Miami-Dade County

SET # OF SETS

Department of Transportation and Public Works



Caribbean Boulevard Bridge Replacement

Miami-Dade County

Bridge General Notes

Small Business Enterprise-Construction Program (SBE-S.): 2% Community Workforce Program: N/A DTPW Capital Improvements Engineer: Alicia Arce RPQ Issue Date: March 20, 2025



SECTION 1: BRIDGE GENERAL NOTES

GENERAL NOTES

A. GENERAL SPECIFICATIONS: FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, JULY 2019 EDITION, AS MODIFIED BY MIAMI-DADE COUNTY PUBLIC WORKS AND WASTE MANAGEMENT DEPARTMENT SPECIAL PROVISIONS.

B. DESIGN SPECIFICATIONS: AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO), LRFD BRIDGE DESIGN SPECIFICATIONS EIGHTH EDITION.

FDOT STRUCTURES DESIGN GUIDELINES (JANUARY 2019).

C. DESIGN METHOD: LOAD AND RESISTANCE FACTOR DESIGN METHOD (LRFD).

D. DESIGN LOADING:

1. OPERATIONAL IMPORTANCE FACTOR: 1.0 IN ACCORDANCE WITH THE FDOT STRUCTURES DESIGN GUIDELINES

2. DEAD LOADS:

UNIT WEIGHT OF REINFORCED CONCRETE (INCLUDING REINFORCEMENT): ..150 PCF TRAFFIC RAILING BARRIER (36" SINGLE SLOPE):........430 PLF EACH PEDESTRIAN/BICYCLE RAILING (27" PARAPET ONLY):.225 PLF ALUMINUM PEDESTRIAN / BICYCLE BULLET RAILING: .10 PLF .15 PSF FUTURE WEARING SURFACE ..

- 3. LIVE LOADS: HL-93 LOADING
- PEDESTRIAN LIVE LOAD... .75 PSF
- 4. WIND LOADS: WIND LOADS ARE IN ACCORDANCE WITH SECTION 3.8 AASHTO. AND SECTION 2.4 OF THE STRUCTURES DESIGN GUIDELINES.
- 5. EARTHQUAKE LOADS:

EARTHQUAKE PROVISIONS ARE IN ACCORDANCE WITH SECTION 2.3 OF THE STRUCTURES DESIGN GUIDELINES.

6. TEMPERATURE EFFECTS:

SUPERSTRUCTURE	TE	EMPERA	TURE (1	COEFFICIENT OF	
MATERIAL	MEAN	HIGH	LOW	RANGE	THERMAL EXPANSION
CONCRETE DECK ON CONCRETE GIRDERS	70	+105	+35	70	0.000006

F. DIMENSIONS:

ALL DIMENSIONS IN THESE PLANS ARE MEASURED IN FEET EITHER HORIZONTALLY OR VERTICALLY UNLESS OTHERWISE NOTED.

G. ENVIRONMENT: SUPERSTRUCTURE - SLIGHTLY AGGRESSIVE SUBSTRUCTURE - SLIGHTLY AGGRESSIVE

H. MATERIALS:

1. CONCRETE STRENGTH:

CLASS	LOCATION IN STRUCTURE	MINIMUM 28 DAY COMPRESSIVE STRENGTH (PSI)
=	BARRIERS	3400
II (BRIDGE DECK)	CAST IN PLACE SUPERSTRUCTURE AND APPROACH SLAB	4500
V (SPECIAL)	PRESTRESSED PRECAST CONCRETE PILES	6000
IV	CAST-IN-PLACE SUBSTRUCTURE	5500

2. CONCRETE SHALL BE IN ACCORDANCE WITH FLORIDA DEPARTMENT OF TRANSPORTATION SPECIFICATIONS SECTION 346.

3. PROVIDE $\frac{3}{4}$ " CHAMFER ON ALL EXPOSED SURFACES, UNO.

4. REINFORCING STEEL:

ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60. ALL DIMENSIONS PERTAINING TO LOCATION OF REINFORCEMENT ARE TO CENTERLINE OF BARS EXCEPT WHERE THE CLEAR DIMENSION IS SHOWN TO THE FACE OF CONCRETE OR OTHER SURFACES.

I. CONCRETE COVER:

UNLESS NOTED OTHERWISE, CONCRETE COVER SHALL CONFORM TO THE FOLLOWING:

TOP DECK SURFACES	2"
SUPERSTRUCTURE (CAST-IN-PLACE)	2"
SUBSTRUCTURE (CAST-IN-PLACE):	
SURFACES CAST AGAINST EARTH (BOTTOM COVER)	4"
ALL OTHER SURFACES	3"
PRESTRESSED PILES	3"

NOTE: CONCRETE COVERS SHOWN IN THE PLANS DO NOT INCLUDE PLACEMENT AND FABRICATION TOLERANCES UNLESS SHOWN AS "MINIMUM COVER". SEE SPECIFICATIONS FOR ALLOWABLE TOLERANCES.

J. SCREEDING DECK SLABS:

SCREED THE RIDING SURFACE OF THE BRIDGE DECK AND APPROACH SLABS TO ACHIEVE THE FINISH GRADE ELEVATIONS SHOWN IN THE PLANS. ACCOUNT FOR THEORETICAL DEFLECTIONS DUE TO DECK SELFWEIGHT, DECK CASTING SEQUENCE, DECK FORMING SYSTEMS, CONSTRUCTION LOADS, AND TEMPORARY SHORING, ETC. AS REQUIRED.

K. CONSTRUCTION JOINTS IN CONCRETE: CONSTRUCTION JOINTS WILL BE PERMITTED ONLY AT LOCATIONS INDICATED ON PLANS. ADDITIONAL CONSTRUCTION JOINTS OR ALTERATIONS TO THOSE SHOWN SHALL REQUIRE WRITTEN APPROVAL OF THE ENGINEER.

L. ELEVATIONS:

ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM (NGVD) OF 1929.

M. UTILITIES:

LOCATION OF UTILITIES SHOWN IN THE BRIDGE PLANS ARE AT APPROXIMATE LOCATIONS. SEE ROADWAY PLANS FOR VERIFICATION OF THE LOCATION OF THE EXISTING UTILITIES SHOWN ON THE BRIDGE PLANS AND FOR ADDITIONAL DETAILS OF PROPOSED UTILITIES TO BE SUPPORTED ON STRUCTURES. THE CONTRACTOR SHALL NOTIFY ALL INVOLVED UTILITY COMPANIES AND VERIFY EXACT LOCATIONS OF ALL UTILITIES PRIOR TO EXCAVATION OR CONSTRUCTION (INCLUDING PRECAST PILES) AND SHALL BE RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AS MAY BE NECESSARY TO AVOID DAMAGE. ANY REQUIRED RELOCATION OF EXISTING UTILITIES SHALL BE DONE BY OTHERS. CONTRACTOR SHALL ENSURE THAT ACTIVE UTILITIES WITHIN THE PROJECT LIMITS ARE PROPERLY MAINTAINED DURING CONSTRUCTION. FOR LIST OF UTILITY COMPANIES, SEE ROADWAY PLANS.

N. SURFACE FINISH:

FOR SURFACES THAT SHALL RECEIVE A CLASS 5 FINISH COATING. SEE SURFACE FINISH DETAILS.

- THE FOLLOWING SURFACES SHALL BE TREATED:
- THE VERTICAL EDGE OF DECK SLAB. - THE INSIDE AND OUTSIDE FACES AND TOP OF TRAFFIC RAILING
- BARRIERS AND PARAPETS ON BRIDGE AND APPROACH SLABS.

O. REMOVAL OF EXISTING STRUCTURES:

CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF EXISTING STRUCTURES AS SHOWN ON CONTRACT DRAWINGS. ALL WORK SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS AND AS DIRECTED BY THE ENGINEER. FOR ADDITIONAL NOTES AND DETAILS, SEE TRAFFIC CONTROL PLANS.

CONTRACTOR SHALL BE RESPONSIBLE FOR STABILITY OF EXISTING STRUCTURES DURING DEMOLITION.

PAY ITEM NOTES:

- A. FOR SUMMARY OF BRIDGE PAY ITEMS SEE ROADWAY PLANS.
- B. PAYMENT FOR INCIDENTAL ITEMS NOT SPECIFICALLY COVERED IN THE INDIVIDUAL BID ITEMS SHALL BE INCLUDED IN THE CONTRACT PRICES FOR THE BID ITEMS.
- C. THE COST OF ALL LABOR AND MATERIALS REQUIRED FOR THE INSTALLATION OF ROOFING PAPER AND PREMOLDED EXPANSION MATERIAL SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR SUPERSTRUCTURE CONCRETE PAY ITEM.
- D. FOR MAINTENANCE OF TRAFFIC BID ITEM NOTES, SEE ROADWAY PLANS.
- E. FOR THE APPROACH SLAB, SEE STANDARD INDEX 400-090.
- F. REMOVAL OF EXISTING STRUCTURE SHALL INCLUDE THE COMPLETE REMOVAL AND LEGAL DISPOSITION OF ALL PARTS, INCLUDING PILES.
- G. COST TO TACK WELD NUTS ON BULLET RAILINGS SHALL BE INCIDENTAL TO PAYMENT NO.515-4-2 (ALUMINIUM BULLET RAILINGS, DOUBLE RAIL).

				1	1		Jacobs Engineering Group Inc				REVISIONS					┝──
		NAME	DRAWN	DATE	NAME	DESIGNED	3150 SW 38TH AVE, SUITE 700, MIAMI, FL 33146	DESCRIPTION	BY	DATE	DESCRIPTION	BY	DATE	DESCRIPTION	TE BY	DA
MIAMI-DADE	09/2019	CMM 57	BY CHECKED	09/2019		BY CHECKED	Tel. (305) 392–5193 CERTIFICATE OF AUTHORIZATION NO. 2822									
COUNTY			<u> </u>		BRETT RAKITA	by Supervised by	ENGINEER OF RECORD: BRETT K. RAKITA P.E. NO. 59474									

TEMPORARY STEEL SHEET PILE NOTES (SHEET PILE TW3 AND TW4 REDESIGNED BY PREVIOUS CONTRACTOR)

- A. SHEET PILES SHALL BE OF STRUCTURAL STEEL CONFORMING TO ASTM 572 GRADE 50 (FY = 50KSI). COLD ROLLED SECTIONS WILL BE ALLOWED AS SUBSTITUTIONS FOR HOT ROLLED SECTIONS AS LONG AS THE SECTION PROPERTY REQUIREMENTS IN NOTE B ARE MET. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE AVAILABILITY OF HOT-ROLLED AND COLD-ROLLED SECTIONS.
- B. STEEL SHEET PILES SHALL HAVE MINIMUM SECTION PROPERTIES PER HORIZONTAL FOOT OF WALL AS FOLLOWS:

WALLS	HOT ROLLED SECTIONS	COLD ROLLED SECTIONS
TEMP. SHEET PILES	PLASTIC SECTION MODULUS = 71.92 IN^3 MOMENT OF INERTIA = 490.85 IN^4	PLASTIC SECTION MODULUS = 86.30 IN^3 MOMENT OF INERTIA = 589.02 IN^4

- C. SHOP DRAWINGS SHALL BE SUBMITTED FOR REVIEW. SHOP DRAWINGS SHALL INCLUDE ALL DETAILS, DIMENSIONS AND QUANTITIES NECESSARY TO CONSTRUCT THE WALL. THE FULLY DETAILED PLANS SHALL BE PREPARED AS PER FDOT STANDARDS. SHOP DRAWINGS TO INCLUDE SIGNED AND SEALED DESIGN CALCULATIONS FOR ANCHORS AND WALER.
- D. FOR TEMPORARY SHEET PILE WALL LOCATIONS, SEE SHEET B1-3.
- E. THE CONTRACTOR SHALL ANTICIPATE HARD-DRIVING RESISTANCE THROUGH EXISTING SOIL. THE COST OF PRE-DRIVING OR THE USE OF SPECIALIZED INSTALLATION EQUIPMENT SHALL BE INCLUDED IN THE PRICE FOR SHEET PILING. NO JETTING WILL BE ALLOWED.
- WHEN REQUIRED FOR SHEET PILING INSTALLATION, THE CONTRACTOR SHALL PRE-FORM PILE HOLES AT 3'-0" SPACING. COST IS TO BE INCLUDED IN THE UNIT PRICE FOR PAY ITEM NO. 455-133-2. OPEN HOLES WILL NOT BE ALLOWED.
- G. THE CONTRACTOR SHALL ANTICIPATE MAINTAINING THE STABILITY OF EXISTING RETAINING WALLS DURING TEMPORARY SHEET PILE DRIVING AND THROUGHOUT EXISTING BRIDGE DEMOLITION.



TEMPORARY SHEET PILE WALL TYPE I SHEET PILE TW3 AND TW4 REDESIGNED AND INSTALLED BY PREVIOUS CONTRACTOR

PROJECT NO. EDP-MT-CIP209

SHEET <u>B1-1</u>

SPECIAL CONSTRUCTION NOTES:

- 1. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE STABILITY OF THE END BENT EMBANKMENT AND CANAL DURING ALL CONSTRUCTION PHASES.
- 2. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING UTILITIES THAT ARE TO REMAIN DURING CONSTRUCTION.
- 3. EXISTING SPANS, ANGLES, DISTANCES, ELEVATIONS, ETC. SHOWN ON THESE PLANS ARE BASED ON THE EXISTING BRIDGE PLANS OR FROM ACTUAL FIELD SURVEY. CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION OF ALL THE ABOVE PRIOR TO COMMENCING THE WORK AND SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
- 4. CONTRACTOR SHALL TACK WELD ALL NUTS ON ALUMINUM BULLET RAILINGS.
- 5. DURING CONSTRUCTION CONTRACTOR IS RESPONSIBLE FOR STAGING AREA. IT WILL NOT BE PROVIDED BY THE COUNTY.



