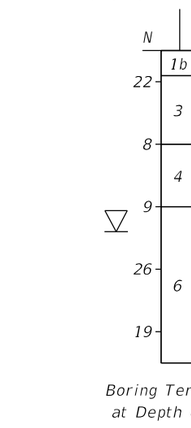
Boring Terminated at Depth of 10ft

BOR # RB-34
STA. 75+80
OFF. 50.0 RT
DATE 11/19/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.59292
LONGITUDE -80.34795



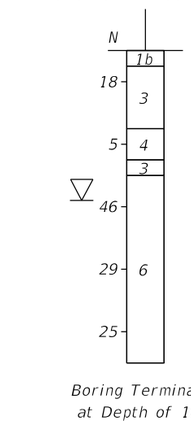
Boring Terminated at Depth of 10ft

BOR # RB-35
STA. 77+40
OFF. 4.0 RT
DATE 11/19/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.59337
LONGITUDE -80.34808

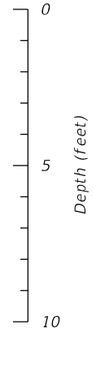


Boring Terminated at Depth of 10ft

BOR # RB-36
STA. 79+38
OFF. 23.0 RT
DATE 12/3/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.59392
LONGITUDE -80.34804



Boring Terminated at Depth of 10ft



LEGEND

1a. ASPHALT
1b. ORGANIC SILTY FINE SAND (TOPSOIL), A-8
2. LIMEROCK WITH SILTY FINE SAND, A-1-b
3. SILTY FINE SAND, A-2-4
4. SANDY SILT/SLIGHTLY ORGANIC SANDY SILT, A-4
5. FINE SAND, A-3
6. POROUS SANDY LIMESTONE AND CALCAREOUS FINE SAND

VERTICAL SCALE: 0 5
HORIZONTAL SCALE: NTS
HRES PROJECT No.: HR19-1573R

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

HERNANDO R. RAMOS, P.E.
P.E. LICENSE NUMBER 42045
HR ENGINEERING SERVICES, INC.
7815 NW 72ND AVENUE
MEDLEY, FLORIDA 33166

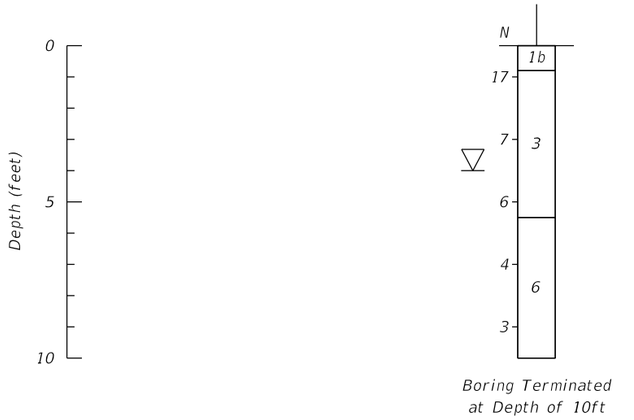
DRAWN BY: CS 01-21
CHECKED BY: HRR 01-21
DESIGNED BY: CS 01-21
CHECKED BY: HRR 01-21

TOWN OF CUTLER BAY
DEPARTMENT OF PUBLIC WORKS

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
-	MIAMI-DADE	-

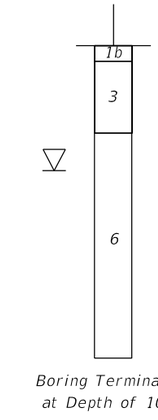
SHEET TITLE: SOIL PROFILES
REF. DWG. NO.:
PROJECT NAME: FRANJO ROAD, FROM OLD CUTLER ROAD TO SW 184 STREET
SHEET NO.:

BOR # RB-37
STA. 81+59
OFF. 15.0 LT
DATE 11/19/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.59453
LONGITUDE -80.34815



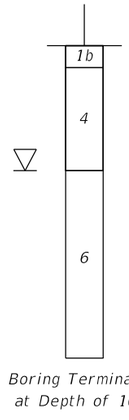
Boring Terminated at Depth of 10ft

BOR # RB-38
STA. 83+77
OFF. 28.0 LT
DATE 11/30/2020
DRILLER O. Mejias
LATITUDE 25.595912
LONGITUDE -80.34819



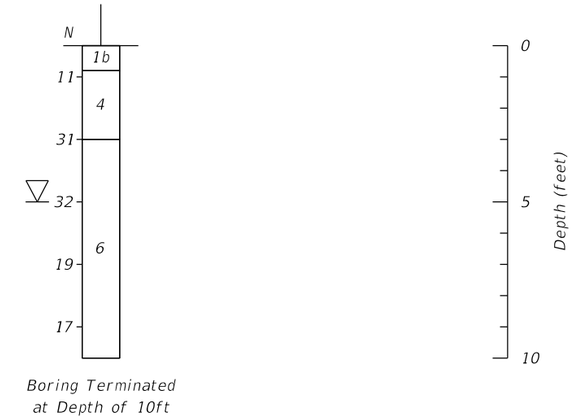
Boring Terminated at Depth of 10ft

BOR # RB-39
STA. 85+12
OFF. 26.0 LT
DATE 11/30/2020
DRILLER O. Mejias
LATITUDE 25.59556
LONGITUDE -80.34818



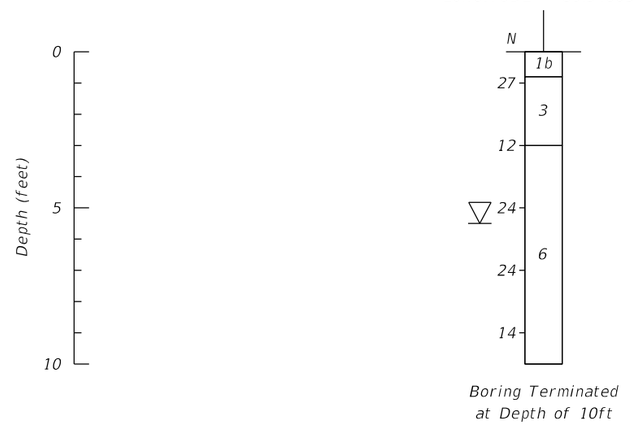
Boring Terminated at Depth of 10ft

BOR # RB-40
STA. 87+45
OFF. 38.0 LT
DATE 11/19/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.59616
LONGITUDE -80.34822



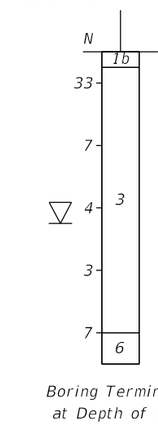
Boring Terminated at Depth of 10ft

BOR # RB-41
STA. 89+10
OFF. 20.0 RT
DATE 11/19/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.59659
LONGITUDE -80.34805



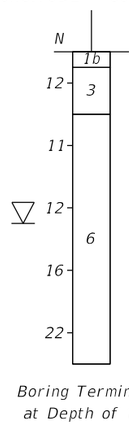
Boring Terminated at Depth of 10ft

BOR # RB-42
STA. 91+02
OFF. 23.0 LT
DATE 11/30/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.59712
LONGITUDE -80.34818



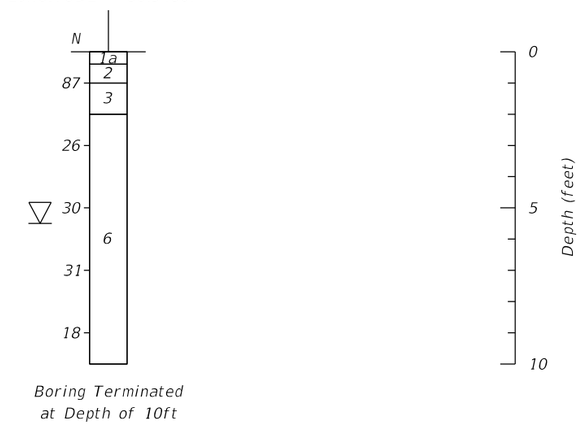
Boring Terminated at Depth of 10ft

BOR # RB-43
STA. 93+00
OFF. 25.0 LT
DATE 11/30/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.59766
LONGITUDE -80.34820



Boring Terminated at Depth of 10ft

BOR # RB-44
STA. 94+42
OFF. 19.0 RT
DATE 11/30/2020
DRILLER O. Mejias
HAMMER Auto
RIG CME-55
LATITUDE 25.59805
LONGITUDE -80.34807



Boring Terminated at Depth of 10ft

LEGEND

1a. ASPHALT
1b. ORGANIC SILTY FINE SAND (TOPSOIL), A-8
2. LIMEROCK WITH SILTY FINE SAND, A-1-b
3. SILTY FINE SAND, A-2-4
4. SANDY SILT/SLIGHTLY ORGANIC SANDY SILT, A-4
5. FINE SAND, A-3
6. POROUS SANDY LIMESTONE AND CALCAREOUS FINE SAND

VERTICAL SCALE: 0 5
HORIZONTAL SCALE: NTS
HRES PROJECT No.: HR19-1573R

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

HERNANDO R. RAMOS, P.E.
P.E. LICENSE NUMBER 42045
HR ENGINEERING SERVICES, INC.
7815 NW 72ND AVENUE
MEDLEY, FLORIDA 33166

DRAWN BY: CS 01-21
CHECKED BY: HRR 01-21
DESIGNED BY: CS 01-21
CHECKED BY: HRR 01-21

TOWN OF CUTLER BAY
DEPARTMENT OF PUBLIC WORKS

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
-	MIAMI-DADE	-

SHEET TITLE: SOIL PROFILES
REF. DWG. NO.:
PROJECT NAME: FRANJO ROAD, FROM OLD CUTLER ROAD TO SW 184 STREET
SHEET NO.:

SOILS INFORMATION TABLE
FRANJO ROAD, FROM OLD CUTLER ROAD TO SW 184TH STREET
TOWN OF CUTLER BAY
DEPARTMENT OF PUBLIC WORKS
MIAMI-DADE COUNTY, FLORIDA
HR ENGINEERING SERVICES, INC.
HRES PROJECT No. HR19-1573R
JANUARY 29, 2021

TEST BORING No.	STATION	OFFSET ft.	RANGE IN DEPTH ft.	STRATUM	APPROXIMATE GROUNDWATER DEPTH ft.
RB-1	11+40	18.0 R	0.0-0.8	1b	6.0
			0.8-3.0	3	
			3.0-10.0	6	
RB-2	13+30	17.0 R	0.0-0.8	1b	7.3
			0.8-1.5	5	
			1.5-10.0	6	
RB-3	15+40	15.0 R	0.0-1.0	1b	6.5
			1.0-1.5	5	
			1.5-2.0	3	
			2.0-4.0	5	
			4.0-10.0	6	
RB-4	16+75	15.0 R	0.0-0.8	1b	6.3
			0.8-1.5	3	
			1.5-3.0	5	
			3.0-10.0	6	
P-1	18+17	58.0 R	0.0-0.5	1b	5.7
			0.5-3.0	3	
			3.0-15.0	6	
RB-5	19+24	16.0 R	0.0-0.8	1b	5.0
			0.8-1.5	3	
			1.5-4.0	5	
			4.0-10.0	6	
RB-6	21+10	18.0 R	0.0-0.8	1b	8.4
			0.8-4.0	3	
			4.0-10.0	6	
RB-7	23+05	21.0 L	0.0-0.8	1b	6.6
			0.8-10.0	6	
RB-8	25+22	18.0 L	0.0-0.8	1b	6.5
			0.8-1.5	3	
			1.5-10.0	6	
P-2	27+15	18.0 L	0.0-0.5	1b	7.5
			0.5-1.5	3	
			1.5-15.0	6	

SOILS INFORMATION TABLE
FRANJO ROAD, FROM OLD CUTLER ROAD TO SW 184TH STREET
TOWN OF CUTLER BAY
DEPARTMENT OF PUBLIC WORKS
MIAMI-DADE COUNTY, FLORIDA
HR ENGINEERING SERVICES, INC.
HRES PROJECT No. HR19-1573R
JANUARY 29, 2021

TEST BORING No.	STATION	OFFSET ft.	RANGE IN DEPTH ft.	STRATUM	APPROXIMATE GROUNDWATER DEPTH ft.
RB-9	27+35	18.0 L	0.0-0.8	1b	6.4
			0.8-1.5	3	
			1.5-10.0	6	
RB-10	28+88	43.0 L	0.0-0.8	1b	7.5
			0.8-1.3	3	
			1.3-2.0	5	
			2.0-10.0	6	
RB-11	30+90	22.0 L	0.0-1.0	1b	7.5
			1.0-1.5	6	
RB-12	32+70	22.0 L	0.0-0.8	1b	7.5
			0.8-1.4	3	
			1.4-10.0	6	
RB-13	34+53	22.0 L	0.0-0.8	1b	7.5
			0.8-1.4	2	
			1.4-10.0	6	
P-3	35+71	23.0 L	0.0-0.5	1b	7.5
			0.5-2.5	3	
			2.5-15.0	6	
RB-14	36+56	24.0 L	0.0-0.8	1b	8.7
			0.5-1.2	3	
			1.2-3.5	5	
			3.5-10.0	6	
RB-15	38+62	23.0 R	0.0-0.8	1b	8.2
			0.8-4.0	5	
			4.0-10.0	6	
RB-16	40+42	24.0 L	0.0-0.8	1b	8.6
			0.8-1.5	3	
			1.5-10.0	6	
RB-17	42+59	23.0 L	0.0-0.8	1b	8.5
			0.8-1.3	2	
			1.3-1.8	3	
			1.8-10.0	6	
RB-18	44+13	26.0 L	0.0-0.8	1b	8.2
			0.8-2.5	3	
			2.5-10.0	6	

SOILS INFORMATION TABLE
FRANJO ROAD, FROM OLD CUTLER ROAD TO SW 184TH STREET
TOWN OF CUTLER BAY
DEPARTMENT OF PUBLIC WORKS
MIAMI-DADE COUNTY, FLORIDA
HR ENGINEERING SERVICES, INC.
HRES PROJECT No. HR19-1573R
JANUARY 29, 2021

TEST BORING No.	STATION	OFFSET ft.	RANGE IN DEPTH ft.	STRATUM	APPROXIMATE GROUNDWATER DEPTH ft.
P-4	44+16	26.0 L	0.0-0.5	1b	10.8
			0.5-2.5	3	
			2.5-15.0	6	
RB-19	45+61	26.0 L	0.0-0.8	1b	7.6
			0.8-10.0	6	
RB-20	48+54	18.0 R	0.0-0.8	1b	8.0
			0.8-1.5	3	
			1.5-10.0	6	
RB-21	50+41	17.0 R	0.0-0.8	1b	7.3
			0.8-1.5	3	
			1.5-10.0	6	
RB-22	52+58	18.0 R	0.0-0.8	1b	7.3
			0.8-1.5	3	
			1.5-10.0	6	
P-5	52+68	18.0 R	0.0-0.5	1b	7.5
			0.5-4.0	3	
			4.0-6.0	5	
			6.0-15.0	6	
RB-23	54+59	19.0 R	0.0-0.8	1b	7.7
			0.8-2.0	3	
			2.0-5.0	3	
			5.0-10.0	6	
RB-24	55+79	23.0 R	0.0-0.8	1b	7.8
			0.8-1.6	3	
			1.6-4.0	5	
			4.0-10.0	6	
RB-25	57+80	28.0 R	0.0-0.8	1b	7.3
			0.8-3.0	2	
			3.0-10.0	6	
RB-26	59+68	25.0 L	0.0-0.8	1b	7.0
			0.8-5.0	3	
			5.0-10.0	6	

SOILS INFORMATION TABLE
FRANJO ROAD, FROM OLD CUTLER ROAD TO SW 184TH STREET
TOWN OF CUTLER BAY
DEPARTMENT OF PUBLIC WORKS
MIAMI-DADE COUNTY, FLORIDA
HR ENGINEERING SERVICES, INC.
HRES PROJECT No. HR19-1573R
JANUARY 29, 2021

TEST BORING No.	STATION	OFFSET ft.	RANGE IN DEPTH ft.	STRATUM	APPROXIMATE GROUNDWATER DEPTH ft.
P-6	61+65	64.0 R	0.0-0.5	1b	5.7
			0.5-5.5	3	
			5.5-15.0	6	
RB-27	65+21	18.0 L	0.0-0.8	1b	6.0
			0.8-3.0	3	
			3.0-4.0	4	
			4.0-10.0	6	
RB-28	63+78	17.0 L	0.0-0.8	1b	5.3
			0.8-1.2	3	
			1.2-2.0	4	
			2.0-2.5	3	
			2.5-6.0	4	
			6.0-7.0	5	
			7.0-10.0	6	
RB-29	65+77	19.0 R	0.0-0.8	1b	4.7
			0.8-2.0	3	
			2.0-10.0	6	
RB-30	67+42	19.0 R	0.0-0.8	1b	5.3
			0.8-3.5	3	
			3.5-10.0	6	
RB-31	69+14	24.0 R	0.0-0.8	1b	6.0
			0.8-3.0	3	
			3.0-10.0	6	
P-7	70+34	23.0 L	0.0-0.5	1b	6.2
			0.5-3.5	4	
			3.5-15.0	6	
RB-32	70+99	18.0 R	0.0-0.8	1b	6.3
			0.8-2.5	3	
			2.5-5.0	4	
			5.0-10.0	6	
RB-33	73+27	8.0 L	0.0-0.8	1b	6.5
			0.8-4.0	3	
			4.0-9.0	4	
			9.0-10.0	6	

SOILS INFORMATION TABLE
FRANJO ROAD, FROM OLD CUTLER ROAD TO SW 184TH STREET
TOWN OF CUTLER BAY
DEPARTMENT OF PUBLIC WORKS
MIAMI-DADE COUNTY, FLORIDA
HR ENGINEERING SERVICES, INC.
HRES PROJECT No. HR19-1573R
JANUARY 29, 2021

TEST BORING No.	STATION	OFFSET ft.	RANGE IN DEPTH ft.	STRATUM	APPROXIMATE GROUNDWATER DEPTH ft.
RB-34	75+80	50.0 R	0.0-0.8	1b	6.0
			0.8-3.0	3	
			3.0-6.0	4	
			6.0-10.0	6	
RB-35	77+40	4.0 R	0.0-0.8	1b	5.8
			0.8-3.0	3	
			3.0-5.0	4	
			5.0-10.0	6	
P-8	79+30	23.0 R	0.0-0.5	1b	4.8
			0.5-2.5	3	
			2.5-3.5	4	
			3.5-4.0	3	
			4.0-15.0	6	
RB-36	79+38	23.0 R	0.0-0.5	1b	4.8
			0.5-2.5	3	
			2.5-3.5	4	
			3.5-4.0	3	
			4.0-10.0	6	
RB-37	81+59	15.0 L	0.0-0.8	1b	4.0
			0.8-5.5	3	
			5.5-10.0	6	
RB-38	83+77	28.0 L	0.0-0.5	1b	4.0
			0.5-2.8	3	
			2.8-10.0	6	
RB-39	85+12	26.0 L	0.0-0.7	1b	4.0
			0.7-4.0	4	
			4.0-10.0	6	
RB-40	87+45	38.0 L	0.0-0.8	1b	5.0
			0.8-3.0	4	
			3.0-10.0	6	
P-9	87+95	20.0 L	0.0-0.7	1b	5.8
			0.7-2.5	3	
			2.5-3.7	4	
			3.7-15.0	6	

SOILS INFORMATION TABLE
FRANJO ROAD, FROM OLD CUTLER ROAD TO SW 184TH STREET
TOWN OF CUTLER BAY
DEPARTMENT OF PUBLIC WORKS
MIAMI-DADE COUNTY, FLORIDA
HR ENGINEERING SERVICES, INC.
HRES PROJECT No. HR19-1573R
JANUARY 29, 2021

TEST BORING No.	STATION	OFFSET ft.	RANGE IN DEPTH ft.	STRATUM	APPROXIMATE GROUNDWATER DEPTH ft.
RB-41	89+10	20.0 R	0.0-0.8	1b	5.5
			0.8-3.0	3	
			3.0-10.0	6	
RB-42	91+02	23.0 L	0.0-0.5	1b	5.5
			0.5-9.0	3	
			9.0-10.0	6	
RB-43	93+00	25.0 L	0.0-0.5	1b	5.5
			0.5-2.0	3	
			2.0-10.0	6	
RB-44	94+42	19.0 R	0.0-0.4	1a	5.5
			0.4-1.0	2	
			1.0-2.0	3	
			2.0-10.0	6	

SOILS INFORMATION LEGEND

STRATUM : 1a	Asphalt
STRATUM : 1b	Organic silty fine sand (topsoil), A-8
STRATUM : 2	Limerock with silty fine sand, A-1-b
STRATUM : 3	Silty fine Sand, A-2-4
STRATUM : 4	Sandy Silt/ Slightly organic sandy Silt, A-4
STRATUM : 5	Fine Sand, A-3
STRATUM : 6	Porous sandy Limestone and calcareous fine sand

FIELD TESTING PROCEDURES

Test Borings - The test borings were made in general accordance with ASTM-D-1586, "Penetration Test and Split-Barrel Sampling of Soils." The borings were advanced using a 3-inch ID casing and a rotary drilling process. At regular intervals, the drilling tools were removed and soil samples were obtained with a standard 1.4-inch I.D., 2-inch O.D., split-tube sampler. The sampler was first seated six inches and then driven an additional foot with blows of a 140-lb hammer falling 30 inches. The number of hammer blows required to drive the sampler the final foot is designated the "Penetration Resistance". The penetration resistance, when properly interpreted, is an index to the soil strength and density.

