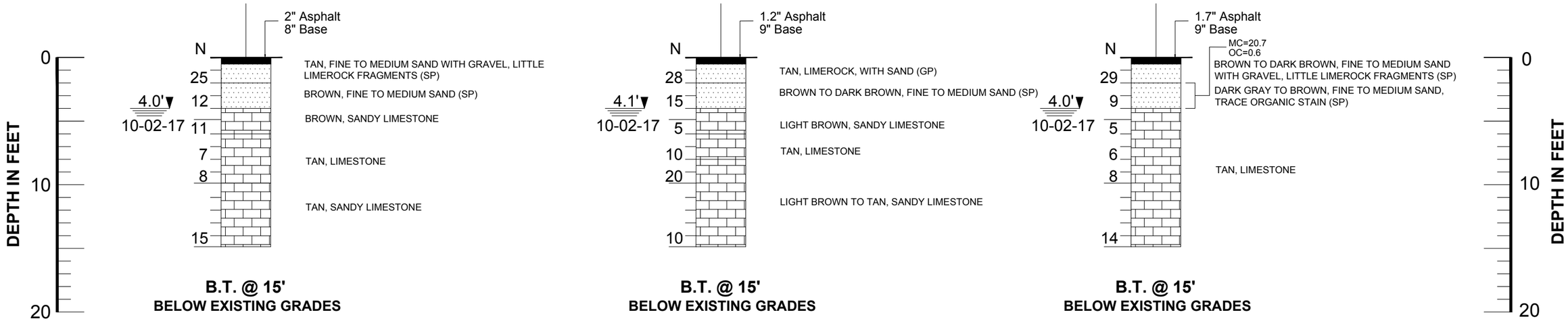
	R-7	R-8	R-13
BORING NO.	R-7	R-8	R-13
ELEVATION (NAVD 88):	N/A	N/A	N/A
LATITUDE:	26.0979°	26.0994°	26.0979°
LONGITUDE:	-80.1589°	-80.1582°	-80.1550°
DATE:	10/02/2017	10/02/2017	10/02/2017
DRILLER:	P. RAMSEWACK	P. RAMSEWACK	P. RAMSEWACK
RIG:	CME 45	CME 45	CME 45



LEGEND

- ASPHALT AND BASE
- LIMESTONE
- SAND
- GRAVEL
- SILTY SAND
- ORGANIC MATERIAL
- 4.2' ▼ GROUNDWATER DEPTH IN FEET
- 10-02-17 AND DRILLING DATE
- N STANDARD PENETRATION RESISTANCE- BLOWS PER FOOT USING AUTOMATIC HAMMER

SP, SP-SM, PT	UNIFIED SOIL CLASSIFICATION SYSTEM GROUP SYMBOL (ASTM D 2488)
R-1	STANDARD PENETRATION TEST (SPT) BORING AND NUMBER
MC	MOISTURE CONTENT (%)
-200	AMOUNT PASSING US STANDARD # 200 SIEVE (%)
OC	ORGANIC CONTENTS (%)
LL	LIQUID LIMIT (%)
PI	PLASTICITY INDEX (%)
B.T. @ 15'	BORING TERMINATED AT 15 FEET BELOW THE EXISTING GROUND SURFACE

NOTES

(1) BORING WERE DRILLED ON OCTOBER, 2017 USING A CENTRAL MINING EQUIPMENT MODEL 45 (CME 45) AUTOMATIC HAMMER DRILL RIG.

(2) STRATA BOUNDARIES ARE APPROXIMATE AND REPRESENT SOIL AND REPRESENT SOIL STRATA AT EACH TEST HOLE LOCATION ONLY. SOIL TRANSITIONS MAY BE MORE GRADUAL THAN IMPLIED.

(3) GROUNDWATER LEVELS SHOWN ON THE SUBSURFACE PROFILES REPRESENT GROUNDWATER SURFACES ON THE DATES SHOWN. GROUNDWATER LEVELS WILL FLUCTUATE THROUGHOUT THE YEAR.

(4) LONGITUDE AND LATITUDE COORDINATES WERE MEASURED IN THE FIELD USING A HAND HELD GPS UNIT.

(5) ELEVATIONS WERE NOT AVAILABLE

(6) AFTER COMPLETION OF DRILLING BOREHOLES WERE BACK FILLED WITH GROUT.

GRANULAR MATERIALS

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

STANDARD PENETRATION TEST DATA

SPOON INSIDE DIA.	1.375 INCH
SPOON OUTSIDE DIA.	2.0 INCHES
AVG. HAMMER DROP	30 INCHES
HAMMER WEIGHT	140 POUNDS

REVISIONS

Date.	By	Descriptions	Date.	By	Descriptions

	Names	Dates
Drawn by	KA	11/09/17
Checked by	AB	11/09/17
Designed by		
Checked by		
Approved by		

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Riviera Beach, Florida. 33404
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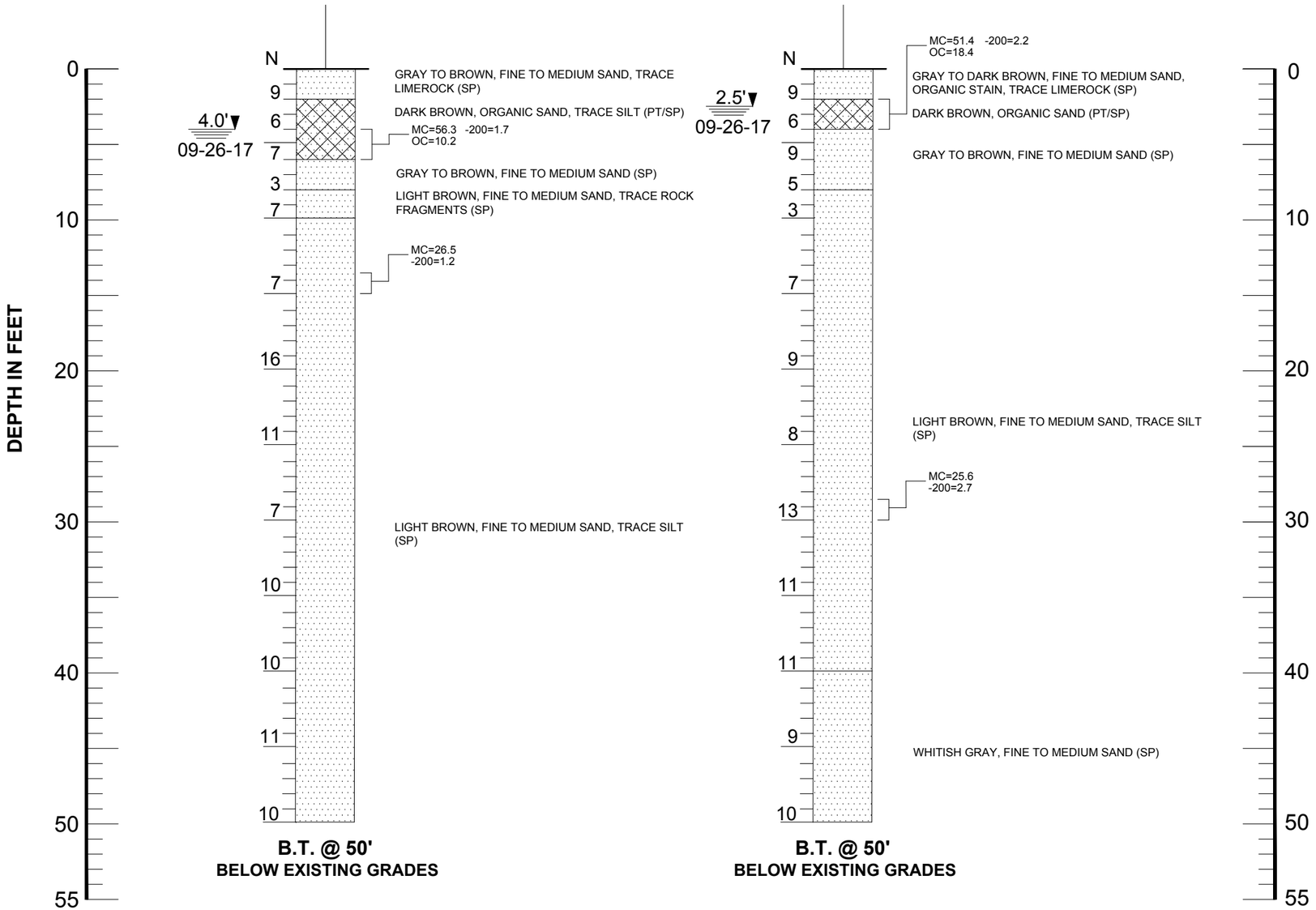
URL : http:// www.radise.net

CITY OF FORT LAUDERDALE PUBLIC WORKS DEPARTMENT		SCALE: VERTICAL N.T.S.	SHEET TITLE: SUBSURFACE PROFILES (RIVER OAKS)	SHEET NO. 7C
COUNTY	CLIENT	SCALE: HORIZONTAL N.T.S.	PROJECT NAME: STORMWATER MASTER PLAN MODELING AND DESIGN IMPLEMENTATION	RADISE PROJECT NO: 170901
BROWARD	HAZEN AND SAWYER			

	R-9	R-10
BORING NO.	R-9	R-10
ELEVATION (NAVD 88):	N/A	N/A
LATITUDE:	26.0949°	26.0947°
LONGITUDE:	-80.1679°	-80.1677°
DATE:	09/26/2017	09/26/2017
DRILLER:	T. FICKLING	T. FICKLING
RIG:	CME 45	CME 45



LEGEND

SAND	SHELLY SAND
SILT	LIMESTONE
ORGANIC MATERIAL	GRAVEL

1.5' ▼ 09-21-17	GROUNDWATER DEPTH IN FEET AND DRILLING DATE
N	STANDARD PENETRATION RESISTANCE- BLOWS PER FOOT USING AUTOMATIC HAMMER
SP	UNIFIED SOIL CLASSIFICATION SYSTEM GROUP SYMBOL (ASTM D 2488)
S-9	STANDARD PENETRATION TEST (SPT) BORING AND NUMBER
MC	MOISTURE CONTENT (%)
-200	AMOUNT PASSING US STANDARD # 200 SIEVE
OC	ORGANIC CONTENTS (%)
LL	LIQUID LIMIT (%)
PI	PLASTICITY INDEX (%)
B.T. @ 50'	BORING TERMINATED AT 50 FEET BELOW THE EXISTING GROUND SURFACE

NOTES

(1) BORINGS WERE DRILLED ON SEPTEMBER AND OCTOBER, 2017 USING A CENTRAL MINING EQUIPMENT MODEL 45 (CME 45) AUTOMATIC HAMMER DRILL RIG.

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(3) GROUNDWATER LEVELS SHOWN ON THE SUBSURFACE PROFILES REPRESENT GROUNDWATER SURFACES ON THE DATES SHOWN. GROUNDWATER LEVELS WILL FLUCTUATE THROUGHOUT THE YEAR.

(4) LONGITUDE AND LATITUDE COORDINATES WERE MEASURED IN THE FIELD USING A HAND HELD GPS UNIT.

(5) ELEVATIONS WERE NOT AVAILABLE

(6) AFTER COMPLETION OF DRILLING BOREHOLES WERE BACK FILLED WITH GROUT.

STANDARD PENETRATION TEST DATA

SPOON INSIDE DIA.	1.375 INCH
SPOON OUTSIDE DIA.	2.0 INCHES
AVG. HAMMER DROP	30 INCHES
HAMMER WEIGHT	140 POUNDS

GRANULAR MATERIALS

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

REVISIONS

Date.	By	Descriptions	Date.	By	Descriptions

	Names	Dates
Drawn by	ML	10/13/17
Checked by	AB	10/13/17
Designed by		
Checked by		
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CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT

COUNTY	CLIENT
BROWARD	HAZEN AND SAWYER

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

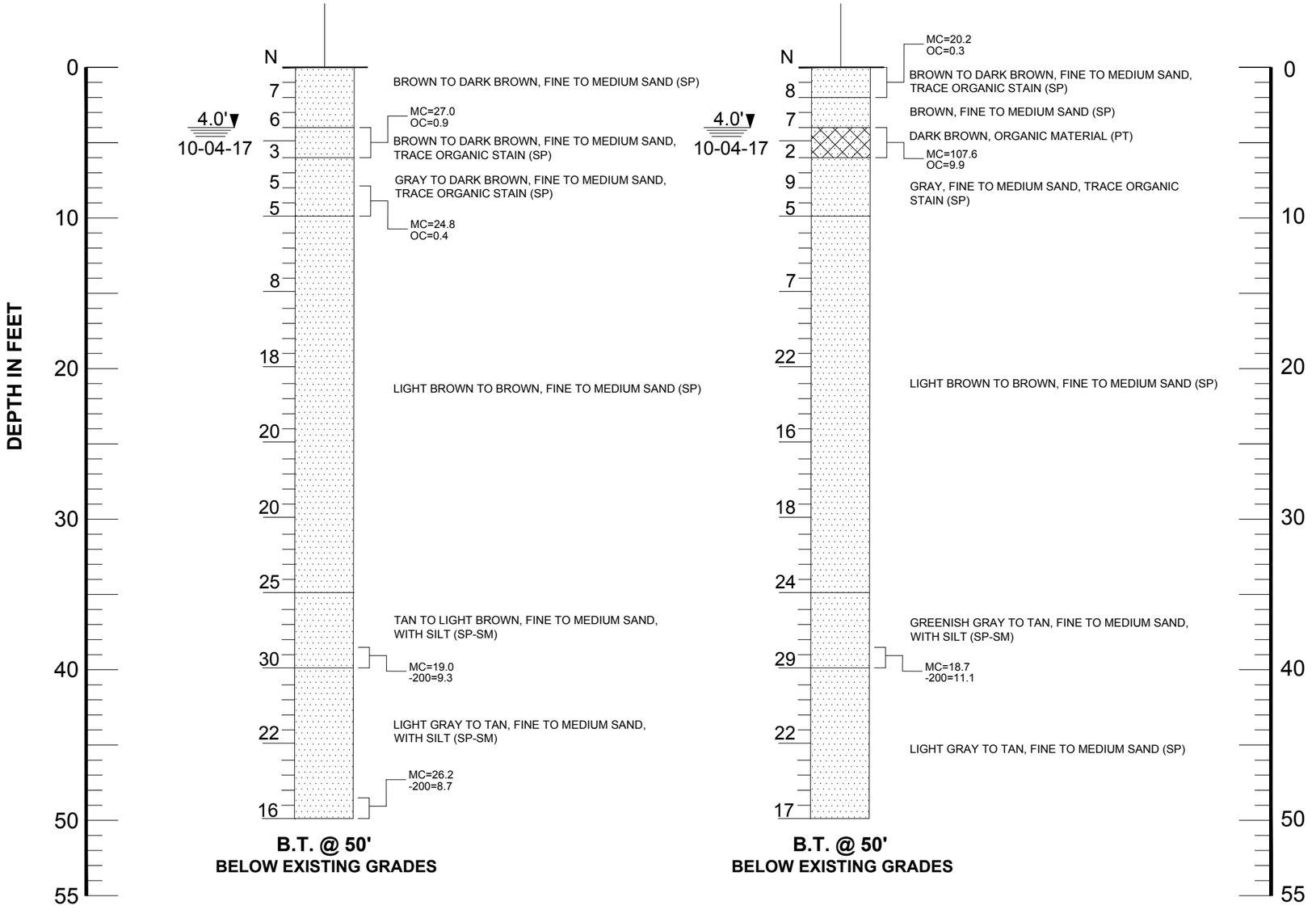
SHEET TITLE: SUBSURFACE PROFILES (RIVER OAKS)

PROJECT NAME: STORMWATER MASTER PLAN MODELING AND DESIGN IMPLEMENTATION

SHEET NO. 7D

RADISE PROJECT NO: 170901

	R-11	R-12
BORING NO.	R-11	R-12
ELEVATION (NAVD 88):	N/A	N/A
LATITUDE:	26.0936°	26.0938°
LONGITUDE:	-80.1665°	-80.1667°
DATE:	10/04/2017	10/04/2017
DRILLER:	P. RAMSEWACK	P. RAMSEWACK
RIG:	CME 45	CME 45



LEGEND

SAND	SHELLY SAND
SILT	LIMESTONE
ORGANIC MATERIAL	GRAVEL

1.5' ▼ 09-21-17	GROUNDWATER DEPTH IN FEET AND DRILLING DATE
N	STANDARD PENETRATION RESISTANCE- BLOWS PER FOOT USING AUTOMATIC HAMMER
SP	UNIFIED SOIL CLASSIFICATION SYSTEM GROUP SYMBOL (ASTM D 2488)
S-9	STANDARD PENETRATION TEST (SPT) BORING AND NUMBER
MC	MOISTURE CONTENT (%)
-200	AMOUNT PASSING US STANDARD # 200 SIEVE
OC	ORGANIC CONTENTS (%)
LL	LIQUID LIMIT (%)
PI	PLASTICITY INDEX (%)
B.T. @ 50'	BORING TERMINATED AT 50 FEET BELOW THE EXISTING GROUND SURFACE

NOTES

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(4) LONGITUDE AND LATITUDE COORDINATES WERE MEASURED IN THE FIELD USING A HAND HELD GPS UNIT.

(5) ELEVATIONS WERE NOT AVAILABLE

(6) AFTER COMPLETION OF DRILLING BOREHOLES WERE BACK FILLED WITH GROUT.

STANDARD PENETRATION TEST DATA

SPOON INSIDE DIA.	1.375 INCH
SPOON OUTSIDE DIA.	2.0 INCHES
AVG. HAMMER DROP	30 INCHES
HAMMER WEIGHT	140 POUNDS

GRANULAR MATERIALS

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

REVISIONS

Date.	By	Descriptions	Date.	By	Descriptions

	Names	Dates
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Checked by	AB	10/13/17
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CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT

COUNTY	CLIENT
BROWARD	HAZEN AND SAWYER

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

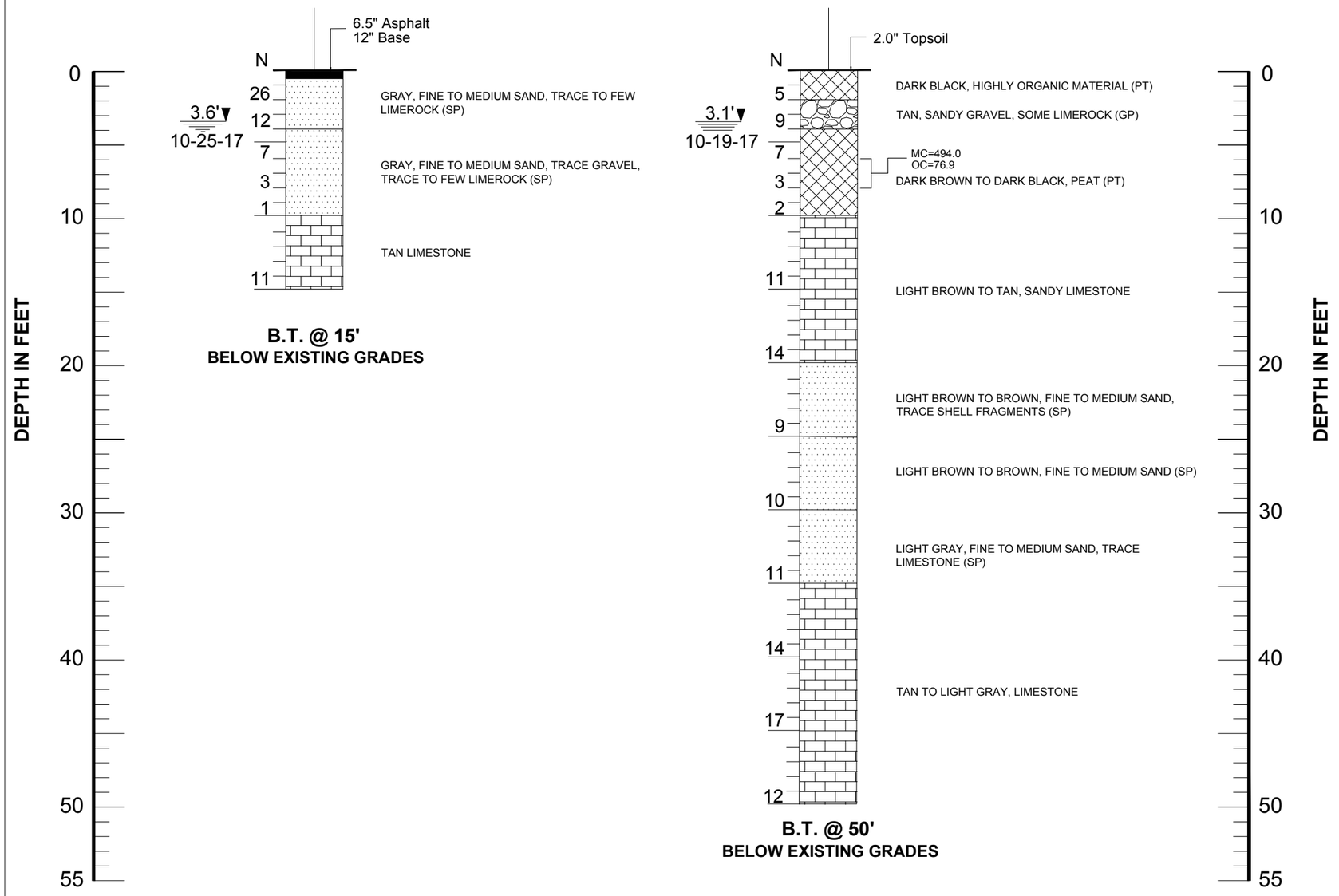
SHEET TITLE: SUBSURFACE PROFILES (RIVER OAKS)

PROJECT NAME: STORMWATER MASTER PLAN MODELING AND DESIGN IMPLEMENTATION

SHEET NO. 7E

RADISE PROJECT NO: 170901

	S-1	S-2
BORING NO.	S-1	S-2
ELEVATION (NAVD 88):	N/A	N/A
LATITUDE:	26.1188°	26.1199°
LONGITUDE:	-80.1244°	-80.1208°
DATE:	10/25/2017	10/19/2017
DRILLER:	T. FICKLING	T. FICKLING
RIG:	CME 45	CME 45



LEGEND

- ASPHALT AND BASE
- SAND
- SILT
- LIMESTONE
- GRAVEL
- ORGANIC MATERIAL

1.5'▼ 09-21-17	GROUNDWATER DEPTH IN FEET AND DRILLING DATE
N	STANDARD PENETRATION RESISTANCE-BLOWS PER FOOT USING AUTOMATIC HAMMER
SP, SP-SM, GP, PT	UNIFIED SOIL CLASSIFICATION SYSTEM GROUP SYMBOL (ASTM D 2488)
S-1	STANDARD PENETRATION TEST (SPT) BORING AND NUMBER
MC	MOISTURE CONTENT (%)
-200	AMOUNT PASSING US STANDARD # 200 SIEVE
OC	ORGANIC CONTENTS (%)
LL	LIQUID LIMIT (%)
PI	PLASTICITY INDEX (%)
B.T. @ 50'	BORING TERMINATED AT 50 FEET BELOW THE EXISTING GROUND SURFACE

NOTES

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(4) LONGITUDE AND LATITUDE COORDINATES WERE MEASURED IN THE FIELD USING A HAND HELD GPS UNIT.

(5) ELEVATIONS WERE NOT AVAILABLE

(6) AFTER COMPLETION OF DRILLING BOREHOLES WERE BACK FILLED WITH GROUT.

STANDARD PENETRATION TEST DATA

SPOON INSIDE DIA.	1.375 INCH
SPOON OUTSIDE DIA.	2.0 INCHES
AVG. HAMMER DROP	30 INCHES
HAMMER WEIGHT	140 POUNDS

GRANULAR MATERIALS

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

REVISIONS

Date.	By	Descriptions	Date.	By	Descriptions

	Names	Dates
Drawn by	KA	11/06/17
Checked by	AB	11/06/17
Designed by		
Checked by		
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CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT

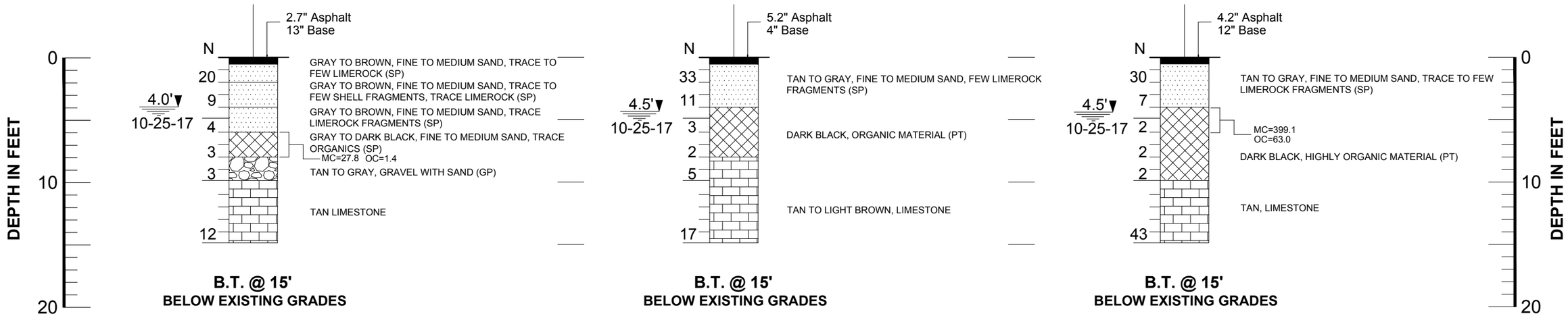
COUNTY	CLIENT
BROWARD	HAZEN AND SAWYER

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

SHEET TITLE: SUBSURFACE PROFILES (SOUTHEAST ISLES)
PROJECT NAME: STORMWATER MASTER PLAN MODELING AND DESIGN IMPLEMENTATION

SHEET NO. 8A
RADISE PROJECT NO: 170901

	S-3	S-4	S-5
BORING NO.	S-3	S-4	S-5
ELEVATION (NAVD 88):	N/A	N/A	N/A
LATITUDE:	26.1196°	26.1199°	26.1200°
LONGITUDE:	-80.1209°	-80.1169°	-80.1149°
DATE:	10/25/2017	10/25/2017	10/23/2017
DRILLER:	T. FICKLING	T. FICKLING	T. FICKLING
RIG:	CME 45	CME 45	CME 45



LEGEND

- ASPHALT AND BASE
- LIMESTONE
- SAND
- GRAVEL
- SILT
- ORGANIC MATERIAL
- 5.5' / 10-12-17 — GROUNDWATER DEPTH IN FEET AND DRILLING DATE
- N — STANDARD PENETRATION RESISTANCE- BLOWS PER FOOT USING AUTOMATIC HAMMER

SP, SP-SM, GP, PT	UNIFIED SOIL CLASSIFICATION SYSTEM GROUP SYMBOL (ASTM D 2488)
S-1	STANDARD PENETRATION TEST (SPT) BORING AND NUMBER
MC	MOISTURE CONTENT (%)
-200	AMOUNT PASSING US STANDARD # 200 SIEVE (%)
OC	ORGANIC CONTENTS (%)
LL	LIQUID LIMIT (%)
PI	PLASTICITY INDEX (%)
B.T. @ 15'	BORING TERMINATED AT 15 FEET BELOW THE EXISTING GROUND SURFACE

NOTES

(1) BORINGS WERE DRILLED ON SEPTEMBER AND OCTOBER, 2017 USING A CENTRAL MINING EQUIPMENT MODEL 45 (CME 45) AUTOMATIC HAMMER DRILL RIG.

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(3) GROUNDWATER LEVELS SHOWN ON THE SUBSURFACE PROFILES REPRESENT GROUNDWATER SURFACES ON THE DATES SHOWN. GROUNDWATER LEVELS WILL FLUCTUATE THROUGHOUT THE YEAR.

(4) LONGITUDE AND LATITUDE COORDINATES WERE MEASURED IN THE FIELD USING A HAND HELD GPS UNIT.

(5) ELEVATIONS WERE NOT AVAILABLE

(6) AFTER COMPLETION OF DRILLING BOREHOLES WERE BACK FILLED WITH GROUT.

GRANULAR MATERIALS

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

STANDARD PENETRATION TEST DATA

SPOON INSIDE DIA.	1.375 INCH
SPOON OUTSIDE DIA.	2.0 INCHES
AVG. HAMMER DROP	30 INCHES
HAMMER WEIGHT	140 POUNDS

REVISIONS

Date.	By	Descriptions	Date.	By	Descriptions

	Names	Dates
Drawn by	KA	11/06/17
Checked by	AB	11/06/17
Designed by		
Checked by		
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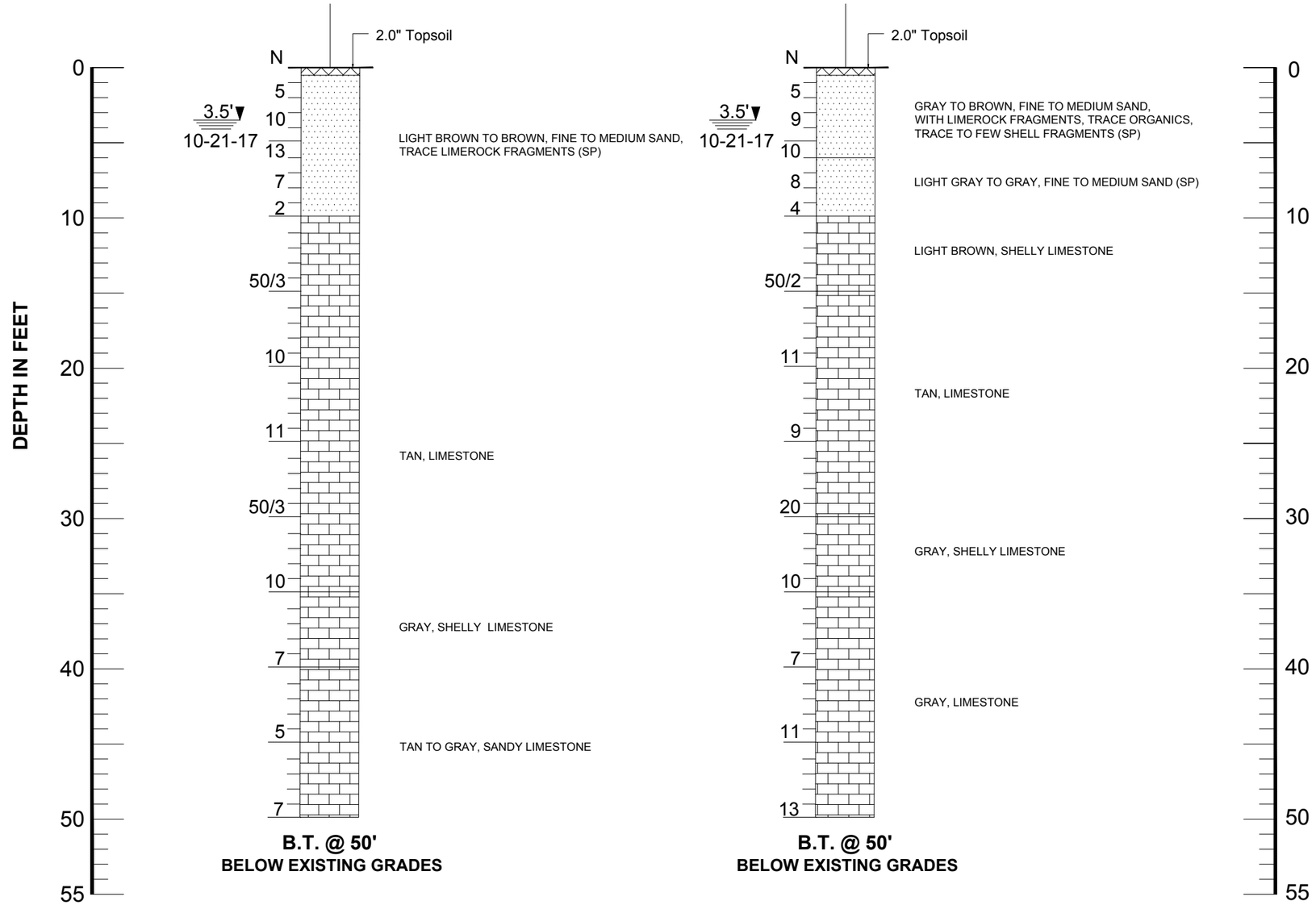
CITY OF FORT LAUDERDALE PUBLIC WORKS DEPARTMENT	
COUNTY	CLIENT
BROWARD	HAZEN AND SAWYER

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

SHEET TITLE: SUBSURFACE PROFILES (SOUTHEAST ISLES)
PROJECT NAME: STORMWATER MASTER PLAN MODELING AND DESIGN IMPLEMENTATION

SHEET NO. 8B
RADISE PROJECT NO: 170901

	S-6	S-7
BORING NO.	S-6	S-7
ELEVATION (NAVD 88):	N/A	N/A
LATITUDE:	26.1198°	26.1196°
LONGITUDE:	-80.1115°	-80.1114°
DATE:	10/21/2017	10/21/2017
DRILLER:	T. FICKLING	T. FICKLING
RIG:	CME 45	CME 45



LEGEND

- ASPHALT AND BASE
- SAND
- SILT
- LIMESTONE
- GRAVEL
- ORGANIC MATERIAL

1.5' ▼ 09-21-17	GROUNDWATER DEPTH IN FEET AND DRILLING DATE
N	STANDARD PENETRATION RESISTANCE- BLOWS PER FOOT USING AUTOMATIC HAMMER
SP, SP-SM, GP, PT	UNIFIED SOIL CLASSIFICATION SYSTEM GROUP SYMBOL (ASTM D 2488)
S-1	STANDARD PENETRATION TEST (SPT) BORING AND NUMBER
MC	MOISTURE CONTENT (%)
-200	AMOUNT PASSING US STANDARD # 200 SIEVE
OC	ORGANIC CONTENTS (%)
LL	LIQUID LIMIT (%)
PI	PLASTICITY INDEX (%)
B.T. @ 50'	BORING TERMINATED AT 50 FEET BELOW THE EXISTING GROUND SURFACE

NOTES

(1) BORINGS WERE DRILLED ON SEPTEMBER AND OCTOBER, 2017 USING A CENTRAL MINING EQUIPMENT MODEL 45 (CME 45) AUTOMATIC HAMMER DRILL RIG.

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(4) LONGITUDE AND LATITUDE COORDINATES WERE MEASURED IN THE FIELD USING A HAND HELD GPS UNIT.

(5) ELEVATIONS WERE NOT AVAILABLE

(6) AFTER COMPLETION OF DRILLING BOREHOLES WERE BACK FILLED WITH GROUT.

STANDARD PENETRATION TEST DATA

SPOON INSIDE DIA.	1.375 INCH
SPOON OUTSIDE DIA.	2.0 INCHES
AVG. HAMMER DROP	30 INCHES
HAMMER WEIGHT	140 POUNDS

GRANULAR MATERIALS

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

REVISIONS

Date.	By	Descriptions	Date.	By	Descriptions

	Names	Dates
Drawn by	ML	10/13/17
Checked by	AB	10/13/17
Designed by		
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CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT

COUNTY	CLIENT
BROWARD	HAZEN AND SAWYER

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

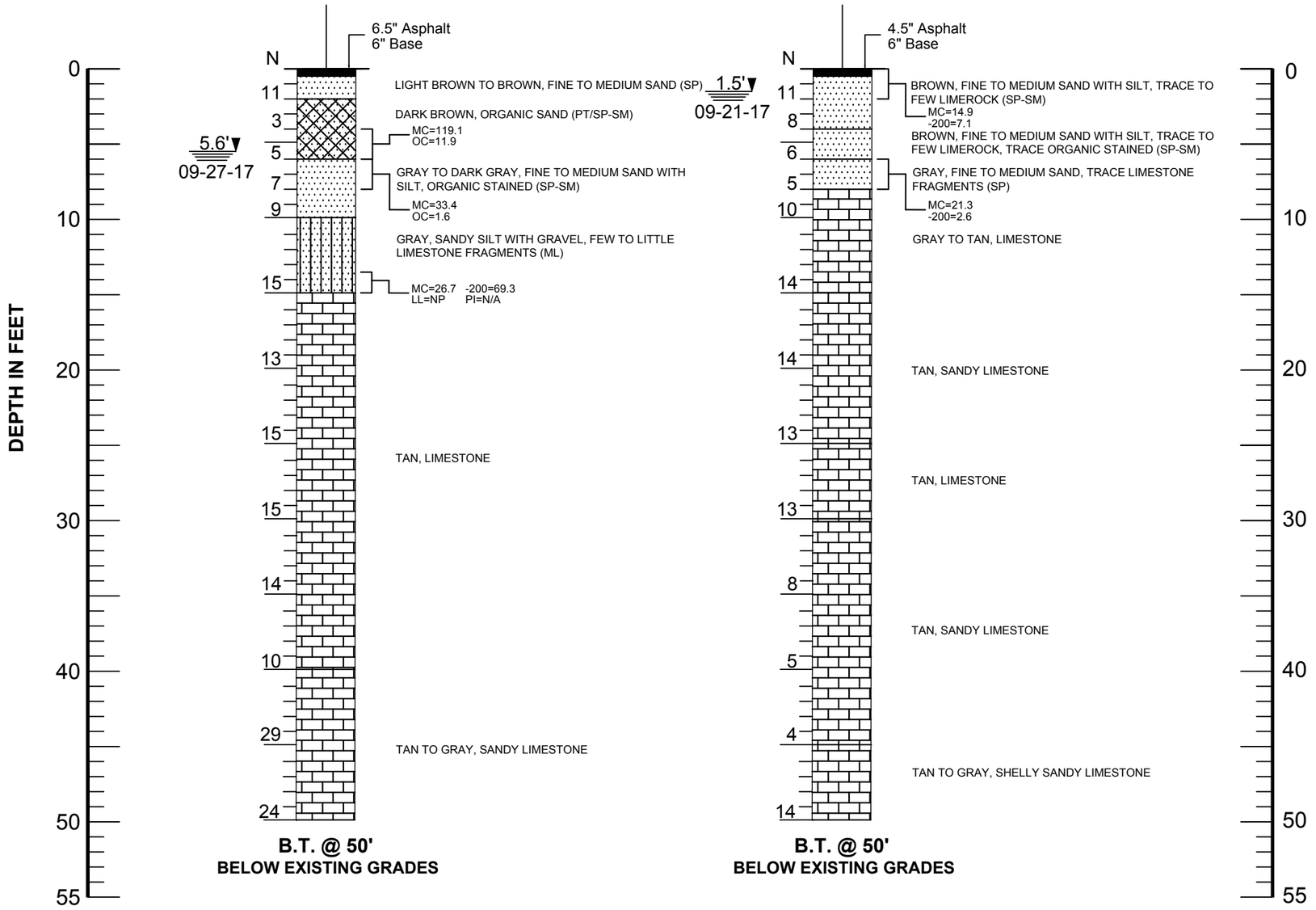
SHEET TITLE: SUBSURFACE PROFILES (SOUTHEAST ISLES)

PROJECT NAME: STORMWATER MASTER PLAN MODELING AND DESIGN IMPLEMENTATION

SHEET NO. 8C

RADISE PROJECT NO: 170901

	S-8	S-9
BORING NO.		
ELEVATION (NAVD 88):	N/A	N/A
LATITUDE:	26.1171°	26.1178°
LONGITUDE:	-80.1129°	-80.1163°
DATE:	09/27/2017	09/21/2017
DRILLER:	T. FICKLING	T. FICKLING
RIG:	CME 45	CME 45



LEGEND

- ASPHALT AND BASE
- SAND
- SILT
- LIMESTONE
- GRAVEL
- ORGANIC MATERIAL

1.5' ▼ 09-21-17	GROUNDWATER DEPTH IN FEET AND DRILLING DATE
N	STANDARD PENETRATION RESISTANCE- BLOWS PER FOOT USING AUTOMATIC HAMMER
SP, SP-SM, GP, PT	UNIFIED SOIL CLASSIFICATION SYSTEM GROUP SYMBOL (ASTM D 2488)
S-1	STANDARD PENETRATION TEST (SPT) BORING AND NUMBER
MC	MOISTURE CONTENT (%)
-200	AMOUNT PASSING US STANDARD # 200 SIEVE
OC	ORGANIC CONTENTS (%)
LL	LIQUID LIMIT (%)
PI	PLASTICITY INDEX (%)
B.T. @ 50'	BORING TERMINATED AT 50 FEET BELOW THE EXISTING GROUND SURFACE

NOTES

(1) BORINGS WERE DRILLED ON SEPTEMBER AND OCTOBER, 2017 USING A CENTRAL MINING EQUIPMENT MODEL 45 (CME 45) AUTOMATIC HAMMER DRILL RIG.

(2) STRATA BOUNDARIES ARE APPROXIMATE AND REPRESENT SOIL AND REPRESENT SOIL STRATA AT EACH TEST HOLE LOCATION ONLY. SOIL TRANSITIONS MAY BE MORE GRADUAL THAN IMPLIED.

(3) GROUNDWATER LEVELS SHOWN ON THE SUBSURFACE PROFILES REPRESENT GROUNDWATER SURFACES ON THE DATES SHOWN. GROUNDWATER LEVELS WILL FLUCTUATE THROUGHOUT THE YEAR.

(4) LONGITUDE AND LATITUDE COORDINATES WERE MEASURED IN THE FIELD USING A HAND HELD GPS UNIT.

(5) ELEVATIONS WERE NOT AVAILABLE

(6) AFTER COMPLETION OF DRILLING BOREHOLES WERE BACK FILLED WITH GROUT.

STANDARD PENETRATION TEST DATA

SPOON INSIDE DIA.	1.375 INCH
SPOON OUTSIDE DIA.	2.0 INCHES
AVG. HAMMER DROP	30 INCHES
HAMMER WEIGHT	140 POUNDS

GRANULAR MATERIALS

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

REVISIONS							Names	Dates
Date.	By	Descriptions	Date.	By	Descriptions	Drawn by	ML	10/13/17
						Checked by	AB	10/13/17
						Designed by		
						Checked by		
						Approved by		

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TEL 561-841-0103 FAX 561-841-0104
URL : http:// www.radise.net

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT

COUNTY	CLIENT
BROWARD	HAZEN AND SAWYER

SCALE: VERTICAL N.T.S.

SCALE: HORIZONTAL N.T.S.

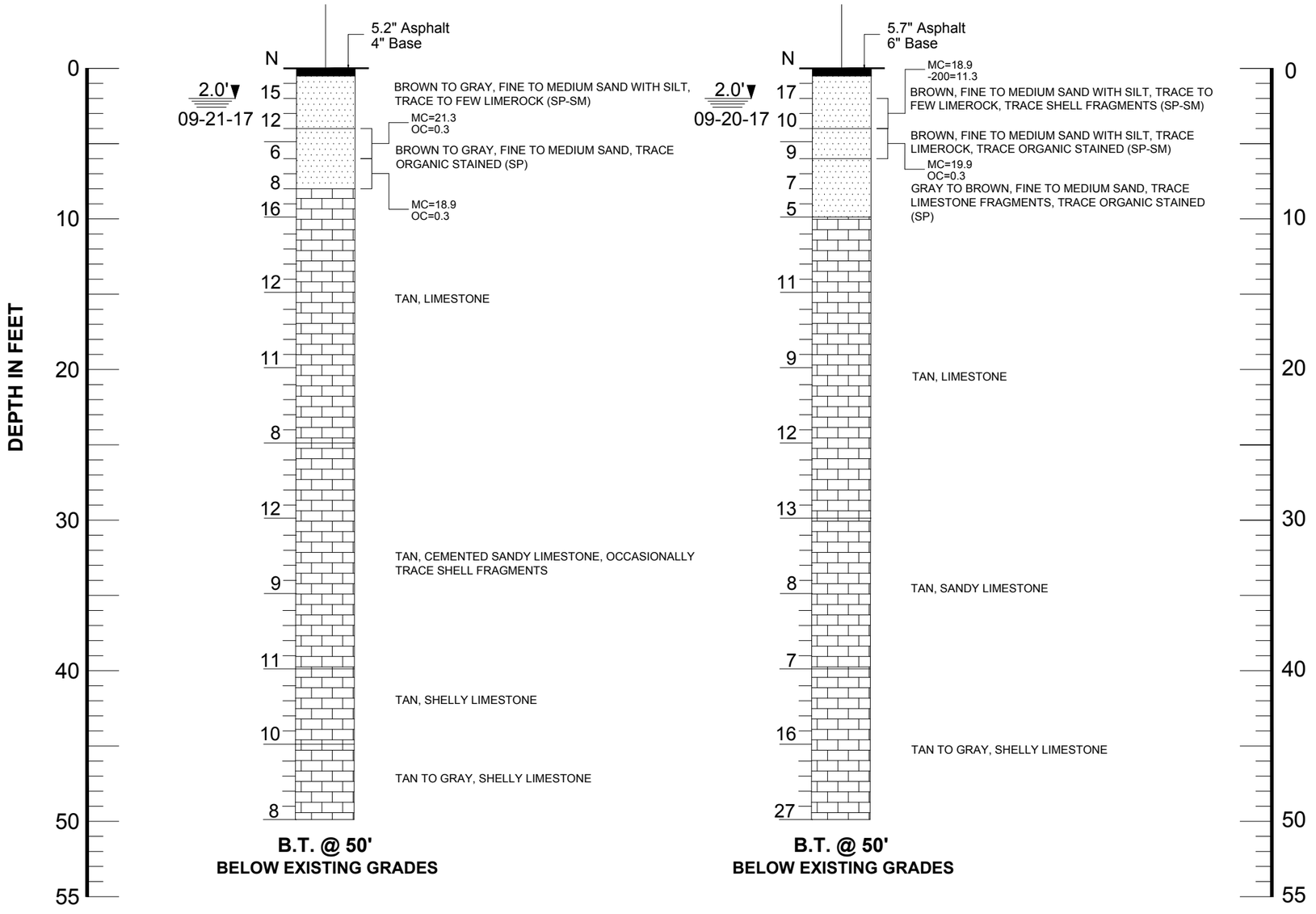
SHEET TITLE: SUBSURFACE PROFILES (SEAWALLS)

PROJECT NAME: STORMWATER MASTER PLAN MODELING AND DESIGN IMPLEMENTATION

SHEET NO. 9A

RADISE PROJECT NO: 170901

	S-10	S-11
BORING NO.		
ELEVATION (NAVD 88):	N/A	N/A
LATITUDE:	26.1184°	26.1190°
LONGITUDE:	-80.1163°	-80.1163°
DATE:	09/21/2017	09/20/2017
DRILLER:	T. FICKLING	T. FICKLING
RIG:	CME 45	CME 45



LEGEND

- ASPHALT AND BASE
- SAND
- SILT
- LIMESTONE
- GRAVEL
- ORGANIC MATERIAL

1.5'▼ 09-21-17	GROUNDWATER DEPTH IN FEET AND DRILLING DATE
N	STANDARD PENETRATION RESISTANCE- BLOWS PER FOOT USING AUTOMATIC HAMMER
SP, SP-SM, GP, PT	UNIFIED SOIL CLASSIFICATION SYSTEM GROUP SYMBOL (ASTM D 2488)
S-1	STANDARD PENETRATION TEST (SPT) BORING AND NUMBER
MC	MOISTURE CONTENT (%)
-200	AMOUNT PASSING US STANDARD # 200 SIEVE
OC	ORGANIC CONTENTS (%)
LL	LIQUID LIMIT (%)
PI	PLASTICITY INDEX (%)
B.T. @ 50'	BORING TERMINATED AT 50 FEET BELOW THE EXISTING GROUND SURFACE

NOTES

(1) BORINGS WERE DRILLED ON SEPTEMBER AND OCTOBER, 2017 USING A CENTRAL MINING EQUIPMENT MODEL 45 (CME 45) AUTOMATIC HAMMER DRILL RIG.

