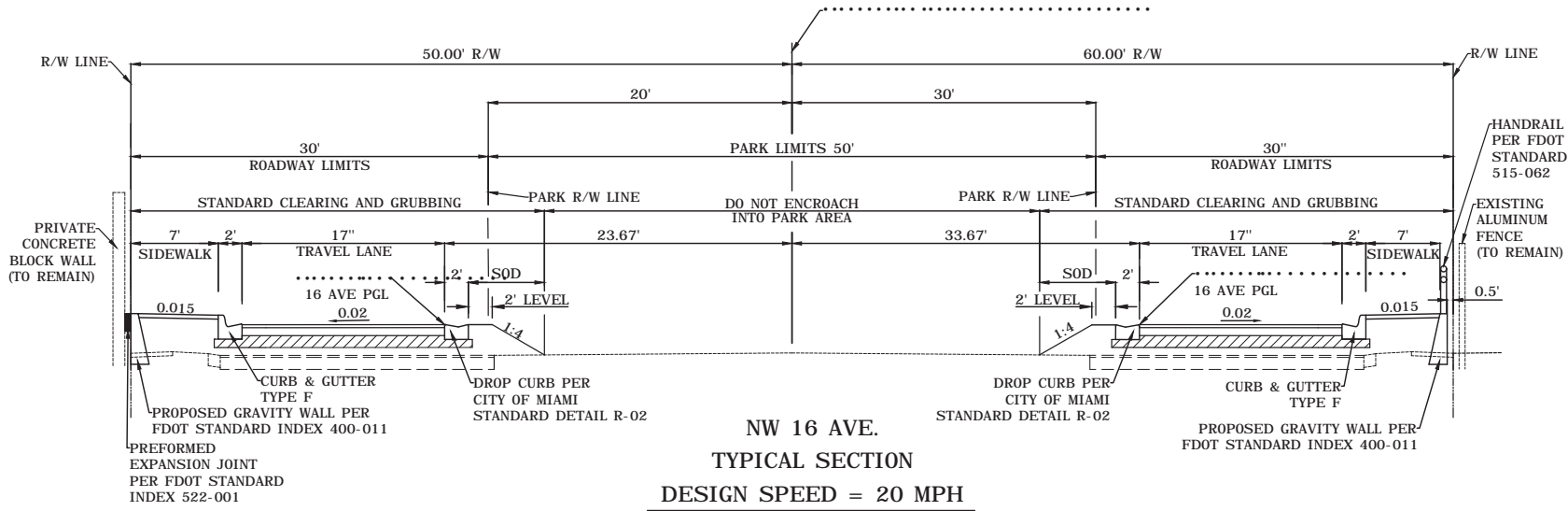


WVGI
ENGINEERING / SURVEYING / ENVIRONMENTAL / PLANNING
11401 SW 40 Street, Suite 455
Miami, FL 33155
Phone No. 305.553.0000
Fax No. 305.553.0001
WGI PROJECT NO. 5974.01

FOUR DRAINAGE SITES
SITE TWELVE
TYPICAL SECTION

DATE	DESIGN BY	SCALE	FILE NO.	SHEETS
	CHECKED BY	AS NOTED		OF
DRAWN BY				

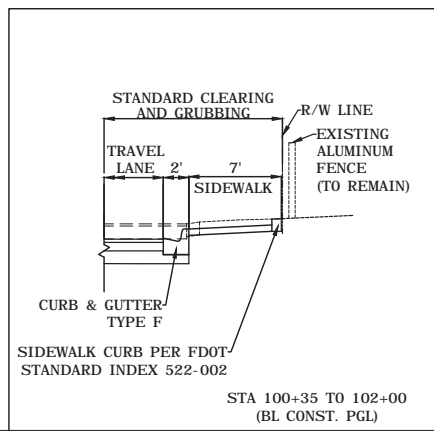


NW 16 AVE.
TYPICAL SECTION
DESIGN SPEED = 20 MPH

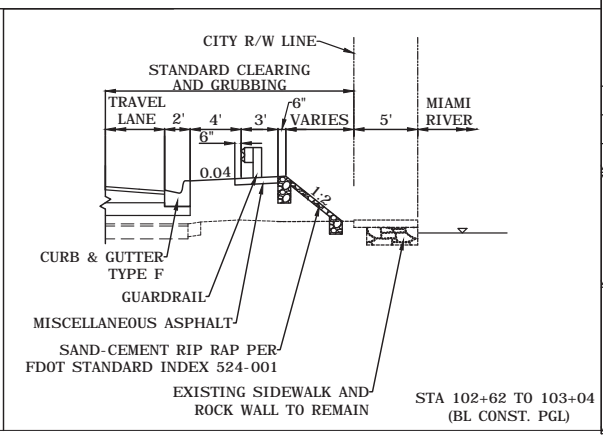
STA 100+30.00 TO 105+20.00
(BL CONST. NW 16 AVE)

RECONSTRUCTION
SUBGRADE: 12" COMPACTED SUBGRADE (MIN 95% MAX DENSITY AASHTO T180)
BASE: 8" LIMEROCK (LBR 100) COMPACTED TO 98% AASHTO T-180
STRUCTURAL COURSE: 1" TYPE SP-9.5 ASPHALT
FRICTION COURSE: 1" FC-9.5 ASPHALT

MILLING AND RESURFACING
MILL EXISTING ASPHALT PAVEMENT (2" AVG. DEPTH)
RESURFACE WITH TYPE SP-9.5 STRUCTURAL COURSE (1")
AND FRICTION COURSE FC-9.5 (1")

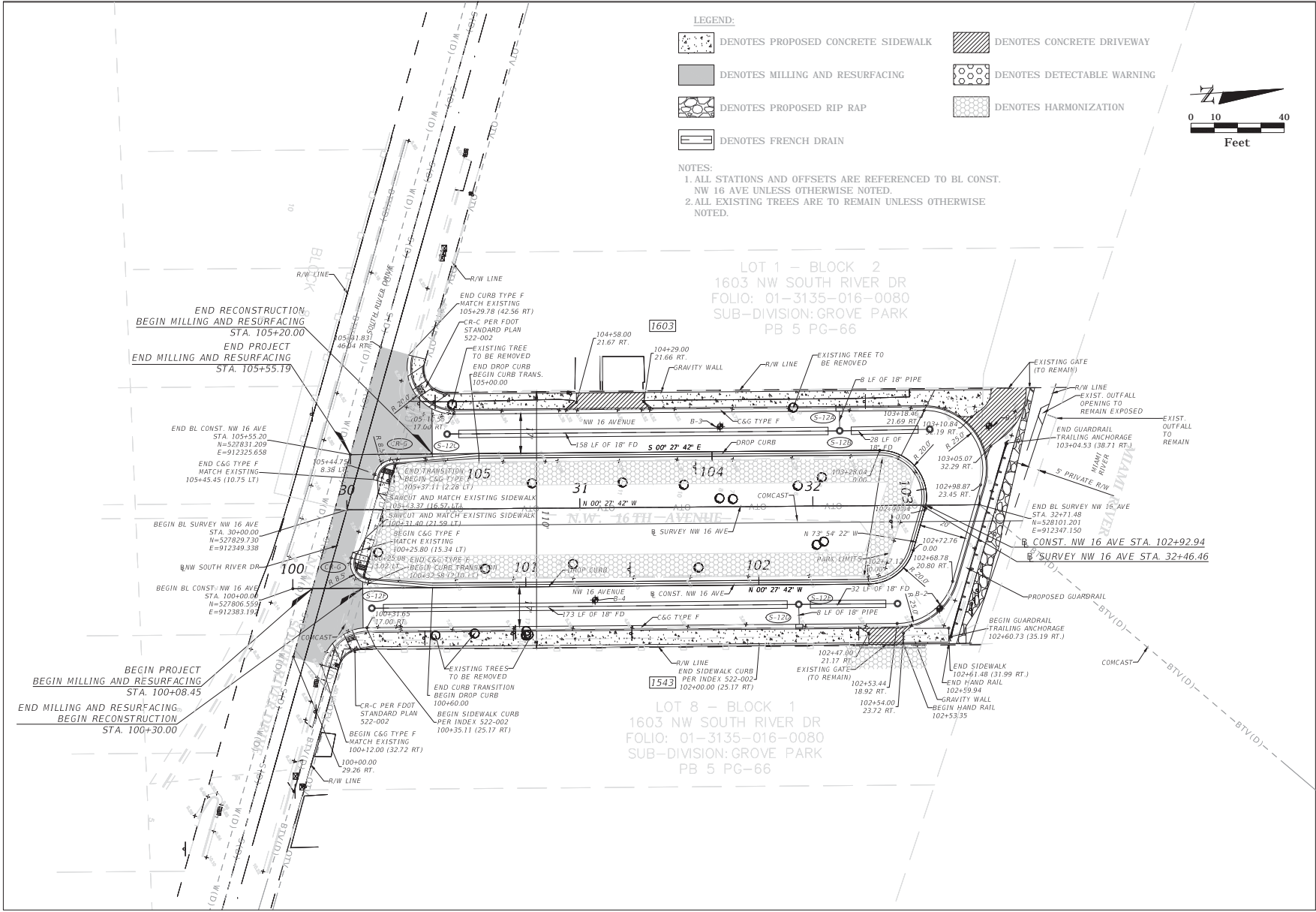


STA 100+35 TO 102+00
(BL CONST. PGL)

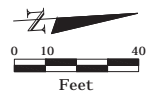


STA 102+62 TO 103+04
(BL CONST. PGL)

ENGINEER OF RECORD:	DATE	BY	MARK	REVISIONS:
RAYMOND WALDO, PE PE No. 79581 WANTMAN GROUP, INC. 11401 SW 40 STREET SUITE 455 MIAMI, FLORIDA 33165				



- LEGEND:**
- DENOTES PROPOSED CONCRETE SIDEWALK
 - DENOTES CONCRETE DRIVEWAY
 - DENOTES MILLING AND RESURFACING
 - DENOTES DETECTABLE WARNING
 - DENOTES PROPOSED RIP RAP
 - DENOTES HARMONIZATION
 - DENOTES FRENCH DRAIN

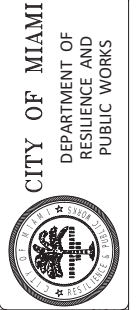


- NOTES:**
- ALL STATIONS AND OFFSETS ARE REFERENCED TO BL CONST. NW 16 AVE UNLESS OTHERWISE NOTED.
 - ALL EXISTING TREES ARE TO REMAIN UNLESS OTHERWISE NOTED.