Representative portions of the soil samples, obtained from the sampler, were placed in glass jars and transported to our laboratory. An engineer then examined the samples in order to confirm the field classifications.

Auger Borings – Auger borings were mechanically advanced. The soils encountered were identified in the field from cuttings brought to the surface by the augering process.

Percolation Testing - The percolation tests were performed in order to estimate the hydraulic conductivity of the materials encountered. The usual open-hole Constant Head method was used. The general procedures outlined in the South Florida Water Management District (SFWD were followed. Each test was performed in a 6.0-inch outside diameter hole initially pre-drilled to a depth of 15 feet below the existing ground surface, using an hollow stem auger. Each borehole was then filled with water and the water level maintained as close as possible to the ground surface. Once the inflow stabilized or came into equilibrium with the outflow rate or seepage, the amount of water added for a period of 10 minutes was recorded and the percolation rate calculated and reported in units of cfs/ft.^{2}-ft. of head.

APPENDIX B

SUMMARY OF LABORATORY TEST RESULTS
FRANJO ROAD, FROM OLD CUTLER ROAD TO SW 184 STREET
TOWN OF CUTLER BAY
DEPARTMENT OF PUBLIC WORKS
MIAMI-DADE COUNTY, FLORIDA
HR ENGINEERING SERVICES, INC.
HRES PROJECT No. HR19-1573R
JANUARY 29, 2021

Test Boring No.	AASHTO Class.	Stratum No.	Sample Depth (ft)	Grain Size Distribution - Percent Passing									Organic Loss of Ignition, %	Moisture Content %	Material in Sample, %		
				1"	3/4"	3/8"	No. 4	No. 10	No. 40	No. 60	No. 100	No. 200			Gravel	Sand	Fines
RB-1	A-2-4	3	0.8-1.5	100	93	75	62	53	43	38	31	27	-	12	38	35	27
RB-9	A-2-4	3	0.8-1.5	100	100	90	74	65	56	47	32	28	-	16	26	46	28
RB-13	A-1-b	2	0.8-1.4	100	100	76	62	54	45	36	22	18	-	18	38	44	18
RB-17	A-1-b	2	0.8-1.3	100	77	71	60	53	44	35	25	21	-	11	40	39	21
RB-20	A-2-4	3	0.8-1.5	100	100	92	77	67	53	41	27	23	-	11	23	54	23
RB-25	A-1-b	2	0.8-2.0	100	91	77	68	61	50	36	19	15	-	14	32	53	15
RB-26	A-2-4	3	2.0-3.0	-	-	-	-	-	-	-	-	23	-	20	-	-	23
RB-26	A-2-4	3	3.0-4.0	-	-	-	-	-	-	-	-	30	-	36	-	-	30
RB-26	A-2-4	3	4.0-5.0	-	-	-	-	-	-	-	-	35	-	33	-	-	35
RB-27	A-4	4	3.0-4.0	-	-	-	-	-	-	-	-	60	-	42	-	-	60
RB-28	A-4	4	1.2-2.0	-	-	-	-	-	-	-	-	64	-	38	-	-	64
RB-28	A-4	4	2.5-4.0	-	-	-	-	-	-	-	-	87	-	53	-	-	87
RB-28	A-4	4	4.0-6.0	-	-	-	-	-	-	-	-	94	-	53	-	-	94
RB-28	A-3	5	6.0-7.0	-	-	-	-	-	-	-	-	8	-	25	-	-	8

SUMMARY OF LABORATORY TEST RESULTS
FRANJO ROAD, FROM OLD CUTLER ROAD TO SW 184 STREET
TOWN OF CUTLER BAY
DEPARTMENT OF PUBLIC WORKS
MIAMI-DADE COUNTY, FLORIDA
HR ENGINEERING SERVICES, INC.
HRES PROJECT No. HR19-1573R
JANUARY 29, 2021

Test Boring No.	AASHTO Class.	Stratum No.	Sample Depth (ft)	Grain Size Distribution - Percent Passing									Organic Loss of Ignition, %	Moisture Content %	Material in Sample, %		
				1"	3/4"	3/8"	No. 4	No. 10	No. 40	No. 60	No. 100	No. 200			Gravel	Sand	Fines
RB-32	A-4	4	2.5-4.0	-	-	-	-	-	-	-	-	95	-	42	-	-	95
RB-32	A-4	4	4.0-5.0	-	-	-	-	-	-	-	-	94	-	38	-	-	94
RB-33	A-4	4	4.0-6.0	-	-	-	-	-	-	-	-	98	-	54	-	-	98
RB-33	A-4	4	6.0-8.0	-	-	-	-	-	-	-	-	95	-	63	-	-	95
RB-33	A-4	4	8.0-9.0	-	-	-	-	-	-	-	-	50	5	75	-	-	50
RB-34	A-4	4	3.0-4.0	-	-	-	-	-	-	-	-	98	-	39	-	-	98
RB-34	A-4	4	4.0-6.0	-	-	-	-	-	-	-	-	94	-	41	-	-	94
RB-35	A-4	4	3.0-4.0	-	-	-	-	-	-	-	-	95	-	38	-	-	95
RB-35	A-4	4	4.0-5.0	-	-	-	-	-	-	-	-	92	-	38	-	-	92
RB-40	A-4	4	0.8-2.0	-	-	-	-	-	-	-	-	-	4	32	-	-	-

DATE OF SURVEY: NOVEMBER AND DECEMBER, 2020
SURVEY MADE BY: HR Engineering Services, Inc.
SUBMITTED BY: HERNANDO RAMOS, P.E.

TOWN OF CUTLER BAY
DEPARTMENT OF PUBLIC WORKS

DISTRICT: --
ROAD NO.: --
COUNTY: MIAMI-DADE

PROJECT NO. : --
PROJECT NAME: FRANJO ROAD, FROM OLD CUTLER ROAD TO SW 184TH STREET

CROSS SECTION SOIL SURVEY FOR THE DESIGN OF ROADS

SURVEY BEGINS STA. : 12+71.54 SURVEY ENDS STA. : 95+7.00

REFERENCE: FRANJO ROAD

	ORGANIC CONTENT		MOISTURE CONTENT		SIEVE ANALYSIS RESULTS PERCENT PASS (%)						ATTERBERG LIMITS (%)					CORROSION TEST RESULTS				
STRATUM NO.	NO. OF TESTS	% ORGANIC	NO. OF TESTS	MOISTURE CONTENT	NO. OF TESTS	10 MESH	40 MESH	60 MESH	100 MESH	200 MESH	NO. OF TESTS	LIQUID LIMIT	PLASTIC INDEX	AASHTO GROUP	DESCRIPTION	NO. OF TESTS	RESISTIVITY ohm-cm	CHLORIDE ppm	SULFATES ppm	pH
1a	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ASPHALTIC CONCRETE					
1b	--	--	--	--	--	--	--	--	--	--	--	--	--	A-8	ORGANIC SILTY FINE SAND (TOPSOIL)					
2	--	--	3	18-11	3	61-53	50-44	36-35	25-19	21-15	--	--	--	A-1-b	LIMEROCK WITH SILTY FINE SAND (FILL)					
3	--	--	6	36-11	6	67-53	56-43	47-38	32-27	35-23	--	--	--	A-2-4	SILTY FINE SAND WITH TRACES OF LIMEROCK FRAGMENTS					
4	2	5-4	14	75-32	13	--	--	--	--	98-50	--	--	--	A-4	SANDY SILT/ SLIGHTLY ORGANIC SANDY SILT					
5	--	--	1	25	1	--	--	--	--	8	--	--	--	A-3	FINE SAND WITH TRACES OF LIMEROCK FRAGMENTS					
6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	POROUS SANDY LIMESTONE AND CALCAREOUS FINE SAND					
																--	--	--	--	--

EMBANKMENT AND SUBGRADE MATERIAL

STRATA BOUNDARIES ARE APPROXIMATE. MAKE FINAL CHECK AFTER GRADING.

∇ - WATER TABLE ENCOUNTERED

GNE - GROUNDWATER NOT ENCOUNTERED

THE MATERIAL FROM STRATUM NUMBER 1a IS ASPHALTIC CONCRETE.

THE MATERIAL FROM STRATUM NUMBER 1b A-8 MATERIAL (TOPSOIL) AND IS UNSUITABLE FOR USE AS STABILIZED SUBGRADE OR FILL MATERIAL AND SHALL BE REMOVED.

THE MATERIAL FROM STRATUM NUMBER 2 IS A-1-b MATERIAL AND IS SUITABLE FOR USE AS GENERAL FILL WHEN UTILIZED IN ACCORDANCE WITH INDEX 120-001. IT CANNOT BE USED AS BASE MATERIAL.

THE MATERIAL FROM STRATUM NUMBER 3 IS A-2-4 MATERIAL AND IS SUITABLE FOR USE IN THE EMBANKMENT WHEN UTILIZED IN ACCORDANCE WITH INDEX 120-001. HOWEVER, THIS MATERIAL IS LIKELY TO RETAIN EXCESS MOISTURE AND BE DIFFICULT TO DRY AND COMPACT. IT SHALL BE USED IN THE EMBANKMENT ABOVE THE WATER LEVEL EXISTING AT THE TIME OF CONSTRUCTION.

THE MATERIAL FROM STRATUM NUMBER 4 IS A-4 MATERIAL. THIS MATERIAL IS UNSUITABLE FOR USE IN THE EMBANKMENT AND AS STABILIZED SUBGRADE AND SHALL BE REMOVED IN ACCORDANCE WITH STANDARD PLAN INDEX 120-002, IT SHALL BE REMOVED IF ENCOUNTERED WITHIN 2 FEET BELOW THE BOTTOM OF THE BASE. THIS MATERIAL WAS FOUND BY BORINGS RB-28, RB-32, RB-36, RB-39, RB-40 AND PERCOLATION TESTS P-7, P-8 AND P-9 AT DEPTHS WITHIN 2 FEET BELOW THE BOTTOM OF THE NEW BASE.

THE MATERIAL FROM STRATUM NUMBER 5 IS A-3 MATERIAL AND APPEARS SATISFACTORY FOR USE IN THE EMBANKMENT WHEN UTILIZED IN ACCORDANCE WITH INDEX 120-001.

THE MATERIAL FROM STRATUM NUMBER 6 IS THE NATURAL LIMESTONE. THIS MATERIAL APPEARS SUITABLE FOR USE AS GENERAL FILL AND AS STABILIZED SUBGRADE WHEN UTILIZED IN ACCORDANCE WITH FDOT INDEX 120-001. THIS MATERIAL TYPICALLY OFFERS A HIGH RESISTANCE TO EXCAVATION. SPECIAL EQUIPMENT AND BREAKING TOOLS MAY BE REQUIRED TO EXCAVATE IT. THIS MATERIAL IS ALSO DIFFICULT TO DEWATER DUE TO ITS HIGH POROSITY AND PERMEABILITY.

THE SYMBOL "--" REPRESENTS NO TESTING PERFORMED.

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

HERNANDO R. RAMOS, P.E.
P.E. LICENSE NUMBER 42045
HR ENGINEERING SERVICES, INC.
7815 NW 72ND AVENUE
MEDLEY, FLORIDA 33166

TOWN OF MIAMI LAKES		
ROAD NO.	COUNTY	PROJECT NO
--	MIAMI-DADE	--

ROADWAY SOILS SURVEY

SHEET NO. B-3

HRESUser 2/4/2021 11:28:21 AM Y:\HR19-1573_Franjo Road, from Cutler Road to SW 184 Street - D6 - RB - Working\RDS

LABORATORY TESTING PROCEDURES

Organic Content (Organic Loss on Ignition – The amount of organic material in the sample was determined in this test, by measuring the loss due to ignition. The sample was first dried and weighed, then ignited and reweighed. The amount of organic material is expressed as a percentage of the soil weight. The test was conducted in general accordance with ASTM D-2974.

Percent Fines Content – In this test, the sample was dried and then washed over a # 200 mesh sieve. The percentage of soil by weight passing the sieve is the percentage of fines or portion of the sample in the silt and clay size range. This test was conducted in general accordance with ASTM D-1140.

Moisture Content – The moisture content (water content is the ratio, expressed as a percentage of the weight of water in a given mass of soil to the weight of the soil particles. This test was conducted in general accordance with ASTM D-2216.

Sieve Analysis – The sieve analyses were performed to determine the particle size and distribution of sample tested. Each sample was dried, weighed, and washed over a # 200 mesh sieve. The dried sample was then passed through a standard set nested sieves to determine the grain size distribution of the soil particles coarser than the # 200 sieves. This test was conducted in general accordance with ASTM C-136.

HR ENGINEERING SERVICES, INC.
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Phone (305) 888-8880, Fax (305) 888-8770

GRAIN SIZE DATA SHEET

Project Name: Franjo Road | Project No.: HR19-1573R
Boring No.: RB-1 | Sample No.: 1B | Depth: 0.8-1.5
Date: 11/18/2020 | Tested By: E.M.

Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	24.20	24.20	7	93	
3/8"	9.51	64.30	88.50	25	75	
4	4.76	46.80	135.30	38	62	AASHTO Classification:
10	2.00	32.20	167.50	47	53	
40	0.420	33.70	201.20	57	43	A-2-4
60	0.250	19.30	220.50	62	38	
100	0.149	25.50	246.00	69	31	
200	0.074	13.80	259.80	73	27	
PAN						

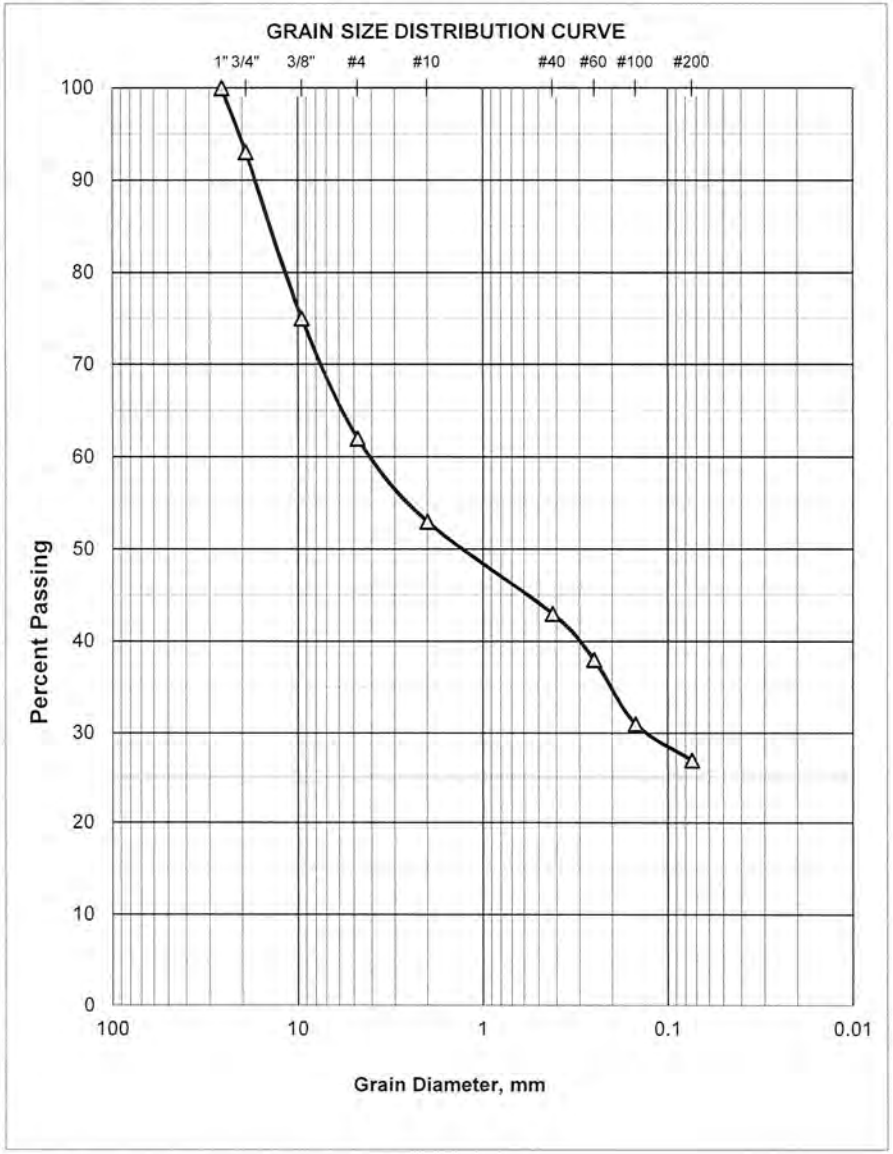
Total Dry Weight Before Wash, (gr) =	354.10
Percent Finer than No. 200 Sieve by Wash Method=	27%

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	38
Coarse Sand	>No. 4-≤ No. 40	19
Fine Sand	>No. 40-≤ No. 200	16
Silt and Clays	>No. 200	27
Water Content		12%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
Florida Registration No. 42045



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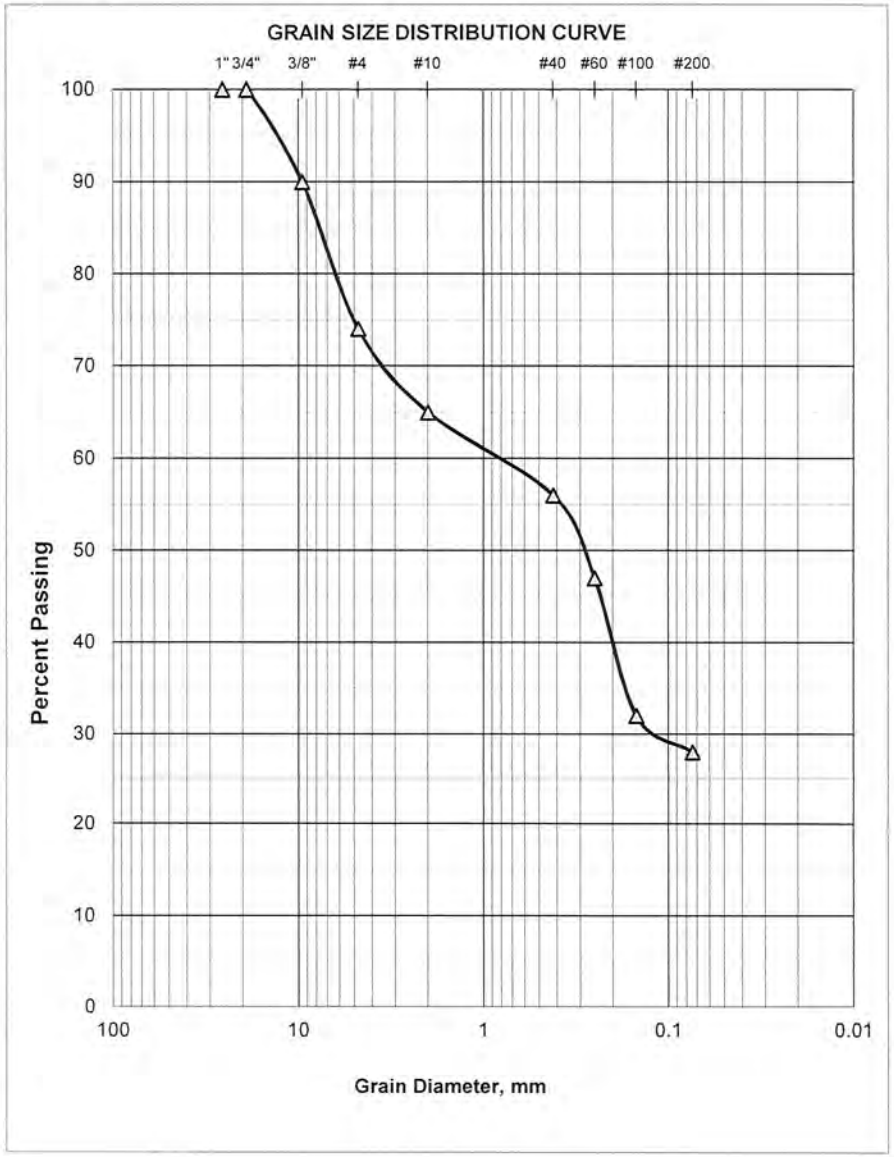
Phone (305) 888-8880, Fax (305) 888-8770

GRAIN SIZE DATA SHEET

Project Name: Franjo Road — Project No.: HR19-1573R
Boring No.: RB-9 — Sample No.: 1B — Depth: 0.8-1.5
Date: 11/18/2020 — Tested By: E.M.

Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	16.40	16.40	10	90	
4	4.76	27.70	44.10	26	74	AASHTO Classification:
10	2.00	15.30	59.40	35	65	
40	0.420	14.90	74.30	44	56	A-2-4
60	0.250	14.80	89.10	53	47	
100	0.149	26.40	115.50	68	32	
200	0.074	7.20	122.70	72	28	
PAN						



Total Dry Weight Before Wash, (gr) = 169.40
Percent Finer than No. 200 Sieve by Wash Method= 28%

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	26
Coarse Sand	>No. 4-≤ No. 40	18
Fine Sand	>No. 40-≤ No. 200	28
Silt and Clays	>No. 200	28
Water Content		16%

Respectfully Submitted,
HR Engineering Services, Inc.

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GRAIN SIZE DATA SHEET

Project Name: Franjo Road Project No.: HR19-1573R
Boring No.: RB-13 Sample No.: 1B Depth: 0.8-1.4
Date: 11/18/2020 Tested By: E.M.

Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	23.30	23.30	24	76	
4	4.76	14.50	37.80	38	62	AASHTO Classification:
10	2.00	7.70	45.50	46	54	
40	0.420	8.40	53.90	55	45	A-1-b
60	0.250	8.90	62.80	64	36	
100	0.149	14.60	77.40	78	22	
200	0.074	3.90	81.30	82	18	
PAN						

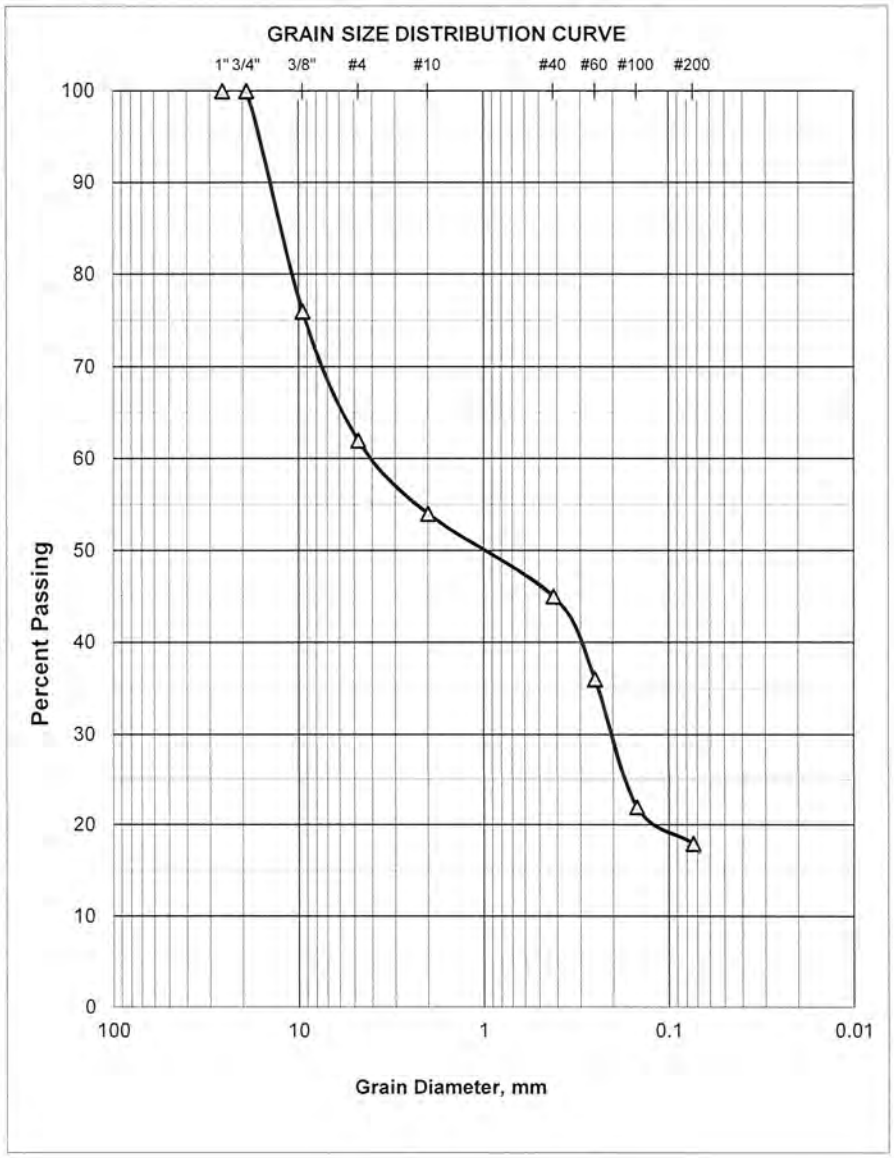
Total Dry Weight Before Wash, (gr) =	98.70
Percent Finer than No. 200 Sieve by Wash Method=	18%

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	38
Coarse Sand	>No. 4-≤ No. 40	17
Fine Sand	>No. 40-≤ No. 200	27
Silt and Clays	>No. 200	18
Water Content		18%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
Florida Registration No. 42045



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GRAIN SIZE DATA SHEET

Project Name: Franjo Road Project No.: HR19-1573R
Boring No.: RB-17 Sample No.: 1B Depth: 0.8-1.3
Date: 11/27/2020 Tested By: E.M.

Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	52.90	52.90	23	77	
3/8"	9.51	14.40	67.30	29	71	
4	4.76	25.20	92.50	40	60	AASHTO Classification:
10	2.00	14.70	107.20	47	53	
40	0.420	20.20	127.40	56	44	A-1-b
60	0.250	21.20	148.60	65	35	
100	0.149	23.90	172.50	75	25	
200	0.074	7.50	180.00	79	21	
PAN						

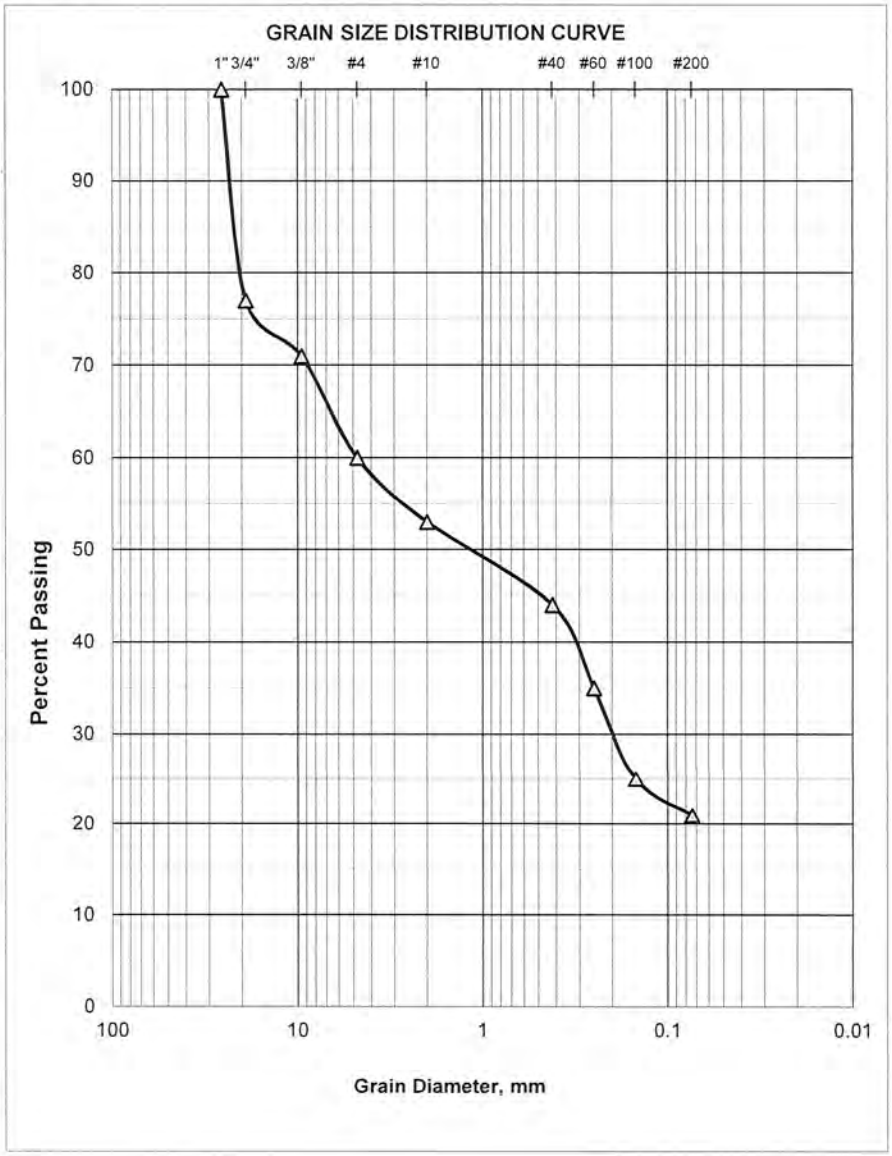
Total Dry Weight Before Wash, (gr) =	229.00
Percent Finer than No. 200 Sieve by Wash Method=	21%

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	40
Coarse Sand	>No. 4-≤ No. 40	16
Fine Sand	>No. 40-≤ No. 200	23
Silt and Clays	>No. 200	21
Water Content		11%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
Florida Registration No. 42045



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GRAIN SIZE DATA SHEET

Project Name: Franjo Road Project No.: HR19-1573R
Boring No.: RB-20 Sample No.: 1B Depth: 0.8-1.5
Date: 12/3/2020 Tested By: E.M.

Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	17.20	17.20	8	92	
4	4.76	31.90	49.10	23	77	AASHTO Classification:
10	2.00	21.70	70.80	33	67	
40	0.420	30.40	101.20	47	53	A-2-4
60	0.250	25.70	126.90	59	41	
100	0.149	30.70	157.60	73	27	
200	0.074	10.20	167.80	77	23	
PAN						

Total Dry Weight Before Wash, (gr) =	216.90
Percent Finer than No. 200 Sieve by Wash Method=	23%

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	23
Coarse Sand	>No. 4-≤ No. 40	24
Fine Sand	>No. 40-≤ No. 200	30
Silt and Clays	>No. 200	23
Water Content		11%

Respectfully Submitted,
HR Engineering Services, Inc.

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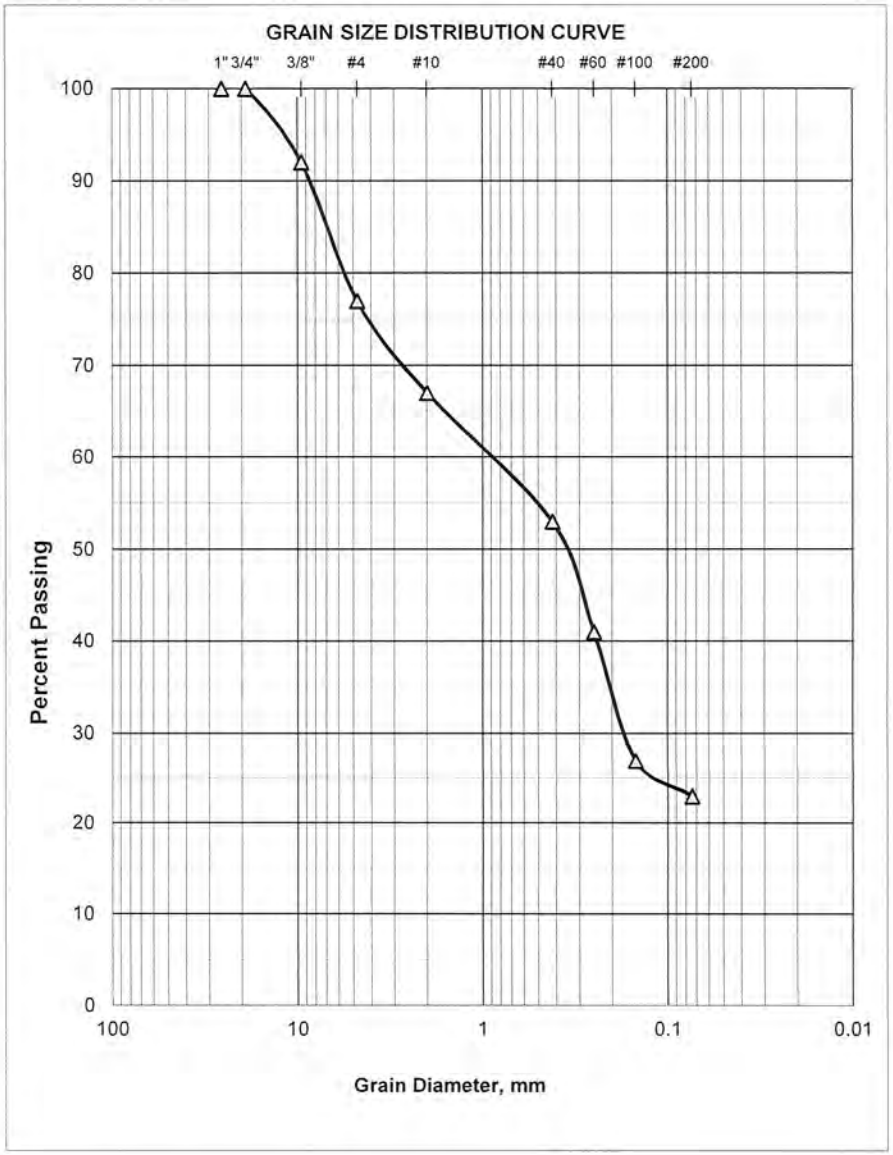

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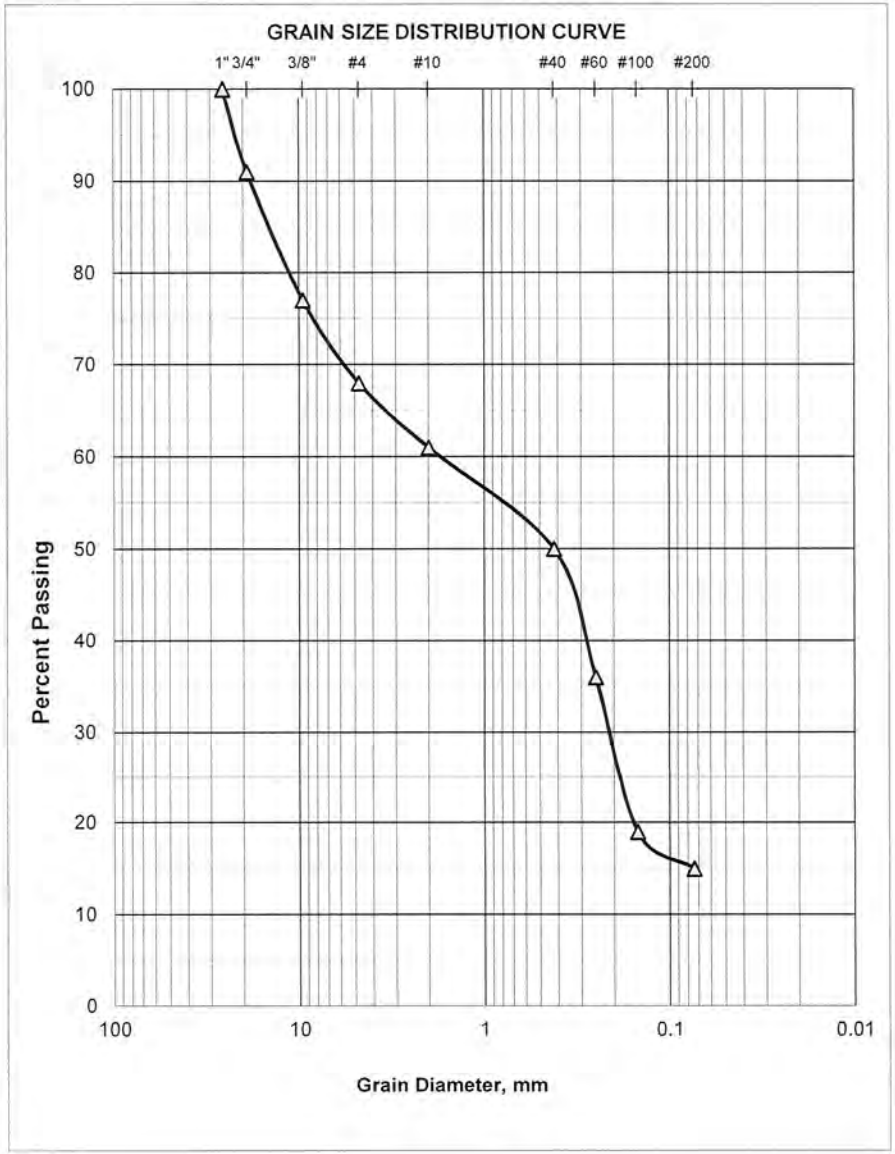
GRAIN SIZE DATA SHEET

Project Name:	Franjo Road			Project No.:	HR19-1573R
Boring No.:	RB-25	Sample No.:	1B	Depth:	0.8-2.0
Date:	12/3/2020			Tested By:	E.M.

Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	27.20	27.20	9	91	
3/8"	9.51	42.40	69.60	23	77	
4	4.76	24.90	94.50	32	68	AASHTO Classification:
10	2.00	22.30	116.80	39	61	
40	0.420	33.20	150.00	50	50	A-1-b
60	0.250	41.30	191.30	64	36	
100	0.149	49.60	240.90	81	19	
200	0.074	11.40	252.30	85	15	
PAN						



Total Dry Weight Before Wash, (gr) =	297.10
Percent Finer than No. 200 Sieve by Wash Method=	15%

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	32
Coarse Sand	>No. 4-≤ No. 40	18
Fine Sand	>No. 40-≤ No. 200	35
Silt and Clays	>No. 200	15
Water Content		14%

Respectfully Submitted,
HR Engineering Services, Inc.

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REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: Franjo Road Project No.: HR19-1573R

Boring No.: RB-26 Sample No.: 2A Depth: 2.0-3.0

Date: 11/30/20

Technician:	E.M
Date Sample Placed in Oven:	11/30/2020
Time in / Out of Oven :	11/30/20 9:00 AM TO 12/01/20 9:00 AM
Wt. of Wet Soil + Can, grams	247.10
Wt. of Dry Soil + Can, grams	208.00
Wt. of Can, grams No. 503	8.80
Wt. of Dry Soil, grams	199.20
Wt. of Moisture, grams	39.10
Water Content, w%	20%
Wt. of Dry Soil + Can Before Wash, grams	208.00
Wt. of Can, grams No. 503	8.80
Wt. of Dry Soil Before Wash, grams	199.20
Time in / Out of Oven :	12/02/20 9:30 AM TO 12/03/20 9:30 AM
Wt. of Dry Soil + Can After Wash, grams	161.30
Wt. of Dry Soil After Wash, grams	152.50
Total Loss, grams	46.70
Percent Finer Than No. 200 Sieve	23%

Moisture Content Test was performed in general accordance with ASTM D 2216 (AASHTO T 265)
Fines Content Test was performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)

Respectfully Submitted,

HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
Florida Registration No. 42045

AASHTO Classification:

A-2-4

HR ENGINEERING SERVICES, INC.

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Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: Franjo Road **Project No.:** HR19-1573R

Boring No.: RB-26 **Sample No.:** 2B **Depth:** 3.0-4.0

Date: 11/30/20

Technician:	E.M					
Date Sample Placed in Oven:	11/30/2020					
Time in / Out of Oven :	11/30/20	9:00 AM	TO	12/01/20	9:00 AM	
Wt. of Wet Soil + Can, grams	149.40					
Wt. of Dry Soil + Can, grams	112.00					
Wt. of Can, grams No. 504	8.80					
Wt. of Dry Soil, grams	103.20					
Wt. of Moisture, grams	37.40					
Water Content, w%	36%					
Wt. of Dry Soil + Can Before Wash, grams	112.00					
Wt. of Can, grams No. 504	8.80					
Wt. of Dry Soil Before Wash, grams	103.20					
Time in / Out of Oven :	12/02/20	9:30 AM	TO	12/03/20	9:30 AM	
Wt. of Dry Soil + Can After Wash, grams	81.50					
Wt. of Dry Soil After Wash, grams	72.70					
Total Loss, grams	30.50					
Percent Finer Than No. 200 Sieve	30%					

Moisture Content Test was performed in general accordance with ASTM D 2216 (AASHTO T 265)
Fines Content Test was performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)

Respectfully Submitted,

HR Engineering Services, Inc.

AASHTO Classification:

A-2-4

Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.
7815 N.W. 72nd Avenue - Medley, Florida 33166
Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: Franjo Road **Project No.:** HR19-1573R

Boring No.: RB-26 **Sample No.:** 3A **Depth:** 4.0-5.0

Date: 11/30/20

Technician:	E.M
Date Sample Placed in Oven:	11/30/2020
Time in / Out of Oven :	11/30/20 9:00 AM TO 12/01/20 9:00 AM
Wt. of Wet Soil + Can, grams	158.60
Wt. of Dry Soil + Can, grams	121.20
Wt. of Can, grams No. 505	8.80
Wt. of Dry Soil, grams	112.40
Wt. of Moisture, grams	37.40
Water Content, w%	33%
Wt. of Dry Soil + Can Before Wash, grams	121.20
Wt. of Can, grams No. 505	8.80
Wt. of Dry Soil Before Wash, grams	112.40
Time in / Out of Oven :	12/02/20 9:30 AM TO 12/03/20 9:30 AM
Wt. of Dry Soil + Can After Wash, grams	81.70
Wt. of Dry Soil After Wash, grams	72.90
Total Loss, grams	39.50
Percent Finer Than No. 200 Sieve	35%

Moisture Content Test was performed in general accordance with ASTM D 2216 (AASHTO T 265)
Fines Content Test was performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)

Respectfully Submitted,

HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
Florida Registration No. 42045

AASHTO Classification:
A-2-4

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7815 N.W. 72nd Avenue - Medley, Florida 33166
Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: Franjo Road Project No.: HR19-1573R

Boring No.: RB-27 Sample No.: 2B Depth: 3.0-4.0

Date: 11/30/20

Technician:	E.M					
Date Sample Placed in Oven:	11/30/2020					
Time in / Out of Oven :	11/30/20	9:00 AM	TO	12/01/20	9:00 AM	
Wt. of Wet Soil + Can, grams	147.60					
Wt. of Dry Soil + Can, grams	106.70					
Wt. of Can, grams No. 506	8.80					
Wt. of Dry Soil, grams	97.90					
Wt. of Moisture, grams	40.90					
Water Content, w%	42%					
Wt. of Dry Soil + Can Before Wash, grams	106.70					
Wt. of Can, grams No. 506	8.80					
Wt. of Dry Soil Before Wash, grams	97.90					
Time in / Out of Oven :	12/02/20	9:30 AM	TO	12/03/20	9:30 AM	
Wt. of Dry Soil + Can After Wash, grams	47.90					
Wt. of Dry Soil After Wash, grams	39.10					
Total Loss, grams	58.80					
Percent Finer Than No. 200 Sieve	60%					

Moisture Content Test was performed in general accordance with ASTM D 2216 (AASHTO T 265)
Fines Content Test was performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)

Respectfully Submitted,

HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
Florida Registration No. 42045

AASHTO Classification:

A-4

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REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: Franjo Road Project No.: HR19-1573R

Boring No.: RB-28 Sample No.: 1C Depth: 1.2-2.0

Date: 11/30/20

Technician:	E.M
Date Sample Placed in Oven:	11/30/2020
Time in / Out of Oven :	11/30/20 2:00 AM TO 12/01/20 2:00 AM
Wt. of Wet Soil + Can, grams	118.90
Wt. of Dry Soil + Can, grams	88.70
Wt. of Can, grams No. 401	8.80
Wt. of Dry Soil, grams	79.90
Wt. of Moisture, grams	30.20
Water Content, w%	38%
Wt. of Dry Soil + Can Before Wash, grams	88.70
Wt. of Can, grams No. 401	8.80
Wt. of Dry Soil Before Wash, grams	79.90
Time in / Out of Oven :	12/02/20 1:00 PM TO 12/03/20 1:00 PM
Wt. of Dry Soil + Can After Wash, grams	37.70
Wt. of Dry Soil After Wash, grams	28.90
Total Loss, grams	51.00
Percent Finer Than No. 200 Sieve	64%

Moisture Content Test was performed in general accordance with ASTM D 2216 (AASHTO T 265)
Fines Content Test was performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)

Respectfully Submitted,

HR Engineering Services, Inc.