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STANDARD PENETRATION TEST DATA

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SPOON OUTSIDE DIA.	2.0 INCHES
AVG. HAMMER DROP	30 INCHES
HAMMER WEIGHT	140 POUNDS

GRANULAR MATERIALS

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

REVISIONS							Names	Dates
Date.	By	Descriptions	Date.	By	Descriptions	Drawn by	ML	10/13/17
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						Designed by		
						Checked by		
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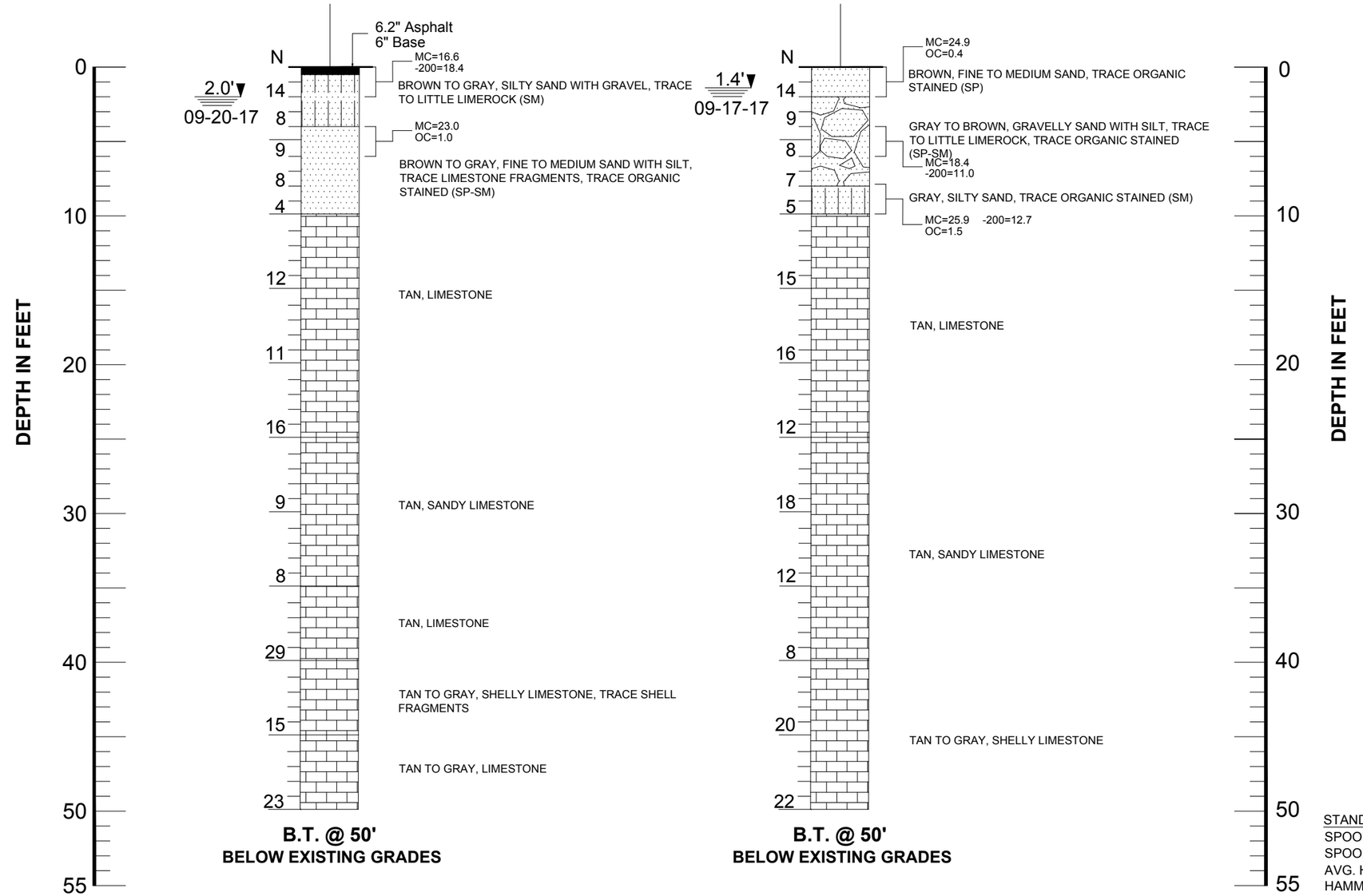
CITY OF FORT LAUDERDALE PUBLIC WORKS DEPARTMENT		SCALE: VERTICAL N.T.S.	SHEET TITLE: SUBSURFACE PROFILES (SEAWALLS)	SHEET NO. 9B
COUNTY: BROWARD	CLIENT: HAZEN AND SAWYER	SCALE: HORIZONTAL N.T.S.	PROJECT NAME: STORMWATER MASTER PLAN MODELING AND DESIGN IMPLEMENTATION	RADISE PROJECT NO: 170901

	S-12	S-13
BORING NO.	S-12	S-13
ELEVATION (NAVD 88):	N/A	N/A
LATITUDE:	26.1196°	26.1199°
LONGITUDE:	-80.1163°	-80.1179°
DATE:	09/20/2017	09/17/2017
DRILLER:	T. FICKLING	T. FICKLING
RIG:	CME 45	CME 45



LEGEND

ASPHALT AND BASE	LIMESTONE
SAND	GRAVEL
SILT	ORGANIC MATERIAL

1.5'▼ 09-21-17	GROUNDWATER DEPTH IN FEET AND DRILLING DATE
N	STANDARD PENETRATION RESISTANCE-BLOWS PER FOOT USING AUTOMATIC HAMMER
SP, SP-SM, GP, PT	UNIFIED SOIL CLASSIFICATION SYSTEM GROUP SYMBOL (ASTM D 2488)
S-1	STANDARD PENETRATION TEST (SPT) BORING AND NUMBER
MC	MOISTURE CONTENT (%)
-200	AMOUNT PASSING US STANDARD # 200 SIEVE
OC	ORGANIC CONTENTS (%)
LL	LIQUID LIMIT (%)
PI	PLASTICITY INDEX (%)
B.T. @ 50'	BORING TERMINATED AT 50 FEET BELOW THE EXISTING GROUND SURFACE

NOTES

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SPOON OUTSIDE DIA.	2.0 INCHES
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HAMMER WEIGHT	140 POUNDS

GRANULAR MATERIALS

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

REVISIONS

Date.	By	Descriptions	Date.	By	Descriptions

	Names	Dates
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CITY OF FORT LAUDERDALE PUBLIC WORKS DEPARTMENT	
COUNTY	CLIENT
BROWARD	HAZEN AND SAWYER

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

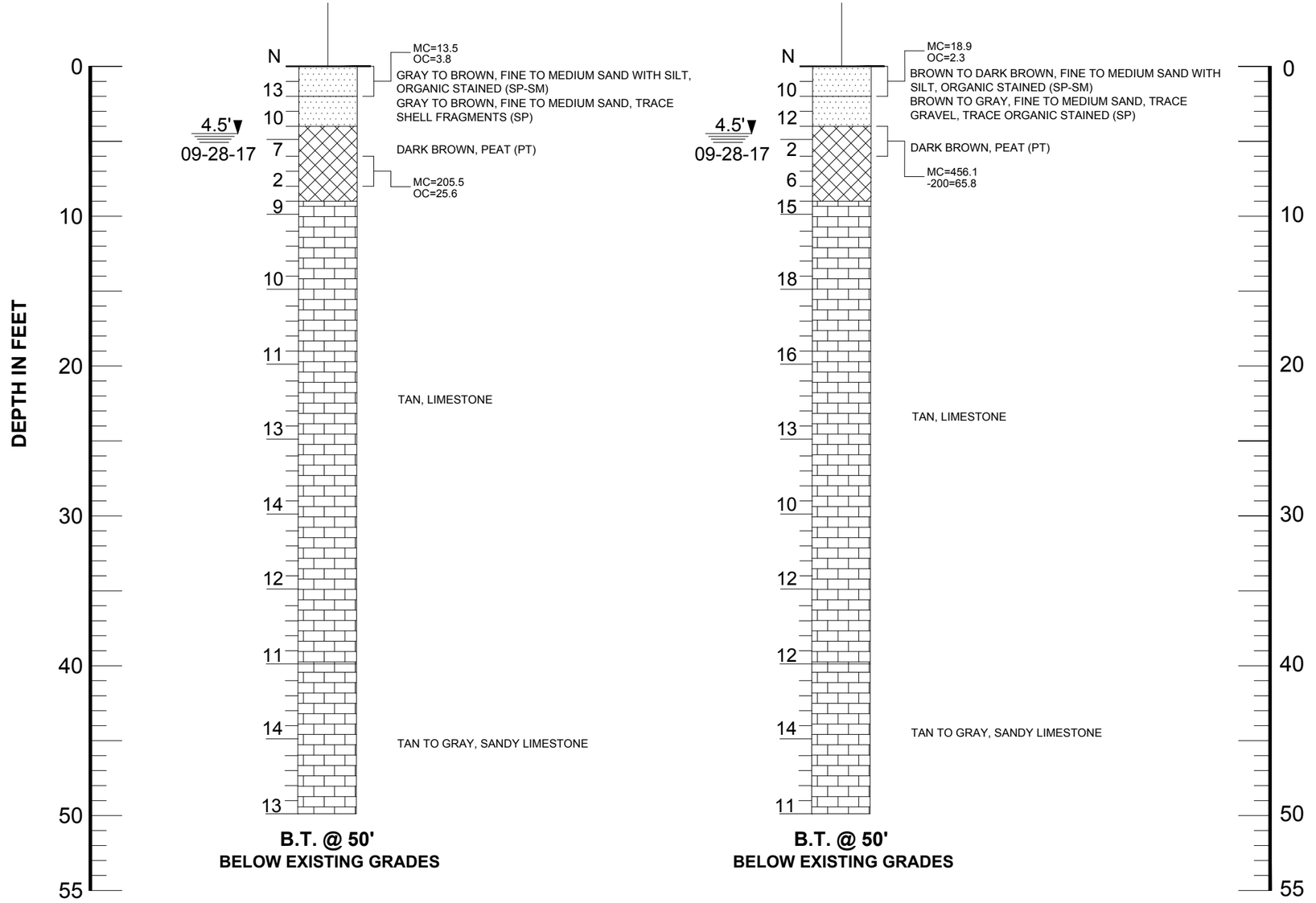
SHEET TITLE: SUBSURFACE PROFILES (SEAWALLS)

PROJECT NAME: STORMWATER MASTER PLAN MODELING AND DESIGN IMPLEMENTATION

SHEET NO. 9C

RADISE PROJECT NO: 170901

	S-14	S-15
BORING NO.	S-14	S-15
ELEVATION (NAVD 88):	N/A	N/A
LATITUDE:	26.1198°	26.1198°
LONGITUDE:	-80.1189°	-80.1200°
DATE:	09/28/2017	09/28/2017
DRILLER:	T. FICKLING	T. FICKLING
RIG:	CME 45	CME 45



LEGEND

ASPHALT AND BASE	LIMESTONE
SAND	GRAVEL
SILT	ORGANIC MATERIAL

1.5'▼ 09-21-17	GROUNDWATER DEPTH IN FEET AND DRILLING DATE
N	STANDARD PENETRATION RESISTANCE- BLOWS PER FOOT USING AUTOMATIC HAMMER
SP, SP-SM, GP, PT	UNIFIED SOIL CLASSIFICATION SYSTEM GROUP SYMBOL (ASTM D 2488)
S-1	STANDARD PENETRATION TEST (SPT) BORING AND NUMBER
MC	MOISTURE CONTENT (%)
-200	AMOUNT PASSING US STANDARD # 200 SIEVE
OC	ORGANIC CONTENTS (%)
LL	LIQUID LIMIT (%)
PI	PLASTICITY INDEX (%)
B.T. @ 50'	BORING TERMINATED AT 50 FEET BELOW THE EXISTING GROUND SURFACE

NOTES

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GRANULAR MATERIALS

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

REVISIONS							Names	Dates
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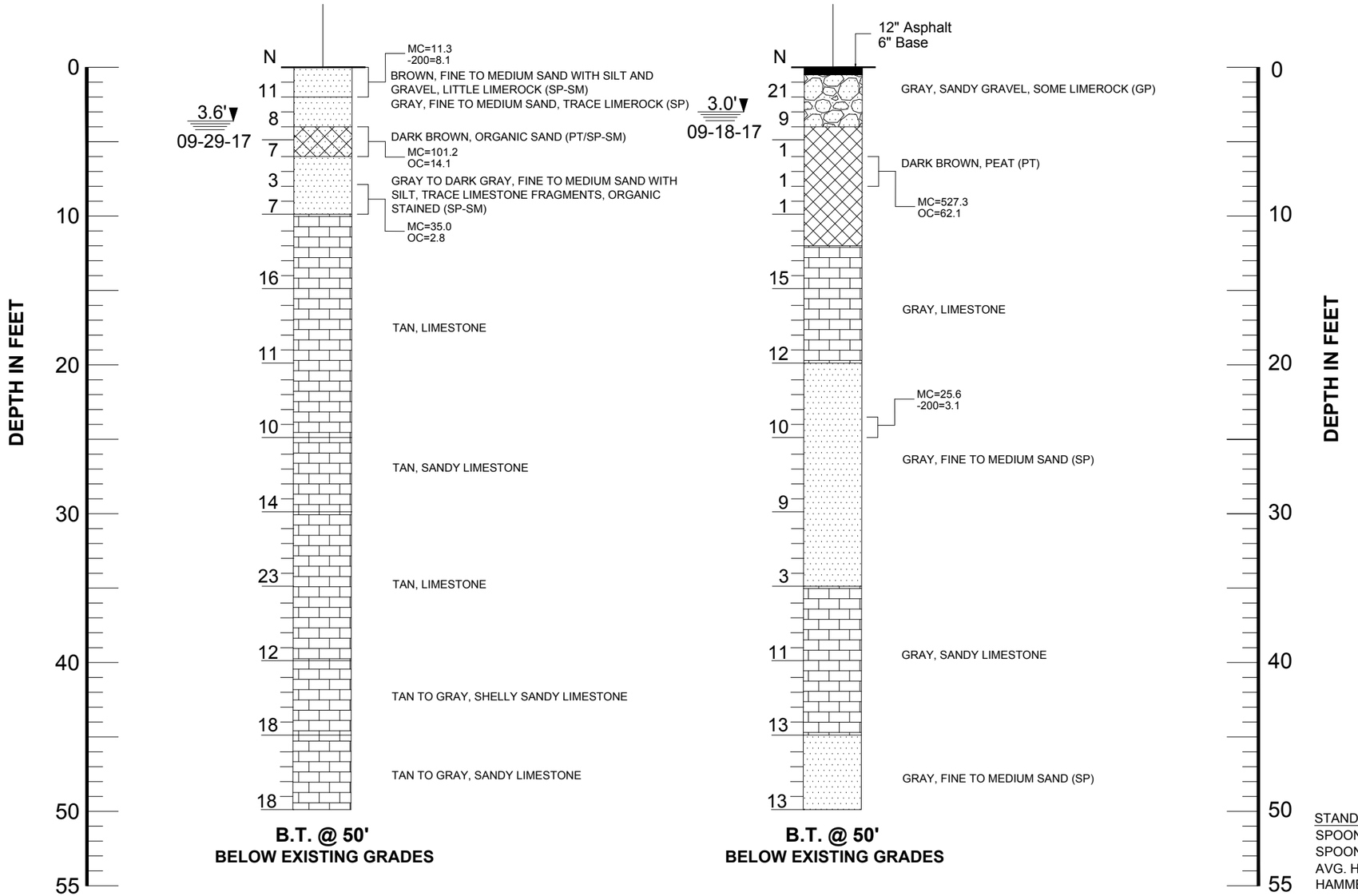
CITY OF FORT LAUDERDALE PUBLIC WORKS DEPARTMENT		SCALE: VERTICAL	SHEET TITLE: SUBSURFACE PROFILES (SEAWALLS)	SHEET NO.
COUNTY	CLIENT	N.T.S.		9D
BROWARD	HAZEN AND SAWYER	SCALE: HORIZONTAL N.T.S.	PROJECT NAME: STORMWATER MASTER PLAN MODELING AND DESIGN IMPLEMENTATION	RADISE PROJECT NO: 170901

	S-16	S-17
BORING NO.		
ELEVATION (NAVD 88):	N/A	N/A
LATITUDE:	26.1172°	26.1140°
LONGITUDE:	-80.1252°	-80.1270°
DATE:	09/29/2017	09/18/2017
DRILLER:	T. FICKLING	T. FICKLING
RIG:	CME 45	CME 45



LEGEND

- ASPHALT AND BASE
- SAND
- SILT
- LIMESTONE
- GRAVEL
- ORGANIC MATERIAL

1.5'▼ 09-21-17	GROUNDWATER DEPTH IN FEET AND DRILLING DATE
N	STANDARD PENETRATION RESISTANCE- BLOWS PER FOOT USING AUTOMATIC HAMMER
SP, SP-SM, GP, PT	UNIFIED SOIL CLASSIFICATION SYSTEM GROUP SYMBOL (ASTM D 2488)
S-1	STANDARD PENETRATION TEST (SPT) BORING AND NUMBER
MC	MOISTURE CONTENT (%)
-200	AMOUNT PASSING US STANDARD # 200 SIEVE
OC	ORGANIC CONTENTS (%)
LL	LIQUID LIMIT (%)
PI	PLASTICITY INDEX (%)
B.T. @ 50'	BORING TERMINATED AT 50 FEET BELOW THE EXISTING GROUND SURFACE

NOTES

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SPOON OUTSIDE DIA.	2.0 INCHES
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HAMMER WEIGHT	140 POUNDS

GRANULAR MATERIALS

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VERY LOOSE	LESS THAN 3
LOOSE	3 - 8
MEDIUM	8 - 24
DENSE	24 - 40
VERY DENSE	GREATER THAN 40

REVISIONS

Date.	By	Descriptions	Date.	By	Descriptions

	Names	Dates
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COUNTY	CLIENT
BROWARD	HAZEN AND SAWYER

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

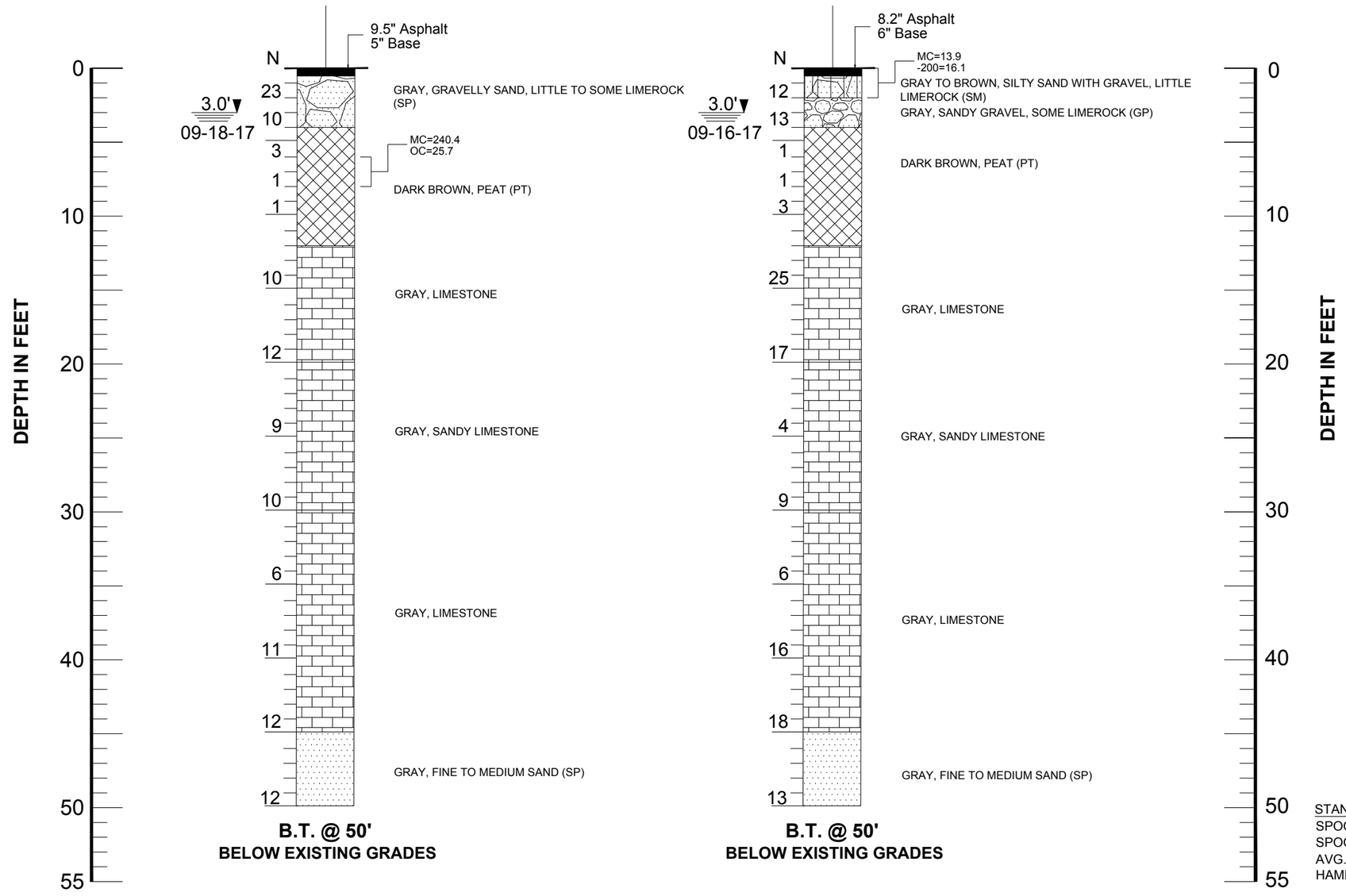
SHEET TITLE: SUBSURFACE PROFILES (SEAWALLS)

PROJECT NAME: STORMWATER MASTER PLAN MODELING AND DESIGN IMPLEMENTATION

SHEET NO. 9E

RADISE PROJECT NO: 170901

	S-18	S-19
BORING NO.	S-18	S-19
ELEVATION (NAVD 88):	N/A	N/A
LATITUDE:	26.1129°	26.1123°
LONGITUDE:	-80.1272°	-80.1274°
DATE:	09/18/2017	09/16/2017
DRILLER:	T. FICKLING	T. FICKLING
RIG:	CME 45	CME 45



LEGEND

- ASPHALT AND BASE
- SAND
- SILT
- LIMESTONE
- GRAVEL
- ORGANIC MATERIAL

1.5'▼ 09-21-17	GROUNDWATER DEPTH IN FEET AND DRILLING DATE
N	STANDARD PENETRATION RESISTANCE- BLOWS PER FOOT USING AUTOMATIC HAMMER
SP, SP-SM, GP, PT	UNIFIED SOIL CLASSIFICATION SYSTEM GROUP SYMBOL (ASTM D 2488)
S-1	STANDARD PENETRATION TEST (SPT) BORING AND NUMBER
MC	MOISTURE CONTENT (%)
-200	AMOUNT PASSING US STANDARD # 200 SIEVE
OC	ORGANIC CONTENTS (%)
LL	LIQUID LIMIT (%)
PI	PLASTICITY INDEX (%)
B.T. @ 50'	BORING TERMINATED AT 50 FEET BELOW THE EXISTING GROUND SURFACE

NOTES

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GRANULAR MATERIALS

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VERY LOOSE	LESS THAN 3
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DENSE	24 - 40
VERY DENSE	GREATER THAN 40

REVISIONS

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	Names	Dates
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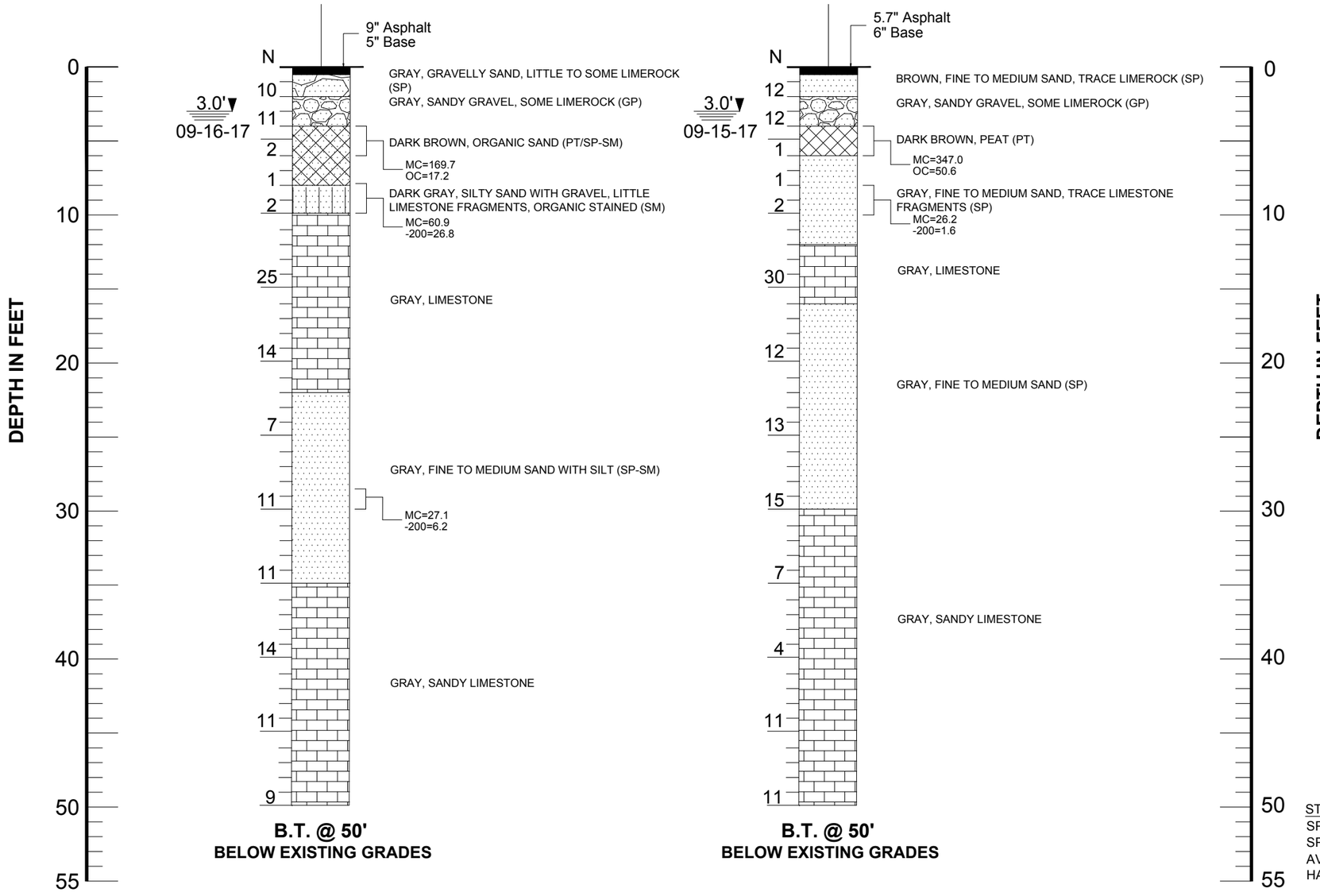
COUNTY	CLIENT
BROWARD	HAZEN AND SAWYER

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

SHEET TITLE: SUBSURFACE PROFILES (SEAWALLS)
PROJECT NAME: STORMWATER MASTER PLAN MODELING AND DESIGN IMPLEMENTATION

SHEET NO. 9F
RADISE PROJECT NO: 170901

	S-20	S-21
BORING NO.	S-20	S-21
ELEVATION (NAVD 88):	N/A	N/A
LATITUDE:	26.1117°	26.1110°
LONGITUDE:	-80.1275°	-80.1280°
DATE:	09/16/2017	09/15/2017
DRILLER:	T. FICKLING	T. FICKLING
RIG:	CME 45	CME 45



LEGEND

ASPHALT AND BASE	LIMESTONE
SAND	GRAVEL
SILT	ORGANIC MATERIAL

1.5'▼ 09-21-17	GROUNDWATER DEPTH IN FEET AND DRILLING DATE
N	STANDARD PENETRATION RESISTANCE-BLOWS PER FOOT USING AUTOMATIC HAMMER
SP, SP-SM, GP, PT	UNIFIED SOIL CLASSIFICATION SYSTEM GROUP SYMBOL (ASTM D 2488)
S-1	STANDARD PENETRATION TEST (SPT) BORING AND NUMBER
MC	MOISTURE CONTENT (%)
-200	AMOUNT PASSING US STANDARD # 200 SIEVE
OC	ORGANIC CONTENTS (%)
LL	LIQUID LIMIT (%)
PI	PLASTICITY INDEX (%)
B.T. @ 50'	BORING TERMINATED AT 50 FEET BELOW THE EXISTING GROUND SURFACE

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LOOSE	3 - 8
MEDIUM	8 - 24
DENSE	24 - 40
VERY DENSE	GREATER THAN 40

REVISIONS

Date.	By	Descriptions	Date.	By	Descriptions

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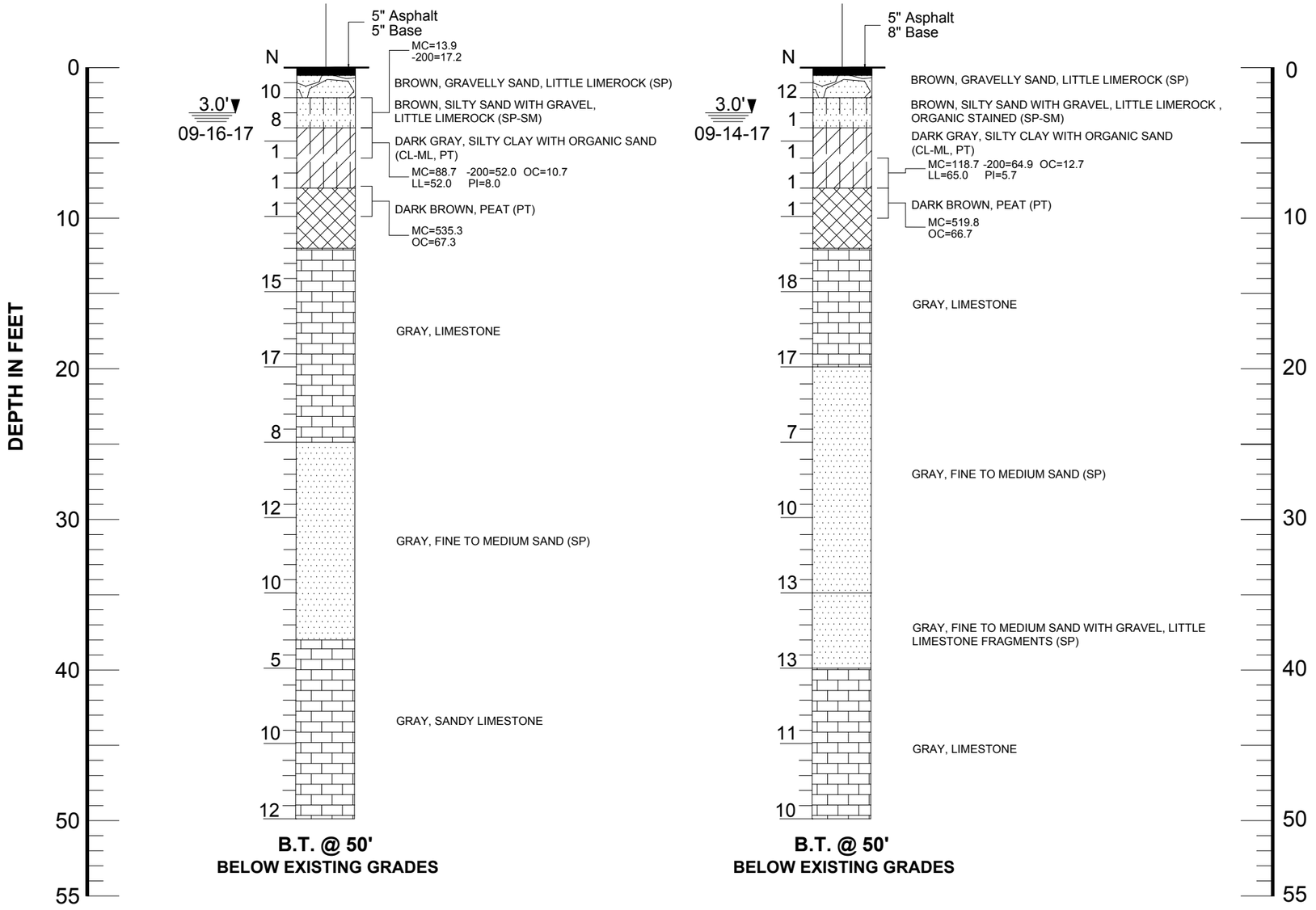
COUNTY	CLIENT
BROWARD	HAZEN AND SAWYER

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

SHEET TITLE: SUBSURFACE PROFILES (SEAWALLS)
PROJECT NAME: STORMWATER MASTER PLAN MODELING AND DESIGN IMPLEMENTATION

SHEET NO. 9G
RADISE PROJECT NO: 170901

	S-22	S-23
BORING NO.	S-22	S-23
ELEVATION (NAVD 88):	N/A	N/A
LATITUDE:	26.1097°	26.1086°
LONGITUDE:	-80.1282°	-80.1282°
DATE:	09/16/2017	09/14/2017
DRILLER:	T. FICKLING	T. FICKLING
RIG:	CME 45	CME 45



LEGEND

ASPHALT AND BASE	LIMESTONE
SAND	GRAVEL
SILT	ORGANIC MATERIAL

1.5'▼ 09-21-17	GROUNDWATER DEPTH IN FEET AND DRILLING DATE
N	STANDARD PENETRATION RESISTANCE- BLOWS PER FOOT USING AUTOMATIC HAMMER
SP, SP-SM, GP, PT	UNIFIED SOIL CLASSIFICATION SYSTEM GROUP SYMBOL (ASTM D 2488)
S-1	STANDARD PENETRATION TEST (SPT) BORING AND NUMBER
MC	MOISTURE CONTENT (%)
-200	AMOUNT PASSING US STANDARD # 200 SIEVE
OC	ORGANIC CONTENTS (%)
LL	LIQUID LIMIT (%)
PI	PLASTICITY INDEX (%)
B.T. @ 50'	BORING TERMINATED AT 50 FEET BELOW THE EXISTING GROUND SURFACE

NOTES

(1) BORINGS WERE DRILLED ON SEPTEMBER AND OCTOBER, 2017 USING A CENTRAL MINING EQUIPMENT MODEL 45 (CME 45) AUTOMATIC HAMMER DRILL RIG.

(2) STRATA BOUNDARIES ARE APPROXIMATE AND REPRESENT SOIL AND REPRESENT SOIL STRATA AT EACH TEST HOLE LOCATION ONLY. SOIL TRANSITIONS MAY BE MORE GRADUAL THAN IMPLIED.

(3) GROUNDWATER LEVELS SHOWN ON THE SUBSURFACE PROFILES REPRESENT GROUNDWATER SURFACES ON THE DATES SHOWN. GROUNDWATER LEVELS WILL FLUCTUATE THROUGHOUT THE YEAR.

(4) LONGITUDE AND LATITUDE COORDINATES WERE MEASURED IN THE FIELD USING A HAND HELD GPS UNIT.

(5) ELEVATIONS WERE NOT AVAILABLE

(6) AFTER COMPLETION OF DRILLING BOREHOLES WERE BACK FILLED WITH GROUT.

STANDARD PENETRATION TEST DATA

SPOON INSIDE DIA.	1.375 INCH
SPOON OUTSIDE DIA.	2.0 INCHES
AVG. HAMMER DROP	30 INCHES
HAMMER WEIGHT	140 POUNDS

GRANULAR MATERIALS

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

REVISIONS						Names	Dates
Date.	By	Descriptions	Date.	By	Descriptions	Drawn by: ML	10/13/17
						Checked by: AB	10/13/17
						Designed by:	
						Checked by:	
						Approved by:	

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CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT

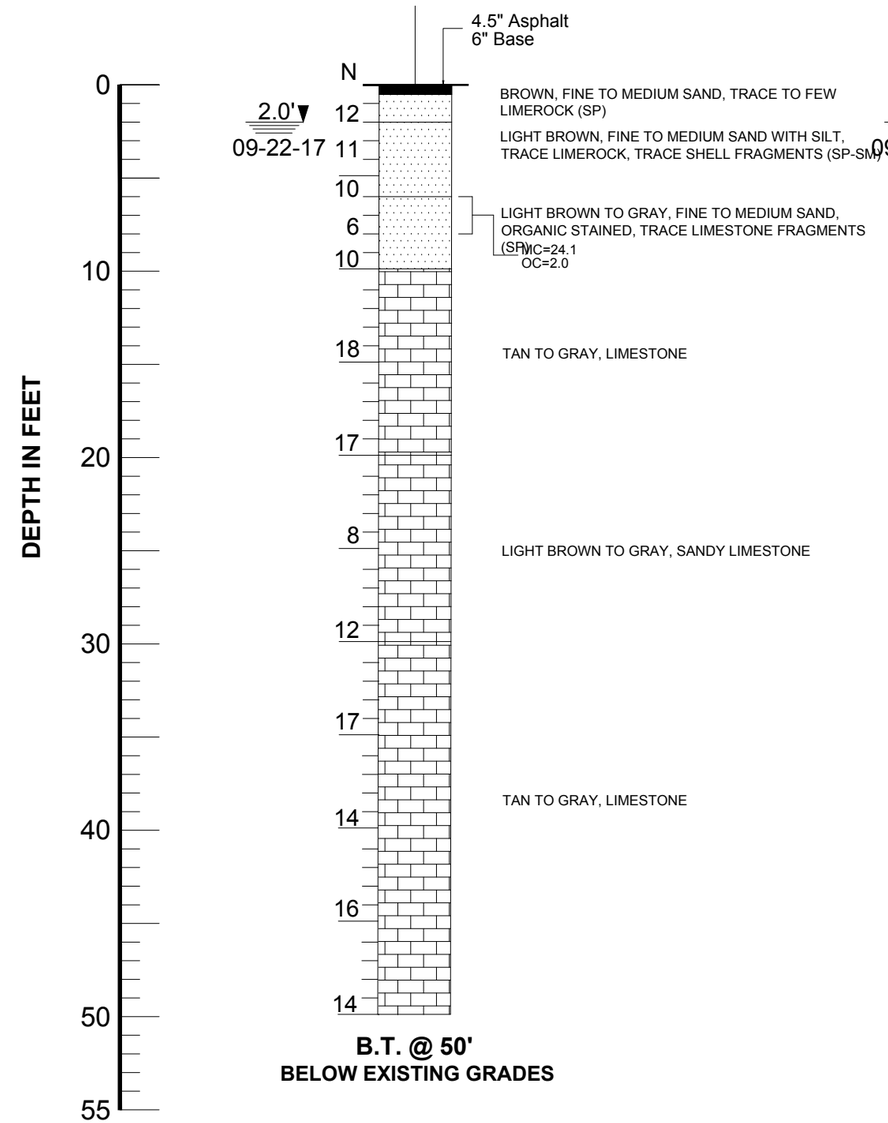
COUNTY	CLIENT
BROWARD	HAZEN AND SAWYER

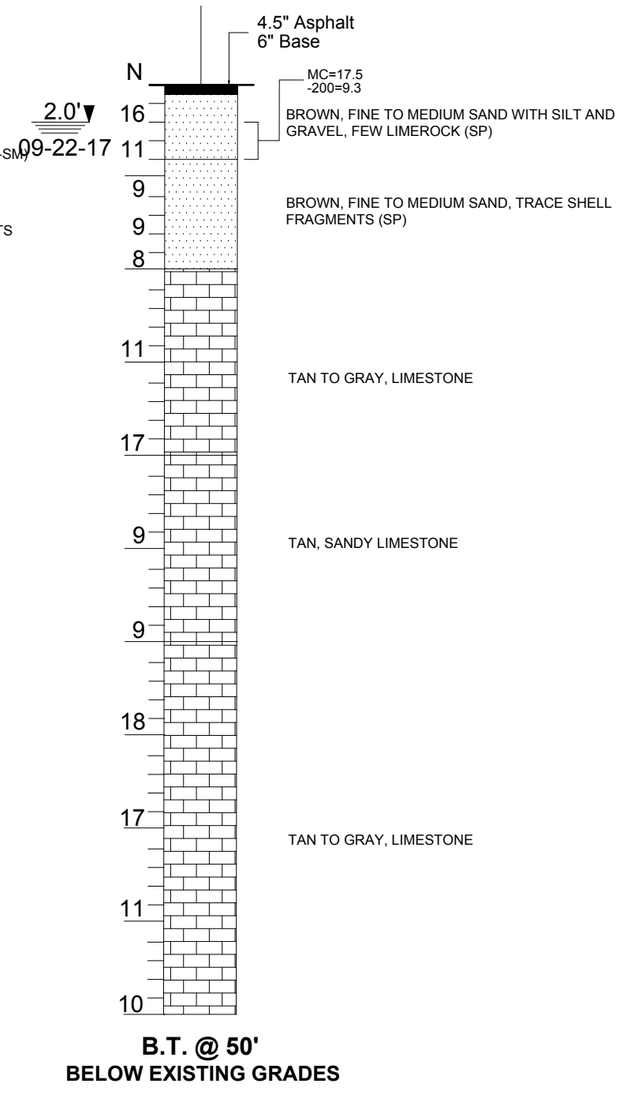
SCALE: VERTICAL N.T.S.
SCALE: HORIZONTAL N.T.S.

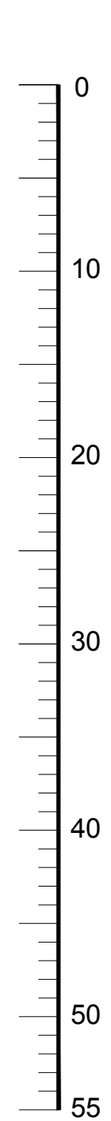
SHEET TITLE: SUBSURFACE PROFILES (SEAWALLS)
PROJECT NAME: STORMWATER MASTER PLAN MODELING AND DESIGN IMPLEMENTATION

SHEET NO. 9H
RADISE PROJECT NO: 170901

	S-24	S-25
BORING NO.		
ELEVATION (NAVD 88):	N/A	N/A
LATITUDE:	26.1123°	26.1123°
LONGITUDE:	-80.1243°	-80.1235°
DATE:	09/22/2017	09/22/2017
DRILLER:	T. FICKLING	T. FICKLING
RIG:	CME 45	CME 45







LEGEND

ASPHALT AND BASE	LIMESTONE
SAND	GRAVEL
SILT	ORGANIC MATERIAL

1.5'▼ 09-21-17	GROUNDWATER DEPTH IN FEET AND DRILLING DATE
N	STANDARD PENETRATION RESISTANCE- BLOWS PER FOOT USING AUTOMATIC HAMMER
SP, SP-SM, GP, PT	UNIFIED SOIL CLASSIFICATION SYSTEM GROUP SYMBOL (ASTM D 2488)
S-1	STANDARD PENETRATION TEST (SPT) BORING AND NUMBER
MC	MOISTURE CONTENT (%)
-200	AMOUNT PASSING US STANDARD # 200 SIEVE
OC	ORGANIC CONTENTS (%)
LL	LIQUID LIMIT (%)
PI	PLASTICITY INDEX (%)
B.T. @ 50'	BORING TERMINATED AT 50 FEET BELOW THE EXISTING GROUND SURFACE

NOTES

(1) BORINGS WERE DRILLED ON SEPTEMBER AND OCTOBER, 2017 USING A CENTRAL MINING EQUIPMENT MODEL 45 (CME 45) AUTOMATIC HAMMER DRILL RIG.

(2) STRATA BOUNDARIES ARE APPROXIMATE AND REPRESENT SOIL AND REPRESENT SOIL STRATA AT EACH TEST HOLE LOCATION ONLY. SOIL TRANSITIONS MAY BE MORE GRADUAL THAN IMPLIED.

(3) GROUNDWATER LEVELS SHOWN ON THE SUBSURFACE PROFILES REPRESENT GROUNDWATER SURFACES ON THE DATES SHOWN. GROUNDWATER LEVELS WILL FLUCTUATE THROUGHOUT THE YEAR.

(4) LONGITUDE AND LATITUDE COORDINATES WERE MEASURED IN THE FIELD USING A HAND HELD GPS UNIT.

(5) ELEVATIONS WERE NOT AVAILABLE

(6) AFTER COMPLETION OF DRILLING BOREHOLES WERE BACK FILLED WITH GROUT.

STANDARD PENETRATION TEST DATA

SPOON INSIDE DIA.	1.375 INCH
SPOON OUTSIDE DIA.	2.0 INCHES
AVG. HAMMER DROP	30 INCHES
HAMMER WEIGHT	140 POUNDS

GRANULAR MATERIALS

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

REVISIONS

Date.	By	Descriptions	Date.	By	Descriptions

	Names	Dates
Drawn by	ML	10/13/17
Checked by	AB	10/13/17
Designed by		
Checked by		
Approved by		

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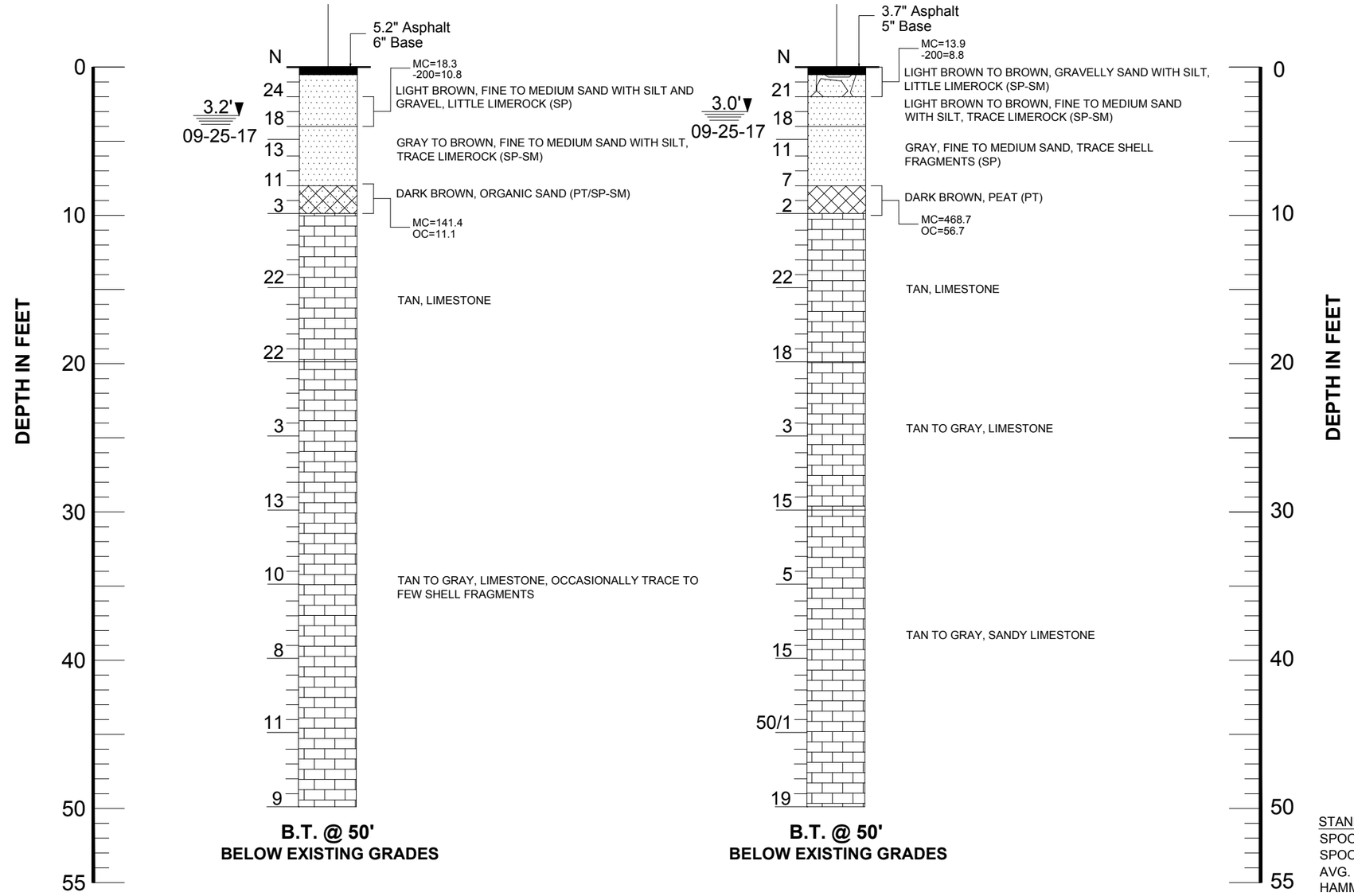
CITY OF FORT LAUDERDALE PUBLIC WORKS DEPARTMENT		SCALE: VERTICAL N.T.S.	SHEET TITLE: SUBSURFACE PROFILES (SEAWALLS)	SHEET NO. 9I
COUNTY	CLIENT	SCALE: HORIZONTAL N.T.S.	PROJECT NAME: STORMWATER MASTER PLAN MODELING AND DESIGN IMPLEMENTATION	RADISE PROJECT NO: 170901
BROWARD	HAZEN AND SAWYER			

	S-26	S-27
BORING NO.	S-26	S-27
ELEVATION (NAVD 88):	N/A	N/A
LATITUDE:	26.1103°	26.1103°
LONGITUDE:	-80.1221°	-80.1214°
DATE:	09/25/2017	09/25/2017
DRILLER:	T. FICKLING	T. FICKLING
RIG:	CME 45	CME 45



LEGEND

- ASPHALT AND BASE
- SAND
- SILT
- LIMESTONE
- GRAVEL
- ORGANIC MATERIAL

1.5'▼ 09-21-17	GROUNDWATER DEPTH IN FEET AND DRILLING DATE
N	STANDARD PENETRATION RESISTANCE- BLOWS PER FOOT USING AUTOMATIC HAMMER
SP, SP-SM, GP, PT	UNIFIED SOIL CLASSIFICATION SYSTEM GROUP SYMBOL (ASTM D 2488)
S-1	STANDARD PENETRATION TEST (SPT) BORING AND NUMBER
MC	MOISTURE CONTENT (%)
-200	AMOUNT PASSING US STANDARD # 200 SIEVE
OC	ORGANIC CONTENTS (%)
LL	LIQUID LIMIT (%)
PI	PLASTICITY INDEX (%)
B.T. @ 50'	BORING TERMINATED AT 50 FEET BELOW THE EXISTING GROUND SURFACE

NOTES

(1) BORINGS WERE DRILLED ON SEPTEMBER AND OCTOBER, 2017 USING A CENTRAL MINING EQUIPMENT MODEL 45 (CME 45) AUTOMATIC HAMMER DRILL RIG.

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(6) AFTER COMPLETION OF DRILLING BOREHOLES WERE BACK FILLED WITH GROUT.

STANDARD PENETRATION TEST DATA

SPOON INSIDE DIA.	1.375 INCH
SPOON OUTSIDE DIA.	2.0 INCHES
AVG. HAMMER DROP	30 INCHES
HAMMER WEIGHT	140 POUNDS

GRANULAR MATERIALS

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

REVISIONS							Names	Dates
Date.	By	Descriptions	Date.	By	Descriptions	Drawn by	ML	10/13/17
						Checked by	AB	10/13/17
						Designed by		
						Checked by		
						Approved by		

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CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT

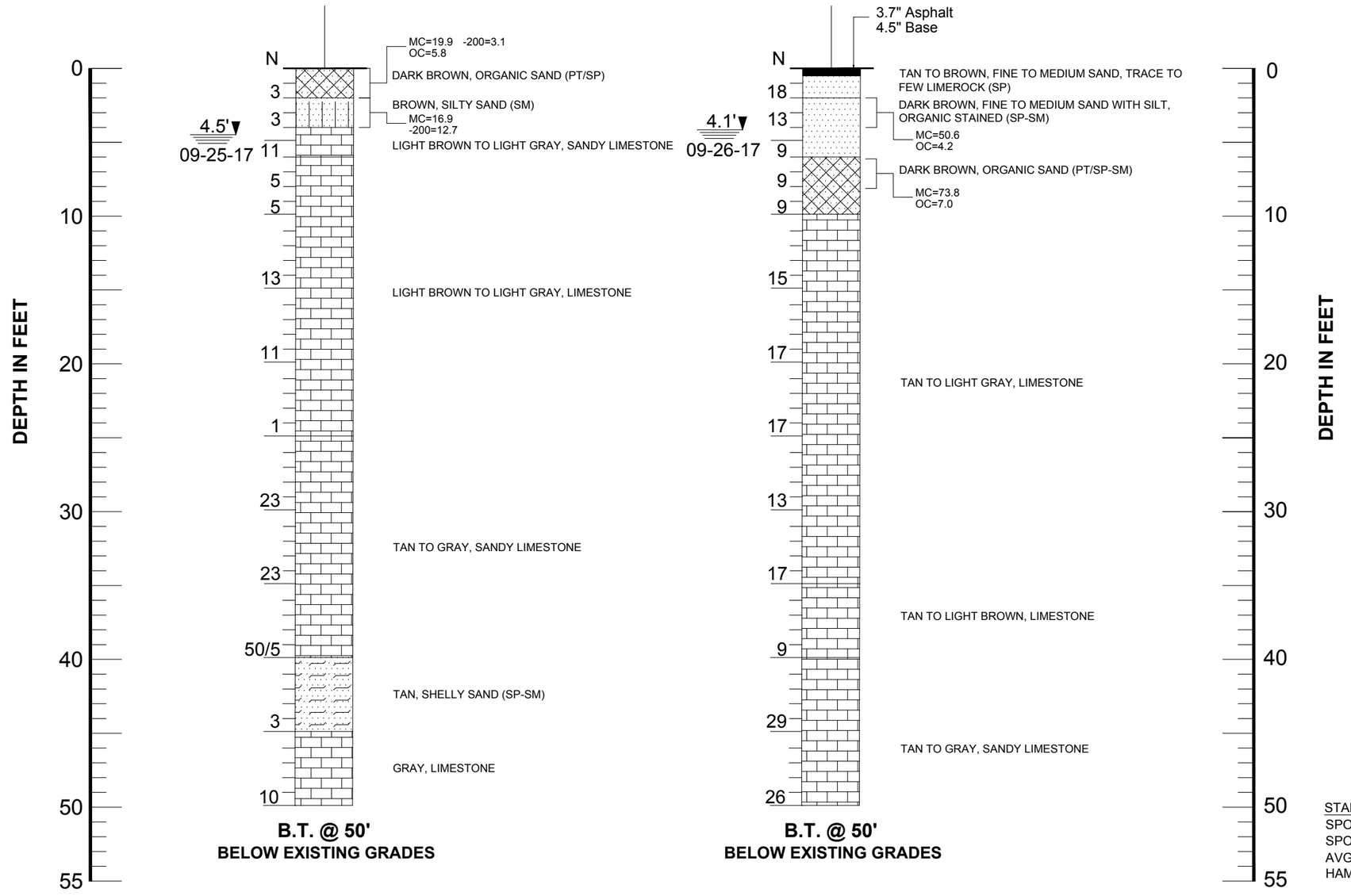
COUNTY	CLIENT
BROWARD	HAZEN AND SAWYER

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

SHEET TITLE: SUBSURFACE PROFILES (SEAWALLS)
PROJECT NAME: STORMWATER MASTER PLAN MODELING AND DESIGN IMPLEMENTATION

SHEET NO. 9J
RADISE PROJECT NO: 170901

	S-28	S-29
BORING NO.		
ELEVATION (NAVD 88):	N/A	N/A
LATITUDE:	26.1228°	26.1213°
LONGITUDE:	-80.1242°	-80.1155°
DATE:	09/25/2017	09/26/2017
DRILLER:	T. FICKLING	T. FICKLING
RIG:	CME 45	CME 45



LEGEND

- ASPHALT AND BASE
- SAND
- SILT
- LIMESTONE
- GRAVEL
- ORGANIC MATERIAL

1.5'▼ 09-21-17	GROUNDWATER DEPTH IN FEET AND DRILLING DATE
N	STANDARD PENETRATION RESISTANCE- BLOWS PER FOOT USING AUTOMATIC HAMMER
SP, SP-SM, GP, PT	UNIFIED SOIL CLASSIFICATION SYSTEM GROUP SYMBOL (ASTM D 2488)
S-1	STANDARD PENETRATION TEST (SPT) BORING AND NUMBER
MC	MOISTURE CONTENT (%)
-200	AMOUNT PASSING US STANDARD # 200 SIEVE
OC	ORGANIC CONTENTS (%)
LL	LIQUID LIMIT (%)
PI	PLASTICITY INDEX (%)
B.T. @ 50'	BORING TERMINATED AT 50 FEET BELOW THE EXISTING GROUND SURFACE

NOTES

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(5) ELEVATIONS WERE NOT AVAILABLE

(6) AFTER COMPLETION OF DRILLING BOREHOLES WERE BACK FILLED WITH GROUT.

STANDARD PENETRATION TEST DATA

SPOON INSIDE DIA.	1.375 INCH
SPOON OUTSIDE DIA.	2.0 INCHES
AVG. HAMMER DROP	30 INCHES
HAMMER WEIGHT	140 POUNDS

GRANULAR MATERIALS

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

REVISIONS							Names	Dates
Date.	By	Descriptions	Date.	By	Descriptions	Drawn by	ML	10/13/17
						Checked by	AB	10/13/17
						Designed by		
						Checked by		
						Approved by		

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CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT

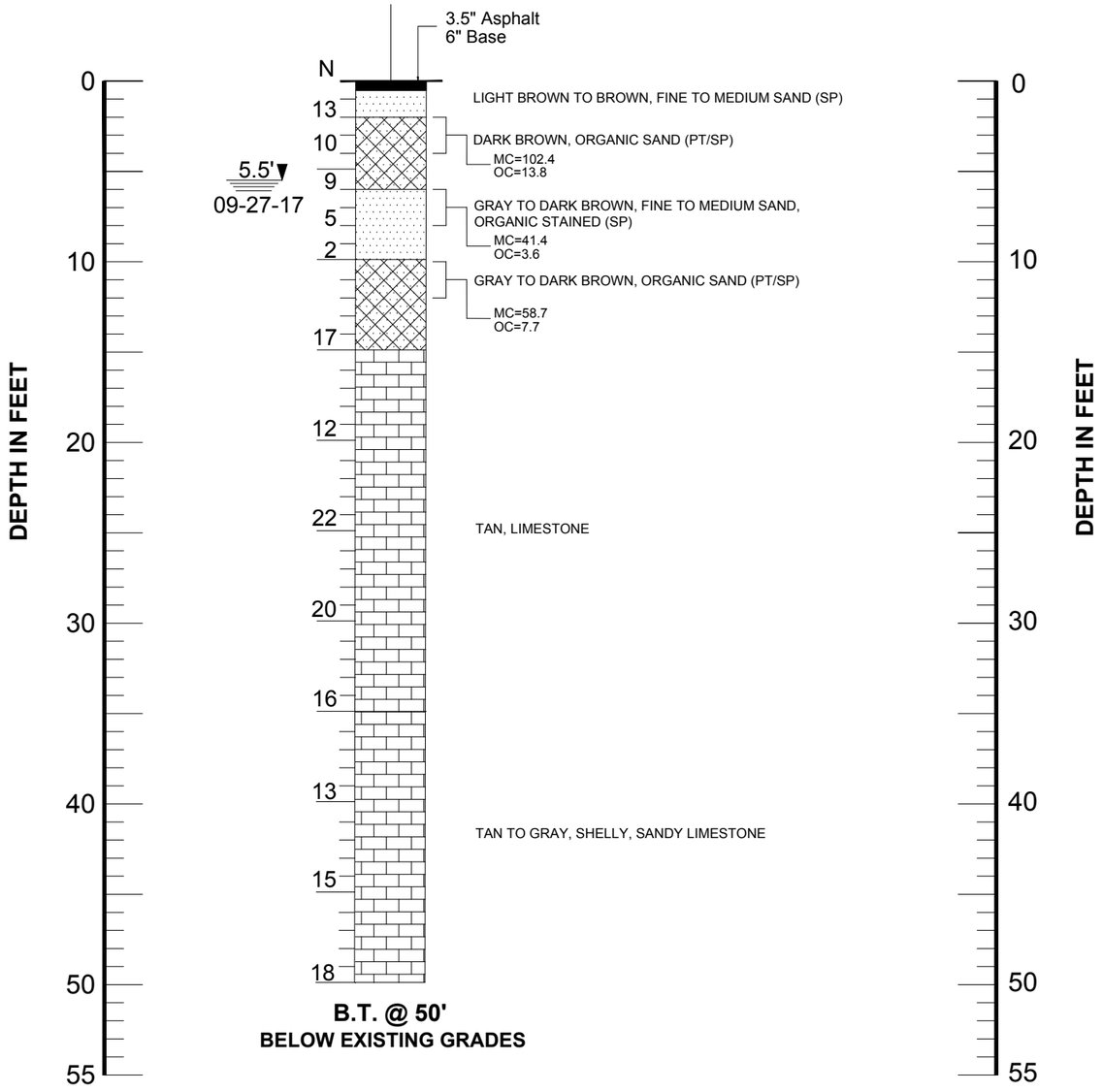
COUNTY	CLIENT
BROWARD	HAZEN AND SAWYER

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

SHEET TITLE: SUBSURFACE PROFILES (SEAWALLS)
PROJECT NAME: STORMWATER MASTER PLAN MODELING AND DESIGN IMPLEMENTATION

SHEET NO. 9K
RADISE PROJECT NO: 170901

BORING NO.	**S-30**
ELEVATION (NAVD 88):	**N/A**
LATITUDE:	**26.1259°**
LONGITUDE:	**-80.1097°**
DATE:	**09/27/2017**
DRILLER:	**T. FICKLING**
RIG:	**CME 45**



LEGEND

ASPHALT AND BASE	LIMESTONE
SAND	GRAVEL
SILT	ORGANIC MATERIAL

1.5'▼ 09-21-17	GROUNDWATER DEPTH IN FEET AND DRILLING DATE
N	STANDARD PENETRATION RESISTANCE- BLOWS PER FOOT USING AUTOMATIC HAMMER
SP, SP-SM, GP, PT	UNIFIED SOIL CLASSIFICATION SYSTEM GROUP SYMBOL (ASTM D 2488)
S-1	STANDARD PENETRATION TEST (SPT) BORING AND NUMBER
MC	MOISTURE CONTENT (%)
-200	AMOUNT PASSING US STANDARD # 200 SIEVE
OC	ORGANIC CONTENTS (%)
LL	LIQUID LIMIT (%)
PI	PLASTICITY INDEX (%)
B.T. @ 50'	BORING TERMINATED AT 50 FEET BELOW THE EXISTING GROUND SURFACE

NOTES

(1) BORINGS WERE DRILLED ON SEPTEMBER AND OCTOBER, 2017 USING A CENTRAL MINING EQUIPMENT MODEL 45 (CME 45) AUTOMATIC HAMMER DRILL RIG.

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(3) GROUNDWATER LEVELS SHOWN ON THE SUBSURFACE PROFILES REPRESENT GROUNDWATER SURFACES ON THE DATES SHOWN. GROUNDWATER LEVELS WILL FLUCTUATE THROUGHOUT THE YEAR.

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(5) ELEVATIONS WERE NOT AVAILABLE

(6) AFTER COMPLETION OF DRILLING BOREHOLES WERE BACK FILLED WITH GROUT.