SURFACE FINISH DETAILS

NOTES TO CONTRACTOR:

- 1. THE FOLLOWING LIST OF ITEMS HAVE BEEN PREVIOUSLY CONSTRUCTED AT STAGE IA ONLY. THE CONTRACTOR WILL NOTIFY THE ENGINEER OF RECORD PRIOR TO BEGINNING CONSTRUCTION IF FIELD CONDITIONS DIFFER:
- A. TEMPORARY SHEET PILE WALLS TW3 AND TW4. THE PREVIOUS CONTRACTOR REVISED THE LAYOUT AND DESIGN OF TEMPORARY SHEET PILE WALLS TW3 AND TW4. PLEASE REFER TO REVISED DESIGN AND LAYOUT AS PER AMERICAN EMPIRE BUILDERS, INC (AEB) SUBMITTAL NUMBERS 005A, 007, 014, 016, 018, AND 024.
- B. CONCRETE PILE BENTS: . END BENT 1 - DRIVEN CONCRETE PILES AND PILE CAP ii. INTERMEDIATE BENT 2 - DRIVEN CONCRETE PILES AND PILE CAP iii. INTERMEDIATE BENT 3 DRIVEN CONCRETE PILES AND PILE CAP iv. END BENT 4 - DRIVEN CONCRETE PILE AND PILES CAP
- 2. STAGE IA OF THE SUBSTRUCTURE AND TEMPORARY SHEET PILE WALLS TW3 AND TW4 WERE CONSTRUCTED / INSTALLED BY THE PREVIOUS CONTRACTOR. THE CONTRACTOR HAS THE OPTION TO USE WHAT HAS BEEN INSTALLED PREVIOUSLY OR REMOVE AND REPLACE. IF THE CONTRACTOR CHOOSES TO USE THE IN-PLACE PORTION OF THE BRIDGE OR THE TEMPORARY SHEET PILE WALLS (SUBSTRUCTURE AND TEMPORARY WALLS PREVIOUSLY CONSTRUCTED BY AEB IN STAGE 1A), THEY ARE TO REVIEW, PROVIDE WRITTEN ACCEPTANCE PREPARED BY A FL PE IN A FORM OF CERTIFICATION, AND TAKE RESPONSIBILITY FOR THE WORK THAT WAS PREVIOUSLY DONE. THE REMOVAL OF ANY PREVIOUS WORK SHALL BE PAID FOR UNDER PAY ITEM 110-3. ALL QUANTITIES ON THIS PLAN SET INCLUDE THOSE PREVIOUSLY CONSTRUCTED. NO DEDUCTION IN QUANTITIES HAS BEEN MADE DUE TO PREVIOUS CONSTRUCTION EFFORTS.
- 3. PREVIOUSLY INSTALLED TEMPORARY SHEET PILE WALLS ARE TO BECOME PROPERTY OF CONTRACTOR.
- 4. PLEASE SEE THE FOLLOWING DOCUMENTATION PROVIDED BY AEB.
- A. AS-BUILT SURVEY PILE CAPS ELEVATIONS, PEGASUS LAND SURVEYORS INC. AUGUST 21, 2024.
- B. AS-BUILT CANAL CROSS SECTIONS, PEGASUS LAND SURVEYORS INC., AUGUST 16, 2024.
- C. STRUCTURAL CALCULATIONS, SOLVER STRUCTURAL PARTNERSHIP, INC.,
- OCTOBER 5, 2022. D. REPORT OF A GEOTECHNICAL EXPLORATION SHEET-PILE WALLS BEGIN TW3 END
- TW4, CEN GEOTECHNICAL & ENVIRONMENTAL SOLUTIONS, INC., AUGUST 3, 2022. E. AEB SUBMITTAL NUMBERS 005A, 007, 014, 016, 018, AND 024.

BRIDGE NO. 874650

	TRANSPORTATION AND PUBLIC
	WORKS DEPARTMENT
. J	

BRIDGE GENERAL NOTES

CARIBBEAN BLVD. BRIDGE OVER C1-N CANAL



CERTIFICATE OF AUTHORIZATION NO. 2822 ENGINEER OF RECORD: BRETT K RAKITA P.F. NO. 59474	CHECKED BY SUPERVISED BY:	RM/AJM BRETT RAKITA	09/2019	CHECKED BY	SZ	09/2019	COUNTY STEPHEN P. CLARK CENTER 111 NW 1 ST MIAMI, FL 33128	CARIBBEAN BLVD. BRIDGE OVER C1-N CANAL
Tel. (305) 392–5193	DESIGNED BY	BKR	09/2019	DRAWN BY	СММ	09/2019	MIAMI-DADE WORKS DEPARTMENT	
Jacobs Engineering Group, Inc.		NAME	DATE		NAME	DATE	TRANSPORTATION AND PUBLIC	PLAN AND ELEVATION





CLE ING 20	<u>STAGE IA WITH THE EXCEPTION OF CONSTRUCTING</u> SUPERSTRUCTURE AND APPROACH SLABS
	1. REMOVE SOUTHERN SIDEWALK AND PLACE TEMPORARY FDOT BARRIER WALL IN ACCORDANCE WITH STANDARD INDEX NO. 102–110 AND SHIFT TRAFFIC AS INDICATED.
18" A I&I FOC (TO BE REMOVED BY CONTRACTOR)	2. REMOVE PORTION OF EXISTING SLAB AND BENTS.
10" FORCE MAIN (TO BE REMOVED BY CONTRACTOR)	 DREDGE CANAL. DRIVE PRECAST CONCRETE PILES AND CONSTRUCT SOUTHERN PORTION OF BRIDGE.
- 8 WATER MAIN (TO BE REMOVED BY CONTRACTOR)	 5. BUILD SLOPE EMBANKMENT. 6. CONSTRUCT BENT CAPS, SUPERSTRUCTURE AND APPROACH SLABS. 7. REMOVE EXISTING UTILITIES AND BULKHEAD WALL AND DRIVE SHEET PILE WALLS TW3 AND TW4.
	STAGE IB
	 RELOCATE TEMPORARY BARRIER WALL AND SHIFT TRAFFIC. REMOVE NORTHERN SIDEWALK AND EXISTING SLAB AND BENTS. INSTALL TEMPORARY SHEET PILE WALLS TW1 AND TW2.
	4. DREDGE CANAL.
	5. DRIVE PRECAST CONCRETE PILES AND CONSTRUCT NORTHERN
	PORTION OF BRIDGE. 6. BUILD SLOPE EMBANKMENT.
	7. CONSTRUCT BENT CAPS, SUPERSTRUCTURE, AND APPROACH SLABS.
	8. DRIVE PRECAST CONCRETE PILES AND CONSTRUCT NORTHERN PORTION OF BRIDGE.
	<u>STAGE II</u>
	1. RELOCATE TEMPORARY BARRIER WALLS.
	 SHIFT TRAFFIC ON NEWLY CONSTRUCTED NORTHERN PORTION OF BRIDGE AND OPEN NEW SOUTHERN SIDEWALK TO PEDESTRIANS.
	3. REMOVE REMAINING PORTION OF EXISTING BRIDGE.
	4. REMOVE SHEET PILE WALLS.
	5. CONSTRUCT REMAINING PORTION OF FINAL BRIDGE.
	STAGE III
	1. SHIFT TRAFFIC TO NEWLY CONSTRUCTED PORTION.
	2. INSTALL BARRIERS IN NORTHERN PORTION OF BRIDGE.
	3. REMOVE TEMPORARY BARRIERS.
	4. PLACE FINAL STRIPPING.
	NOTES
	1. FOR ADDITIONAL NOTES AND DETAILS, SEE TRAFFIC CONTROL PLANS.
	 ALL EXISTING DIMENSIONS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY THEM PRIOR TO THE START OF CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
TY W LINE	

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

PROJECT NO. EDP-MT-CIP209

STAGE IA PREVIOUS CONTRACTOR COMPLETED

CARIBBEAN BLVD. BRIDGE OVER C-1N CANAL

Sheet <u>B1-3</u>

INDEX NO. 521-820 (TYP.)

-R/W LINE

TRANSPORTATION AND PUBLIC WORKS DEPARTMENT STEPHEN P. CLARK CENTER 111 NW 1 ST MIAMI, FL 33128 CARIBBEAN BLVD. BRIDGE OVER C1-N CANAL

BRIDGE NO. 874650

CONSTRUCTION SEQUENCE



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SCRIPTION	Jacobs Engineering Group, Inc.		NAME	DATE		NAME	DATE	
SURIPTION	Tel. (305) 392–5193	DESIGNED BY	BKR	09/2019	DRAWN BY	СММ	09/2019	MIAMI-DA
	CERTIFICATE OF AUTHORIZATION NO. 2822	CHECKED BY	RM/AJM	09/2019	CHECKED BY	SZ	09/2019	COUNTY
	BRETT K. RAKITA P.E. NO. 59474	SUPERVISED BY:	BRETT RAKITA					

			PILE DATA	A TABLE -	SEE PIL	e driving	RECORDS	FOR AS-	BUILT IN	FORM	ATION AT .	STAGE IA				
INSTALLATION CRITERIA											DESIGN	CRITERIA				
PIER or BENT NUMBER	PILE SIZE (in.)	NOMINAL BEARING RESISTANCE (tons)	NOMINAL UPLIFT RESISTANCE (tons)	MINIMUM TIP ELEVATION (ft.)	TEST PILE LENGTH (ft.)	REQUIRED JET ELEVATION (ft.)	REQUIRED PREFORM ELEVATION (ft.)	FACTORED DESIGN LOAD (tons)	FACTORED DESIGN UPLIFT LOAD (tons)	DOWN DRAG (tons)	TOTAL SCOUR RESISTANCE (tons)	NET SCOUR RESISTANCE (tons)	100-YEAR SCOUR ELEVATION (ft.)	LONG TERM SCOUR ELEVATION (ft.)	Ø COMPRESSION	Ø UPLIFT
EB-1	18	157	N/A	N/A	70	N/A	-4	102	-	-	N/A	N/A	N/A	N/A	0.65	N/A
IB-2	18	157	N/A	N/A	N/A	N/A	N/A	100	-	-	2	2	-14	-14	0.65	N/A
IB-3	18	157	N/A	N/A	70	N/A	N/A	100	-	_	2	2	-14	-14	0.65	N/A
EB-4	18	157	N/A	N/A	70	N/A	-4	102	-	_	N/A	N/A	N/A	N/A	0.65	N/A

	PILE CU	'ATIONS		
PILE NO.	END BENT 1	INT. BENT 2	INT. BENT 3	END BENT 4
1	6.075	6.203	6.220	6.108
2	6.275	6.316	6.330	6.308
3	6.475	6.428	6.445	6.508
4	6.676	6.541	6.558	6.709
5	6.723	6.653	6.670	6.756
6	6.521	6.764	6.781	6.554
7	6.320	6.876	6.893	6.353
8	6.140	6.919	6.936	6.173
9	-	6.807	6.824	-
10	-	6.696	6.713	-
11	-	6.584	6.601	-
12	-	6.473	6.490	-
13	-	6.383	6.400	-
14	-	6.293	6.310	-

FACTORED DESIGN LOAD + NET SCOUR RESISTANCE + DOWN DRAG

Ø

TENSION RESISTANCE - THE ULTIMATE SIDE FRICTION CAPACITY THAT MUST BE OBTAINED BELOW THE 100 YEAR SCOUR ELEVATION TO RESIST PULLOUT OF THE PILE

(SPECIFY ONLY WHEN DESIGN REQUIRES TENSION CAPACITY). TOTAL SCOUR RESISTANCE - AN ESTIMATE OF THE ULTIMATE STATIC SIDE FRICTION RESISTANCE PROVIDED BY THE SCOURABLE SOIL.

NET SCOUR RESISTANCE - AN ESTIMATE OF THE ULTIMATE STATIC SIDE FRICTION RESISTANCE PROVIDED BY THE SOIL FROM THE REQUIRED PREFORMED OR JETTING ELEVATION TO THE SCOUR ELEVATION.

100-YEAR SCOUR ELEVATION - ESTIMATED ELEVATION OF SCOUR DUE TO THE 100 YEAR STORM EVENT.

LONG TERM SCOUR ELEVATION - ESTIMATED ELEVATION OF SCOUR USED IN DESIGN FOR EXTREME EVENT LOADING.