LOT 1 - BLOCK 2
 1603 NW SOUTH RIVER DR
 FOLIO: 01-3135-016-0080
 SUB-DIVISION: GROVE PARK
 PB 5 PG-66

LOT 8 - BLOCK 1
 1603 NW SOUTH RIVER DR
 FOLIO: 01-3135-016-0080
 SUB-DIVISION: GROVE PARK
 PB 5 PG-66

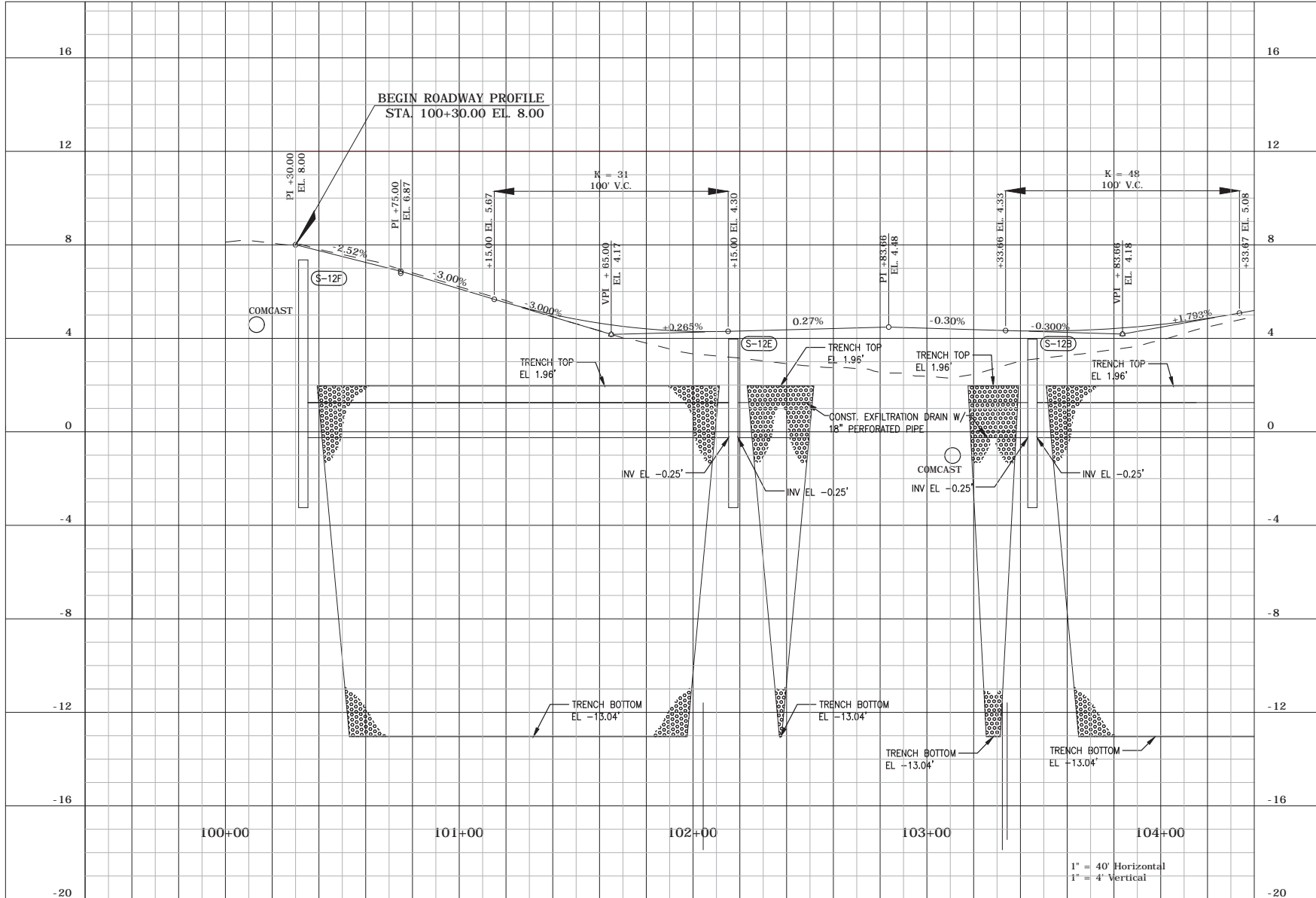
IWGLI
 11401 SW 40 Street, Suite 455
 MIAMI, FL 33165
 Phone No. 305.555.0000
 Fax No. 305.555.0001
 Email: info@iwgli.com
 ENGINEERING / SURVEYING / ENVIRONMENTAL / PLANNING
 WGI PROJECT NO. 8974101



**FOUR DRAINAGE SITES
 SITE TWELVE
 ROADWAY PLAN**

ENGINEER OF RECORD:	DATE:	SCALE:	FILE NO.:	SHEETS
RAYMOND WALDO, PE		AS NOTED		OF
PE No. 79581	DESIGN BY:	CHECKED BY:	DATE:	
WANTMAN GROUP, INC.	MARK			
11401 SW 40 STREET				
SUITE 455				
MIAMI, FLORIDA 33165				

23



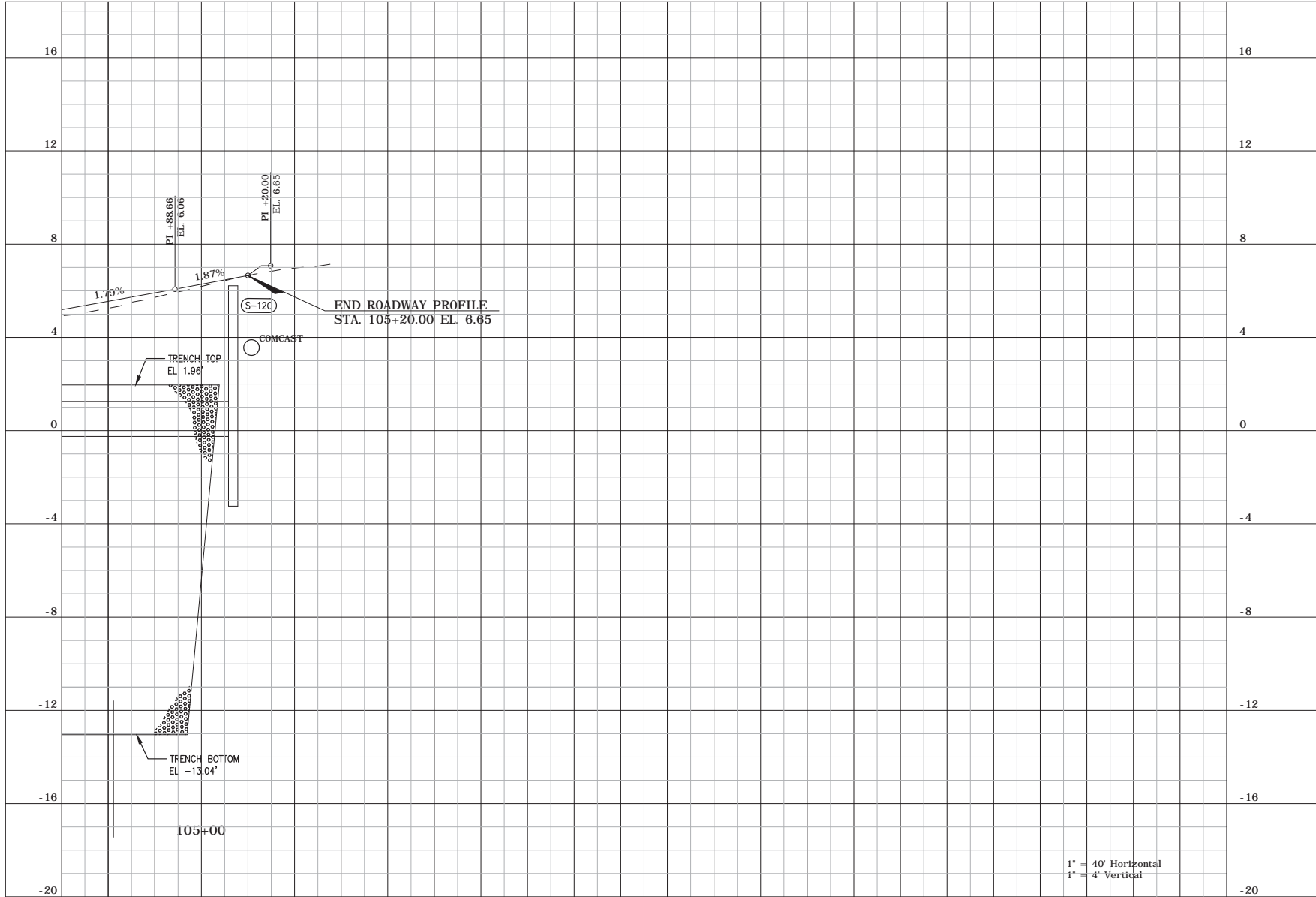
WGI
 11401 SW 40 Street, Suite 405
 Miami, Florida 33155
 Phone No. 305.553.6000
 Fax No. 305.553.6000
 E-mail: wgi@wgi.com
 ENGINEERING / SURVEYING / ENVIRONMENTAL / PLANNING
 WGI PROJECT NO. 2014-01

CITY OF MIAMI
DEPARTMENT OF
RESILIENCE AND
PUBLIC WORKS

FOUR DRAINAGE SITES
SITE TWELVE
ROADWAY PROFILE

ENGINEER OF RECORD:	DATE:	BY:	MARK:	REVISIONS:	SHEETS
RAYMOND VALDEO, PE					OF
PE. No 79581					
WANTHAN GROUP, INC					
11401 SW 40 STREET					
MIAMI, FLORIDA 33155					

24



1" = 40' Horizontal
 1" = 4' Vertical

WGI
 ENGINEERING / SURVEYING / ENVIRONMENTAL / PLANNING
 WGI PROJECT NO. 2017-01

11401 SW 40 Street, Suite 410
 Miami, Florida 33155
 Phone No. 305.553.6000
 Fax No. 305.553.6000
 C.E. No. 9091-LB No. 705

**FOUR DRAINAGE SITES
 SITE TWELVE
 ROADWAY PROFILE**

REVISIONS

MARK

DATE

BY

DATE

BY

DATE

BY

DATE

BY

DATE

BY

DATE

BY

DATE

BY

DATE

BY

ENGINEER OF RECORD:
 RAYMOND VALDO, PE
 P.E. No. 79581
 WANTHAN GROUP, INC.
 11401 SW 40 STREET
 MIAMI, FLORIDA 33195

25



CITY OF MIAMI
 DEPARTMENT OF
 RESILIENCE AND
 PUBLIC WORKS

SHEETS

FILE No.

OF

JOB No.

SHEET No.