STANDARD PENETRATION TEST DATA

SPOON INSIDE DIA.	1.375 INCH
SPOON OUTSIDE DIA.	2.0 INCHES
AVG. HAMMER DROP	30 INCHES
HAMMER WEIGHT	140 POUNDS

GRANULAR MATERIALS

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

REVISIONS

Date.	By	Descriptions	Date.	By	Descriptions

	Names	Dates
Drawn by	ML	10/13/17
Checked by	AB	10/13/17
Designed by		
Checked by		
Approved by		

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CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT

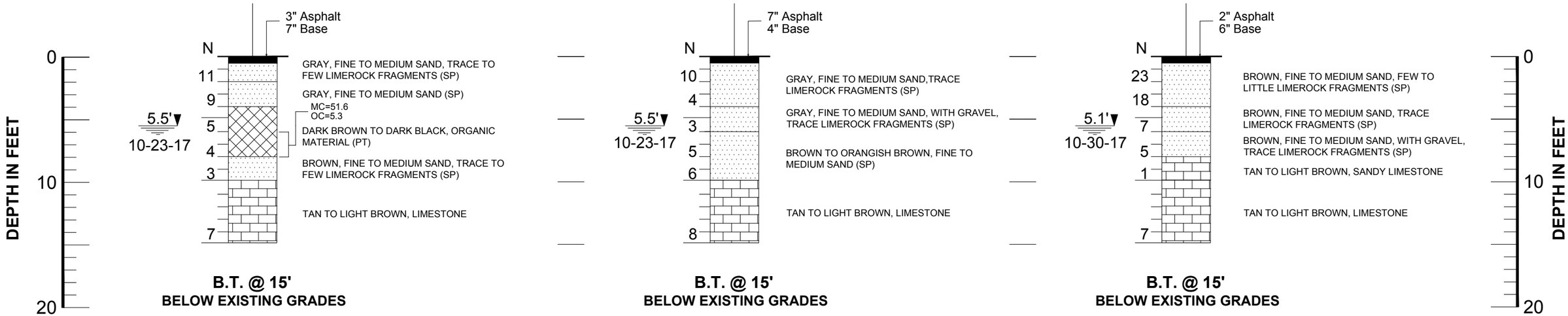
COUNTY	CLIENT
BROWARD	HAZEN AND SAWYER

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

SHEET TITLE: SUBSURFACE PROFILES (SEAWALLS)
PROJECT NAME: STORMWATER MASTER PLAN MODELING AND DESIGN IMPLEMENTATION

SHEET NO. 9L
RADISE PROJECT NO: 170901

	V-1	V-2	V-3
BORING NO.	**V-1**	**V-2**	**V-3**
ELEVATION (NAVD 88):	**N/A**	**N/A**	**N/A**
LATITUDE:	**26.1300°**	**26.1301°**	**26.1353°**
LONGITUDE:	**-80.1335°**	**-80.1274°**	**-80.1286°**
DATE:	**10/23/2017**	**10/23/2017**	**10/30/2017**
DRILLER:	**T. FICKLING**	**T. FICKLING**	**T. FICKLING**
RIG:	**CME 45**	**CME 45**	**CME 45**



LEGEND

- ASPHALT AND BASE
- LIMESTONE
- SAND
- GRAVEL
- SILTY SAND
- ORGANIC MATERIAL
- 5.5' ▼ / 10-23-17 — GROUNDWATER DEPTH IN FEET AND DRILLING DATE
- N — STANDARD PENETRATION RESISTANCE- BLOWS PER FOOT USING AUTOMATIC HAMMER

SP, SP-SM, PT	UNIFIED SOIL CLASSIFICATION SYSTEM GROUP SYMBOL (ASTM D 2488)
V-1	STANDARD PENETRATION TEST (SPT) BORING AND NUMBER
MC	MOISTURE CONTENT (%)
-200	AMOUNT PASSING US STANDARD # 200 SIEVE (%)
OC	ORGANIC CONTENTS (%)
LL	LIQUID LIMIT (%)
PI	PLASTICITY INDEX (%)
B.T. @ 15'	BORING TERMINATED AT 15 FEET BELOW THE EXISTING GROUND SURFACE

NOTES

(1) BORING WERE DRILLED ON SEPTEMBER AND OCTOBER, 2017 USING A CENTRAL MINING EQUIPMENT MODEL 45 (CME 45) AUTOMATIC HAMMER DRILL RIG.

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(3) GROUNDWATER LEVELS SHOWN ON THE SUBSURFACE PROFILES REPRESENT GROUNDWATER SURFACES ON THE DATES SHOWN. GROUNDWATER LEVELS WILL FLUCTUATE THROUGHOUT THE YEAR.

(4) LONGITUDE AND LATITUDE COORDINATES WERE MEASURED IN THE FIELD USING A HAND HELD GPS UNIT.

(5) ELEVATIONS WERE NOT AVAILABLE

(6) AFTER COMPLETION OF DRILLING BOREHOLES WERE BACK FILLED WITH GROUT.

GRANULAR MATERIALS

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

STANDARD PENETRATION TEST DATA

SPOON INSIDE DIA.	1.375 INCH
SPOON OUTSIDE DIA.	2.0 INCHES
AVG. HAMMER DROP	30 INCHES
HAMMER WEIGHT	140 POUNDS

REVISIONS							Names	Dates
Date.	By	Descriptions	Date.	By	Descriptions	Drawn by	KA	11/06/17
						Checked by	AB	11/06/17
						Designed by		
						Checked by		
						Approved by		

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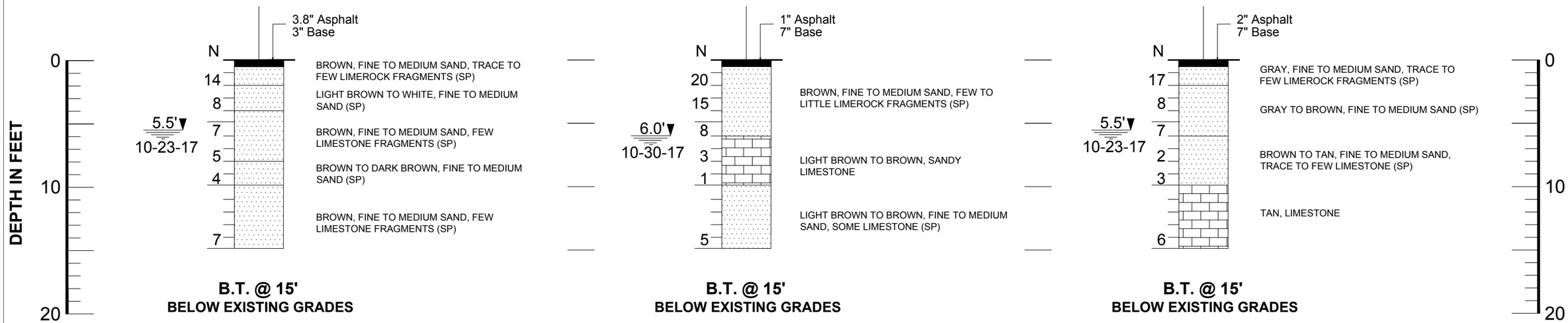
CITY OF FORT LAUDERDALE PUBLIC WORKS DEPARTMENT		SCALE: VERTICAL N.T.S.	SHEET TITLE: SUBSURFACE PROFILES (VICTORIA PARK)	SHEET NO. 10A
COUNTY: BROWARD	CLIENT: HAZEN AND SAWYER	SCALE: HORIZONTAL N.T.S.	PROJECT NAME: STORMWATER MASTERPLAN MODELING AND DESIGN IMPLEMENTATION	RADISE PROJECT NO: 170901

	V-4	V-5	V-6
BORING NO.			
ELEVATION (NAVD 88):	N/A	N/A	N/A
LATITUDE:	26.1338°	26.1320°	26.1289°
LONGITUDE:	-80.1266°	-80.1234°	-80.1229°
DATE:	10/23/2017	10/30/2017	10/23/2017
DRILLER:	T. FICKLING	T. FICKLING	T. FICKLING
RIG:	CME 45	CME 45	CME 45



LEGEND

- ASPHALT AND BASE
- LIMESTONE
- SAND
- GRAVEL
- SILTY SAND
- ORGANIC MATERIAL
- 5.5' / 10-23-17 — GROUNDWATER DEPTH IN FEET AND DRILLING DATE
- N — STANDARD PENETRATION RESISTANCE- BLOWS PER FOOT USING AUTOMATIC HAMMER

SP, SP-SM, PT	UNIFIED SOIL CLASSIFICATION SYSTEM GROUP SYMBOL (ASTM D 2488)
V-1	STANDARD PENETRATION TEST (SPT) BORING AND NUMBER
MC	MOISTURE CONTENT (%)
-200	AMOUNT PASSING US STANDARD # 200 SIEVE (%)
OC	ORGANIC CONTENTS (%)
LL	LIQUID LIMIT (%)
PI	PLASTICITY INDEX (%)
B.T. @ 15'	BORING TERMINATED AT 15 FEET BELOW THE EXISTING GROUND SURFACE

NOTES

(1) BORING WERE DRILLED ON SEPTEMBER AND OCTOBER, 2017 USING A CENTRAL MINING EQUIPMENT MODEL 45 (CME 45) AUTOMATIC HAMMER DRILL RIG.

(2) STRATA BOUNDARIES ARE APPROXIMATE AND REPRESENT SOIL AND REPRESENT SOIL STRATA AT EACH TEST HOLE LOCATION ONLY. SOIL TRANSITIONS MAY BE MORE GRADUAL THAN IMPLIED.

(3) GROUNDWATER LEVELS SHOWN ON THE SUBSURFACE PROFILES REPRESENT GROUNDWATER SURFACES ON THE DATES SHOWN. GROUNDWATER LEVELS WILL FLUCTUATE THROUGHOUT THE YEAR.

(4) LONGITUDE AND LATITUDE COORDINATES WERE MEASURED IN THE FIELD USING A HAND HELD GPS UNIT.

(5) ELEVATIONS WERE NOT AVAILABLE

(6) AFTER COMPLETION OF DRILLING BOREHOLES WERE BACK FILLED WITH GROUT.

GRANULAR MATERIALS

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

STANDARD PENETRATION TEST DATA

SPOON INSIDE DIA.	1.375 INCH
SPOON OUTSIDE DIA.	2.0 INCHES
AVG. HAMMER DROP	30 INCHES
HAMMER WEIGHT	140 POUNDS

REVISIONS

Date.	By	Descriptions	Date.	By	Descriptions

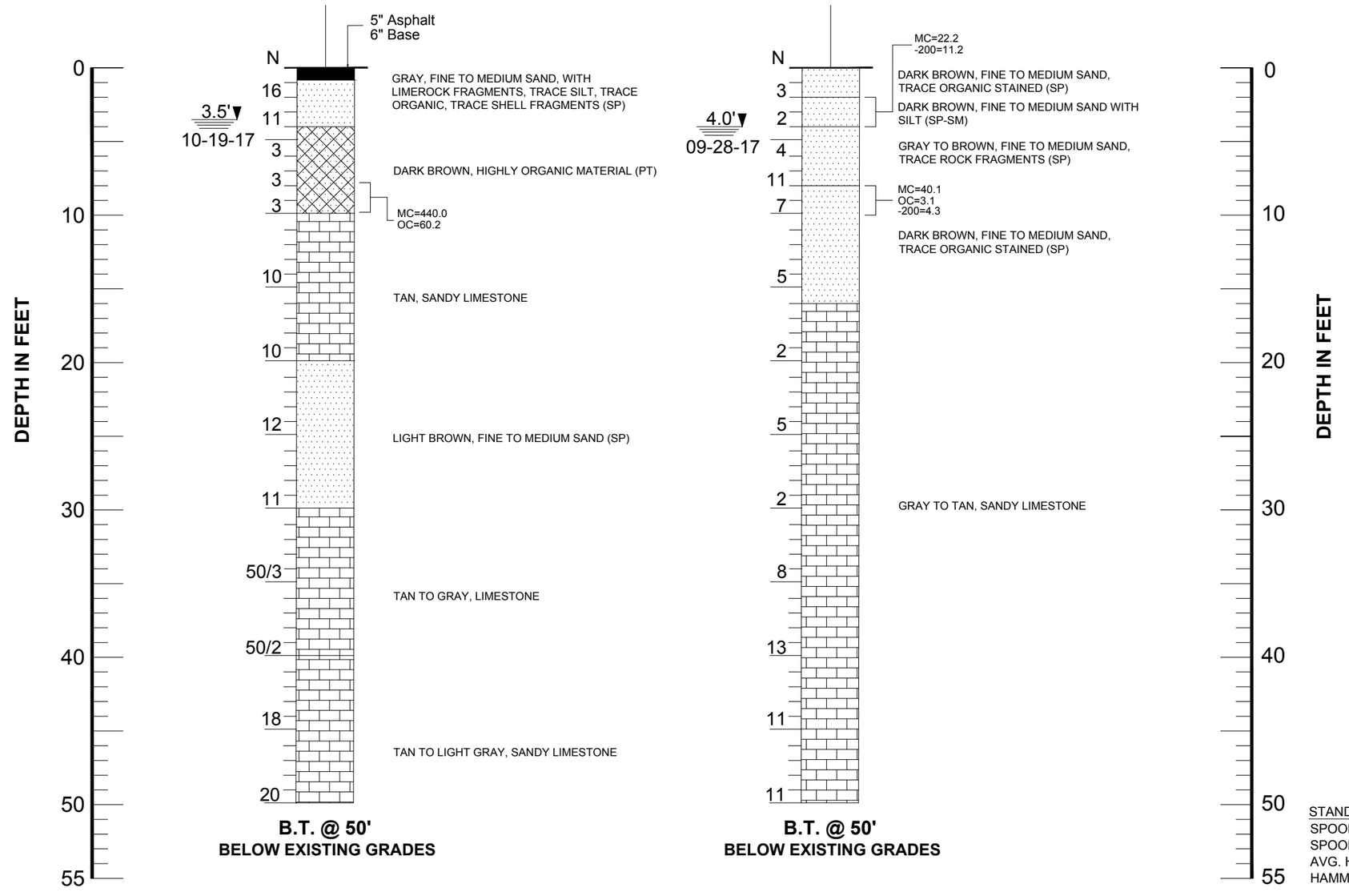
	Names	Dates
Drawn by	KA	11/06/17
Checked by	AB	11/06/17
Designed by		
Checked by		
Approved by		

RADISE — Infrastructure Engineers & Software Developers
LICENSE NO. - 8901

ENGINEER OF RECORD
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 FORT LAUDERDALE PUBLIC WORKS DEPARTMENT		SCALE: VERTICAL N.T.S.	SHEET TITLE: SUBSURFACE PROFILES (VICTORIA PARK)	SHEET NO. 10B
COUNTY: BROWARD	CLIENT: HAZEN AND SAWYER	SCALE: HORIZONTAL N.T.S.	PROJECT NAME: STORMWATER MASTER PLAN MODELING AND DESIGN IMPLEMENTATION	RADISE PROJECT NO: 170901

	V-8	V-9
BORING NO.		
ELEVATION (NAVD 88):	N/A	N/A
LATITUDE:	26.1323°	26.1321°
LONGITUDE:	-80.1194°	-80.1192°
DATE:	10/19/2017	09/28/2017
DRILLER:	T. FICKLING	T. FICKLING
RIG:	CME 45	CME 45



LEGEND

SAND	SHELLY SAND
SILT	LIMESTONE
ORGANIC MATERIAL	GRAVEL

1.5'▼ 09-21-17	GROUNDWATER DEPTH IN FEET AND DRILLING DATE
N	STANDARD PENETRATION RESISTANCE- BLOWS PER FOOT USING AUTOMATIC HAMMER
SP	UNIFIED SOIL CLASSIFICATION SYSTEM GROUP SYMBOL (ASTM D 2488)
V-9	STANDARD PENETRATION TEST (SPT) BORING AND NUMBER
MC	MOISTURE CONTENT (%)
-200	AMOUNT PASSING US STANDARD # 200 SIEVE
OC	ORGANIC CONTENTS (%)
LL	LIQUID LIMIT (%)
PI	PLASTICITY INDEX (%)
B.T. @ 50'	BORING TERMINATED AT 50 FEET BELOW THE EXISTING GROUND SURFACE

NOTES

(1) BORINGS WERE DRILLED ON SEPTEMBER, 2017 USING A CENTRAL MINING EQUIPMENT MODEL 45 (CME 45) AUTOMATIC HAMMER DRILL RIG.

(2) STRATA BOUNDARIES ARE APPROXIMATE AND REPRESENT SOIL AND REPRESENT SOIL STRATA AT EACH TEST HOLE LOCATION ONLY. SOIL TRANSITIONS MAY BE MORE GRADUAL THAN IMPLIED.

(3) GROUNDWATER LEVELS SHOWN ON THE SUBSURFACE PROFILES REPRESENT GROUNDWATER SURFACES ON THE DATES SHOWN. GROUNDWATER LEVELS WILL FLUCTUATE THROUGHOUT THE YEAR.

(4) LONGITUDE AND LATITUDE COORDINATES WERE MEASURED IN THE FIELD USING A HAND HELD GPS UNIT.

(5) ELEVATIONS WERE NOT AVAILABLE

(6) AFTER COMPLETION OF DRILLING BOREHOLES WERE BACK FILLED WITH GROUT.

STANDARD PENETRATION TEST DATA

SPOON INSIDE DIA.	1.375 INCH
SPOON OUTSIDE DIA.	2.0 INCHES
AVG. HAMMER DROP	30 INCHES
HAMMER WEIGHT	140 POUNDS

GRANULAR MATERIALS

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

REVISIONS							Names	Dates
Date.	By	Descriptions	Date.	By	Descriptions	Drawn by	ML	10/13/17
						Checked by	AB	10/13/17
						Designed by		
						Checked by		
						Approved by		

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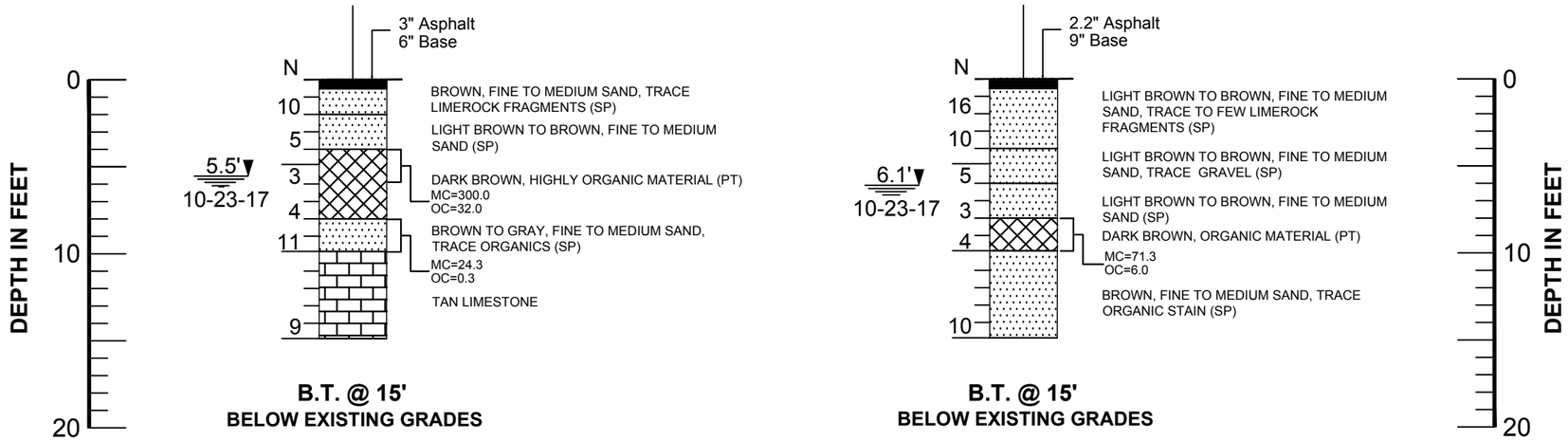
CITY OF FORT LAUDERDALE PUBLIC WORKS DEPARTMENT	
COUNTY	CLIENT
BROWARD	HAZEN AND SAWYER

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

SHEET TITLE: SUBSURFACE PROFILES (VICTORIA PARK)
PROJECT NAME: STORMWATER MASTER PLAN MODELING AND DESIGN IMPLEMENTATION

SHEET NO. 10C
RADISE PROJECT NO: 170901

	V-7	V-10
BORING NO.	V-7	V-10
ELEVATION (NAVD 88):	N/A	N/A
LATITUDE:	26.1321°	26.1345°
LONGITUDE:	-80.1208°	-80.1196°
DATE:	10/23/2017	10/23/2017
DRILLER:	T. FICKLING	T. FICKLING
RIG:	CME 45	CME 45



LEGEND

- ASPHALT AND BASE
- LIMESTONE
- SAND
- GRAVEL
- SILTY SAND
- ORGANIC MATERIAL
- 5.5' / 10-23-17 — GROUNDWATER DEPTH IN FEET AND DRILLING DATE
- N — STANDARD PENETRATION RESISTANCE- BLOWS PER FOOT USING AUTOMATIC HAMMER

SP, SP-SM, PT	UNIFIED SOIL CLASSIFICATION SYSTEM GROUP SYMBOL (ASTM D 2488)
V-1	STANDARD PENETRATION TEST (SPT) BORING AND NUMBER
MC	MOISTURE CONTENT (%)
-200	AMOUNT PASSING US STANDARD # 200 SIEVE (%)
OC	ORGANIC CONTENTS (%)
LL	LIQUID LIMIT (%)
PI	PLASTICITY INDEX (%)
B.T. @ 15'	BORING TERMINATED AT 15 FEET BELOW THE EXISTING GROUND SURFACE

NOTES

(1) BORING WERE DRILLED ON SEPTEMBER AND OCTOBER, 2017 USING A CENTRAL MINING EQUIPMENT MODEL 45 (CME 45) AUTOMATIC HAMMER DRILL RIG.

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(5) ELEVATIONS WERE NOT AVAILABLE

(6) AFTER COMPLETION OF DRILLING BOREHOLES WERE BACK FILLED WITH GROUT.

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

STANDARD PENETRATION TEST DATA

SPOON INSIDE DIA.	1.375 INCH
SPOON OUTSIDE DIA.	2.0 INCHES
AVG. HAMMER DROP	30 INCHES
HAMMER WEIGHT	140 POUNDS

REVISIONS							Names	Dates
Date.	By	Descriptions	Date.	By	Descriptions	Drawn by	KA	11/06/17
						Checked by	AB	11/06/17
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						Checked by		
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CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT

COUNTY	CLIENT
BROWARD	HAZEN AND SAWYER

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

SHEET TITLE: SUBSURFACE PROFILES (VICTORIA PARK)
PROJECT NAME: STORMWATER MASTER PLAN MODELING AND DESIGN IMPLEMENTATION

SHEET NO. 10D
RADISE PROJECT NO: 170901

APPENDIX A

TABLE A-1 – LABORATORY TEST RESULTS SUMMARY
GRAIN SIZE DISTRIBUTION

Table A: Laboratory Test Results Summary

Project Name: City of Fort Lauderdale - Stormwater Master Plan Modeling and Design Implementation

Project ID: 170901

						ATTERBERG LIMITS			GRAIN SIZE ANALYSIS U.S STANDARD SIEVE SIZE (% Passing)														
Boring No	Sample Depth	Soil Classification	Moisture Content (%)	Organic Content (%)	-200	LL (%)	PL (%)	PI	3"	1.5"	1"	3/4"	3/8"	#4	#10	#20	#40	#50	#60	#100	#140	#200
DR-1	28.5' - 30'	SM	19.1	-	12.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DR-2	4' - 6'	SP	26.6	0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DR-3	8' - 10'	SP	20.0	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DR-4	8' - 10'	SP	21.5	2.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DR-5	4' - 6'	SP	25.9	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D-1	6' - 8'	SP	22.8	-	1.7	-	-	-	100	100	-	100	100	100	100	100	86.2	64.0	49.5	11.5	2.6	1.7
D-1	8' -10'	SP	27.3	1.1	2.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D-2	6' - 8'	SP	32.9	3.2	3.7	-	-	-	100	100	-	100	100	100	98.9	98.1	88.7	64.4	48.3	8.8	4.2	3.7
D-2	8' - 10'	SP-SM	22.1	-	10.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D-3	0' - 2'	SP-SM	7.5	-	8.2	-	-	-	100	100	-	100	92.1	90.1	88.5	87.0	78.3	62.2	50.5	14.9	9.3	8.2
D-3	4' - 6'	SP	21.5	-	1.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D-5	8' - 10'	SP	27.8	1.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
P-1	13.5' 15'	SP	20.8	0.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
P-4	6' - 8'	SP	16.9	-	4.4	-	-	-	100	100	-	100	93.9	87.5	83.3	81.1	71.9	57.8	44.5	9.8	5.2	4.4
P-5	4' - 6'	SP	26.7	1.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
P-6	28.5' - 30'	SP-SM	25.7	-	7.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
V-1	6' - 8'	PT	51.6	5.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
V-7	4' - 6'	PT	300.0	32.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
V-7	8' - 10'	SP	24.3	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A: Laboratory Test Results Summary

Project Name: City of Fort Lauderdale - Stormwater Master Plan Modeling and Design Implementation

Project ID: 170901

						ATTERBERG LIMITS			GRAIN SIZE ANALYSIS U.S STANDARD SIEVE SIZE (% Passing)														
Boring No	Sample Depth	Soil Classification	Moisture Content (%)	Organic Content (%)	-200	LL (%)	PL (%)	PI	3"	1.5"	1"	3/4"	3/8"	#4	#10	#20	#40	#50	#60	#100	#140	#200
V-8	8' - 10'	PT	440.5	60.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
V-9	2' - 4'	SP-SM	22.2	-	11.2	-	-	-	100	100	-	100	92.3	90.1	88.7	87.5	79.6	67.1	56.9	21.2	12.5	11.2	
V-9	8' - 10'	SP	40.1	3.1	4.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
V-10	8' - 10'	PT	71.3	6.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
E-11	2' - 4'	SP	17.8	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R-1	0' - 2'	SP-SM	8.1	-	8.3	-	-	-	100	100	-	95.1	80.3	75.2	72.1	70.3	62.8	52.1	43.5	15.6	9.7	8.3	
R-2	2' - 4'	SP-SM	14.0	-	7.3	-	-	-	100	100	-	90.7	78.8	70.6	64.6	61.1	54.8	46.5	40.1	15.8	9.2	7.3	
R-2	4' - 6'	SP	18.2	-	4.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R-3	2' - 4'	SP	20.1	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R-4	0' - 2'	SP	14.5	2.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R-5	6' - 8'	SP	27.4	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R-6	2' - 4'	SP-SM	16.8	-	8.1	-	-	-	100	100	-	93.0	87.2	82.5	80.4	78.5	72.6	62.3	52.7	17.5	10.3	8.1	
R-6	6' - 8'	SP	24.1	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R-9	4' - 6'	SP	56.3	10.2	1.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R-9	13.5' - 15'	SP	26.5	-	1.2	-	-	-	100	100	100	100	100	100	100	100	95.4	79.9	64.3	8.8	1.6	1.2	
R-10	2' - 4'	SP	51.4	18.4	2.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R-10	28.5' - 30'	SP	25.6	-	2.7	-	-	-	100	100	100	100	100	100	100	99.1	77.8	55.0	43.5	13.8	3.5	2.7	
R-11	4' - 6'	SP	27.0	0.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R-11	8' - 10'	SP	24.8	0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A: Laboratory Test Results Summary

Project Name: City of Fort Lauderdale - Stormwater Master Plan Modeling and Design Implementation

Project ID: 170901

						ATTERBERG LIMITS			GRAIN SIZE ANALYSIS U.S STANDARD SIEVE SIZE (% Passing)														
Boring No	Sample Depth	Soil Classification	Moisture Content (%)	Organic Content (%)	-200	LL (%)	PL (%)	PI	3"	1.5"	1"	3/4"	3/8"	#4	#10	#20	#40	#50	#60	#100	#140	#200
R-11	38.5' - 40'	SP-SM	19.0	-	9.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R-11	48.5' - 50'	SP-SM	26.2	-	8.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R-12	0' - 2'	SP	20.2	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R-12	4' - 6'	PT	107.6	9.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R-12	38.5' - 40'	SP-SM	18.7	-	11.1	-	-	-	100	100	-	100	100	100	100	98.4	81.6	64.5	54.8	28.0	14.5	11.1
R-13	2' - 4'	SP	20.7	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S-2	6' - 8'	PT	494.0	76.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S-3	6' - 8'	SP	27.8	1.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S-4	6' - 8'	PT	110.6	12.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S-5	4' - 6'	PT	399.1	63.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S-8	4' - 6'	PT/SP-SM	119.1	11.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S-8	6' - 8'	SP-SM	33.4	1.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S-8	13.5' - 15'	ML	27.6	-	69.3	NP	NP	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S-9	0' - 2'	SP-SM	14.9	-	7.1	-	-	-	100	100	100	100	96.8	90.6	85.9	82.0	71.8	61.2	52.1	30.2	12.1	7.1
S-9	6' - 8'	SP	21.3	-	2.6	-	-	-	100	100	-	100	99.6	99.2	98.7	97.7	81.9	57.4	42.2	6.3	3.1	2.6
S-10	4' - 6'	SP	21.3	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S-10	6' - 8'	SP	18.9	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S-11	2' - 4'	SP-SM	18.9	-	11.3	-	-	-	100	100	-	92.5	81.2	77.9	74.8	71.7	62.0	49.1	39.5	15.1	11.7	11.3
S-11	4' - 6'	SP	19.9	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A: Laboratory Test Results Summary

Project Name: City of Fort Lauderdale - Stormwater Master Plan Modeling and Design Implementation

Project ID: 170901

						ATTERBERG LIMITS			GRAIN SIZE ANALYSIS U.S STANDARD SIEVE SIZE (% Passing)														
Boring No	Sample Depth	Soil Classification	Moisture Content (%)	Organic Content (%)	-200	LL (%)	PL (%)	PI	3"	1.5"	1"	3/4"	3/8"	#4	#10	#20	#40	#50	#60	#100	#140	#200
S-12	0' - 2'	SM	16.6	-	18.4	-	-	-	100	100	100	94.0	80.9	72.3	65.9	61.4	54.3	46.0	40.0	23.8	19.9	18.4
S-12	4' - 6'	SP	23.0	1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S-13	0' - 2'	SP	24.9	0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S-13	4' - 6'	SP-SM	18.4	-	11.0	-	-	-	100	100	-	100	74.1	66.7	63.1	61.2	55.6	46.2	38.0	15.7	12.3	11.0
S-13	8' -10'	SM	25.9	1.5	12.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S-14	0' - 2'	SP	13.5	3.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S-14	6' - 8'	PT	205.5	25.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S-15	0' - 2'	SP	18.9	2.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S-15	4' - 6'	PT	456.1	65.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S-16	0' - 2'	SP-SM	11.3	-	8.1	-	-	-	100	100	-	95.0	85.1	79.2	74.7	72.1	62.7	50.6	42.4	17.8	9.7	8.1
S-16	4' - 6'	PT/SP-SM	101.2	14.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S-16	8' - 10'	SP	35.0	2.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S-17	6' - 8'	PT	527.3	62.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S-17	23.5' - 25'	SP	25.6	-	3.1	-	-	-	100	100	-	100	100	100	100	99.4	92.4	82.3	76.5	24.6	5.4	3.1
S-18	6' - 8'	PT	240.4	25.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S-19	0' - 2'	SM	13.9	-	16.1	-	-	-	100	100	-	96.3	81.0	69.0	61.8	57.4	48.7	39.9	34.8	21.1	17.6	16.1
S-20	4' - 6'	PT/SP-SM	169.7	17.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S-20	8' - 10'	SM	60.9	-	26.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S-20	28.5' - 30'	SP-SM	27.1	-	6.2	-	-	-	100	100	-	100	100	100	100	100	97.4	96.5	96.1	53.6	12.0	6.2

Table A: Laboratory Test Results Summary

Project Name: City of Fort Lauderdale - Stormwater Master Plan Modeling and Design Implementation

Project ID: 170901

						ATTERBERG LIMITS			GRAIN SIZE ANALYSIS U.S STANDARD SIEVE SIZE (% Passing)														
Boring No	Sample Depth	Soil Classification	Moisture Content (%)	Organic Content (%)	-200	LL (%)	PL (%)	PI	3"	1.5"	1"	3/4"	3/8"	#4	#10	#20	#40	#50	#60	#100	#140	#200
S-21	4' - 6'	PT	347.0	50.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S-21	8' - 10'	SP	26.2	-	1.6	-	-	-	100	100	-	100	100	100	100	98.9	84.8	62.1	48.9	9.8	2.4	1.6
S-22	2 '- 4'	SM	13.9	-	17.2	-	-	-	100	100	-	100	84.3	73.3	66.0	61.3	53.2	45.5	40.6	24.8	19.0	17.2
S-22	4' - 6'	CL-ML/PT	88.7	10.7	54.2	52	44	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S-22	8' - 10'	PT	535.3	67.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S-23	6' - 8'	CL-ML/PT	118.7	12.7	64.9	65	59.3	5.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S-23	8' - 10'	PT	519.8	66.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S-24	6' - 8'	SP	24.1	2.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S-25	2' - 4'	SP-SM	17.5	-	9.3	-	-	-	100	100	100	100	87.7	80.8	75.9	73.0	62.6	49.5	41.7	14.1	10.3	9.3
S-26	2' - 4'	SP-SM	18.3	-	10.8	-	-	-	100	-	100	100	90.0	81.7	75.3	70.0	58.9	45.5	37.8	17.8	12.7	10.8
S-26	8' - 10'	PT/SP-SM	141.4	11.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S-27	0' - 2'	SP-SM	13.9	-	8.8	-	-	-	100	-	89.6	89.6	68.6	59.5	53.3	49.3	41.7	33.7	28.2	13.6	9.8	8.8
S-27	8' - 10'	PT	468.7	56.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S-28	0' - 2'	PT/SP	19.9	5.8	3.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S-28	2' - 4'	SM	16.9	-	12.7	-	-	-	100	100	100	100	93.8	92.9	91.8	90.7	80.5	63.3	50.3	17.3	13.6	12.7
S-29	2' - 4'	SP	50.6	4.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S-29	6' - 8'	PT/SP-SM	73.8	7.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S-30	2' - 4'	PT/SP	102.4	13.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S-30	6' - 8'	SP	41.4	3.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A: Laboratory Test Results Summary

Project Name: City of Fort Lauderdale - Stormwater Master Plan Modeling and Design Implementation

Project ID: 170901

						ATTERBERG LIMITS			GRAIN SIZE ANALYSIS U.S STANDARD SIEVE SIZE (% Passing)														
Boring No	Sample Depth	Soil Classification	Moisture Content (%)	Organic Content (%)	-200	LL (%)	PL (%)	PI	3"	1.5"	1"	3/4"	3/8"	#4	#10	#20	#40	#50	#60	#100	#140	#200
S-30	13.5' - 15'	PT/SP	58.7	7.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes:

Moisture Content tested in accordance ASTM-D2216,
Organic Content tests are performed with furnace temperature @450 Celsius and tested accordance ASTM-D2974,
Plasticity Index Properties tested with accordance to ASTM-D4318,. LL=Liquid Limit, PL=Plasticity Limit and PI=Plasticity Index and NP=Non-Pastic
Soil Classification tested with accordance to ASTM D 2487,
Grain Size Analysis was tested in general accordance with ASTM-D422

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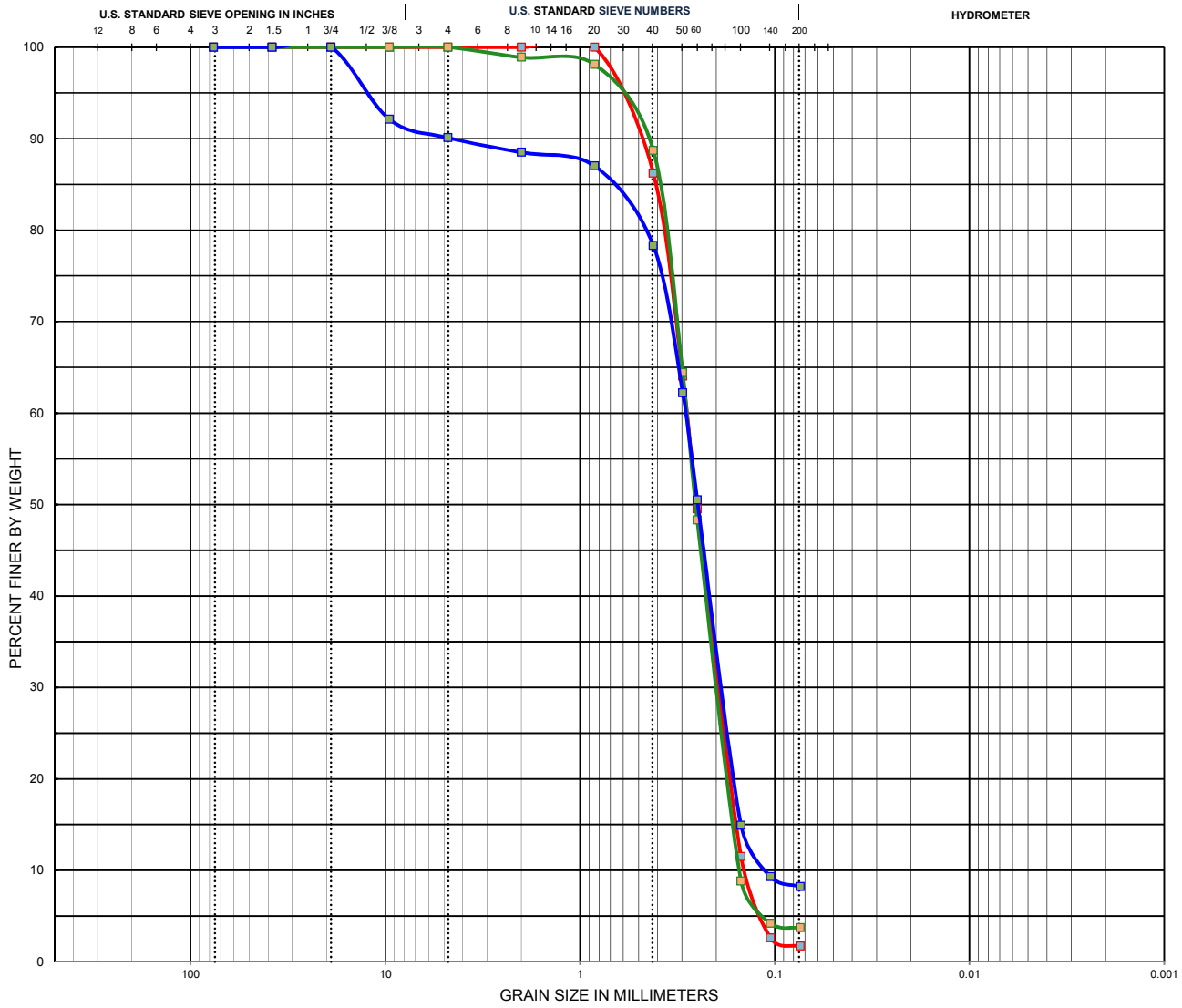
PROJECT NUMBER 170901



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Boring No, Depth	Classification	LL	PL	PI	Cc	Cu
D-1 , 6-8	**Poorly-graded sand (SP)**	**NP**	**NP**	**NP**	**1.02**	**2**
D-2 , 6-8	**Poorly-graded sand (SP)**	**NP**	**NP**	**NP**	**0.95**	**1.87**
D-3 , 0-2	**Poorly-graded sand with silt (SP-SM)**	**NP**	**NP**	**NP**	**1.13**	**2.64**

Boring No, Depth	D100	D60	D30	D10	% Cobble	%Gravel	%Sand	%Silt	%Clay
D-1 , 6-8	**0.84**	**0.28**	**0.2**	**0.14**	**0**	**0**	**98.3**	**1.7**	
D-2 , 6-8	**4.76**	**0.28**	**0.2**	**0.15**	**0**	**0**	**96.3**	**3.7**	
D-3 , 0-2	**19**	**0.29**	**0.19**	**0.11**	**0**	**9.9**	**81.9**	**8.2**	

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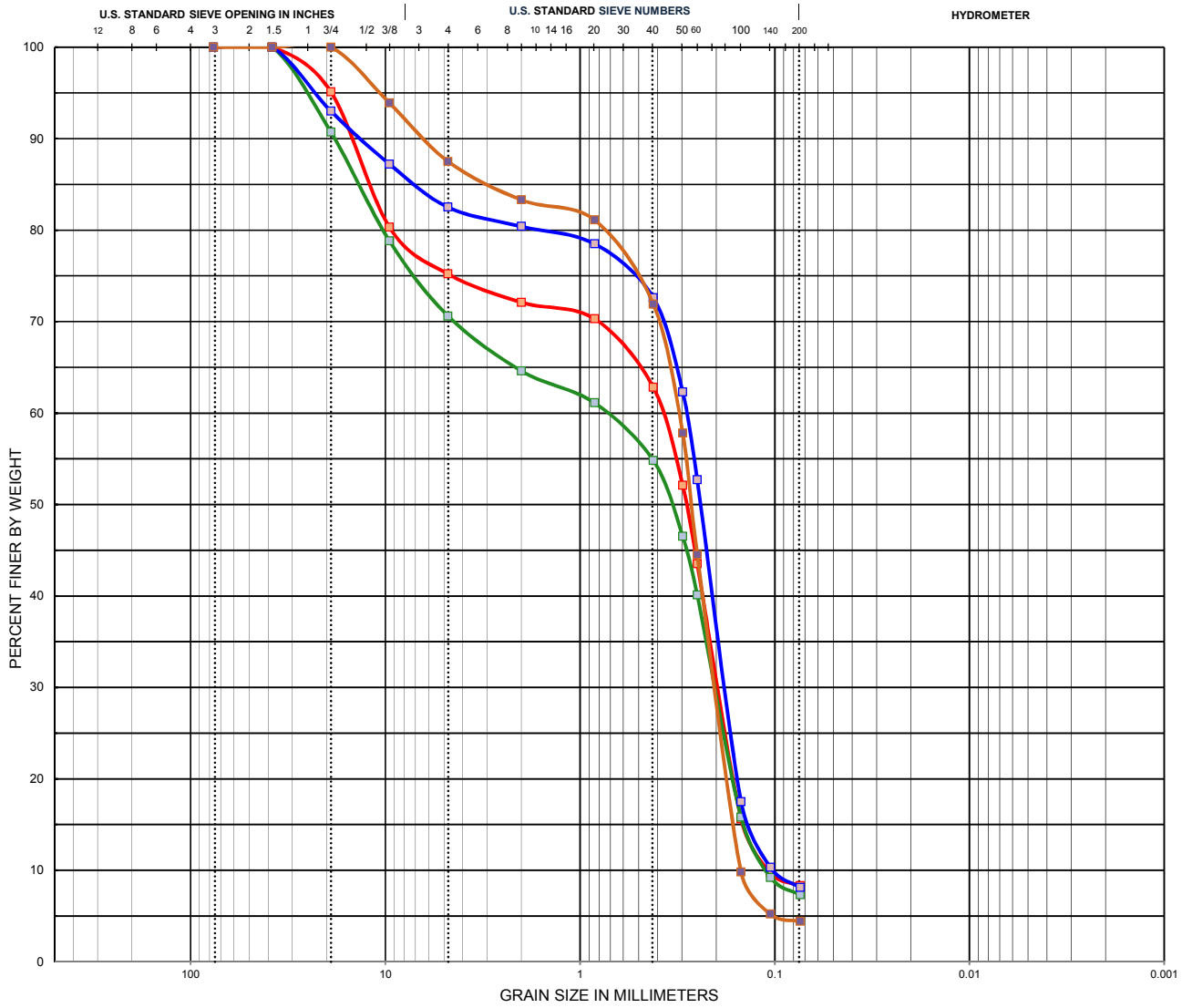

COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Boring No, Depth	Classification	LL	PL	PI	Cc	Cu
R-1 , 0 - 2'	**Poorly-graded sand with silt and gravel (SP-SM)**	**NP**	**NP**	**NP**	**0.93**	**3.55**
R-2 , 2' - 4'	**Poorly-graded sand with silt and gravel (SP-SM)**	**NP**	**NP**	**NP**	**0.52**	**7**
R-6 , 2' - 4'	**Poorly-graded sand with silt and gravel (SP-SM)**	**NP**	**NP**	**NP**	**1.12**	**2.9**
P-4 , 6' - 8'	**Poorly-graded sand (SP)**	**NP**	**NP**	**NP**	**0.92**	**2.13**

Boring No, Depth	D100	D60	D30	D10	% Cobble	%Gravel	%Sand	%Silt	%Clay
R-1 , 0 - 2'	**38.1**	**0.39**	**0.2**	**0.11**	**0**	**24.8**	**66.9**	**8.3**	
R-2 , 2' - 4'	**38.1**	**0.77**	**0.21**	**0.11**	**0**	**29.4**	**63.3**	**7.3**	
R-6 , 2' - 4'	**38.1**	**0.29**	**0.18**	**0.1**	**0**	**17.5**	**74.4**	**8.1**	
P-4 , 6' - 8'	**19**	**0.32**	**0.21**	**0.15**	**0**	**12.5**	**83.1**	**4.4**	

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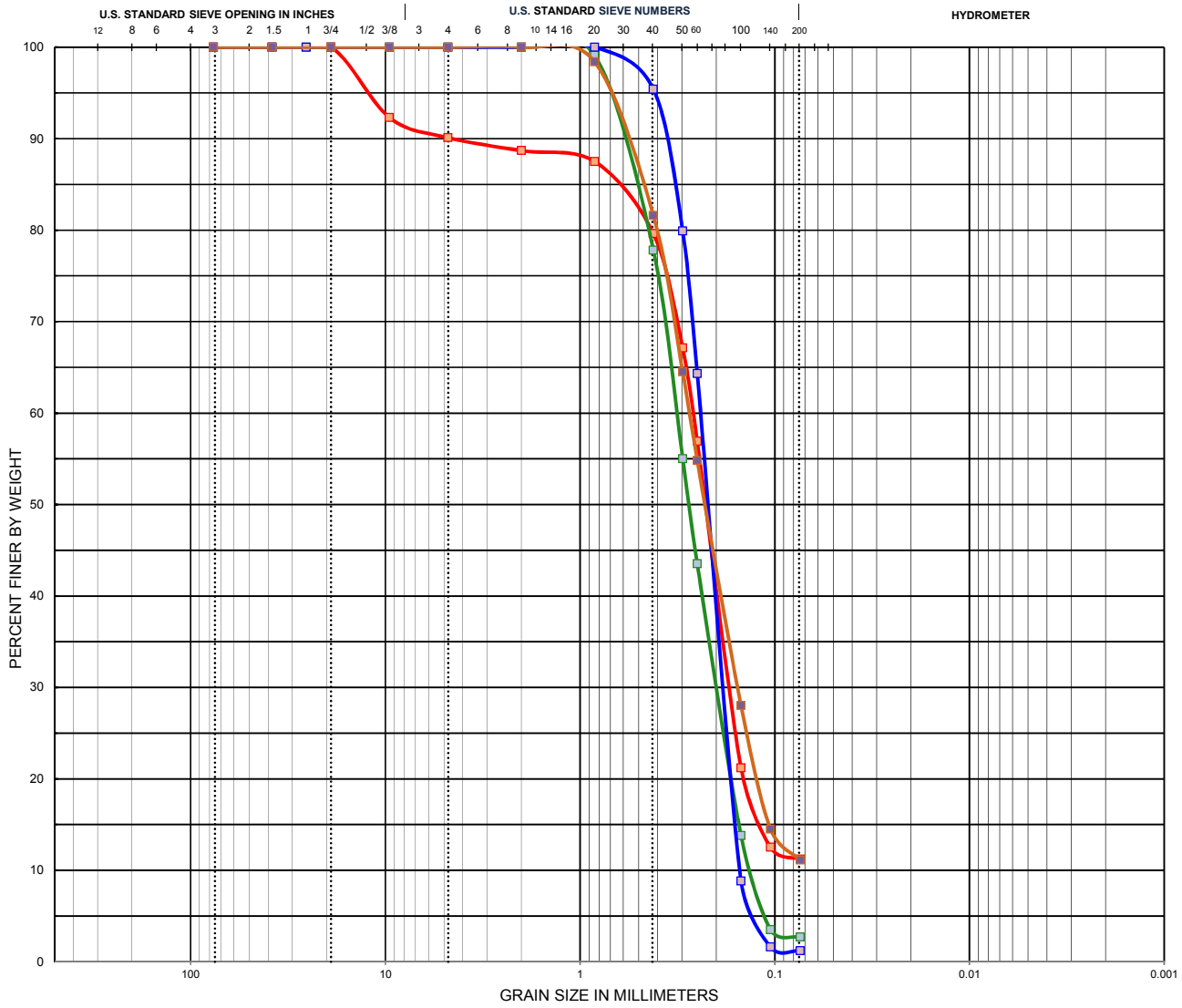

COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Boring No, Depth	Classification	LL	PL	PI	Cc	Cu
V-9 , 2-4	**Poorly-graded sand with silt (SP-SM)**	**NP**	**NP**	**NP**	**0**	**0**
R-10 , 28.5-30	**Poorly-graded sand (SP)**	**NP**	**NP**	**NP**	**0.96**	**2.46**
R-9 , 13.5-15	**Poorly-graded sand (SP)**	**NP**	**NP**	**NP**	**1**	**1.6**
R-12 , 38.5' - 40'	**Poorly-graded sand with silt (SP-SM)**	**NP**	**NP**	**NP**	**0**	**0**

Boring No, Depth	D100	D60	D30	D10	% Cobble	%Gravel	%Sand	%Silt	%Clay
V-9 , 2-4	**19**	**0.26**	**0.17**	**0**	**0**	**9.9**	**78.9**	**11.2**	
R-10 , 28.5-30	**2**	**0.32**	**0.2**	**0.13**	**0**	**0**	**97.3**	**2.7**	
R-9 , 13.5-15	**0.84**	**0.24**	**0.19**	**0.15**	**0**	**0**	**98.8**	**1.2**	
R-12 , 38.5' - 40'	**2**	**0.28**	**0.16**	**0**	**0**	**0**	**88.9**	**11.1**	

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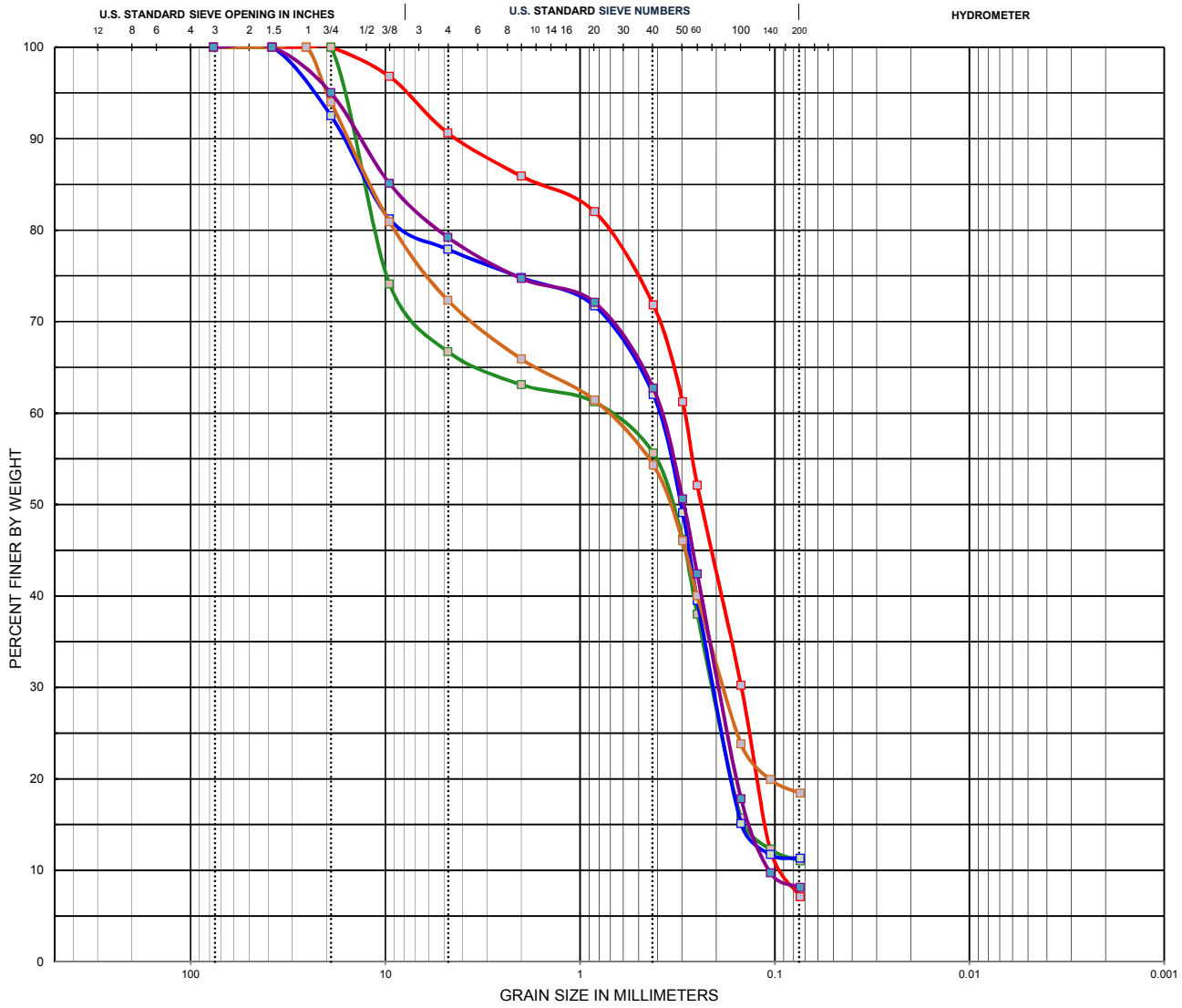

COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Boring No, Depth	Classification	LL	PL	PI	Cc	Cu
S-9 , 0-2	**Poorly-graded sand with silt (SP-SM)**	**NP**	**NP**	**NP**	**0.86**	**3.22**
S-13 , 4-6	**Poorly-graded sand with silt and gravel (SP-SM)**	**NP**	**NP**	**NP**	**0**	**0**
S-11 , 2-4	**Poorly-graded sand with silt and gravel (SP-SM)**	**NP**	**NP**	**NP**	**0**	**0**
S-12 , 0-2	**Silty sand with gravel (SM)**	**NP**	**NP**	**NP**	**0**	**0**
S-16 , 0-2	**Poorly-graded sand with silt and gravel (SP-SM)**	**NP**	**NP**	**NP**	**0.93**	**3.55**

Boring No, Depth	D100	D60	D30	D10	% Cobble	%Gravel	%Sand	%Silt	%Clay
S-9 , 0-2	**19**	**0.29**	**0.15**	**0.09**	**0**	**9.4**	**83.5**	**7.1**	
S-13 , 4-6	**19**	**0.75**	**0.21**	**0**	**0**	**33.3**	**55.7**	**11**	
S-11 , 2-4	**38.1**	**0.4**	**0.21**	**0**	**0**	**22.1**	**66.6**	**11.3**	
S-12 , 0-2	**25.4**	**0.76**	**0.19**	**0**	**0**	**27.7**	**53.9**	**18.4**	
S-16 , 0-2	**38.1**	**0.39**	**0.2**	**0.11**	**0**	**20.8**	**71.1**	**8.1**	