			RE	VISIONS				Jacobs Engineering Group, Inc.		NAME	DATE		NAME	DATE	Ī	RANSPORTATION AND PUBLIC	
DA	TE BY	DESCRIPTION	DATE BY	DESCRIPTION	DATE	BY	DESCRIPTION	3150 SW 38TH AVE, SUITE 700, MIAMI, FL 33146	DECIONED			DDAWAI				WORKS DEPARTMENT	PILE DATA TABLE
								Tel. (305) 392–5193	BY	BKR	09/2019	BY	СММ	09/2019			
								CERTIFICATE OF AUTHORIZATION NO. 2822	CHECKED	RM/AJM	09/2019	CHECKED	SZ	09/2019	COUNTY	STEPHEN P. CLARK CENTER	
								ENGINEER OF RECORD:	SUPERVISED BY	BRETT RAKITA	•			•		111 NW 1 ST MIAMI, FL 33128	CARIBBEAN BLVD. BRIDGE UVER CI-N CANAL

PILE INSTALLATION NOTES:

CONTRACTOR TO VERIFY LOCATION OF ALL UTILITIES PRIOR TO ANY PILE INSTALLATION ACTIVITIES.

WHEN A REQUIRED JETTING ELEVATION IS SHOWN, THE JET SHALL BE LOWERED TO THE ELEVATION AND CONTINUE TO OPERATE AT THIS ELEVATION UNTIL THE PILE DRIVING IS COMPLETED. IF JETTING OR PREFORMING ELEVATIONS DIFFER FROM THOSE SHOWN ON THE TABLE, THE ENGINEER SHALL BE RESPONSIBLE FOR DETERMINATION OF THE REQUIRED DRIVING RESISTANCE. NO JETTING WILL BE ALLOWED WITHOUT THE APPROVAL OF THE ENGINEER.

THE CONTRACTOR SHOULD NOT ANTICIPATE BEING ALLOWED TO JET PILES BELOW THE 100-YEAR SCOUR ELEVATION OR REQUIRED JET ELEVATION, WHICHEVER IS DEEPER.

PROCEED OUTWARD.

THE AVAILABLE TEST BORINGS INDICATE THAT THE NEAR SURFACE LIMESTONE MAY NOT PERMIT THE INSTALLATION OF PILES TO THE DESIRED PENETRATION. THEREFORE, PREFORMING IS REQUIRED TO THE ELEVATIONS NOTED ON THE PILE DATA TABLE. PREFORMING SHALL FOLLOW FDOT STANDARD SPECIFICATION 455–5.10 AND INCLUDE ALL SPECIAL CONSTRUCTION EFFORTS TO PENETRATE THE LIMESTONE PRIOR TO PILE DRIVING.

DYNAMIC LOAD TESTS SHALL BE PERFORMED ON ALL TEST PILES SHOWN IN THE PLANS IN ACCORDANCE WITH FDOT STANDARD SPECIFICATIONS 455-5.13 AND 455–5.14. THESE PILES SHALL BE INSTALLED IN THE POSITION OF THE PERMANENT PILES AT THE DESIGNATED POSITIONS BY USING THE SAME EQUIPMENT AND METHOD PROPOSED FOR INSTALLATION OF PRODUCTION PILES.

MINIMUM TIP ELEVATION IS GOVERNED BY THE PENETRATION REQUIREMENTS OF FDOT STANDARD SPECIFICATION 455-5.9 AND ANY OTHER LIMITS ESTABLISHED BY THE STRUCTURAL ENGINEER.

THE ANTICIPATED PILE TIP ELEVATIONS ARE SHOWN IN THE GEOTECHNICAL REPORT PREPARED BY GANNET FLEMING. HOWEVER, THE ANTICIPATED PILE TIP ELEVATIONS ARE PROVIDED AS A GUIDE FOR A TOTAL ESTIMATE OF PILE QUANTITY NEEDED FOR THE PROJECT. THESE ELEVATIONS ARE BASED ON INFORMATION AVAILABLE DURING DESIGN AND ARE APPROXIMATE. THE ANTICIPATED TIP ELEVATIONS SHALL NOT BE USED FOR DETERMINING THE LENGTH OF PRODUCTION PILES. THE AUTHORIZED LENGTH OF PRODUCTION PILES WILL BE ESTABLISHED IN THE FIELD WHEN THE BLOW COUNT IS INCREASING AND THE BLOW COUNT CRITERIA (AS DETERMINED BY DYNAMIC LOAD TESTS) HAS BEEN MET. THE AUTHORIZED PILE LENGTHS MAY VARY SIGNIFICANTLY FROM THE ANTICIPATED PILE LENGTHS.

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MIAMI-DADE COUNTY DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS ROADWAY ENGINEERING AND RIGHT OF WAY DIVISION CARIBBEAN BLVD. BRIDGE OVER C-1N CANAL

PROJECT NO. EDP-MT-CIP209

Sheet <u>B1-6</u>

AT EACH BENT, PILE DRIVING IS TO COMMENCE AT THE CENTER OF THE BENT AND

BRIDGE NO. 874650



SCRIPTION	Jacobs Engineering Group, Inc. 3150 SW 38TH AVE, SUITE 700, MIAMI, FL 33146		NAME	DATE		NAME	DATE	
	Tel. (305) 392–5193	DESIGNED BY	BKR	09/2019	DRAWN BY	СММ	09/2019	MIAMI-DA
	CERTIFICATE OF AUTHORIZATION NO. 2822	CHECKED BY	RM/AJM	09/2019	CHECKED BY	SZ	09/2019	COUNTY
	BRETT K. RAKITA P.E. NO. 59474	SUPERVISED BY:	BRETT RAKITA					



PROJECT NO. EDP-MT-CIP209

Sheet <u>B1-7</u>

STEPHEN P. CLARK CENTER 111 NW 1 ST MIAMI, FL 33128





Jacobs Engineering Group, Inc.		NAME	DATE		NAME	DATE	
Tel. (305) 392–5193	DESIGNED BY	BKR	09/2019	DRAWN BY	СММ	09/2019	MIAMI-DA
CERTIFICATE OF AUTHORIZATION NO. 2822	CHECKED BY	RM/AJM	09/2019	CHECKED BY	SZ	09/2019	COUNTY
BRETT K. RAKITA P.E. NO. 59474	SUPERVISED BY:	BRETT RAKITA					

TRANSPORTATION AND PUBLIC WORKS DEPARTMENT	END BENT DETAILS
STEPHEN P. CLARK CENTER 111 NW 1 ST MIAMI, FL 33128	CARIBBEAN BLVD. BRIDGE OVER C1-N CANAL



	Jacobs Engineering Group, Inc.		NAME	DATE		NAME	DATE	TRANSPORTATION AND PUBLIC	INTERMEDIATE BENT 2 OR 3
SCRIPTION	Tel. (305) 392–5193 CERTIFICATE OF AUTHORIZATION NO. 2822	DESIGNED BY CHECKED	BKR RM/AJM	09/2019 09/2019	DRAWN BY CHECKED	CMM SZ	09/2019 09/2019	MIAMI-DADE COUNTY STEPHEN P. CLARK CENTER	
	ENGINEER OF RECORD: BRETT K. RAKITA P.E. NO. 59474	SUPERVISED BY:	, Brett rakita		BT			COUNTY 111 NW 1 ST MIAMI, FL 33128	CARIBBEAN BLVD. BRIDGE OVER CI-N CANAL



	Jacobs Engineering Group, Inc.		NAME	DATE		NAME	DATE		TRANSPORTATION AND PUBLIC	INTERMEDIATE BENT DETAILS
SCRIF HON	Tel. (305) 392–5193	DESIGNED BY	BKR	09/2019	DRAWN BY	СММ	09/2019	MIAMI-DADE	WURKS DEPARIMENT	
	CERTIFICATE OF AUTHORIZATION NO. 2822	CHECKED BY	RM/AJM	09/2019	CHECKED BY	SZ	09/2019	COUNTY	STEPHEN P. CLARK CENTER	CARIBBEAN RIVD BRIDGE OVER C1-N CANAI
	BRETT K. RAKITA P.E. NO. 59474	SUPERVISED BY:	BRETT RAKITA						MIAMI, FL 33128	

PROJECT NO. EDP-MT-CIP209

Sheet <u>B1-10</u>

1. FOR LOCATIONS OF SECTION A-A, SECTION B-B, SECTION C-C, AND DETAIL 1, SEE SHEET B1-9.

2. FOR LOCATIONS OF DETAIL 1, SEE SHEET B1-7

BRIDGE NO. 874650





																	BRIDGE NO. 874650
			RE	VISIONS				Jacobs Engineering Group, Inc.		NAME	DATE		NAME	DATE	T	RANSPORTATION AND PUBLIC	FINISH CRADE FLEVATIONS (1 OF 3)
DATE	BY	DESCRIPTION	DATE BY	DESCRIPTION	DATE	BY	DESCRIPTION	3150 SW 38TH AVE, SUITE 700, MIAMI, FL 33146 Tel. (305) 392–5193	DESIGNED BY	BKR	09/2019	DRAWN BY	СММ	09/2019		WORKS DEPARTMENT	TINISH GRADE ELEVATIONS (1 01 3)
								CERTIFICÁTE OF AUTHORIZATION NO. 2822 ENGINEER OF RECORD: BRETT K. RAKITA P.E. NO. 59474	CHECKED BY SUPERVISED BY:	RM/AJM BRETT RAKITA	09/2019	CHECKED BY	SZ	09/2019	COUNTY	STEPHEN P. CLARK CENTER 111 NW 1 ST MIAMI, FL 33128	CARIBBEAN BLVD. BRIDGE OVER C1-N CANAL

TYPICAL SECTION

PROJECT NO. EDP-MT-CIP209

Sheet <u>B1-11</u>

NOTES:

1. FOR TABLE OF FINISH GRADE ELEVATIONS, SEE FINISH GRADE ELEVATIONS (2 OF 3) SHEET.

— RIGHT COPING

			FIN	ISH GRADE ELEV	ATIONS	- BRIDG	E					
LOCATION	BEGIN BRIDGE FFBW END BENT 1	1	2	Q INT. BENT 2	1	2	3	4	Q INT. BENT 3	1	2	END BRIDGE FAS END BENT 4
LEFT COPING	9.510	9.572	9.623	9.663	9.697	9.716	9.719	9.707	9.680	9.645	9.599	9.543
BACK OF LEFT PED. RAILING	9.603	9.665	9.716	9.756	9.790	9.809	9.812	9.800	9.773	9.738	9.692	9.636
LEFT PED. RAILING	9.620	9.682	9.733	9.773	9.807	9.826	9.829	9.817	9.790	9.755	9.709	9.653
BACK OF LEFT TRAFFIC RAILING	9.793	9.855	9.906	9.946	9.980	9.999	10.002	9.990	9.963	9.928	9.882	9.826
LEFT GUTTER	9.820	9.882	9.933	9.973	10.007	10.026	10.029	10.017	9.990	9.955	9.909	9.853
LEFT CONST. JT.	10.040	10.102	10.153	10.193	10.227	10.246	10.249	10.237	10.210	10.175	10.129	10.073
LEFT TRAFFIC SEPARATOR	10.210	10.272	10.323	10.363	10.397	10.416	10.419	10.407	10.380	10.345	10.299	10.243
Q CONST. & B SURVEY CARIBBEAN BLVD.	10.300	10.362	10.413	10.453	10.487	10.506	10.509	10.497	10.470	10.435	10.389	10.333
RIGHT TRAFFIC SEPARATOR	10.210	10.272	10.323	10.363	10.397	10.416	10.419	10.407	10.380	10.345	10.299	10.243
RIGHT CONST. JT.	9.850	9.912	9.963	10.003	10.037	10.056	10.059	10.047	10.020	9.985	9.939	9.883
RIGHT GUTTER	9.820	9.882	9.933	9.973	10.007	10.026	10.029	10.017	9.990	9.955	9.909	9.853
BACK OF RIGHT TRAFFIC RAILING	9.793	9.855	9.906	9.946	9.980	9.999	10.002	9.990	9.963	9.928	9.882	9.826
RIGHT PED. RAILING	9.620	9.682	9.733	9.773	9.807	9.826	9.829	9.817	9.790	9.755	9.709	9.653
RIGHT COPING	9.600	9.662	9.713	9.753	9.787	9.806	9.809	9.797	9.770	9.735	9.689	9.633

																	BRIDGE NO. 874650
			REV	VISIONS				Jacobs Engineering Group, Inc.		NAME	DATE		NAME	DATE		TRANSPORTATION AND PUBLIC	EINICH OPADE ELEVATIONS (2 DE 3)
DATE	BY	DESCRIPTION	DATE BY	DESCRIPTION	DATE	BY	DESCRIPTION	3150 SW 38TH AVE, SUITE 700, MIAMI, FL 33146 Tel. (305) 392–5193	DESIGNED	BKR	09/2019	DRAWN	СММ	09/2019		WORKS DEPARTMENT	TINISH GRADE LLEVATIONS (2 OF 5)
								CERTIFICATE OF AUTHORIZATION NO. 2822 ENGINEER OF RECORD: BRETT K. RAKITA P.E. NO. 59474	CHECKED BY SUPERVISED BY:	RM/AJM BRETT RAKITA	09/2019	CHECKED BY	SZ	09/2019	COUNTY	STEPHEN P. CLARK CENTER 111 NW 1 ST MIAMI, FL 33128	CARIBBEAN BLVD. BRIDGE OVER C1-N CANAL

PROJECT NO. EDP-MT-CIP209

Sheet <u>B1-12</u>

Jacobs Engineering Group, Inc.		NAME	DATE		NAME	DATE	
Tel. (305) 392–5193	DESIGNED BY	BKR	09/2019	DRAWN BY	СММ	09/2019	MIAMI-DA
CERTIFICATE OF AUTHORIZATION NO. 2822	CHECKED BY	RM/AJM	09/2019	CHECKED BY	SZ	09/2019	COUNTY
BRETT K. RAKITA P.E. NO. 59474	SUPERVISED BY:	BRETT RAKITA					