SCALE

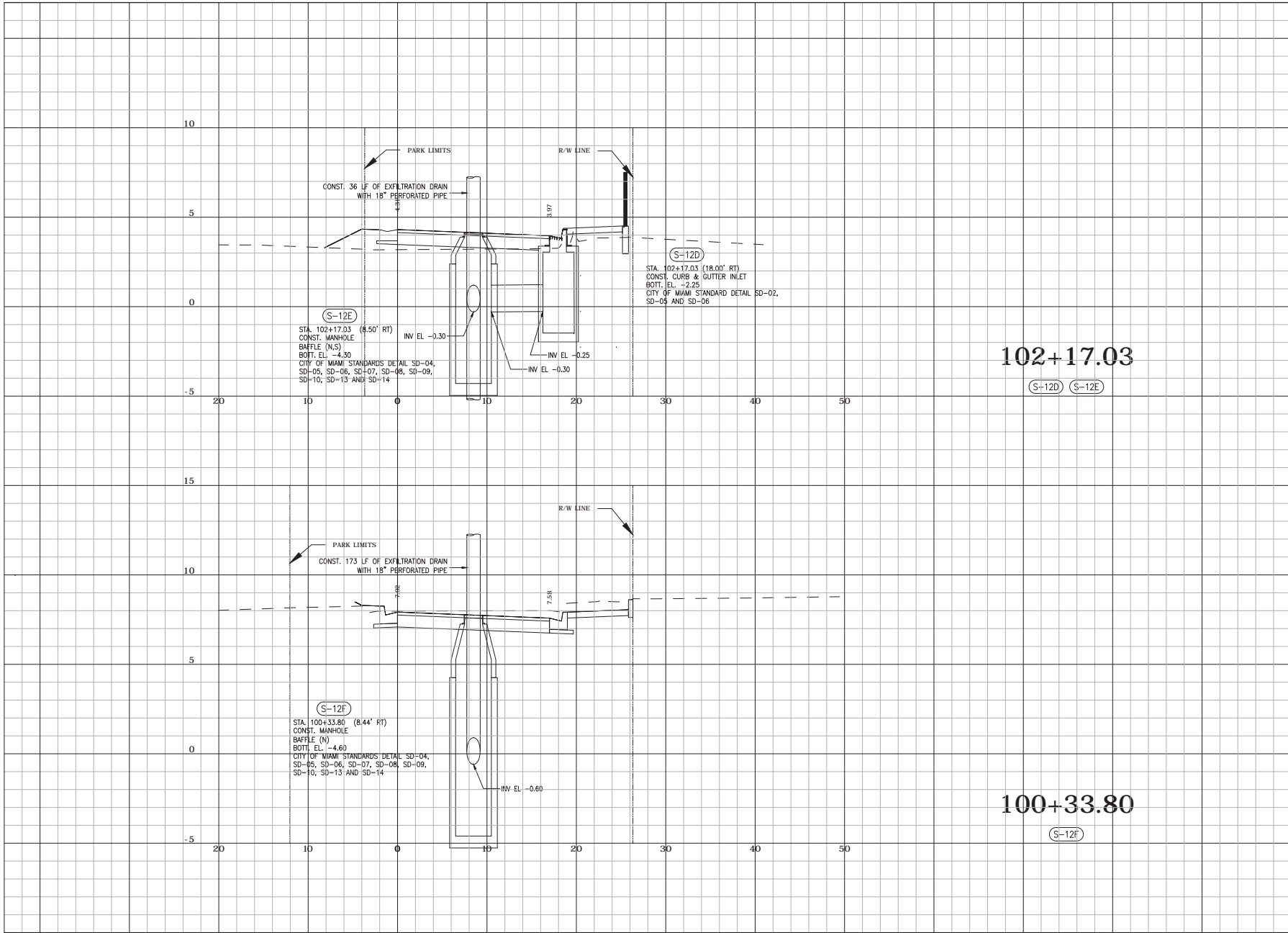
AS NOTED

DESIGN BY

CHECKED BY

DATE

DRAWN BY



102+17.03

(S-12D) (S-12E)

100+33.80

(S-12F)

WVGI
 WATSON CONSULTANTS, INC. ENGINEERING / ENVIRONMENTAL / PLANNING
 11401 SW 40 STREET, SUITE 405
 MIAMI, FL 33166
 TEL: 305.553.6500
 FAX: 305.553.6501
 Lic. No. 00981 - L.P. No. 7055
 WFL PROJECT NO. 26741A

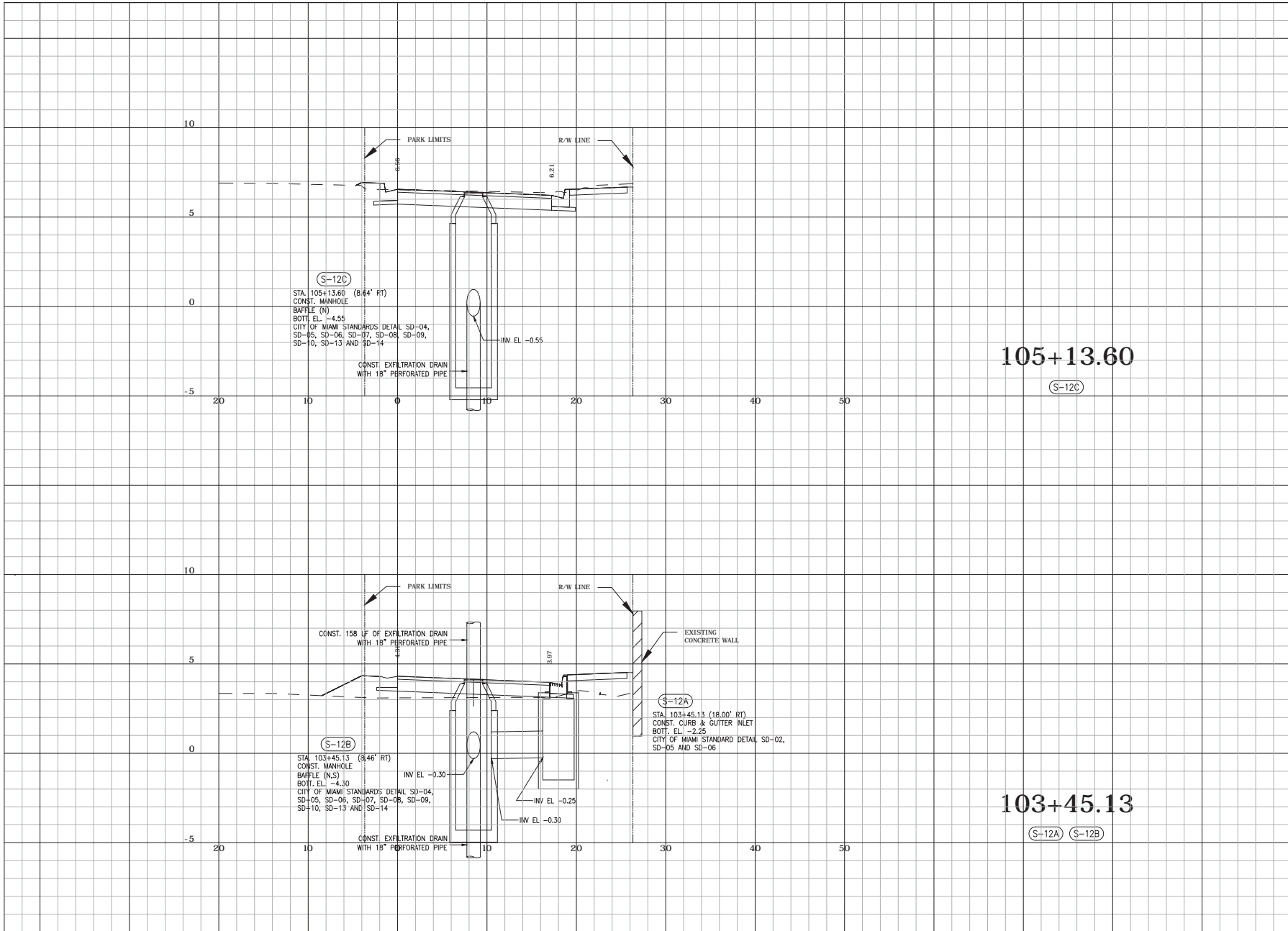


**FOUR DRAINAGE SITES
 SITE TWELVE
 CROSS SECTIONS**

ENGINEER OF RECORD:	DATE	BY	MARK	REVISIONS
RAYMOND VALDO, PE PE. No 79581 WANTMAN GROUP, INC. 11401 SW 40 STREET SUITE 405 MIAMI, FLORIDA 33165				

DATE: ---
 DESIGN: ---
 DRAWN: ---
 CHECKED: ---
 SCALE: AS SHOWN
 JOB No. --- OF --- SHEETS
 FILE No. --- OF --- SHEETS

26



105+13.60

103+45.13

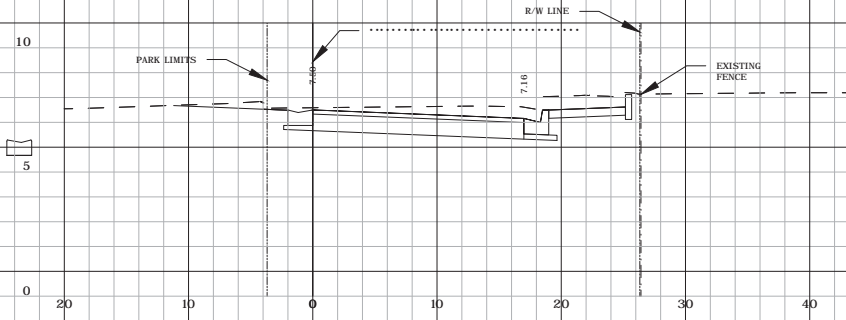
WVGI
 WATSON CONSULTANTS, INC. ENGINEERING / ENVIRONMENTAL / PLANNING
 11401 SW 40 Street, Suite 405
 Miami, FL 33165
 Phone No. 305.553.0500
 Fax No. 305.553.0501
 Lic. No. 13001 - EIT
 Lic. No. 00941 - L.P. No. 7055
 WFL PROJECT NO. 2017-011

CITY OF MIAMI
 DEPARTMENT OF
 RESILIENCE AND
 PUBLIC WORKS

FOUR DRAINAGE SITES
SITE TWELVE
CROSS SECTIONS

ENGINEER OF RECORD: RAYMOND VALIDO, PE
 PE. No. 79581
 WANTMAN GROUP, INC.
 11401 SW 40 STREET
 SUITE 405
 MIAMI, FLORIDA 33165

DATE: --- DESIGN: --- CHECKED: --- SCALE: AS SHOWN SHEET No. 27 OF SHEETS



100+50.00



11401 SW 40 Street, Suite 405
Miami, FL 33165
Tel: 305.533.6200
Fax No: 305.533.0501
Professional Engineer License No. 12005
Professional Planner License No. 1005
MWGI PROJECTS, INC. (SFLA 01)