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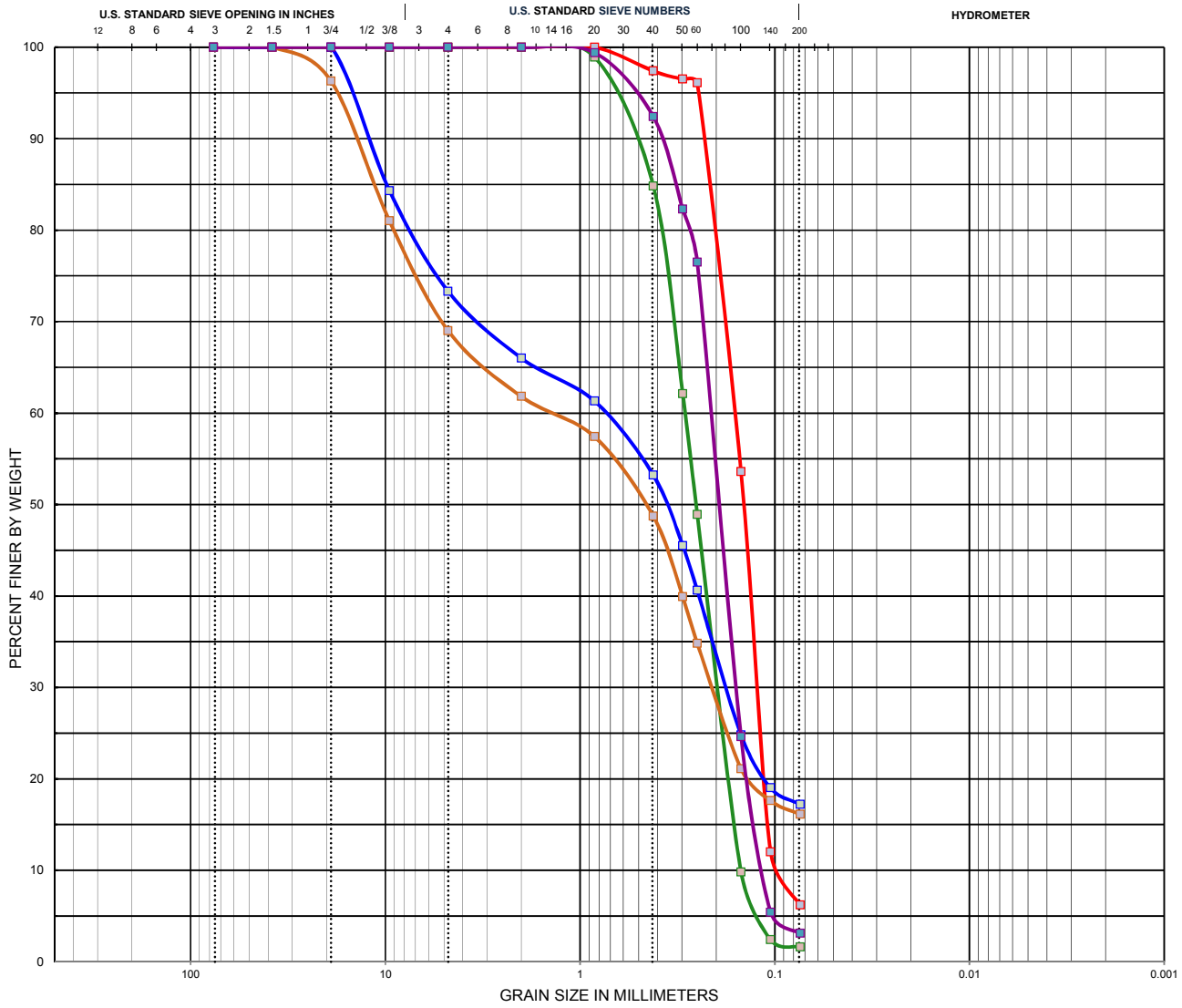

COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Boring No, Depth	Classification	LL	PL	PI	Cc	Cu
S-20 , 28.5-30	**Poorly-graded sand with silt (SP-SM)**	**NP**	**NP**	**NP**	**1**	**1.78**
S-21 , 8-10	**Poorly-graded sand (SP)**	**NP**	**NP**	**NP**	**0.92**	**1.93**
S-22 , 2-4	**Silty sand with gravel (SM)**	**NP**	**NP**	**NP**	**0**	**0**
S-19 , 0-2	**Silty sand with gravel (SM)**	**NP**	**NP**	**NP**	**0**	**0**
S-17 , 23.5-25	**Poorly-graded sand (SP)**	**NP**	**NP**	**NP**	**0.97**	**1.83**

Boring No, Depth	D100	D60	D30	D10	% Cobble	%Gravel	%Sand	%Silt	%Clay
S-20 , 28.5-30	**0.84**	**0.16**	**0.12**	**0.09**	**0**	**0**	**93.8**	**6.2**	
S-21 , 8-10	**2**	**0.29**	**0.2**	**0.15**	**0**	**0**	**98.4**	**1.6**	
S-22 , 2-4	**19**	**0.77**	**0.18**	**0**	**0**	**26.7**	**56.1**	**17.2**	
S-19 , 0-2	**38.1**	**1.53**	**0.21**	**0**	**0**	**31**	**52.9**	**16.1**	
S-17 , 23.5-25	**2**	**0.22**	**0.16**	**0.12**	**0**	**0**	**96.9**	**3.1**	

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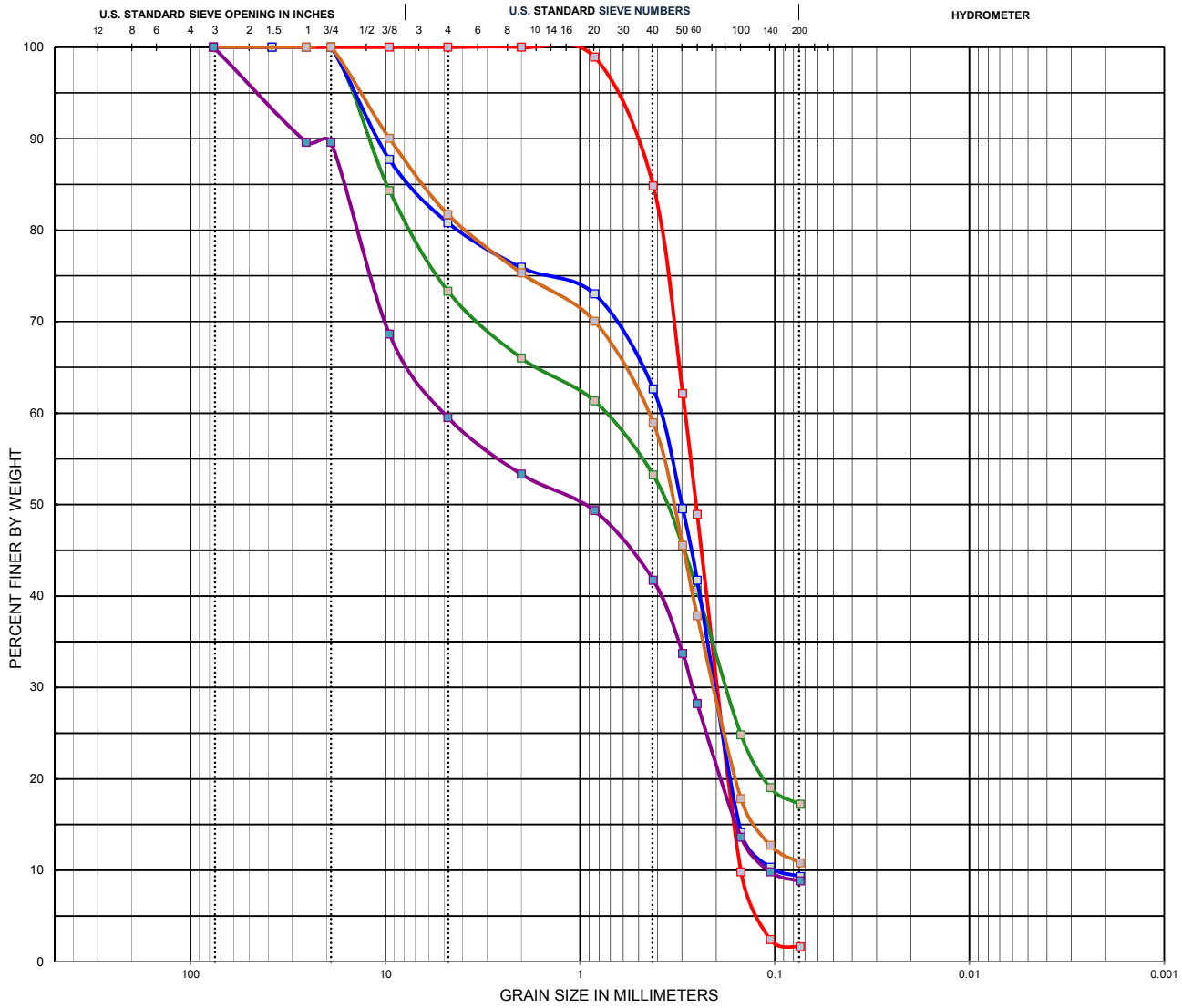

COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Boring No, Depth	Classification	LL	PL	PI	Cc	Cu
S-21 , 8-10	**Poorly-graded sand (SP)**	**NP**	**NP**	**NP**	**0.92**	**1.93**
S-22 , 2-4	**Silty sand with gravel (SM)**	**NP**	**NP**	**NP**	**0**	**0**
S-25 , 2-4	**Poorly-graded sand with silt and gravel (SP-SM)**	**NP**	**NP**	**NP**	**1.1**	**4**
S-26 , 2-4	**Poorly-graded sand with silt and gravel (SP-SM)**	**NP**	**NP**	**NP**	**0**	**0**
S-27 , 0-2	**Poorly-graded sand with silt and gravel (SP-SM)**	**NP**	**NP**	**NP**	**0.13**	**45.64**

Boring No, Depth	D100	D60	D30	D10	% Cobble	%Gravel	%Sand	%Silt	%Clay
S-21 , 8-10	**2**	**0.29**	**0.2**	**0.15**	**0**	**0**	**98.4**	**1.6**	
S-22 , 2-4	**19**	**0.77**	**0.18**	**0**	**0**	**26.7**	**56.1**	**17.2**	
S-25 , 2-4	**19**	**0.4**	**0.21**	**0.1**	**0**	**19.2**	**71.5**	**9.3**	
S-26 , 2-4	**19**	**0.46**	**0.21**	**0**	**0**	**18.3**	**70.9**	**10.8**	
S-27 , 0-2	**76.2**	**5.02**	**0.27**	**0.11**	**0**	**40.5**	**50.7**	**8.8**	

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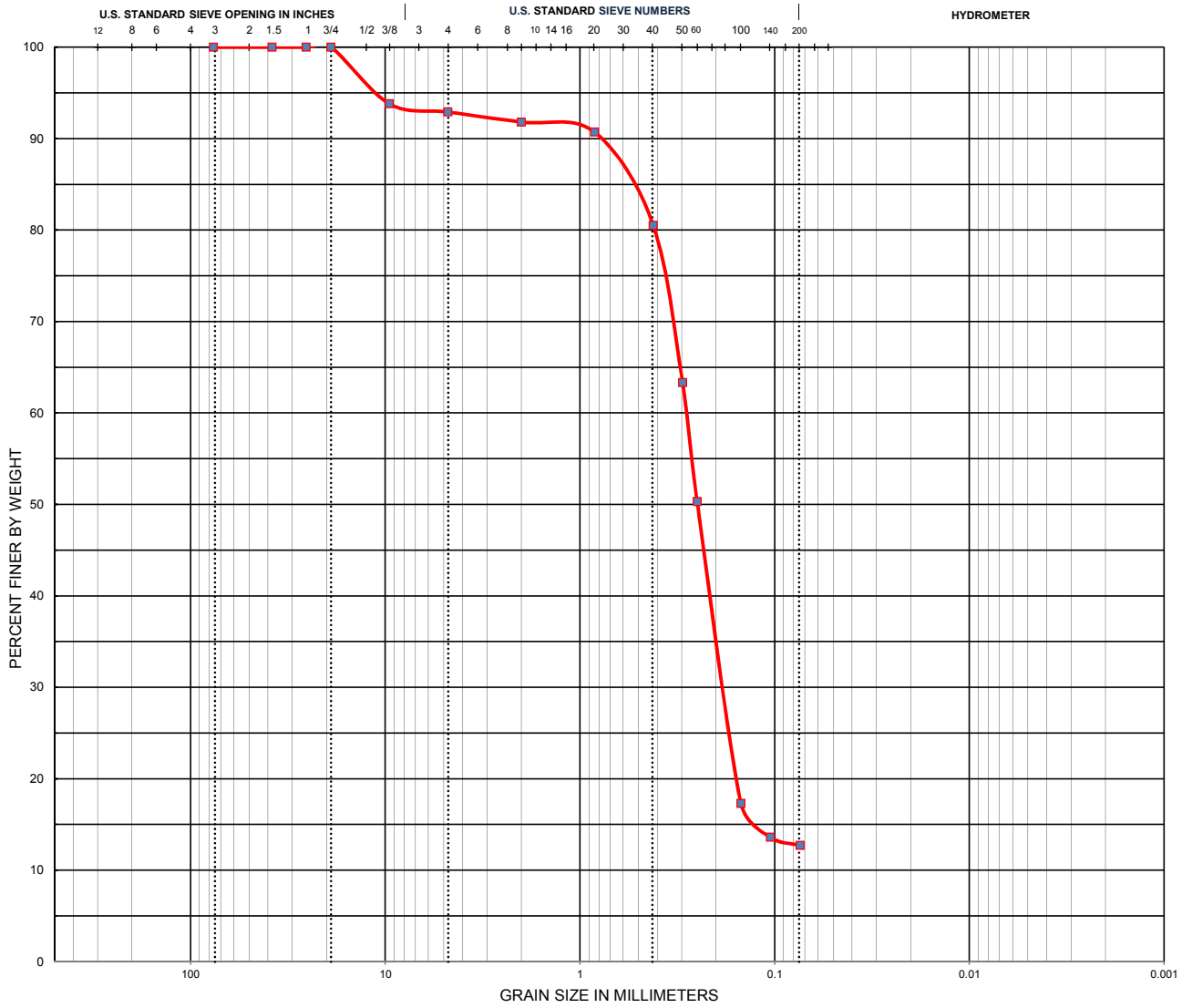

COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Boring No, Depth	Classification	LL	PL	PI	Cc	Cu
S-28 , 2-4	**Silty sand (SM)**	**NP**	**NP**	**NP**	**0**	**0**

Boring No, Depth	D100	D60	D30	D10	% Cobble	%Gravel	%Sand	%Silt	%Clay
S-28 , 2-4	**19**	**0.29**	**0.19**	**0**	**0**	**7.1**	**80.2**	**12.7**	

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APPENDIX B

PRELIMINARY DESIGN GEOTECHNICAL SERVICES REPORT

RADISE

January 31, 2017

Hazen and Sawyer
4000 Hollywood Blvd., Suite 750N
Hollywood, Florida 33201

Attn: Mr. Robert B. Taylor, Jr., P.E.
Office: (954) 987- 0066
Cell: (772) 595- 2535
Email: rbtaylor@hazenandsawyer.com

RE: Geotechnical Services Report
City of Fort Lauderdale - 7 Neighborhoods Improvement Projects
Broward County, Florida
RADISE Project No: 160605

Dear Mr. Taylor,

RADISE International, LC (RADISE) is pleased to submit this *Geotechnical Services Report* for the above-referenced project. The purpose of this report is to provide geotechnical information and recommendations to aid in the design and construction of this project. This report describes the field exploration and laboratory testing performed, presents the data obtained, and provides our recommendation regarding geotechnical aspect of the of the proposed project.

The study was performed in general accordance with our agreement executed on October 11, 2016, our scope of work for geotechnical services, and the Florida Department of Transportation (FDOT) Soils and Foundations Handbook.

We appreciate the opportunity to work with Hazen and Sawyer on this project, and trust that the information presented is clear. Should you have any questions with this report, or if we can be of additional assistance as this project develops, please contact us at (561) 841-0103.

Sincerely,

RADISE International
Infrastructure Engineers & Software Developers

Khaled Abdelli
Staff Engineer

Akash Bissoon, P.E.
Project Engineer
Florida Registration
No. 74582

Thomas F. Mullin LICENSE No. 43366 STATE OF FLORIDA PROFESSIONAL ENGINEER

Thomas F. Mullin, P.E.
Chief Engineer &
Geotechnical Group Manager
Florida Registration
No. 34466

1/31/17

4152 West Blue Heron Blvd, Suite 1114, Riviera Beach, FL 33404 Phone: 561.841.0103 / Fax: 561.841.0104 www.radise.net
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ATTACHMENTS

Sheet 1 – Vicinity Map
Sheets 2A through 2G – Test Location Plan
Sheet 3A through 3E – SPT Boring Subsurface Profiles
Table A-1 – Laboratory Test Results Summary
Grain Size Distribution
Table A-2 – Open-Hole Exfiltration Test Results

1.0 INTRODUCTION

RADISE understands that the City of Fort Lauderdale is performing a study for Stormwater master plan modeling and design implementation in the City of Fort Lauderdale. To aid in the evaluation and design of the project, RADISE was requested to provide subsoil investigation and evaluation services that included drilling of exploratory borings and exfiltration testing to determine the subsurface stratigraphy, groundwater levels and physical properties of the soils underlying the site.

The information presented in this report is based upon our interpretation of the subsurface information revealed by the test borings. The report does not reflect variations in subsurface conditions that may exist between or beyond these borings. Variations in soil and groundwater conditions should be expected, the nature and extent of which might not become evident until construction is undertaken. If variations are encountered, and/or the scope of the project altered, we should be consulted for additional recommendations.

2.0 PROJECT DESCRIPTION

The project is located in the City of Fort Lauderdale, Florida and includes seven (7) neighborhoods located east of the interstate (I-95) and between Port Everglades Expressway and Sunrise Boulevard. The approximate limits of the neighborhood projects are shown on the attached *Vicinity Map*, Sheet 1.

3.0 PURPOSE AND SCOPE OF WORK

The purpose of this study was to perform a limited exploration of the subsurface conditions within the project proposed areas, to aid in the planning and design of the overall neighborhood site drainage infrastructure.

More specifically, the purpose of the work included the following:

- Development of the anticipated soil profiles and the subsurface conditions within the depth of influence of the needed and anticipated improvements.
- Identification of critical geotechnical design or construction considerations based on the soil and groundwater conditions encountered in the borings.

RADISE performed the following services in accordance with the proposed scope of work:

1. Performed a site visit to field mark (paint or/and stake) the planned soil boring and percolation test locations and observe existing site conditions.

2. Contacted Sunshine One-Call to request the field location and clearance of underground utilities in the areas of the proposed borings, as per Florida Statutes.

3. Set up basic Maintenance of Traffic (MOT) safety controls prior to and during the field

drilling and testing operations.

4. Mobilized drilling equipment to the site to perform thirty-five (35) Standard Penetration Test (SPT) soil borings to depths of twelve (12) to fourteen (14) feet below the existing ground surface within the various seven (7) neighborhoods. Samples of the subsurface soils encountered were obtained and the depth to the groundwater level was measured in each of the borings. Following completion of the testing, the boreholes were backfilled with neat cement grout.

5. Performed twenty-eight (28) open-hole Exfiltration tests to a depth of fifteen (15) feet below the existing ground surface. Tests were performed along the edge of the streets in the green space adjacent to the SPT borings. Tests were performed in accordance with the South Florida Water Management District (SFWMD) test procedures. Following completion of the testing, the boreholes were backfilled with neat cement grout.

6. Visually classified the SPT soil samples retrieved from the soil borings in accordance with the Unified Soil Classification System (USCS) using the Visual-Manual Procedure in general accordance with the American Society of Testing and Materials (ASTM) test method D 2488, *Description and Identification of Soils*.

7. Performed a limited laboratory testing program for soil index property determinations on selected SPT samples to aid in the classification process in general accordance with the ASTM test method D 2487, *Classification of Soils for Engineering Purposes*.

8. Prepared this geotechnical report which includes, but not necessarily be limited to:

    - Detailed graphical logs of the soil borings showing the groundwater level and subsurface soil stratigraphy and classification.
    - Presentation of the results of the field permeability exfiltration tests.
    - Geotechnical design and construction recommendations for the proposed improvements.

4.0 FIELD EXPLORATION

During this work phase, MOT was used to protect our field personnel, crew, equipment, and the public. The MOT was designed and set up in accordance with the FDOT Design Standards.

4.1 SOIL BORINGS

The field exploration program to evaluate the existing subsurface conditions consisted of drilling thirty-five (35) SPT borings. The SPT borings were drilled to depths of twelve (12) to fourteen (14) feet below the existing ground surface. The approximate locations of the SPT borings are depicted on the attached *Test Location Plan*, Sheets 2A through 2G. Latitude and Longitude coordinates of the test locations were obtained by the field crew using hand-held GPS equipment and are listed on the attached *Subsurface Profiles*, Sheets 3A through 3E. The SPT borings were

performed in general accordance with ASTM D 1586, "*Standard Test Method for the Standard Penetration Test and Split-Barrel Sampling*". Upon retrieval, the split-spoon soil samples were visually classified and placed in moisture proof containers for transportation to our laboratory. Each borehole was backfilled with neat cement grout to the ground surface after the completion of drilling operations.

4.2 PERMEABILITY TEST

To evaluate the hydraulic conductivity of the subsurface soils, twenty-eight (28) Exfiltration Tests were performed along the edge of the streets in the green space adjacent to most of the SPT borings. Exfiltration tests were performed in general accordance with the South Florida Water Management District (SFWMD) procedures in 6-inch diameter by fifteen (15) feet deep auger boreholes. The approximate location of the tests are shown on the attached *Test Location Plan*, Sheets 2A through 2G.

4.3 GROUNDWATER LEVEL MEASUREMENTS

After completion of the borings and after a short stabilization period, the depth to the groundwater was measured from the existing ground surface in each boring. The measured groundwater depth/elevation is plotted adjacent to the soil profiles shown on the attached *Subsurface Profiles*, Sheets 3A through 3E.

5.0 LABORATORY TESTING

5.1 GENERAL

Representative soils samples collected from the borings were visually reviewed in the laboratory by a RADISE Geotechnical Engineer to confirm field classifications. The samples were classified in general accordance with the Unified Soil Classification System (USCS). The classifications were based on visual observations supplemented by laboratory test results performed on selected representative SPT samples. Laboratory index tests consisting of Full Sieve Analysis, Percent Passing No. 200 Sieve, Moisture and Organics Content tests were performed on selected samples.

5.2 LABORATORY TEST RESULTS

The following list summarizes the types and numbers of laboratory tests performed.

- Fifty (50), Moisture Content Tests (ASTM D 2216).
- Nineteen (19), Organics Content Tests (ASTM 2216 D).
- Eighteen (18), Full Sieve Analysis Test (ASTM D422).
- Fourteen (14), Percent Passing No. 200 Sieve Tests (ASTM D 1140).

Test assignments were provided by a geotechnical engineer during the laboratory review of secured soil samples. Laboratory assignments were made to supplement and confirm soil

classification at each general boring location.

All of the laboratory test results are presented on the attached *Subsurface Profiles*, Sheet 3A through 3E, and in the attached Table A-1 - *Laboratory Test Results Summary*.

6.0 SURFACE AND SUBSURFACE EXPLORATION

6.1 STRATIGRAPHY

Stratification of the explored soils is based on visual examination of the recovered soil samples, laboratory classification and index testing, and interpretation of the field boring logs by a geotechnical engineer in accordance with the Unified Soil Classification System (USCS). Subsurface profiles showing the soil stratification at the boring locations were developed and are presented on the attached *Subsurface Profiles*, Sheets 3A through 3E. Stratification lines represent approximate boundaries between soil types, but the actual transition between layers may be gradual or abrupt. Additionally, soil and groundwater conditions will vary between boring locations.

The soils encountered in all thirty-five (35) of the soil borings generally consist of sand with varying amounts of silt and limestone fragments occasionally underlain by limestone. Some of the borings encountered a layer of soil containing appreciable amounts of organic matter. Generalized descriptions of the soil stratigraphy are provided in the following Table 1:

TABLE 1 - STRATIGRAPHY

Stratum No.	Description	USCS Class.
1	Gray, tan, brown to dark brown, fine to medium SAND, trace Organics, trace Limestone, trace Silt	SP
2	Gray, tan, brown to dark brown, fine to medium SAND, trace to few Shell fragments	SP
3	Gray, tan, brown to dark brown Silty SAND, with Limestone Fragments	SM
4	Gray, tan, brown to dark brown SAND, with Silt, trace Limestone fragments	SP, SP-SM
5	Tan LIMESTONE	-
6	Dark Brown PEAT	PT

It is noted that the Layer 6 Dark Brown Peats were primarily encountered in the borings performed in the Seven Isles area of the project. Review of the boring logs indicates there appear to be layers of fill soils which were placed over remnant buried mangrove preserve areas along the Intracoastal

waterway. This land reclamation occurred during early development periods in the history of the coastal Ft. Lauderdale area.

The following Table 2 summarizes the borings, depths and thickness of the Stratum 6 soils that contain 14.7 to 62.5 percent organics encountered:

TABLE 2 – STRATUM 6 SOILS (PEAT)

Boring No.	Depth from (feet)	Depth to (feet)	Organic layer thickness (feet)
B-32	8	10	2
B-33	6	8	2
B-34	4	8	4
B-35	6	8	2

6.2 EXFILTRATION TESTING

The Exfiltration permeability tests were completed in an 8-inch diameter by 15-foot deep auger borehole in general accordance with the SFWMD procedures. The borehole sidewall was stabilized with a 6-inch diameter perforated section of No. 10 slot screen. The annulus space was backfilled with clean 6/20 silica sand. The results of the permeability tests are presented on Table A-2 - *Open-hole Exfiltration Test Results* included in the Attachments.

6.3 GROUNDWATER LEVELS

Groundwater was encountered in each of the auger borings and exfiltration test boreholes. The groundwater level varied between 3.5 to 7 feet below the existing ground surface. However, the groundwater levels will fluctuate with the seasons and variations of precipitation. It is our recommendation that the seasonal high groundwater table levels along the various project infrastructure alignments, be based on the normal high tide water levels of the adjacent waterways existing near the various neighborhood project areas and with additional geotechnical explorations. In inland areas not directly influenced by the water levels in the adjacent waterways and canals, normal high groundwater levels can be expected to be on the order of 2 to 3 feet above currently measured and reported levels herein.

7.0 DISCUSSIONS AND RECOMMENDATIONS

Generally speaking, the soils encountered in the majority of the borings performed for this study will be suitable for the proposed construction. However, it was previously noted that the Seven Isles area is likely a historical land reclamation area. This area as well as several others in the surrounding region, were infilled sometime in the historical past to facilitate the construction of the present residential communities. While no organics were encountered in the limited number of borings performed for the Victoria Park area, it is noted that the eastern area of this development

borders what appears to be the old Intracoastal Waterway footprint. Hence it might be expected that some buried organics may exist in the eastern areas/edges of this development.

The presence of the buried organics will be problematic to the installation of underground utilities especially when the inverts of such systems are founded in the organic layers. Such organics have very low shear strengths and will not support significant excavations made within or through them. As such, it is anticipated that significant shoring/sheet piling will be required to install infrastructure systems in this area.

7.1 CLEARING AND GRUBBING

Clearing and grubbing may be required in some of the proposed construction areas. Clearing and grubbing should include the complete removal and disposal of surficial grasses, associated root systems, topsoil, rubbish, debris, any demolition material/pavement and all other obstructions resting on or protruding through the surface of the existing ground and the surface of excavated areas.

7.2 UNDERGROUND UTILITIES

Existing underground utilities and structures are likely to be present in the proposed construction areas. These utilities need to be properly identified, and located and/or relocated as necessary to construct the new components of the project. The excavation bottoms of any relocated or replacement utilities should be cleaned of any undesirable materials prior to placing any engineered backfill.

Site preparation, excavation, and backfilling for new utilities or re-aligned utilities should follow all of the applicable recommendations of this report.

7.3 EXCAVATIONS

The project construction Contractor is solely responsible for making any utility or other excavations in a safe manner and to provide appropriate measures to retain side slopes to ensure that persons working in or near the excavation are protected.

Excavations shall comply with Occupational Health and Safety Administration (OHSA) stipulations for Trench Excavation Safety including all temporary design and safety requirements. The soils encountered in the majority borings outside of the Seven Isles area, generally consist of relatively clean sands. OSHA 29 CFR part 1926 (Subpart P, Excavations) defines such soils as Type C soils. As such, the granular deposits encountered in the borings are readily capable of being excavated to a depth of several feet with standard backhoe construction equipment. As such, temporary side slopes in fully dewatered excavations could be made at a 1½H:1V inclination or flatter. Adjustment to this inclination and/or the use of sheeting, shoring or sliding trench boxes should be evaluated by the Contractor if other soil strata are encountered. Any structural retaining walls shall be designed and sealed by a structural engineer registered in the State of Florida.

It is noted that in the Seven Isles area, that significant Muck deposits were encountered in the borings. Utilities installed in this area are likely to encounter organic Muck deposits during the utility excavation and installation process.

7.4 DEWATERING

At the time of the field exploration (October, 2016), the groundwater encountered varied between 3.5 to 7 feet below the existing ground surface. In-the-dry construction of the underground utilities may require groundwater lowering and control of groundwater seepage depending on the design installation depths. Dewatering of the excavations may necessitate the use of sumps, wells, wellpoints or combinations thereof. Control of groundwater should be accomplished in a manner that preserves the integrity of the in-situ soils and limestones and does not cause instability of the excavation sidewalls. The dewatering system employed should be capable of maintaining a pre-drained surface a minimum of 24 inches below the excavation bottoms.

7.5 PIPE BEDDING

Most of the sands encountered in the borings are expected to provide good support for utility pipelines without the need for bedding when the invert elevations are at least 24 inches above the groundwater level (natural or pre-drained by dewatering). Should or where organics or other deleterious materials be encountered at or within 2 feet below the pipe invert, such soils shall be considered compressible and unsuitable for pipe support. These soils should be over-excavated and replaced with compacted clean sand or FDOT No. 57 coarse aggregate or an approved equivalent. If FDOT No. 57 stone or an approved equivalent is utilized, such stone material will need to be encapsulated and/or covered with a geosynthetic fabric especially beneath pavement areas. Such fabric material is needed to prevent granular excavation soils and trench backfill from penetrating/settling into the void volumes of the open stone resulting in loss of ground and eventual settlement of the ground surface above the piping.

The bedding surface should be uniformly compacted to a density of not less than 95 percent of the maximum dry density in accordance with ASTM D 1557, the Modified Proctor Method.

7.6 TRENCH BACKFILL AND COMPACTION

Soils used to backfill utility excavations should consist of clean sands having no materials larger than one inch in size, not more than ten (10) percent passing the U.S. Standard No. 200 sieve, and not more than three (3) percent organics or other deleterious materials by weight. Some of the subsurface soils encountered at these neighborhood sites appear to meet these criteria and are suitable for reuse as backfill once inspected, tested and approved.

Granular backfill should be placed at a moisture content within three (3) percent of its ASTM D 1557 determined optimum moisture and in level lifts whose thickness does not exceed eight (8) inches. Each fill lift should be stable, unyielding and uniformly compacted to at least 95 percent of the maximum dry density in accordance with ASTM D 1557, the Modified Proctor Method. We recommend the use of only relatively light, hand-held compaction equipment in the

densification operations around utilities to limit the potential damage to the pipelines and buried structures.

7.7 SITE PREPARATION

The site preparation for any roadway modifications should consist of necessary clearing and grubbing in general accordance with Section 110 of the FDOT Standard Specifications for Road and Bridge Construction or any similar City/County standard design criteria applicable to the project. Any topsoil or other deleterious material encountered in proposed pavement areas, will need to be stripped, removed and replaced with embankment or roadway fill. If buried organic soils, debris or other unsuitable materials are encountered during the construction, which are or are not disclosed by the borings, they should be removed and replaced with a backfill material as described in following sections.

The Strata 1, 2, and 4 soils are select granular soils and are satisfactory to use in the subgrade and embankment when utilized in general accordance with FDOT Standard Index 505 or any similar City/County standard design criteria applicable to the project. Soils exposed at the stripped grades will require moisture conditioning to near the optimum moisture content prior to initiating the densification operations. The densification should normally be accomplished using a self-propelled vibratory compactor which imparts a dynamic drum force of not less than 44,000 pounds however, in residential areas, the use of such heavy vibratory compaction equipment may prove problematic and disruptive or even damaging to existing/adjacent home owner's properties. In such cases, the compaction will need to be performed and achieved with lighter weight, less vibration generation capable equipment such as walk behind (e.g. Whacker) ground pounder or small vibratory rolling equipment.

Each section of the stripped grade should be subjected to multiple, overlapping (minimum of 10 percent overlap) coverages of the compactor as it operates at a travel speed of no more than 1.5 miles per hour (normal walking speed). Compaction should be continued until no further settlement can be visually discerned at the ground surface. The densified areas should include a 3-foot perimeter along proposed new pavement areas.

Density control should be exercised for the exposed subgrade for any roadway repairs. Soils in this interval should be compacted to not less than 95 percent of the maximum dry density in accordance with ASTM D 1557, the Modified Proctor Method. Subgrade soils that noticeably pump or deflect under the weight of the passing compaction equipment, could indicate the presence of soft, weak, overly saturated soils or compressible and loose soil zones existing in the near surface subgrade within the depth of influence of the roller. In such cases, those areas should be remedied by appropriate means to be determined by the inspecting field representative in consultation with representatives of the design team.

7.8 SELECT FILL COMPOSITION, PLACEMENT AND COMPACTION

Site structural and pavement embankment fill and backfill required for construction should consist of clean, granular materials that are free of debris, cinders, combustibles and organic matter. The fines content (i.e., material passing U.S. Standard No. 200 sieve) should not be more than ten (10)

percent by weight, no particle sizes larger than one (1) inches in any direction and the organic content should not exceed three (3) percent by dry weight. The on-site sand soils appear to meet the above criteria and are suitable for use as structural fill and backfill material. Organic laidened soils encountered in several of the borings soils beneath the upper sand layer such as those encountered in the Seven Isles area, will not be suitable for use of Select Fill.

The granular fill should be placed at a moisture content within three (3) percent of its Modified Proctor (ASTM D 1557) determined optimum in level lifts whose loose thickness does not exceed twelve (12) inches. In areas where heavy equipment cannot be operated for compaction, the fill should be placed in six (6) inch thick level lifts. Each fill lift should be stable, unyielding and uniformly compacted to 95 percent of the ASTM D 1557 maximum dry density, as verified by the designated site construction inspecting representative.

Select fill soils will require moisture conditioning to near the optimum moisture content prior to initiating the densification operations. Similar to the subgrade preparation, the fill densification should normally be accomplished using a self-propelled vibratory compactor which imparts a dynamic drum force of not less than 44,000 pounds. However, in residential areas, the use of such heavy vibratory compaction equipment may prove problematic and disruptive or even damaging to existing/adjacent home owner's properties. In such cases, the compaction will need to be performed and achieved with lighter weight, less vibration generation capable equipment such as walk behind (e.g. Whacker) ground pounder or small vibratory rolling equipment.

7.9 PAVEMENT DESIGN CONSIDERATIONS

The following information is intended as a guideline only, as the roadway or any repairs thereof, should be designed specifically for the vehicle load intensities and frequencies anticipated during the life of the project. Flexible pavement systems in this geographic area, typically consist of an asphaltic concrete wearing course, limerock base course and a stabilized pavement subgrade. Based on our preliminary analysis and experience in the area, the typical pavement section thicknesses shown in the following Table 3, are commonly used by local pavement design engineers.

TABLE 3 - TYPICAL FLEXIBLE AND RIGID PAVEMENT DESIGN

TYPE OF PAVEMENT	LAYER	MATERIAL DESCRIPTION	LAYER THICKNESS	
			LIGHT DUTY	HEAVY DUTY
Flexible	Asphaltic concrete	Florida DOT Asphalt Type S	1.5	2.0
	Base course	Crushed limerock with minimum LBR of 100, compacted to 98% of the Modified Proctor maximum dry density	6.0	8.0
	Stabilized subbase	Stabilized sub-base fill with a minimum LBR of 40 compacted to 95% of the Modified Proctor maximum dry density	12.0	12.0
Rigid	Concrete	Florida DOT Portland Cement Concrete	6.0	8.0
	Compacted subgrade	Natural in place soils compacted to at least 95 percent of the materials Modified Proctor maximum dry density	12.0	12.0

The base course material should consist of crushed limestone having a minimum Limerock Bearing Ratio (LBR) of 100. Base materials should meet the requirements presented in the latest revisions of the Florida Department of Transportation "Specifications for Road and Bridge Construction", Section 911 (limestone). The base course should be compacted to at least ninety-eight (98) percent of its maximum dry modified proctor density (AASHTO T 180).

We recommend that the pavement subgrade be stabilized to a depth of twelve (12) inches to achieve a minimum LBR of 40. This LBR can be achieved by blending base material (limerock) with the existing sandy subgrade soils. The required mixing ratio should be determined by laboratory testing. The stabilized subgrade should be compacted to at least ninety-eight (98) percent of its maximum dry as per ASTM D 1557, the Modified Proctor Method.

If it is not feasible to stabilize the subgrade, we recommend that the base course be thickened by an amount equivalent to the structural number of twelve (12) inches of stabilized subgrade.

A Portland concrete pavement thickness in the range of eight (8) inches is recommended for the project if a rigid pavement is to be employed (the thickness would depend on specific pavement use). The concrete should be reinforced to withstand the anticipated traffic loadings and jointed to reduce the chances for rigid pavement crack development. The minimum rigid pavement thickness recommended above is based upon concrete with an unconfined compressive strength of at least 3,000 psi and a modulus of rupture of at least 450 psi.

Actual pavement section thickness should be determined by the Design Civil Engineer based on traffic loads, volume, and the owner's design life requirements. The above sections represent minimum thickness representative of typical local construction practices and, as such, periodic

maintenance should be anticipated. All pavement materials and construction procedures should conform to FDOT, American Concrete Institute (ACI), or appropriate City and County requirements.

7.10 OBSERVATION AND TESTING

It is recommended that a geotechnical engineer be retained to provide soil engineering inspection services during the construction excavation phase of the project. This is to observe compliance with the design concept, specifications and recommendations, and to allow design changes in the event subsurface conditions differ from those anticipated. In addition, an inspection and testing representative of a geotechnical engineer should be present to provide monitoring and testing of both fill and concrete placement during the construction phase of the project.

8.0 PROTECTION OF EXISTING STRUCTURES

Ground vibrations induced upon adjacent structures, primarily by soil compaction equipment or any other construction activities such as pile driving, should be monitored to assure that they do not reach levels which prove damaging to any adjacent/nearby structures. Vibration Monitoring should be performed in general accordance with "Section 108, Protection of Existing Structures" of the current FDOT Standard Specifications for Road and Bridge Construction or other similar local City/County regulations or ordinances.

Vibration levels on adjacent facilities should generally be maintained below a 0.25 ips peak particle velocity level however, more restrictive/lessor levels may be specified for highly sensitive residential or commercial areas. The construction Contractor will need to inventory and provide a pre-construction inspection of adjacent structures and determine suitable vibration monitoring programs and impact limits for their construction activities. Such monitoring will be particularly important for the Seven Isles area as the ground conditions will have a higher tendency and capability to transmit vibrations horizontally from the construction activities. It is noted that the residential homes in this area are all likely founded on short driven piles installed to sound bearing conditions beneath the buried organics. Vibrations in the lower soil/rock layers beneath the organics, from construction activities such as sheet piling installation, will have the potential to be transmitted into the residences via the piling foundations installed for the structures.

9.0 LIMITATIONS

This report is intended for geotechnical purposes only, and not to document or detect the presence, or absence of any environmental conditions at the site, or to perform an environmental assessment of the site.

The analysis and recommendations presented in this report are based upon our interpretation of the subsurface information revealed by the test borings. The report does not reflect variations in subsurface conditions that may exist between or beyond these borings. Variations in soil and groundwater conditions should be expected, the nature and extent of which might not become

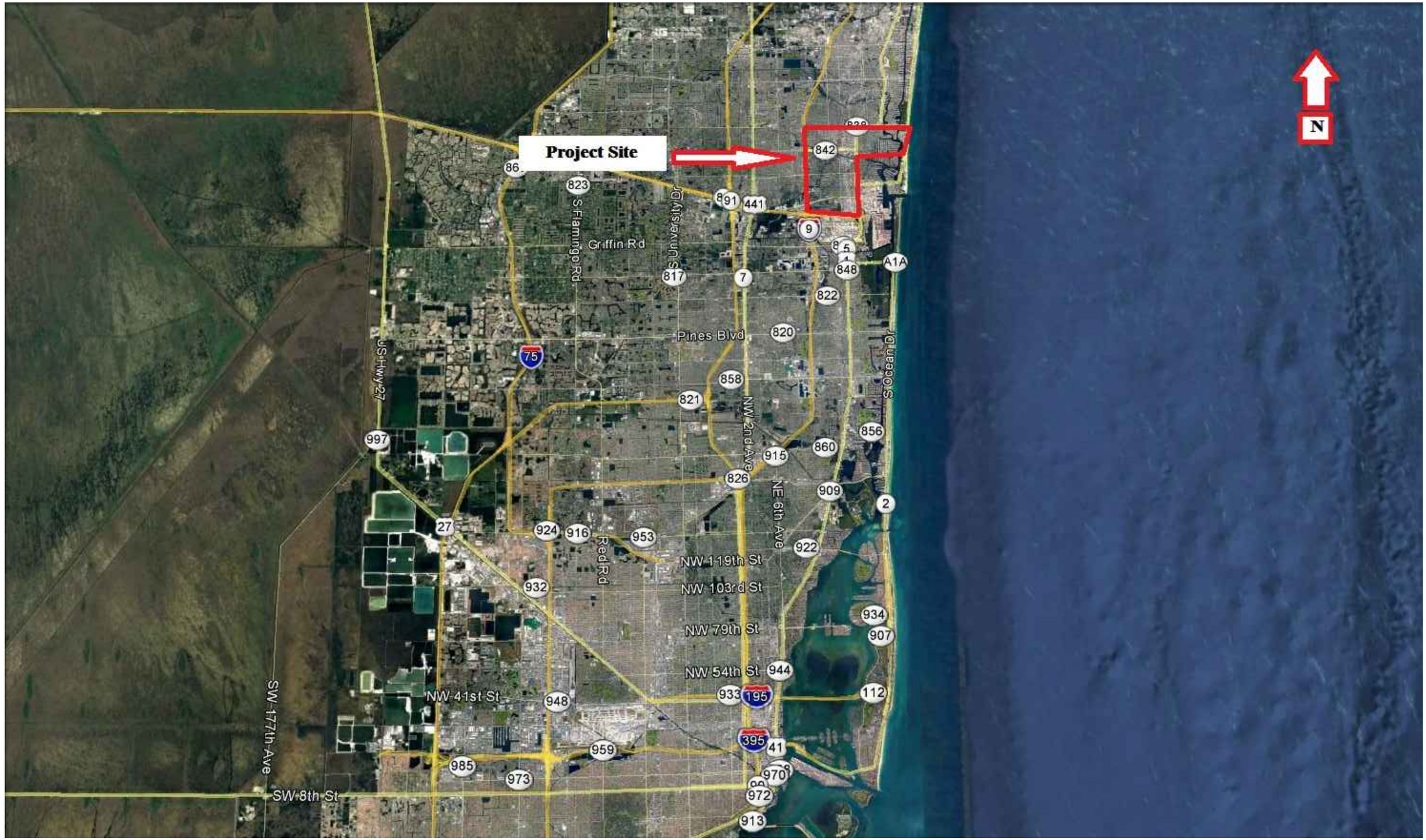
evident until construction is undertaken. If variations are encountered, and/or the scope of the project altered, we should be consulted for additional recommendations.

RADISE International warrants that the professional services performed and presented in this report are prepared for Hazen and Sawyer, and are based upon typical standard of care recognized principles and practices in the discipline of geotechnical engineering and hydrogeology at this place and point in time, for this project site. No other warranties are expressed or implied.

-oOo-

RADISE appreciates the opportunity to be of service to you. Please feel free to contact us at 561-841-0103 if you have any questions or comments regarding this report.

Respectfully submitted
RADISE INTERNATIONAL, L.C.



REVISIONS						Names	Dates
Date.	By	Descriptions	Date.	By	Descriptions	Drawn by	KA 11/9/2016
						Checked by	TM 11/9/2016
						Designed by	
						Checked by	
						Approved by	

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THE CITY OF FORT LAUDERDALE	
COUNTY	CLIENT
BROWARD	HAZEN AND SAWYER

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

SHEET TITLE: VICINITY MAP
PROJECT NAME: FORT LAUDERDALE - 7 NEIGHBORHOODS IMPROVEMENT

SHEET NO. 1
RADISE PROJECT NO: 160605

LEGEND

TEST NUMBER AND APPROXIMATE LOCATION

REVISIONS						Names	Dates
Date.	By	Descriptions	Date.	By	Descriptions	Drawn by	KA 11/9/2016
						Checked by	AB 11/9/2016
						Designed by	
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THE CITY OF FORT LAUDERDALE	
COUNTY	CLIENT
BROWARD	HAZEN AND SAWYER

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

SHEET TITLE: TEST LOCATION PLAN
SHEET NO. 2A
PROJECT NAME: FORT LAUDERDALE - 7 NEIGHBORHOODS IMPROVEMENT
RADISE PROJECT NO: 160605

LEGEND

TEST NUMBER AND APPROXIMATE LOCATION

REVISIONS							Names	Dates						
Date.	By	Descriptions	Date.	By	Descriptions	Drawn by	KA	11/9/2016	RADISE Infrastructure Engineers & Software Developers	ENGINEER OF RECORD 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	THE CITY OF FORT LAUDERDALE		SCALE: VERTICAL N.T.S.	SHEET TITLE: TEST LOCATION PLAN	SHEET NO. 2B
						Checked by	AB	11/9/2016							
						Designed by					COUNTY	CLIENT	SCALE: HORIZONTAL N.T.S.	PROJECT NAME: FORT LAUDERDALE - 7 NEIGHBORHOODS IMPROVEMENT	RADISE PROJECT NO: 160605
						Checked by					BROWARD	HAZEN AND SAWYER			
						Approved by			LICENSE NO. - 8901						

LEGEND

TEST NUMBER AND APPROXIMATE LOCATION

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THE CITY OF FORT LAUDERDALE	
COUNTY	CLIENT
BROWARD	HAZEN AND SAWYER

SCALE: VERTICAL N.T.S.

SCALE: HORIZONTAL N.T.S.

SHEET TITLE: TEST LOCATION PLAN

PROJECT NAME: FORT LAUDERDALE - 7 NEIGHBORHOODS IMPROVEMENT

SHEET NO. 2C

RADISE PROJECT NO: 160605

LEGEND

TEST NUMBER AND APPROXIMATE LOCATION

REVISIONS							Names	Dates
Date.	By	Descriptions	Date.	By	Descriptions	Drawn by	KA	11/9/2016
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						Checked by		
						Approved by		

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THE CITY OF FORT LAUDERDALE	
COUNTY	CLIENT
BROWARD	HAZEN AND SAWYER

SCALE: VERTICAL N.T.S.

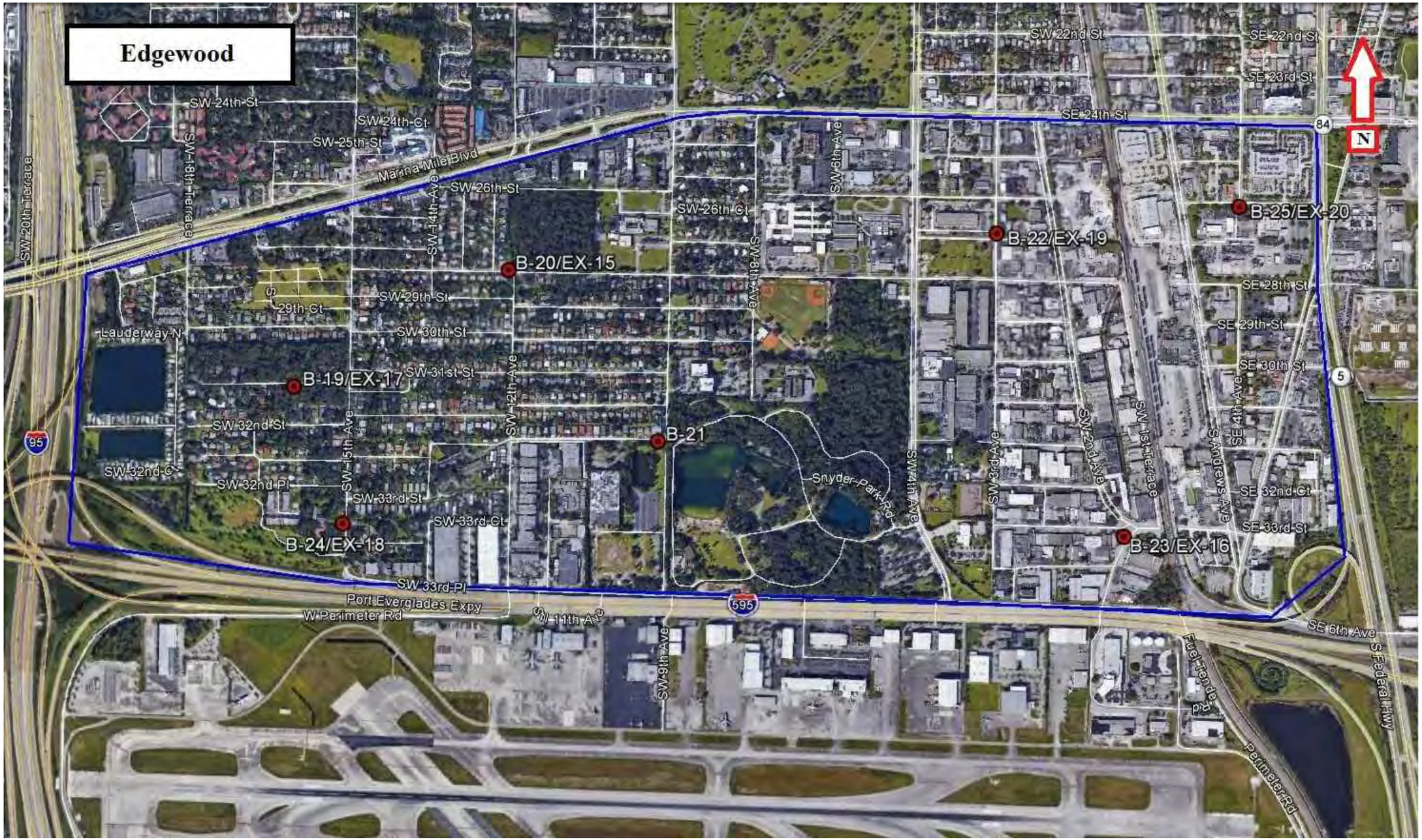
SCALE: HORIZONTAL N.T.S.

SHEET TITLE: TEST LOCATION PLAN

PROJECT NAME: FORT LAUDERDALE - 7 NEIGHBORHOODS IMPROVEMENT

SHEET NO. 2D

RADISE PROJECT NO: 160605



LEGEND

◉ TEST NUMBER AND APPROXIMATE LOCATION

REVISIONS							Names	Dates
Date.	By	Descriptions	Date.	By	Descriptions	Drawn by	KA	11/9/2016
						Checked by	AB	11/9/2016
						Designed by		
						Checked by		
						Approved by		

RADISE Infrastructure Engineers & Software Developers

LICENSE NO. - 8901

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4152 West Blue Heron Boulevard, Suite 1114
Riviera Beach, Florida. 33404
TEL 561-841-0103 FAX 561-841-0104
URL : http:// www.radise.net

THE CITY OF FORT LAUDERDALE	
COUNTY	CLIENT
BROWARD	HAZEN AND SAWYER

SCALE: VERTICAL N.T.S.

SCALE: HORIZONTAL N.T.S.

SHEET TITLE: TEST LOCATION PLAN

PROJECT NAME: FORT LAUDERDALE - 7 NEIGHBORHOODS IMPROVEMENT

SHEET NO. 2E

RADISE PROJECT NO: 160605

LEGEND

TEST NUMBER AND APPROXIMATE LOCATION

REVISIONS							Names	Dates
Date.	By	Descriptions	Date.	By	Descriptions	Drawn by	KA	11/9/2016
						Checked by	AB	11/9/2016
						Designed by		
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THE CITY OF FORT LAUDERDALE	
COUNTY	CLIENT
BROWARD	HAZEN AND SAWYER

SCALE: VERTICAL N.T.S.

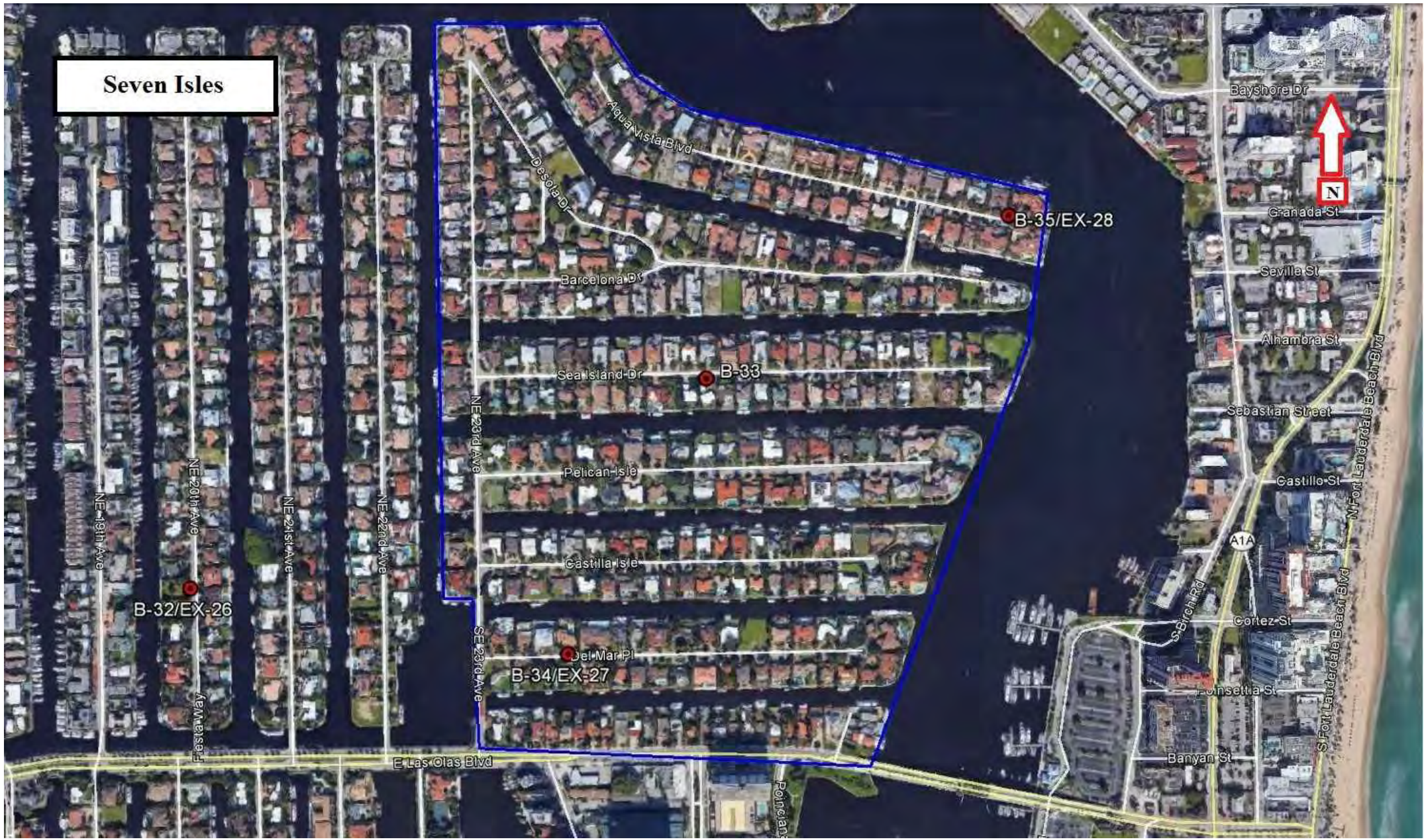
SCALE: HORIZONTAL N.T.S.