PROJECT NO. EDP-MT-CIP209

Sheet <u>B1-13</u>

FINISH GRADE	ELEVATIONS - J	APPROA	CH SLAB	1
DN .	BEGIN APPROACH SLAB 1	1	2	BEGIN BRIDGE FAS END BENT 1
PING	9.234	9.376	9.498	9.600
LEFT TRAFFIC RAILING	9.427	9.569	9.691	9.793
TER	9.454	9.596	9.718	9.820
IST. JT.	9.674	9.816	9.938	10.040
FFIC SEPARATOR	9.844	9.986	10.108	10.210
. & ₽_SURVEY N BLVD.	9.934	10.076	10.198	10.300
AFFIC SEPARATOR	9.844	9.986	10.108	10.210
ONST. JT.	9.484	9.626	9.748	9.850
ITTER	9.454	9.596	9.718	9.820
RIGHT TRAFFIC RAILING	9.427	9.569	9.691	9.793
D. RAILING	9.254	9.396	9.518	9.620
PING	9.234	9.376	9.498	9.600

FINISH GRADE E	ELEVATIONS - /	APPROAC	CH SLAB	2
DN .	END BRIDGE FAS END BENT 4	1	2	END APPROACH SLAB 2
PING	9.633	9.539	9.424	9.290
LEFT TRAFFIC RAILING	9.826	9.732	-	-
TER	9.853	9.759	-	-
IST. JT.	10.073	9.979	9.864	9.730
FFIC SEPARATOR	10.243	-	-	-
. & B2 SURVEY N BLVD.	10.333	10.239	10.124	9.990
AFFIC SEPARATOR	10.243	-	-	-
DNST. JT.	9.883	9.789	9.674	9.540
ITTER	9.853	9.759	-	-
RIGHT TRAFFIC RAILING	9.826	9.732	-	-
PING	9.633	9.539	9.424	9.290

TRANSPORTATION AND PUBLIC WORKS DEPARTMENT	FI

BRIDGE NO. 874650

STEPHEN P. CLARK CENTER 111 NW 1 ST MIAMI, FL 33128

FINISH GRADE ELEVATIONS (3 OF 3)

CARIBBEAN BLVD. BRIDGE OVER C1-N CANAL

	Jacobs Engineering Group, Inc.		NAME	DATE		NAME	DATE	
SURIPTION	Tel. (305) 392–5193	DESIGNED BY	BKR	09/2019	DRAWN BY	СММ	09/2019	
	CERTIFICATE OF AUTHORIZATION NO. 2822	CHECKED BY	RM/AJM	09/2019	CHECKED BY	SZ	09/2019	COUNTY
	BRETT K. RAKITA P.E. NO. 59474	SUPERVISED BY:	BRETT RAKITA					

SCRIPTION	Jacobs Engineering Group, Inc.		NAME	DATE		NAME	DATE	TRANSPORTATION AND F	UBLIC SUPERSTRUCTURE DETAILS (1 OF 2)
	Tel. (305) 392–5193	DESIGNED BY	BKR	09/2019	DRAWN BY	СММ	09/2019	MIAMI-DADE WORKS DEPARTMEN	
	CERTIFICATE OF AUTHORIZATION NO. 2822	CHECKED BY	RM/AJM	09/2019	CHECKED BY	SZ	09/2019	COUNTY STEPHEN P. CLARK CENTER	CARIBREAN BLVD BRIDGE OVER CI-N CANAL
	BRETT K. RAKITA P.E. NO. 59474	SUPERVISED BY	: Brett Rakita					MIAMI, FL 33128	

Jacobs Engineering Group, Inc.		NAME	DATE		NAME	DATE	
Tel. (305) 392–5193	DESIGNED BY	BKR	09/2019	DRAWN BY	СММ	09/2019	MIAMI-DA
CERTIFICATE OF AUTHORIZATION NO. 2822	CHECKED BY	RM/AJM	09/2019	CHECKED BY	SZ	09/2019	COUNTY
BRETT K. RAKITA P.E. NO. 59474	supervised by:	BRETT RAKITA					

Jacobs Engineering Group, Inc.		NAME	DATE		NAME	DATE	
Tel. (305) 392–5193	DESIGNED BY	BKR	09/2019	DRAWN BY	СММ	09/2019	
CERTIFICATE OF AUTHORIZATION NO. 2822	CHECKED BY	RM/AJM	09/2019	CHECKED BY	SZ	09/2019	COUNTY
BRETT K. RAKITA P.E. NO. 59474	SUPERVISED BY:	BRETT RAKITA					

ESTIMATED QUANTITIES		
ITEM	UNIT	QUANTITY
CLASS II (BRIDGE DECK) CONCRETE (APPROACH SLAB)	CY	160.4
REINFORCING STEEL (MISCELLANEOUS)	LB	30,593
CONCRETE TRAFFIC RAILING, BRIDGE (36" SINGLE SLOPE)	LF	80
CONCRETE PARAPET, PEDEST/BICYCLE	LF	60
ALUMINUM BULLET RAILING, DOUBLE	LF	60

	BRIDGE NO. 874650
TRANSPORTATION AND PUBLIC WORKS DEPARTMENT	APPROACH SLAB DETAILS
STEPHEN P. CLARK CENTER 111 NW 1 ST MIAMI, FL 33128	CARIBBEAN BLVD. BRIDGE OVER C1-N CANAL

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					REVISIONS				Jacobs Engineering Group, Inc.		NAME	DATE		NAME	DATE	
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	3150 SW 38TH AVE, SUITE 700, MIAMI, FL 33146	DESIGNED			DRAWN		00 /00/0	┥
									Tel. (305) 392–5193	BY	BKR	09/2019	BY	СММ	09/2019	」 MIAMI—DA
									CERTIFICATE OF AUTHORIZATION NO. 2822	CHECKED BY	RM/AJM	09/2019	CHECKED BY	SZ	09/2019	COUNTY
									BRETT K. RAKITA P.E. NO. 59474	SUPERVISED BY	BRETT RAKITA					

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MIAMI-DADE COUNTY DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS ROADWAY ENGINEERING AND RIGHT OF WAY DIVISION **CARIBBEAN BLVD. BRIDGE OVER C-1N CANAL**

OJECT	NO.	EDP-MT-CIP209

NOTES:

1. FOR APPROACH SLAB REINFORCEMENT DETAILS, SEE INDEX NO. 400–090. 2. FOR STANDARD BAR BENDING DETAILS, SEE INDEX NO. 415–001.

BRIDGE NO. 874650

TRANSPORTATION AND PUBLIC WORKS DEPARTMENT REINFORCING BAR LIST DE STEPHEN P. CLARK CENTER 111 NW 1 ST MIAMI, FL 33128 CARIBBEAN BLVD. BRIDGE OVER C1-N CANAL

	SUMMARY OF	QUANTITIES	
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. 100-1	Limerask Boss (s Thick, Primed)	\$.7. 1,837	1.33
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210-7	Altoprinous Surface Treatment Type I-C	5.K 437	4,931
615-3	Type & Asphaltic Concrete Surface Course	Ton. 71	7/
300-7	Class A* Concrete	1 C.K	54.
2104	Reinforcing Steel	Lbs. 4689	6,63
201-3	Presherred Stat Units	\$.F. 812	9/2
107.1	Aregoor Concrete Pilling Avrilaties (127)	142 LK and 142	542
100-1	Presant Concrete Piling Ditran (18")	4.4	54
j09-9	Unlogded test Plies (12")	1 LR. 42	42
105-10	Test Logds	· · · · · · · · · · · · · · · · · · ·	1
1 M-105	Punching	Au 1940 1464 18	18
4077	Neminium Handrall	4.5. 50.5	58.
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145-1	Guardrall	4.6 , 250	250
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Bridge No. 874431 EB - 13 د الدر الا ۲۰۲۰ درده برم ورودهای د WE REAL WAY AND A DATE OF FOR WESTEND BENT 8401 62 513* 0 501 16 /\6" 8402 0:2" 6 P 501 4:3* P 502 9:7* 5:9* 9:7* 38 12 28 0501 \$41 P309 8302 30.01 0 801 7 FOR EAST END BENT 8401 8402 62 313° 8801 6 6:2 .7 38:8" 6 0601 16 1:6* 415* 0501 2 415* 8.302 ESTIMATED QUANTITIES 100. Bam Stari Criss A * Concrete Start Reinforcing Steel Unit Cuantity C.Y. 18.80 Lb. 1936 FOR EAST END BENT 300-1 Class A* Concrete 310-1 Reinforcing Steaf C.Y. 9.36 -Lb. 1024 Notes: (Unless athorwise noted) Notes: (Unless atherwise noted) 7. Yor erneral Notess atherwise noted) 7. All exposed edges and corners hole chamfared 1°. 8. Stob sects shall be brought to final elevation by grinding. 4. Elevation moments shall be placed at the opprach and of the and bents on top of the shear blocks. Markers will be for nished by Dade Gounty and shall be installed by the Contractor as directed by the Engineer. Installation costs shall be included in the contract unit price for Class A* Concrete. 5. Bridge alab is fixed at both ernde.

1	21 C.		
ALK Bred	END	BENT	
AT MARY AND . C.	ARIBBEAN B	LVD. BRI	DGE
J.Brown	OVI	ER .	÷.
medanto	BEL-AIRE	• CANAL	
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APRIL 190	53 3205	18	17
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- Notes: (Unless otherwise noted) 1. For General Notes see Plan and Elevation Sheet. 2. Minimum cover on all reinforcement shall be 3. Lateral post-tensioning cables shall be grouted after find stressing. 4. All exposed edges shall be chamfered I". 5. Cast-inplace concrete shall be Class At. The a entraining agent shall be approved by the Engineer. 6. All joints that will be covered with an aphaltic concrete mearing surface shall be seeled w a sand mix asphatt. All other joints, includin vertical joints, shall be acaded with. BASS rether joints free or curb, sidewolk and parap-shall receive a Class I Surface Finish examp-top of sidewalk which shall have a broom finish.

		DADE COUNTY PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION			
		DESIGN 11.1. Z. and Dawn	SUPERSTRUCTURE CARIRBEAN BLVD. BRIDGE OVER BEL-AIRE CALLAL		
	J.Sanzane Gdb J.Brown Mycqu Zifferlands	J.Sanzane Gela J.Brown Magrolu Entre Lamb			
		Autority Columner	AIGANNADIN	ARA SINCTON	
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 $(\mathbf{x}_{i}) \in \mathbf{A}_{i}$

|Bridge No. 874431 |EB - 15

Notes : (Uniess otherwise noted)

- 1. For General Notes, see Plan and Elevation Shiet 2. Tops of preshressed units are to be rough floaded. At approximately the time a initial set, the entire top of preshressed units shall be scrubbed fronsversely with a coorse wire brush to remove all laifunce ond to produce o rough surface. 3. Prestressed concrete shall be Class P,*
- Prestressed concrete shill be Glass P; I^c 3000 psi.
 In hondling prestressed units, they must be mainfalned in an upright position of cill times and must be picked up at ends to prevent damage. The contractor shall be responsible for damage due to improper
- be responsible for damage due to impropat handling. 5. Af fronsier withe tensioning load, the cylinder strength of concrete shall be 4000 psi. ond the concrete shall be at least 20 hrs old

- Cancrele cover over reinforcing steel shall be 2" minimum.
 The use of steel forms on concrete founded casting beds is prefeired
 All reinforcement shall be new. Bars sholl be deformed in accordance with ASTM A-3.05, and shall be either intermediate grade billet steel in accordance with ASTM A-16, or rail steel in accordance with ASTM A-16.
 All strands shall extend 25 Beyond ends of 500 units

- All strands shall extend 23 Beyond ends of slot units
 Exterior faces of exterior units that be given a Closs J Surface Finish in the casting yord within 12 hrs. after casting.
 The Contractor shall provide cament grout under each slab unit, if required by the Engineer, to provide a uniform top surface and, or, a uniform bearing surface for the slab units.

	DADE COUNTY PUBLIC WORKS DEPARTMENT			
	M.W. 2. rock	PRESTRESSED SLAB UNIT.		
	Crumbley DilCa J. Brown MOPOSED	CARIBBEAN BLVD. BRIDGE OVER BEL-AIRE CANAL		
	 Le l'a	0.2	CRUE BRANDE	Lega: A Par
RDITTIOR	 MR4		me_320.5	. mm 15 m.16

 (x_{i}, N_{i})

Same



Bridge No. 874431 [EB - 17]

Aluminum end cops shell be Aluminum Association Alloy 45 <u>Notes</u> (Unless othermas noted)
Cost post to be Alexa No 1003 Alloy 336-76 as shown here, ar equal subject to opproved by the Engineer.
2 Balls to be Minimum Alby GOSI-76, sizes as show, mith axianum will thickness of §.
3 Ancher bals, nuts and weathers shell be hat algoed and an analytic and an analytic provided to the subject of the subject DADE COUNTY PUBLIC WORKS DEPARTMENT Engineering Division OLUSA M.M.Ringed ORUNA Rubinstein CHICK HANDRAIL DETAILS CARIBBEAN BLVD. BRIDGE OVER J Brown BEL-AIRE CANAL The APRIL 1963 mg 3205 part II or 17 NOITHAUESO .6 *

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REFERENCES

As-Built Canal Package is digitally signed by Alfredo Diaz, PSM. See separate PDF, filename: "240815_e sign AS_BUILT B1-07 E End Bent 1 or 4" for digitally signed version. As-Built Canal Package is digitally signed by Alfredo Diaz, PSM. See separate PDF, filename: "240815_e sign AS-BUILT B1-09 IntBent 2 or 3" for digitally signed version. As-Built Canal Package is digitally signed by Alfredo Diaz, PSM. See separate PDF, filename: "240815_e sign X SECTIONS.pdf" for digitally signed version. Temporary sheet pile structural calculations are digitally signed by Denis K. Solano P.E. See separate PDF, filename "Structural Calculations from Denis K. Solano P.E.pdf" for digitally signed version.