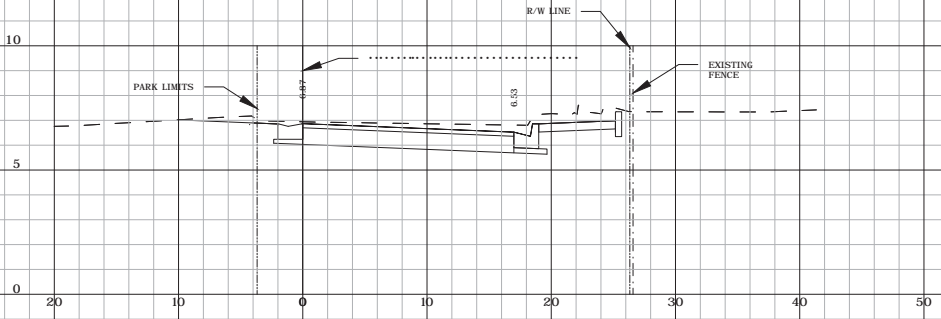
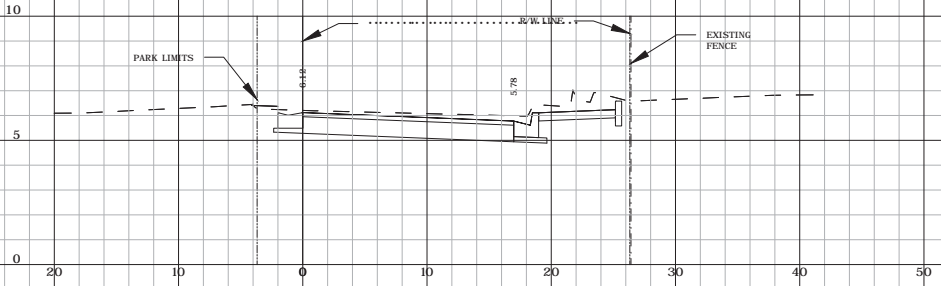
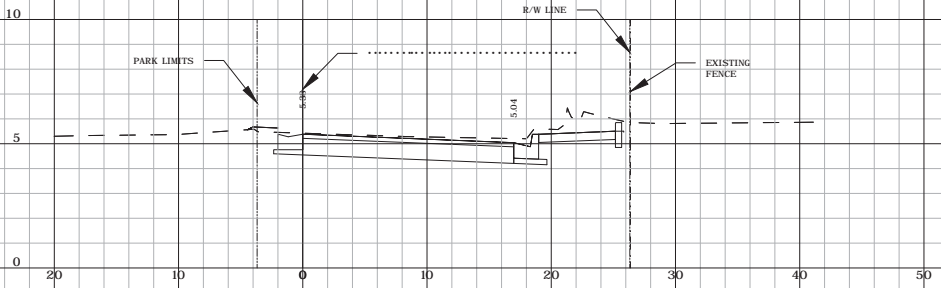
**FOUR DRAINAGE SITES
SITE TWELVE
CROSS SECTIONS**



CITY OF MIAMI
DEPARTMENT OF
RESILIENCE AND
PUBLIC WORKS

ENGINEER OF RECORD:	DATE	BY	MARK	REVISIONS:
RAYMOND VALDO, PE P.E. No 79581 WANTMAN GROUP, INC. 11401 SW 40 STREET SUITE 405 MIAMI, FLORIDA 33165				

DATE: ---
DRAWN: ---
DESIGN: ---
CHECKED: ---
SCALE: AS SHOWN
JOB No. ---
SHEET No. ---
FILE No. ---
OF SHEETS



WGI
 WATMAN GROUP, INC. ENGINEERING // ENVIRONMENTAL // PLANNING
 WGI PROJECTS, INC. (SEFLA)

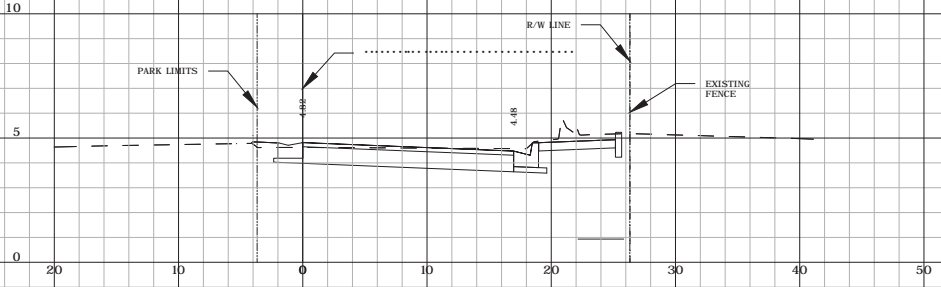
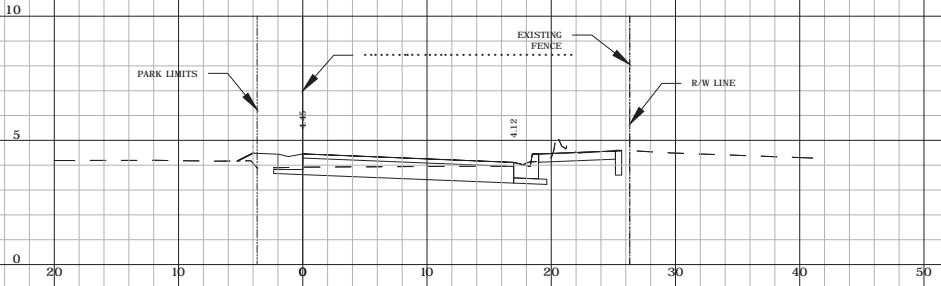
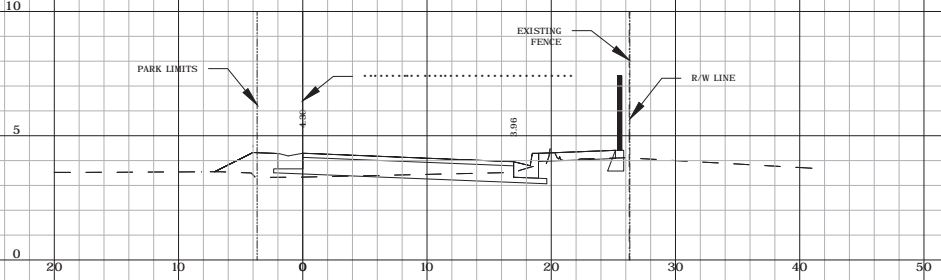
11401 SW 40 Street, Suite 405
 Miami, FL 33165
 Tel. No. 305.553.6200
 Fax No. 305.553.0501
 Lic. No. CE 10001 - L.R. No. 7055



**FOUR DRAINAGE SITES
 SITE TWELVE
 CROSS SECTIONS**

ENGINEER OF RECORD:	DATE	BY	REVISIONS
RAYMOND VALDO, PE			
PE. No 79581			
WATMAN GROUP, INC.			
11401 SW 40 STREET			
SUITE 405			
MIAMI, FLORIDA 33165			

DATE: --- DESIGN: --- AS SHOWN: --- SCALE: --- FILE NO. --- OF SHEETS
 DRAWN: --- CHECKED: --- JOB NO. --- SHEET NO. ---



WGI
 WATMAN GROUP, INC.
 11401 SW 40 STREET, SUITE 405
 MIAMI, FL 33165
 TEL: 305.553.6500
 FAX: 305.553.6501
 REG. PROFESSIONAL ENGINEER / ENVIRONMENTAL PLANNING
 FL REG. NO. 60981 - L.P. NO. 7055
 WGI PROJECT NO. 3871.01

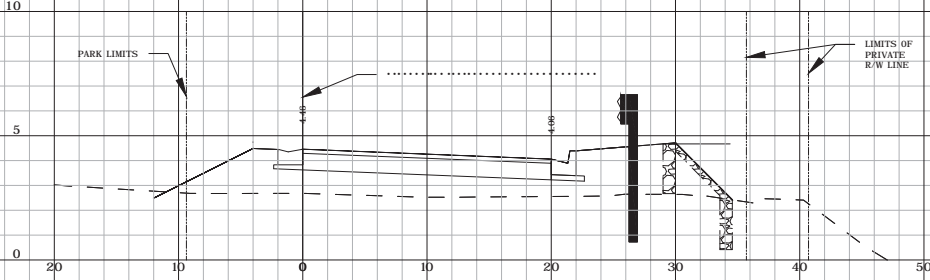
CITY OF MIAMI
 DEPARTMENT OF
 RESILIENCE AND
 PUBLIC WORKS

FOUR DRAINAGE SITES
SITE TWELVE
CROSS SECTIONS

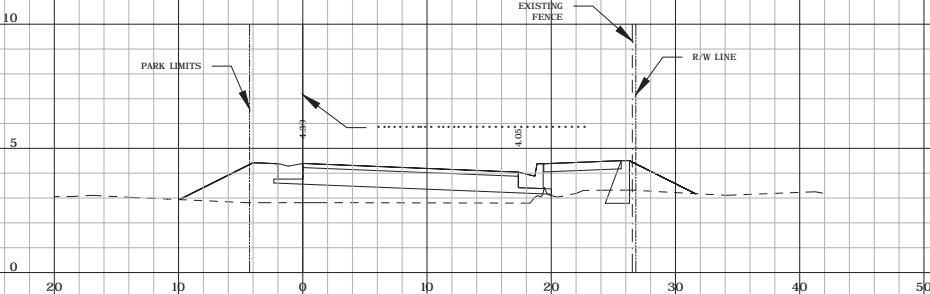
ENGINEER OF RECORD: RAYMOND VALDO, PE
 PE. No. 79581
 WATMAN GROUP, INC.
 11401 SW 40 STREET
 SUITE 405
 MIAMI, FLORIDA 33165

DATE: --- DESIGN: --- AS SHOWN: --- FILE NO. --- OF SHEETS
 DRAWN: --- CHECKED: --- JOB NO. --- SHEET NO. ---

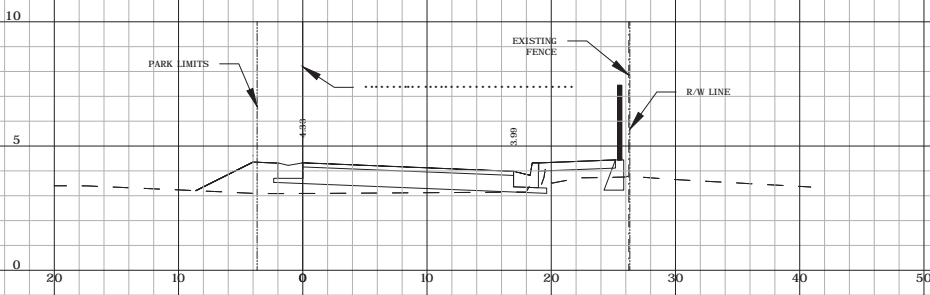
30



102+75.00



102+50.00



102+25.00

WVGI
 WATMAN GROUP, INC. ENGINEERING // ENVIRONMENTAL // PLANNING
 11401 SW 40 Street, Suite 455
 Miami, FL 33165
 Tel. No. 305.553.6500
 Fax No. 305.553.0501
 Lic. No. 13001
 Cert. No. 00941 - L.R. No. 7055
 WVGI PROJECT NO. 2017.011