AASHTO Classification:

A-4

Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166
Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: Franjo Road Project No.: HR19-1573R

Boring No.: RB-28 Sample No.: 2B Depth: 2.5-4.0

Date: 11/30/20

Technician:	E.M
Date Sample Placed in Oven:	11/30/2020
Time in / Out of Oven :	11/30/20 2:00 AM TO 12/01/20 2:00 AM
Wt. of Wet Soil + Can, grams	406.80
Wt. of Dry Soil + Can, grams	268.10
Wt. of Can, grams No. 402	8.80
Wt. of Dry Soil, grams	259.30
Wt. of Moisture, grams	138.70
Water Content, w%	53%
Wt. of Dry Soil + Can Before Wash, grams	268.10
Wt. of Can, grams No. 402	8.80
Wt. of Dry Soil Before Wash, grams	259.30
Time in / Out of Oven :	12/02/20 1:00 PM TO 12/03/20 1:00 PM
Wt. of Dry Soil + Can After Wash, grams	43.60
Wt. of Dry Soil After Wash, grams	34.80
Total Loss, grams	224.50
Percent Finer Than No. 200 Sieve	87%

Moisture Content Test was performed in general accordance with ASTM D 2216 (AASHTO T 265)
Fines Content Test was performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)

Respectfully Submitted,

HR Engineering Services, Inc.

AASHTO Classification:

A-4

Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.
7815 N.W. 72nd Avenue - Medley, Florida 33166
Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: Franjo Road **Project No.:** HR19-1573R

Boring No.: RB-28 **Sample No.:** 3 **Depth:** 4.0-6.0

Date: 11/30/20

Technician:	E.M
Date Sample Placed in Oven:	11/30/2020
Time in / Out of Oven :	11/30/20 2:00 AM TO 12/01/20 2:00 AM
Wt. of Wet Soil + Can, grams	517.70
Wt. of Dry Soil + Can, grams	341.10
Wt. of Can, grams No. 403	9.00
Wt. of Dry Soil, grams	332.10
Wt. of Moisture, grams	176.60
Water Content, w%	53%
Wt. of Dry Soil + Can Before Wash, grams	341.10
Wt. of Can, grams No. 403	9.00
Wt. of Dry Soil Before Wash, grams	332.10
Time in / Out of Oven :	12/02/20 1:00 PM TO 12/03/20 1:00 PM
Wt. of Dry Soil + Can After Wash, grams	28.40
Wt. of Dry Soil After Wash, grams	19.40
Total Loss, grams	312.70
Percent Finer Than No. 200 Sieve	94%

Moisture Content Test was performed in general accordance with ASTM D 2216 (AASHTO T 265)
Fines Content Test was performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)

Respectfully Submitted,

HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
Florida Registration No. 42045

AASHTO Classification:

A-4

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7815 N.W. 72nd Avenue - Medley, Florida 33166
Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: Franjo Road **Project No.:** HR19-1573R

Boring No.: RB-28 **Sample No.:** 4A **Depth:** 6.0-7.0

Date: 11/30/20

Technician:	E.M
Date Sample Placed in Oven:	11/30/2020
Time in / Out of Oven :	11/30/20 2:00 AM TO 12/01/20 2:00 AM
Wt. of Wet Soil + Can, grams	450.30
Wt. of Dry Soil + Can, grams	360.80
Wt. of Can, grams No. 404	8.80
Wt. of Dry Soil, grams	352.00
Wt. of Moisture, grams	89.50
Water Content, w%	25%
Wt. of Dry Soil + Can Before Wash, grams	360.80
Wt. of Can, grams No. 404	8.80
Wt. of Dry Soil Before Wash, grams	352.00
Time in / Out of Oven :	12/02/20 1:00 PM TO 12/03/20 1:00 PM
Wt. of Dry Soil + Can After Wash, grams	334.40
Wt. of Dry Soil After Wash, grams	325.60
Total Loss, grams	26.40
Percent Finer Than No. 200 Sieve	8%

Moisture Content Test was performed in general accordance with ASTM D 2216 (AASHTO T 265)
Fines Content Test was performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)

Respectfully Submitted,

HR Engineering Services, Inc.

AASHTO Classification:

A-3

Hernando R. Ramos, P.E.
Florida Registration No. 42045

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Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: Franjo Road **Project No.:** HR19-1573R

Boring No.: RB-32 **Sample No.:** 2B **Depth:** 2.5-4.0

Date: 11/30/20

Technician:	E.M
Date Sample Placed in Oven:	11/30/2020
Time in / Out of Oven :	11/30/20 2:00 AM TO 12/01/20 2:00 AM
Wt. of Wet Soil + Can, grams	599.50
Wt. of Dry Soil + Can, grams	426.00
Wt. of Can, grams No. 407	9.00
Wt. of Dry Soil, grams	417.00
Wt. of Moisture, grams	173.50
Water Content, w%	42%
Wt. of Dry Soil + Can Before Wash, grams	426.00
Wt. of Can, grams No. 407	9.00
Wt. of Dry Soil Before Wash, grams	417.00
Time in / Out of Oven :	12/02/20 1:00 PM TO 12/03/20 1:00 PM
Wt. of Dry Soil + Can After Wash, grams	29.50
Wt. of Dry Soil After Wash, grams	20.50
Total Loss, grams	396.50
Percent Finer Than No. 200 Sieve	95%

Moisture Content Test was performed in general accordance with ASTM D 2216 (AASHTO T 265)
Fines Content Test was performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)

Respectfully Submitted,

HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
Florida Registration No. 42045

AASHTO Classification:

A-4

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166
Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: Franjo Road Project No.: HR19-1573R

Boring No.: RB-32 Sample No.: 3A Depth: 4.0-5.0

Date: 11/30/20

Technician:	E.M
Date Sample Placed in Oven:	11/30/2020
Time in / Out of Oven :	11/30/20 2:00 AM TO 12/01/20 2:00 AM
Wt. of Wet Soil + Can, grams	343.50
Wt. of Dry Soil + Can, grams	251.10
Wt. of Can, grams No. 408	9.00
Wt. of Dry Soil, grams	242.10
Wt. of Moisture, grams	92.40
Water Content, w%	38%
Wt. of Dry Soil + Can Before Wash, grams	251.10
Wt. of Can, grams No. 408	9.00
Wt. of Dry Soil Before Wash, grams	242.10
Time in / Out of Oven :	12/02/20 1:00 PM TO 12/03/20 1:00 PM
Wt. of Dry Soil + Can After Wash, grams	22.50
Wt. of Dry Soil After Wash, grams	13.50
Total Loss, grams	228.60
Percent Finer Than No. 200 Sieve	94%

Moisture Content Test was performed in general accordance with ASTM D 2216 (AASHTO T 265)
Fines Content Test was performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)

Respectfully Submitted,

HR Engineering Services, Inc.

AASHTO Classification:

A-4

Hernando R. Ramos, P.E.
Florida Registration No. 42045

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Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: Franjo Road **Project No.:** HR19-1573R

Boring No.: RB-33 **Sample No.:** 3 **Depth:** 4.0-6.0

Date: 11/30/20

Technician:	E.M
Date Sample Placed in Oven:	11/30/2020
Time in / Out of Oven :	11/30/20 2:00 AM TO 12/01/20 2:00 AM
Wt. of Wet Soil + Can, grams	565.30
Wt. of Dry Soil + Can, grams	370.50
Wt. of Can, grams No. 409	9.00
Wt. of Dry Soil, grams	361.50
Wt. of Moisture, grams	194.80
Water Content, w%	54%
Wt. of Dry Soil + Can Before Wash, grams	370.50
Wt. of Can, grams No. 409	9.00
Wt. of Dry Soil Before Wash, grams	361.50
Time in / Out of Oven :	12/02/20 1:00 PM TO 12/03/20 1:00 PM
Wt. of Dry Soil + Can After Wash, grams	14.60
Wt. of Dry Soil After Wash, grams	5.60
Total Loss, grams	355.90
Percent Finer Than No. 200 Sieve	98%

Moisture Content Test was performed in general accordance with ASTM D 2216 (AASHTO T 265)
Fines Content Test was performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)

Respectfully Submitted,

HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
Florida Registration No. 42045

AASHTO Classification:

A-4

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7815 N.W. 72nd Avenue - Medley, Florida 33166
Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: Franjo Road Project No.: HR19-1573R

Boring No.: RB-33 Sample No.: 4 Depth: 6.0-8.0

Date: 11/30/20

Technician:	E.M
Date Sample Placed in Oven:	11/30/2020
Time in / Out of Oven :	11/30/20 2:00 AM TO 12/01/20 2:00 AM
Wt. of Wet Soil + Can, grams	480.10
Wt. of Dry Soil + Can, grams	297.20
Wt. of Can, grams No. 410	9.00
Wt. of Dry Soil, grams	288.20
Wt. of Moisture, grams	182.90
Water Content, w%	63%
Wt. of Dry Soil + Can Before Wash, grams	297.20
Wt. of Can, grams No. 410	9.00
Wt. of Dry Soil Before Wash, grams	288.20
Time in / Out of Oven :	12/02/20 1:00 PM TO 12/03/20 1:00 PM
Wt. of Dry Soil + Can After Wash, grams	22.40
Wt. of Dry Soil After Wash, grams	13.40
Total Loss, grams	274.80
Percent Finer Than No. 200 Sieve	95%

Moisture Content Test was performed in general accordance with ASTM D 2216 (AASHTO T 265)
Fines Content Test was performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)

Respectfully Submitted,

HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
Florida Registration No. 42045

AASHTO Classification:

A-4

HR ENGINEERING SERVICES, INC.
7815 N.W. 72nd Avenue - Medley, Florida 33166
Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: Franjo Road **Project No.:** HR19-1573R

Boring No.: RB-33 **Sample No.:** 5A **Depth:** 8.0-9.0

Date: 11/30/20

Technician:	E.M
Date Sample Placed in Oven:	11/30/2020
Time in / Out of Oven :	11/30/20 2:00 AM TO 12/01/20 2:00 AM
Wt. of Wet Soil + Can, grams	401.90
Wt. of Dry Soil + Can, grams	233.70
Wt. of Can, grams No. 507	8.90
Wt. of Dry Soil, grams	224.80
Wt. of Moisture, grams	168.20
Water Content, w%	75%
Date Sample Placed in Furnace:	12/02/20
Time in / out of furnace (minimum 6 hrs):	12/02/20 9:30 AM TO 12/02/20 3:30 PM
Weight of Crucible & Oven-Dried Sample:	27.40
Weight of Crucible and Sample After Ignition:	26.80
Weight of Crucible: No. 227	16.00
Weight of Oven-Dried Soil:	11.40
Weight Loss due to Ignition:	0.60
Percent Organics:	5%

Moisture Content Test was performed in general accordance with ASTM D 2216 (AASHTO T 265)
Organic Content Test was performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,

HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
Florida Registration No. 42045

AASHTO Classification:

A-4

HR ENGINEERING SERVICES, INC.
7815 N.W. 72nd Avenue - Medley, Florida 33166
Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: Franjo Road **Project No.:** HR19-1573R

Boring No.: RB-33 **Sample No.:** 5A **Depth:** 8.0-9.0

Date: 11/30/20

Technician:	E.M
Date Sample Placed in Oven:	11/30/2020
Time in / Out of Oven :	11/30/20 2:00 AM TO 12/01/20 2:00 AM
Wt. of Wet Soil + Can, grams	401.90
Wt. of Dry Soil + Can, grams	233.70
Wt. of Can, grams No. 507	8.90
Wt. of Dry Soil, grams	224.80
Wt. of Moisture, grams	168.20
Water Content, w%	75%
Wt. of Dry Soil + Can Before Wash, grams	222.10
Wt. of Can, grams No. 507	8.90
Wt. of Dry Soil Before Wash, grams	213.20
Time in / Out of Oven :	12/02/20 1:00 PM TO 12/03/20 1:00 PM
Wt. of Dry Soil + Can After Wash, grams	114.60
Wt. of Dry Soil After Wash, grams	105.70
Total Loss, grams	107.50
Percent Finer Than No. 200 Sieve	50%

Moisture Content Test was performed in general accordance with ASTM D 2216 (AASHTO T 265)
Fines Content Test was performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)

Respectfully Submitted,

HR Engineering Services, Inc.

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AASHTO Classification:

A-4

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Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: Franjo Road **Project No.:** HR19-1573R

Boring No.: RB-34 **Sample No.:** 2B **Depth:** 3.0-4.0

Date: 11/30/20

Technician:	E.M
Date Sample Placed in Oven:	11/30/2020
Time in / Out of Oven :	11/30/20 2:00 AM TO 12/01/20 2:00 AM
Wt. of Wet Soil + Can, grams	279.50
Wt. of Dry Soil + Can, grams	202.90
Wt. of Can, grams No. 508	8.90
Wt. of Dry Soil, grams	194.00
Wt. of Moisture, grams	76.60
Water Content, w%	39%
Wt. of Dry Soil + Can Before Wash, grams	202.90
Wt. of Can, grams No. 508	8.90
Wt. of Dry Soil Before Wash, grams	194.00
Time in / Out of Oven :	12/02/20 1:00 PM TO 12/03/20 1:00 PM
Wt. of Dry Soil + Can After Wash, grams	13.70
Wt. of Dry Soil After Wash, grams	4.80
Total Loss, grams	189.20
Percent Finer Than No. 200 Sieve	98%

Moisture Content Test was performed in general accordance with ASTM D 2216 (AASHTO T 265)
Fines Content Test was performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)

Respectfully Submitted,

HR Engineering Services, Inc.

AASHTO Classification:

A-4

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Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: Franjo Road **Project No.:** HR19-1573R

Boring No.: RB-34 **Sample No.:** 3 **Depth:** 4.0-6.0

Date: 11/30/20

Technician:	E.M					
Date Sample Placed in Oven:	11/30/2020					
Time in / Out of Oven :	11/30/20	2:00 PM	TO	12/01/20	2:00 PM	
Wt. of Wet Soil + Can, grams	867.60					
Wt. of Dry Soil + Can, grams	617.80					
Wt. of Can, grams No. 509	8.90					
Wt. of Dry Soil, grams	608.90					
Wt. of Moisture, grams	249.80					
Water Content, w%	41%					
Wt. of Dry Soil + Can Before Wash, grams	617.80					
Wt. of Can, grams No. 509	8.90					
Wt. of Dry Soil Before Wash, grams	608.90					
Time in / Out of Oven :	12/02/20	1:00 PM	TO	12/03/20	1:00 PM	
Wt. of Dry Soil + Can After Wash, grams	43.80					
Wt. of Dry Soil After Wash, grams	34.90					
Total Loss, grams	574.00					
Percent Finer Than No. 200 Sieve	94%					

Moisture Content Test was performed in general accordance with ASTM D 2216 (AASHTO T 265)
Fines Content Test was performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)

Respectfully Submitted,

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REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: Franjo Road Project No.: HR19-1573R

Boring No.: RB-35 Sample No.: 2B Depth: 3.0-4.0

Date: 12/02/20

Technician:	E.M
Date Sample Placed in Oven:	12/02/2020
Time in / Out of Oven :	12/02/20 10:30 AM TO 12/03/20 10:30 AM
Wt. of Wet Soil + Can, grams	194.20
Wt. of Dry Soil + Can, grams	143.10
Wt. of Can, grams No. 510	8.80
Wt. of Dry Soil, grams	134.30
Wt. of Moisture, grams	51.10
Water Content, w%	38%
Wt. of Dry Soil + Can Before Wash, grams	143.10
Wt. of Can, grams No. 510	8.80
Wt. of Dry Soil Before Wash, grams	134.30
Time in / Out of Oven :	12/02/20 1:00 PM TO 12/03/20 1:00 PM
Wt. of Dry Soil + Can After Wash, grams	15.80
Wt. of Dry Soil After Wash, grams	7.00
Total Loss, grams	127.30
Percent Finer Than No. 200 Sieve	95%

Moisture Content Test was performed in general accordance with ASTM D 2216 (AASHTO T 265)
Fines Content Test was performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)

Respectfully Submitted,

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REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: Franjo Road Project No.: HR19-1573R

Boring No.: RB-35 Sample No.: 3A Depth: 4.0-5.0

Date: 12/02/20

Technician:	E.M
Date Sample Placed in Oven:	12/02/2020
Time in / Out of Oven :	12/02/20 10:30 AM TO 12/03/20 10:30 AM
Wt. of Wet Soil + Can, grams	430.30
Wt. of Dry Soil + Can, grams	315.30
Wt. of Can, grams No. 611	8.80
Wt. of Dry Soil, grams	306.50
Wt. of Moisture, grams	115.00
Water Content, w%	38%
Wt. of Dry Soil + Can Before Wash, grams	315.30
Wt. of Can, grams No. 611	8.80
Wt. of Dry Soil Before Wash, grams	306.50
Time in / Out of Oven :	12/02/20 1:00 PM TO 12/03/20 1:00 PM
Wt. of Dry Soil + Can After Wash, grams	32.80
Wt. of Dry Soil After Wash, grams	24.00
Total Loss, grams	282.50
Percent Finer Than No. 200 Sieve	92%

Moisture Content Test was performed in general accordance with ASTM D 2216 (AASHTO T 265)
Fines Content Test was performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)

Respectfully Submitted,

HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
Florida Registration No. 42045

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A-4

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Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: Franjo Road Project No.: HR19-1573R

Boring No.: RB-40 Sample No.: 1B Depth: 0.8-2.0

Date: 12/02/20

Technician:	E.M
Date Sample Placed in Oven:	12/02/2020
Time in / Out of Oven :	12/02/20 10:30 AM TO 12/03/20 10:30 AM
Wt. of Wet Soil + Can, grams	412.40
Wt. of Dry Soil + Can, grams	313.70
Wt. of Can, grams No. 612	8.90
Wt. of Dry Soil, grams	304.80
Wt. of Moisture, grams	98.70
Water Content, w%	32%
Date Sample Placed in Furnace:	12/03/20
Time in / out of furnace (minimum 6 hrs):	12/03/20 11:00 AM TO 12/03/20 5:00 PM
Weight of Crucible & Oven-Dried Sample:	26.20
Weight of Crucible and Sample After Ignition:	25.80
Weight of Crucible: No. 54	15.00
Weight of Oven-Dried Soil:	11.20
Weight Loss due to Ignition:	0.40
Percent Organics:	4%

Moisture Content Test was performed in general accordance with ASTM D 2216 (AASHTO T 265)
Organic Content Test was performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,

HR Engineering Services, Inc.

AASHTO Classification:

A-4

Hernando R. Ramos, P.E.
Florida Registration No. 42045

APPENDIX C

GTR REVIEW CHECKLIST **C-1 AND C-2**

GTR REVIEW CHECKLIST FOR SITE INVESTIGATION

A. Site Investigation Information

Since the most important step in the geotechnical design process is to conduct an adequate site investigation, presentation of the subsurface information in the geotechnical report and on the plans deserves careful attention.

Geotechnical Report Text (Introduction) (Pgs. 10-1 to 10-4)	Yes	No	Unknown or N/A
1. Is the general location of the investigation described and/or a vicinity map included?	✓		
2. Is scope and purpose of the investigation summarized?	✓		
3. Is concise description given of geologic setting and topography of area?	✓		
4. Are the field explorations and laboratory tests on which the report is based listed?	✓		
5. Is the general description of subsurface soil, rock, and groundwater conditions given?	✓		
*6. Is the following information included with the geotechnical report (typically included in the report appendices):			
a. Test hole logs? (Pgs. 2-24 to 2-32)	✓		
b. Field test data?	✓		
c. Laboratory test data? (Pgs. 4-22 to 4-23)	✓		
d. Photographs (if pertinent)?			✓
Plan and Subsurface Profile (Pgs. 2-19, 3-9 to 3-12, 10-13)			
*7. Is a plan and subsurface profile of the investigation site provided?	✓		
8. Are the field explorations located on the plan view?	✓		

*A response other than (yes) or (N/A) for any of these checklist questions is cause to contact the appropriate geotechnical engineer for a clarification and/or to discuss the project.