REPORT OF A GEOTECHNICAL EXPLORATION

SHEET-PILE WALLS BEGIN TW3 END TW4

CARIBBEAN BLVD AT THE C1-N CANAL CROSSING

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

MIAMI-DADE COUNTY, FLORIDA PROJECT No. EDP-MT-CIP209 STORMWATER UTILITY

- Prepared for - **AMERICAN EMPIRE BUILDERS, INC.** 13775 SW 145th Court, Unit B Miami, Florida 33186

- Prepared by -CEN GEOTECHNICAL & ENVIRONMENTAL SOLUTIONS, INC. 12560 NW 81 Avenue Miami, Florida 33156

CEN Project No. 11111-21-0120

August 3, 2022

American Empire Builders Inc. 13775 SW 145th CT. Unit B Miami, Florida 33186

Attention:	Mr. Tony Gonzalez
	Project Manager
Subject:	Report of a Geotechnical Evaluation – Sheet Piles Parameters
	Caribbean Boulevard Bridge Replacement over C1-N Canal
	Temporary Sheet Pile Wall Begin TW3 & End TW4
	Bridge No. 874650
	Miami-Dade County Project No. EDP-MT-CIP209
	Miami Dade County, Florida
	CEN Geosolutions Project No. 11111-21-0120 CEN

Dear Tony:

CEN Geotechnical & Environmental Solutions, Inc. (CEN) is presenting this Report of a Geotechnical Exploration for the temporary Sheet Pile Wall Begin TW3 and End TW4 at the subject project. This report presents our understanding of the project, outlines our exploratory procedures, and documents the field test data obtained for the proposed project.

We have enjoyed assisting you on this project and look forward to serving as your geotechnical consultant on the remainder of this project and on future projects. If you have any questions concerning this report, please call our office at (305) 498-3920.

Sincerely,

CEN GEOTECHNICAL & ENVIRONMENTAL SOLUTIONS, INC.

Ricardo Bernal. Project Geotechnical Engineer

Distribution: Addressee (13) File (1)

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Report of Core Boring
Field Testing Procedures

Caribbean Boulevard Bridge Replacement-Soil Parameters Sheet-Pile-Begin TW3 & End TW4August 3, 2022CEN Geotechnical & Environmental Engineering, Inc.CEN Project No. 11111-21-0120CEN

1.0 INTRODUCTION

The purpose of this geotechnical exploration was to obtain information concerning the site and subsurface conditions along the proposed temporary sheet-pile wall location. This report discusses our exploratory and testing procedures, presents our findings and evaluation, and includes the following items:

Field Services

- Performed a test core boring for the proposed temporary sheet-pile wall, to a depth of 50 feet. In addition, rock parameters for the temporary sheet-pile wall are presented in this report.
- A brief description of our field-testing procedures.

Evaluation

- A general review of area and site geologic conditions.
- A general review of existing surface features and site conditions.
- Report of core boring which illustrate the estimated subsurface conditions along the temporary sheet-pile structure.
- Rock parameters and coefficients for the temporary sheet-pile wall analysis.

Caribbean Boulevard Bridge Replacement–Soil Parameters Sheet-Pile-Begin TW3 & End TW4 August 3, 2022 CEN Geotechnical & Environmental Engineering, Inc. CEN Project No. 11111-21-0120CEN

2.0 PROJECT INFORMATION

2.1 GENERAL

Project information for this subsurface exploration has been provided to us by various members of the contractor team and telephone conversations.

During our geotechnical study, we have been furnished with the following project-related plans and information:

 Caribbean Blvd over C1-N Canal Replacement Bridge Project Plans Including Cross Sections along with Foundation Layout & Plan Elevation Prepared by: Jacobs Engineering Group, Inc. Dated: March 2020

2.2 PROJECT DESCRIPTION

The project consists of the construction of a new bridge along Caribbean Blvd over C1-N Canal. Includes a sheet pile wall sections:

• Temporary Sheet Pile Wall Begin TW3 End TW4, from Sta. 40+57.00 to Sta. 41+69.00.

Caribbean Boulevard Bridge Replacement-Soil Parameters Sheet-Pile-Begin TW3 & End TW4August 3, 2022CEN Geotechnical & Environmental Engineering, Inc.CEN Project No. 11111-21-0120CEN

3.0 FIELD EXPLORATION AND LABORATORY TESTING

3.1 FIELD EXPLORATION

The primary purpose of this field exploration was as follows:

- 1. To define the near subsurface conditions, present along the proposed temporary sheetpile wall.
- 2. To obtain soil samples for examination and classification.

The field exploration was conducted by CEN Geosolutions. The location of the test boring is provided in the Summary of Test Boring Location in Appendix A. The Report of Core Boring in Appendix A summarize the approximate boundary between soil types. In some instances, the transition between material types may be gradual. A brief description of the exploratory sampling techniques used is presented in the Field-Testing Procedures section in Appendix A. A discussion of the subsurface conditions encountered along the project alignment is provided in Section 4.2 of this report.

4.0 SITE AND SUBSURFACE CONDITIONS

4.1 SITE CONDITIONS

The site conditions were observed by a geotechnical engineer during several visits.

4.2 SUBSURFACE CONDITIONS

4.2.1 General

A graphical representation of the subsurface conditions encountered by the test boring drilled near the proposed temporary sheet-pile wall is shown on the Report of Core Boring in Appendix A. This profile of rock conditions highlights the major subsurface stratification. The boring profile on this sheet should be consulted for a detailed description of the rock condition encountered at the boring location.

4.2.2 Geologic Conditions

The project is located on the southern flank of the Florida Plateau, a stable, carbonate platform. In the study, the upper 200 feet of this platform is composed predominately of limestone and quartz sand. The sediments were deposited during several glacial and interglacial stages during the Pleistocene Epoch. Within the explored depths of this study, two distinct geological formations were encountered. These formations are the Miami Limestone Formation and the Fort Thompson Formation.

4.2.3 Miami Limestone

The Miami Limestone can be described as a soft tan white porous to very porous fossiliferous quartz sandy fine-grained slightly oolitic limestone. The solution channels in the limestone may be up to 2 inches in diameter at some locations, are filled with quartz fine sand and uncemented calcareous materials. The limestone varies in both thickness and competency within the investigated area.

The Miami Limestone was deposited in a shallow near shore marine carbonate bank environment. Spherical carbonate sand grains called oolites formed and were deposited in this environment. Near shore, processes transported quartz sand into the area and reworked some of the carbonate material. Encrusting organisms called bryozoans were locally abundant and formed patches on the substrate. After sea level receded, the carbonate deposit was exposed to fresh water and the cementation process was initiated. The degree of cementation, and therefore the competency of the rock, was influenced by both the abundance and the type of calcareous material in the original deposit. Humic and carbonic acids percolating downward through the material etched slots up to 4 feet deep in the surface of the stratum.

4.2.4 Fort Thompson Formation

Underlying the Miami Limestone Formation, the Fort Thompson Formation was generally encountered. The Fort Thompson Formation is composed of sediments of variable lithologies.

The Fort Thompson limestone grades downward into a gray quartz and calcareous fine to medium sand. This sand has been cemented to varying degrees by carbonate material leached out of the overlying limestone.

4.2.5 Generalized Subsurface Conditions Encountered Along the Sheet-pile Alignment

For a detailed subsurface condition at a particular borehole location, please refer to the Report of Core Boring in Appendix A.

4.2.6 Groundwater Conditions

The groundwater levels in the borings were measured at the time of drilling. Groundwater level in the test boring was encountered at approximately elevation of 1.7, NGVD29. A Seasonal High Ground Water Table (SHGWT) of 4.0 feet, (NGVD29) is recommended for design. Fluctuation in the observed groundwater levels should be expected due to seasonal climatic changes, construction activity, rainfall variations, surface water runoff, and other site-specific factors such as changes of the Canal water elevations. Since groundwater level variations are anticipated, design drawings and specifications should accommodate such possibilities and construction planning should assume that variations will occur.

5.0 RECOMMENDATIONS

5.1 ROCK

The limestone parameters presented below have been estimated from correlations with the Standard Penetration Test (SPT) values (N, blows/ft) obtained from the field exploration. the internal friction angle (θ) is estimated from accepted FDOT correlations with N_s values. SPT N values obtained using an automatic hammer, SPT Na, were covert to safety hammer values, SPT Ns, by multiplying by a factor of 1.24. The following correlations with SPT Ns values were used:

Boring No.	Range of Elevation, ft.		Soil Type	Automatic Hammer	Equivalent Safety Hammer N Value	Ø for Soils ø=28+N/4 for Rock	γ Total Unit Weight	δ Angle of Friction between Soil
	From	То		N value, blows/ft.	x 1.24 auto, blows/ft.	Ø=33+N/4, degrees	lb/ft3	& Sheetpile, degrees
	5.67	1.67	Limestone	18	22	39	120	17
	1.67	-0.33	Limestone	80	99	58	122	17
	-0.33	-2.33	Limestone	43	53	46	122	17
	-2.33	-4.33	Limestone	18	22	39	120	17
	-4.33	-10.33	Limestone	15	19	38	120	17
	-10.33	-12.33	Limestone	48	60	48	122	17
	-12.33	-14.33	Limestone	28	35	42	122	17
TB-1	-14.33	-17.33	Limestone	70	87	55	122	17
	-17.33	-20.33	Limestone	17	21	38	120	17
	-20.33	-22.33	Sand/Limestone	6	7	35	115	17
	-22.33	-27.33	Limestone	37	46	44	122	17
	-27.33	-32.33	Limestone	5	6	35	120	17
	-32.33	-34.33	Limestone	42	52	46	122	17
	-34.33	-40.33	Limestone	90	112	61	122	17
	-40.33	-42.33	Limestone	27	33	41	122	17

TABLE 5.2.1: SUMMARY OF ROCK PARAMETERS

6.0 EVALUATION

6.1 BASIS FOR EVALUATION

The following evaluation is based in the Standard Penetration Test (SPT) and the data gathered during our subsurface exploration. The stratification and consistency of the subsurface materials underlying the site may vary within even short lateral distances; therefore, any subsurface condition encountered which differs from those documented in this study should be reported to us so that our recommendations can be reviewed.

6.2 SHEET-PILE WALL STRUCTURE

6.2.1 Rock Parameters Coefficients for Sheet-Pile Wall Design Analysis

Structure Boring No.		Ran Eleva	Range of Elevation, ft		δ	Coefficients of Lateral Earth Pressure			γ total	Material Description	
	5	From	То	degrees	degrees	Ka	Ko	Кр	pcf	-	
		5.67	1.67	39	17	0.23	0.37	4.40	120	Limestone	
		1.67	-0.33	45	17	0.17	0.29	5.83	122	Limestone	
		-0.33	-2.33	45	17	0.17	0.29	5.83	122	Limestone	
		-2.33	-4.33	39	17	0.23	0.37	4.40	120	Limestone	
		-4.33	-10.33	38	17	0.24	0.38	4.20	120	Limestone	
		-10.33	-12.33	48	17	0.15	0.26	6.79	122	Limestone	
CARIBBEAN		-12.33	-14.33	42	17	0.20	0.33	5.04	122	Limestone	
BLVD REPLACEMENT	TB-1A	-14.33	-17.33	45	17	0.17	0.29	5.83	122	Limestone	
BRIDGE		-17.33	-20.33	38	17	0.24	0.38	4.20	120	Limestone	
		-20.33	-22.33	31	17	0.32	0.48	3.12	115	Sand Limestone	
		-22.33	-27.33	46	17	0.18	0.31	5.55	122	Limestone	
		-27.33	-32.33	35	17	0.27	0.43	3.69	120	Limestone	
		-32.33	-34.33	45	17	0.17	0.29	5.83	122	Limestone	
		-34.33	-40.33	45	17	0.17	0.29	5.83	122	Limestone	
		-40.33	-42.33	41	17	0.21	0.34	4.81	122	Limestone	

Table 7.2.1: Summary of Rock Parameters for Temporary Sheet Pile Design

The following table reviews the rock parameters for the design of the temporary Sheet-Pile Wall Begin TW3 End TW4:

- ϕ = Rock/soil angle of internal friction.
- $\phi = 28 + N(\text{safety})/4 \text{ Sand}; \phi = 33 + N(\text{safety})/4 \text{ Rock}.$
- $\gamma = 105*30/30$ for sand or limerock fill (115 pcf max); 122 for limestone.
- δ = Friction angle between sheet-pile and rock (rock).
- Design high groundwater elevation 2.0 feet.