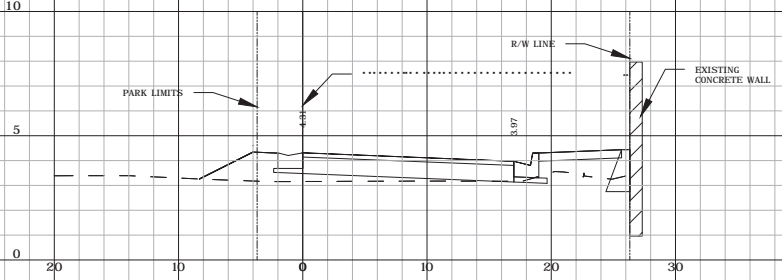


FOUR DRAINAGE SITES
 SITE TWELVE
 CROSS SECTIONS

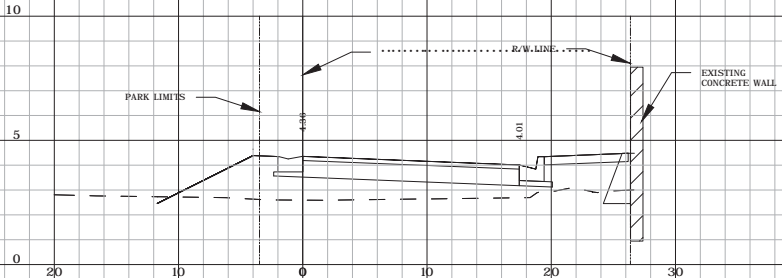
DATE: --- DESIGN: --- AS SHOWN: --- SHEET No. --- OF ---
 DRAWN: --- CHECKED: ---

ENGINEER OF RECORD:	DATE	BY	MARK	REVISIONS
RAYMOND VALIDO, PE				
PE. No 79581				
WATMAN GROUP, INC.				
11401 SW 40 STREET				
SUITE 455				
MIAMI, FLORIDA 33165				

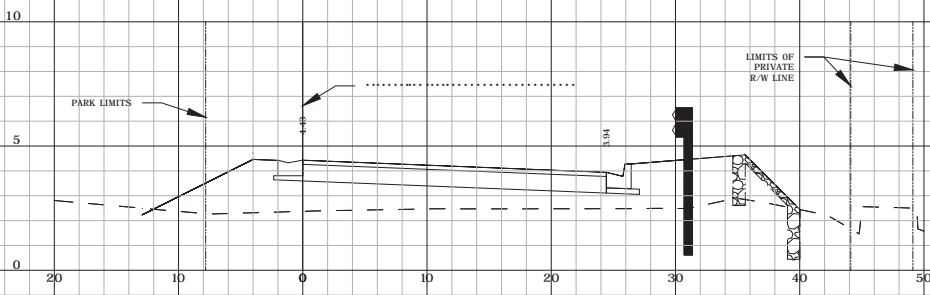
31



103+50.00



103+25.00



103+00.00

IWGI
 INDEPENDENT WORK GROUP, INC. / ENVIRONMENTAL / PLANNING
 11401 SW 40 Street, Suite 455
 Miami, FL 33165
 Tel. No. 305.553.6500
 Fax No. 305.553.0501
 Lic. No. 13001 - L.P. No. 7055
 WFL PROJECT NO. 2017.01.01

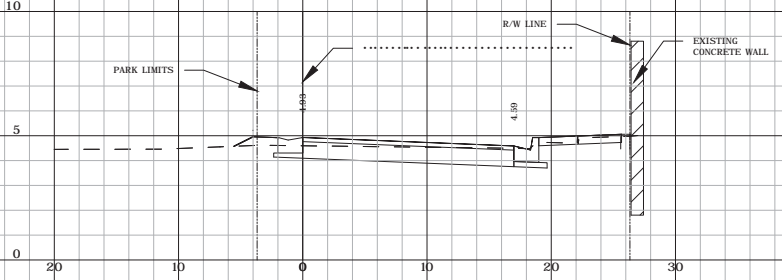


**FOUR DRAINAGE SITES
 SITE TWELVE
 CROSS SECTIONS**

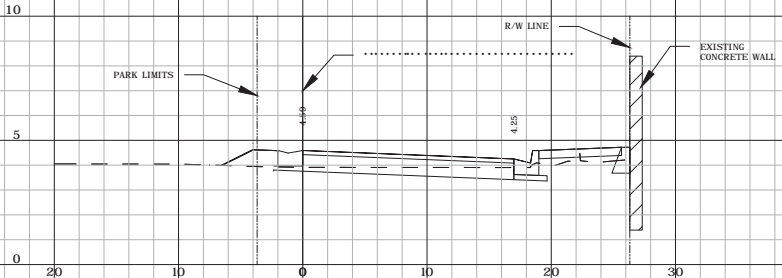
ENGINEER OF RECORD:	DATE	BY	MARK	REVISIONS
RAYMOND VALDO, PE				
PE. No 79581				
WANTMAN GROUP, INC.				
11401 SW 40 STREET				
SUITE 455				
MIAMI, FLORIDA 33165				

DATE: ---
 DESIGN: ---
 DRAWN: ---
 CHECKED: ---
 SCALE: AS SHOWN
 JOB No. ---
 SHEET No. ---
 OF --- SHEETS

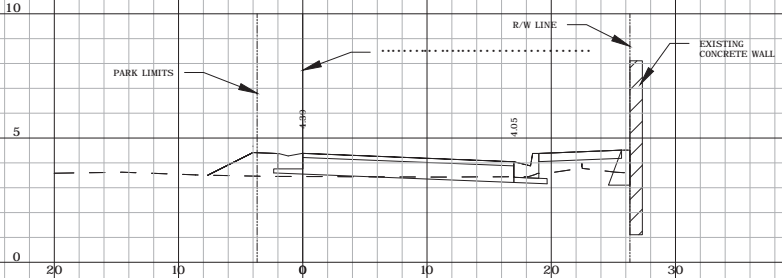
32



104+25.00



104+00.00



103+75.00

TWGI
 TRANSPORTATION WORKS GROUP, INC.
 11401 SW 40 STREET, SUITE 455
 MIAMI, FL 33165
 TEL: 305.553.0500
 FAX: 305.553.0501
 E-MAIL: TWGI@TWGI.COM
 WWW.TWGI.COM

11401 SW 40 Street, Suite 455
 Miami, FL 33165
 Tel: 305.553.0500
 Fax: 305.553.0501
 E-mail: TWGI@TWGI.COM
 WWW.TWGI.COM

CITY OF MIAMI
 DEPARTMENT OF
 RESILIENCE AND
 PUBLIC WORKS

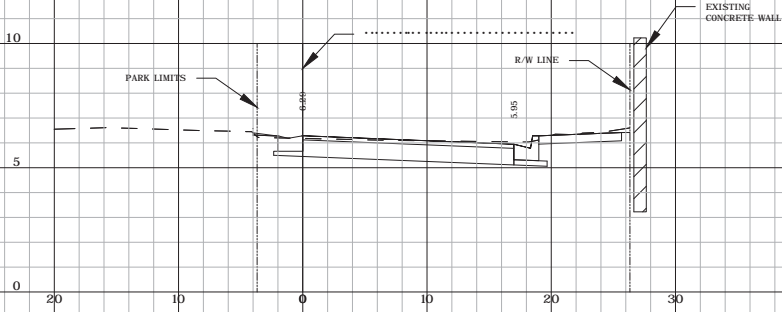


FOUR DRAINAGE SITES
 SITE TWELVE
 CROSS SECTIONS

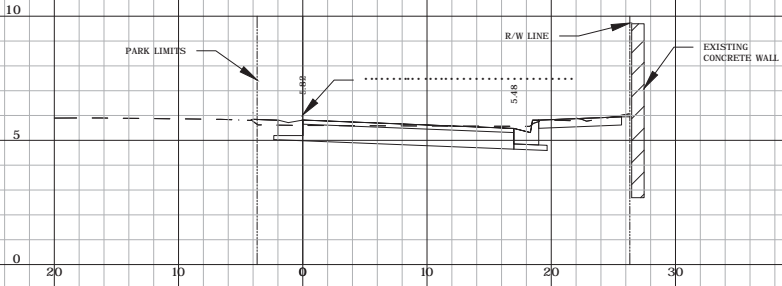
ENGINEER OF RECORD:	DATE	BY	MARK	REVISIONS:
RAYMOND VALDO, PE PE. No 79581 WANTMAN GROUP, INC. 11401 SW 40 STREET SUITE 455 MIAMI, FLORIDA 33165				