A. Site Investigation Information (Cont.)	Yes	No	Unknown or N/A
*9. Does the conducted site investigation meet minimum criteria outlined in Table 2?	✓		
10. Are the explorations plotted and correctly numbered on the profile at their true elevation and location?	✓		
11. Does the subsurface profile contain a word description and/or graphic depiction of soil and rock types?	✓		
12. Are groundwater levels and date measured shown on the subsurface profile?	✓		
Subsurface Profile or Field Boring Log (Pgs. 2-14, 2-15, 2-24 to 2-31)			
13. Are sample types and depths recorded?	✓		
*14. Are SPT blow count, percent core recovery, and RQD values shown?	✓		
15. If cone penetration tests were made, are plots of cone resistance and friction ratio shown with depth?			
Laboratory Test Data (Pgs. 4-6, 4-22, 4-23)			
*16. Were lab soil classification tests such as natural moisture content, gradation, Atterberg limits, performed on selected representative samples to verify field visual soil identification?			✓
17. Are laboratory test results such as shear strength (Pg. 4-14), consolidation (Pg. 4-9), etc., included and/or summarized?			✓

*A response other than (yes) or (N/A) for any of these checklist questions is cause to contact the appropriate geotechnical engineer for a clarification and/or to discuss the project.

DTPW SPECIFICATIONS

GENERAL REQUIREMENTS

TABLE OF CONTENTS

1. GENERAL REQUIREMENTS

1. GENERAL REQUIREMENTS

1.01 DEFINITIONS AND TERMINOLOGY

A. General

1. These Specifications are written to the bidders, prior to award of the Contract, and to Contractor.
2. Where sentences directing work or other action appear in the active voice-imperative mood, without a subject, the subject "bidder" or "Contractor" is understood. In any other case where the subject is not clearly understood, Engineer will make a clarification and final determination as to the subject of the action.

B. Governing Regulations and Standard References

1. The following Standards and Governing Regulations, as amended by the Contract Documents, are hereby incorporated by reference:
   a. Building Code as set forth in Chapter 8 of the Code of Miami-Dade County.
   b. Public Works Manual of Metropolitan Dade County (Public Works Manual).
   c. United States Department of Justice's 2010 ADA Standards For Accessible Design
   d. Miami-Dade County's Traffic Control Equipment Specifications and Standards for The Metro Traffic Control System Miami-Dade County (TCESS).
   e. Florida Department of Transportation's Standard Plans for Road and Bridge Construction (FDOT Standard Plans).
      http://www.fdot.gov/design/standardplans/SPRBC.shtm
   f. Florida Department of Transportation Standard Specifications for Road and Bridge Construction (Divisions II & III), Special Provisions and Supplemental Specifications
      http://www.fdot.gov/programmanagement/Implemented/SpecBooks/default.shtm
   g. Florida Department of Transportation Surveying and Mapping Procedure
      http://fdotwp1.dot.state.fl.us/ProceduresInformationManagementSystemInternet/FormsAndProcedures/ViewDocument?topicNum=550-030-101
   h. Florida Department of Transportation Drainage Manual
      http://www.fdot.gov/roadway/Drainage/Manualsandhandbooks.shtm
   i. Florida Department of Transportation Soils and Foundations Handbook
      http://www.fdot.gov/structures/DocsandPubs.shtm
   j. Florida Department of Transportation Structures Manual
      http://www.fdot.gov/structures/DocsandPubs.shtm
   k. Florida Department of Transportation Current Structures Design Bulletins
      http://www.fdot.gov/structures/Memos/currentbulletins.shtm
   l. Manual on Uniform Traffic Control Devices (MUTCD)
      https://mutcd.fhwa.dot.gov/
   m. Safe Mobility For Life Program Policy Statement
      http://www.fdot.gov/traffic/TrafficServices/SafetyisGolden.shtm
   n. Florida Department of Transportation American with Disabilities Act (ADA) Compliance
      http://www.fdot.gov/roadway/ada/
   o. Florida Department of Transportation Florida Sampling and Testing Methods
      http://www.fdot.gov/materials/administration/resources/library/publications/fstm/disclaimer.shtm
   p. Florida Department of Transportation Flexible Pavement Coring and Evaluation Procedure
      http://www.fdot.gov/materials/administration/resources/library/publications/materialsmanual/documents/v1-section32-clean.pdf
   q. Florida Department of Transportation Design Bulletins and Update Memos
      http://www.fdot.gov/roadway/Bulletin/
   r. Florida Department of Transportation Utility Accommodation Manual
      http://www.fdot.gov/programmanagement/utilities/default.shtm
   s. Florida Department of Transportation Flexible Pavement Design Manual
      http://www.fdot.gov/roadway/pm/pcs/flexiblepavementmanual.pdf
   t. Florida Department of Transportation Rigid Pavement Design Manual
      http://www.fdot.gov/roadway/pm/pcs/rigidpavementmanual.pdf
   u. Florida Department of Transportation Pavement Type Selection Manual
      http://www.fdot.gov/roadway/pm/Publications/PTSM.pdf
   v. Florida Department of Transportation Traffic Engineering Manual
      http://www.fdot.gov/traffic/trafficservices/Studies/TEM/TEM.shtm
   w. Florida Department of Transportation Bicycle and Pedestrian Policies and Standards
      http://www.fdot.gov/roadway/bikeped/default.shtm
   x. Federal Highway Administration Hydraulic Engineering Circular Number 18 (HEC 18).
      https://www.fhwa.dot.gov/engineering/hydraulics/library_listing.cfm
   y. Florida Department of Transportation Manual of Uniform Minimum Standards for Design,

Construction and Maintenance for Streets and Highways (Florida Greenbook)
http://www.fdot.gov/roadway/floridagreenbook/fgb.shtm

z. Florida Department of Transportation Project Development and Environment Manual, Parts 1 and 2
http://www.fdot.gov/environment/pubs/pdeman/pdeman1.shtm

aa. Florida Statutes
http://www.leg.state.fl.us/statutes/

bb. Miami-Dade County and Local Municipal Ordinances.

2. The above list is not all inclusive and it is the responsibility of Contractor to comply with all applicable requirements whether included in this list or not. Additional project-specific criteria are provided throughout the Contract Documents

3. The above referenced Standards are intended to supplement, not supersede the requirements set forth herein and, unless otherwise noted, the latest revision shall apply. Where differences occur between referenced Standards and these Contract Documents, the more stringent shall apply unless otherwise noted in the Contract Documents or directed by Engineer in writing.

4. FDOT Standard Specifications.

a. FDOT Standard Specifications for Road and Bridge Construction (Divisions II & III), as amended by the Contract Documents, apply to an Article within these Specifications when:

1) The applicable FDOT Standard Specification Section (e.g. FDOT SECTION 415) is referenced in the title of the Article; or

2) The FDOT Standard Specification section, article, or subarticle is referenced within the Article (e.g. FDOT Section 415, FDOT 415-3; FDOT 415-5.1, etc.)

b. Unless otherwise specified, where page numbers are used in these Specifications to reference modifications to the FDOT Standard Specifications, it shall be understood to reference the 2007 edition.

C. Abbreviations

The following abbreviations, when used in the Contract Documents, represent the full text shown.

AAN	American Association of Nurserymen, Inc.
AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
AGC	The Associated General Contractors of America, Inc.
AGMA	American Gear Manufacturers Association
AIA	American Institute of Architects.
AISI	American Iron and Steel Institute
ANSI	American National Standards Institute, Inc.
APL	FDOT Approved Product List
AREA	American Railway Engineering Association
ASCE	American Society of Civil Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
AWG	American Wire Gauge
AWPA	American Wood Preservers Association
AWS	American Welding Society
AWWA	American Water Works Association
CFR	Code of Federal Regulations
CRSI	Concrete Reinforcing Steel Institute
EASA	Electrical Apparatus Service Association
EPA	Environmental Protection Agency of the United States Government
F.A.C.	Florida Administrative Code
FBC	Florida Building Code
FDEP	Florida Department of Environmental Protection
FDOT	Florida Department of Transportation
FHWA	Federal Highway Administration
FM	Florida Method or Florida Sampling and Testing Method
F.S.	Florida Statutes
FSS	Federal Specifications and Standards
IEEE	Institute of Electrical and Electronics Engineers
IES	Illuminating Engineering Society
IMSA	International Municipal Signal Association
IPCEA	Insulated Power Cable Engineers Association
ISO	International Organization for Standards
MDC	Miami-Dade County
MSTCSD	Minimum Specifications for Traffic Control Signals and Devices
NAM	Negotiated Acceptance Memorandum
MUTCD	Manual on Uniform Traffic Control Devices
NEC	National Electrical Code
NEMA	National Electrical Manufacturers Association
NESC	National Electrical Safety Code
NFPA	National Fire Protection Association
NIST	National Institute for Standards and Technology
NOAA	National Oceanic and Atmospheric Administration
NSF	NSF International
OSHA	Occupational Safety and Health Administration
PCA	Portland Cement Association
DTPW	Miami-Dade County Department of Transportation and Public Works
SAE	Society of Automotive Engineers
SBE-CONST	Small Business Enterprise-Construction
SI	International System of Units
SSPC	Society of Protective Coatings
TSSQPL	Traffic Signals and Signs Qualified Products List
UL	Underwriters' Laboratories
U.S.C.	United States Code

D. Definitions

The following terms, when used in the Specifications, have the meaning described.

1. Article. The numbered prime subdivision of a Division of these Specifications.
2. Bracing. A temporary structural member(s) placed between beams, girders, piles columns, etc. to provide stability during construction activities.
3. Bridge. A structure, including supports, erected over a depression or over an obstruction such as water, highway or railway, or for elevated roadway, for carrying traffic or other moving loads, and having a length, measured along the center of the roadway, of more than 20 feet between the inside faces of end supports. A multiple-span box culvert is considered a bridge, where the length between the extreme ends of the openings exceeds 20 feet.
4. Calendar day. Every day shown on the calendar, ending and beginning at midnight. Unless otherwise stipulated in the Contract Documents, the term "days" shall be understood as calendar days. In computing any period of time prescribed or allowed by this Contract, the day of the act, event, or default from which the designated period of time begins to run shall not be included. The last day of the period so computed shall be included unless it is a Saturday, Sunday, or legal holiday, in which event the period shall run until the end of the next day which is neither a Saturday, Sunday, or legal holiday. When the period of time prescribed or allowed is less than 7 days, intermediate Saturdays, Sundays, and legal holidays shall be excluded in the computation.
5. Construction Affecting Public Safety. Construction that may jeopardize public safety such as structures spanning functioning vehicular roadways, pedestrian walkways, railroads, navigation channels of navigable waterways and walls or other structure foundations located in embankments immediately adjacent to functioning roadways. It does not apply to those areas of the site under Contractor's control and outside the limits of normal public access.
6. Contract. The term "Contract" means the entire and integrated agreement between the parties thereunder and supersedes all prior negotiations, representations, or agreements, either written or oral. The executed Contract Documents form the Contract between the Department (on behalf of the County) and Contractor setting forth the obligations of the parties thereunder, including, but not limited to, the performance of the Work and the basis of payment.
7. Contract Documents. Consists of those items so designated in and inclusive of the executed Contract. Only printed or hard copies of the items listed in the executed Contract Form are Contract Documents.
8. Contract Time. The maximum number of calendar days, including authorized time extensions, allowed for final completion of all Contract work and requirements. Also called Contract Duration.
9. Contract Unit Price. Refers to the Unit Price provided by the Contract that is fixed at time of Contract award.
10. Contractor. The individual, firm, joint venture, or company contracting with the County to perform the Work pursuant to the Contract.
11. Contractor's Engineer of Record.
    a. A Professional Engineer registered in the State of Florida, other than the Engineer of Record or his subcontracted consultant, who undertakes the design and drawing of components of the permanent structure as part of a redesign, or for repair designs and details of the permanent work. Contractor's Engineer of Record may also serve as the Specialty Engineer.
    b. Contractor's Engineer of Record must be an employee of a pre-qualified firm. The firm shall be pre-qualified in accordance with the Rule 14-75, F.A.C. Any Corporation or Partnership offering engineering services must hold a Certificate of Authorization from the Florida Board of Professional Engineers.
    c. As an alternate to being an employee of a pre-qualified firm, Contractor's Engineer of Record may be a pre-qualified Specialty Engineer. For items of the permanent Work declared by the FDOT Construction Office to be "major" or "structural", the work performed by a pre-qualified Specialty Engineer must be checked by another pre-qualified Specialty Engineer. An individual Engineer may become pre-qualified in the work groups listed in Rule 14-75, F.A.C., if the requirements for the Professional Engineer are met for the individual work groups. Pre-qualified Specialty Engineers are listed on the FDOT Construction Office website. Pre-qualified Specialty Engineers will not be authorized to perform redesigns of items fully detailed in the Plans.
12. Contractor Originated Designs. Items which the Contract Documents require Contractor to design, detail and incorporate into the permanent works.
13. Controlling Work Items. The activity or work item on the critical path having the least amount of total float. The controlling item of work will also be referred to as a Critical Activity.
14. County. Miami-Dade County, Florida.
15. Culverts. Any structure not classified as a bridge that provides an opening under the roadway.
16. Department. Miami-Dade County Department of Transportation and Public Works.
17. Engineer. The County Engineer, acting directly or through duly authorized representatives; such representatives acting within the scope of the duties and authority assigned to them.
    a. Note: In order to avoid cumbersome and confusing repetition of expressions in these Specifications, it is provided that whenever anything is, or is to be done, if, as, or, when, or where "acceptable, accepted, approval, approved, authorized, condemned, considered necessary, contemplated, deemed necessary, designated, determined, directed, disapproved, established, given, indicated, insufficient, ordered, permitted, rejected, required, reserved, satisfactory, specified, sufficient, suitable,

suspended, unacceptable, or unsatisfactory," it shall be understood as if the expression were followed by the words "by Engineer," "by the Engineer," "to the Engineer," or "of the Engineer."

18. Engineer of Record. The Professional Engineer or Engineering Firm registered in the State of Florida that develops the criteria and concept for the project, performs the analysis, and is responsible for the preparation of the Plans and Specifications. The Engineer of Record may be Departmental in-house staff or a consultant retained by the Department. Contractor shall not employ the Engineer of Record as Contractor's Engineer of Record or as a Specialty Engineer.

19. Equipment. The machinery and equipment, together with the necessary supplies for upkeep and maintenance thereof, and all other tools and apparatus necessary for the construction and acceptable completion of the work.

20. Extra Work. Any "work" which is required by Engineer to be performed and which is not otherwise covered or included in the project by the existing Contract Documents, whether it be in the nature of additional work, altered work, deleted work, work due to differing site conditions, or otherwise. This term does not include a "delay".

21. Falsework. Includes any temporary construction work used to support the permanent structure until it becomes self-supporting. Falsework includes steel or timber beams, girders, columns, piles and foundations, and any proprietary equipment including modular shoring frames, post shores, and adjustable horizontal shoring.

22. Formwork. Includes any structure or mold used to retain plastic or fluid concrete in its designated shape until it hardens. Formwork comprises common materials such as wood or metal sheets, battens, soldiers and walers, ties, proprietary forming systems such as stay-in-place metal forms, and proprietary supporting bolts, hangers and brackets. Formwork may be either permanent formwork requiring a shop drawing submittal such as stay-in-place metal or concrete forms, or may be temporary formwork which requires certification by the Specialty Engineer for Construction Affecting Public Safety and for Major and Unusual Structures.

23. Highway, Street, or Road. A general term denoting a public way for purposes of vehicular travel, including the entire area within the right-of-way.

24. Holidays. Days designated by Miami-Dade County as holidays, which include, but are not limited to, New Year's Day, Martin Luther King's Birthday, President's Day, Memorial Day, Independence Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day and the following Friday, and Christmas Day.

25. Inspector. An authorized representative of the Engineer, assigned to make official inspections of the materials furnished and of the work performed by Contractor.

26. Laboratory. The official testing laboratory authorized by the Department.

27. Major and Unusual Structures: Bridges of complex geometry and/or complex design. Generally, this includes the following types of structures:
    a. Bridges with an individual span longer than 300 feet.
    b. Structurally continuous superstructures with spans over 150 feet.
    c. Steel box and plate girder bridges.
    d. Steel truss bridges.
    e. Concrete segmental and longitudinally post-tensioned continuous girder bridges.
    f. Cable stayed or suspension bridges.
    g. Arch bridges.
    h. Tunnels.
    i. Movable bridges (specifically electrical and mechanical components).
    j. Rehabilitation, widening, or lengthening of any of the above.

28. Major Item of Work. Any item of work having an original Contract value in excess of 5% of the original Contract amount.

29. Materials. Any substances to be incorporated in the work under the Contract.

30. Median. The portion of a divided highway or street separating the traveled ways for traffic moving in opposite directions.

31. Permanent Works. All the permanent structures and parts thereof required of the completed Contract.

32. Plans. The part of the Contract Documents prepared or approved by the Engineer, including reproductions thereof, which graphically shows or supplements the scope, extent, and character of the Work to be performed by Contractor. Whenever the word "Plans" appears in these Contract Documents, it shall include any related drawings or standard details referenced by the Contract Documents.

33. Right-of-Way. The land that the Department has title to, or right of use, for the road and its structures and appurtenances, and for material pits furnished by the Department.

34. Roadbed. The portion of the roadway occupied by the subgrade and shoulders.

35. Roadway. The portion of a highway within the limits of construction.

36. Scaffolding. An elevated work platform used to support workmen, materials and equipment, but not intended to support the structure.

37. Section. A numbered prime division of these Specifications.

38. Shop Drawings. All working, shop and erection drawings, associated trade literature, calculations, schedules, manuals and similar documents submitted by Contractor to define some portion of the Work. The

Work may include both permanent and temporary works as appropriate to the Project. Shop Drawings and other contractor submittals are not Plans as so defined.

39. Shoring. A component of falsework such as horizontal, vertical or inclined support members. In this Section, this term is interchangeable with falsework.

40. Special Erection Equipment. Includes launching gantries, beam and winch equipment, form travelers, stability towers, strong-backs, erection trusses, launching noses or similar items made purposely for construction of the structure. It does not apply to commonly available proprietary construction equipment such as cranes.

41. Special Provisions. Project specific clauses adopted by the Department that add to or revise these Specifications and associated supplemental specifications, or provide other requirements applicable to the Contract.

42. Specialty Engineer.

    a. A Professional Engineer registered in the State of Florida, other than the Engineer of Record or his subcontracted consultant, who undertakes the design and drawing preparation of components, systems, or installation methods and equipment for specific temporary portions of the Work or for special items of the permanent works not fully detailed in the plans and required to be furnished by Contractor such as but not limited to pot bearing designs, non-standard expansion joints, mechanically stabilized earth wall designs and other specialty items. The Specialty Engineer may also provide designs and details for items of the permanent work declared by the FDOT Construction Office to be "minor" or "non-structural". The Specialty Engineer may be an employee or officer of Contractor or a fabricator, an employee or officer of an entity providing components to a fabricator, or an independent consultant.

    b. For items of work not specifically covered by Rule 14-75, F.A.C., a Specialty Engineer is qualified if he has the following qualifications:

        1) Registration as a Professional Engineer in the State of Florida.

        2) The education and experience necessary to perform the submitted design as required by the Florida Board of Professional Engineers.

43. Specifications. The directions, provisions, and requirements contained herein, together with all stipulations contained in the Contract Documents, setting out or relating to the method and manner of performing the work, or to the quantities and qualities of materials and labor to be furnished under the Contract.

44. State. State of Florida.

45. Structure. Any waterworks, drainage works, sewage works, river works, earthworks or constructions of any kind, including those of earth or rock, permanent or temporary, and including bridges, dam, wall, caisson, mast, tower, pylon, underground tank, earth retaining elements or assembly of elements, formwork, falsework, scaffold, fences, poles, buildings, pavings, inlets, levees, tide gates, spillways, drop structures, any structure similar to the foregoing, and any other form of building, construction, arrangement of parts, elements, or materials found in structures.

46. Subarticle. A prime subdivision of an Article of these Specifications.

47. Subgrade. The portion of the roadbed immediately below the base course or pavement, including below the curb and gutter, valley gutter, shoulder and driveway pavement. The subgrade limits ordinarily include those portions of the roadbed shown in the plans to be constructed to a design bearing value or to be otherwise specially treated. Where no limits are shown in the plans, the subgrade section extends to a depth of 12 inches below the bottom of the base or pavement and outward to 6 inches beyond the base, pavement, or curb and gutter.

48. Substantial Completion. The time and date at which the Work has progressed to the point where, in the opinion of Engineer, the Work is sufficiently complete, in accordance with the Contract Documents, so that the Work can be occupied and/or utilized for the purposes for which it is intended. Substantial Completion cannot occur before the Project is issued a Certificate of Occupancy (or Completion, if applicable) by the Department that allows the County to utilize the entire Project for the purposes for which it is intended. Substantial completion on roadway projects includes completion and operation of traffic signals, street lighting and completion of landscape items.

49. Substructure. All of that part of a bridge structure below the bridge seats, including the parapets, backwalls, and wingwalls of abutments.

50. Superintendent. Contractor's authorized representative in responsible charge of the work.

51. Superstructure. The entire bridge structure above the substructure, including anchorage and anchor bolts, but excluding the parapets, backwalls, and wingwalls of abutments.

52. Surety. The corporate body that is bound by the Contract Bond with and for Contractor and responsible for the performance of the Contract and for payment of all legal debts pertaining thereto.

53. Temporary Works. Any temporary construction work necessary for the construction of the permanent works. This includes but is not limited to bracing, falsework, formwork, scaffolding, shoring, temporary earthworks, sheeting, cofferdams, and special erection equipment.

54. Traveled Way. The portion of the roadway providing for the movement of vehicles, exclusive of shoulders and auxiliary lanes.