APPENDIX A

SITE LOCATION MAP	A-1
FIELD EXPLORATION PLAN	A-2
REPORT OF CORE BORING	A-3
FIELD TESTING PROCEDURES	A-4



BY: RB DATE: Aug-2022 CHECKED BY: R.BERNAL

CEN PROJECT No. 11111-21-0120 D:/296/CEN11111 21 0120/6 CARIBBEAN BLVD REPLACEMEN



Jacobs Engineering Group, Inc.		NAIE	DAlE		NAME	DAlE	
Tel. (305) 392-5193	DESIGIED BY	BKR	09/2019	DRA BY	CMM	09/2019	MIAMI-DA
Certificate of Authorization No. 2822	CHEa <ell BY</ell 	RM/MI	09/2019	CHEQCED BŸ	SZ	09/2019	COUNTY
BRETT K. RAKITA P.E. NO. 59474	SUPER'IISED BY:	BRETT RAKITA					

STEPHEN P. CLARK CENTER 111 NW 1 ST MIAMI, FL 33128



<u>LEGEND</u>

Fine Sand

Limestone with some fine SAND and/or fine SAND

| | CASING

☑ ENCOUNTERED WATER TABLE DURING DRILLING

N SPT N-VALUES SHOWN ABOVE WERE OBTAINED USING AUTOMATIC HAMMERS. MOST DESIGN CALCULATIONS USE SAFETY HAMMER N-VALUES. THE ABOVE N-VALUES NEED TO BE CONVERTED TO SAFETY HAMMER EQUIVALENT VALUES

<u>NOTES:</u>

STRATA BOUNDARIES ARE APPROXIMATE AND MAY VARY BETWEEN OR AWAY FROM BORING LOCATIONS.

STANDARD PENETRATION TEST DATA CROON INCIDE DIA 1 275

1.375 Inches
2.0 inches
30.0 inches
140.0 pounds

SPT CONSISTENCY CHART

SILTS AND CLAYS

CONSISTENCY	SAFETY HAMMER SPT N-VALUE (BLOW/FOOT)	AUTOMATIC HAMMER SPT N-VALUE (BLOW/FOOT)
VERY SOFT	LESS THAN 2	LESS THAN 1
SOFT	2 - 4	1 – 3
FIRM	4 - 8	3 - 6
STIFF	8 - 15	6 - 12
VERY STIFF	15 - 30	12 - 24
HARD	GREATER THAN 30	GREATER THAN 24

Ē

SPT DENSITY CHART

GRANULAR MATERIALS

RELATIVE DENSITY	SAFETY HAMMER SPT N-VALUE (BLOW/FOOT)	AUTOMATIC HAMMER SPT N-VALUE (BLOW/FOOT)
VERY LOOSE	LESS THAN 4	LESS THAN 3
LOOSE	4 - 10	3 - 8
MEDIUM	10 - 30	8 - 24
DENSE	30 - 50	24 - 40
VERY DENSE	GREATER THAN 50	GREATER THAN 40





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REPO	FINANCIAL PROJECT ID	COUNTY	ROAD NO.					1
		MIAMI-DADE						
	0/4/2022 0.22.20 MM							

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Caribbean Boulevard Bridge Replacement-Soil Parameters Sheet-Pile-Begin TW3 & End TW4August 3, 2022CEN Geotechnical & Environmental Engineering, Inc.CEN Project No. 11111-21-0120CEN

FIELD TESTING PROCEDURES

<u>Test Borings</u> - The test boring was made in general accordance with ASTM-D-1586, "Penetration Test and Split-Barrel Sampling of Soils." The boring was advanced using a 3-inch ID casing and a rotary drilling process. Water or bentonite drilling fluid was circulated in the boreholes to flush the cuttings. 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.



October 18, 2021

Project:Caribbean Blvd Bridge ReplacementSubmittal Number:005AReference:AEB Temporary Critical Sheet Pile WallProject Owner:Miami Dade County

Submittal Description:

AEB answers to EOR Response on Submittal 005. Temporary Critical Sheet Pile Wall Design and Calculations Revised TW3 Sketch – S&S

Approval Stamps

This document has been reviewed and is approved as meeting the requirements of this submittal.

Reviewed by: Bernie Barrile American Empire Builders, Inc.

10/18/2021

13775 SW 145th CT, Suite B Miami, FL 33186 Office: 305-261-9276 www.americanempirebuilders.com

EOR Response to Revision 005A:

The revised proposal is acceptable given that the contractor has verified the following:

• Contractor to verify that there are no issues with stability of the existing slope in front of existing end bent 1 since there is no temp wall shown in this location in the proposed drawing for Revision 005A.



• Contractor to field verify there are no conflicts with the existing wall prior to construction of stage 1A of the bridge.



The EOR has the following concerns with the proposed modification of TW3:

The provided sketch identifying the layout of the proposed location of TW3 interferes with the existing retaining wall. See Foundation Layout Sketch of this RFI. The concrete cap will be removed to the middle of the 3rd pile (easternmost), to allow the sheet pile to rest against the remaining concrete panel and existing concrete pile.

If the intent is to drive TW3 behind the existing retaining wall up to the 3rd existing wall supporting pile and avoid demolition of the existing bridge overhang, please ensure that there is sufficient room to drive AZ36-700 pile between the existing bridge traffic railing and the existing wall to remain.

Outside edge of existing bridge is 19' - 0" right of the centerline, see next page. Per revised signed and sealed sketch, TW3 starts 20' - 3-1/2" right of centerline. This confirms there is enough room to fit the AZ36-700 sheets between the existing and proposed.



In addition, the existing wall panels do not appear to have a wall joint at the location the proposed wall to remain in Ph1. This concept would require cutting of the precast panel and is not recommended.



Please note that the proposed modification of TW 3 is not reflected in the current shop drawings.



TEMPORARY SHEET PILE WALLS CARIBBEAN BOULEVARD BRIDGE REPLACEMENT CARIBBEAN BOULEVARD AT THE C1-N CANAL CROSSING MIAMI-DADE COUNTY PROJECT No. EDP-MT-CIP209



APPROVED BY J. ALTHOFF

** Grout to bottom of panel if req'd to seal.	
Cut Panel Cut Panel ** 6"x 6"x ½" Angle 12'-0" Min. 7" Precast Panel	ove him if req'd to upport panel Demolish cap to provide clearance
DETAIL "A"	
These sheets have been did signed and sealed by John C. Althoff The above named professional be responsible for the followin accordance with Rule 61G15, F SHT CBB-TW-01: TEMPORAN PLAN VIEW SHT CBB-TW-02: TEMPORAN ELEVATION VIEW	40851 TE OF RID AL Hangineer shall g sheets in A.C. RY WALLS 1.2&4 RY WALLS 1.2&4 RY WALL 3
Printed copies of these sheet not considered signed and se The signature must be verifie the electronic document.	s are aled. d on
TEMPORARY WALLS	DRAWING NO.
PLAN MEW	CBB-TW-01
JECT NAME: CARIBBEAN BRIDGE REPLACEMENT AT THE C1-N CANAL CROSSING	INDEX NO. CBB TREPLACEMENT

MIAMI-DADE





1	CBB-TW-03	
ROJECT NAME:	CARIBBEAN BRIDGE REPLACEMENT AT THE C1-N CANAL CROSSING	INDEX NO. CBB TREPLACEMENT

DRAWING NO.

SHEET TITLE:

IΡ

PROJECT NO.

EDP-MT-CP209



American Empire Builders 13775 SW 145th CT, Unit B Miami, Florida 33186 Office: 305-261-9276

RFI # 007

Project: Caribbean Blvd Bridge Replacement Project

Contract No.: 20190279

Date: 8/18/2020

To: Juan Santandreu, P.E.

From: Bernie Barrile

Subject: RFI 7 – Minor Modification to Temporary Critical Wall #3 – Move Alignment Slightly South of Original Plan Location

In an effort to accelerate Stage 1A construction and to provide a safer project for the traveling public we respectfully request permission to move Temporary Critical Sheet Pile Wall #3 slightly to the south. The attached sketch and pictures show our intentions. The pictures show the existing south wing wall with a paint line showing the north edge of the Stage 1A bridge. This gives a reference of the existing bridge structure compared to the new Stage 1A bridge. The orange line shown in the pictures was located using recent survey and is an accurate depiction of the proposed Stage 1A segment. It also demonstrates the room to locate TW3 between and the existing bridge is ample for this relocation.

We propose to install TW3 as shown on the attached sketch, in between the existing bridge and the south concrete wing wall. After TW3 is installed the wing wall, piles and cap will be removed from the west end of this wall to just before the eastern most supporting concrete pile in this wall. The eastern most concrete pile, steel tie rod, and wall would remain in place, and the wall would continue to its east end. Locating TW3 as described would still allow Stage 1A construction as proposed and all the required demolition of the existing structures without any negative impacts.

Benefits:

- Eliminates the need for the demolition of the existing bridge deck and traffic railing to accommodate TW3.
- Combining the demolition of the Stage 1A portion of the bridge with the demolition of the bridge in Stage 2 makes for a safer and more productive activity.
- Reduces the need for extended lane closures for Stage 1A demolition, and impacts to the traveling public.
- Preserves the existing bridge traffic railing and bridge deck, therefore retaining the existing bridges integrity and increasing safety.
- Potentially allowing the elimination of the only the eastbound temporary concrete barrier wall across the bridge, allowing more room for traffic to cross the bridge in Stage 1A and especially in Stage 1B. Barrier wall would still be used before and after the bridge. The option of eliminating of the eastbound temporary concrete barrier wall across the bridge, is not tied to this request, but outlined for review and consideration.

Please let us know if there are any questions or more information we can provide to accommodate this request.

Bernie Barrile American Empire Builders, Inc. (772) 631-4049

Attachments:

• Sketch with 2 Existing Condition Pictures

The EOR has the following concerns with the proposed modification of TW3:

The provided sketch identifying the layout of the proposed location of TW3 interferes with the existing retaining wall. See Foundation Layout Sketch of this RFI.

If the intent is to drive TW3 behind the existing retaining wall up to the 3rd existing wall supporting pile and avoid demolition of the existing bridge overhang, please ensure that there is sufficient room to drive AZ36-700 pile between the existing bridge traffic railing and the existing wall to remain.



In addition, the existing wall panels do not appear to have a wall joint at the location the proposed wall to remain in Ph1. This concept would require cutting of the precast panel and is not recommended.



Please note that the proposed modification of TW 3 is not reflected in the current shop drawings.







	DRUGE NV. 0/4030
TRANSPORTRTATION AND PUBLICLIC WORKS DEPARTMENT	FOUTIND LAYOUT
STEPHEN P, CLARK CENTER 111 NW 1 ST MANU-FL-S3128-	CAREBEAN BLVD. BRIDGE OVER CI-N CANAL



View of south wing wall looking east. The wing wall and concrete cap would be removed from it's west end up to the eastern most pile shown. The eastern most pile and steel tie back rod would remain. TW3 would be installed between the existing south edge of the bridge and up against the wing wall to remain.



Photo looking east at concrete wing wall on south side of existing bridge. The orange paint line is the north edge of the new Stage 1A bridge. located by survey. Would like to locate TW3 beteween the south side of the existing bridge and the wing wall. TW3 would extend east and tuck in on the land side of the wing wall at the eastern most pile (see sketch). The wall extending to the west from this point would be removed. The on site survey shows there is ample room between the existing bridge and new Stage 1A segment of bridge for TW3 to be installed without demo of the existing traffic railing and small portion of the existing bridge deck. This demo

would be performed in Stage 2.

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American Empire Builders 13775 SW 145th CT, Unit B Miami, Florida 33186 Office: 305-261-9276

RFI # 014 Rev 1

Project: Caribbean Blvd Bridge Replacement Project

Contract No.: 20190279

Date: 3/9/2022

To: Edgard Sucre / Christopher Yepez

From: Bernie Barrile

Subject: RFI 014 – Follow Up to Pile Refusal Responses

We have some follow up questions on the Gannett Fleming (GF) response to our RFI 014.

We and our Geotech would like to see written confirmation from the structural Engineer of Record that they are in concurrence with Gannett Fleming's response. Right now, we just have GF's answer that the EOR has reviewed it, but no written documentation from the EOR confirming their concurrence with this response. Can Jacobs EOR for this project please provide their complete concurrence with GF' responses, or provide their own responses?

What does the EOR think about the necessity of running new intermediate bent pile calculations based on starting the pile at EL -24 in a preformed hole?

Bernie Barrile American Empire Builders, Inc. (772) 631-4049

Attachments:

None
Response to RFI 014 Rev 1 dated 03/09/2022

Question #1: I take no exception to the responses on RFI 013 and RFI 014 by Gannett Fleming, Inc.

Question #2: No new intermediate bent pile calculations are needed. The axial load in the piles will not be affected by preforming of piles. In addition, the lateral loading is insignificant and does not control the foundation design.

SUBMITTED BY: Brett Rakita, P.E. Jacobs Engineering Group



American Empire Builders 13775 SW 145th CT, Unit B Miami, Florida 33186 Office: 305-261-9276

RFI # 016

Project: Caribbean Blvd Bridge Replacement Project

Contract No.: 20190279

Date: 5/31/2022

To: Edgard Sucre

From: Bernie Barrile

Subject: RFI 016- Issue with the Driving of TW-4

On May 27, 2022 we started driving the temporary critical wall TW-4. Driving conditions were very difficult, with a high level of resistance and ultimately reached refusal in the pair of sheet piles located between stations 41+37.6 and 41+42.19. Due to the actual driving conditions not corresponding with the soil boring near this location, the sheet pile driving operation was terminated. Please let us know how to proceed with the last pair of sheet pile.