DATE	DESIGN	CHECKED	SCALE	AS SHOWN	JOB No.	FILE No.	SHEETS
							OF

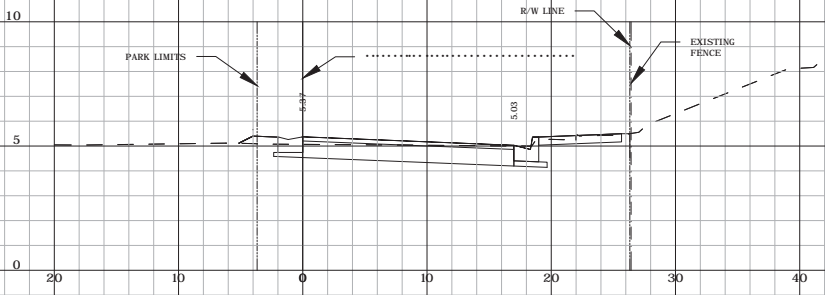
33



105+00.00



104+75.00



104+50.00

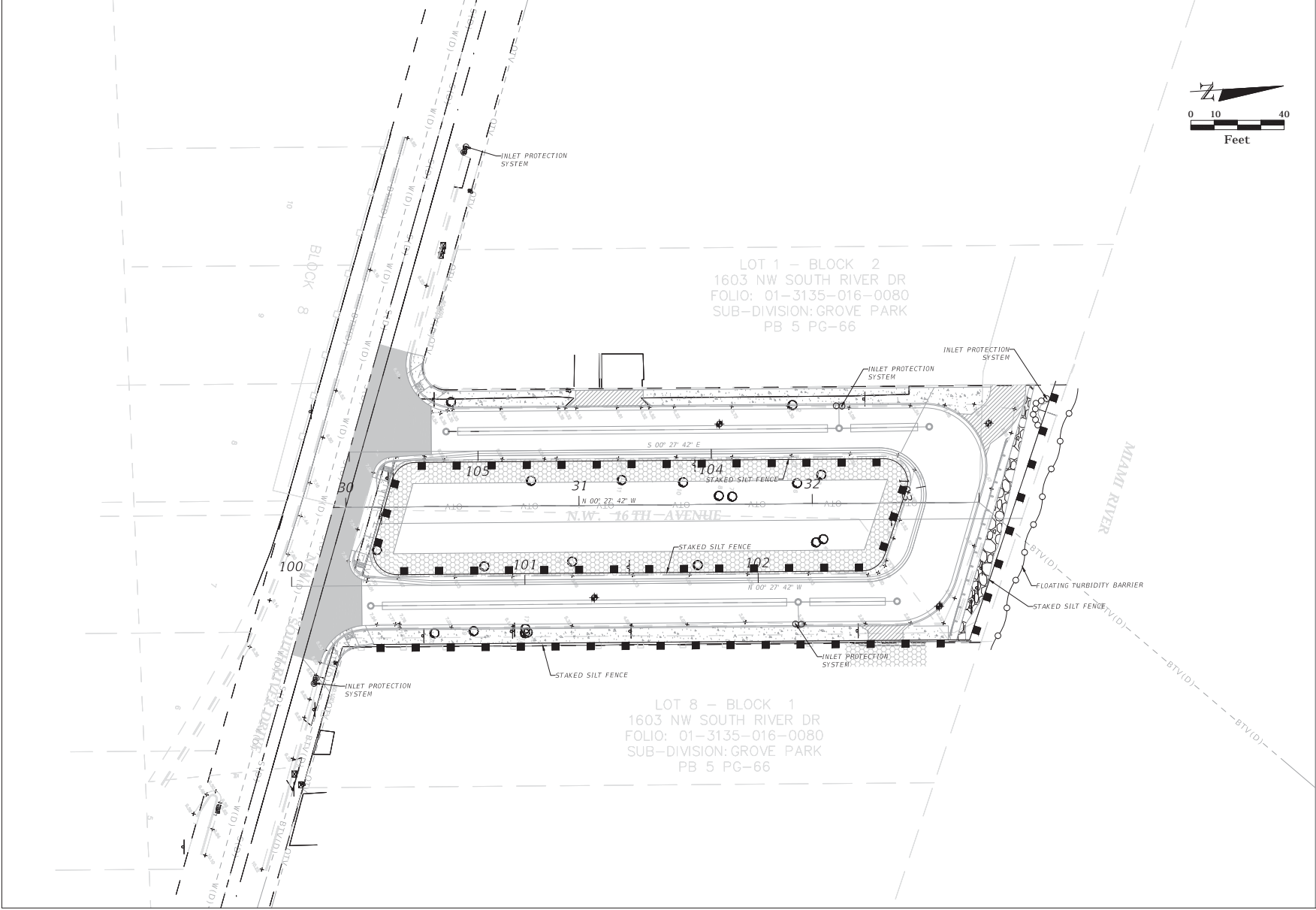
TWGI
 TRAFFIC WORKS GROUP, INC.
 11401 SW 40 STREET, SUITE 405
 MIAMI, FL 33165
 TEL: 305.553.0500
 FAX: 305.553.0501
 E-MAIL: TWGI@TWGI.COM
 WWW.TWGI.COM



**FOUR DRAINAGE SITES
 SITE TWELVE
 CROSS SECTIONS**

ENGINEER OF RECORD:	DATE	BY	MARK	REVISIONS:
RAYMOND VALDO, PE PE. No 79581 WANTMAN GROUP, INC. 11401 SW 40 STREET SUITE 405 MIAMI, FLORIDA 33165				

DATE: --- DESIGN: --- AS SHOWN: --- SCALE: --- SHEETS: ---
 DRAWN: --- CHECKED: --- JOB No. --- OF --- FILE No. ---



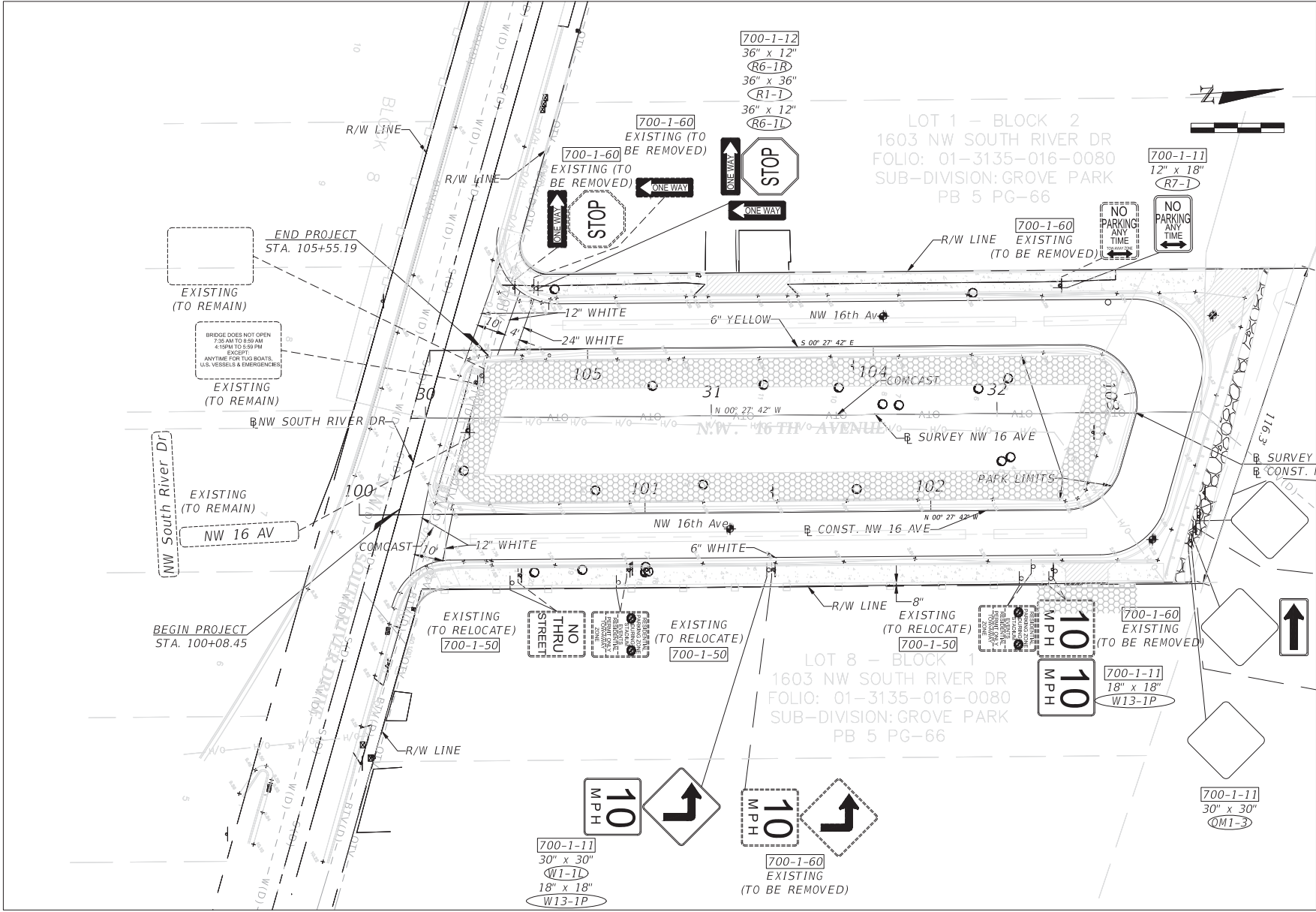
WGL
 11401 SW 40 Street, Suite 455
 Phone No. 305.553.0000
 Fax No. 305.553.0001
 Email: info@wgl.com
 ENGINEERING / SURVEYING / ENVIRONMENTAL / PLANNING
 WGI PROJECT NO. 0974101

CITY OF MIAMI
 DEPARTMENT OF
 RESILIENCE AND
 PUBLIC WORKS

FOUR DRAINAGE SITES
SITE TWELVE
STORMWATER POLLUTION
PREVENTION PLAN

ENGINEER OF RECORD:	DATE:	BY:	MARK:	REVISIONS:	SCALE:	AS NOTED	FILE NO.:	SHEET NO.:	OF:
RAYMOND WALDO, PE PE No. 79581 WANTMAN GROUP, INC. 11401 SW 40 STREET SUITE 455 MIAMI, FLORIDA 33165									

35



DWGL
 ENGINEERING / SURVEYING / ENVIRONMENTAL / PLANNING
 WGI PROJECT NO. 597401

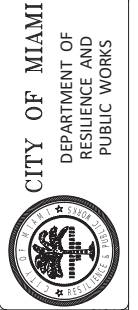
11401 SW 40 Street, Suite 455
 Miami, FL 33155
 Phone No. 305.555.0000
 Fax No. 305.555.0001
 Email No. 305.555.0001

CITY OF MIAMI
 DEPARTMENT OF
 RESILIENCE AND
 PUBLIC WORKS

FOUR DRAINAGE SITES
SITE TWELVE
SIGNING & PAVEMENT MARKING PLAN

ENGINEER OF RECORD:	DATE:	BY:	MARK:
RAYMOND WALDO, PE			
PE No. 79581			
WANTMAN GROUP, INC.			
11401 SW 40 STREET			
SUITE 455			
MIAMI, FLORIDA 33165			

36



DESIGNER:	BY:	DATE:	SCALE:	AS NOTED
CHICKER, JC				

FILE NO.	SHEETS
JOB NO.	OF

PAY ITEM NO.	DESCRIPTION	UNIT	SITE 12 QUANTITY	
101-1	MOBILIZATION	LS	1	
102-1	MAINTENANCE OF TRAFFIC	LS	1	
104-10-3	SEDIMENT BARRIER	LF	116	
104-11	FLOATING TURBIDITY BARRIER	LF	118	
104-12	STAKED TURBIDITY BARRIER- NYLON REINFORCED PVC	LF	918	
104-18	INLET PROTECTION SYSTEM	EA	1	
110-1-1	CLEARING & GRUBBING	AC	0.505	
120-1	REGULAR EXCAVATION	CY	270	
120-11-1	EMBANKMENT	CY	193	
160-4	TYPE B STABILIZATION	SY	1329	
285-706	OPTIONAL BASE, BASE GROUP 06	SY	1095	
327-70-5	MILLING EXIST ASPH PAVT, 2" AVG DEPTH	SY	282	
334-1-12	SUPERPAVE ASPHALTIC CONC, TRAFFIC B (SP-9.5), (1")	TN	74	
337-7-80	ASPHALT CONCRETE FRICTION COURSE, TRAFFIC B, FC-9.5, PG 76-22 (1")	TN	74	
400-0-11	CONCRETE CLASS NS, GRAVITY WALL	CY	9	
425-1-203	CITY OF MIAMI INLETS TYPE "F-3" < 10' J-BOTTOM	EA	2	
425-2-AAB	MANHOLE, DRAINAGE	EA	4	
430-174-118	PIPE CULV, OPT MATL, ROUND, 18" 50	LF	46	
443-70-3	FRENCH DRAIN, 18"	LF	391	
515-1-2	PIPE HANDRAIL - GUIDERAIL, ALUMINUM	LF	75	
520-1-10	CONCRETE CURB, TYPE F (INCLUDES DROP CURB)	LF	1142	
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	SY	336	
522-2	CONCRETE SIDEWALK AND DRIVEWAYS, 6"	SY	97	
527-2	DETECTABLE WARNINGS	SF	34	
530-3-3	RIPRAP - RUBBLE, BANK AND SHORE	CY	6	
536-1-0	GUARDRAIL - ROADWAY, GENERAL/LOW SPEED TL-2	LF	81	
536-85-20	GUARDRAIL END TREATMENT - TRAILING ANCHORAGE	EA	2	
550-102-20	FENCING, TYPE B, 5.1-6.0', STANDARD (HARMONIZATION)	LF	20	
550-602-33	FENCE GATE, TYPE B, SLIDING/CANTILEVER, 12.1-18' OPENING (HARMONIZATION)	EA	1	
570-1-2	PERFORMANCE TURF, SOD	SY	521	
570-1-2	PERFORMANCE TURF, SOD (HARMONIZATION)	SY	39	
700-1-11	SINGLE POST SIGN F&I GM, <12 SF	AS	5	
700-1-12	SINGLE POST SIGN F&I GM, 12-20 SF	AS	2	
700-1-50	SINGLE POST SIGN, RELOCATE	AS	3	
700-1-60	SINGLE POST SIGN, REMOVE	AS	8	
711-14-123	THERMOPLASTIC, PREFORM, WHITE SOLID, 12" GTXG	LF	111	
711-14-125	THERMOPLASTIC, PREFORM, WHITE SOLID, 24"	LF	21	
711-16-101	THERMOPLASTIC, PREFORM, WHITE SOLID, 6"	LF	102	
711-16-131	THERMOPLASTIC, PREFORM, WHITE SOLID, 6", 10-30 SKIP	LF	126	
711-16-201	THERMOPLASTIC, YELLOW, SOLID, 6"	LF	493	