55. Traffic Control Signals and Devices. Any signal or device, manually, electrically or mechanically operated, by which traffic is alternately directed to stop and permitted to proceed or controlled in any manner.

Traffic control signals and devices regulate, warn, or guide traffic on, over or adjacent to a street, highway, pedestrian facility, or bikeway by authority of a public agency having jurisdiction. Traffic control signals and devices include, but are not limited to, controller assemblies (controller cabinets and their contents); signal heads including their hanging or mounting devices; vehicle detection systems (loops, sealant, amplifier, lead-in wire, or cable); pedestrian detection systems (push button, push button housing, lead-in wires, and signal); motorist information systems, video equipment, network devices, dynamic message signs, highway advisory radios, cameras, vehicle detection systems, and other equipment used within a traffic control system.

56. Underground Facilities. All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.

57. Work. All labor, materials and incidentals required to execute and complete the requirements of the Contract including superintendence, use of equipment and tools, and all services and responsibilities prescribed or implied.

58. Working Day. Any calendar day on which Contractor works or is expected to work in accordance with the approved work progress schedule.

1.02 WORK COVERED BY THE CONTRACT DOCUMENTS

A. Intent of Contract and Contract Documents

1. The intent of the Contract and Contract Documents is to describe a functionally complete project (or part thereof) to be constructed, and to provide for the construction and completion in every detail of the Work described therein.

2. The intent of the Contract is for Contractor to provide, at no additional cost to the County, all labor, documentation, services, materials, equipment, tools, transportation, and supplies that are:

   a. Necessary to complete the Work in accordance with the Contract Documents.

   b. Reasonably inferred and incidental to the Work, whether or not specifically called for by the Contract Documents.

B. Alteration of Plans or of Character of Work

1. Engineer reserves the right to make, at any time prior to or during the progress of the Work, such increases or decreases in quantities, whether a significant change or not, and such alterations in the details of construction, whether a substantial change or not, including but not limited to alterations in the grade or alignment of the road or structure or both, as may be found necessary or desirable by the Engineer. The term "significant change" applies only when the Engineer determines that the character of the work, as altered, differs materially from that involved or included in the original proposed construction.

2. Such increases, decreases or alterations shall not constitute a breach of Contract, shall not invalidate the Contract, nor release the Surety from any liability arising out of this Contract or the Surety bond. Contractor agrees to perform the work, as altered, the same as if it had been a part of the original Work.

3. The Department may require work that is not covered by a price in the Contract if the Department determines that such work does not constitute a significant change and is essential to the satisfactory completion of the Contract within its intended scope. If an adjustment in price is warranted, Engineer will determine the basis of payment for such an adjustment in a fair and equitable amount and authorize the adjustment through an executed Negotiated Acceptance Memorandum (NAM) provided by the Department.

4. In the instance of an alleged significant change, Engineer will review all pertinent information provided by Contractor to determine the validity of the allegation. The determination by Engineer shall be conclusive and shall not be subject to challenge by Contractor in any forum, except upon Contractor establishing by clear and convincing proof that the determination by Engineer was without any reasonable and good-faith basis.

C. Connections to Existing Pavement, Drives and Walks

1. Adhere to the limits of construction at the beginning and end of the Project as detailed in the Contract Documents. However, if Engineer determines that it is necessary to extend the construction in order to make suitable connections to existing pavement, Engineer will authorize such a change.

2. For necessary connections to existing pavement, walks and drives that are not indicated on the Plans, Engineer will provide direction regarding the proper connections in accordance with the applicable Standards.

D. Differing Site Conditions

1. During the progress of the Work, if subsurface or latent physical conditions are encountered at the site differing materially from those indicated in the Contract Documents, or if unknown physical conditions of an unusual nature differing materially from those ordinarily encountered and generally recognized as inherent in the work provided for in the Contract are encountered at the site, the party (County or Contractor) discovering such conditions shall promptly notify the other party in writing of the specific differing conditions before Contractor disturbs the conditions or performs the affected work.

2. Upon receipt of written notification of differing site conditions from Contractor, Engineer will investigate the conditions. If Engineer determines that the

conditions materially differ and cause an increase or decrease in the cost or time required for the performance of any work under the Contract, an adjustment will be made, excluding loss of anticipated profits, and the Contract will be modified in writing accordingly. Engineer will notify Contractor whether or not an adjustment of the Contract is warranted.

3. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times if:
   a. Contractor knew of the existence of such conditions at the time Contractor made a final commitment to the County with respect to Contract Price and Contract Times by the submission of a Bid; or
   b. The existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making a Bid; or
   c. Contractor failed to give the written notice as required by this Article.
4. Engineer will not allow a Contract adjustment for a differing site condition unless Contractor has provided the required written notice.
5. Engineer will not allow a Contract adjustment under this clause for any effects caused to any other Department or non-Department projects on which Contractor may be working.

E. Underground Facilities.

1. It is generally recognized and Contractor should anticipate that information provided by utility owners during project design, frequently fails to disclose all Underground Facilities. The fact that more utility lines or other Underground Facilities are located in the Project Site than shown on the Project Plans does not constitute an unforeseen or differing Site Condition and such undisclosed Underground Facilities do not differ materially from the conditions which Contractor should expect.
2. Any information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the Site is based on information and data furnished to the County design engineer by the owners of such Underground Utilities. Additional utilities may exist which are not shown in the Contract Documents. Unless it is otherwise expressly stated in the Special Provisions, the County is not responsible for the accuracy or completeness of any such information or data provided
3. Contractor is responsible for field verification and location of all Underground Facilities prior to the start of construction. No field work shall be allowed to start until Contractor has notified Sunshine State One-Call of Florida, Inc. and all affected utilities have been located. In addition, Contractor, without any additional compensation, must expose and physically locate all potentially conflicting Underground Facilities prior to construction and is fully responsible for:
   a. Reviewing and checking all Underground Facilities information and data;
   b. Locating and verifying all Underground Facilities at or contiguous to the Site;
   c. Coordination of the Work with the owners of such Underground Facilities, including the County, during construction; and
   d. The safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.
4. The actual locations of the Underground Facilities must be compared to locations shown on the Plans and any required changes in alignment and grade must be made at the time of construction in consultation with Engineer.
5. If an Underground Utilities is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents:
   a. Identify the owner of such Underground Facilities and give written notice to that owner and to Engineer promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.
   b. Engineer will promptly review the Underground Facilities and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. If Engineer determines that the conditions materially differ and cause an increase or decrease in the cost or time required for the performance of the Work, an adjustment will be made, excluding loss of anticipated profits, and the Contract will be modified in writing accordingly. Engineer will notify Contractor whether or not an adjustment of the Contract is warranted.

F. Contractor Proposed Changes Affecting Utilities

1. Contractor is responsible for identifying and assessing any potential impacts to a utility that may be caused by the changes proposed by Contractor, and Contractor must, at the time of making the request for a change, notify the Department in writing of any such potential impacts to utilities.
2. Department approval of a Contractor proposed change does not relieve Contractor of sole responsibility for all utility impacts, costs, delays or damages, whether direct or indirect, resulting from Contractor initiated changes in the design or construction activities from those in the original Contract Specifications, design plans (including traffic control plans) or other Contract Documents and which effect a change in utility work different from that shown

in the utility plans, joint project agreements or utility relocation schedules.

G. Rights in and Use of Materials Found on the Site of the Work

1. Ownership and Disposal of Existing Materials: Unless otherwise directed by Engineer or elsewhere in the Contract Documents, take ownership and dispose of all materials that are not designated as the property of other parties, in both roadway and structures, found on the right-of-way, and all material in structures designated for removal. Such materials do not include earth or other excavated material required for the construction of the Project. During construction, Contractor may use materials from existing structures that are required to be removed and that are designated to remain the property of the Department. Do not cut or otherwise damage such material during removal unless Engineer gives permission to do so. Store material in an accessible location as Engineer directs. The Department is not responsible for the quality or quantity of any material salvaged.

2. Ornamental Trees and Shrubs: Take ownership of all ornamental trees or shrubs existing in the right-of-way that are required to be removed for the construction operations and which are not specifically designated on the Plans to be reset, relocated, or to be removed by others prior to the construction operations.

H. Restoration of Property

1. Take preconstruction videos/pictures of the entire work zone and adjacent areas.

2. Public or private property damaged during construction or removed for convenience of the Work must be repaired or replaced at Contractor's expense in a manner acceptable to Engineer, prior to final acceptance of the Work or sooner if otherwise required by the Contract Documents or Engineer. This includes, but is, not limited to signalization equipment and miscellaneous hardware removed from the construction site, signs, driveways, landscaping, sidewalk, walkways, walls, fences, footings, underground utilities, etc.

3. Contractor must comply with the requirements of Miami-Dade County Code Section 2-103.1 (b), CONSTRUCTION OF PUBLIC UTILITIES OR WORKS IN PUBLIC RIGHTS-OF-WAY

   a. "Whenever any person, corporation, partnership, association, County Department or other legal entity performs any construction or public work within an existing right-of-way located within unincorporated Miami-Dade County, or in right-of-ways of roads or streets located within municipalities that are maintained by the County, the right-of-way, including sidewalks, curbs and gutters, landscaping and must be restored to their legally permissible preexisting condition, including any aesthetic enhancements thereto and any adjacent private property damaged during construction, within forty-five (45) days of completion of the construction or public work in that right of way or within forty-five (45) days of damage to the affected property or area, whichever occurs first. Prior to the time such construction work begins, the contractor, by posting the construction site, shall inform the local community of the requirement to restore the right-of-way as well as any affected adjacent private property and the fines that could be imposed for each failure to do so. All work to be done pursuant to this Section shall be performed in compliance with the Public Works Manual. Any entity failing to restore the right-of-way to its preexisting condition or better within the time permitted shall be subject to a civil fine of five hundred dollars ($500.00) per violation per day until such time as the right-of-way is restored, as well as five hundred dollars ($500.00) per day for each affected adjacent private property until it is restored." Contractor may obtain a complete copy of the Ordinance from the Clerk of the Board.

   b. Post the construction site pursuant to Miami-Dade County Code Section 2-103 (b). The Public Notice to be posted is to read as follows:

> ***PUBLIC NOTICE***
> ***ORDINANCE NO. 03-89***
>
> *Contractor shall restore the right-of-way as well as any affected adjacent private property within 45 days of completion of construction or damage to the affected property or area, whichever occurs first.*
>
> *Any entity failing to restore the right-of-way to its pre-existing condition or better within the time promoted shall be subject to a civil fine of $500 per violation per day.*

4. Survey monuments.

   a. Upon completion of construction activities and prior to the expiration of the Contract:

      1) Coordinate the replacement of any monument(s) disturbed or destroyed.

      2) Submit to Engineer for review and approval, a survey report that includes all monuments replaced and all monuments impacted as a result of construction activities.

   b. The replacement of monuments and the preparation of the survey report must be by a licensed Florida Surveyor and Mapper and meet all applicable State Rules, Statutes, and requirements of the Department. All costs required for compliance with these requirements will be included among the Contract pay items.

5. Failure to Restore Damaged Property:

   a. In case of failure on the part of Contractor to restore such property, bridge, road or street, or to make good such damage or injury, Engineer may,

upon 48 hours notice, proceed to repair, rebuild, or otherwise restore such property, road, or street as may be deemed necessary, and the Department will deduct the cost thereof from any monies due or which may become due Contractor under the Contract. Nothing in this clause prevents the Contractor from receiving proper compensation for the removal, damage, or replacement of any public or private property, not shown on the plans, that is made necessary by alteration of grade or alignment. Engineer will authorize such work, provided that Contractor, or his employees or agents, have not, through their own fault, damaged such property.

6. Work Site Clean-Up:

   a. Debris and trash shall be removed from the site daily. Mow turf or vegetation within the project limits in accordance with Article 107 of the Construction Specifications.

   b. Upon completion of all work specified herein at each work site and before acceptance and payment is made, Contractor shall remove from each work site all machinery, equipment, surplus and discarded materials, rubbish and temporary structures. Material cleared from site and deposited on adjacent property will not be considered as having been disposed of satisfactorily.

I. Final Cleaning Up of Right-of-Way

1. Upon completion of the Work, and before the Department accepts the Work and makes final payment, remove from the right-of-way and adjacent property all falsework, equipment, surplus and discarded materials, rubbish and temporary structures; restore in an acceptable manner all property, both public and private, that has been damaged during the prosecution of the work; and leave the waterways unobstructed and the roadway in a neat and presentable condition throughout the entire length of the work under Contract. Clean all areas impacted by the Work and remove sedimentation in drainage structures caused by the construction activities.

2. Do not dispose of materials of any character, rubbish or equipment, on abutting property, with or without the consent of the property owners. Engineer will allow Contractor to temporarily store equipment, surplus materials, usable forms, etc., on a well-kept site owned or leased by Contractor, adjacent to the Project. However, do not place or store discarded equipment, materials, or rubbish on such a site.

3. Shape, dress and restore areas adjacent to the Project right-of-way that were used as plant sites, materials storage areas or equipment yards when they are no longer needed for such purposes.

1.03 CONTROLLING WORK

A. Plans

1. Contract Documents: Have one complete copy of the Contract Documents available on the worksite at all times.

2. Department's Plans: Unless otherwise labeled, all Items shown on the Plans are considered to be part of the Work, and must be incorporated into the Work and included in the established prices.

3. Alterations in Plans: The Department will issue, in writing, all authorized alterations affecting the requirements and information given on the approved plans.

B. Typical Details and/or Sketches

1. Typical details and/or sketches regarding the proposed work may be provided in addition to the standard details that are available in the Miami-Dade County Public Works Manual and the latest edition of the Florida Department of Transportation's Design Standards for Design, Construction, Maintenance and Utility Operations on The State Highway System.

2. County through its Engineer shall have the right to modify the details and/or sketches, to supplement the sketches with additional plans and/or with additional information as work proceeds; all of which shall be considered as plans accompanying these Specifications herein generally referred to as the "Plans." In case of disagreement between the Plans and Specifications, Engineer will make a final determination as to which will govern.

C. Or-Equals and Substitutes

1. Except where specifically provided, whenever material or equipment is specified or described in the Contract Documents by proprietary name or as being available from a particular supplier, the intent is to establish the type, function, appearance, and quality required. A written request to Engineer to authorize an "or-equal" or "substitute" material or equipment may be submitted as described below unless the item specified or described contains or is followed by words reading that no like, equivalent, or "or-equal" item or no substitution is permitted.

   a. Or-Equal Material or Equipment:

      1) Material or equipment proposed by Contractor may be considered by Engineer as an "or equal" item if in Engineer's sole discretion the item proposed is functionally equal and sufficiently similar to that specified or described in the Contract Documents and that no change in related Work will be required.

      2) Contractor has the burden of proving at Contractor's own cost and expense, to the satisfaction of Engineer, that the proposed item is equal to the named item. If Contractor fails to comply with the provisions of this Article, or if Engineer determines that the proposed item is not equal to that named, Contractor must supply the product named.

3) For the purposes of this Article and at Engineer's sole discretion, a proposed item of material or equipment will be considered functionally equal to the item specified or described in the Contract Documents if:

a) In the exercise of reasonable judgment Engineer determines that the proposed item is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics; will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole; has a proven record of performance and availability of responsive service; and

b) Contractor certifies that, if approved and incorporated into the Work, there will be no increase in cost to the County or increase in Contract Times, and the proposed item will conform substantially to the detailed requirements of the item named in the Contract Documents.

b. Substitute Material or Equipment:

1) If in Engineer's sole discretion an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item, it may be proposed for consideration as a substitute item by Contractor submitting sufficient information as stipulated below to allow Engineer to determine that the item of material or equipment proposed is essentially equivalent to and an acceptable substitute for that named. Requirements pertaining to a proposed substitute item request for review by Engineer will be as set forth in this Article, as supplemented in the Contract Documents, and as Engineer may decide are appropriate under the circumstances.

2) Contractor must make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application shall:

a) Certify that the proposed substitute item will perform adequately the functions and achieve the results called for by the general design, be similar in substance to that specified, and be suited to the same use as that specified;

b) State the extent, if any, to which the use of the proposed substitute item will prejudice Contractor's achievement of Substantial Completion on time; whether or not use of the proposed substitute item in the Work will require a change in any of the Contract Documents to adapt the design to the proposed substitute item; and whether or not incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty;

c) Identify all variations of the proposed substitute item from that specified, and available engineering, sales, maintenance, repair, and replacement services;

d) Contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change.

2. Substitute Construction Methods or Procedures: If a specific means, method, technique, sequence, or procedure of construction is expressly required by the Contract Documents, Contractor may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by Engineer. For Engineer approval, submit sufficient information to allow Engineer, in Engineer's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The requirements for review by Engineer will be as set forth in this Article, as supplemented in the Contract Documents, and as Engineer may decide are appropriate under the circumstances.

3. Engineer's Evaluation: Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to this Article and will be the sole judge of acceptability. Engineer may require Contractor to furnish additional data about the proposed substitute item. No "or equal" or substitute will be ordered, installed or utilized until Engineer's review is complete, which will be evidenced by receipt from Engineer of either a written approval or Change order where required for a substitute; or an approved Shop Drawing or written approval for an "or equal." Engineer will advise Contractor in writing of any negative determination. Contractor shall provide all data in support of any proposed substitute or "or-equal" at Contractor's expense. County may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute item.

4. Engineer's Cost Reimbursement: Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor pursuant to this Article whether or not Engineer approves a substitute item so proposed or submitted by Contractor, Contractor shall reimburse the County for the costs for evaluating each such proposed substitute. Contractor shall also reimburse the County for the costs of making changes in the Contract Documents from the acceptance of each proposed substitute.

D. Right Of Way Verification

1. All Work and improvements shall be performed, constructed and installed within the limits of the existing Right-of-Way pursuant to the Contract Documents.

2. Obtain all necessary documentation for verifying rights-of-way and property lines.

3. Retain a Florida Registered Surveyor and Mapper to obtain right-of-way and property lines by examining available rights-of-way maps, plats, occupation, legal descriptions or other legal documents or means. The Surveyor will layout the required alignments and grades and be responsible for their accuracy.

4. All field notes on this Project must be kept in a dedicated field book. Submit all field books to Engineer once the Project is completed or prior to completion when a field book gets filled.

5. All costs for complying with these requirements are included under the several scheduled items of the overall Contract. Therefore, no separate payment will be made for this work.

E. Shop Drawings

1. Shop Drawings:

   a. General. Prepare and submit whatever detailed working drawings necessary to fabricate, erect, and construct all parts of the Work in conformity with the Plans and Specifications. Shop drawings shall be submitted to Engineer; two sets will be returned to Contractor approved or showing the changes or corrections required; if changes or corrections are required, four revised copies shall be resubmitted until they are approved. Payment for shop drawings and required documents, revisions thereof, and for all copies furnished, shall be included in the various items of work bid. Contractor should allow a minimum of 14 days for the County's approval of shop drawings. County is not responsible for errors or minor discrepancies of Contractor's drawings, even though approved.

   b. Work Items Requiring Shop Drawings: In general, the Department requires shop drawings for items of work not fully detailed in the plans which require additional drawings and coordination prior to constructing the item, including but not limited to:

      1) Bridge components not fully detailed in the plans
      2) Retaining Wall Systems
      3) Precast Box Culverts
      4) Non-standard lighting, signalization and signing structures and components
      5) Building structures
      6) Drainage structures, attenuators, and other nonstructural items
      7) Design and structural details furnished by Contractor in compliance with the Contract
      8) Temporary Works affecting public safety.

   c. Schedule of Submittals: Prepare and submit a schedule of submittals that identifies the work for which shop drawings apply. For each planned submittal, define the type, and approximate number of drawings or other documents that are included and the planned submittal date, considering the processing requirements herein. Submit the schedule of submittals to Engineer at the preconstruction conference, and prior to the submission of any shop drawings. Coordinate subsequent submittals with construction schedules to allow sufficient time for review, approval, and re-submittal as necessary.

   d. Style, Numbering, and Material of Submittals:

      1) Drawings: Furnish four clearly legible copies of all shop drawings that are necessary to complete the structure in compliance with the design shown on the Plans. Prepare all shop drawings using the same units of measure as those used in the Plans. Use sheets no larger than 11 by 17 inches unless otherwise required by Engineer. Consecutively number each sheet in the submittal series, and indicate the total number in the series (i.e., 1 of 12, 2 of 12, . . ., 12 of 12). Include on each sheet the following items as a minimum requirement: the Project Number, Bridge Number(s), drawing title and number, a title block showing the names of the fabricator or producer and Contractor for which the work is being done, the initials of the person(s) responsible for the drawing, the date on which the drawing was prepared, the location of the item(s) within the Project, Contractor's approval stamp with date and initials, and, when applicable, the documents shall be signed and sealed by the Specialty Engineer or Contractor's Engineer of Record, as appropriate. A re-submittal will be requested when any of the required information is not included.

      2) Other Documents: Provide four sets of original documents or clearly legible copies of documents other than drawings, such as trade literature, catalogue information, calculations, and manuals. Provide sheets no larger than 11 by 17 inches unless otherwise required by Engineer. Clearly label and number each sheet in the submittal to indicate the total number of sheets in the series (i.e., 1 of 12, 2 of 12, . . ., 12 of 12). Additional sets of documentation may be required by Engineer for review of precast prestressed and structural steel components.

      3) Prepare all documents using the same units of measure as those used in the Contract Documents. Bind and submit all documents with a Table of Contents cover sheet. List on the cover sheet the total number of pages and appendices, and include the Project Number, a title referencing the submittal item(s), the name of the firm and person(s) responsible for the preparation of the document, Contractor's approval stamp with date and initials, and, when applicable, the documents shall be signed and sealed by the Specialty Engineer or Contractor's Engineer of Record, as appropriate.