Bernie Barrile American Empire Builders, Inc.

Attachments:

• Sheet CBB-TW-02, Temporary Walls 4 Current Elevation View



American Empire Builders 13775 SW 145th CT, Unit B Miami, Florida 33186 Office: 305-261-9276

RFI # 016

Project: Caribbean Blvd Bridge Replacement Project

Contract No.: 20190279

Date: 5/31/2022

To: Edgard Sucre

From: Bernie Barrile

Subject: RFI 016- Issue with the Driving of TW-4

EOR's Response:

The temporary sheet pile walls were designed using soil and rock parameters in the Geotechnical Report. All materials below +3 feet are listed as "Weak Rock". Corresponding soil parameters would indicate stiff materials. In addition, the geotechnical borings presented show zones of soft limestone, as well as zones of stiff, very stiff, and hard limestone.

Per Temporary Sheet Pile Notes on Sheet B1-1, the contractor was to anticipate hard-driving resistance through the existing soil. When required for sheet pile installation, the contractor shall pre-form holes at 3'-0" spacing with the cost of pre-driving or use of specialized equipment included in the price of sheet piling.

Confirm whether pre-formed holes were installed per the contract documents and what, if any, specialized equipment was used to install the sheets.

Brett Rakita Jacobs





January 27, 2023

Project:	Caribbean Blvd Bridge Replacement
Submittal Number:	018 – AEB's Engineer's Response to EOR Questions
Reference:	Existing Soil Condition Geotechnical and Structural Report for Temporary
	Critical Sheet Pile Walls
Project Owner:	Miami Dade County

Submittal Description:

Submittal 018 with EOR's Questions Answer to Submittal 18, from Denis K. Solano P.E. Additional Structural Calculations ASD Alternative Design Certification Letter

Approval Stamps

This document has been reviewed and is approved as meeting the requirements of this submittal.

Reviewed by: Bernie Barrile American Empire Builders, Inc.

1/27/2023

Attachments

- Submittal 018 with EOR's Questions
- Answer to Submittal 18, from Denis K. Solano P.E.
- Additional Structural Calculations
- ASD Alternative Design Certification Letter

13775 SW 145th CT, Suite B Miami, FL 33186 Office: 305-261-9276 www.americanempirebuilders.com



October 24, 2022

Project:	Caribbean Blvd Bridge Replacement
Submittal Number:	018
Reference:	Existing Soil Condition Geotechnical and Structural Report for Temporary
	Critical Sheet Pile Walls
Project Owner:	Miami Dade County

Submittal Description:

These engineering reports show the actual soil conditions support a new tip elevation for the Temporary Critical Sheet Pie Walls. These reports confirm the extremely hard soil will support theses walls at tip elevations of -16.

Approval Stamps

This document has been reviewed and is approved as meeting the requirements of this submittal.

Reviewed by: Bernie Barrile American Empire Builders, Inc.

10/24/2022

Attachments

- Geotechnical Report with Soil Boring TB1
- Structural Report

13775 SW 145th CT, Suite B Miami, FL 33186 Office: 305-261-9276 www.americanempirebuilders.com

EOR's Response:

Based on responses provided to SolVer Structural Partnership, Inc, the EOR takes no exception to the proposed revised tip elevation such that a sheet pile section equal to or greater to an AZ36 is used.

Jacobs Engineering Brett Rakita, PE 2/1/2023

REPORT OF A GEOTECHNICAL EXPLORATION

SHEET-PILE WALLS BEGIN TW3 END TW4

CARIBBEAN BLVD AT THE C1-N CANAL CROSSING

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

MIAMI-DADE COUNTY, FLORIDA PROJECT No. EDP-MT-CIP209 STORMWATER UTILITY

- Prepared for - **AMERICAN EMPIRE BUILDERS, INC.** 13775 SW 145th Court, Unit B Miami, Florida 33186

- Prepared by -CEN GEOTECHNICAL & ENVIRONMENTAL SOLUTIONS, INC. 12560 NW 81 Avenue Miami, Florida 33156

CEN Project No. 11111-21-0120

August 3, 2022

American Empire Builders Inc. 13775 SW 145th CT. Unit B Miami, Florida 33186

Attention:	Mr. Tony Gonzalez
	Project Manager
Subject:	Report of a Geotechnical Evaluation – Sheet Piles Parameters
	Caribbean Boulevard Bridge Replacement over C1-N Canal
	Temporary Sheet Pile Wall Begin TW3 & End TW4
	Bridge No. 874650
	Miami-Dade County Project No. EDP-MT-CIP209
	Miami Dade County, Florida
	CEN Geosolutions Project No. 11111-21-0120 CEN

Dear Tony:

CEN Geotechnical & Environmental Solutions, Inc. (CEN) is presenting this Report of a Geotechnical Exploration for the temporary Sheet Pile Wall Begin TW3 and End TW4 at the subject project. This report presents our understanding of the project, outlines our exploratory procedures, and documents the field test data obtained for the proposed project.

We have enjoyed assisting you on this project and look forward to serving as your geotechnical consultant on the remainder of this project and on future projects. If you have any questions concerning this report, please call our office at (305) 498-3920.

Sincerely,

CEN GEOTECHNICAL & ENVIRONMENTAL SOLUTIONS, INC.

Ricardo Bernal. Project Geotechnical Engineer

Distribution: Addressee (13) File (1)

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Caribbean Boulevard Bridge Replacement-Soil Parameters Sheet-Pile-Begin TW3 & End TW4August 3, 2022CEN Geotechnical & Environmental Engineering, Inc.CEN Project No. 11111-21-0120CEN

1.0 INTRODUCTION

The purpose of this geotechnical exploration was to obtain information concerning the site and subsurface conditions along the proposed temporary sheet-pile wall location. This report discusses our exploratory and testing procedures, presents our findings and evaluation, and includes the following items:

Field Services

- Performed a test core boring for the proposed temporary sheet-pile wall, to a depth of 50 feet. In addition, rock parameters for the temporary sheet-pile wall are presented in this report.
- A brief description of our field-testing procedures.

Evaluation

- A general review of area and site geologic conditions.
- A general review of existing surface features and site conditions.
- Report of core boring which illustrate the estimated subsurface conditions along the temporary sheet-pile structure.
- Rock parameters and coefficients for the temporary sheet-pile wall analysis.

Caribbean Boulevard Bridge Replacement–Soil Parameters Sheet-Pile-Begin TW3 & End TW4 August 3, 2022 CEN Geotechnical & Environmental Engineering, Inc. CEN Project No. 11111-21-0120CEN

2.0 PROJECT INFORMATION

2.1 GENERAL

Project information for this subsurface exploration has been provided to us by various members of the contractor team and telephone conversations.

During our geotechnical study, we have been furnished with the following project-related plans and information:

 Caribbean Blvd over C1-N Canal Replacement Bridge Project Plans Including Cross Sections along with Foundation Layout & Plan Elevation Prepared by: Jacobs Engineering Group, Inc. Dated: March 2020

2.2 PROJECT DESCRIPTION

The project consists of the construction of a new bridge along Caribbean Blvd over C1-N Canal. Includes a sheet pile wall sections:

• Temporary Sheet Pile Wall Begin TW3 End TW4, from Sta. 40+57.00 to Sta. 41+69.00.

Caribbean Boulevard Bridge Replacement-Soil Parameters Sheet-Pile-Begin TW3 & End TW4August 3, 2022CEN Geotechnical & Environmental Engineering, Inc.CEN Project No. 11111-21-0120CEN

3.0 FIELD EXPLORATION AND LABORATORY TESTING

3.1 FIELD EXPLORATION

The primary purpose of this field exploration was as follows:

- 1. To define the near subsurface conditions, present along the proposed temporary sheetpile wall.
- 2. To obtain soil samples for examination and classification.

The field exploration was conducted by CEN Geosolutions. The location of the test boring is provided in the Summary of Test Boring Location in Appendix A. The Report of Core Boring in Appendix A summarize the approximate boundary between soil types. In some instances, the transition between material types may be gradual. A brief description of the exploratory sampling techniques used is presented in the Field-Testing Procedures section in Appendix A. A discussion of the subsurface conditions encountered along the project alignment is provided in Section 4.2 of this report.

4.0 SITE AND SUBSURFACE CONDITIONS

4.1 SITE CONDITIONS

The site conditions were observed by a geotechnical engineer during several visits.

4.2 SUBSURFACE CONDITIONS

4.2.1 General

A graphical representation of the subsurface conditions encountered by the test boring drilled near the proposed temporary sheet-pile wall is shown on the Report of Core Boring in Appendix A. This profile of rock conditions highlights the major subsurface stratification. The boring profile on this sheet should be consulted for a detailed description of the rock condition encountered at the boring location.

4.2.2 Geologic Conditions

The project is located on the southern flank of the Florida Plateau, a stable, carbonate platform. In the study, the upper 200 feet of this platform is composed predominately of limestone and quartz sand. The sediments were deposited during several glacial and interglacial stages during the Pleistocene Epoch. Within the explored depths of this study, two distinct geological formations were encountered. These formations are the Miami Limestone Formation and the Fort Thompson Formation.

4.2.3 Miami Limestone

The Miami Limestone can be described as a soft tan white porous to very porous fossiliferous quartz sandy fine-grained slightly oolitic limestone. The solution channels in the limestone may be up to 2 inches in diameter at some locations, are filled with quartz fine sand and uncemented calcareous materials. The limestone varies in both thickness and competency within the investigated area.

The Miami Limestone was deposited in a shallow near shore marine carbonate bank environment. Spherical carbonate sand grains called oolites formed and were deposited in this environment. Near shore, processes transported quartz sand into the area and reworked some of the carbonate material. Encrusting organisms called bryozoans were locally abundant and formed patches on the substrate. After sea level receded, the carbonate deposit was exposed to fresh water and the cementation process was initiated. The degree of cementation, and therefore the competency of the rock, was influenced by both the abundance and the type of calcareous material in the original deposit. Humic and carbonic acids percolating downward through the material etched slots up to 4 feet deep in the surface of the stratum.

4.2.4 Fort Thompson Formation

Underlying the Miami Limestone Formation, the Fort Thompson Formation was generally encountered. The Fort Thompson Formation is composed of sediments of variable lithologies.

The Fort Thompson limestone grades downward into a gray quartz and calcareous fine to medium sand. This sand has been cemented to varying degrees by carbonate material leached out of the overlying limestone.

4.2.5 Generalized Subsurface Conditions Encountered Along the Sheet-pile Alignment

For a detailed subsurface condition at a particular borehole location, please refer to the Report of Core Boring in Appendix A.

4.2.6 Groundwater Conditions

The groundwater levels in the borings were measured at the time of drilling. Groundwater level in the test boring was encountered at approximately elevation of 1.7, NGVD29. A Seasonal High Ground Water Table (SHGWT) of 4.0 feet, (NGVD29) is recommended for design. Fluctuation in the observed groundwater levels should be expected due to seasonal climatic changes, construction activity, rainfall variations, surface water runoff, and other site-specific factors such as changes of the Canal water elevations. Since groundwater level variations are anticipated, design drawings and specifications should accommodate such possibilities and construction planning should assume that variations will occur.

5.0 RECOMMENDATIONS

5.1 ROCK

The limestone parameters presented below have been estimated from correlations with the Standard Penetration Test (SPT) values (N, blows/ft) obtained from the field exploration. the internal friction angle (θ) is estimated from accepted FDOT correlations with N_s values. SPT N values obtained using an automatic hammer, SPT Na, were covert to safety hammer values, SPT Ns, by multiplying by a factor of 1.24. The following correlations with SPT Ns values were used:

Boring No.	Range of Elevation, ft. oring No.		Automatic Soil Type		Range of Equivalent Ø Elevation, ft. Soil Type Hammer N Value for Rock		Ø for Soils ø=28+N/4 for Rock	γ Total Unit Weight	δ Angle of Friction between Soil
	From	То		N value, blows/ft.	x 1.24 auto, blows/ft.	Ø=33+N/4, degrees	lb/ft3	& Sheetpile, degrees	
	5.67	1.67	Limestone	18	22	39	120	17	
	1.67	-0.33	Limestone	80	99	58	122	17	
	-0.33	-2.33	Limestone	43	53	46	122	17	
	-2.33	-4.33	Limestone	18	22	39	120	17	
	-4.33	-10.33	Limestone	15	19	38	120	17	
	-10.33	-12.33	Limestone	48	60	48	122	17	
	-12.33	-14.33	Limestone	28	35	42	122	17	
TB-1	-14.33	-17.33	Limestone	70	87	55	122	17	
	-17.33	-20.33	Limestone	17	21	38	120	17	
	-20.33	-22.33	Sand/Limestone	6	7	35	115	17	
	-22.33	-27.33	Limestone	37	46	44	122	17	
	-27.33	-32.33	Limestone	5	6	35	120	17	
	-32.33	-34.33	Limestone	42	52	46	122	17	
	-34.33	-40.33	Limestone	90	112	61	122	17	
	-40.33	-42.33	Limestone	27	33	41	122	17	

TABLE 5.2.1: SUMMARY OF ROCK PARAMETERS

6.0 EVALUATION

6.1 BASIS FOR EVALUATION

The following evaluation is based in the Standard Penetration Test (SPT) and the data gathered during our subsurface exploration. The stratification and consistency of the subsurface materials underlying the site may vary within even short lateral distances; therefore, any subsurface condition encountered which differs from those documented in this study should be reported to us so that our recommendations can be reviewed.