SHEET TITLE: TEST LOCATION PLAN

PROJECT NAME: FORT LAUDERDALE - 7 NEIGHBORHOODS IMPROVEMENT

SHEET NO. 2F

RADISE PROJECT NO: 160605



LEGEND

TEST NUMBER AND APPROXIMATE LOCATION

REVISIONS						Names	Dates
Date.	By	Descriptions	Date.	By	Descriptions	Drawn by	KA 11/9/2016
						Checked by	AB 11/9/2016
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THE CITY OF FORT LAUDERDALE

COUNTY	CLIENT
BROWARD	HAZEN AND SAWYER

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

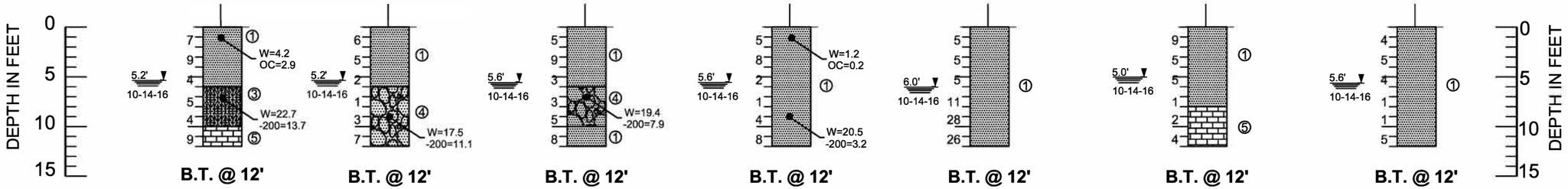
SHEET TITLE: TEST LOCATION PLAN

PROJECT NAME: FORT LAUDERDALE - 7 NEIGHBORHOODS IMPROVEMENT

SHEET NO. 2G

RADISE PROJECT NO: 160605

BORING NO:	B-1	B-2	B-3	B-4	B-5	B-6	B-7
LATITUDE:	26°08'07.1"N	26°08'05.1"N	26°07'51.6"N	26°07'51.6"N	26°07'38.8"N	26°07'24.9"N	26°07'32.7"N
LONGITUDE:	80°09'58.8"W	80°09'36.1"W	80°09'51.2"W	80°09'36.2"W	80°09'57.5"W	80°08'37.7"W	80°09'25.5"W
DATE:	10-14-16	10-14-16	10-14-16	10-14-16	10-14-16	10-14-16	10-14-16
DRILLER:	TIM FLICKING	TIM FLICKING	TIM FLICKING	TIM FLICKING	TIM FLICKING	TIM FLICKING	TIM FLICKING
RIG:	CME 45	CME 45	CME 45	CME 45	CME 45	CME 45	CME 45



LEGEND

1	GRAY, TAN, BROWN TO DARK BROWN, FINE TO MEDIUM SAND, TRACE ORGANIC, TRACE LIMESTONE FRAGMENTS, TRACE SILT (SP)	
2	GRAY, TAN, BROWN FINE TO MEDIUM SAND, TRACE TO FEW SHELL FRAGMENTS (SP)	
3	GRAY, TAN, BROWN TO DARK BROWN SILTY SAND, WITH LIMESTONE FRAGMENTS (SM)	
4	GRAY, TAN, BROWN TO DARK BROWN SAND, WITH SILT, TRACE LIMESTONE FRAGMENTS (SP, SP-SM)	
5	TAN LIMESTONE	
6	DARK BROWN PEAT (PT)	
		B.T. @ 12' — BORING TERMINATED AT 12' BELOW THE EXISTING GROUND SURFACE
		PT-SP-SM — UNIFIED SOIL CLASSIFICATION SYSTEM GROUP SYMBOL (ASTM D 2487)
		N — STANDARD PENETRATION RESISTANCE- BLOWS PER FOOT USING AUTOMATIC HAMMER
		W — MOISTURE CONTENT (%)
		OC — ORGANIC CONTENT (%)
		-200 — AMOUNT PASSING US STANDARD 200 SIEVE (%)

NOTES

(1) BORINGS WERE DRILLED IN OCTOBER OF 2016. SPT BORINGS WERE PERFORMED USING A CME-45C AUTOMATIC HAMMER DRILLING RIG (ASTM D1586).

(2) STRATA BOUNDARIES ARE APPROXIMATE AND REPRESENT SOIL STRATA AT EACH TEST HOLE LOCATION ONLY. SOIL TRANSITIONS MAY BE MORE GRADUAL THAN IMPLIED.

(3) GROUNDWATER LEVELS SHOWN ON THE SUBSURFACE PROFILES REPRESENT GROUNDWATER SURFACES ON THE DATES SHOWN. GROUNDWATER LEVEL FLUCTUATIONS SHOULD BE ANTICIPATED THROUGHOUT THE YEAR.

(4) LATITUDE AND LONGITUDE COORDINATES WERE MEASURED IN THE FIELD USING A HELD HAND GPS.

(5) AFTER COMPLETION OF DRILLING, BOREHOLES WERE BACKFILLED WITH GROUT.

STANDARD PENETRATION TEST DATA

SPOON INSIDE DIA.	1.375 INCH
SPOON OUTSIDE DIA.	2.0 INCHES
AVG. HAMMER DROP	30 INCHES
HAMMER WEIGHT	140 POUNDS

GRANULAR MATERIALS

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

SILTS AND CLAYS

CONSISTENCY	AUTOMATIC HAMMER SPT N-VALUE BLOWS/FOOT
VERY SOFT	LESS THAN 1
SOFT	1 - 3
FIRM	3 - 6
STIFF	6 - 12
VERY STIFF	12 - 24
HARD	GREATER THAN 24

REVISIONS

Date.	By	Descriptions	Date.	By	Descriptions

	Names	Dates
Drawn by	K.A.	01/03/2017
Checked by	A.B.	01/03/2017
Designed by		
Checked by		
Approved by		

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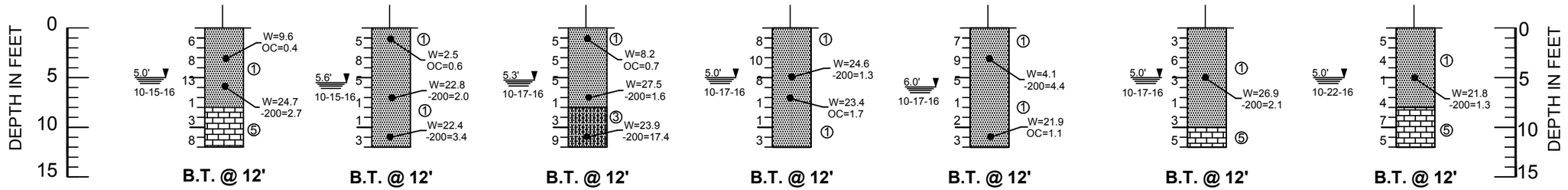
CITY OF FORT LAUDERDALE		SCALE: VERTICAL N.T.S.	SHEET TITLE: SPT BORING SUBSURFACE PROFILES	SHEET NO. 3A
COUNTY: BROWARD	CLIENT: HAZEN AND SAWYER	SCALE: HORIZONTAL N.T.S.	PROJECT NAME: FORT LAUDERDALE - 7 NEIGHBORHOODS IMPROVEMENT	RADISE PROJECT NO: 160605

BORING NO:	B-8	B-9	B-10	B-11	B-12	B-13	B-14
LATITUDE:	26°07'25.7"N	26°07'39.5"N	26°08'06.1"N	26°08'05.7"N	26°07'47.0"N	26°07'26.7"N	26°06'21.6"N
LONGITUDE:	80°09'07.4"W	80°09'09.3W"	80°08'39.7"W	80°09'06.4"W	80°08'56.0"W	80°08'58.6"W	80°09'26.9"W
DATE:	10-15-16	10-15-16	10-17-16	10-17-16	10-17-16	10-17-16	10-22-16
DRILLER:	TIM FLICKING	TIM FLICKING	TIM FLICKING	TIM FLICKING	TIM FLICKING	TIM FLICKING	TIM FLICKING
RIG:	CME 45	CME 45	CME 45	CME 45	CME 45	CME 45	CME 45



LEGEND

①	GRAY, TAN, BROWN TO DARK BROWN, FINE TO MEDIUM SAND, TRACE ORGANIC, TRACE LIMESTONE FRAGMENTS, TRACE SILT (SP)	
②	GRAY, TAN, BROWN FINE TO MEDIUM SAND, TRACE TO FEW SHELL FRAGMENTS (SP)	
③	GRAY, TAN, BROWN TO DARK BROWN SILTY SAND, WITH LIMESTONE FRAGMENTS (SM)	
④	GRAY, TAN, BROWN TO DARK BROWN SAND, WITH SILT, TRACE LIMESTONE FRAGMENTS (SP, SP-SM)	
⑤	TAN LIMESTONE	
⑥	DARK BROWN PEAT (PT)	
B.T. @ 12'	BORING TERMINATED AT 12' BELOW THE EXISTING GROUND SURFACE	
PT-SP-SM	UNIFIED SOIL CLASSIFICATION SYSTEM GROUP SYMBOL (ASTM D 2487)	
N	STANDARD PENETRATION RESISTANCE- BLOWS PER FOOT USING AUTOMATIC HAMMER	
W	MOISTURE CONTENT (%)	
OC	ORGANIC CONTENT (%)	
-200	AMOUNT PASSING US STANDARD 200 SIEVE (%)	

NOTES

(1) BORINGS WERE DRILLED IN OCTOBER OF 2016. SPT BORINGS WERE PERFORMED USING A CME-45C AUTOMATIC HAMMER DRILLING RIG (ASTM D1586).

(2) STRATA BOUNDARIES ARE APPROXIMATE AND REPRESENT SOIL STRATA AT EACH TEST HOLE LOCATION ONLY. SOIL TRANSITIONS MAY BE MORE GRADUAL THAN IMPLIED.

(3) GROUNDWATER LEVELS SHOWN ON THE SUBSURFACE PROFILES REPRESENT GROUNDWATER SURFACES ON THE DATES SHOWN. GROUNDWATER LEVEL FLUCTUATIONS SHOULD BE ANTICIPATED THROUGHOUT THE YEAR.

(4) LATITUDE AND LONGITUDE COORDINATES WERE MEASURED IN THE FIELD USING A HELD HAND GPS.

(5) AFTER COMPLETION OF DRILLING, BOREHOLES WERE BACKFILLED WITH GROUT.

STANDARD PENETRATION TEST DATA

SPOON INSIDE DIA.	1.375 INCH
SPOON OUTSIDE DIA.	2.0 INCHES
AVG. HAMMER DROP	30 INCHES
HAMMER WEIGHT	140 POUNDS

GRANULAR MATERIALS

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

SILTS AND CLAYS

CONSISTENCY	AUTOMATIC HAMMER SPT N-VALUE BLOWS/FOOT
VERY SOFT	LESS THAN 1
SOFT	1 - 3
FIRM	3 - 6
STIFF	6 - 12
VERY STIFF	12 - 24
HARD	GREATER THAN 24

REVISIONS

Date.	By	Descriptions	Date.	By	Descriptions

	Names	Dates
Drawn by	K.A.	01/03/2017
Checked by	A.B.	01/03/2017
Designed by		
Checked by		
Approved by		

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URL : http:// www.radise.net

CITY OF FORT LAUDERDALE

COUNTY	CLIENT
BROWARD	HAZEN AND SAWYER

SCALE: VERTICAL N.T.S.

SCALE: HORIZONTAL N.T.S.

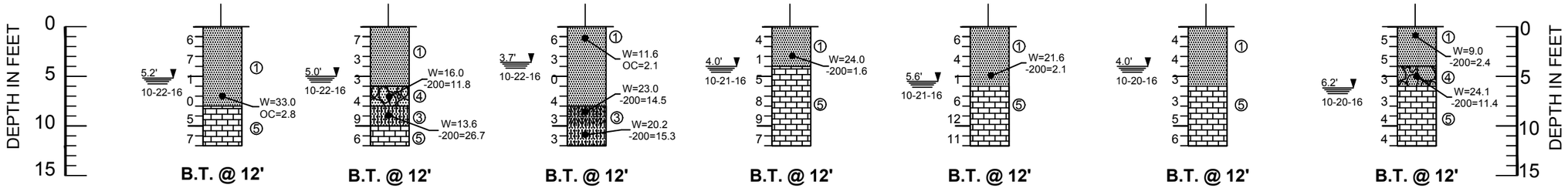
SHEET TITLE: SPT BORING SUBSURFACE PROFILES

PROJECT NAME: FORT LAUDERDALE - 7 NEIGHBORHOODS IMPROVEMENT

SHEET NO. 3B

RADISE PROJECT NO: 160605

BORING NO:	B-15	B-16	B-17	B-18	B-19	B-20	B-21
LATITUDE:	26°06'05.3"N	26°05'49.7"N	26°05'45.8"N	26°05'36.7"N	26°05'10.2"N	26°05'20.0"N	26°05'06.5"N
LONGITUDE:	80°09'19.3"W	80°09'24.9W"	80°09'52.2"W	80°09'58.2"W	80°09'43.8"W	80°09'24.7"W	80°09'10.7"W
DATE:	10-22-16	10-22-16	10-22-16	10-21-16	10-21-16	10-20-16	10-20-16
DRILLER:	TIM FLICKING	TIM FLICKING	TIM FLICKING	TIM FLICKING	TIM FLICKING	TIM FLICKING	TIM FLICKING
RIG:	CME 45	CME 45	CME 45	CME 45	CME 45	CME 45	CME 45



LEGEND

①	GRAY, TAN, BROWN TO DARK BROWN, FINE TO MEDIUM SAND, TRACE ORGANIC, TRACE LIMESTONE FRAGMENTS, TRACE SILT (SP)
②	GRAY, TAN, BROWN FINE TO MEDIUM SAND, TRACE TO FEW SHELL FRAGMENTS (SP)
③	GRAY, TAN, BROWN TO DARK BROWN SILTY SAND, WITH LIMESTONE FRAGMENTS (SM)
④	GRAY, TAN, BROWN TO DARK BROWN SAND, WITH SILT, TRACE LIMESTONE FRAGMENTS (SP, SP-SM)
⑤	TAN LIMESTONE
⑥	DARK BROWN PEAT (PT)

B.T. @ 12'	BORING TERMINATED AT 12' BELOW THE EXISTING GROUND SURFACE
PT-SP-SM	UNIFIED SOIL CLASSIFICATION SYSTEM GROUP SYMBOL (ASTM D 2487)
N	STANDARD PENETRATION RESISTANCE- BLOWS PER FOOT USING AUTOMATIC HAMMER
W	MOISTURE CONTENT (%)
OC	ORGANIC CONTENT (%)
-200	AMOUNT PASSING US STANDARD 200 SIEVE (%)

NOTES

(1) BORINGS WERE DRILLED IN OCTOBER OF 2016. SPT BORINGS WERE PERFORMED USING A CME-45C AUTOMATIC HAMMER DRILLING RIG (ASTM D1586).

(2) STRATA BOUNDARIES ARE APPROXIMATE AND REPRESENT SOIL STRATA AT EACH TEST HOLE LOCATION ONLY. SOIL TRANSITIONS MAY BE MORE GRADUAL THAN IMPLIED.

(3) GROUNDWATER LEVELS SHOWN ON THE SUBSURFACE PROFILES REPRESENT GROUNDWATER SURFACES ON THE DATES SHOWN. GROUNDWATER LEVEL FLUCTUATIONS SHOULD BE ANTICIPATED THROUGHOUT THE YEAR.

(4) LATITUDE AND LONGITUDE COORDINATES WERE MEASURED IN THE FIELD USING A HELD HAND GPS.

(5) AFTER COMPLETION OF DRILLING, BOREHOLES WERE BACKFILLED WITH GROUT.

STANDARD PENETRATION TEST DATA

SPOON INSIDE DIA.	1.375 INCH
SPOON OUTSIDE DIA.	2.0 INCHES
AVG. HAMMER DROP	30 INCHES
HAMMER WEIGHT	140 POUNDS

GRANULAR MATERIALS

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

SILTS AND CLAYS

CONSISTENCY	AUTOMATIC HAMMER SPT N-VALUE BLOWS/FOOT
VERY SOFT	LESS THAN 1
SOFT	1 - 3
FIRM	3 - 6
STIFF	6 - 12
VERY STIFF	12 - 24
HARD	GREATER THAN 24

REVISIONS

Date.	By	Descriptions	Date.	By	Descriptions

	Names	Dates
Drawn by	K.A.	01/03/2017
Checked by	A.B.	01/03/2017
Designed by		
Checked by		
Approved by		

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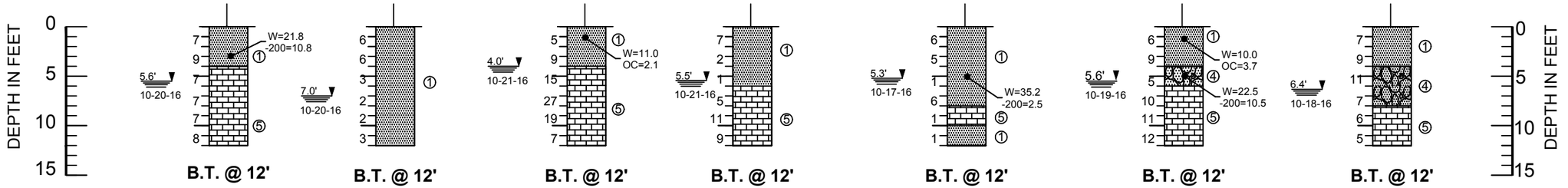
CITY OF FORT LAUDERDALE		SCALE: VERTICAL N.T.S.	SHEET TITLE: SPT BORING SUBSURFACE PROFILES	SHEET NO. 3C
COUNTY	CLIENT	SCALE: HORIZONTAL N.T.S.	PROJECT NAME: FORT LAUDERDALE - 7 NEIGHBORHOODS IMPROVEMENT	RADISE PROJECT NO: 160605
BROWARD	HAZEN AND SAWYER			

BORING NO:	B-22	B-23	B-24	B-25	B-26	B-27	B-28
LATITUDE:	26°05'24.2"N	26°04'59.9"N	26°04'58.9"N	26°05'27.0"N	26°07'53.9"N	26°07'34.9"N	26°07'24.9"N
LONGITUDE:	80°08'40.8"W	80°08'28.3W"	80°09'38.8"W	80°08'18.8"W	80°08'06.7"W	80°07'56.6"W	80°07'35.9"W
DATE:	10-20-16	10-20-16	10-21-16	10-21-16	10-17-16	10-19-16	10-18-16
DRILLER:	TIM FLICKING	TIM FLICKING	TIM FLICKING	TIM FLICKING	TIM FLICKING	TIM FLICKING	TIM FLICKING
RIG:	CME 45	CME 45	CME 45	CME 45	CME 45	CME 45	CME 45



LEGEND

①	GRAY, TAN, BROWN TO DARK BROWN, FINE TO MEDIUM SAND, TRACE ORGANIC, TRACE LIMESTONE FRAGMENTS, TRACE SILT (SP)	
②	GRAY, TAN, BROWN FINE TO MEDIUM SAND, TRACE TO FEW SHELL FRAGMENTS (SP)	
③	GRAY, TAN, BROWN TO DARK BROWN SILTY SAND, WITH LIMESTONE FRAGMENTS (SM)	
④	GRAY, TAN, BROWN TO DARK BROWN SAND, WITH SILT, TRACE LIMESTONE FRAGMENTS (SP, SP-SM)	
⑤	TAN LIMESTONE	
⑥	DARK BROWN PEAT (PT)	
B.T. @ 12'		BORING TERMINATED AT 12' BELOW THE EXISTING GROUND SURFACE
PT-SP-SM		UNIFIED SOIL CLASSIFICATION SYSTEM GROUP SYMBOL (ASTM D 2487)
N		STANDARD PENETRATION RESISTANCE- BLOWS PER FOOT USING AUTOMATIC HAMMER
W		MOISTURE CONTENT (%)
OC		ORGANIC CONTENT (%)
-200		AMOUNT PASSING US STANDARD 200 SIEVE (%)

NOTES

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(2) STRATA BOUNDARIES ARE APPROXIMATE AND REPRESENT SOIL STRATA AT EACH TEST HOLE LOCATION ONLY. SOIL TRANSITIONS MAY BE MORE GRADUAL THAN IMPLIED.

(3) GROUNDWATER LEVELS SHOWN ON THE SUBSURFACE PROFILES REPRESENT GROUNDWATER SURFACES ON THE DATES SHOWN. GROUNDWATER LEVEL FLUCTUATIONS SHOULD BE ANTICIPATED THROUGHOUT THE YEAR.

(4) LATITUDE AND LONGITUDE COORDINATES WERE MEASURED IN THE FIELD USING A HELD HAND GPS.

(5) AFTER COMPLETION OF DRILLING, BOREHOLES WERE BACKFILLED WITH GROUT.

STANDARD PENETRATION TEST DATA

SPOON INSIDE DIA.	1.375 INCH
SPOON OUTSIDE DIA.	2.0 INCHES
AVG. HAMMER DROP	30 INCHES
HAMMER WEIGHT	140 POUNDS

GRANULAR MATERIALS

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

SILTS AND CLAYS

CONSISTENCY	AUTOMATIC HAMMER SPT N-VALUE BLOWS/FOOT
VERY SOFT	LESS THAN 1
SOFT	1 - 3
FIRM	3 - 6
STIFF	6 - 12
VERY STIFF	12 - 24
HARD	GREATER THAN 24

REVISIONS

Date.	By	Descriptions	Date.	By	Descriptions

	Names	Dates
Drawn by	K.A.	01/03/2017
Checked by	A.B.	01/03/2017
Designed by		
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CITY OF FORT LAUDERDALE

COUNTY	CLIENT
BROWARD	HAZEN AND SAWYER

SCALE: VERTICAL N.T.S.

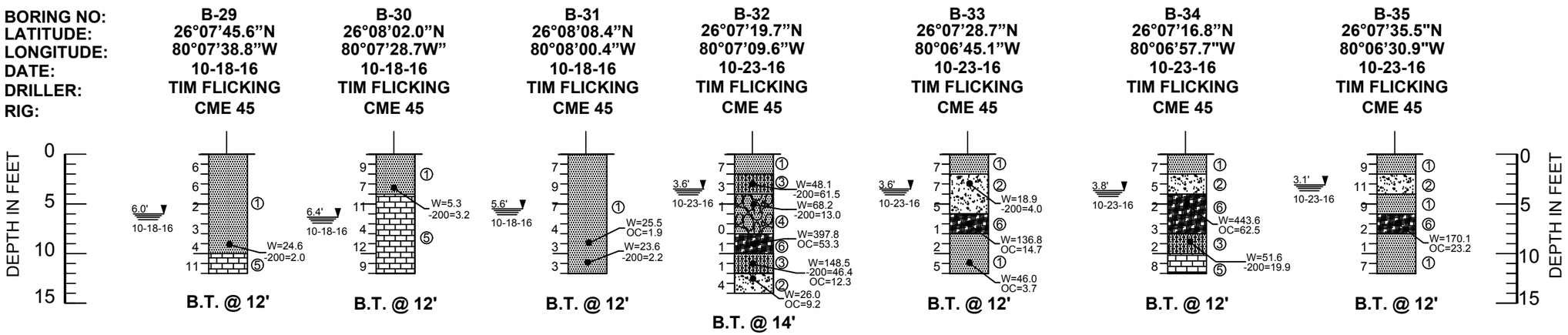
SCALE: HORIZONTAL N.T.S.

SHEET TITLE: SPT BORING SUBSURFACE PROFILES

PROJECT NAME: FORT LAUDERDALE - 7 NEIGHBORHOODS IMPROVEMENT

SHEET NO. 3D

RADISE PROJECT NO: 160605



LEGEND

①	GRAY, TAN, BROWN TO DARK BROWN, FINE TO MEDIUM SAND, TRACE ORGANIC, TRACE LIMESTONE FRAGMENTS, TRACE SILT (SP)	
②	GRAY, TAN, BROWN FINE TO MEDIUM SAND, TRACE TO FEW SHELL FRAGMENTS (SP)	
③	GRAY, TAN, BROWN TO DARK BROWN SILTY SAND, WITH LIMESTONE FRAGMENTS (SM)	
④	GRAY, TAN, BROWN TO DARK BROWN SAND, WITH SILT, TRACE LIMESTONE FRAGMENTS (SP, SP-SM)	
⑤	TAN LIMESTONE	
⑥	DARK BROWN PEAT (PT)	
B.T. @ 12'		BORING TERMINATED AT 12' BELOW THE EXISTING GROUND SURFACE
PT-SP-SM		UNIFIED SOIL CLASSIFICATION SYSTEM GROUP SYMBOL (ASTM D 2487)
N		STANDARD PENETRATION RESISTANCE- BLOWS PER FOOT USING AUTOMATIC HAMMER
W		MOISTURE CONTENT (%)
OC		ORGANIC CONTENT (%)
-200		AMOUNT PASSING US STANDARD 200 SIEVE (%)

NOTES

(1) BORINGS WERE DRILLED IN OCTOBER OF 2016. SPT BORINGS WERE PERFORMED USING A CME-45C AUTOMATIC HAMMER DRILLING RIG (ASTM D1586).

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(4) LATITUDE AND LONGITUDE COORDINATES WERE MEASURED IN THE FIELD USING A HELD HAND GPS.

(5) AFTER COMPLETION OF DRILLING, BOREHOLES WERE BACKFILLED WITH GROUT.

STANDARD PENETRATION TEST DATA

SPOON INSIDE DIA.	1.375 INCH
SPOON OUTSIDE DIA.	2.0 INCHES
AVG. HAMMER DROP	30 INCHES
HAMMER WEIGHT	140 POUNDS

GRANULAR MATERIALS

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

SILTS AND CLAYS

CONSISTENCY	AUTOMATIC HAMMER SPT N-VALUE BLOWS/FOOT
VERY SOFT	LESS THAN 1
SOFT	1 - 3
FIRM	3 - 6
STIFF	6 - 12
VERY STIFF	12 - 24
HARD	GREATER THAN 24

REVISIONS

Date.	By	Descriptions	Date.	By	Descriptions

	Names	Dates
Drawn by	K.A.	01/03/2017
Checked by	A.B.	01/03/2017
Designed by		
Checked by		
Approved by		

RADISE
Infrastructure Engineers & Software Developers
LICENSE NO. - 8901

ENGINEER OF RECORD
RADISE International
4152 West Blue Heron Boulevard, Suite 228
Riviera Beach, Florida. 33404
TEL 561-841-0103 FAX 561-841-0104
URL : http:// www.radise.net

CITY OF FORT LAUDERDALE		SCALE: VERTICAL N.T.S.	SHEET TITLE: SPT BORING SUBSURFACE PROFILES	SHEET NO. 3E
COUNTY: BROWARD	CLIENT: HAZEN AND SAWYER	SCALE: HORIZONTAL N.T.S.	PROJECT NAME: FORT LAUDERDALE - 7 NEIGHBORHOODS IMPROVEMENT	RADISE PROJECT NO: 160605

Table A-1 - Laboratory Test Results Summary

Project Name: Fort Lauderdale-7 Neighborhoods

Project ID: 160605

						GRAIN SIZE ANALYSIS U.S STANDARD SIEVE SIZE (% Passing)														
Boring No	Sample Depth	Soil Classification	Moisture Content (%)	Organic Content (%)	-200	3"	1.5"	1"	3/4"	1/2"	3/8"	#4	#10	#20	#40	#50	#60	#100	#140	#200
B-1	0-2	SP	4.2	2.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-1	6-8	SP-SM	22.7	-	13.7	100	100	-	95.3	-	65.1	55.5	49.7	45.3	38.3	29.7	25.5	17.2	15.0	13.7
B-2	8-10	SP-SM	17.5	-	11.1	100	100	-	100	-	90.4	82.4	77.8	76.5	72.3	57.2	41.9	16.3	13.0	11.1
B-3	6-8	SP-SM	19.4	-	7.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-4	0-2	SP	1.2	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-4	8-10	SP	20.5	-	3.2	100	100	-	100	-	96.7	94.1	93.1	92.4	81.7	56.9	42.9	10.7	3.9	3.2
B-8	2-4	SP	9.6	0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-8	6-8	SP	24.7	-	2.7	100	100	-	100	-	100	100	100	99.5	87.1	72.4	61.2	22.4	4.7	2.7
B-9	0-2	SP	2.5	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-9	10-12	SP	22.4	-	3.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-9	6-8	SP	22.8	-	2.0	100	100	-	100	-	100	100	100	99.7	88.4	67.3	49.0	9.0	2.8	2.0
B-10	0-2	SP	8.2	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-10	10-12	SM	23.9	-	17.4	100	100	-	99.0	-	94.2	87.4	84.9	83.6	65.7	45.7	38.5	26.6	21.9	17.4
B-10	6-8	SP	27.5	-	1.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-11	4-6	SP	24.6	-	1.3	100	100	-	100	100	100	100	100	99.4	87.2	70.4	57.8	16.2	2.4	1.3
B-11	6-8	SP	23.4	1.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-12	10-12	SP	21.9	1.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-12	2-4	SP	4.1	-	4.4	100	100	-	100	-	100	96.9	95.6	94.6	84.9	66.9	53.1	12.6	5.8	4.4
B-13	4-6	SP	26.9	-	2.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-14	6-8	SP	21.8	-	1.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-15	6-8	SP	33	2.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-16	6-8	SP-SM	16	-	11.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-16	8-10	SM	13.6	-	26.7	100	100	-	97.7	-	88.6	75.6	68.1	64.6	58.0	51.1	47.2	34.3	30.9	26.7

B-17	0-2	SP	11.6	2.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-17	10-12	SM	20.2	-	15.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-17	8-10	SM	23	-	14.5	100	100	-	95.2	-	94.3	88.5	86.3	84.7	78.7	69.1	59.7	22.8	15.5	14.5
B-18	2-4	SP	24	-	1.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-19	4-6	SP	21.6	-	2.1	100	100	-	100	-	100	100	100	99.1	80.5	57.9	42.8	6.3	2.4	2.1
B-21	0-2	SP	9	2.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-21	4-6	SP-SM	24.1	-	11.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-22	2-4	SP-SM	21.8	-	10.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-24	0-2	SP	11	2.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-26	4-6	SP	35.2	-	2.5	100	100	-	100	-	100	100	100	98.7	83.6	63.4	45.2	6.0	2.9	2.5
B-27	0-2	SP	10	3.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-27	4-6	SP-SM	22.5	-	10.5	100	100	-	76.1	-	72.2	69.6	67.6	66.2	59.3	51.6	45.1	16.4	11.9	10.5
B-29	8-10	SP	24.6	-	2.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-30	2-4	SP	5.3	-	3.2	100	100	-	98.1	-	96.7	95.4	94.2	92.7	79.4	61.5	48.3	9.4	3.9	3.2
B-31	10-12	SP	23.6	-	2.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-31	8-10	SP	25.5	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-32	10-12	SM	148.5	12.3	46.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-32	12-14	SP-SM	26	-	9.2	100	-	98.1	92.8	-	91.1	85.9	81.0	75.0	65.4	54.5	47.2	21.2	11.9	9.2
B-32	2-4	SM	48.1	-	61.5	100	100	-	93.0	-	90.2	85.1	82.6	81.3	79.3	77.3	75.9	69.5	64.9	61.5
B-32	4-6	SM	68.2	-	13.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-32	8-10	PT	397.8	53.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-33	10-12	SP	46	3.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-33	2-4	SP	18.9	-	4.0	100	100	-	100	-	100	98.7	94.4	78.4	46.5	30.5	23.6	8.5	4.9	4.0
B-33	6-8	PT	136.8	14.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-34	4-6	PT	443.6	62.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B-34	8-10	SM	51.6	-	19.9	100	100	-	100	-	100	98.1	95.2	92.9	86.7	78.3	72.6	43.0	24.8	19.9
B-35	6-8	PT	170.1	23.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

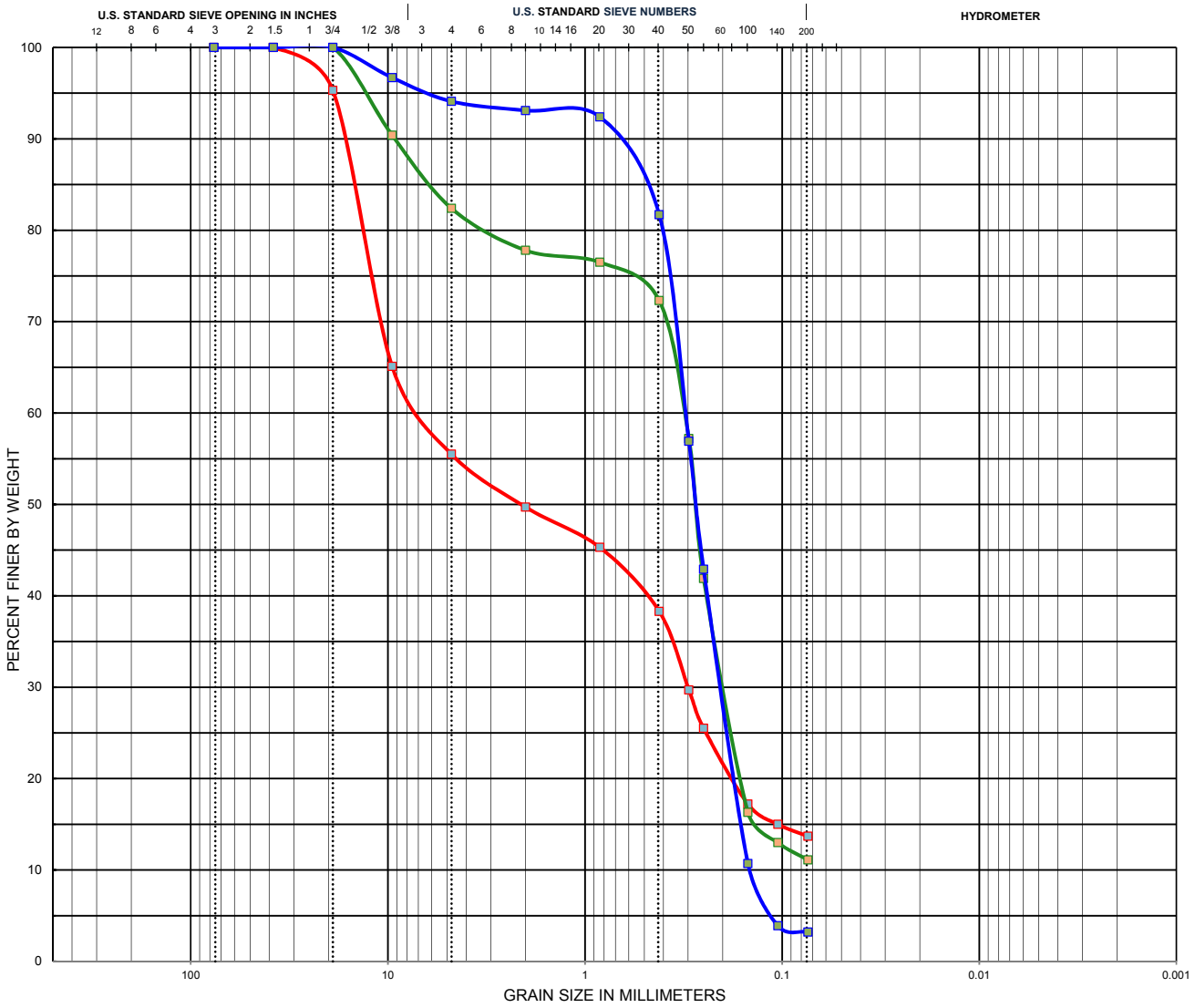
Notes:

Moisture Content tested in accordance ASTM-D2216,
Organic Content tests are performed with furnace temperature @450 Celsius and tested accordance ASTM-D2974,
Soil Classification tested with accordance to ASTM D 2487,
Grain Size Analysis was tested in general accordance with ASTM-D422.

GRAIN SIZE DISTRIBUTION

CLIENT NAME Hazen and Sawyer, P.C. **PROJECT NAME** Fort Lauderdale-7 Neighborhoods - Hazen and Sawyer

PROJECT NUMBER 160605



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Boring No, Depth	Classification	LL	PL	PI	Cc	Cu
B-1 , 6-8	**SP-SM**	**NP**	**NP**	**NP**	**0**	**0**
B-2 , 8-10	**SP-SM**	**NP**	**NP**	**NP**	**0**	**0**
B-4 , 8-10	**SP**	**NP**	**NP**	**NP**	**1.02**	**2.21**

Boring No, Depth	D100	D60	D30	D10	% Cobble	%Gravel	%Sand	%Silt	%Clay
B-1 , 6-8	**38.1**	**6.99**	**0.3**	**0**	**0**	**44.5**	**41.8**	**13.7**	
B-2 , 8-10	**19**	**0.32**	**0.2**	**0**	**0**	**17.6**	**71.3**	**11.1**	
B-4 , 8-10	**19**	**0.31**	**0.21**	**0.14**	**0**	**5.9**	**90.9**	**3.2**	

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GRAIN SIZE DISTRIBUTION

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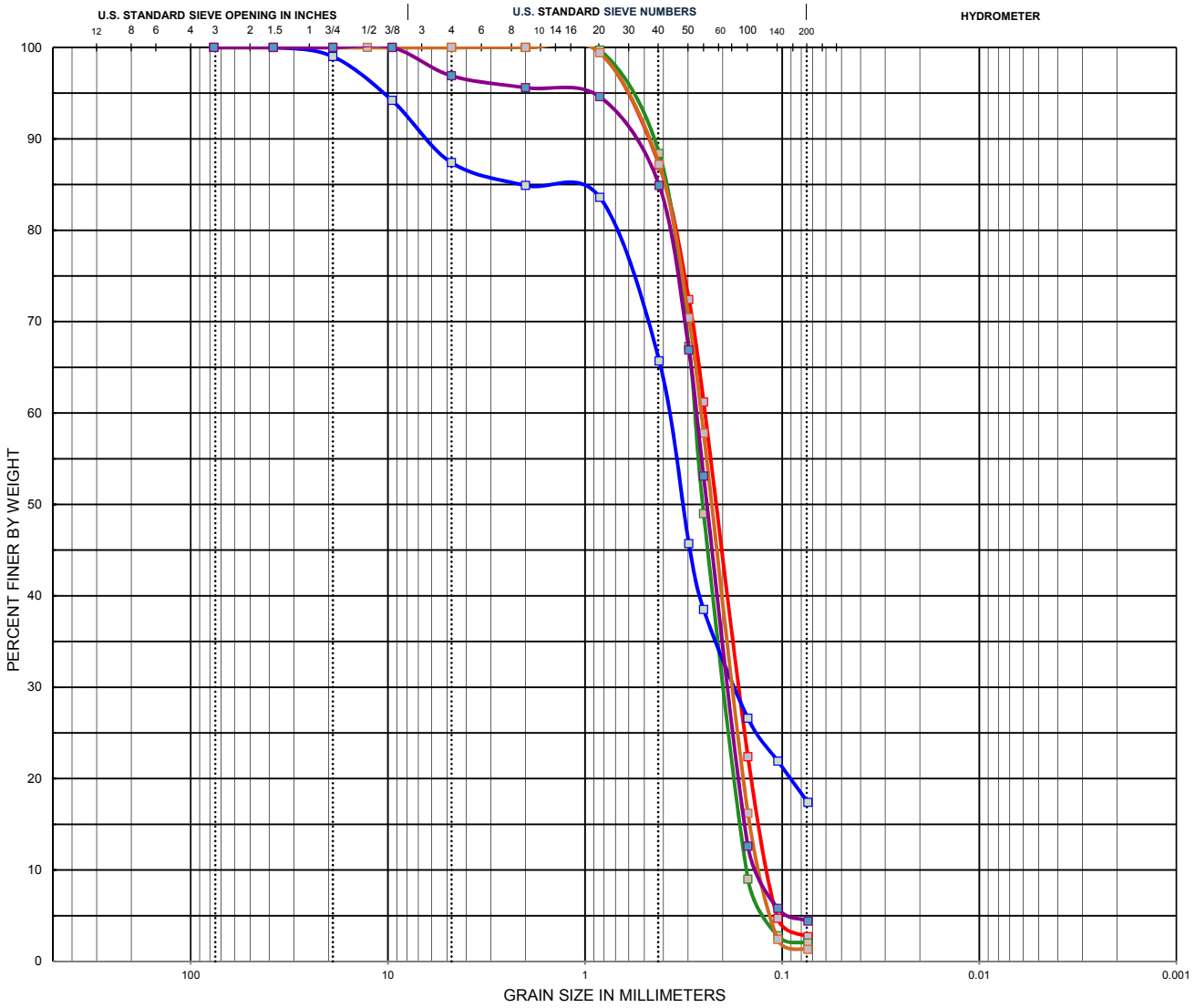
PROJECT NUMBER 160605



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Boring No, Depth	Classification	LL	PL	PI	Cc	Cu
B-8 , 6-8	SP	NP	NP	NP	0.96	2.08
B-9 , 6-8	SP	NP	NP	NP	0.95	1.87
B-10 , 10-12	SM	NP	NP	NP	0	0
B-11 , 4-6	SP	NP	NP	NP	0.96	2
B-12 , 2-4	SP	NP	NP	NP	1.03	2.08

Boring No, Depth	D100	D60	D30	D10	% Cobble	%Gravel	%Sand	%Silt	%Clay
B-8 , 6-8	2	0.25	0.17	0.12	0	0	97.3	2.7	
B-9 , 6-8	2	0.28	0.2	0.15	0	0	98	2	
B-10 , 10-12	38.1	0.38	0.18	0	0	12.6	70	17.4	
B-11 , 4-6	2	0.26	0.18	0.13	0	0	98.7	1.3	
B-12 , 2-4	9.51	0.27	0.19	0.13	0	3.1	92.5	4.4	

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GRAIN SIZE DISTRIBUTION

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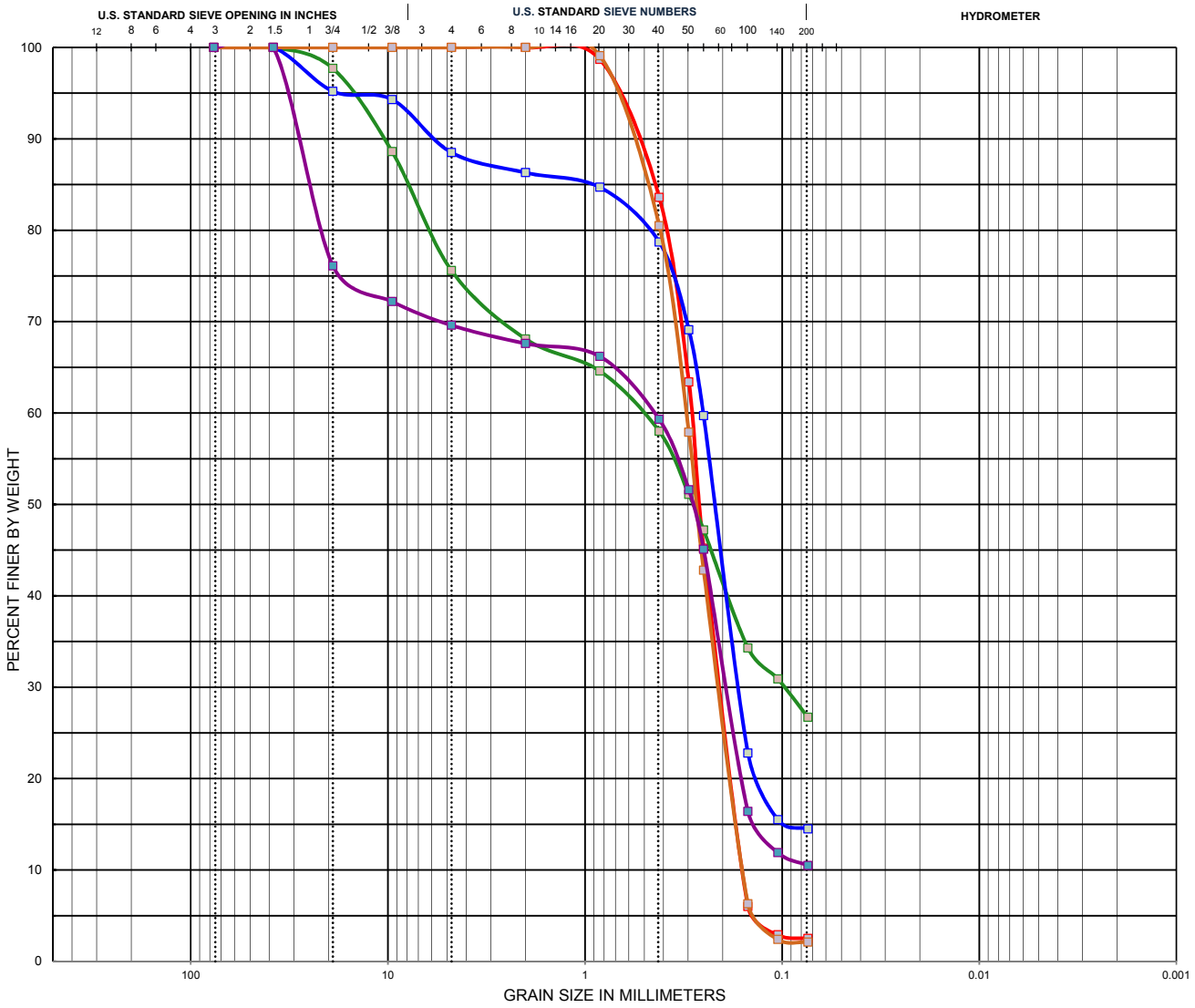
PROJECT NUMBER 160605



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Boring No, Depth	Classification	LL	PL	PI	Cc	Cu
B-26 , 4-6	**SP**	**NP**	**NP**	**NP**	**0.95**	**1.81**
B-16 , 8-10	**SM**	**NP**	**NP**	**NP**	**0**	**0**
B-17 , 8-10	**SM**	**NP**	**NP**	**NP**	**0**	**0**
B-19 , 4-6	**SP**	**NP**	**NP**	**NP**	**0.89**	**1.94**
B-27 , 4-6	**SP-SM**	**NP**	**NP**	**NP**	**0**	**0**

Boring No, Depth	D100	D60	D30	D10	% Cobble	%Gravel	%Sand	%Silt	%Clay
B-26 , 4-6	**2**	**0.29**	**0.21**	**0.16**	**0**	**0**	**97.5**	**2.5**	
B-16 , 8-10	**38.1**	**0.55**	**0.1**	**0**	**0**	**24.4**	**48.9**	**26.7**	
B-17 , 8-10	**38.1**	**0.25**	**0.17**	**0**	**0**	**11.5**	**74**	**14.5**	
B-19 , 4-6	**2**	**0.31**	**0.21**	**0.16**	**0**	**0**	**97.9**	**2.1**	
B-27 , 4-6	**38.1**	**0.46**	**0.2**	**0**	**0**	**30.4**	**59.1**	**10.5**	

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GRAIN SIZE DISTRIBUTION

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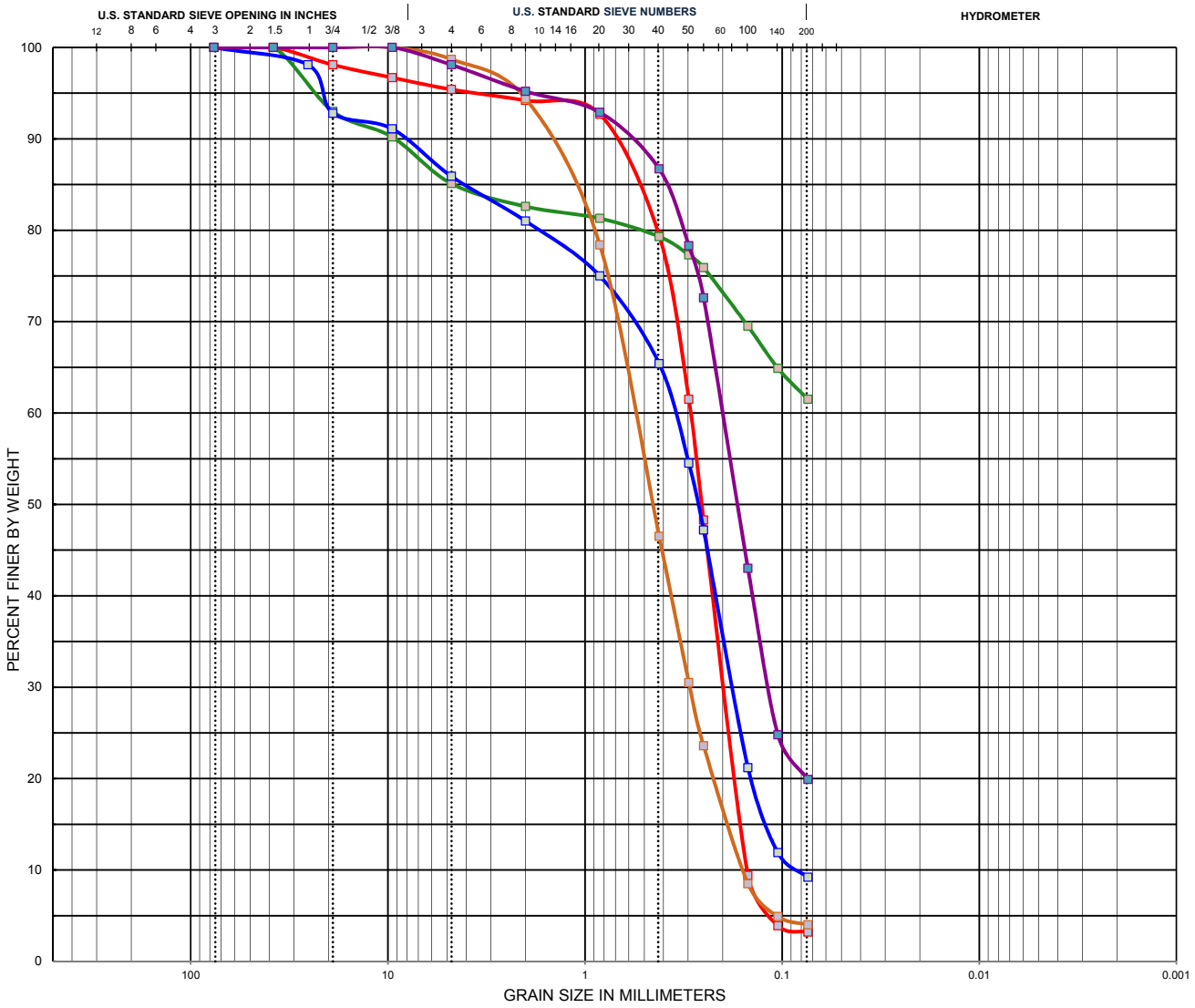
PROJECT NUMBER 160605



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Boring No, Depth	Classification	LL	PL	PI	Cc	Cu
B-30 , 2-4	SP	NP	NP	NP	0.92	1.93
B-32 , 2-4	SM	NP	NP	NP	0	0
B-32 , 12-14	SP-SM	NP	NP	NP	1.12	4.5
B-33 , 2-4	SP	NP	NP	NP	0.88	3.75
B-34 , 8-10	SM	NP	NP	NP	0	0

Boring No, Depth	D100	D60	D30	D10	% Cobble	%Gravel	%Sand	%Silt	%Clay
B-30 , 2-4	38.1	0.29	0.2	0.15	0	4.6	92.2	3.2	
B-32 , 2-4	38.1	0	0	0	0	14.9	23.6	61.5	
B-32 , 12-14	76.2	0.36	0.18	0.08	0	14.1	76.7	9.2	
B-33 , 2-4	9.51	0.6	0.29	0.16	0	1.3	94.7	4	
B-34 , 8-10	9.51	0.21	0.12	0	0	1.9	78.2	19.9	

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TABLE A-2 - OPEN-HOLE EXFILTRATION TEST RESULTS
City of Ft. Lauderdale - 7 Neighborhoods Improvement
Broward County, Florida

Boring No.	Test Depth (ft.)	Diameter of the test hole (in.)	Diameter of the test hole, d (ft.)	Length of the exposed soil, L (ft.)	Depth to water table, H_2 (ft.)	Volume of Water (gal.)	Time (sec)	Stabilized flow rate, Q (cfs)	Saturated Hole Depth, Ds (ft)	Hydraulic Conductivity, K (cfs/ft^2 - ft head)
E-1	0 - 15	8	0.67	15	5.50	109.0	600	0.024	9.5	1.70E-04
E-2	0 - 15	8	0.67	15	5.50	53.4	600	0.012	9.5	8.32E-05
E-3	0 - 15	8	0.67	15	5.50	19.1	600	0.004	9.5	2.98E-05
E-4	0 - 15	8	0.67	15	6.00	64.0	600	0.014	9.0	9.33E-05
E-5	0 - 15	8	0.67	15	5.00	80.2	600	0.018	10.0	1.35E-04
E-6	0 - 15	8	0.67	15	5.00	39.7	600	0.009	10.0	6.67E-05
E-7	0 - 15	8	0.67	15	5.50	36.3	600	0.008	9.5	5.65E-05
E-8	0 - 15	8	0.67	15	5.25	93.6	600	0.021	9.8	1.51E-04
E-9	0 - 15	8	0.67	15	6.00	19.0	600	0.004	9.0	2.77E-05
E-10	0 - 15	8	0.67	15	5.00	48.7	600	0.011	10.0	8.18E-05
E-11	0 - 15	8	0.67	15	5.16	167.2	600	0.037	9.8	2.74E-04
E-12	0 - 15	8	0.67	15	3.58	54.1	600	0.012	11.4	1.20E-04
E-13	0 - 15	8	0.67	15	5.00	113.5	600	0.025	10.0	1.91E-04
E-14	0 - 15	8	0.67	15	4.00	126.5	600	0.028	11.0	2.56E-04
E-15	0 - 15	8	0.67	15	4.00	46.3	600	0.010	11.0	9.35E-05
E-16	0 - 15	8	0.67	15	7.00	50.8	600	0.011	8.0	6.62E-05
E-17	0 - 15	8	0.67	15	5.50	116.3	600	0.026	9.5	1.81E-04
E-18	0 - 15	8	0.67	15	4.00	168.9	600	0.038	11.0	3.41E-04
E-19	0 - 15	8	0.67	15	5.50	117.2	600	0.026	9.5	1.83E-04
E-20	0 - 15	8	0.67	15	5.41	254.8	600	0.057	9.6	4.02E-04
E-21	0 - 15	8	0.67	15	5.50	87.0	600	0.019	9.5	1.36E-04
E-22	0 - 15	8	0.67	15	6.33	134.8	600	0.030	8.7	1.89E-04
E-23	0 - 15	8	0.67	15	5.50	51.6	600	0.011	9.5	8.04E-05
E-24	0 - 15	8	0.67	15	6.00	110.3	600	0.025	9.0	1.61E-04
E-25	0 - 15	8	0.67	15	6.33	153.7	600	0.034	8.7	2.15E-04
E-26	0 - 15	8	0.67	15	3.50	16.9	600	0.004	11.5	3.83E-05
E-27	0 - 15	8	0.67	15	3.66	37.8	600	0.008	11.3	8.24E-05
E-28	0 - 15	8	0.67	15	3.50	21.2	600	0.005	11.5	4.80E-05

Notes:

* Equation from SFWMD Manual

$$K = \frac{4 * Q}{\pi * d * (2 * H_2^2 + 4 * H_2 * Ds + H_2 * d)}$$

RADISE
Infrastructure Engineers • Software Developers

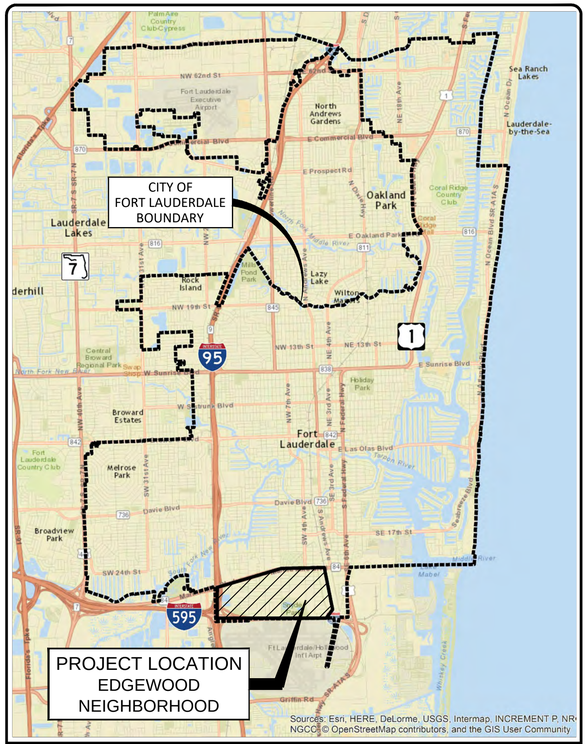
DRAWING INDEX

CITY OF FORT LAUDERDALE

PROJECT #11842
STORMWATER IMPROVEMENTS
EDGEWOOD NEIGHBORHOOD

FORT LAUDERDALE, FLORIDA

MAY 2021
FINAL BID SET



NORTH

LOCATION SKETCH

PROJECT #11842
STORMWATER IMPROVEMENTS
EDGEWOOD NEIGHBORHOOD

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

FORT LAUDERDALE CITY COMMISSION

DEAN J. TRANTALIS	MAYOR
HEATHER MORAITIS	COMMISSIONER - DISTRICT I
STEVEN GLASSMAN	COMMISSIONER - DISTRICT II
ROBERT L. McKINZIE	COMMISSIONER - DISTRICT III
BEN SORENSEN	COMMISSIONER - DISTRICT IV

PROJECT MANAGER	JOB TITLE	PHONE NO.
THOMAS LAWRENCE	PROJECT MANAGER II	954-828-6126

DATE: APRIL 2021

CAD FILE: 11842-G001

DRAWING FILE No.: 4-142-65

BID SET

DRAWING INDEX

Hazen

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ABBREVIATIONS

VALVE AND FITTING ABBREVIATIONS:

ARV	AIR RELIEF VALVE
BF	BLIND FLANGE
BFV	BUTTERFLY VALVE
BV	BALL VALVE
CO	CLEAN OUT
CPLG	COUPLING
CV	CHECK VALVE
DV	DIAPHRAGM VALVE
EXP JT	EXPANSION JOINT
FCO	FLOOR CLEAN OUT
FD	FLOOR DRAIN
FH	FIRE HYDRANT
FLG	FLANGE
FS	FLOOR SINK
GV	GATE VALVE
HB	HOSE BIBB
HD	HUB DRAIN
ICV	IRRIGATION CONTROL VALVE
LR	LONG RADIUS
MJ	MECHANICAL JOINT
NPT	NATIONAL PIPE THREAD
PE	PLAIN END
PV	PLUG VALVE
PRV	PRESSURE RELIEF VALVE
RED	REDUCER
SOV	SOLENOID OPERATED VALVE
THD	THREADED
VAC	VACUUM

PIPING:

CIP	CAST IRON PIPE
CMP	CORRUGATED METAL PIPE
CU	COPPER OR CUBIC
DIP	DUCTILE IRON PIPE
ERCP	ELLIPTICAL REINFORCED CONCRETE PIPE
GIP	GALVANIZED PIPE
GSP	GALVANIZED STEEL PIPE
HDPE	HIGH DENSITY POLYETHYLENE PIPE
IP	IRON PIPE
PCCP	PRECAST CONCRETE CYLINDER PIPE
PVC	POLYVINYLCHLORIDE
RCP	REINFORCED CONCRETE PIPE
SCP	SECONDARY CONTAINMENT PIPE
SS	STAINLESS STEEL PIPE

GENERAL

A	ARC DISTANCE
AB	ANCHOR BOLT
A/C	AIR CONDITIONER
ACU	AIR CONDENSATE UNIT
AL, ALUM	ALUMINUM
a	ANGLE
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
BLDG	BUILDING
BM	BENCHMARK
BOTT	BOTTOM
BOW	BACK OF WALK
C/L	CENTERLINE
CA	CENTRAL ANGLE
CB	CATCH BASIN
CC	CENTER TO CENTER
CHK'D	CHECKERED
C.I.	CURB INLET
CJ	CONSTRUCTION JOINT
CL, q	CENTER LINE
CLF	CHAIN LINK FENCE
CLR	CLEAR
CM	CONFLICT MANHOLE
COL	COLUMN
CO	COMPANY
CONC, C	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUOUS
CONTR	CONTRACTOR
CP	CONCRETE POST
DET	DETAIL
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DIR	DIRECTION
DISCH	DISCHARGE
DMH	DRAIN MANHOLE
DN	DOWN
DR	DRAIN
DWL	DOWEL
DWG	DRAWING
EA	EACH
ECC	ECCENTRIC
EE	EACH END
EF	EACH FACE
EL, ELEV	ELEVATION
ELEC	ELECTRIC
ENGR	ENGINEER
EOP	EDGE OF PAVEMENT
EW	EACH WAY
EQUIP	EQUIPMENT

GENERAL CONT.