4) Submit appropriately prepared and checked calculations and manuals that clearly outline the design criteria. Include on the internal sheets the Project Number and the initials of the person(s) responsible for preparing and checking the document.

5) Clearly label trade literature and catalogue information on the front cover with the title, Project Number, date and name of the firm and person(s) responsible for that document.

e. Submittal Paths and Copies:

1) General: Submit shop drawings to Engineer or Engineer's duly authorized representative. At the preconstruction conference, the Department will notify Contractor of any changes in the submittal path and whether the Department's or the Consultant's review stamp will signify an officially reviewed shop drawing. When the Engineer of Record is a consultant hired by the Department, submit shop drawings to the consultant with a copy to Engineer. For work requiring other documentation (e.g., catalog data, procedure manuals, fabrication/welding procedures, and maintenance and operating manuals), submit the required number of copies with the prints. If not shown on the plans, the Department will furnish the mailing address of the Consulting Engineer of Record. Provide copies of material certifications and material tests to Engineer.

2) Contractor-Originated Design: Submit shop drawings and applicable calculations to the Engineer of Record for review. Ensure that each sheet of the shop drawings and the cover sheet of the calculations are signed and sealed by the Specialty Engineer or Contractor's Engineer of Record. Transmit the submittal and copies of the transmittal letters in accordance with the submittal requirements stipulated herein.

3) Temporary Works: For Construction Affecting Public Safety, submit to the Engineer of Record shop drawings and the applicable calculations for the design of special erection equipment, bracing, falsework, scaffolding, etc. Ensure that each sheet of the shop drawings and the cover sheet of the applicable calculations is signed and sealed by the Specialty Engineer. Transmit the submittal and copies of the transmittal letters in accordance with the submittal requirements stipulated herein.

4) Formwork and Scaffolding: Contractor is solely responsible for the safe installation and use of all formwork and scaffolding. The Department does not require any formwork or scaffolding submittals unless such work would be classified as Construction Affecting Public Safety or called for by the Contract Documents.

5) Beam and Girder Temporary Bracing: Contractor is solely responsible for ensuring stability of beams and girders during all handling, storage, shipping and erection. Adequately brace beams and girders to resist wind, weight of forms and other temporary loads, especially those eccentric to the vertical axis of the products, considering actual beam geometry and support conditions during all stages of erection and deck construction. Develop the required designs following the AASHTO Guide Design Specifications for Bridge Temporary Works and Construction Handbook for Bridge Temporary Works and the Contract Documents.

6) For Construction Affecting Public Safety, submit signed and sealed calculations for stability for all beams and girders.

7) Erection Plan: Submit, for Engineer's review, an Erection Plan that meets the specific requirements of FDOT Sections 450, 452 and 460 and this section. Refer to FDOT Design Standards Index 600 for construction activities not permitted over traffic.

8) Other Miscellaneous Design and Structural Details Furnished by Contractor in Compliance with the Contract: Submit to Engineer any shop drawings and applicable calculations. Ensure that each sheet of the shop drawings and the cover sheet of the applicable calculations is signed and sealed by the Specialty Engineer. Transmit the submittal and copies of the transmittal letters in accordance with the submittal requirements stipulated herein.

f. Processing of Shop Drawings:

1) Contractor Responsibility for Accuracy and Coordination of Shop Drawings:

a) Coordinate, schedule, and control all submittals, with a regard for the required priority, including those of the various subcontractors, suppliers, and engineers, to provide for an orderly and balanced distribution of the work.

b) Submit shop drawings to facilitate expeditious review. Contractor is discouraged from transmitting voluminous submittals of shop drawings at one time. For submittals transmitted in this manner, allow for the additional review time that may result.

c) Only shop drawings distributed that have been approved by the Department are valid. Any work that Contractor performs in advance of approval will be at Contractor's risk.

2) Scope of Review by Engineer: The Engineer of Record's review of the shop drawings is for conformity to the requirements of the Contract Documents and to the intent of the

design. The Engineer of Record's review of shop drawings which include means, methods, techniques, sequences, and construction procedures are limited to the effects on the permanent works. The Engineer of Record's review of submittals which include means, methods, techniques, sequences, and construction procedures does not include an in-depth check for the ability to perform the work in a safe or efficient manner. Review by the Engineer of Record does not relieve Contractor of responsibility for dimensional accuracy to ensure field fit and for conformity of the various components and details.

3) Special Review by Engineer of Shop Drawings for Construction Affecting Public Safety: For Construction Affecting Public Safety, the Engineer of Record, or other Engineer as the Department appoints for this purpose, will make an independent review of all relevant shop drawings and similar documents. Do not proceed with construction of the permanent works until receiving the Engineer of Record's approval. The review of these shop drawings is for overall structural adequacy of the item to support the imposed loads and does not include a check for economy, efficiency or ease of construction.

g. Other Requirements for Shop Drawings for Bridges:

1) Shop Drawings for Structural Steel and Miscellaneous Metals: Furnish shop drawings for structural steel and miscellaneous metals. Shop drawings shall consist of working, shop, and erection drawings, welding procedures, and other working plans, showing details, dimensions, sizes of material, and other information necessary for the complete fabrication and erection of the metal work.

2) Shop Drawings for Concrete Structures: Furnish shop drawings for concrete components that are not cast-in-place and are not otherwise exempted from submittal requirements. Also, furnish shop drawings for all details that are required for the effective prosecution of the concrete work and are not included in the Contract Documents such as: special erection equipment, masonry layout diagrams, and diagrams for bending reinforcing steel, in addition to any details required for concrete components for the permanent work.

3) Shop Drawings for Major and Unusual Structures: In addition to any other requirements, within 60 days from the Notice to Proceed, submit information to Engineer outlining the integration of the Major and Unusual Structure into the overall approach to the project. Where applicable to the project, include, but do not limit this information to:

a) The overall construction program for the duration of the Contract. Clearly show the Milestone dates.

b) The overall construction sequence. The order in which individual structures are to be built, the sequence in which individual spans of girders or cantilevers are erected, and the sequence in which spans are to be made continuous.

c) The general location of any physical obstacles to construction that might impose restraints or otherwise affect the construction, and an outline of how to deal with such obstacles while building the structure(s).

d) The approximate location of any special lifting equipment in relation to the structure, including clearances required for the operation of the equipment.

e) The approximate location of any temporary falsework, and the conceptual outline of any special erection equipment. Provide the precise locations and details of attachments, fixing devices, loads, etc. in later detailed submittals.

f) An outline of the handling, transportation, and storage of fabricated components, such as girders or concrete segments. Provide the precise details in later detailed submittals.

g) Any other information pertinent to the proposed scheme or intended approach.

h) Clearly and concisely present the above information on as few drawings as possible in order to provide an overall, integrated summary of the intended approach to the project. The Department will use these drawings for information, review planning, and to assess Contractor's approach in relation to the intent of the original design. The delivery to and receipt by Engineer does not constitute any Department acceptance or approval of the proposals shown thereon. Include the details of such proposals on subsequent detailed shop drawing submittals. Submit timely revisions and re-submittals for all variations from these overall scheme proposals.

h. Cost of Shop Drawings: Include the cost of furnishing shop and working drawings in the Contract prices for the work requiring the shop and working drawings. The Department will not pay Contractor additional compensation for such drawings.

2. Certifications:

a. Special Erection Equipment: Prior to its use, ensure that the Specialty Engineer personally inspects the special erection equipment and certifies to Engineer in writing that the equipment

has been fabricated in accordance with the submitted drawings and calculations. In addition, after assembly, ensure that the Specialty Engineer observes the equipment in use and certifies to Engineer in writing that it is being used as intended and in accordance with the submitted drawings and calculations. In each case, ensure that the Specialty Engineer also signs and seals the letter of certification.

b. Falsework and Shoring Requiring Shop Drawings: After its erection or installation but prior to the application of any superimposed load, ensure that the Specialty Engineer personally inspects the falsework and certifies to Engineer in writing that the falsework has been constructed in accordance with the materials and details shown on the submitted drawings and calculations. Ensure that the Specialty Engineer also signs and seals the letter of certification.

c. Temporary Formwork: For Construction Affecting Public Safety and for Major and Unusual Structures, prior to the placement of any concrete, ensure that the Specialty Engineer inspects the formwork and certifies to Engineer in writing that the formwork has been constructed to safely withstand the superimposed loads to which it will be subjected. Ensure that the Specialty Engineer signs and seals the letter of certification.

d. Erection: For Construction Affecting Public Safety, submit an erection plan signed and sealed by the Specialty Engineer to Engineer at least four (4) weeks prior to erection commencing. Include as part of this submittal signed and sealed calculations and details for any falsework, bracing or other connection(s) supporting the structural elements shown in the erection plan.

e. At least two (2) weeks prior to beginning erection, conduct a Preerection meeting with the Specialty Engineer and Engineer to review details of the plan.

f. After erection of the elements but prior to opening of the roadway below the structure, ensure that a Specialty Engineer has personally inspected the erected member(s) and certified to Engineer that the structure has been erected in accordance with the signed and sealed erection plan.

g. Perform daily inspections of the erected structural systems. For structures without temporary supports but with temporary girder bracing systems, perform inspections until all the diaphragms and cross frames are in place. For structures with temporary supports, perform inspections until the temporary supports are no longer needed as indicated in the erection plans. Provide written documentation of the inspections to Engineer within 24 hours of the inspection.

3. Corrections for Construction Errors:

a. For work that Contractor constructs incorrectly or does not meet the requirements of the Contract Documents, Contractor has the prerogative to submit an acceptance proposal to Engineer for review and disposition. The acceptance proposal shall describe the error or defect and either describe remedial action for its correction or propose a method for its acceptance. In either case, the acceptance proposal shall address structural integrity, aesthetics, maintainability, and the effect on Contract Time. The Department will judge any such proposal for its effect on these criteria and also for its effect on Contract Administration.

b. When Engineer judges that a proposal infringes on the structural integrity or maintainability of the structure, Contractor's Engineer of Record will perform a technical assessment and submit it to Engineer for approval.

c. Do not take any corrective action without Engineer's approval. Carry out all approved corrective construction measures at no expense to the County.

d. Notwithstanding any disposition of the compensation aspects of the defective work, Engineer's decision on the technical merits of a proposal is final.

F. Coordination of Contract Documents

1. These Specifications, the Plans, Special Provisions, and all supplementary documents are integral parts of the Contract; a requirement occurring in one is as binding as though occurring in all.

2. All parts of the Contract Documents are complementary and describe and provide for a complete work. In addition to the work and materials specified in the Specifications as being included in any specific pay item, include in such pay items additional, incidental work, not specifically mentioned, when so shown in the plans, or if indicated, or obvious and apparent, as being necessary for the proper completion of the work under such pay item and not stipulated as being covered under other pay items.

3. Promptly notify Engineer in writing of any conflict, error, ambiguity, omission or discrepancy which Contractor may discover within the Contract Documents and obtain a written interpretation or clarification from Engineer before proceeding with any work affected thereby. The higher quality, greater quantity, more specific or restrictive, or more expensive requirement necessary and applicable to the completed Project, based on Engineer's interpretation, will take precedence. Engineer's written decision on the issue will be final and binding.

G. Conformity of Work with Contract Documents

1. Perform all work and furnish all materials in conformity with the lines, grades, cross-sections, dimensions, and material requirements, including tolerances, as specified in the Contract Documents.

2. In the event that Engineer finds that Contractor has used material or produced a finished product that is not in conformity with the Contract Documents, but that Contractor has produced reasonably acceptable work, Engineer will determine if the Department will accept the work. In this event, Engineer will document the

basis of acceptance by Contract modification, which provides for an appropriate reduction in the Contract price for such work or materials included in the accepted work as deemed necessary to conform to the determination based on engineering judgment.

3. In the event that Engineer finds that Contractor has used material or produced a finished product that is not in conformity with the Contract Documents, and that Contractor has produced an inferior or unsatisfactory product, Contractor shall remove and replace or otherwise correct the work or materials at no expense to the County.

4. For base and surface courses, the Department will allow the finished grade to vary as much as 0.1 foot from the grade shown in the plans, provided that Contractor's work meets all templates and straightedge requirements and contains suitable transitions.

H. Errors or Omissions in Contract Documents

1. Do not take advantage of any apparent error or omission discovered in the Contract Documents, but immediately notify Engineer of such discovery. Engineer will then make such corrections and interpretations as necessary to reflect the actual spirit and intent of the Contract Documents.

I. Authority of Engineer

1. Perform all work to the satisfaction of Engineer. Engineer will decide all questions, difficulties, and disputes, of whatever nature, that may arise relative to the interpretation of the Plans, construction, prosecution, and fulfillment of the Contract, and as to the character, quality, amount, and value of any work done, and materials furnished, under or by reason of the Contract.

J. Authority and Duties of Engineer's Assistants

1. Engineer's assistants and representatives are authorized to inspect all work done and all materials furnished. Such inspection may extend to all or any part of the work and to the manufacture, preparation, or fabrication of the materials to be used. Such assistants and representatives are not authorized to revoke, alter, or waive any requirement of these Specifications. Rather, they are authorized to call to the attention of Contractor any failure of the work or materials to meet the Contract Documents, and have the authority to reject materials or suspend the work until any questions at issue can be referred to and decided by Engineer.

2. Engineer will immediately notify Contractor in writing of any such suspension of the work, stating in detail the reasons for the suspension. The presence of the inspector or other assistant in no way lessens the responsibility of Contractor.

K. Engineering and Layout

1. Control Points Furnished by the Department:

   a. Engineer will provide centerline control points (Begin Project, End Project, PIs, PTs, etc.) and bench marks at appropriate intervals along the line of the project to facilitate the proper layout of the work. Normally, Engineer will furnish only one bench mark for water crossings. Preserve all reference points and bench marks that the Department furnishes.

   b. As an exception to the above, for projects where the plans do not show a centerline or other survey control line for construction of the work (e.g. resurfacing, safety modifications, etc.) Engineer will provide only points marking the beginning and ending of the project, and all exceptions.

2. Furnishing of Stake Materials: Furnish all stakes, templates, and other materials necessary for establishing and maintaining the lines and grades necessary for control and construction of the Work.

3. Layout of Work:

   a. Utilizing the control points furnished by the Department, establish all horizontal and vertical controls necessary to construct the work in conformity to the Contract Documents. Perform all calculations required, and set all stakes needed such as grade stakes, offset stakes, reference point stakes, slope stakes, and other reference marks or points necessary to provide lines and grades for construction of all roadway, bridge, and miscellaneous items.

   b. When performing utility construction as part of the project, establish all horizontal and vertical controls necessary to carry out such work.

4. Specific Staking Requirements:

   a. When performing new base construction as part of the Project, set stakes to establish lines and grades for subgrade, base, curb, and related items at intervals along the line of the work no greater than 50 feet on tangents and 25 feet on curves. Set grade stakes at locations that Engineer directs to facilitate checking of subgrade, base, and pavement elevations in crossovers, intersections, and irregular shaped areas.

   b. For bridge construction stakes and other control, set references at sufficiently frequent intervals to ensure construction of all components of a structure in accordance with the lines and grades shown in the plans.

   c. For projects where the plans do not show a centerline or other survey control line for construction of the work (resurfacing, safety modifications, etc.), provide only such stakes as necessary for horizontal and vertical control of work items.

   d. For resurfacing and resurfacing-widening type projects, establish horizontal controls adequate to ensure that the asphalt mix added matches with the existing pavement. In tangent sections, set horizontal control points at 100 foot intervals by an instrument survey. In curve sections, set horizontal control points at 25 foot intervals by

locating and referencing the centerline of the existing pavement.

e. Establish by an instrument survey, and mark on the surface of the finished pavement at 25 foot intervals, the points necessary for striping of the finished roadway. As an exception, for resurfacing and resurfacing/widening projects, establish these points in the same manner as used for horizontal control of paving operations. Mark the pavement with white paint. If performing striping, Engineer may approve an alternate method for layout of striping provided that Contractor achieves an alignment equal to or better than the alignment that would be achieved using an instrument survey.

f. For projects that include temporary or permanent striping of "no passing zones", provide the location and length of these zones as shown in the plans, except projects where the vertical or horizontal alignment is new or altered from preconstruction alignment. For projects that consist of new or altered vertical or horizontal alignment, the Department will provide the location and length of the "no passing zones" during construction. For these projects, notify Engineer not less than 21 calendar days prior to beginning striping.

g. For all projects, set a station identification stake at each right-of-way line at 100 foot intervals and at all locations where a change in right-of-way width occurs. Mark each of these stakes with painted numerals, of a size readable from the roadway, corresponding to the project station at which it is located. As an exception to the above, for projects where plans do not show right-of-way lines, set station identification stakes at locations and intervals appropriate to the type of work being done. For resurfacing and resurfacing/widening projects, set station identification stakes at 200 foot intervals.

5. Personnel, Equipment, and Record Requirements:

a. Employ only competent personnel and use only suitable equipment in performing layout work. Do not engage the services of any person or persons, employed by the Department, for performance of layout work.

b. Keep adequate field notes and records while performing layout work. Make these field notes and records available for Engineer's review as the work progresses, and furnish copies to Engineer at the time of completion of the project. Engineer's inspection, checking, or acceptance of Contractor's field notes or layout work does not relieve Contractor of his responsibility to achieve the lines, grades, and dimensions shown in the Contract Documents.

c. Prior to final acceptance of the project, mark, in a permanent manner on the surface of the completed work, all horizontal control points originally furnished by the Department.

6. Payment: Include the cost of performing layout work as described above in the Contract unit prices for the various items of work that require layout.

L. Contractor's Supervision

1. Contractor's Superintendent:

a. Maintain a competent superintendent at the Site at all times while work is in progress to act as Contractor's agent. The superintendant must:

1) Be capable of properly interpreting the Contract Documents and thoroughly experienced in the type of work being performed.

2) Have full authority to receive instructions from Engineer and to execute the orders or directions of the Engineer, including promptly supplying any materials, tools, equipment, labor, and incidentals that may be required.

3) Speak and understand English.

b. Maintain at least one other responsible person who speaks and understands English, on the Project during all working hours.

c. Furnish sufficient superintendence and supervisory personnel commensurate to the amount and type of work being performed.

2. Supervision for Emergencies:

a. Provide a responsible person, who speaks and understands English, and who is available at or reasonably near the worksite on a 24 hour basis, seven days a week. Designate this person as the point of contact for emergencies and in cases that require immediate action to maintain traffic or to resolve any other problem that might arise.

b. Submit, by certified mail, the phone numbers and names of personnel designated to be contacted in cases of emergencies, along with a description of the project location, to the Miami-Dade Police and all other local law enforcement agencies.

M. General Inspection Requirements

1. Cooperation by Contractor:

a. Notify Engineer daily where each of his crews will be working and what work will be done. This notification shall be given each weekday between 3:00 p.m. and 4:00 p.m. on the prior day.

b. Do not perform work or furnish materials without obtaining inspection by Engineer or his representative. Furnish Engineer with every reasonable facility for ascertaining whether the work performed and materials used are in accordance with the requirements and intent of the Contract Documents.

c. If Engineer so requests at any time before final acceptance of the work, remove or uncover such portions of the finished work as directed. After examination, restore the uncovered portions of the work to the standard required by the Contract

Documents. If Engineer determines that the work so exposed or examined is unacceptable, perform the uncovering or removal, and the replacing of the covering or making good of the parts removed, at no expense to the County. However, if Engineer determines that the work thus exposed or examined is acceptable, the County will pay for the uncovering or removing, and the replacing of the covering or making good of the parts removed in accordance with the terms of the Contract Documents.

2. Failure of Engineer to Reject Work During Construction: If, during or prior to construction operations, Engineer fails to reject defective work or materials, whether from lack of discovery of such defect or for any other reason, such initial failure to reject in no way prevents the later rejection when such defect is discovered, or obligates the County to final acceptance. The County is not responsible for losses suffered due to any necessary removals or repairs of such defects.

3. Failure to Remove and Renew Defective Materials and Work: If Contractor fails or refuses to remove and renew any defective materials used or work performed, or to make any necessary repairs in an acceptable manner and in accordance with the requirements of the Contract within the time indicated in writing, the Engineer has the authority to repair, remove, or renew the unacceptable or defective materials or work as necessary, all at Contractor's expense. The Department will obtain payment for any expense it incurs in making these repairs, removals, or renewals, that Contractor fails or refuses to make, by deducting such expenses from any moneys due or which may become due Contractor, or by charging such amounts against the Contract bond.

4. Inspection by State and/or Federal Government: When the State of Florida and/or the United States Government pays a portion of the cost of construction, their representatives may inspect the construction work as they deem necessary. However, such inspection(s) will in no way make the State or the Federal Government a party to the Contract.

N. Final Inspection

1. Maintenance until Acceptance: Maintain all Work until Engineer has given final acceptance in accordance with the requirements of the Contract Documents.

2. Inspection for Acceptance:

   a. Upon notification that all Contract Work, or all Contract Work on the portion of the Contract scheduled for acceptance, has been completed, Engineer will make an inspection for acceptance. The inspection will be made within seven days of the notification. If Engineer finds that all work has been satisfactorily completed, the Department will consider such inspection as the final inspection. If any or all of the Work is found to be unsatisfactory, Engineer will detail the remedial work required to achieve acceptance. Immediately perform such remedial work. Subsequent inspections will be made on the remedial work until Engineer accepts all Work.

   b. Upon satisfactory completion of the Work, the Department will provide written notice of acceptance, either partial or final, to Contractor.

   c. Until final acceptance in accordance with the requirements of the Contract Documents, replace or repair any damage to the accepted Work.