6.2 SHEET-PILE WALL STRUCTURE

6.2.1 Rock Parameters Coefficients for Sheet-Pile Wall Design Analysis

Structure	Boring No.	Ran Eleva	ge of tion, ft	ф	δ	Coefficier	Coefficients of Lateral Earth Pressure		γ total	Material Description	
	5	From	То	degrees	degrees	Ka	Ko	Кр	pcf		
		5.67	1.67	39	17	0.23	0.37	4.40	120	Limestone	
		1.67	-0.33	45	17	0.17	0.29	5.83	122	Limestone	
		-0.33	-2.33	45	17	0.17	0.29	5.83	122	Limestone	
		-2.33	-4.33	39	17	0.23	0.37	4.40	120	Limestone	
		-4.33	-10.33	38	17	0.24	0.38	4.20	120	Limestone	
		-10.33	-12.33	48	17	0.15	0.26	6.79	122	Limestone	
CARIBBEAN		-12.33	-14.33	42	17	0.20	0.33	5.04	122	Limestone	
BLVD REPLACEMENT	TB-1A	-14.33	-17.33	45	17	0.17	0.29	5.83	122	Limestone	
BRIDGE		-17.33	-20.33	38	17	0.24	0.38	4.20	120	Limestone	
		-20.33	-22.33	31	17	0.32	0.48	3.12	115	Sand Limestone	
		-22.33	-27.33	46	17	0.18	0.31	5.55	122	Limestone	
		-27.33	-32.33	35	17	0.27	0.43	3.69	120	Limestone	
		-32.33	-34.33	45	17	0.17	0.29	5.83	122	Limestone	
		-34.33	-40.33	45	17	0.17	0.29	5.83	122	Limestone	
		-40.33	-42.33	41	17	0.21	0.34	4.81	122	Limestone	

Table 7.2.1: Summary of Rock Parameters for Temporary Sheet Pile Design

The following table reviews the rock parameters for the design of the temporary Sheet-Pile Wall Begin TW3 End TW4:

- ϕ = Rock/soil angle of internal friction.
- $\phi = 28 + N(\text{safety})/4 \text{ Sand}; \phi = 33 + N(\text{safety})/4 \text{ Rock}.$
- $\gamma = 105*30/30$ for sand or limerock fill (115 pcf max); 122 for limestone.
- δ = Friction angle between sheet-pile and rock (rock).
- Design high groundwater elevation 2.0 feet.

APPENDIX A

SITE LOCATION MAP	A-1
FIELD EXPLORATION PLAN	A-2
REPORT OF CORE BORING	A-3
FIELD TESTING PROCEDURES	A-4



BY: RB DATE: Aug-2022 CHECKED BY: R.BERNAL

CEN PROJECT No. 11111-21-0120 D:/296/CEN11111 21 0120/6 CARIBBEAN BLVD REPLACEMEN



Jacobs Engineering Group, Inc.		NAIE	DAlE		NAME	DAlE	
Tel. (305) 392-5193	DESIGIED BY	BKR	09/2019	DRA BY	CMM	09/2019	MIAMI-DA
Certificate of Authorization No. 2822	CHEa <ell BY</ell 	RM/MI	09/2019	CHEQCED BŸ	SZ	09/2019	COUNTY
BRETT K. RAKITA P.E. NO. 59474	SUPER'IISED BY:	BRETT RAKITA					

STEPHEN P. CLARK CENTER 111 NW 1 ST MIAMI, FL 33128



<u>LEGEND</u>

Fine Sand

Limestone with some fine SAND and/or fine SAND

| | CASING

☑ ENCOUNTERED WATER TABLE DURING DRILLING

N SPT N-VALUES SHOWN ABOVE WERE OBTAINED USING AUTOMATIC HAMMERS. MOST DESIGN CALCULATIONS USE SAFETY HAMMER N-VALUES. THE ABOVE N-VALUES NEED TO BE CONVERTED TO SAFETY HAMMER EQUIVALENT VALUES

<u>NOTES:</u>

STRATA BOUNDARIES ARE APPROXIMATE AND MAY VARY BETWEEN OR AWAY FROM BORING LOCATIONS.

STANDARD PENETRATION TEST DATA CROON INCIDE DIA 1 275

1.375 Inches
2.0 inches
30.0 inches
140.0 pounds

SPT CONSISTENCY CHART

SILTS AND CLAYS

CONSISTENCY	SAFETY HAMMER SPT N-VALUE (BLOW/FOOT)	AUTOMATIC HAMMER SPT N-VALUE (BLOW/FOOT)
VERY SOFT	LESS THAN 2	LESS THAN 1
SOFT	2 - 4	1 – 3
FIRM	4 - 8	3 - 6
STIFF	8 - 15	6 - 12
VERY STIFF	15 - 30	12 - 24
HARD	GREATER THAN 30	GREATER THAN 24

Ē

SPT DENSITY CHART

GRANULAR MATERIALS

RELATIVE DENSITY	SAFETY HAMMER SPT N-VALUE (BLOW/FOOT)	AUTOMATIC HAMMER SPT N-VALUE (BLOW/FOOT)
VERY LOOSE	LESS THAN 4	LESS THAN 3
LOOSE	4 - 10	3 - 8
MEDIUM	10 - 30	8 - 24
DENSE	30 - 50	24 - 40
VERY DENSE	GREATER THAN 50	GREATER THAN 40





	LORIDA	STATE OF F			REVISIONS			
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Caribbean Boulevard Bridge Replacement-Soil Parameters Sheet-Pile-Begin TW3 & End TW4August 3, 2022CEN Geotechnical & Environmental Engineering, Inc.CEN Project No. 11111-21-0120CEN

FIELD TESTING PROCEDURES

<u>Test Borings</u> - The test boring was made in general accordance with ASTM-D-1586, "Penetration Test and Split-Barrel Sampling of Soils." The boring was advanced using a 3-inch ID casing and a rotary drilling process. Water or bentonite drilling fluid was circulated in the boreholes to flush the cuttings. 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. Answer letter from SolVer Structural is digitally signed by Denis K. Solano P.E. See separate PDF, filename "Answer to submittal 018- Caribbean Bridge.pdf" for digitally signed version.

Additional Calculations are digitally signed by Denis K. Solano P.E. See separate PDF, filename "Add structural calcs- Caribbean Bridge.pdf" for digitally signed version.

ASD approval letter is digitally signed by Denis K. Solano P.E. See separate PDF, filename "ASD alternative design certification letter.pdf" for digitally signed version.





American Empire Builders 13775 SW 145th CT, Unit B Miami, Florida 33186 Office: 305-261-9276

RFI # 024

Project: Caribbean Blvd Bridge Replacement Project

Contract No.: 20190279

Date: 5/2/2023

To: Edgard Sucre

From: Bernie Barrile

Subject: Eliminate Unnecessary Portion of Temporary Sheet Pile on TW3

AEB would like to eliminate 2 pair of sheet piles at the far west end of TW3. We would install 3 more pair of sheet pile to the existing wall, ending the wall just west of End Bent 1, see sketch attached.

The grade difference on either side of these piles is small enough to be able to support itself and is more than stable enough to justify eliminating these 2 pair of sheet piles. The plans do not call for any permanent soil retention measures in this area, further supporting our request to eliminate these sheet piles.

This allows us to reduce negative impacts to the surrounding area from the vibration of driving these sheets, saves the County money by reducing the pay item quantity for this work, and maintain adequate access to the work area without burying sheet pile below grade.

Please let us know if you need any more information or have any questions. Thank you.

Bernie Barrile American Empire Builders, Inc.

Attachments:

• Elevation view of TW3 showing 3 pair of sheet piles proposed to be eliminated





American Empire Builders 13775 SW 145th CT, Unit B Miami, Florida 33186 Office: 305-261-9276

RFI # 024

Jacobs' Response:

The contractor requests elimination of a portion of the temporary sheet pile wall TW3 due to means and methods citing that this portion of the wall is not necessary. Jacobs takes no exception to the elimination of 2 pairs of sheet piles at the far west end of TW3 per the attached sketch.

In design, the wall was placed to the west of the end bent to facilitate the construction of end bent 1 and allow sufficient workable room. With the elimination of this portion of the wall, the contractor is responsible for the stability of the soil and the temporary sheet pile wall at the west end.



CARIBBEAN BLVD AT C1-N CANAL BRIDGE REPLACEMENT FIELD REVIEW MEETING MINUTES

SUBJECT:	Field Review Mtg
DATE AND TIME:	July 30, 2024 at 9:00 AM
LOCATION:	Caribbean Blvd over C1-N Canal Bridge

RECORDED BY: Alex Meitin, Jacobs

PARTICIPANTS:

Name:	Representing:	E-mail Address:
Alex Meitin	Jacobs	Alex.Meitin@jacobs.com
Joe Martin	Jacobs	Joseph.Martin@jacobs.com
Darren Dyer	Jacobs	Darren.Dyer@jacobs.com
Jawara Jarrett	Jacobs	Jawara.Jarrett@jacobs.com

A field meeting was held for the project Caribbean Blvd over C1-N Canal Bridge replacement with representatives of the Jacobs team. This project is classified as a bridge replacement project containing roadway approach rework to match the proposed bridge section.

The purpose of the meeting was to make staff aware of the existing field conditions and to review the recent survey performed by Miami Dade County staff within the project limits. The project had been awarded to a contractor, construction commenced, and work stopped. The intent is to review the existing and incorporate the previously constructed items into the set so that a new construction contract can be awarded to finalize the construction of the project by another contractor.

Items noted during the field review include:

- 1) The survey depicts temporary steel sheet pile crossing the entire canal section this is not consistent with the field conditions. (Survey should be revised accordingly)
- 2) The survey depicts a sanitary pipe along the south side of the canal which is not consistent with the field conditions. (Survey should be revised accordingly)
- 3) The canal soundings provided by Miami Dade County extend far enough north and south to provide sufficient coverage within the limits of the canal to properly calculate revised canal earthwork quantities. However, the survey does not depict the top of pile cap elevations nor the locations of the driven piles. These locations are needed to document contract compliance.
- 4) The temporary concrete barrier wall is not anchored to the bridge deck or roadway as required in the contract documents (barrier wall shall be anchored accordingly to follow FDOT Index 102-110). Please note this is a substandard condition and must be corrected immediately to meet current design.
- 5) The proposed end bents and intermediate piers with caps have been constructed on the south side of the existing bridge. This is depicted in Phase I of the TTCP for the project. A certification stating that piles have been driven and pile caps constructed in accordance with plans and specs needs to be provided by the County. The certification as well as inspection reports need to be reviewed by Geotech and structural EOR to incorporate information into proposed plans for contractor to bid the project accurately and feel comfortable taking responsibility for the work by others.

- 6) The constructed end bents have exposed steel shown. Detailed As-Builts of the end bents or a certification that they are in conformance with design and specs is required.
- 7) There was a construction team on premises. Alex Meitin asked them what they were doing and they informed him that they were asked by the County to rework the top of bank area along the south and east side of the canal and sod the area. They were also seen cutting what seemed to be remnants of pipe into pieces for disposal.

Other items that need to be included to repackage the plans for letting include:

- The new survey included canal sounding elevations. It is noted the CADD files sent to Jacobs by the County do not contain a .tin electronic file of the canal sounding. A .tin electronic file of the soundings is needed so a modified surface can be brought into the original cross sections and updated to reflect the revised work to be performed by the new Contractor in the design plans and quantities accordingly.
- 2) Geotechnical sub consultant is to perform additional geotechnical investigations to verify canal bank stability.
- 3) Structural EOR is to update plans accordingly to depict any and all work that has been performed by previous contractor.
- 4) The temporary steel sheet pile that has been installed was designed by the Contractor's Specialty Engineer (changed from the original design provided in the contract documents). The wall must remain for use by new contractor. Is it the County's desire for the new contractor is to take ownership of the temporary sheet pile or will this become property of the County once removed? As the temporary sheet pile will remain in-place for at least phase 1 (and possibly become the property of the new Contractor) a certification stating that temporary sheet piles have been driven and constructed in accordance with specialty engineer's plans and specs needs to be provided by the County. A material certification for the sheet pile will also be necessary.
- 5) As the existing temporary concrete barrier wall, TTCP signage, etc. that exists in the field today must remain in place until the new contractor begins working on the project, does the County want to take ownership of the devises or will these become property of the new Contractor?

Field Review Photos Caribbean Blvd 7-30-2024



SW Corner of Bridge Looking East



South of SW Corner of Bridge Looking Northeast



South of SW Corner of Bridge Looking Northeast



SW Corner of Bridge Looking East



SW Corner of Bridge Looking East



South side of Bride Looking East



South side of Bride Looking East



South side of Bride Looking West



Southeast Side of Bridge Looking East



East of Southeast Side of Bridge Looking East



East Of Southeast Side of Bridge Looking West



Southeast Side of Bridge Looking West



Southeast Side of Bridge Looking West



Southeast Side of Bridge Looking Southwest



Southeast Side of Bridge Looking South Contractor reworking and resodding area



Southeast Side of Bridge East bank – telephone duct bank