ES	ELECTRICAL SERVICE
ESC	EROSION AND SEDIMENT CONTROL
EXH	EXHAUST
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION
FDR	FLOOR DRAIN
FE	FIRE EXTINGUISHER
FF	FINISH FLOOR
FG	FINISH GRADE
FIN	FINISH
FL	FLOOR
FM	FORCE MAIN
FND	FOUND
FP	FLAG POLE
FT	FOOT OR FEET
FTG	FOOTING OR FITTING
GALV	GALVANIZED
GPM	GALLONS PER MINUTE
GR	GRADE
H	HIGH
HORIZ	HORIZONTAL
HP	HIGH POINT
HS	HIGH SERVICE
HWL	HIGH WATER LEVEL
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IF	INSIDE FACE
IN	INCH
INFL	INFLUENT
INJ	INJECTION
INSUL	INSULATION
INV	INVERT
IP	IRON PIPE
IRRIG	IRRIGATION
IR	IRON ROD
ISO	ISOLATION
JCT	JUNCTION
JT	JOINT
LBS/FT	POUNDS PER FOOT
LG	LONG
LF	LINEAR FOOT
LN	LINE
LP	LOW POINT OR LIGHT POLE
LR	LONG RADIUS
LWL	LOW WATER LEVEL
MANUF	MANUFACTURER
MAX	MAXIMUM
MECH	MECHANICAL
MGD	MILLION GALLONS PER DAY

GENERAL CONT.

MH	MANHOLE
MIN	MINIMUM
MO	MASONRY OPENING
MOV	MOTOR OPERATED VALVE
NAVD	NORTH AMERICAN VERTICAL DATUM
NGVD	NATIONAL GEODETIC VERTICAL DATUM
NIC	NOT IN CONTRACT
NO	NUMBER
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OHW	OVERHEAD WIRES
OPNG	OPENING
P/L	PROPERTY LINE
PRB	POLLUTION RETARDANT BAFFLE
PS	PUMP STATION
PT	PRESSURE TREATED
R	RIM
RAD, R	RADIUS
RECIR	RECIRCULATION
RE	RIM ELEVATION
REHAB	REHABILITATION
REINF	REINFORCING
REQ'D	REQUIRED
R/W,	ROW RIGHT OF WAY
SECT	SECTION
SHT	SHEET
SLB	SIGNAL LIGHT BOX
SMH	STORMWATER MANHOLE
SP	SAMPLE POINT
SPEC	SPECIFICATION
SQ	SQUARE
SS	STAINLESS STEEL
STIN	STORM INLET
STMH	STORM MANHOLE
STL	STEEL
STRUC	STRUCTURAL
SYMM	SYMMETRICAL
TBD	TO BE DETERMINED
TEMP	TEMPORARY
THK	THICK
TI	TEMPERATURE INDICATOR
TO	THROUGHOUT
TOB	TOP OF BANK
TOC	TOP OF CONCRETE
TOE	TOE OF SLOPE
TOP	TOP OF PIPE
TOS	TOP OF SLAB
TYP	TYPICAL
UGE	UNDERGROUND ELECTRIC

GENERAL CONT.

UNK	UNKNOWN
V	VENT
VERT	VERTICAL
VP	VENT PIPE
VTR	VENT THROUGH ROOF
W	WIDE
W/	WITH
WATR	WATER
WGR	WOOD GUARDRAIL
W/L	WATER LEVEL
W/O	WITH OUT
WSE	WATER SURFACE ELEVATION
WWF	WELDED WIRE FABRIC
WUP	WOOD UTILITY POLE

FLOWSTREAM IDENTIFICATION:

ED	EQUIPMENT DRAIN
FM	FORCE MAIN
FR	FUEL RETURN
FS	FUEL SUPPLY
OF	OVERFLOW
PW	POTABLE WATER
RD	ROOF DRAIN
SA	SAMPLE
SAN	SANITARY SEWER
SD	STORM DRAIN
SPD	SUMP PUMP DISCHARGE
STRM	STORMWATER
WM	WATER MAIN

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4-142-65

LINETYPES

COMMUNICATION, CABLE TV, TELEPHONE:

- COM(CT) — COMCAST LINES
- COM OH — COMMUNICATIONS
- COM(CC) — CROWN CASTLE LINES
- COM(FD) — FIBERNET DIRECT LINES
- COM(L3) — LEVEL 3 LINES
- GPS OH — GPG LINES
- UGT — UNDERGROUND TELEPHONE LINES
- OHT — OVERHEAD TELEPHONE LINES

ELECTRIC LINES:

- X-X ELEC — ELECTRIC DUCT (X-X = WIRES/GUAGE)
- UGE — UNDERGROUND ELECTRIC LINES
- OHE — OVERHEAD ELECTRIC LINES

OTHERS LINES:

- GAS — GAS MAIN (SIZE UNKNOWN)
- X" GAS — GAS MAIN (SIZE)
- AIR — UNDERGROUND AIR LINE
- FM — SANITARY FORCE MAIN (SIZE UNKNOWN)
- X" FM — SANITARY FORCE MAIN (SIZE)
- X" PVC FM — SANITARY FORCEMAIN (SIZE/MATERIAL)
- SAN — SANITARY GRAVITY (SIZE UNKNOWN)
- X" SAN — SANITARY GRAVITY MAIN (SIZE)
- X" PVC SAN — SANITARY GRAVITY (SIZE/MATERIAL)
- SD — STORM DRAINAGE (SIZE UNKNOWN)
- X" SD — STORM DRAINAGE (SIZE)
- X" PVC SD — STORM DRAINAGE (SIZE/MATERIAL)
- WM — WATER MAIN (SIZE UNKNOWN)
- X" WM — WATER MAIN (SIZE)
- X" DIP WM — WATER MAIN (SIZE/MATERIAL)
- OHW — OVER HEAD WIRES (TYPE UNKNOWN)
- UNK UG — UNDERGROUND LINE (TYPE UNKNOWN)
- ABANDONED
- DEMOLISHED
- EXISTING
- PROPOSED
- PROPOSED PIPELINE (DOUBLE LINE IF SCALE OF DRAWING PERMITS)
- PLASTIC FENCE
- WOODEN FENCE
- WROUGHT IRON FENCE
- CHAIN LINK FENCE
- BOARD FENCE
- PROPERTY LINE
- EASEMENT LINE

SYMBOLS, LEGEND AND HATCH PATTERNS

LANSCAPING SYMBOLS:

- PALM TREE
- SHADE TREE
- PINE TREE
- CACTUS
- HEDGE
- VEGETATION
- BUSH
- UNKNOWN TREE

LEGEND:

- 90 DEG BEND
- 45 DEG BEND
- A/C — AIR CONDITIONING UNIT
- AIR VALVE MANHOLE
- BFP — BACK FLOW PREVENTER
- BBQ GRILL
- BLOW-OFF VALVE
- BOAT ANCHOR CLEAT
- BOLLARD
- BUILDING COLUMN/PILE
- CATV PEDESTAL
- CATCH BASIN
- CLEAN OUT
- COMMUNICATION MANHOLE
- COMMUNICATION VAULT
- CONCRETE LIGHT POLE
- CONCRETE POST
- CONCRETE POWER POLE
- CROSS FITTING
- CURB INLET
- CUT IN SLEEVE
- DECORATIVE/YARD LIGHT POLE
- DETECTOR CHECK VALVE
- DCCV — DOUBLE DETECTOR CHECK VALVE
- ELECTRIC BOX
- ELECTRIC MANHOLE
- ELECTRICAL METER
- ELECTRIC METER/SERVICE
- ELECTRICAL OUTLET
- ELECTRICAL PEDESTAL
- ELECTRICAL PULL BOX
- ELECTRICAL VAULT

LEGEND CONT:

- FIRE HYDRANT
- FIBER OPTIC PEDESTAL
- FLAG — FLAG POLE
- FM — FORCE MAIN VALVE
- GAS FUEL CAP
- GAS MARKER
- GAS METER
- GAS — GAS VALVE
- GAS WELL
- GATE CONTROL BOX
- GREASE TRAP MH
- GUY ANCHOR AND WIRE
- HOSE BIBB
- IRR — IRRIGATION CONTROL VALVE
- LS — LIFT STATION
- LS — LIFT STATION CAN
- LP — LIGHT POLE
- LP — LP GAS TANK
- MAILBOX
- MAIL DROP BOX
- MAIL DROP BOX — MARKER POST
- METAL LIGHT POLE
- MONITORING WELL
- OUTFALL
- PARK BENCH
- PEDESTRIAN SIGNAL
- PILE
- PIN FLAG
- PIPE MATERIAL CHANGE
- PARKING LIGHT 1 BULB
- PARKING LIGHT 1 BULB
- PARKING LIGHT 2 BULBS
- PARKING LIGHT 2 BULBS
- PARKING LIGHT 3 BULBS
- PARKING LIGHT 3 BULBS
- PARKING LIGHT 4 BULBS
- PARKING LIGHT 4 BULBS
- PARKING METER
- PARKING METER (DOUBLE)
- PLUG
- POST INDICATOR VALVE
- REDUCER
- RD — ROOF DRAIN

LEGEND CONT:

- RAILROAD CROSSING GATE
- REDUCER FITTING
- SP XXX — SAMPLE POINT
- SANITARY CLEAN OUT
- SANITARY MANHOLE
- SANITARY WYE LATERAL
- SIGN
- SIGN DOUBLE POST
- SPOT-FLOOD LIGHT
- SPK — SPRINKLER HEAD
- SOIL BORING
- SQUARE COLUMN
- STEEL I-BEAM
- STORM CLEAN OUT
- STORM MANHOLE
- STORM DRAINAGE VAULT
- TAPPING SLEEVE
- TEE FITTING
- TELEPHONE BOOTH — TELEPHONE BOOTH
- TELEPHONE JUNCTION BOX
- TELEPHONE MANHOLE
- TELEPHONE PEDESTAL
- TELEPHONE PULL BOX
- TELEPHONE VAULT
- TH — TEST HOLES
- TOWER — TOWER
- TRAFFIC CAMERA
- TRAFFIC CONTROL
- TRAFFIC POLE
- TRAFFIC PULL BOX
- TSB — TRAFFIC SIGNAL BOX
- TSP — TRAFFIC SIGNAL POLE
- TRANS — TRANSFORMER PAD
- TRASH CAN
- TRASH CAN
- UNKNOWN MANHOLE
- VALLEY CURB INLET
- WATER MANHOLE
- WATER METER
- WATER METER (DOUBLE)

LEGEND CONT.

- WV — WATER VALVE
- WATER VAULT
- WATER WELL
- WOOD POST
- WOOD LIGHT POLE
- WOOD TELEPHONE POLE
- WOOD POWER POLE
- YD — YARD DRAIN

CONTROL LEGEND:

- AERIAL TARGET
- BENCH MARK
- DRILL HOLE
- HUB & TACK
- IRON PIPE
- IRON ROD
- NAIL&TAB
- PERMANENT REFERENCE MONUMENT
- PERMANENT REFERENCE MONUMENT NAIL&TAB
- PKNAIL.SPIKE
- QUARTER SECTION CORNER
- SECTION CORNER
- X.X.X — EXISTING SPOT ELEVATION
- X.X.X — PROPOSED SPOT ELEVATION

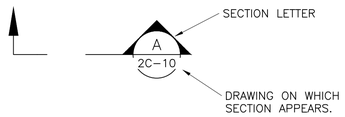
HATCH LEGEND:

- PERMEABLE PAVEMENT
- GRASSY SWALE
- EXFILTRATION TRENCH
- CONTRACTOR STAGING AREA
- CONCRETE
- BRICK STAMPING
- GRAVEL
- MILL & RESURFACE
- DRIVEWAY RECONSTRUCTION
- DEMOLITION AREA
- GRADING DIRECTION

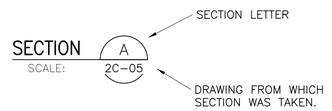
SECTION AND DETAIL IDENTIFICATION

SECTION IDENTIFICATION

A. SECTION CUT ON DRAWING 2C-05

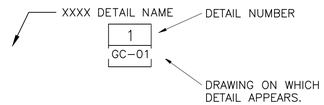


B. ON DRAWING 2C-10 THIS SECTION IS IDENTIFIED AS:

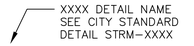


DETAIL IDENTIFICATION

A. NON STANDARD DETAIL CALL-OUT ON DRAWING:



B. CITY STANDARD DETAIL CALL-OUT ON DRAWING:



SHEET NUMBERING IDENTIFICATION

XD-## = (X=SHEET TYPE, D= DISCIPLINE, ##=SEQUENTIAL NUMBER)

SHEET TYPE (X)	
NUMBER DESIGNATION	DESCRIPTION
1	DEMOLITION
2	STORM DRAINAGE
3	GRADING
4	SCHEDULES

DISCIPLINE (D)	
LETTER DESIGNATION	DESCRIPTION
G	GENERAL
C	CIVIL
L	LANDSCPE
M	MECHANICAL
A	ARCHITECTURAL
S	STRUCTURAL
H	HVAC
P	PLUMBING
E	ELECTRICAL
I	INSTRUMENTATION

Hazen

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ENGINEER:
ROBERT B. TAYLOR JR
REG. No. 41165
DATE: 02/28/2023

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DRAWN BY: JSJ
DESIGNED BY: TV
CHECKED BY: RBT
DATE: APRIL 2021
SCALE: N/A
FIELD BOOK: XXXX

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	BY	CHK'D	DESCRIPTION

REVISIONS

PROJECT # 11842
STORMWATER IMPROVEMENTS
EDGEWOOD NEIGHBORHOOD
SYMBOLS

BID SET

SHEET NO.
G-05

TOTAL: 224

CAD FILE:
11842-G005

DRAWING FILE NO.
4-142-65

GENERAL NOTES:

1. CONTRACTOR SHALL MAINTAIN ACCESS TO PRIVATE PROPERTY AT ALL TIMES.
2. REFER TO SPECIFICATION SECTION 01001 AND 01520 FOR DETAILED REQUIREMENTS FOR SEQUENCE OF CONSTRUCTION AND CONSTRUCTION CONSTRAINTS.
3. SITE INFORMATION HAS BEEN PROVIDED BY SITE SURVEYS PREPARED BY BISCAYNE ENGINEERING COMPANY, INC (DATED 11-8-2018) AND CRAVEN & THOMPSON & ASSOCIATES, INC (DATED 12-21-2017).
4. HORIZONTAL CONTROL IS REFERENCED TO THE FLORIDA STATE PLANE COORDINATE SYSTEM, EAST ZONE, BASED ON THE NORTH AMERICAN DATUM OF 1983 (NAD 83). VERTICAL CONTROL IS REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
5. RECORD DRAWINGS USED FOR EXISTING FEATURES MAY BE OBTAINED FROM THE OWNER UPON REQUEST.
6. CONTRACTOR SHALL VERIFY FIELD CONDITIONS BEFORE COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES. CONTRACTOR SHALL VERIFY EXISTING ELEVATIONS AND DIMENSIONS WHERE NEW WORK WILL MATCH EXISTING. DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR RESOLUTION PRIOR TO THE COMMENCEMENT OF WORK.
7. CONTRACTOR SHALL OBTAIN ALL THE NECESSARY PERMITS FROM THE APPROPRIATE AUTHORITIES, DEPARTMENTS, AND/OR AGENCIES HAVING JURISDICTION PRIOR TO COMMENCING WORK.
8. ALL PRACTICAL AND NECESSARY EFFORTS SHALL BE TAKEN DURING CONSTRUCTION TO PREVENT UNNECESSARY TREE REMOVAL AND/OR DAMAGE.
9. THE LOCATION OF EXISTING UTILITIES HAS BEEN PREPARED FROM THE MOST RELIABLE INFORMATION AVAILABLE TO THE ENGINEER. THE INFORMATION IS NOT GUARANTEED. THEREFORE THE CONTRACTOR SHALL VERIFY THE LOCATION AND ELEVATION OF ALL UTILITIES IN THE FIELD PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITIES.
10. UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEY INFORMATION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THEIR EXACT LOCATION AND TO AVOID DAMAGE TO THEM. THE CONTRACTOR SHALL CONTACT SUNSHINE 811 AT PHONE NUMBER 811 OR 1-800-432-4770 TO REQUEST UNDERGROUND UTILITY LOCATION MARK-OUT AT LEAST TWO (2) WORKING DAYS BUT NO MORE THAN TEN (10) WORKING DAYS PRIOR TO BEGINNING EXCAVATION, INCLUDING SOIL DRILLING. THE CONTRACTOR SHALL ALSO CONTACT AND REQUEST UTILITY LOCATION MARK-OUT FROM BURIED UTILITY OWNERS WITH UTILITIES ON THE PROJECT SITE THAT ARE NOT PARTICIPANTS OF SUNSHINE 811.
11. CONTRACTOR SHALL REPLACE SURROUNDING LAND COVER AFFECTED BY CONSTRUCTION ACTIVITIES, INCLUDING, BUT NOT LIMITED TO, PAVERS, SIDEWALK, SOD, AND LANDSCAPING, TO EXISTING OR BETTER CONDITIONS.
12. CONTRACTOR SHALL TAKE CARE TO AVOID DAMAGE TO EXISTING PAVEMENT, STRUCTURES, AND UTILITIES THAT ARE NOT INDICATED TO BE DEMOLISHED OR REMOVED. ANY DAMAGE TO EXISTING PAVEMENT, STRUCTURES, AND UTILITIES NOT INDICATED TO BE DEMOLISHED OR REMOVED SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
13. WHERE PROPOSED WORK IS IN THE VICINITY OF UTILITY POLES, SUCH THAT SUPPORT OF THE POLE(S) WILL BE REQUIRED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE UTILITY OF THE WORK. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE UTILITY FOR SUPPORT OF THE POLE.
14. DURING EXCAVATION AND PLACEMENT OF UTILITIES THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE SAFETY REGULATIONS AND SHALL SUBMIT TO THE ENGINEER FOR APPROVAL SHEET PILING, SHORING AND/OR BRACING DESIGNS AS MAY BE NECESSARY TO COMPLY WITH THESE REGULATIONS.
15. GROUNDWATER FROM ALL DEWATERING OPERATIONS SHALL BE DISCHARGED TO AN ENVIRONMENTALLY ACCEPTABLE LOCATION IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, OR AS DIRECTED BY THE ENGINEER.
16. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL DEBRIS GENERATED DURING THE PROJECT OFF SITE AT A PROPERLY PERMITTED DISPOSAL FACILITY.
17. FOR REFERENCE MONUMENTS, SEE SURVEY DRAWING.
18. THE CONTRACTOR IS REQUIRED TO OBTAIN WRITTEN APPROVAL FROM THE ENGINEER FOR ANY DEVIATIONS FROM THE PLANS AND/OR SPECIFICATIONS.
19. THE UNDERGROUND CONTRACTOR SHALL MINIMIZE THE WORK AREA AND WIDTH OF TRENCHES TO AVOID DISTURBANCES OF NATURAL VEGETATION. SPOIL FROM TRENCHES SHALL BE PLACED ONLY ON PREVIOUSLY CLEARED AREAS, EXISTING RIGHT-OF-WAY OR APPROVED EASEMENT. THE CONTRACTOR SHALL NOT REMOVE OR DISTURB ANY TREES OR SHRUBS WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
20. ALL RESTORATION SHALL CONFORM TO THE STANDARDS AND REQUIREMENTS OF THE AGENCIES HAVING JURISDICTION OVER THE RIGHT-OF-WAY WHERE THE PROJECT IS CONSTRUCTED.
21. ALL LOOP DETECTORS, COMMUNICATION CABLES AND CONDUITS, IF DAMAGED BY THE CONTRACTOR'S ACTIVITIES, SHALL BE REPAIRED AND/OR REPLACED IN ACCORDANCE WITH BCTED AND FDOT REQUIREMENTS.
22. PIPING, FITTINGS, AND APPURTENANCES FOR DUCTILE IRON PIPE SHALL BE RESTRAINED JOINT WHERE SHOWN ON THE PLANS OR AS OTHERWISE SPECIFICALLY SPECIFIED IN THE CONTRACT DRAWINGS.
23. RESILIENT SEATED GATE VALVES WITH BEVEL TYPE GEAR SHALL BE INSTALLED IN HORIZONTAL ORIENTATION WHEN LESS THAN 7-FEET OF COVER FROM TOP OF PIPE IS PRESENT OR AS OTHERWISE SPECIFICALLY SPECIFIED IN THE CONTRACT DRAWINGS.
24. NO CONNECTIONS FOR THE PURPOSE OF OBTAINING WATER SUPPLY DURING CONSTRUCTION SHALL BE MADE TO ANY FIRE HYDRANT OR BLOW-OFF STRUCTURE WITHOUT FIRST OBTAINING PERMISSION AND A CONSTRUCTION METER FROM THE CITY OF FORT LAUDERDALE.
25. THE CONTRACTOR WILL BE RESPONSIBLE FOR LOCATING, MOVING AND RELOCATING OR REPLACING ALL WATER SERVICES OR SEWER LATERALS WHICH ARE ENCOUNTERED DURING EXCAVATION. THE CONTRACTOR SHALL SUBMIT A WRITTEN PLAN FOR WATER SERVICE AND WASTEWATER SERVICE DISRUPTION FOR APPROVAL 7 (SEVEN) CALENDAR DAYS PRIOR TO THE ANTICIPATED DISRUPTION. THE CONTRACTOR SHALL NOTIFY THE PROPERTY OWNERS 48 HOURS IN ADVANCE OF ANY WORK ON THEIR SERVICES. THIS WORK SHALL BE CONSIDERED INCIDENTAL.
26. THE CONTRACTOR MUST INFORM THE CITY AT LEAST 48-HOURS IN ADVANCE OF CONSTRUCTION, IN WRITING IF ANY CONFLICT IS DISCOVERED DURING POT HOLE OPERATIONS FOR CLARIFICATION BY THE CITY.
27. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE UTILITIES DEPARTMENT OF THE CITY OF FORT LAUDERDALE AT LEAST TWO (2) BUSINESS DAYS IN ADVANCE TO COORDINATE ANY ACTIVITY TO BE PERFORMED BY THE CITY'S UTILITIES DEPARTMENT.
28. CONTRACTOR SHALL NOT DISTURB AREAS OUTSIDE EXISTING RIGHTS-OF-WAY.
29. ALL WORK WITHIN STATE DEPARTMENT OF TRANSPORTATION (FDOT) RIGHT-OF-WAYS SHALL BE IN CONFORMANCE WITH FDOT SPECIFICATIONS AND PERMIT REQUIREMENTS.
30. ALL WORK WITHIN BROWARD COUNTY RIGHT-OF-WAYS SHALL BE IN CONFORMANCE WITH THE BROWARD COUNTY MINIMUM STANDARDS AND/OR REQUIREMENTS.
31. CONTRACTOR SHALL COMPLY WITH ALL LOCAL CITY, COUNTY AND STATE REGULATIONS PERTAINING TO THE CLOSING OF PUBLIC STREETS FOR USE OF TRAFFIC DURING CONSTRUCTION.
32. CONTRACTOR SHALL PREPARE AND SUBMIT MAINTENANCE OF TRAFFIC (MOT) PLANS TO FDOT, CITY OF FORT LAUDERDALE, BROWARD COUNTY AS REQUIRED FOR WORK TO BE DONE WITHIN THEIR R/W PRIOR TO COMMENCEMENT OF WORK. SPECIFIC AGENCY MOT REQUIREMENTS ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
33. STATIONS SHOWN ON THE DRAWINGS ARE BASED ON THE ESTABLISHED BASELINE AND SHALL NOT BE CONSIDERED AS DISTANCES OR AS A MEASURE OF THE LINEAR FOOTAGE OF PIPE TO BE INSTALLED.
34. THE GENERAL INTENT IS TO PROVIDE SEWER SERVICE LATERALS FOR EACH PROPERTY. ALL LATERAL LOCATIONS SHALL BE FIELD ADJUSTED.
35. ALL OPEN TRENCHES AND HOLES ADJACENT TO ROADWAY OR WALKWAY SHALL BE PROPERLY MARKED AND BARRICADED TO ASSURE THE SAFETY OF BOTH VEHICULAR AND PEDESTRIAN TRAFFIC.
36. TRENCHES OR HOLES NEAR WALKWAYS, IN ROADWAYS OR THEIR SHOULDERS SHALL NOT BE LEFT OPEN DURING NIGHT TIME HOURS WITHOUT ADEQUATE PROTECTION.
37. CONTRACTOR SHALL PROMPTLY REPAIR AND RESTORE EXISTING PAVEMENT, SIDEWALKS, CURBS, DRIVEWAYS, PIPES, RESIDENTIAL AND COMMERCIAL SPRINKLER LINES, CONDUIT, CABLES, ETC. AND LANDSCAPE AREAS DAMAGED AS A RESULT OF CONSTRUCTION ACTIVITIES. ATTENTION IS CALLED TO THE FACT THAT IRRIGATION AS-BUILTS MAY NOT EXIST OR BE AVAILABLE FOR THE PROJECT.
38. CONTRACTOR SHALL PROVIDE TEMPORARY FENCING AS REQUIRED BY AGENCIES HAVING JURISDICTION OVER THE PROJECT AND/OR WHEN REQUIRED FOR PUBLIC SAFETY.
39. THE CONTRACTOR SHALL BE RESPONSIBLE AT ALL TIMES THROUGHOUT THE DURATION OF CONSTRUCTION AND UNTIL ACCEPTANCE OF WORK, FOR THE PROTECTION OF EXISTING AND NEWLY INSTALLED UTILITIES FROM DAMAGE OR DISRUPTION OF SERVICE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TAKING SUCH MEASURES AS NECESSARY TO PROTECT THE HEALTH, SAFETY AND WELFARE OF THOSE PERSONS HAVING ACCESS TO THE WORK SITE.
40. LOCATION OF AIR RELEASE VALVES MAY BE FIELD ADJUSTED BY THE ENGINEER OR CITY OF FORT LAUDERDALE AS NECESSARY.
41. CONTRACTOR SHALL ADJUST TO GRADE ALL EXISTING UTILITY CASTINGS INCLUDING VALVE BOXES, MANHOLES, HAND HOLES, PULL BOXES, INLETS AND SIMILAR STRUCTURES IN CONSTRUCTION AREA TO BE OVERLAYED WITH ASPHALT.
42. EXISTING TRAFFIC SIGNS SHALL BE RESET UPON COMPLETION PER BROWARD COUNTY TRAFFIC ENGINEERING STANDARDS. COST SHALL BE CONSIDERED INCIDENTAL. CONTRACTOR SHALL REPAIR OR REPLACE DAMAGED TRAFFIC SIGNAL LOOPS PER BROWARD COUNTY TRAFFIC ENGINEERING SPECIFICATIONS; COST SHALL BE INCIDENTAL.
43. CONTRACTOR SHALL RESTORE EXISTING PAVEMENT AND PAVEMENT MARKINGS/SIGNAGE TO ORIGINAL PRE-CONSTRUCTION CONDITION OR AS OTHERWISE SPECIFIED IN CONTRACT DOCUMENTS. THIS WORK SHALL BE CONSIDERED INCIDENTAL.
44. ALL CONSTRUCTION WITHIN FDOT R/W MUST CONFORM WITH FDOT SPECIFICATIONS, STANDARDS, AND PERMIT REQUIREMENTS. NO WORK SHALL COMMENCE WITHIN FDOT R/W's WITHOUT AN FDOT PERMIT. FULL LANE WIDTH RESTORATION TO MATCH EXISTING PAVEMENT SECTION IS REQUIRED IN ACCORDANCE WITH FDOT STANDARDS FOR PROPOSED WORK WITHIN FDOT R/W.

GAS NOTES:

1. PRE-CONSTRUCTION MEETING WITH GAS COMPANY IS REQUIRED TO ADDRESS GAS MAIN CROSSINGS.
2. ON-SITE MONITORING BY GAS CO. PERSONNEL MAY BE REQUIRED DURING EXCAVATION OF GAS MAIN CROSSINGS.
3. ALL GAS MAIN CROSSINGS MUST BE HAND DUG TO VERIFY LOCATIONS AND DEPTHS.
4. PRECAUTIONS MUST BE TAKEN TO PROTECT GAS MAIN COATINGS FROM DAMAGE DURING EXCAVATION AND BACKFILLING.
5. PROVIDE APPROPRIATE SUPPORT OF GAS MAINS DURING BACKFILLING AND TAMPING.
6. PROVIDE SAND PADDING AROUND ALL GAS MAINS.
7. GAS RELOCATIONS, IF REQUIRED, WILL BE COMPLETED BY THE UTILITY COMPANY. THE CONTRACTOR WILL BE REQUIRED TO PAY FOR THE GAS RELOCATION AS A PASS THROUGH, THE COST OF WHICH SHALL BE REIMBURSED BY THE CITY AND PAID UNDER THE UNDEFINED CONDITIONS ALLOWANCE. ANY TIME OR EFFORT REQUIRED TO COORDINATE AND OR SCHEDULE THE RELOCATION ON THE CONTRACTORS PART SHALL BE CONSIDERED INCIDENTAL AND NOT SUBJECT TO REIMBURSEMENT. REFER TO THE MEASUREMENT AND PAYMENT SPECIFICATION SECTION FOR MORE INFORMATION.

Hazen

HAZEN AND SAWYER
4000 HOLLYWOOD BLVD, SUITE 750N
HOLLYWOOD, FLORIDA 33021

ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM 1988 (NAVD 1988)

811 KNOW WHAT'S BELOW ALWAYS CALL 811 BEFORE YOU DIG
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www.callsunshine.com

ENGINEER:
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P.E. NO. 41465
DATE: 02/28/2023

TEL: 954-987-0066
FAX: 954-987-2949

DRAWN BY: JSJ | DESIGNED BY: TV | DATE: APRIL 2021 | SCALE: N/A | CHECKED BY: RBT | FIELD BOOK: XXXX

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS

NO.	DATE	BY	CHK'D	DESCRIPTION

PROJECT # 11842
STORMWATER IMPROVEMENTS
EDGEWOOD NEIGHBORHOOD
GENERAL NOTES

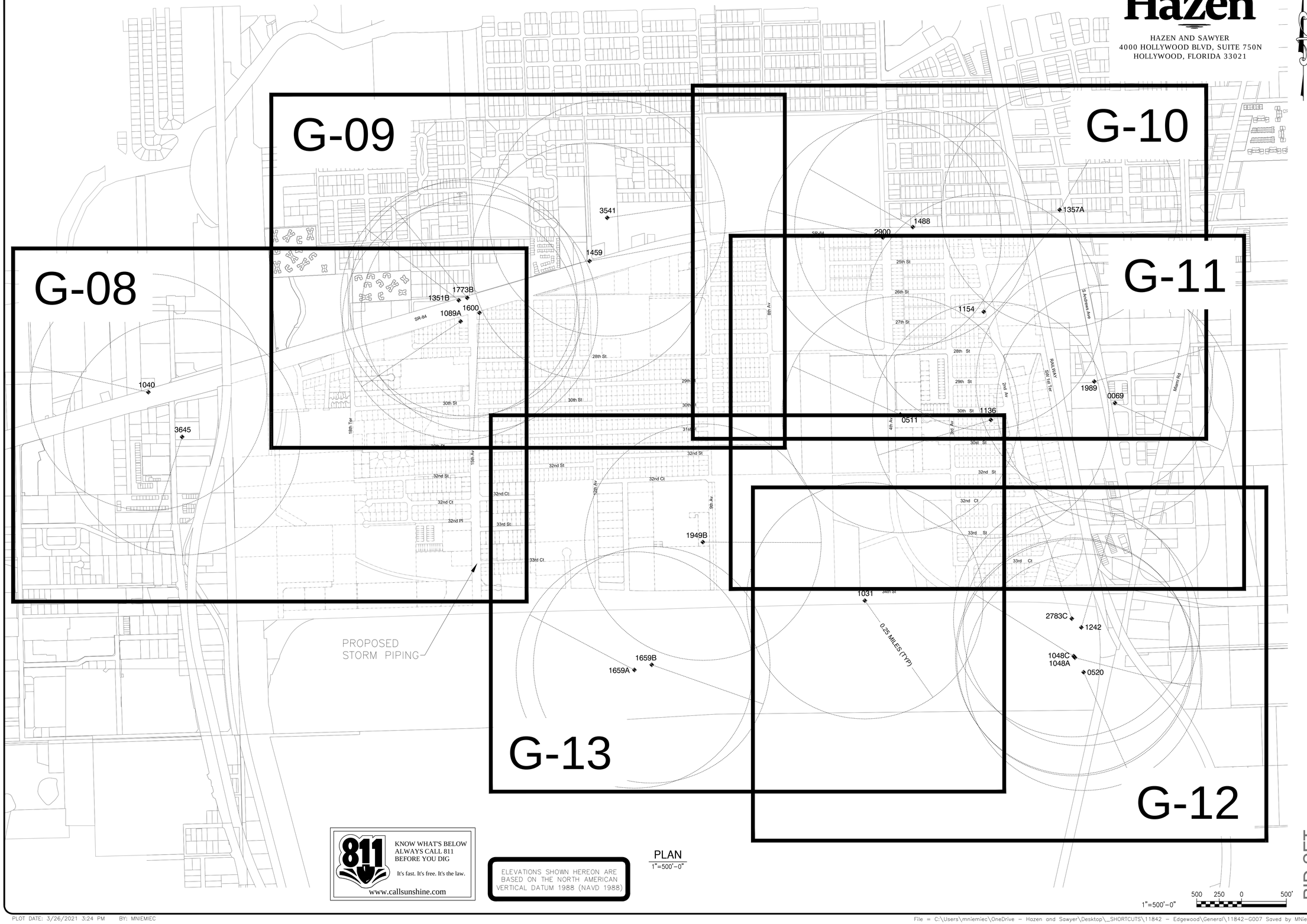
BID SET

SHEET NO.
G-06

TOTAL: 224

CAD FILE:
11842-G006

DRAWING FILE NO.
4-142-65



Hazen

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ENGINEER:
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DRAWN BY: JSJ
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CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS

NO.	DATE	BY	CHK'D	DESCRIPTION

PROJECT # 11842
STORMWATER IMPROVEMENTS
EDGEWOOD NEIGHBORHOOD
CONTAMINATED SITES LOCATION
SITE PLAN AND KEY MAP

SHEET NO.
G-07

TOTAL: 224

CAD FILE:
11842-G007

DRAWING FILE NO.
4-142-65

811
KNOW WHAT'S BELOW
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ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM 1988 (NAVD 1988)

PLAN
1"=500'-0"

1"=500'-0"
500 250 0 500'

BID SET

811 KNOW WHAT'S BELOW ALWAYS CALL 811 BEFORE YOU DIG

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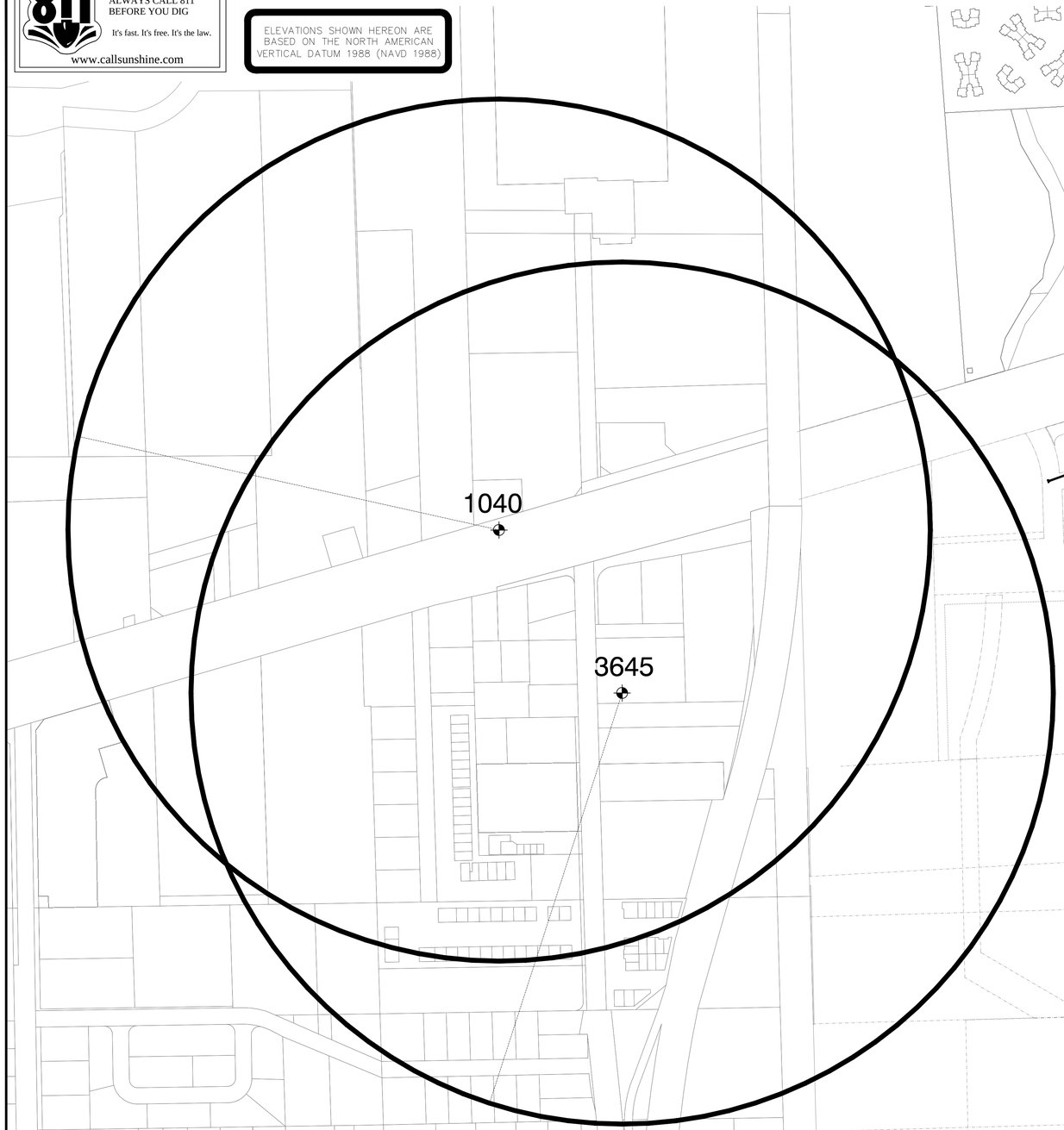
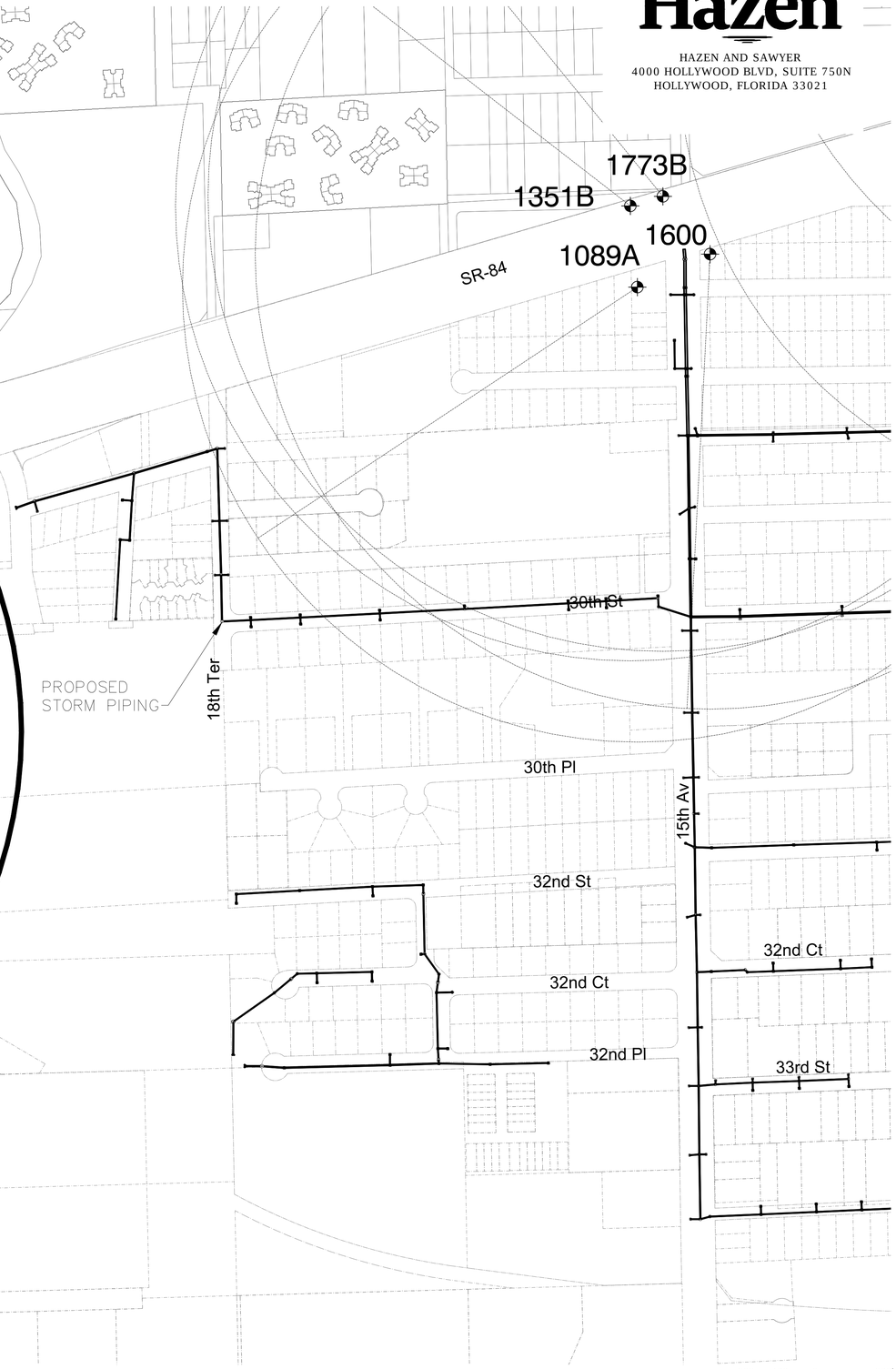
ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM 1988 (NAVD 1988)





CONTAMINATED SITE SCHEDULE WITHIN 0.25 MILES OF THE PROJECT SITE									
SITE NO.	FACILITY NAME	STREET ADDRESS	CITY	ZIP CODE	DEP FACILITY NO.	PROGRAM TYPE	Facility Type	Pollutant	Lead Agency
1040	GULF #367227	2295 STATE RD 84	FORT LAUDERDALE	33312	068501426	FDEP	GAS STATION	PETROLEUM	BCEPD
3645	UNIWELD PRODUCTS INC	2850 RAVENSWOOD RD	FORT LAUDERDALE	33312		NF	OTHER	CHLORINATED	BCEPD

PLAN
1"=200'-0"

1"=200'-0"
200 100 0 200'

BID SET

Hazen

HAZEN AND SAWYER
4000 HOLLYWOOD BLVD, SUITE 750N
HOLLYWOOD, FLORIDA 33021

ENGINEER:
ROBERT B. TAYLOR JR
REG. NO. 41165
DATE: 02/28/2023

TEL: 954-987-0066
FAX: 954-987-2949

DRAWN BY: JSJ
DESIGNED BY: TV
CHECKED BY: RBT
DATE: APRIL 2021
SCALE: N/A
FIELD BOOK: XXXX

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS

NO.	DATE	BY	CHK'D	DESCRIPTION

PROJECT # 11842
STORMWATER IMPROVEMENTS
EDGEWOOD NEIGHBORHOOD
CONTAMINATED SITES LOCATION
SHEET 1

SHEET NO.
G-08

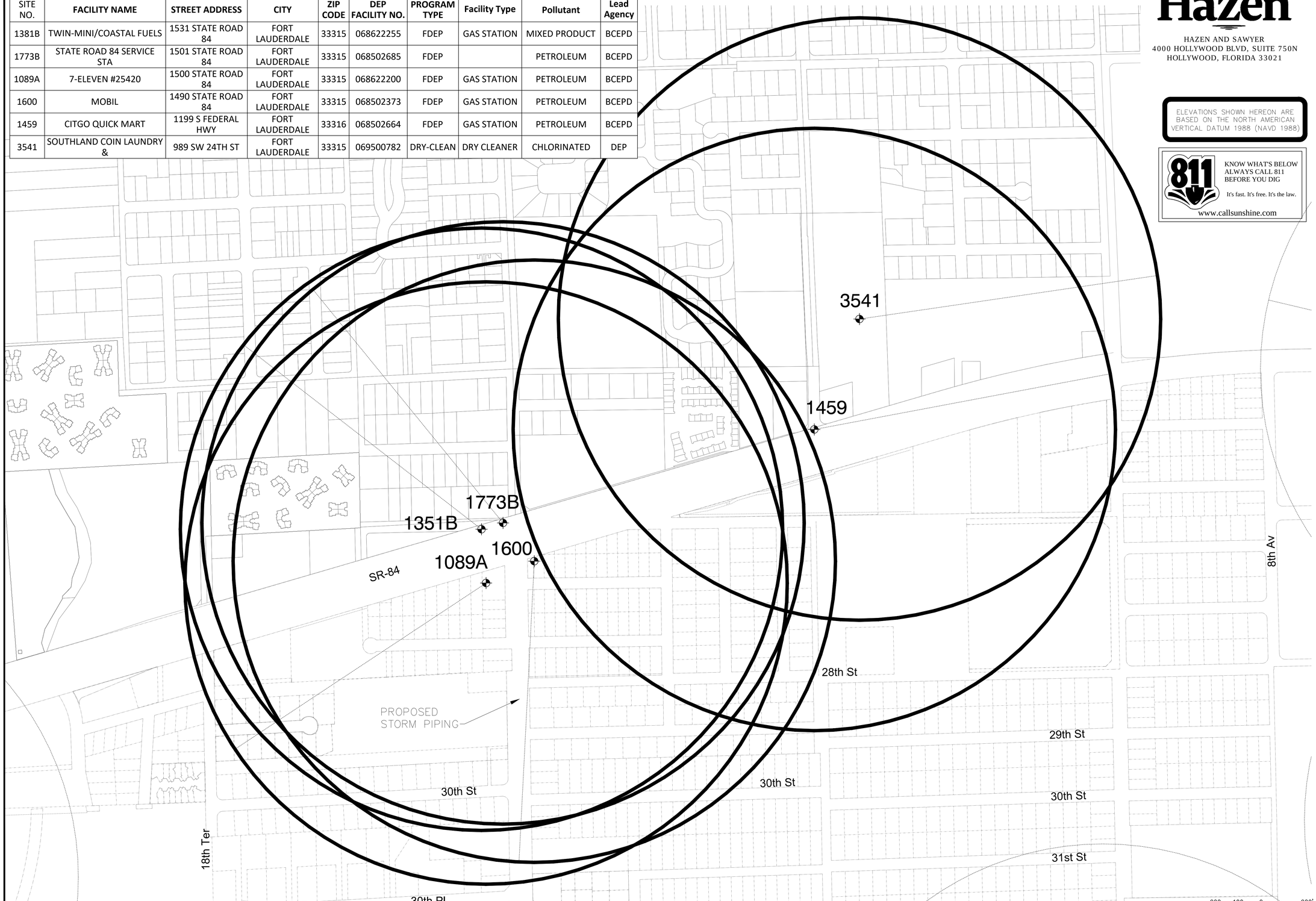
TOTAL: 224

CAD FILE:
11842-G008

DRAWING FILE NO.
4-142-65

CONTAMINATED SITE SCHEDULE WITHIN 0.25 MILES OF THE PROJECT SITE

SITE NO.	FACILITY NAME	STREET ADDRESS	CITY	ZIP CODE	DEP FACILITY NO.	PROGRAM TYPE	Facility Type	Pollutant	Lead Agency
1381B	TWIN-MINI/COASTAL FUELS	1531 STATE ROAD 84	FORT LAUDERDALE	33315	068622255	FDEP	GAS STATION	MIXED PRODUCT	BCEPD
1773B	STATE ROAD 84 SERVICE STA	1501 STATE ROAD 84	FORT LAUDERDALE	33315	068502685	FDEP		PETROLEUM	BCEPD
1089A	7-ELEVEN #25420	1500 STATE ROAD 84	FORT LAUDERDALE	33315	068622200	FDEP	GAS STATION	PETROLEUM	BCEPD
1600	MOBIL	1490 STATE ROAD 84	FORT LAUDERDALE	33315	068502373	FDEP	GAS STATION	PETROLEUM	BCEPD
1459	CITGO QUICK MART	1199 S FEDERAL HWY	FORT LAUDERDALE	33316	068502664	FDEP	GAS STATION	PETROLEUM	BCEPD
3541	SOUTHLAND COIN LAUNDRY &	989 SW 24TH ST	FORT LAUDERDALE	33315	069500782	DRY-CLEAN	DRY CLEANER	CHLORINATED	DEP



PLAN
1"=200'-0"

BID SET

Hazen

HAZEN AND SAWYER
4000 HOLLYWOOD BLVD, SUITE 750N
HOLLYWOOD, FLORIDA 33021

ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM 1988 (NAVD 1988)

811 KNOW WHAT'S BELOW ALWAYS CALL 811 BEFORE YOU DIG
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ENGINEER:
ROBERT B. TAYLOR JR
REG. NO. 41465
DATE: 02/28/2023

TEL: 954-987-0066
FAX: 954-987-2949

DRAWN BY: JSJ
DATE: APRIL 2021
DESIGNED BY: TV
SCALE: N/A
CHECKED BY: RBT
FIELD BOOK: XXXX

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS

NO.	DATE	BY	CHK'D	DESCRIPTION

PROJECT # 11842
STORMWATER IMPROVEMENTS
EDGEWOOD NEIGHBORHOOD
CONTAMINATED SITES LOCATION
SHEET 2

SHEET NO.
G-09

TOTAL: 224

CAD FILE:
11842-G009

DRAWING FILE NO.
4-142-65

CONTAMINATED SITE SCHEDULE WITHIN 0.25 MILES OF THE PROJECT SITE

SITE NO.	FACILITY NAME	STREET ADDRESS	CITY	ZIP CODE	DEP FACILITY NO.	PROGRAM TYPE	Facility Type	Pollutant	Lead Agency
2900	BRAKEWORLD	400 SE 24TH ST	FORT LAUDERDALE	33315	069103212	FDEP		PETROLEUM	BCEPD
1488	AMOCO STATION #6190	345 W 24TH ST	FORT LAUDERDALE	33315	068501546	FDEP	GAS STATION	PETROLEUM	BCEPD
1357A	MOBIL STATION #02-A29	2333 S ANDREWS AVE	FORT LAUDERDALE	33316	068502314	FDEP	GAS STATION	PETROLEUM	BCEPD
1154	ANDERSON BURIAL VAULT SER	217 SW 27TH ST	FORT LAUDERDALE	33315	068622573	FDEP		PETROLEUM	BCEPD