MWGI
 11401 SW 40 Street, Suite 405
 Miami, FL 33185
 Phone No. 305.555.0800
 Fax No. 305.555.0801
 E-mail: info@mwgi.com
 Licenses: Professional Engineer No. 9091 - J.E. No. 7055
 PROFESSIONAL ENGINEERING / SURVEYING / ENVIRONMENTAL / PLANNING
 WGI PROJECT NO. 3874-D1

CITY OF MIAMI
 DEPARTMENT OF
 RESILIENCE AND
 PUBLIC WORKS






**FOUR DRAINAGE SITES
 SITE TWELVE
 SUMMARY OF QUANTITIES**

DESIGN: RV	SCALE: AS NOTED	FOR NO. 1	FILE NO. 1	SHEETS 1
DATE: DRAWN: WJ	CHECKED: JC			


ENGINEER OF RECORD:	DATE:	BY:	MARK:	REVISIONS:
RAYMOND VALDIVIA, PE PE No. 79581 WANTMAN GROUP, INC. 11401 SW 40 STREET SUITE 405 MIAMI, FLORIDA 33165				



LEGEND :

- B-1 AND B-2  60 ft. SPT BORING LOCATION AND NUMBERING
- B-3 AND B-4  15 ft. SPT BORING LOCATION AND NUMBERING
- EX-1 AND EX-2  15 ft. EXFILTRATION TEST LOCATION AND NUMBERING

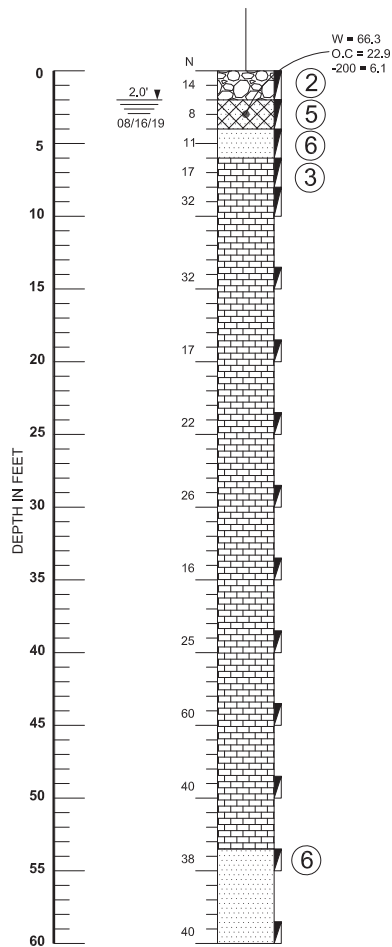
REVISIONS						Names		Dates	
Date	By	Descriptions	Date	By	Descriptions	Drawn by	AK	08/30/2019	
						Checked by	NK	08/30/2019	
						Designed by	AB	08/30/2019	
						Checked by	AB	08/30/2019	
						Approved by			

		ENGINEER OF RECORD ANDREW NIXON (P.E.No. - 71456) RADISE International 4152 West Blue Heron Boulevard, Suite 1114 Riviera Beach, Florida, 33404 TEL 561-841-0103 FAX 561-841-0104 URL > http://www.radise.net		CITY OF MIAMI PUBLIC WORKS DEPARTMENT		SCALE: VERTICAL N.T.S.	SHEET TITLE: BORING LOCATION PLAN	SHEET NO. 38
		LICENSE NO. - 8901	COUNTY MIAMI - DADE	CLIENT WANTMAN GROUP, INC.	SCALE: HORIZONTAL N.T.S.	PROJECT NAME: MIAMI FOREVER BOND, FOUR DRAINAGE LOCATIONS, SITE 12	RADISE PROJECT NO: 190720	

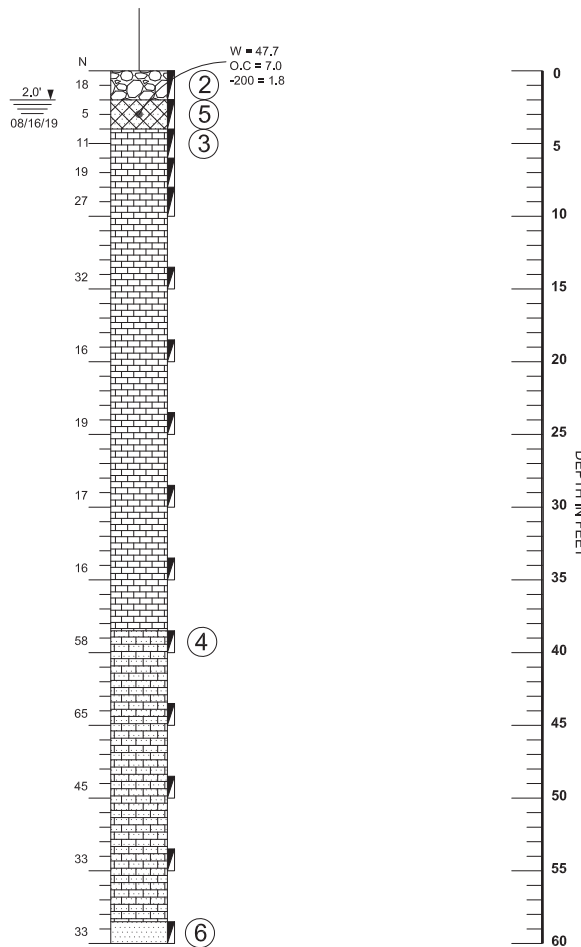
BORING NO.
LONGITUDE:
LATITUDE:
RIG:
HAMMER:
DRILLER:
DATE:

B-1
W -80.2216°
N 25.7844°
CME 45
AUTO
RAVI
08/16/2019

B-2
W -80.2213°
N 25.7844°
CME 45
AUTO
RAVI
08/16/2019



B.T. @ 60'
BELOW EXISTING GRADES



B.T. @ 60'
BELOW EXISTING GRADES

LEGEND

- ① ASPHALTIC CONCRETE AND LIMEROCK BASE
- ② LIGHT BROWN, LIMEROCK, WITH SAND (A-1)
- ③ BROWN TO GRAY, LIMESTONE
- ④ GRAY, SANDY LIMESTONE
- ⑤ DARK BROWN, FINE SAND, WITH ORGANICS (A-6)
- ⑥ BROWN TO GRAY, FINE TO MEDIUM SAND, OCCASIONALLY WITH LIMESTONE FRAGMENTS (A-3)

B.T @ 60' BORING TERMINATED AT 60 FEET BELOW THE EXISTING GROUND SURFACE
B-1 STANDARD PENETRATION TEST (SPT) BORING AND NUMBER
N STANDARD PENETRATION RESISTANCE-BLOWS PER FOOT USING AUTOMATIC HAMMER

SAMPLING INTERVAL

2.0' GROUNDWATER LEVEL IN FEET AND DRILLING DATE
 08/19/19

W MOISTURE CONTENT (%)
OC ORGANIC CONTENT (%)
-200 AMOUNT PASSING US STANDARD 200 SIEVE (%)
A-1, A-3, A-8 AASHTO SOIL CLASSIFICATION SYSTEM GROUP SYMBOLS (ASTM D 3282)

NOTES:

- BORING WAS DRILLED BETWEEN 08/15/2019 AND 08/16/19. SPT BORINGS WERE PERFORMED USING A CME-45C AUTOMATIC DRILLING RIG (ASTM D1586)
- STRATA BOUNDARIES ARE APPROXIMATE AND REPRESENT SOIL STRATA AT EACH TEST HOLE LOCATION ONLY. SOIL TRANSITIONS MAY BE MORE GRADUAL THAN IMPLIED.
- GROUNDWATER LEVELS SHOWN ON THE SUBSURFACE PROFILES REPRESENT GROUNDWATER SURFACES ON THE DATES SHOWN. GROUNDWATER LEVEL FLUCTUATIONS SHOULD BE ANTICIPATED THROUGHOUT THE YEAR.
- AFTER COMPLETION OF DRILLING, BOREHOLES WERE BACKFILLED WITH GROUT.

STANDARD PENETRATION TEST DATA *
 SPOON INSIDE DIA. 1.375 INCH
 SPOON OUTSIDE DIA. 2 INCHES
 AVG. HAMMER DROP 30 INCHES
 HAMMER WEIGHT 140 POUNDS
 GRANULAR MATERIALS AUTOMATIC HAMMER
 SPT N - VALUE

RELATIVE DENSITY BLOWS/FOOT
 VERY LOOSE LESS THAN 3
 LOOSE 3 - 8
 MEDIUM 8 - 24
 DENSE 24 - 40
 VERY DENSE GREATER THAN 40
 SILTS AND CLAYS AUTOMATIC HAMMER
 SPT N - VALUE

CONSISTENCY BLOWS/FOOT
 VERY SOFT LESS THAN 1
 SOFT 1 - 3
 FIRM 3 - 6
 STIFF 6 - 12
 VERY STIFF 12 - 24
 HARD GREATER THAN 24
 *FDOT SOILS AND FOUNDATIONS HANDBOOK 2018

REVISIONS

Date	By	Descriptions	Date	By	Descriptions

RADISE
 INTERNATIONAL

ENGINEER OF RECORD
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 RADISE International
 4152 West Blue Heron Boulevard, Suite 1114
 Riviera Beach, Florida, 33404
 TEL 561-841-0103 FAX 561-841-0104
 URL - <http://www.radise.net>

CITY OF MIAMI PUBLIC WORKS DEPARTMENT

COUNTY	CLIENT
MIAMI - DADE	WANTMAN GROUP, INC.

SCALE:
 VERTICAL
 N.T.S.

SCALE:
 HORIZONTAL
 N.T.S.