3. Partial Acceptance: At Engineer's sole discretion, Engineer may accept any portion of the Work under the provisions stipulated above.

4. Conditional Acceptance: Engineer will not make, or consider requests for conditional acceptance of a project.

O. Final Acceptance.

   a. When, upon completion of the final construction inspection of the entire Project, Engineer determines that Contractor has satisfactorily completed all the Work and furnished all documents required by the Contract Documents, Engineer will give Contractor written notice of final acceptance. Final Acceptance shall also denote the beginning of any warranty periods associated with the Project.

1.04 CONTROLLING MATERIALS

A. Acceptance Criteria

1. General:

   a. All materials and equipment, except for materials specifically called for on the Contract Documents to be provided by the County, are to be supplied by the Contractor who must, as required, obtain shop drawing approvals and order these items in a timely fashion so as not to cause any delays in the approved schedule.

   b. Acceptance of materials is based on the criteria provided herein and elsewhere in the Contract Documents. All requirements may not apply to all materials. Use only materials in the Work that meet the requirements of the Contract Documents. Engineer may inspect and test any material, at points of production, distribution and use.

2. Sampling and Testing:

   a. Use sample identification and tracking forms approved by Engineer to provide related information and attach the information to each sample. Restore immediately any site from which material has been removed for sampling purposes to the pre-sampled condition with materials and construction methods used in the initial construction, at no additional cost to the County. Ensure that sufficient material is delivered to allow for proper sample collection, at no expense to the County.

   b. Where required:

1) Pretest by Manufacturers: Submit certified manufacturer's test results to Engineer for qualification and use on the Project. Testing will be as specified in the Contract Documents. The Department may require submittal from manufacturers of samples of materials for independent verification purposes.

2) Point of Production Test: Test the material during production as specified in the Contract Documents.

3) Point of Distribution Test: Test the material at Distribution facilities as specified in the Contract Documents.

4) Point of Use Test: Test the material immediately following placement as specified in the Contract Documents. After delivery to the Project, the Department may require the retesting of materials that have been tested and accepted at the source of supply, or may require the testing of materials that are to be accepted by Producer Certification. The Department may reject all materials that, when retested, do not meet the requirements of the Contract Documents.

3. Certification:

a. Manufacturer Material Certification: Submit material certifications for all materials to Engineer for approval when required by the Specifications. Materials will not be considered for payment when not accompanied by a material certification. Sample material certification forms are available on the FDOT's website at the following URL: http://www.fdot.gov/materials/navigation/documents.shtm

b. Ensure that the material certification follows the format of the sample form, is submitted on the manufacturer's letterhead and is signed by a legally responsible person employed by the manufacturer.

c. FDOT Approved Product List (APL): The Department will limit Contractor's use of products and materials that require use of APL items to those listed on the APL effective at the time of placement.

d. Traffic Signals and Signs (TSS) Division's Qualified Products List (TSSQPL):

1) Only those traffic control equipment and materials listed in the DTPW Traffic Signals and Signs (TSS) Division's Qualified Products List (TSSQPL), or submitted to and approved in writing by the DTPW TSS for addition to the TSSQPL, are allowed to be installed within Miami-Dade County. Equipment or material used in the performance of the Work, without prior Departmental approval, must be replaced with Department approved equipment or material, at no cost to the County. The TSSQPL is available at http://www.miamidade.gov/gpl/Home.aspx

e. Contractor Installation Certification: Provide installation certifications as required by the Contract Documents.

B. Applicable Documented Authorities Other Than Specifications

1. General: Details on individual materials are identified in various material specific Sections of the Specifications that may refer to other documented authorities for requirements. When specified, meet the requirements as defined in such references.

2. Test Methods: Methods of sampling and testing materials are in accordance with the Florida Methods (FM). If a Florida Method does not exist for a particular test, perform the testing in accordance with the method specified in the Specification. When test methods or other standards are referenced in the Specifications without identification of the specific time of issuance, use the most current issuance, including interims or addendums thereto, at the time of bid opening.

3. Construction Aggregates:

a. Unless otherwise specified in the Contract Documents:

1) All aggregate products and sources used in performance of the Work must be approved by FDOT pursuant to Rule 14-103, F.A.C. Aggregates and sources used must be identified in the FDOT "Approved Aggregate Products from Mines or Terminals" listings current at the time the aggregate is proposed for use on the Project.

2) Each truck aggregate load ticket provided must include the DTPW Project Name and Number, name of the aggregate source, the FDOT Source Number, quantity, aggregate description and corresponding FDOT material code, producer ticket number, and statement "CERTIFIED FOR FDOT" or "CERT. FOR FDOT."

C. Storage of Materials and Samples

1. Method of Storage: Store materials in such a manner as to preserve their quality and fitness for the work, to facilitate prompt inspection, and to minimize noise impacts on sensitive receivers. More detailed requirements concerning the storage of specific materials are prescribed under the applicable Specifications. The Department may reject improperly stored materials.

2. Use of Right-of-Way for Storage: Unless otherwise stated in the Contract Documents, no Project staging areas have been provided by the County. If Engineer allows, Contractor may use a portion of the right-of-way for temporary storage purposes and for temporarily placing Contractor's plant and equipment. Use only the portion of the right-of-way that is outside the clear zone, which is the portion not required for public vehicular or pedestrian travel. When used, restore the right-of-way to pre-construction condition

at no additional cost to the County or as specified in the Contract Documents. Provide any additional space required at no expense to the County.

3. Responsibility for Stored Materials: Accept responsibility for the protection of stored materials. The Department is not liable for any loss of materials, by theft or otherwise, or for any damage to the stored materials.

4. Storage Facilities for Samples: Provide facilities for storage of samples as described in the Contract Documents and warranted by the test methods and Specifications.

D. Defective Materials

1. Materials not meeting the requirements of the Contract Documents will be considered defective. Engineer will reject all such materials, whether in place or not. Remove all rejected material immediately from the site of the work and from storage areas, at no expense to the County.

2. Do not use material that has been rejected and the defects corrected, until Engineer has approved the material's use. Upon failure to comply promptly with any order of Engineer made under these provisions, Engineer will remove and replace defective material and deduct the cost of removal and replacement from any moneys due or to become due to Contractor.

3. As an exception to the above, Contractor may submit, upon approval of Engineer, an engineering and/or laboratory analysis to evaluate the effect of defective in-place materials. A Specialty Engineer, who is an independent consultant or Contractor's Engineer of Record as stated within each individual Section shall perform any such analysis. Engineer will determine the final disposition of the material after review of the information submitted by Contractor. No additional monetary compensation or time extension will be granted for the impact of any such analysis or review.

E. Products and Source of Supply

1. Source of Supply–Convict Labor (Federal-Aid Contracts Only):

   a. Do not use materials that were produced after July 1, 1991, by convict labor for Federal-aid highway construction projects unless the prison facility has been producing convict-made materials for Federal-aid highway construction projects before July 1, 1987.

   b. Use materials that were produced prior to July 2, 1991, by convicts on Federal-aid highway construction projects free from the restrictions placed on the use of these materials by 23 U.S.C. 114. The Department will limit the use of materials produced by convict labor for use in Federal-aid highway construction projects to:

      1) Materials produced by convicts on parole, supervised release, or probation from a prison or,

      2) Materials produced in a qualified prison facility.

   c. The amount of such materials produced for Federal-aid highway construction during any 12-month period shall not exceed the amount produced in such facility for use in such construction during the 12-month period ending July 1, 1987.

2. Source of Supply-Steel (Federal-Aid Contracts Only):

   a. For Federal-aid Contracts, only use steel and iron produced in the United States, in accordance with the Buy America provisions of 23 CFR 635.410, as amended. Ensure that all manufacturing processes for this material occur in the United States. As used in this specification, a manufacturing process is any process that modifies the chemical content, physical shape or size, or final finish of a product, beginning with the initial melding and mixing and continuing through the bending and coating stages. A manufactured steel or iron product is complete only when all grinding, drilling, welding, finishing and coating have been completed. If a domestic product is taken outside the United States for any process, it becomes foreign source material. When using steel and iron as a component of any manufactured product incorporated into the project (e.g., concrete pipe, prestressed beams, corrugated steel pipe, etc.), these same provisions apply, except that the manufacturer may use minimal quantities of foreign steel and iron when the cost of such foreign materials does not exceed 0.1% of the total Contract amount or $2,500, whichever is greater.

   b. These requirements are applicable to all steel and iron materials incorporated into the finished work, but are not applicable to steel and iron items that Contractor uses but does not incorporate into the finished work. Provide a certification from the producer of steel or iron, or any product containing steel or iron as a component, stating that all steel or iron furnished or incorporated into the furnished product was manufactured in the United States in accordance with the requirements of this specification and the Buy America provisions of 23 CFR 635.410, as amended. Such certification shall also include (1) a statement that the product was produced entirely within the United States, or (2) a statement that the product was produced within the United States except for minimal quantities of foreign steel and iron valued at $ (actual value). Furnish each such certification to Engineer prior to incorporating the material into the project. When FHWA allows the use of foreign steel on a project, furnish invoices to document the cost of such material, and obtain Engineer's written approval prior to incorporating the material into the project.

3. Unfit, Hazardous, and Dangerous Materials:

   a. Do not use any material that, after approval and/or placement, has in any way become unfit for use.

b. Do not use materials containing any substance that has been determined to be hazardous by the State of Florida Department of Environmental Protection or the U.S. Environmental Protection Agency (EPA). Provide workplaces free from serious recognized hazards and to comply with occupational safety and health standards, as determined by the U.S. Department of Labor Occupational Safety and Health Administration (OSHA).

1.05 LEGAL REQUIREMENTS AND RESPONSIBILITY TO THE PUBLIC

A. Disaster Preparedness

1. General:

a. During periods in which any portion of Miami-Dade County is designated by the National Oceanic and Atmospheric Administration's National Hurricane Center as being under a Tropical Storm Watch or greater, Contractor shall perform all precautions as necessary to safeguard the Work and property, including the removal of all small equipment and materials from the site, securing all other equipment and materials to each other and to rigid construction, and any other safety measures as may be directed by Engineer.

2. Upon Notification of a Tropical Storm or Hurricane Watch:

a. Engineer will provide formal notification to Contractor to prepare and submit for approval a Plan of Action for the specific actions to be taken on their particular projects.

3. Upon Notification of a Tropical Storm or Hurricane Warning:

a. Engineer will provide formal notification to Contractor to implement the approved Plan of Action to protect the Project and the public.

b. For construction projects within the public right-of-way, Contractor will be notified by Engineer to suspend his construction operations. Contractor will backfill all open trenches, remove all construction equipment and materials from the right-of-way, remove unnecessary traffic barricades and signs, and secure remaining barricades by "half burial" or "double sand bags."

4. Storm or Disaster Services:

a. Contractor, by accepting the award of this Contract, recognizes and agrees that should a storm or other severe and catastrophic natural disaster affect the Miami-Dade-County area during the performance of the work, Contractor shall provide services contracted for during the contract period, at the Contract unit prices and at the same or different locations from those covered by this Contract.

b. For emergency services and conditions not addressed by this Contract, Contractor agrees to negotiate reasonable prices and terms with the County for any disaster-relief work required by the County. In all instances, Contractor agrees to negotiate reasonable time extensions for performance of disaster-relief work.

B. Laws to be Observed

1. General:

a. Become familiar with and comply with all applicable Federal, State, County, and city laws, by-laws, ordinances, and regulations that control the action or operation of those engaged or employed in the Work or that affect materials used. Pay particular attention to the applicable safety regulations promulgated by the U.S. Department of Labor, Occupational Safety and Health Administration (OSHA). In addition, comply with Chapter 403, F.S. (Florida Statutes), regarding control of air pollution. Direct special attention to that portion of Chapter 17-5, F.A.C. (Florida Administrative Code), pertaining to open burning in land clearing operations. Where work or structures included in the Contract are in "Navigable Waters of the U.S.," (reference 33 of the Code of Federal Regulations, Part 329); "Waters of the U.S.," (reference 33 of the Code of Federal Regulations, Parts 323 and 328); or "Waters of the State," (reference Part 4, Chapters 253 and 373 of the Florida Statutes and Section 62-340, F.A.C.); comply with the regulatory provisions of Section 404 of the Federal Clean Water Act of 1977; Sections 9 and 10 of the Federal River and Harbor Act of 1899; Chapter 161, F.S.; and any local authority having jurisdiction over such waters.

b. Obtain certification from the Construction Industry Licensing Board as required by Part I, Chapter 489, F.S., regardless of exemptions allowed by Section 489.103, F.S., prior to removing underground pollutant storage tanks. Dispose of tanks and pollutants in accordance with the requirements and regulations of any Federal, State, or local, agency having jurisdiction.

c. Prior to building construction or renovation, provide copies of current registrations or certifications issued by the Florida Construction Industry Licensing Board in accordance with Chapter 489, F.S. for the appropriate category of construction.

d. Corporations must be registered with the State of Florida, Department of State, Division of Corporations, and hold a current State Corporate Charter Number in accordance with Chapter 607, F.S.

e. Contractor or the authorized subcontractor applying any roofing material must be licensed or be an approved dealer and applicator of the proposed roofing material.

f. Indemnify, defend, and save harmless the County and all of its officers, agents, and employees, in the amount of the Contract price, against all claims or liability arising from or based on the violation of any such laws, by-laws, ordinances,

regulations, order, or decrees; whether by himself or his employees.

2. Plant Quarantine Regulations: The U.S. Department of Agriculture and the Florida Department of Agriculture and Consumer Services have issued quarantine regulations pertaining to control of the nematodes of citrus, Rule 5B-44, Florida Administrative Code, and other plant pests. Contact the local (or other available) representatives of the Animal and Plant Health Inspection Service of the U.S. Department of Agriculture, and the Division of Plant Industry of the Florida Department of Agriculture and Consumer Services to ascertain all current restrictions regarding plant pests that are imposed by these agencies. Keep advised of current quarantine boundary lines throughout the construction period.

   a. These restrictions may affect operations in connection with such items as clearing and grubbing, earthwork, grassing and mulching, sodding, landscaping, and other items which might involve the movement of materials containing plant pests across quarantine lines.

   b. Obtain quarantine regulations and related information from the following:

   Animal and Plant Health Inspection Service
   U.S. Department of Agriculture
   3029 Lake Alfred Road
   Winter Haven, Florida 33881

   Director, Division of Plant Industry
   Florida Department of Agriculture and Consumer Services
   Post Office Box 147100
   Gainesville, Florida 32614-7100

3. Introduction or Release of Prohibited Aquatic Plants, Plant Pests, or Noxious Weeds:

   a. Do not introduce or release prohibited aquatic plants, plant pests, or noxious weeds into the project limits as a result of clearing and grubbing, earthwork, grassing and mulching, sodding, landscaping, or other such activities. Immediately notify Engineer upon discovery of all prohibited aquatic plants, plant pests, or noxious weeds within the project limits. Do not move prohibited aquatic plants, plant pests, or noxious weeds within the project limits or to locations outside of the project limits without Engineer's permission. Maintain all borrow material brought onto the project site free of prohibited aquatic plants, plant pests, noxious weeds, and their reproductive parts. Refer to Rule 16C-52 and Rule 5B-57, F.A.C. for the definition of prohibited aquatic plants, plant pests, and noxious weeds.

   b. Furnish Engineer, prior to incorporation into the Project, with a certification from the Florida Department of Agriculture and Consumer Services, Division of Plant Industry, stating that the sod, hay, straw, and mulch materials are free of noxious weeds, including Tropical Soda Apple.

4. Compliance with Federal Endangered Species Act and other Wildlife Regulations:

   a. In cases where protected, threatened or endangered species may unexpectedly be found or appear within close proximity to the project boundaries, the FDOT has established guidelines that will apply when interaction with certain species occurs, absent of any special mitigation measures or permit conditions otherwise identified for the project. These guidelines are posted at the following URL address: www2.dot.state.fl.us/specificationsestimates/federal/endangeredwildlifeguidelines.pdf. Take responsibility to obtain this information and take all actions and precautions necessary to comply with the conditions of these guidelines and Federal regulations during all Project activities.

   b. In the event of a potential impact to a protected, threatened or endangered species and mitigation measures or permits are necessary, coordinate with the appropriate resource agencies for clearance, obtain permits and perform mitigation measures as necessary. Immediately notify Engineer in writing of the results of this coordination with the appropriate resource agencies. Additional compensation or time will not be allowed for permitting or mitigation, associated with Contractor initiated off-project activities.

5. Occupational Safety and Health Requirements: Contractor shall take all precautions necessary for the protection of life, health, and general occupational welfare of all persons, including employees of both Contractor and the County, until Contractor has completed the work required under the Contract. Comply at all times with applicable Federal, State, and local laws, provisions, and policies governing safety and health, including 29 CFR 1926, including all subsequent revisions and updates.

6. Discovery of an Unmarked Human Burial: When an unmarked human burial is discovered, immediately cease all activity that may disturb the unmarked human burial and notify Engineer. Do not resume activity until specifically authorized by Engineer.

7. Insecticides and Herbicides: Use products approved by the Florida Department of Agriculture for the State of Florida, found on the following website http://state.ceris.purdue.edu/. The use of restricted products is prohibited. Do not use any products in the sulfonylurea family of chemicals. Herbicide application by broadcast spraying is not allowed.

   a. Procure any necessary licenses, pay all charges and fees, and give all notices necessary for lawful performance of the work.

   b. Ensure that all employees applying insecticides and herbicides possess a current Florida Department of Agriculture Commercial Applicator license with the categories of licensure in Right-of-Way Pest Control and Aquatic Pest Control. Provide a copy of current certificates upon request, to Engineer.

   c. Ensure that employees who work with herbicides comply with all applicable Federal, State, and local regulations.

d. Comply with all regulations and permits issued by any regulatory agency within whose jurisdiction work is being performed. Post all permit placards in a protected, conspicuous location at the work site.

e. Acquire any permits required for work performed on the rights-of-way within the jurisdiction of National Forests in Florida. Contact the Local National Forest Ranger District, or the United States Department of Agriculture (USDA) office for the proper permits and subsequent approval.

f. Acquire all permits required for aquatic plant control as outlined in Chapter 62C-20, F.A.C., Rules of the Florida Department of Environmental Protection. Contact the Regional Field Office of Bureau of Invasive Plant Management of the Florida Department of Environmental Protection for proper permits and subsequent approval. If application of synthetic organo-auxin herbicides is necessary, meet the requirements of Chapter 5E-2, F.A.C.

8. Employment Eligibility Verification

a. By entering into this Contract, the Contractor affirms its enrollment and participation in the Federal work authorization program known as "E-Verify", web address https://e-verify.uscis.gov/enroll operated by the United States Citizenship and Immigration Services Bureau of the United States Department of Homeland Security, to verify information under the terms governing use of the system.

b. The Contractor shall utilize the U.S. Department of Homeland Security's E-Verify system, in accordance with the terms governing use of the system, to confirm the employment eligibility of all persons employed by the Contractor during the term of the Contract to perform employment duties within Florida; and all persons, including subcontractors, assigned by the Contractor to perform work pursuant to the Contract.

c. Contractor shall also be responsible for entering into an agreement, with each and every vendor and subcontractor, that states that the vendor or subcontractor (and their vendors) is independently responsible for its own employment decisions, including hiring, disciplinary and termination decisions; and is participating in the "E-Verify" program to confirm, under the terms governing use of the system, the employment eligibility of all persons assigned to perform work or provide materials and services in support of this Contract.

d. Miami-Dade County reserves the right, at any time, to request supporting documentation, as evidence of services provided and demonstration of compliance with the above requirements.

C. Permits and Licenses

1. General:

a. Except for permits procured by the Department, as incorporated by Special Provision to this Contract, if any, procure all permits and licenses, pay all charges and fees, and give all notices necessary and incidental to the due and lawful prosecution of the Work.

b. The Department will also acquire any modifications or revisions to an original permit incorporated by Special Provision to this Contract when Contractor requires such modifications or revisions to complete the construction operations specified in the Plans or Special Provisions and within the right-of-way limits.

c. Contractor must obtain all other permits required for this Project prior to commencing the Work. This includes permits required by other municipalities and agencies, permits to work in the Right-of–Way, and those required for the removal or relocation of trees.

d. The actual amount paid for the permits will be reimbursed to Contractor from a dedicated allowance established by the County. If no dedicated allowance is specified the reimbursement shall be paid from the Contract's Contingency Allowance. Original receipts must be presented to Engineer for approval.

e. Contractor must give all notices, pay all fees and comply with all laws, rules and regulations applicable to the Work at no additional cost.

f. Acquire all permits for work performed outside the right-of-way or easements for the Project.

g. In carrying out the work in the Contract, when under the jurisdiction of any environmental regulatory agency, comply with all regulations issued by such agencies and with all general, special, and particular conditions relating to construction activities of all permits issued to the Department as though such conditions were issued to Contractor. Post all permit placards in a protected location at the worksite.

h. In case of a discrepancy between any permit condition and other Contract Documents, the more stringent condition shall prevail.

2. Additional Contractor Requirements For Work With Traffic Control Devices or Street Lighting

a. In addition to the license(s) required of Contractor, all personnel engaged in installing, modifying, repairing, removing or maintaining: roadway street lighting systems; traffic signalization; or any other electrical/electronic traffic control device in Miami-Dade County must:

1) Perform work under the direction of a Master Electrician that is present at the job site or able to respond within 2 hours of notification (4 hours for roadway street lighting systems).

2) Perform all work under the direct supervision of a Journeyman Electrician. For Traffic Signalization or Control Devices the Journeyman Electrician must be certified as an International Municipal Signal Association (IMSA) certified Traffic Signal Technician (TST) Level II or Level III. All work related at or pertaining to the controller must be