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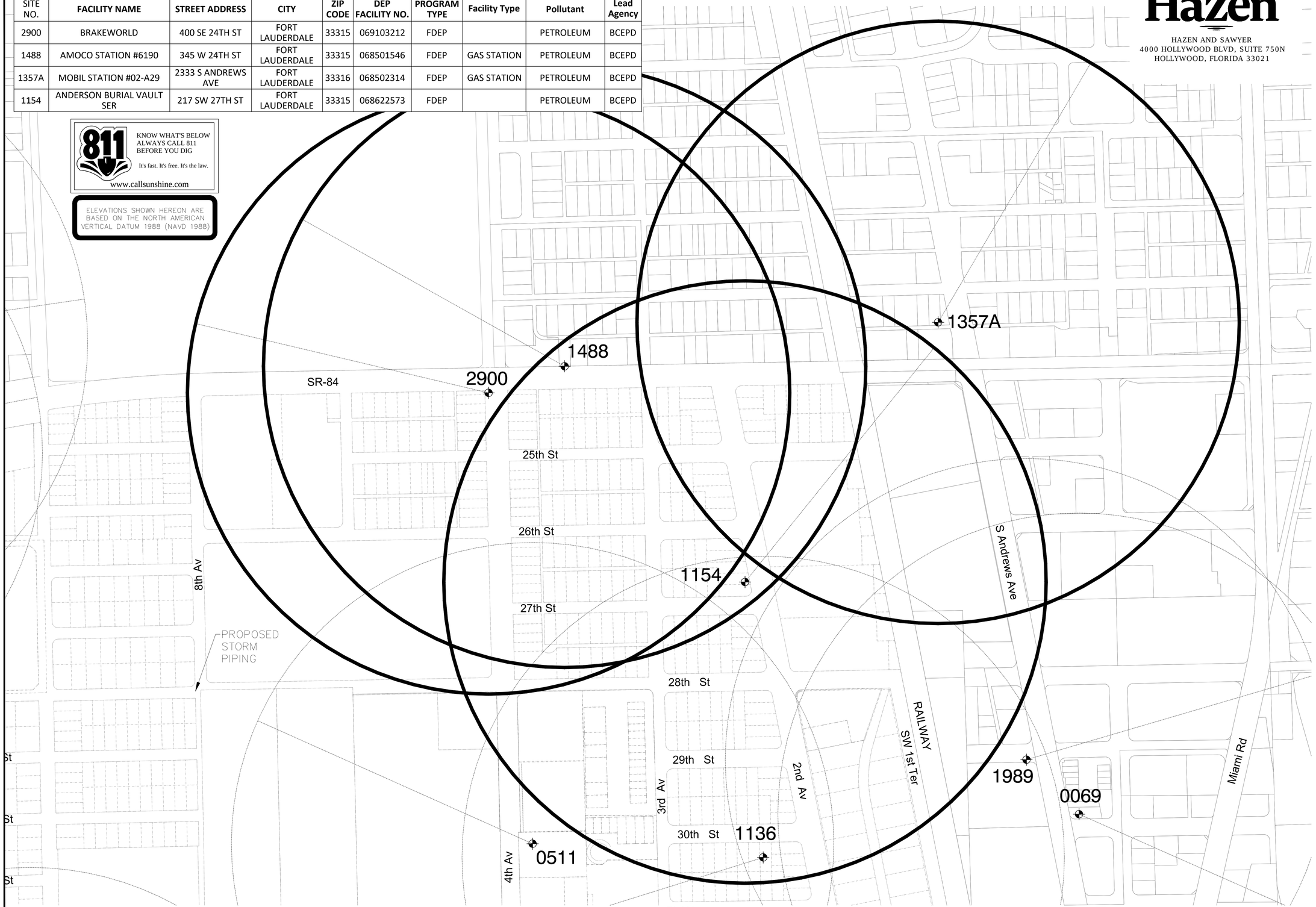


PLAN
1"=200'-0"

1"=200'-0"
200 100 0 200'

BID SET

Hazen

HAZEN AND SAWYER
4000 HOLLYWOOD BLVD, SUITE 750N
HOLLYWOOD, FLORIDA 33021

ENGINEER:
ROBERT B. TAYLOR JR
REG. # 41165
DATE: 02/28/2023

TEL: 954-987-0066
FAX: 954-987-2949

DRAWN BY: JSJ
DESIGNED BY: TV
CHECKED BY: RBT
DATE: APRIL 2021
SCALE: N/A
FIELD BOOK: XXXX

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS

NO.	DATE	BY	CHK'D	DESCRIPTION

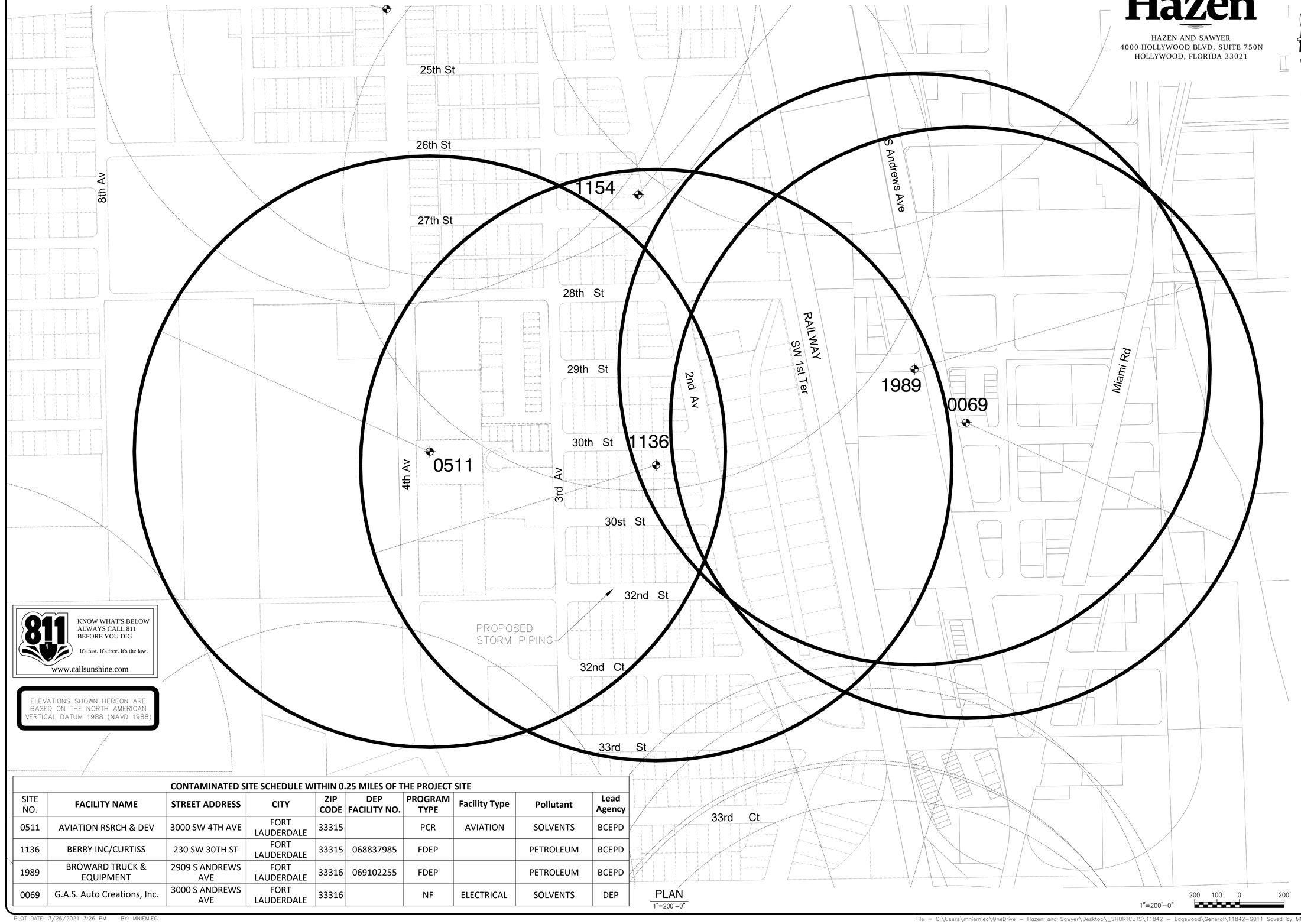
PROJECT # 11842
STORMWATER IMPROVEMENTS
EDGEWOOD NEIGHBORHOOD
CONTAMINATED SITES LOCATION
SHEET 3

SHEET NO.
G-10

TOTAL: 224

CAD FILE:
11842-G010

DRAWING FILE NO.
4-142-65



PLAN
1"=200'-0"

1"=200'-0"
200 100 0 200'

811
KNOW WHAT'S BELOW
ALWAYS CALL 811
BEFORE YOU DIG
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www.callsunshine.com

ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM 1988 (NAVD 1988)

CONTAMINATED SITE SCHEDULE WITHIN 0.25 MILES OF THE PROJECT SITE

SITE NO.	FACILITY NAME	STREET ADDRESS	CITY	ZIP CODE	DEP FACILITY NO.	PROGRAM TYPE	Facility Type	Pollutant	Lead Agency
0511	AVIATION RSRCH & DEV	3000 SW 4TH AVE	FORT LAUDERDALE	33315		PCR	AVIATION	SOLVENTS	BCEPD
1136	BERRY INC/CURTISS	230 SW 30TH ST	FORT LAUDERDALE	33315	068837985	FDEP		PETROLEUM	BCEPD
1989	BROWARD TRUCK & EQUIPMENT	2909 S ANDREWS AVE	FORT LAUDERDALE	33316	069102255	FDEP		PETROLEUM	BCEPD
0069	G.A.S. Auto Creations, Inc.	3000 S ANDREWS AVE	FORT LAUDERDALE	33316		NF	ELECTRICAL	SOLVENTS	DEP

BID SET

Hazen
HAZEN AND SAWYER
4000 HOLLYWOOD BLVD, SUITE 750N
HOLLYWOOD, FLORIDA 33021

ENGINEER:
ROBERT B. TAYLOR JR
REG. No. 41165
DATE: 02/28/2023

TEL: 954-987-0066
FAX: 954-987-2949

DRAWN BY: JSJ
DATE: APRIL 2021
DESIGNED BY: TV
SCALE: N/A
CHECKED BY: RBT
FIELD BOOK: XXXX

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS

NO.	DATE	BY	CHK'D	DESCRIPTION

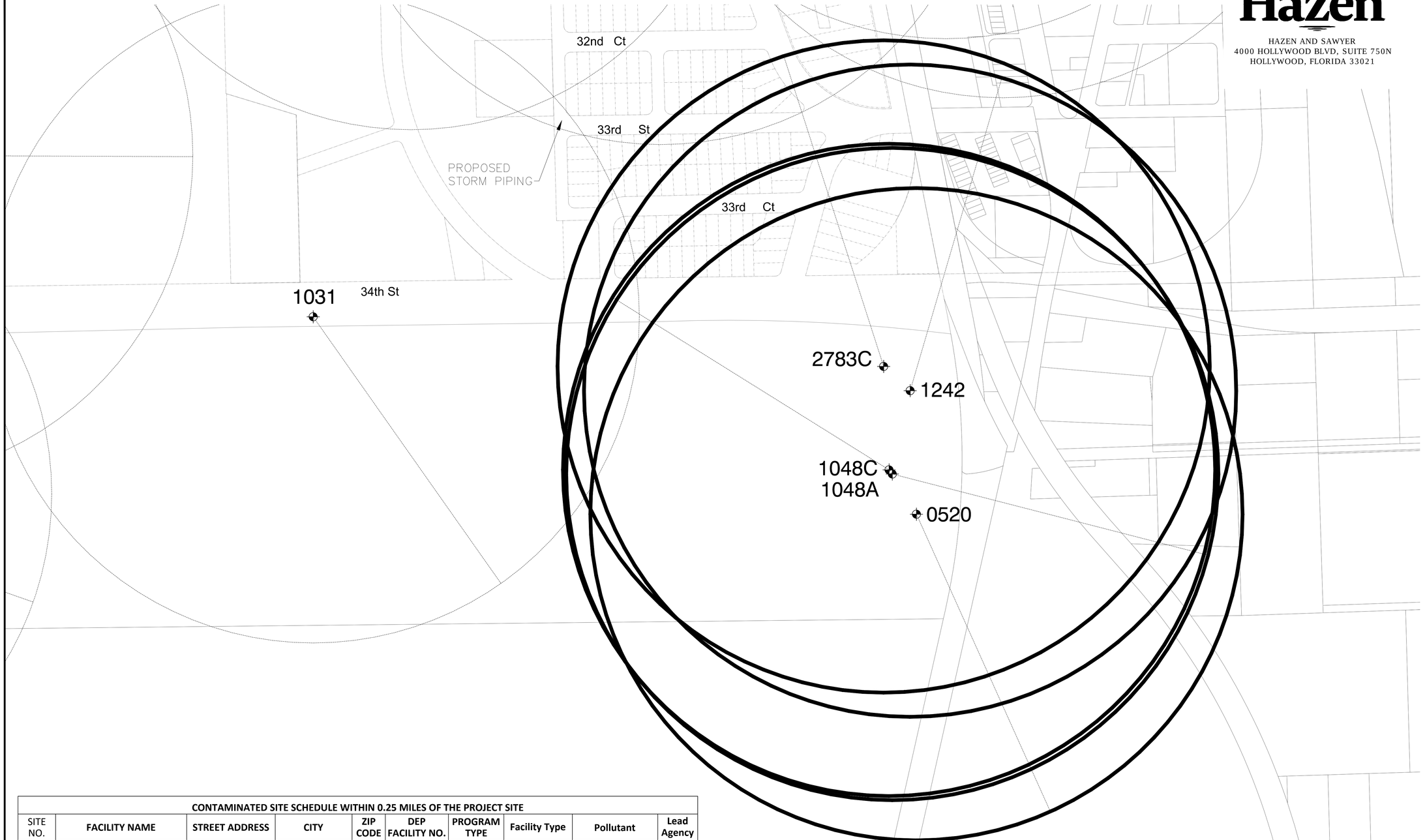
PROJECT # 11842
STORMWATER IMPROVEMENTS
EDGEWOOD NEIGHBORHOOD
CONTAMINATED SITES LOCATION
SHEET 4

SHEET NO.
G-11

TOTAL: 224

CAD FILE:
11842-G011

DRAWING FILE NO.
4-142-65



CONTAMINATED SITE SCHEDULE WITHIN 0.25 MILES OF THE PROJECT SITE									
SITE NO.	FACILITY NAME	STREET ADDRESS	CITY	ZIP CODE	DEP FACILITY NO.	PROGRAM TYPE	Facility Type	Pollutant	Lead Agency
2783C	FT LAUDERDALE INT'L - FUEL	210 SW 34TH ST	FORT LAUDERDALE	33315	068625870	FDEP	AVIATION	PETROLEUM	BCEPD
1242	National Rental Car	200 SW 34TH ST	FORT LAUDERDALE	33315	068502388	FDEP		MIXED PRODUCT	BCEPD
1048C	AIRCRAFT SERVICE INTERNAI	3451 SW 2ND AVE	FORT LAUDERDALE	33315		PCR		UNKNOWN	DEP
1048A	AIRCRAFT SERVICE INTERNAI	3451 SW 2ND AVE	FORT LAUDERDALE	33315	068501476	FDEP	AVIATION	MIXED PRODUCT	BCEPD
0520	BC AVIATION - GATE 101	3545 SW 2ND AVE	FORT LAUDERDALE	33315	069800428	PCR	VACANT LOT	JET FUEL	BCEPD

PLAN
1"=200'-0"

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ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM 1988 (NAVD 1988)

1"=200'-0"
200 100 0 200'

BID SET

Hazen
HAZEN AND SAWYER
4000 HOLLYWOOD BLVD, SUITE 750N
HOLLYWOOD, FLORIDA 33021

ENGINEER:
ROBERT B. TAYLOR JR
REG. No. 41165
DATE: 02/28/2023
TEL: 954-987-0066
FAX: 954-987-2949

DRAWN BY: JSJ
DESIGNED BY: TV
CHECKED BY: RBT
DATE: APRIL 2021
SCALE: N/A
FIELD BOOK: XXXX

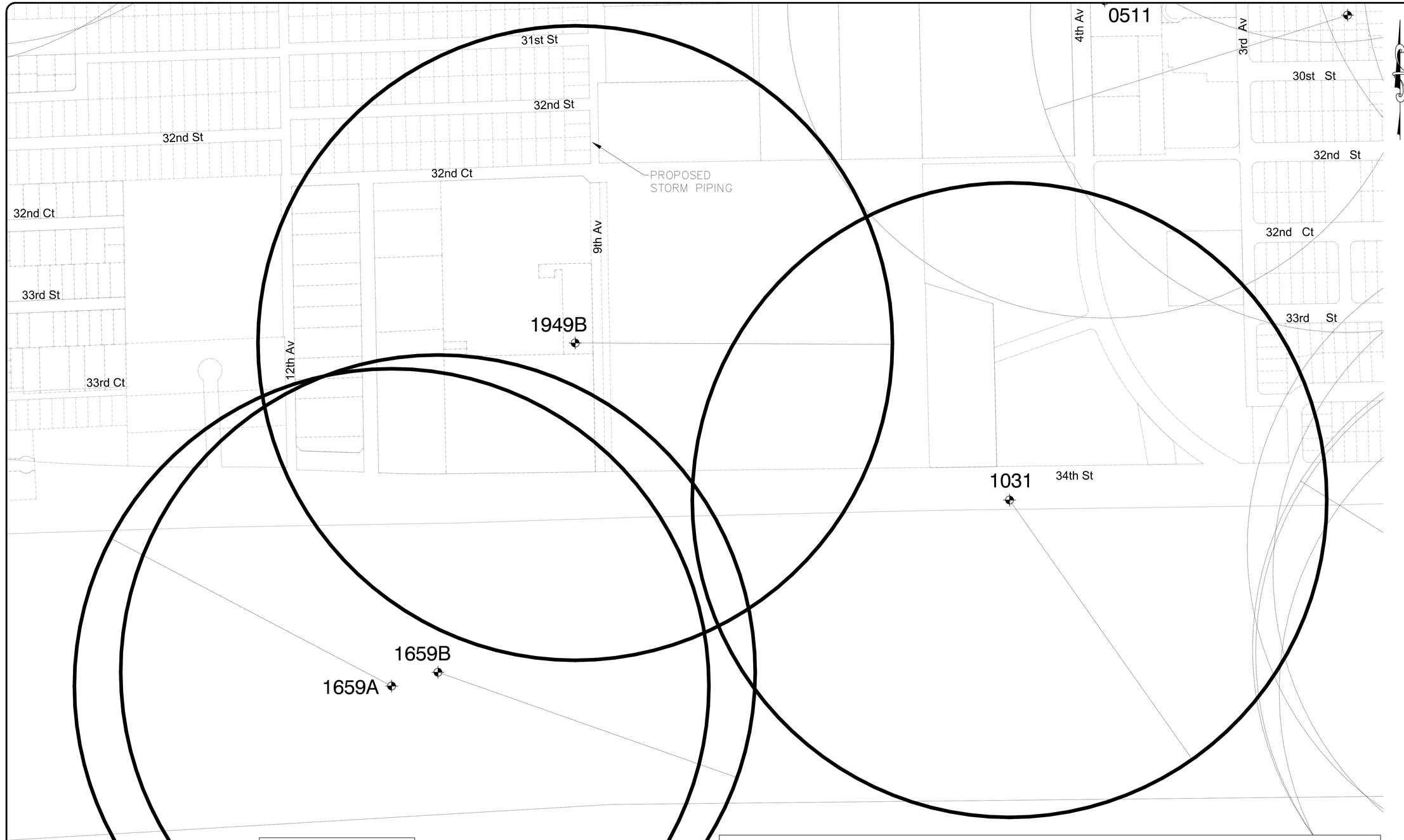
CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS

NO.	DATE	BY	CHK'D	DESCRIPTION

PROJECT # 11842
STORMWATER IMPROVEMENTS
EDGEWOOD NEIGHBORHOOD
CONTAMINATED SITES LOCATION
SHEET 5

SHEET NO.
G-12
TOTAL: 224
CAD FILE: 11842-G012
DRAWING FILE NO. 4-142-65



CONTAMINATED SITE SCHEDULE WITHIN 0.25 MILES OF THE PROJECT SITE									
SITE NO.	FACILITY NAME	STREET ADDRESS	CITY	ZIP CODE	DEP FACILITY NO.	PROGRAM TYPE	Facility Type	Pollutant	Lead Agency
1031	WALKER'S AVIATION	500 SW 34TH ST	FORT LAUDERDALE	33315	068502863	FDEP	AVIATION	PETROLEUM	BCEPD
1949A	VISION EASE	3301 SW 9TH AVE	FORT LAUDERDALE	33315	069401081	FDEP	OFFICE BUILDING	DIESEL	BCEPD
1659B	CAROLINA AIRCRAFT CORP	3500 SW 11TH AVE	FORT LAUDERDALE	33315	069101800	NF	AVIATION	METALS; SOLVENTS	BCEPD
1659A	CAROLINA AIRCRAFT CORP	3500 SW 11TH AVE	FORT LAUDERDALE	33315	069101800	FDEP	AVIATION	PETROLEUM	BCEPD

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ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM 1988 (NAVD 1988)

PLAN
1"=200'-0"

1"=200'-0"
200 100 0 200'

Hazen
HAZEN AND SAWYER
4000 HOLLYWOOD BLVD, SUITE 750N
HOLLYWOOD, FLORIDA 33021

BID SET

ENGINEER:
ROBERT B. TAYLOR JR
REG. No. 41165
DATE: 02/28/2023

TEL: 954-987-0066
FAX: 954-987-2949

DRAWN BY: JSJ
DESIGNED BY: TV
CHECKED BY: RBT
DATE: APRIL 2021
SCALE: N/A
FIELD BOOK: XXXX

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS

NO.	DATE	BY	CHK'D	DESCRIPTION

PROJECT # 11842
STORMWATER IMPROVEMENTS
EDGEWOOD NEIGHBORHOOD
CONTAMINATED SITES LOCATION
SHEET 6

SHEET NO.
G-13

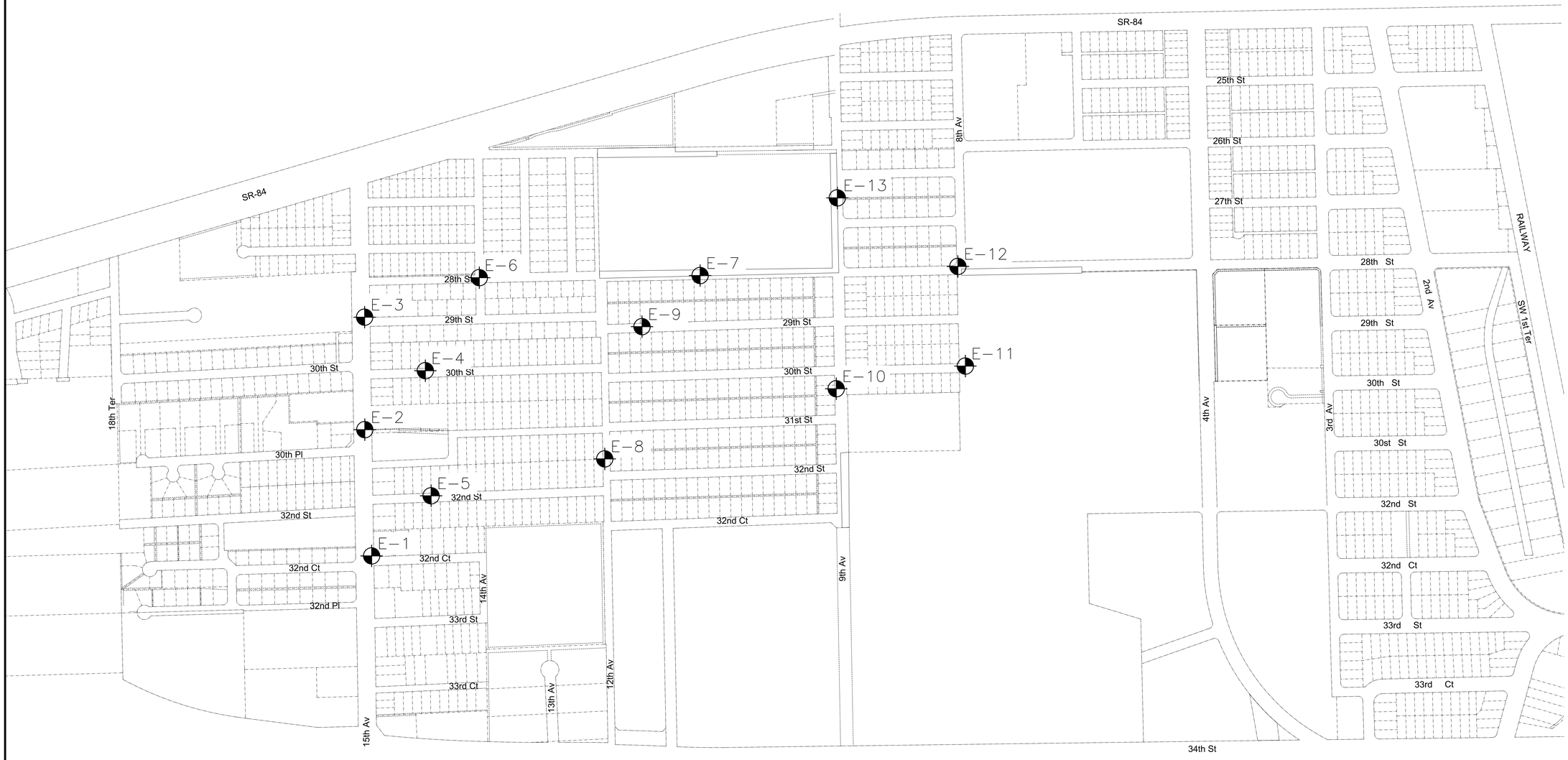
TOTAL: 224

CAD FILE:
11842-G013

DRAWING FILE NO.
4-142-65

Hazen

HAZEN AND SAWYER
4000 HOLLYWOOD BLVD, SUITE 750N
HOLLYWOOD, FLORIDA 33021



PLAN
1"=300'-0"

LEGEND

15' SPT BORING NUMBERING AND APPROXIMATE LOCATION

0 300' 600'

BID SET

ENGINEER:
ROBERT B. TAYLOR JR
REG. No. 41165
DATE: 02/28/2023

TEL: 954-987-0066
FAX: 954-987-2949

DRAWN BY: AA
DESIGNED BY: TAV
CHECKED BY: RBT
DATE: APRIL 2021
SCALE: 1"=300'
FIELD BOOK: XXXX

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS

NO.	DATE	BY	CHK'D	DESCRIPTION

PROJECT # 11842
STORMWATER IMPROVEMENTS
EDGEWOOD NEIGHBORHOOD
SOIL BORING LOCATIONS

SHEET NO.
G-14

TOTAL: 224

CAD FILE:
11842-G014

DRAWING FILE NO.
4-142-65

PLAN
1"=300'-0"

0 300' 600'

BID SET

ENGINEER:
ROBERT B. TAYLOR JR
REG. No: 44165
DATE: 02/26/2023

TEL: 954-987-0066
FAX: 954-987-2949

HAZEN AND SAWYER
4000 HOLLYWOOD BLVD, SUITE 750N
HOLLYWOOD, FLORIDA 33021

DRAWN BY: AA
DATE: APRIL 2021
DESIGNED BY: TAV
SCALE: 1"=300'
CHECKED BY: RBT
FIELD BOOK: XXXX

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS

NO.	DATE	BY	CHK'D	DESCRIPTION

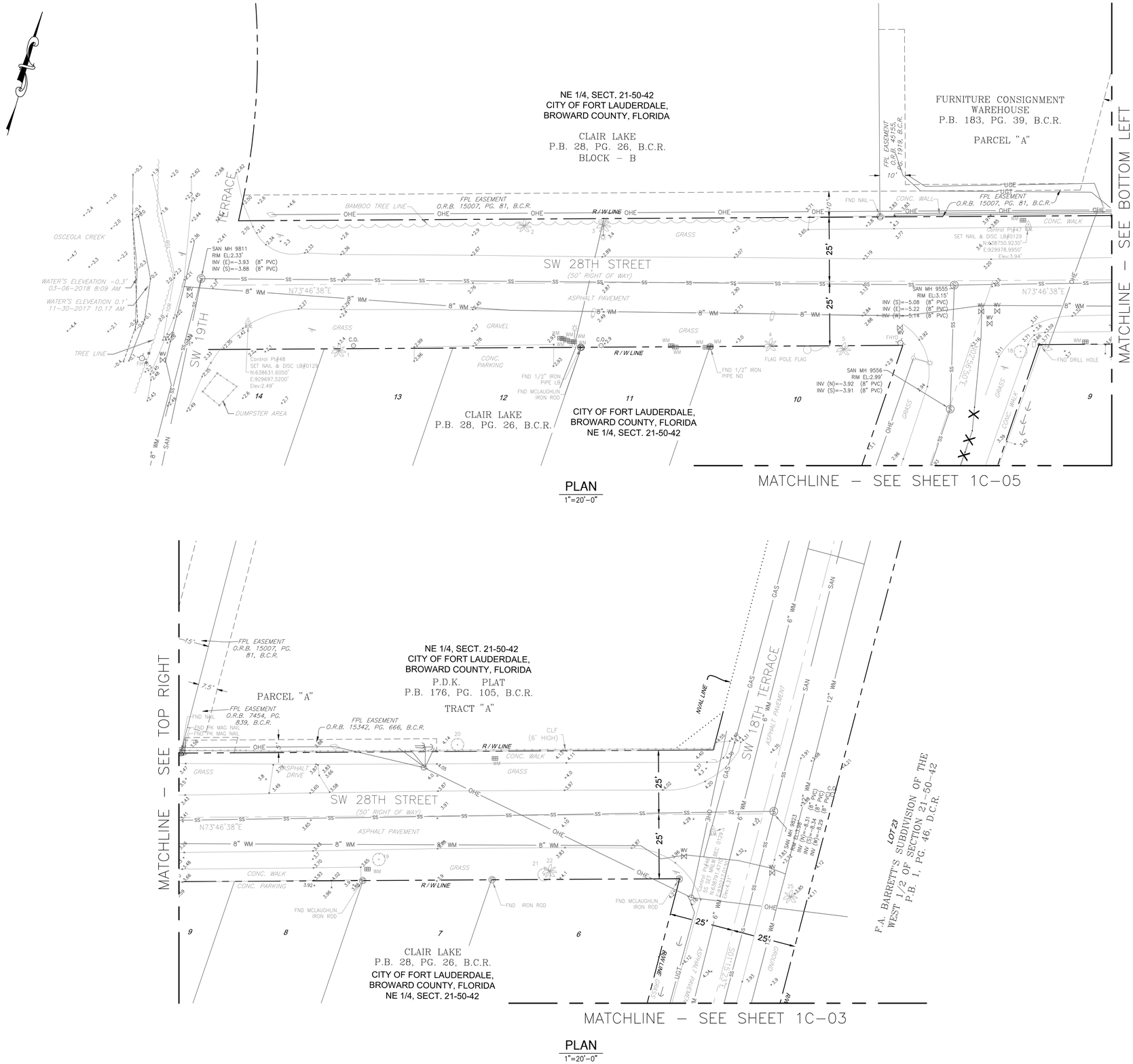
PROJECT # 11842
STORMWATER IMPROVEMENTS
EDGEWOOD NEIGHBORHOOD
EXISTING SITE KEY MAP

SHEET NO.
1C-01

TOTAL: 224

CAD FILE:
11842-1C01

DRAWING FILE NO.
4-142-65



PLAN
1"=20'-0"

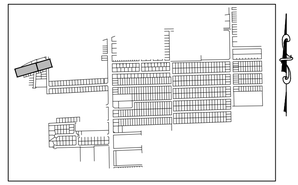
PLAN
1"=20'-0"

Hazen

HAZEN AND SAWYER
4000 HOLLYWOOD BLVD, SUITE 750N
HOLLYWOOD, FLORIDA 33021

ENGINEER:
ROBERT B. TAYLOR JR
REG. No.: 41165
DATE: 02/28/2023

TEL: 954-987-0066
FAX: 954-987-2949



KEY MAP
NTS

DRAWN BY:	DATE:
AA	09/2020
DESIGNED BY:	SCALE:
TAV	1"=20'
CHECKED BY:	FIELD BOOK:
RBT	XXXX

ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM 1988 (NAVD 1988)

811 KNOW WHAT'S BELOW ALWAYS CALL 811 BEFORE YOU DIG
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NOTES:

1. CONTRACTOR SHALL FIELD MEASURE ALL EXISTING STORM PIPE DIAMETERS AND VERIFY PIPE MATERIAL PRIOR TO ORDERING THE APPROPRIATE INLINE CHECK VALVE AND PIPE FITTINGS. PIPE DIMENSIONS SHOWN WERE OBTAINED FROM CITY GEODATABASE AND SURVEY INFORMATION.
2. CONTRACTOR SHALL CLEAN AND DESILT PIPES AND EXISTING DRAINAGE STRUCTURES PRIOR TO INSTALLING INLINE CHECK VALVES.
3. FOR ALL CATCH BASINS TO BE REPLACED, CONTRACTOR SHALL REMOVE EXISTING PIPE AS NECESSARY FOR DEMOLITION/REMOVAL OF EXISTING STRUCTURE AND REPLACEMENT WITH PROPOSED STRUCTURE AS SHOWN ON PLANS. REMOVAL OF EXISTING PIPE SHALL BE AS TO ALLOW FOR WATER TIGHT CONNECTION TO REMAINING PIPELINE AND PROPOSED STRUCTURE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS AND/OR AASHTO M198, TYPE B REQUIREMENTS.
4. CONTRACTOR SHALL REPAIR/REPLACE SURROUNDING GROUND AFFECTED BY CONSTRUCTION, INCLUDING BUT NOT LIMITED TO: PAVERS, SIDEWALKS, SOD, LANDSCAPING AND BRING IT TO EXISTING OR BETTER CONDITIONS.
5. CONTRACTOR TO PROVIDE, REPLACE AND MAINTAIN TREE PROTECTION BARRICADES DURING CONSTRUCTION FOR ALL EXISTING TREES TO REMAIN. SEE CITY STANDARD DETAILS, SHEET GC–16.
6. TREES TO BE REMOVED, RELOCATED, OR REPLACED WITHIN THE PROJECT AREA SHALL BE SPECIFICALLY DESIGNATED IN THE FIELD AS THE PROJECT PROGRESSES. REFER TO SPECIFICATIONS.
7. CONTRACTOR SHALL BE ADVISED AS TO THE POSSIBLE PRESENCE OF ASBESTOS CEMENT PIPE (ACP) WITHIN AND IMMEDIATELY BEYOND THE PROJECT LIMITS. AS SUCH, CONTRACTOR SHALL IN THE COURSE OF PERFORMING HIS WORK, TAKE NECESSARY PRECAUTIONS AS TO NOT DISTURB, BREAK OR OTHERWISE DAMAGE ACP. CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY CONFLICTS WITH ACP BEFORE BEGINNING THE WORK.

LEGEND

PIPE TO BE REMOVED

PIPE TO ABANDONED GROUT IN PLACE

STRUCTURE TO BE REMOVED

0 20' 40'

BID SET

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS			
NO.	DATE	BY	CHK'D	DESCRIPTION

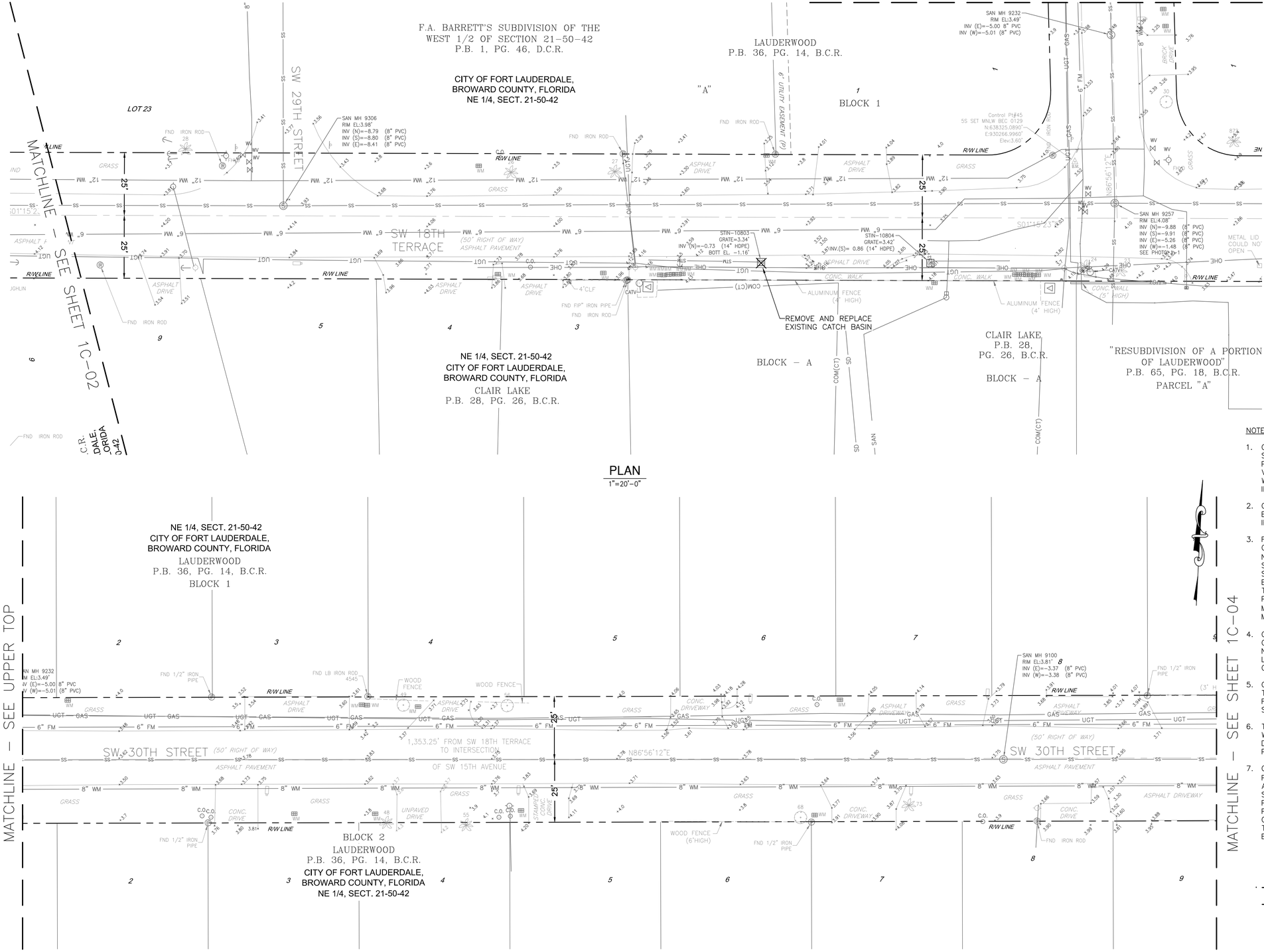
PROJECT # 11842
STORMWATER IMPROVEMENTS
EDGEWOOD NEIGHBORHOOD
EXISTING SITE AND DEMOLITION
PLAN WEST - SHEET 1

SHEET NO.
1C-02

TOTAL: 224

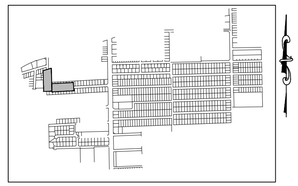
CAD FILE:
11842-1C02

DRAWING FILE NO.
4-142-65



Hazen

HAZEN AND SAWER
4000 HOLLYWOOD BLVD, SUITE 750N
HOLLYWOOD, FLORIDA 33021



KEY MAP
NTS

811 KNOW WHAT'S BELOW ALWAYS CALL 811 BEFORE YOU DIG
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ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM 1988 (NAVD 1988)

NOTES:

1. CONTRACTOR SHALL FIELD MEASURE ALL EXISTING STORM PIPE DIAMETERS AND VERIFY PIPE MATERIAL PRIOR TO ORDERING THE APPROPRIATE INLINE CHECK VALVE AND PIPE FITTINGS. PIPE DIMENSIONS SHOWN WERE OBTAINED FROM CITY GEODATABASE AND SURVEY INFORMATION.
2. CONTRACTOR SHALL CLEAN AND DESILT PIPES AND EXISTING DRAINAGE STRUCTURES PRIOR TO INSTALLING INLINE CHECK VALVES.
3. FOR ALL CATCH BASINS TO BE REPLACED, CONTRACTOR SHALL REMOVE EXISTING PIPE AS NECESSARY FOR DEMOLITION/REMOVAL OF EXISTING STRUCTURE AND REPLACEMENT WITH PROPOSED STRUCTURE AS SHOWN ON PLANS. REMOVAL OF EXISTING PIPE SHALL BE AS TO ALLOW FOR WATER TIGHT CONNECTION TO REMAINING PIPELINE AND PROPOSED STRUCTURE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS AND/OR AASHTO M198, TYPE B REQUIREMENTS.
4. CONTRACTOR SHALL REPAIR/REPLACE SURROUNDING GROUND AFFECTED BY CONSTRUCTION, INCLUDING BUT NOT LIMITED TO: PAVERS, SIDEWALKS, SOD, LANDSCAPING AND BRING IT TO EXISTING OR BETTER CONDITIONS.
5. CONTRACTOR TO PROVIDE, REPLACE AND MAINTAIN TREE PROTECTION BARRICADES DURING CONSTRUCTION FOR ALL EXISTING TREES TO REMAIN. SEE CITY STANDARD DETAILS, SHEET GC-16.
6. TREES TO BE REMOVED, RELOCATED, OR REPLACED WITHIN THE PROJECT AREA SHALL BE SPECIFICALLY DESIGNATED IN THE FIELD AS THE PROJECT PROGRESSES. REFER TO SPECIFICATIONS.
7. CONTRACTOR SHALL BE ADVISED AS TO THE POSSIBLE PRESENCE OF ASBESTOS CEMENT PIPE (ACP) WITHIN AND IMMEDIATELY BEYOND THE PROJECT LIMITS. AS SUCH, CONTRACTOR SHALL IN THE COURSE OF PERFORMING HIS WORK, TAKE NECESSARY PRECAUTIONS AS TO NOT DISTURB, BREAK OR OTHERWISE DAMAGE ACP. CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY CONFLICTS WITH ACP BEFORE BEGINNING THE WORK.

LEGEND

- PIPE TO BE REMOVED
- PIPE TO ABANDONED GROUT IN PLACE
- STRUCTURE TO BE REMOVED

0 20' 40'

BID SET

ENGINEER:
ROBERT B. TAYLOR JR
REG. No. 41465
DATE: 02/28/2023

TEL: 954-987-0066
FAX: 954-987-2949

DRAWN BY: AA
DATE: APRIL 2021
DESIGNED BY: TAV
SCALE: 1"=20'
CHECKED BY: RBT
FIELD BOOK: XXXX

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS

NO.	DATE	BY	CHK'D	DESCRIPTION

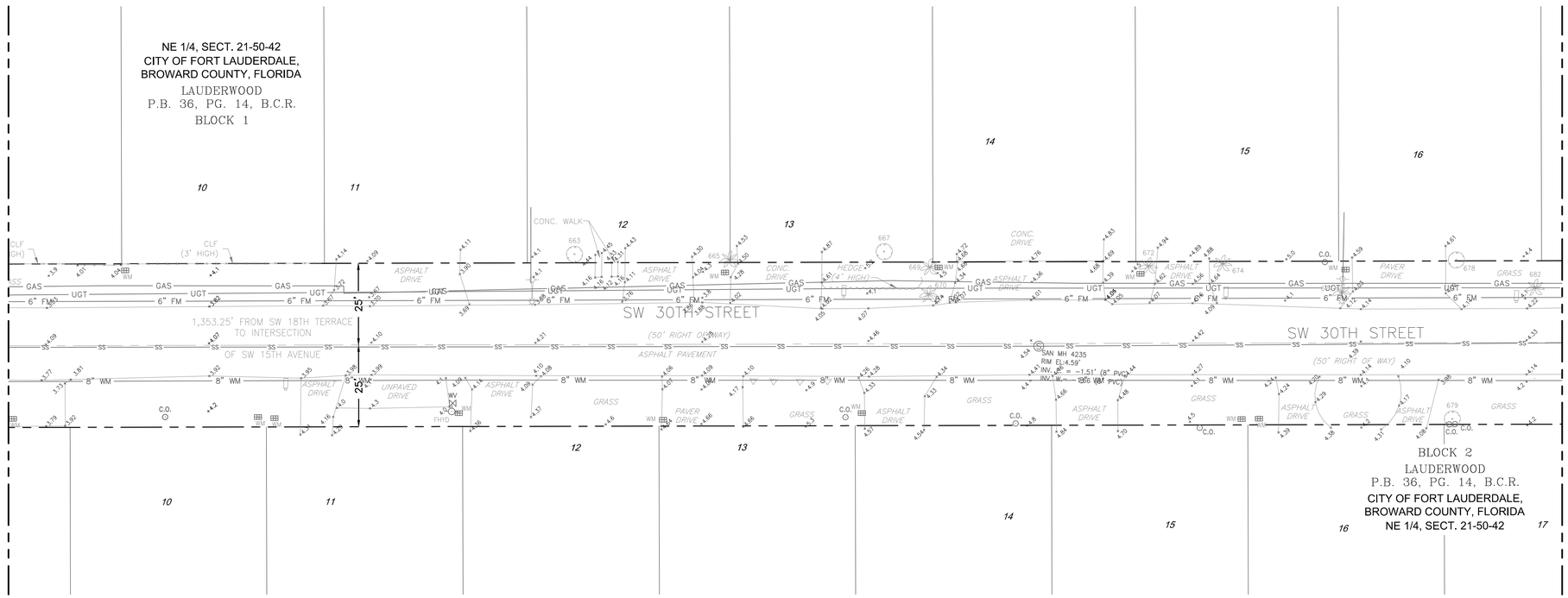
PROJECT # 11842
STORMWATER IMPROVEMENTS
EDGEWOOD NEIGHBORHOOD
EXISTING SITE AND DEMOLITION
PLAN WEST - SHEET 2

SHEET NO.
1C-03

TOTAL: 224

CAD FILE: 11842-1C03

DRAWING FILE NO. 4-142-65



PLAN
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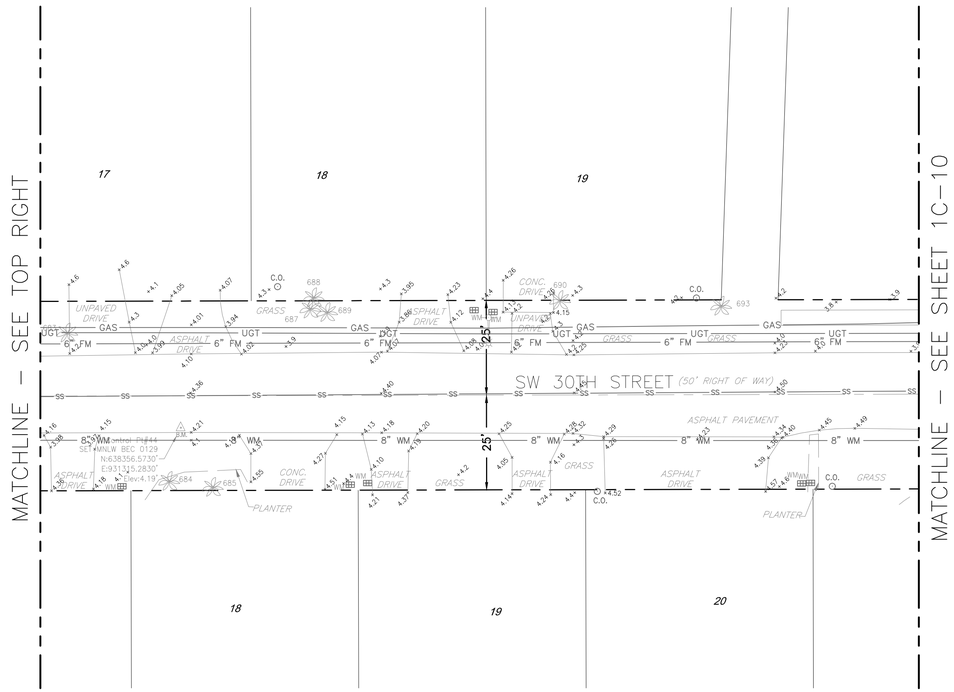
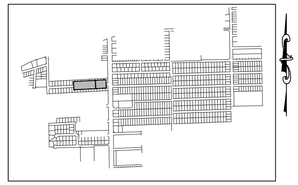


PLAN
1"=20'–0"

Hazen

HAZEN AND SAWYER
4000 HOLLYWOOD BLVD, SUITE 750N
HOLLYWOOD, FLORIDA 33021



KEY MAP
NTS

ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM 1988 (NAVD 1988)

811 KNOW WHAT'S BELOW ALWAYS CALL 811 BEFORE YOU DIG
It's fast. It's free. It's the law.
www.callsunshine.com

NOTES:

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LEGEND

PIPE TO BE REMOVED

PIPE TO ABANDONED GROUT IN PLACE

STRUCTURE TO BE REMOVED

0 20' 40'

BID SET

ENGINEER:
ROBERT B. TAYLOR JR
REG. No. 41465
DATE: 02/28/2023

TEL: 954-987-0066
FAX: 954-987-2949

DRAWN BY: AA
DATE: APRIL 2021
DESIGNED BY: TAV
SCALE: 1"=20'
CHECKED BY: RBT
FIELD BOOK: XXXX

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS

NO.	DATE	BY	CHK'D	DESCRIPTION

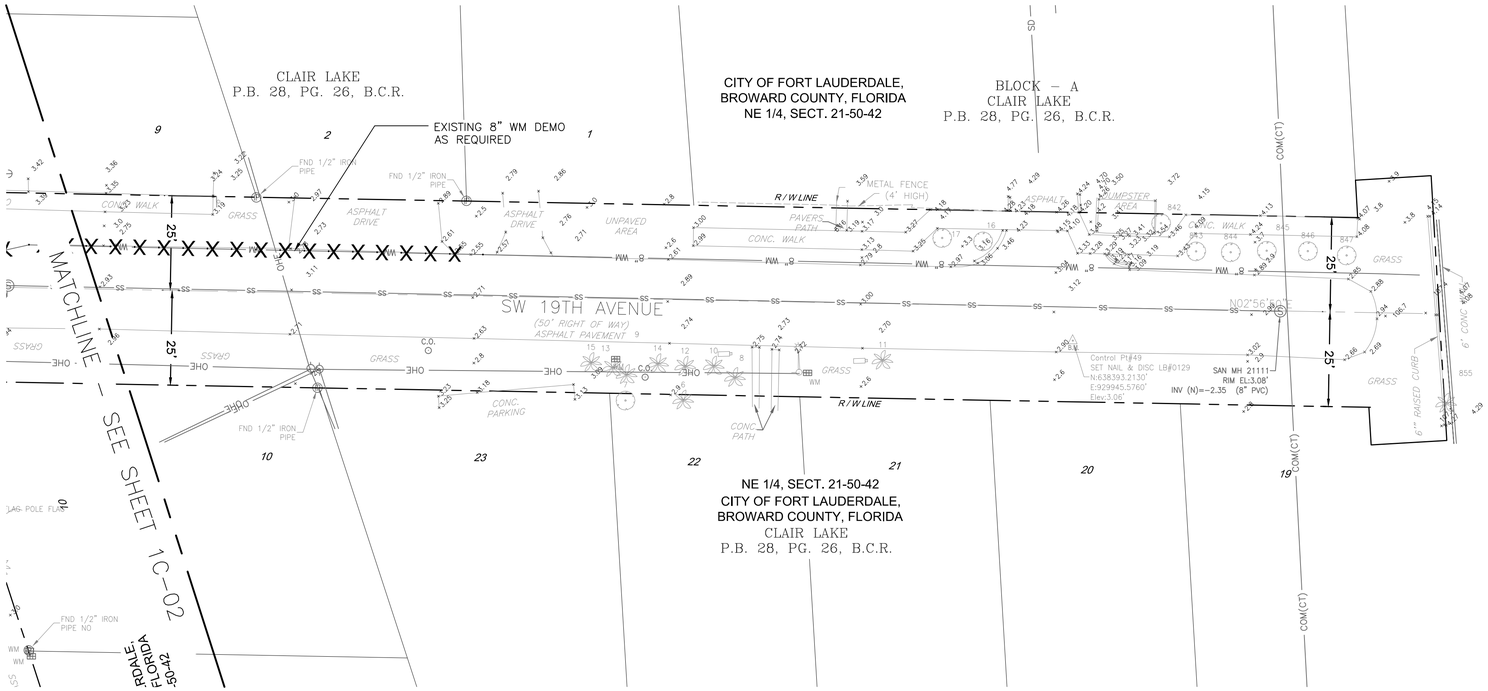
PROJECT # 11842
STORMWATER IMPROVEMENTS
EDGEWOOD NEIGHBORHOOD
EXISTING SITE AND DEMOLITION
PLAN WEST - SHEET 3

SHEET NO.
1C-04

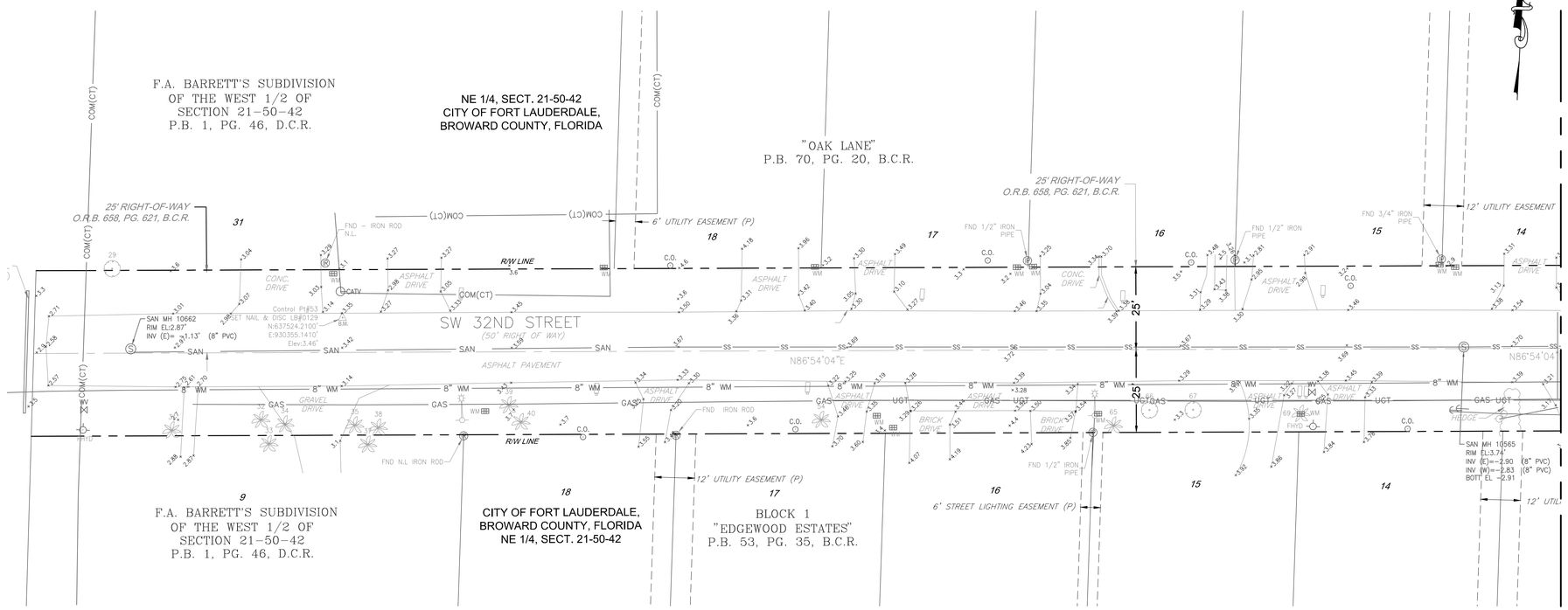
TOTAL: 224

CAD FILE: 11842–1C04

DRAWING FILE NO. 4–142–65



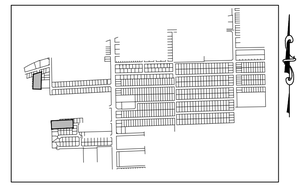
PLAN
1"=20'-0"



PLAN
1"=20'-0"

Hazen

HAZEN AND SAWER
4000 HOLLYWOOD BLVD, SUITE 750N
HOLLYWOOD, FLORIDA 33021



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LEGEND

- PIPE TO BE REMOVED
- PIPE TO ABANDONED GROUT IN PLACE
- STRUCTURE TO BE REMOVED

0 20' 40'

ENGINEER:
ROBERT B. TAYLOR JR
REG. No.: 41165
DATE: 02/28/2023

TEL: 954-987-0066
FAX: 954-987-2949

DRAWN BY: AA
DATE: APRIL 2021
DESIGNED BY: TAV
SCALE: 1"=20'
CHECKED BY: RBT
FIELD BOOK: XXXX

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS

NO.	DATE	BY	CHK'D	DESCRIPTION

PROJECT # 11842
STORMWATER IMPROVEMENTS
EDGEWOOD NEIGHBORHOOD
EXISTING SITE AND DEMOLITION
PLAN WEST - SHEET 4

SHEET NO.
1C-05

TOTAL: 224

CAD FILE:
11842-1C05

DRAWING FILE NO.
4-142-65

"OAK LANE"
P.B. 70, PG. 20, B.C.R.

NE 1/4, SECT. 21-50-42
CITY OF FORT LAUDERDALE,
BROWARD COUNTY, FLORIDA

F.A. BARRETT'S SUBDIVISION
OF THE WEST 1/2 OF
SECTION 21-50-42
P.B. 1, PG. 46, D.C.R.