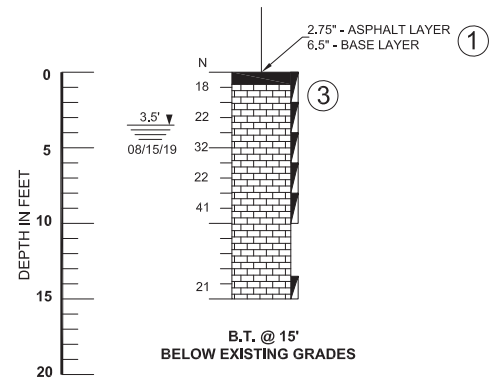
SHEET TITLE:
SUBSURFACE PROFILES

PROJECT NAME:
**MIAMI FOREVER BOND,
 FOUR DRAINAGE LOCATIONS, SITE 12**

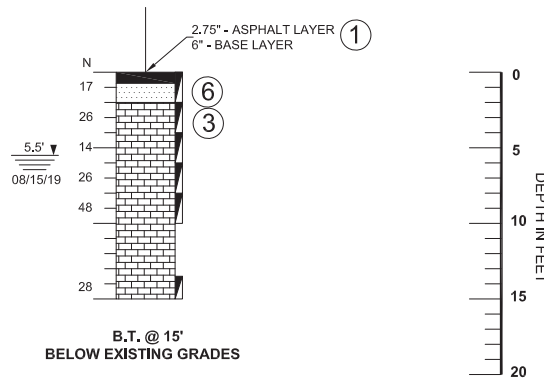
SHEET NO.
39

RADISE PROJECT NO:
190720

BORING NO. B-3
LONGITUDE: W -80.2215°
LATITUDE: N 25.7841°
RIG: CME 45
HAMMER: AUTO
DRILLER: RAVI
DATE: 08/15/2019



BORING NO. B-4
LONGITUDE: W -80.2214°
LATITUDE: N 25.7840°
RIG: CME 45
HAMMER: AUTO
DRILLER: RAVI
DATE: 08/15/2019



LEGEND

- ① [Symbol] ASPHALTIC CONCRETE AND LIMEROCK BASE
- ② [Symbol] LIGHT BROWN, LIMEROCK, WITH SAND (A-1)
- ③ [Symbol] BROWN TO GRAY, LIMESTONE
- ④ [Symbol] GRAY, SANDY LIMESTONE
- ⑤ [Symbol] DARK BROWN, FINE SAND, WITH ORGANICS (A-8)
- ⑥ [Symbol] BROWN TO GRAY, FINE TO MEDIUM SAND, OCCASIONALLY WITH LIMESTONE FRAGMENTS (A-3)

B.T @ 60' BORING TERMINATED AT 60 FEET BELOW THE EXISTING GROUND SURFACE
 B-1 STANDARD PENETRATION TEST (SPT) BORING AND NUMBER
 N STANDARD PENETRATION RESISTANCE-BLOWS PER FOOT USING AUTOMATIC HAMMER

[Symbol] SAMPLING INTERVAL
 [Symbol] GROUNDWATER LEVEL IN FEET AND DRILLING DATE
 W MOISTURE CONTENT (%)
 OC ORGANIC CONTENT (%)
 -200 AMOUNT PASSING US STANDARD 200 SIEVE (%)
 A-1, A-3, A-8 AASHTO SOIL CLASSIFICATION SYSTEM GROUP SYMBOLS (ASTM D 3282)

NOTES:

- BORING WAS DRILLED BETWEEN 08/15/2019 AND 08/16/2019, SPT BORINGS WERE PERFORMED USING A CME-45C AUTOMATIC DRILLING RIG (ASTM D1586)
- STRATA BOUNDARIES ARE APPROXIMATE AND REPRESENT SOIL STRATA AT EACH TEST HOLE LOCATION ONLY. SOIL TRANSITIONS MAY BE MORE GRADUAL THAN IMPLIED.
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- AFTER COMPLETION OF DRILLING, BOREHOLES WERE BACKFILLED WITH GROUT.

STANDARD PENETRATION TEST DATA *
 SPOON INSIDE DIA. 1.375 INCH
 SPOON OUTSIDE DIA. 2 INCHES
 AVG. HAMMER DROP 30 INCHES
 HAMMER WEIGHT 140 POUNDS
 AUTOMATIC HAMMER
 GRANULAR MATERIALS
 SPT N - VALUE
 RELATIVE DENSITY
 VERY LOOSE LESS THAN 3
 LOOSE 3 - 8
 MEDIUM 8 - 24
 DENSE 24 - 40
 VERY DENSE GREATER THAN 40
 SILTS AND CLAYS
 AUTOMATIC HAMMER
 SPT N - VALUE
 CONSISTENCY
 VERY SOFT LESS THAN 1
 SOFT 1 - 3
 FIRM 3 - 6
 STIFF 6 - 12
 VERY STIFF 12 - 24
 HARD GREATER THAN 24
 *FDOT SOILS AND FOUNDATIONS HANDBOOK 2018

REVISIONS

Date	By	Descriptions	Date	By	Descriptions

RADISE INTERNATIONAL
 LICENSE NO. - 8901

ENGINEER OF RECORD
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 URL - http://www.radise.net

CITY OF MIAMI PUBLIC WORKS DEPARTMENT
 COUNTY CLIENT
 MIAMI - DADE WANTMAN GROUP, INC.

SCALE:
 VERTICAL
 N.T.S.
 SCALE:
 HORIZONTAL
 N.T.S.

SHEET TITLE:
 SUBSURFACE PROFILES
PROJECT NAME:
 MIAMI FOREVER BOND,
 FOUR DRAINAGE LOCATIONS, SITE 12

SHEET NO.
 40
RADISE PROJECT NO:
 190720

CITY OF MIAMI
PUBLIC WORKS DEPARTMENT

DATE OF SURVEY: SEPTEMBER 2019
SURVEY MADE BY: RADISE INTERNATIONAL, L.C.
SUBMITTED BY: ANDREW NIXON, P.E.

PROJECT NAME: MIAMI FOREVER BOND, FOUR DRAINAGE LOCATIONS, SITE 12

ROAD NAME: NW 16TH AVENUE
COUNTY: MIAMI-DADE

CROSS SECTION SOIL SURVEY FOR THE DESIGN OF ROADS

SURVEY BEGINS : NW SOUTH RIVER DRIVE

SURVEY ENDS : NW SOUTH RIVER DRIVE

STRATUM NO.	NO. OF TESTS	ORGANIC CONTENT		NO. OF TESTS	SIEVE ANALYSIS RESULTS % PASS					ATTERBERG LIMITS (%)			MATERIAL DESCRIPTION	NO. OF TESTS	CORROSION TEST RESULTS					
		% ORGANIC	MOISTURE CONTENT		10 MESH	40 MESH	60 MESH	100 MESH	200 MESH	NO. OF TESTS	LIQUID LIMIT	PLASTIC INDEX			AASHTO GROUP	RESISTIVITY ohm-cm	CHLORIDES ppm	SULFATES ppm	pH	
1	0	-	-	0	-	-	-	-	-	-	-	-	-	ASPHALTIC CONCRETE AND LIMEROCK BASE	0	-	-	-	-	
2	0	-	-	0	-	-	-	-	-	-	-	-	A-1	LIGHT BROWN, LIMEROCK, WITH SAND	0	-	-	-	-	
3	0	-	-	0	-	-	-	-	-	-	-	-	-	BROWN TO GRAY, LIMESTONE	4	162-3,219	20-400	6-59	8.2-8.7	
4	0	-	-	0	-	-	-	-	-	-	-	-	-	GRAY, SANDY LIMESTONE	0	-	-	-	-	
5	2	7.0-22.9	47.7-66.3	2	-	-	-	-	-	1.8-6.1	-	-	-	A-8	DARK BROWN, FINE SAND, WITH ORGANICS	0	-	-	-	-
6	0	-	-	0	-	-	-	-	-	-	-	-	-	A-3	BROWN TO GRAY, FINE TO MEDIUM SAND, OCCASIONALLY WITH LIMESTONE FRAGMENTS	0	-	-	-	-

EMBANKMENT AND SUBGRADE MATERIAL

STRATA BOUNDARIES ARE APPROXIMATE MAKE FINAL CHECK AFTER GRADING

≡ = WATER TABLE ENCOUNTERED

GNE - GROUNDWATER NOT ENCOUNTERED

NOTES:

- STRATA BOUNDARIES ARE APPROXIMATE AND REPRESENT SOIL STRATA AT EACH TEST HOLE LOCATION ONLY. ANY STRATUM CONNECTING LINES THAT ARE SHOWN ARE FOR ESTIMATING EARTHWORK ONLY AND DO NOT INDICATE ACTUAL STRATUM LIMITS. SUBSURFACE VARIATIONS BETWEEN BORINGS SHOULD BE ANTICIPATED.
- THE SYMBOL "-" REPRESENTS AN UNMEASURED PARAMETER.
- STRATUM 1 IS LIMEROCK BASE UNDER ASPHALTIC CONCRETE.
- THE MATERIALS FROM STRATA 2 AND 6 APPEARS TO BE SATISFACTORY FOR USE IN EMBANKMENT WHEN UTILIZED IN ACCORDANCE WITH THE FDOT STANDARD PLANS INDEX 120-001.
- THE MATERIALS FROM STRATA 3 AND 4 IS THE NATURAL LIMESTONE FORMATION. SPECIAL TOOLS AND EQUIPMENT MAY BE NECESSARY TO EXCAVATE AND/OR DEWATER THIS MATERIAL. THIS MATERIAL APPEARS TO BE SATISFACTORY FOR USE IN EMBANKMENT AS A-1 MATERIAL WHEN UTILIZED IN ACCORDANCE WITH THE FDOT STANDARD PLANS INDEX 120-001.
- THE MATERIAL FROM STRATUM NUMBER 5 CONSISTS OF ORGANIC SAND. MATERIALS FROM STRATUM 5 SHALL BE REMOVED AND REPLACED WITH SELECT FILL IN ACCORDANCE WITH FDOT STANDARD PLANS FOR ROAD CONSTRUCTION, INDICES 120-001 AND 120-002. STRATUM 4 MATERIALS WERE ENCOUNTERED IN BORINGS B-1 AND B-2 AT DEPTHS BETWEEN APPROXIMATELY 2 AND 4 FEET BELOW THE EXISTING GROUND SURFACE.

REVISIONS

Date	By	Descriptions	Date	By	Descriptions



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CITY OF MIAMI PUBLIC WORKS DEPARTMENT	
COUNTY	CLIENT
MIAMI - DADE	WANTMAN GROUP, INC.

SCALE:
VERTICAL
N.T.S.

SCALE:
HORIZONTAL
N.T.S.

SHEET TITLE: ROADWAY SOIL SURVEY	SHEET NO. 41
PROJECT NAME: MIAMI FOREVER BOND, FOUR DRAINAGE LOCATIONS, SITE 12	RADISE PROJECT NO: 190720