F.A. BARRETT'S SUBDIVISION
OF THE WEST 1/2 OF
SECTION 21-50-42
P.B. 1, PG. 46, D.C.R.

TRACT "A"
"EDGEWOOD ESTATES"
P.B. 53, PG. 35, B.C.R.

SW 32ND STREET
(50' RIGHT OF WAY)

SW 17TH AVENUE
(50' RIGHT OF WAY)

SW 32ND COURT
(50' RIGHT OF WAY)

BASELINE OF SURVEY

6' UTILITY EASEMENT (P)

BLOCK 1
"EDGEWOOD ESTATES"
P.B. 53, PG. 35, B.C.R.

CITY OF FORT LAUDERDALE,
BROWARD COUNTY, FLORIDA
NE 1/4, SECT. 21-50-42

"EDGEWOOD ESTATES"
P.B. 53,
PG. 35, B.C.R.

SE 1/4, SECT. 21-50-42
CITY OF FORT LAUDERDALE,
BROWARD COUNTY, FLORIDA

"EDGEWOOD ESTATES
SECTION 2"
P.B. 54,
PG. 20, B.C.R.

MATCHLINE – SEE SHEET 1C-05

MATCHLINE – SEE BOTTOM RIGHT

MATCHLINE – SEE SHEET 1C-07

PLAN
1"=20'-0"

NE 1/4, SECT. 21-50-42
CITY OF FORT LAUDERDALE,
BROWARD COUNTY, FLORIDA

"EDGEWOOD ESTATES"
P.B. 53, PG. 35, B.C.R.
BLOCK 1

REMOVE AND REPLACE
EXISTING CATCH BASIN

REMOVE AND REPLACE
EXISTING CATCH BASIN

BLOCK 1
"EDGEWOOD ESTATES
SECTION 3"
P.B. 54, PG. 41, B.C.R.

REMOVE AND REPLACE
EXISTING STORM WATER
MANHOLE; INSTALL
INLINE CHECK VALVE

REMOVE TO EXTENTS NECESSARY FOR
REPLACEMENT OF EXISTING STORM
DRAIN AND OUTFALL

CITY OF FORT LAUDERDALE,
BROWARD COUNTY, FLORIDA
NE 1/4, SECT. 21-50-42

BLOCK 2
"EDGEWOOD ESTATES SECTION 2"
P.B. 54, PG. 20, B.C.R.

MATCHLINE – SEE UPPER BELOW

MATCHLINE – SEE SHEET 1C-07

PLAN
1"=20'-0"

0 20' 40'

Hazen

HAZEN AND SAWYER
4000 HOLLYWOOD BLVD, SUITE 750N
HOLLYWOOD, FLORIDA 33021

KEY MAP
NTS

ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM 1988 (NAVD 1988)

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LEGEND

- PIPE TO BE REMOVED
- PIPE TO ABANDONED GROUT IN PLACE
- STRUCTURE TO BE REMOVED

BID SET

ENGINEER:
ROBERT B. TAYLOR JR
FL. REG. # 41165
DATE: 02/28/2023

TEL: 954-987-0066
FAX: 954-987-2949

DRAWN BY: AA
DATE: APRIL 2021
DESIGNED BY: TAV
SCALE: 1"=20'
CHECKED BY: RBT
FIELD BOOK: XXXX

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS

NO.	DATE	BY	CHK'D	DESCRIPTION

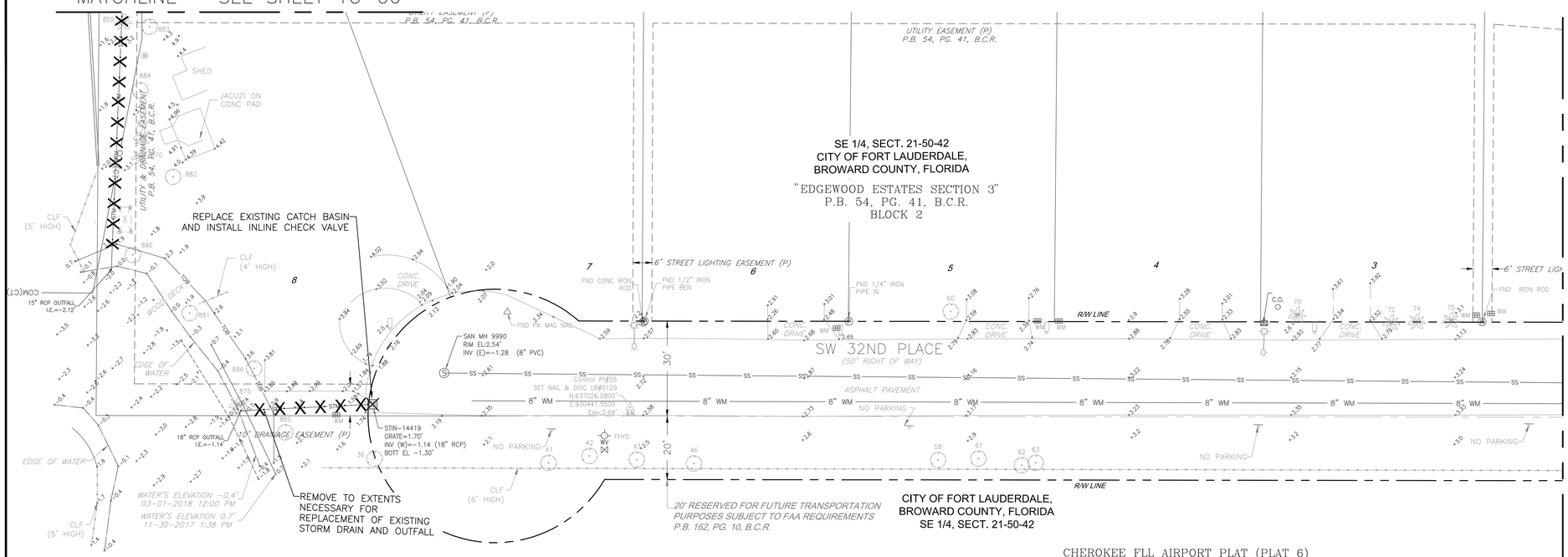
PROJECT # 11842
STORMWATER IMPROVEMENTS
EDGEWOOD NEIGHBORHOOD
EXISTING SITE AND DEMOLITION
PLAN WEST - SHEET 5

SHEET NO.
1C-06

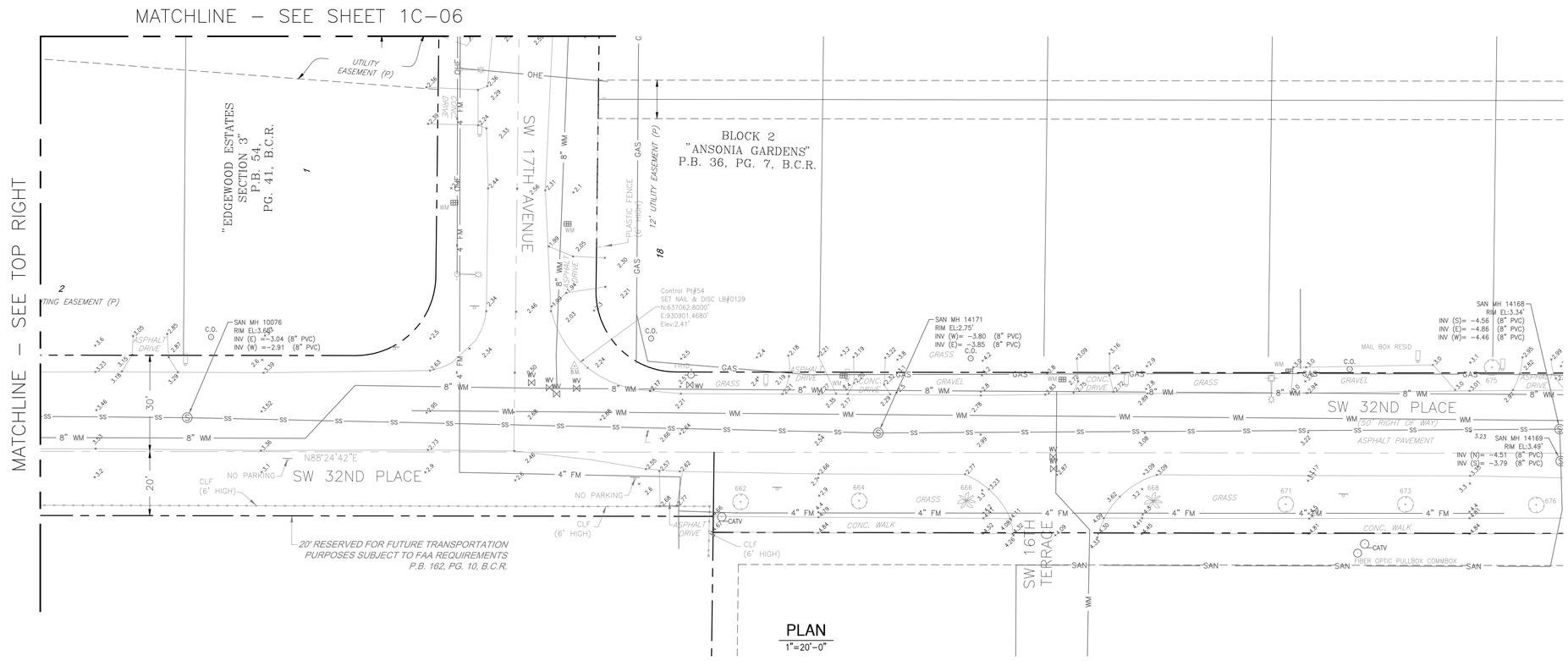
TOTAL: 224

CAD FILE:
11842-1C06

DRAWING FILE NO.
4-142-65



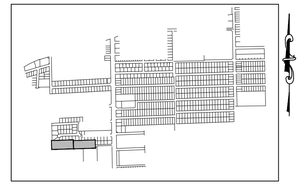
PLAN
1"=20'–0"



PLAN
1"=20'–0"

Hazen

HAZEN AND SAWER
4000 HOLLYWOOD BLVD, SUITE 750N
HOLLYWOOD, FLORIDA 33021



KEY MAP
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LEGEND

- PIPE TO BE REMOVED
- PIPE TO ABANDONED GROUT IN PLACE
- STRUCTURE TO BE REMOVED

0 20' 40'

BID SET

ENGINEER:
ROBERT B. TAYLOR JR
REG. No. 41465
DATE: 02/28/2023

TEL: 954-987-0066
FAX: 954-987-2949

DRAWN BY: AA
DATE: APRIL 2021
DESIGNED BY: TAV
SCALE: 1"=20'
CHECKED BY: RBT
FIELD BOOK: XXXX

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS

NO.	DATE	BY	CHK'D	DESCRIPTION

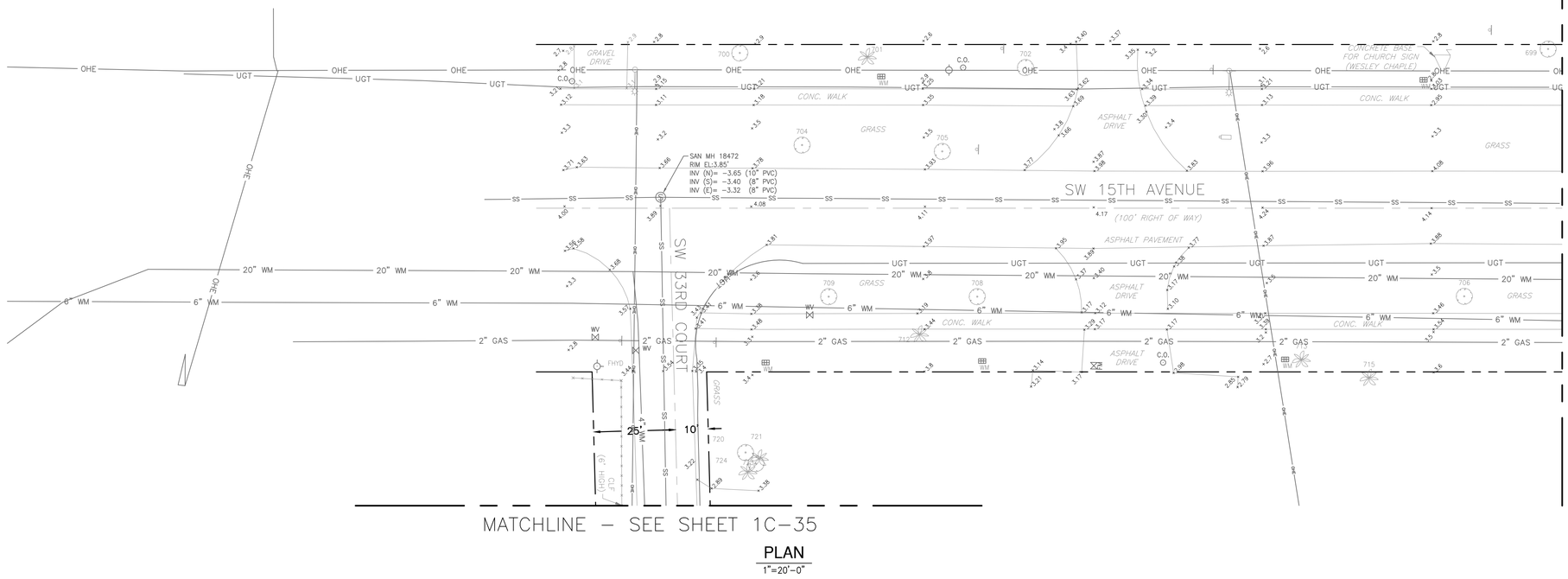
PROJECT # 11842
STORMWATER IMPROVEMENTS
EDGEWOOD NEIGHBORHOOD
EXISTING SITE AND DEMOLITION
PLAN WEST - SHEET 6

SHEET NO.
1C-07

TOTAL: 224

CAD FILE:
11842-1C07

DRAWING FILE NO.
4-142-65



PLAN
1"=20'-0"

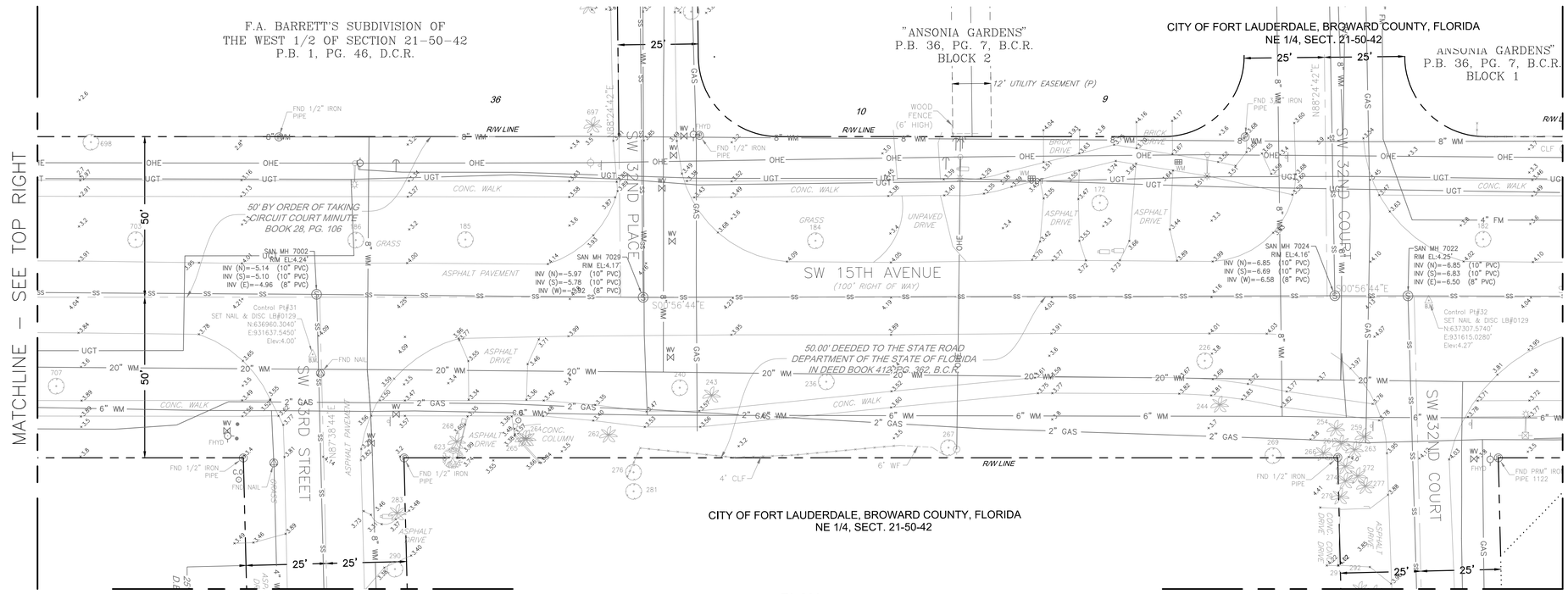
MATCHLINE – SEE TOP RIGHT

F.A. BARRETT'S SUBDIVISION OF
THE WEST 1/2 OF SECTION 21-50-42
P.B. 1, PG. 46, D.C.R.

"ANSONIA GARDENS"
P.B. 36, PG. 7, B.C.R.
BLOCK 2

CITY OF FORT LAUDERDALE, BROWARD COUNTY, FLORIDA
NE 1/4, SECT. 21-50-42

"ANSONIA GARDENS"
P.B. 36, PG. 7, B.C.R.
BLOCK 1



CITY OF FORT LAUDERDALE, BROWARD COUNTY, FLORIDA
NE 1/4, SECT. 21-50-42

MATCHLINE – SEE SHEET 1C–34

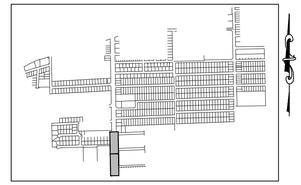
PLAN
1"=20'-0"

MATCHLINE – SEE SHEET 1C–33

BID SET

Hazen

HAZEN AND SAWYER
4000 HOLLYWOOD BLVD, SUITE 750N
HOLLYWOOD, FLORIDA 33021



KEY MAP
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LEGEND

- PIPE TO BE REMOVED
- PIPE TO ABANDONED GROUT IN PLACE
- STRUCTURE TO BE REMOVED

0 20' 40'

ENGINEER:
ROBERT B. TAYLOR JR
REG. No. 41165
DATE: 02/28/2023

TEL: 954-987-0066
FAX: 954-987-2949

DRAWN BY: AA
DATE: APRIL 2021
DESIGNED BY: TAV
SCALE: 1"=20'
CHECKED BY: RBT
FIELD BOOK: XXXX

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS

NO.	DATE	BY	CHK'D	DESCRIPTION

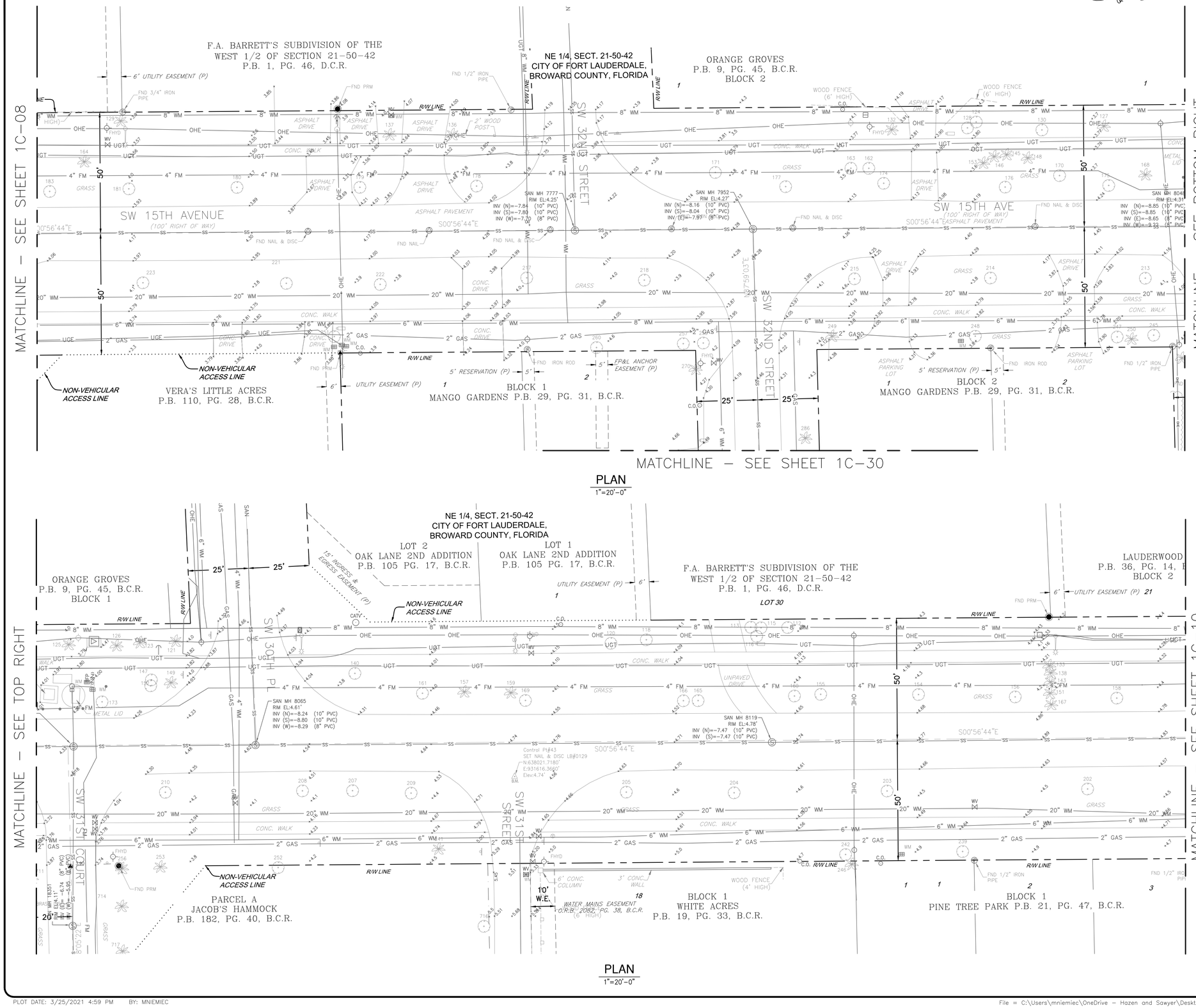
PROJECT # 11842
STORMWATER IMPROVEMENTS
EDGEWOOD NEIGHBORHOOD
EXISTING SITE AND DEMOLITION
PLAN WEST - SHEET 7

SHEET NO.
1C-08

TOTAL: 224

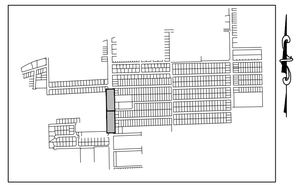
CAD FILE:
11842-1C08

DRAWING FILE NO.
4-142-65



Hazen

HAZEN AND SAWER
4000 HOLLYWOOD BLVD, SUITE 750N
HOLLYWOOD, FLORIDA 33021



KEY MAP
NTS

ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM 1988 (NAVD 1988)

811 KNOW WHAT'S BELOW ALWAYS CALL 811 BEFORE YOU DIG
It's fast. It's free. It's the law.
www.callsunshine.com

NOTES:

1. CONTRACTOR SHALL FIELD MEASURE ALL EXISTING STORM PIPE DIAMETERS AND VERIFY PIPE MATERIAL PRIOR TO ORDERING THE APPROPRIATE INLINE CHECK VALVE AND PIPE FITTINGS. PIPE DIMENSIONS SHOWN WERE OBTAINED FROM CITY GEODATABASE AND SURVEY INFORMATION.
2. CONTRACTOR SHALL CLEAN AND DESILT PIPES AND EXISTING DRAINAGE STRUCTURES PRIOR TO INSTALLING INLINE CHECK VALVES.
3. FOR ALL CATCH BASINS TO BE REPLACED, CONTRACTOR SHALL REMOVE EXISTING PIPE AS NECESSARY FOR DEMOLITION/REMOVAL OF EXISTING STRUCTURE AND REPLACEMENT WITH PROPOSED STRUCTURE AS SHOWN ON PLANS. REMOVAL OF EXISTING PIPE SHALL BE AS TO ALLOW FOR WATER TIGHT CONNECTION TO REMAINING PIPELINE AND PROPOSED STRUCTURE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS AND/OR AASHTO M198, TYPE B REQUIREMENTS.
4. CONTRACTOR SHALL REPAIR/REPLACE SURROUNDING GROUND AFFECTED BY CONSTRUCTION, INCLUDING BUT NOT LIMITED TO: PAVERS, SIDEWALKS, SOD, LANDSCAPING AND BRING IT TO EXISTING OR BETTER CONDITIONS.
5. CONTRACTOR TO PROVIDE, REPLACE AND MAINTAIN TREE PROTECTION BARRICADES DURING CONSTRUCTION FOR ALL EXISTING TREES TO REMAIN. SEE CITY STANDARD DETAILS, SHEET GC-16.
6. TREES TO BE REMOVED, RELOCATED, OR REPLACED WITHIN THE PROJECT AREA SHALL BE SPECIFICALLY DESIGNATED IN THE FIELD AS THE PROJECT PROGRESSES. REFER TO SPECIFICATIONS.
7. CONTRACTOR SHALL BE ADVISED AS TO THE POSSIBLE PRESENCE OF ASBESTOS CEMENT PIPE (ACP) WITHIN AND IMMEDIATELY BEYOND THE PROJECT LIMITS. AS SUCH, CONTRACTOR SHALL IN THE COURSE OF PERFORMING HIS WORK, TAKE NECESSARY PRECAUTIONS AS TO NOT DISTURB, BREAK OR OTHERWISE DAMAGE ACP. CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY CONFLICTS WITH ACP BEFORE BEGINNING THE WORK.

LEGEND

PIPE TO BE REMOVED

PIPE TO ABANDONED GROUT IN PLACE

STRUCTURE TO BE REMOVED

0 20' 40'

BID SET

ENGINEER:
ROBERT B. TAYLOR JR
REG. No. 41165
DATE: 02/28/2023

TEL: 954-987-0066
FAX: 954-987-2949

DRAWN BY: AA
DATE: APRIL 2021
DESIGNED BY: TAV
SCALE: 1"=20'
CHECKED BY: RBT
FIELD BOOK: XXXX

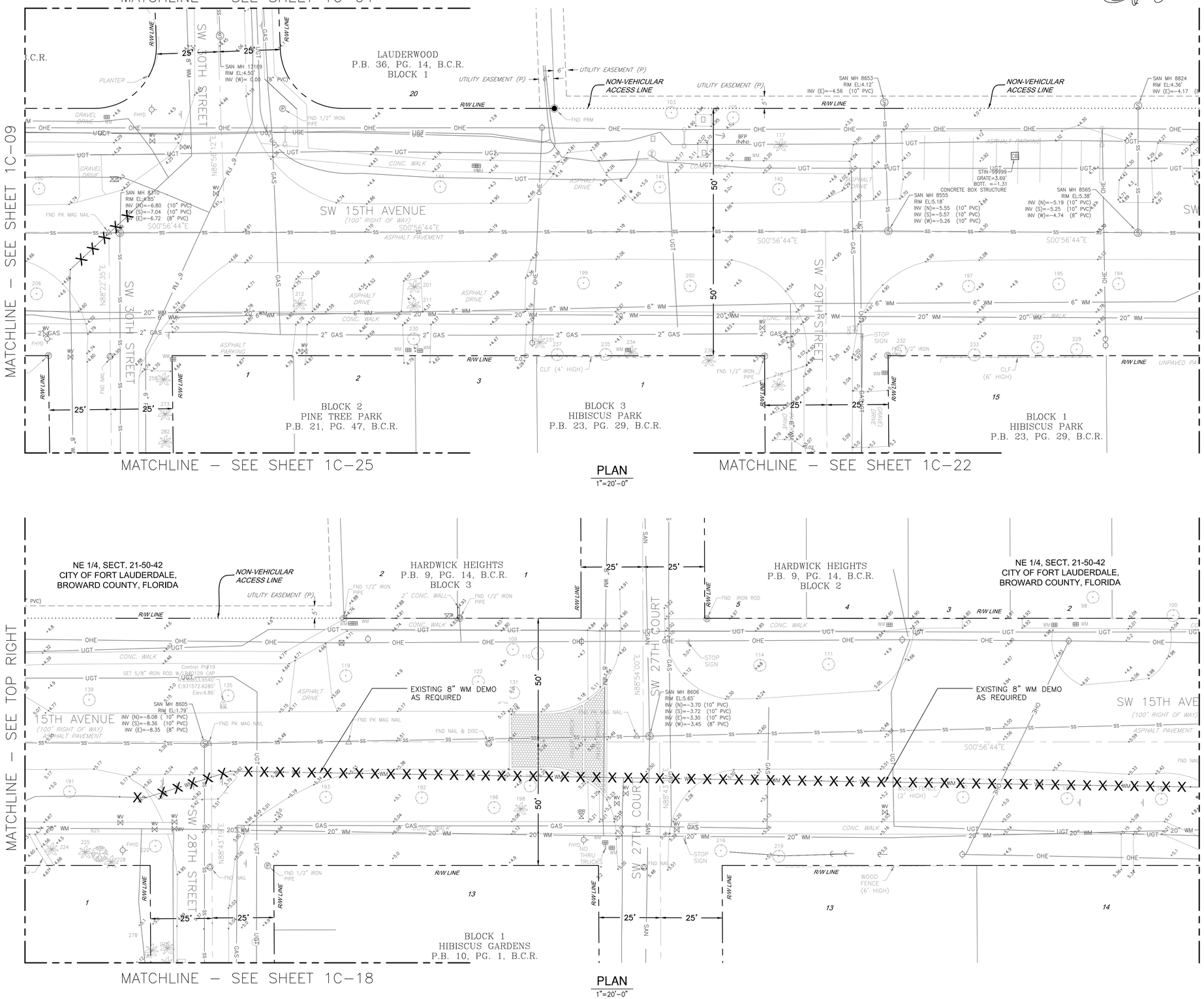
CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS

NO.	DATE	BY	CHK'D	DESCRIPTION

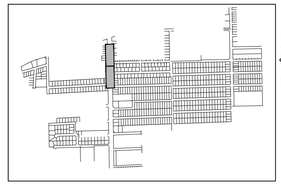
PROJECT # 11842
STORMWATER IMPROVEMENTS
EDGEWOOD NEIGHBORHOOD
EXISTING SITE AND DEMOLITION
PLAN WEST - SHEET 8

SHEET NO. 1C-09
TOTAL: 224
CAD FILE: 11842-1C09
DRAWING FILE NO. 4-142-65



Hazen

HAZEN AND SAWYER
4000 HOLLYWOOD BLVD, SUITE 750N
HOLLYWOOD, FLORIDA 33021



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LEGEND

PIPE TO BE REMOVED

PIPE TO ABANDONED GROUT IN PLACE

STRUCTURE TO BE REMOVED

0 20' 40'

BID SET

ENGINEER:
ROBERT A. TAYLOR JR
REG. NO. 41465
DATE: 02/28/2023

TEL: 954-987-0066
FAX: 954-987-2949

DRAWN BY: AA
DATE: APRIL 2021
DESIGNED BY: TAV
SCALE: 1"=20'
CHECKED BY: RBT
FIELD BOOK: XXXX

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS

NO.	DATE	BY	CHK'D	DESCRIPTION

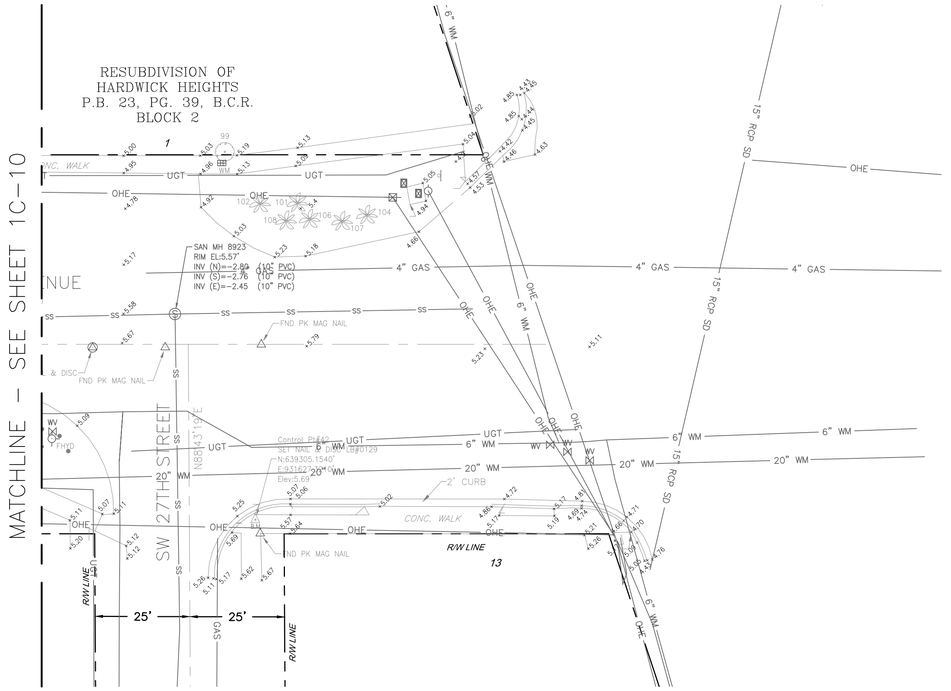
PROJECT # 11842
STORMWATER IMPROVEMENTS
EDGEWOOD NEIGHBORHOOD
EXISTING SITE AND DEMOLITION
PLAN WEST - SHEET 9

SHEET NO.
1C-10

TOTAL: 224

CAD FILE:
11842-1C10

DRAWING FILE NO.
4-142-65



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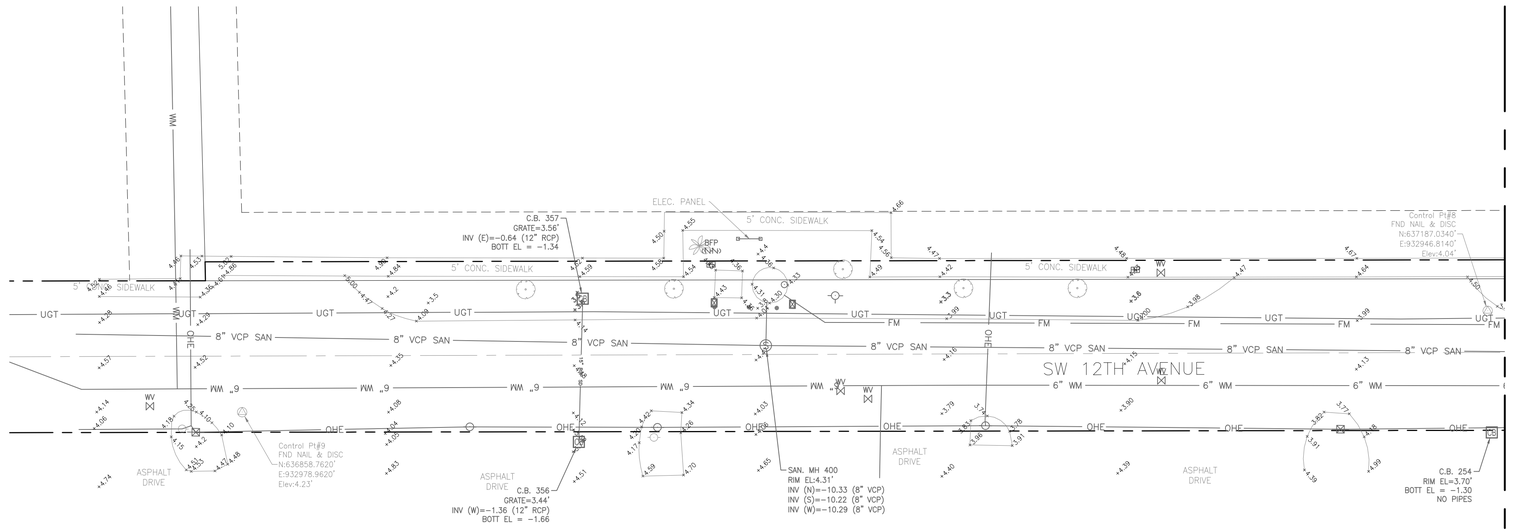
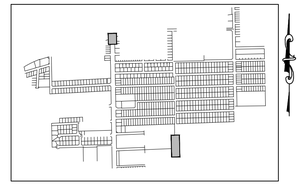


PLAN
1"=20'-0"

Hazen

HAZEN AND SAWYER
4000 HOLLYWOOD BLVD, SUITE 750N
HOLLYWOOD, FLORIDA 33021



KEY MAP
NTS

ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM 1988 (NAVD 1988)

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LEGEND

- PIPE TO BE REMOVED
- PIPE TO ABANDONED GROUT IN PLACE
- STRUCTURE TO BE REMOVED

0 20' 40'

BID SET

ENGINEER:
ROBERT B. TAYLOR JR
REG. No. 41165
DATE: 02/28/2023

TEL: 954-987-0066
FAX: 954-987-2949

DRAWN BY: AA
DESIGNED BY: TAV
CHECKED BY: RBT
DATE: APRIL 2021
SCALE: 1"=20'
FIELD BOOK: XXXX

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS

NO.	DATE	BY	CHK'D	DESCRIPTION

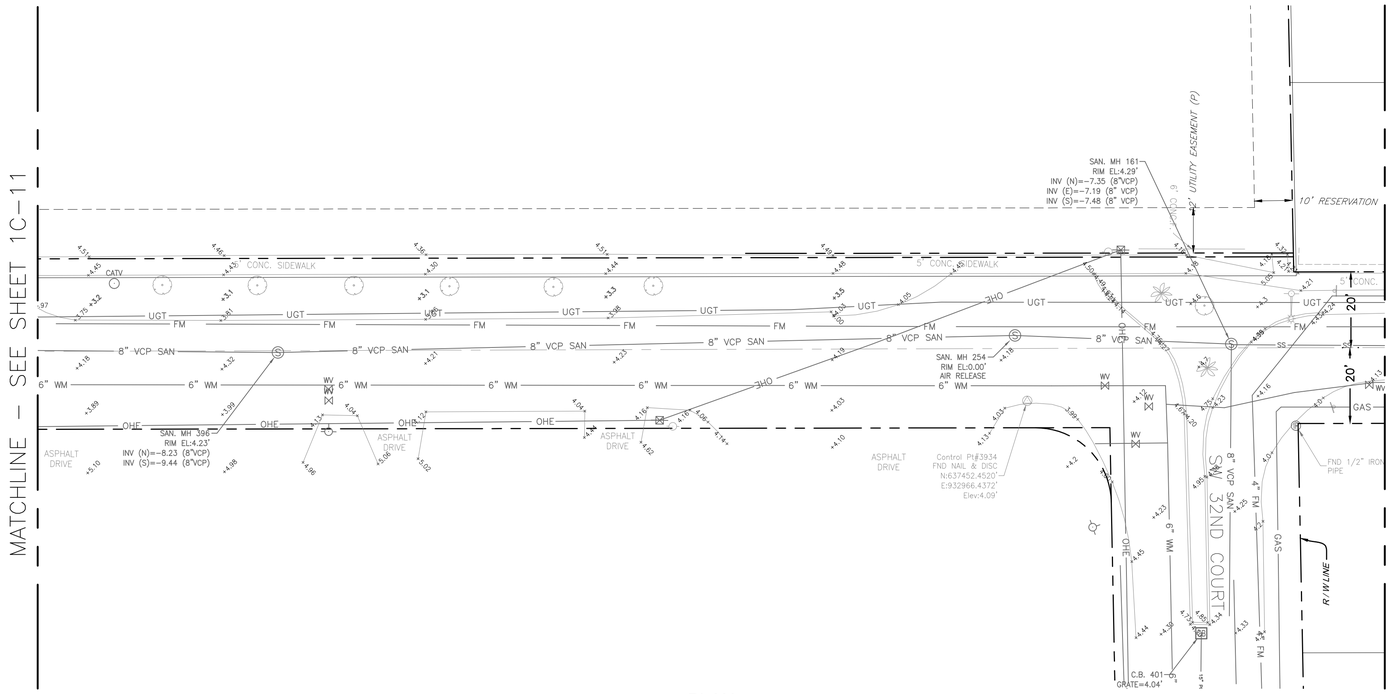
PROJECT # 11842
STORMWATER IMPROVEMENTS
EDGEWOOD NEIGHBORHOOD
EXISTING SITE AND DEMOLITION
PLAN WEST - SHEET 10

SHEET NO.
1C-11

TOTAL: 224

CAD FILE:
11842-1C11

DRAWING FILE NO.
4-142-65



PLAN
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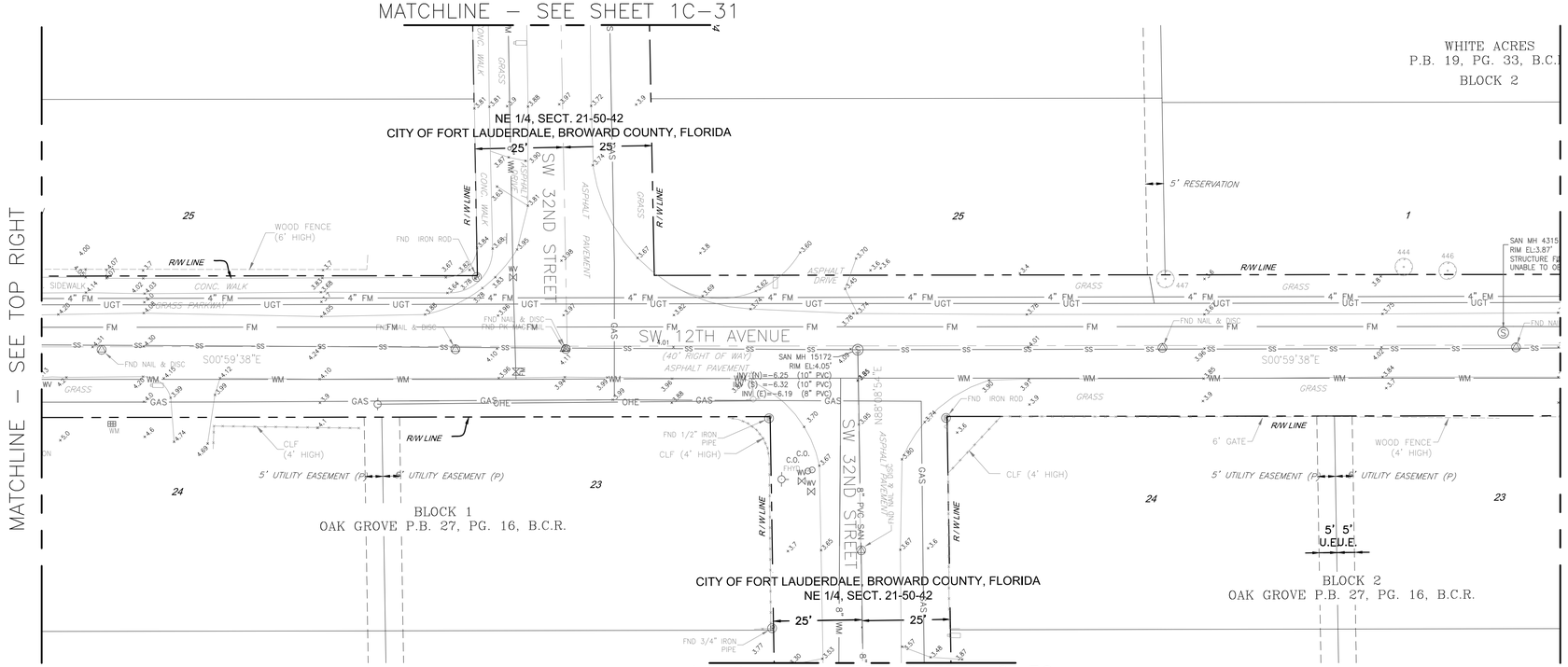
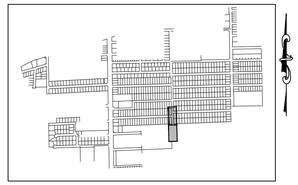


PLAN
1"=20'-0"

Hazen

HAZEN AND SAWYER
4000 HOLLYWOOD BLVD, SUITE 750N
HOLLYWOOD, FLORIDA 33021



KEY MAP
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LEGEND

PIPE TO BE REMOVED

PIPE TO ABANDONED GROUT IN PLACE

STRUCTURE TO BE REMOVED

0 20' 40'

BID SET

ENGINEER:
ROBERT B. TAYLOR JR
REG. No.: 41165
DATE: 02/28/2023

TEL: 954-987-0066
FAX: 954-987-2949

DRAWN BY: AA
DATE: APRIL 2021
DESIGNED BY: TAV
SCALE: 1"=20'
CHECKED BY: RBT
FIELD BOOK: XXXX

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS

NO.	DATE	BY	CHK'D	DESCRIPTION

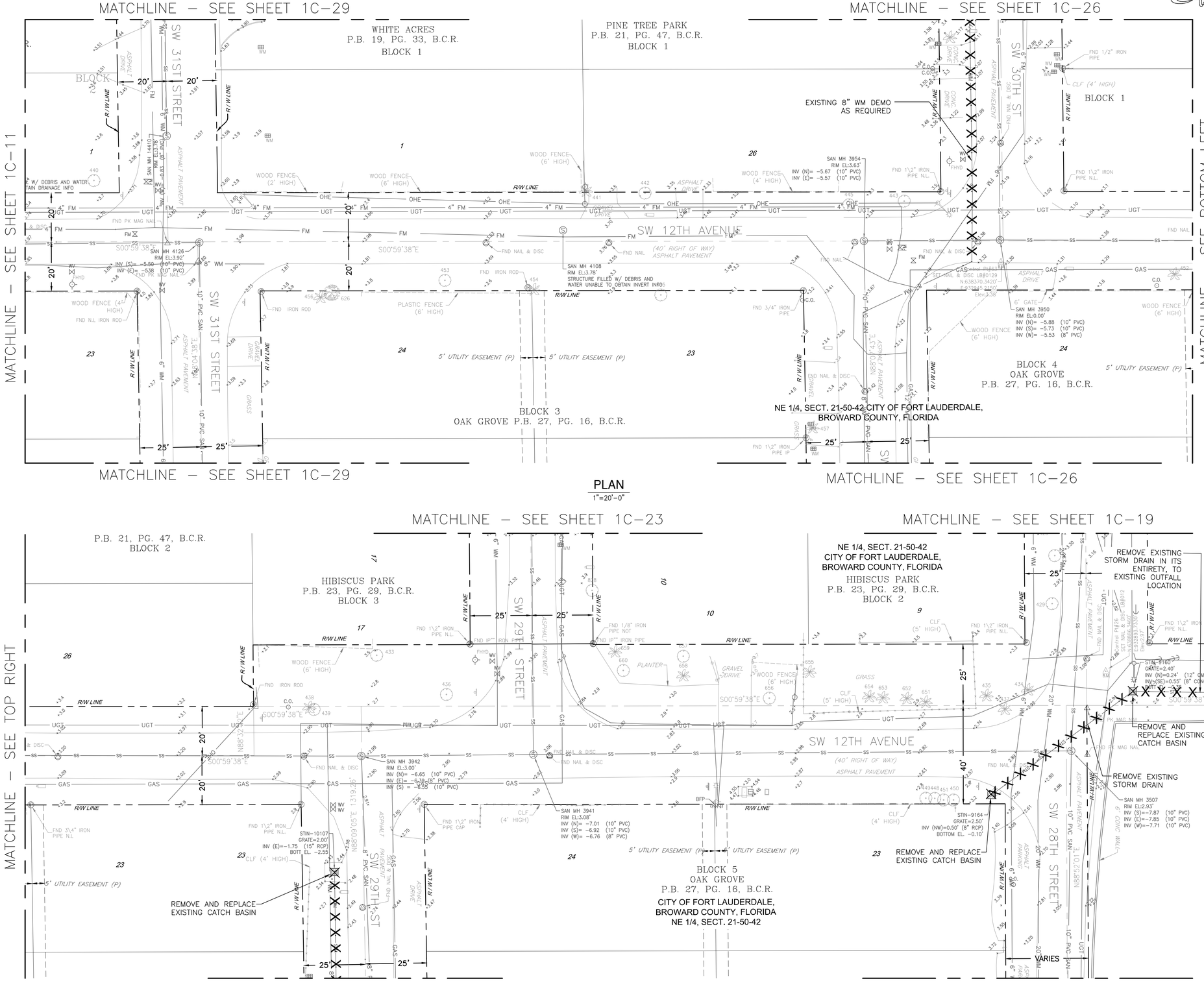
PROJECT # 11842
STORMWATER IMPROVEMENTS
EDGEWOOD NEIGHBORHOOD
EXISTING SITE AND DEMOLITION
PLAN WEST - SHEET 11

SHEET NO.
1C-12

TOTAL: 224

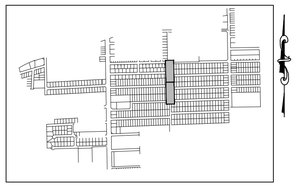
CAD FILE:
11842-1C12

DRAWING FILE NO.
4-142-65



Hazen

HAZEN AND SAWYER
4000 HOLLYWOOD BLVD, SUITE 750N
HOLLYWOOD, FLORIDA 33021



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LEGEND

PIPE TO BE REMOVED
PIPE TO ABANDONED GROUT IN PLACE
STRUCTURE TO BE REMOVED

0 20' 40'

BID SET

ENGINEER:
ROBERT B. TAYLOR JR
REG. No. 41165
DATE: 02/28/2023

TEL: 954-987-0066
FAX: 954-987-2949

DRAWN BY: AA
DATE: APRIL 2021
DESIGNED BY: TAV
SCALE: 1"=20'
CHECKED BY: RBT
FIELD BOOK: XXXX

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS

NO.	DATE	BY	CHK'D	DESCRIPTION

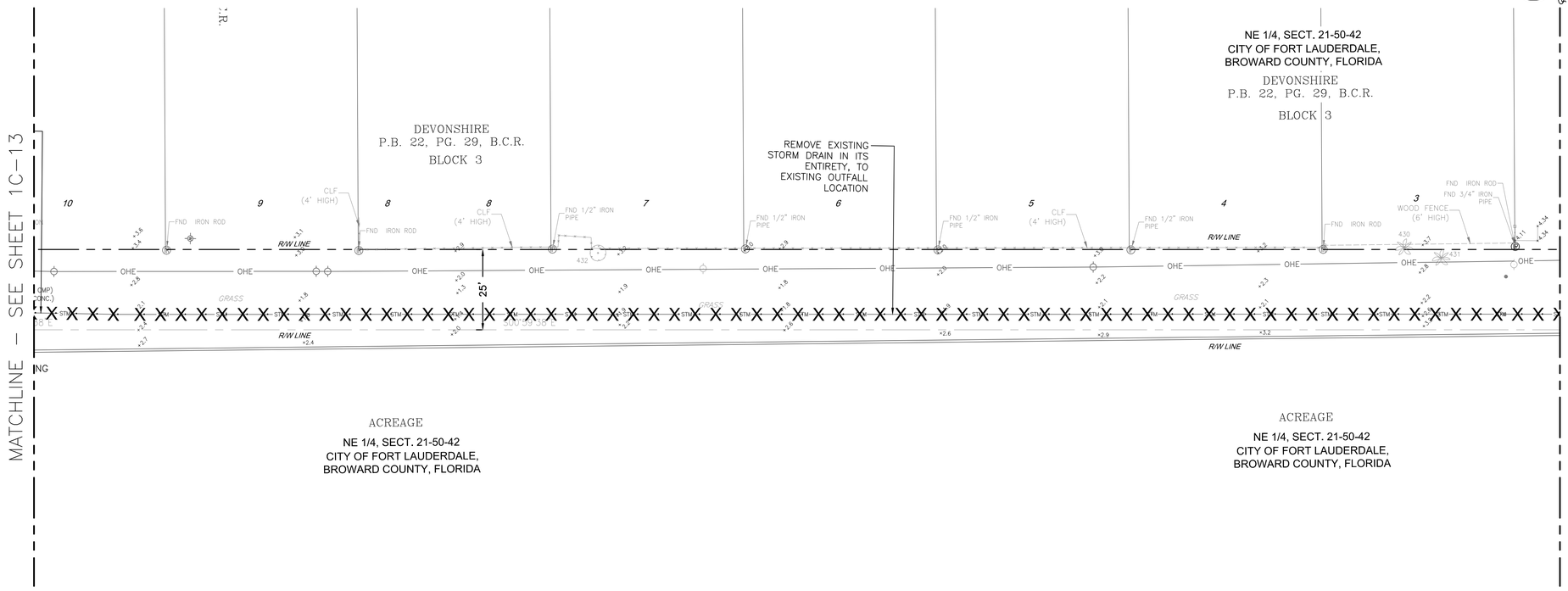
PROJECT # 11842
STORMWATER IMPROVEMENTS
EDGEWOOD NEIGHBORHOOD
EXISTING SITE AND DEMOLITION
PLAN WEST - SHEET 12

SHEET NO.
1C-13

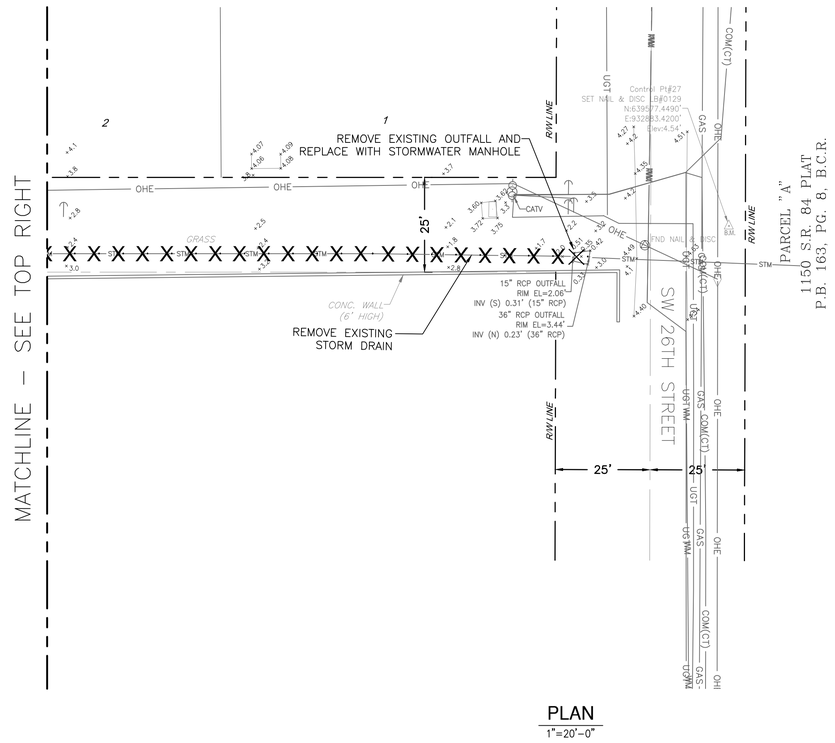
TOTAL: 224

CAD FILE:
11842-1C13

DRAWING FILE NO.
4-142-65



PLAN
1"=20'-0"



PLAN
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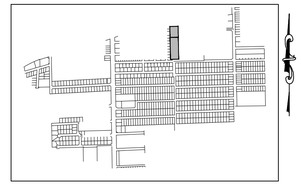

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LEGEND

PIPE TO BE REMOVED

PIPE TO ABANDONED GROUT IN PLACE

STRUCTURE TO BE REMOVED

0 20' 40'

BID SET

Hazen

HAZEN AND SAWYER
4000 HOLLYWOOD BLVD, SUITE 750N
HOLLYWOOD, FLORIDA 33021

ENGINEER:
ROBERT B. TAYLOR JR
REG. No. 41165
DATE: 02/28/2023

TEL: 954-987-0066
FAX: 954-987-2949

DRAWN BY: AA
DATE: APRIL 2021
DESIGNED BY: TAV
SCALE: 1"=20'
CHECKED BY: RBT
FIELD BOOK: XXXX

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS

NO.	DATE	BY	CHK'D	DESCRIPTION

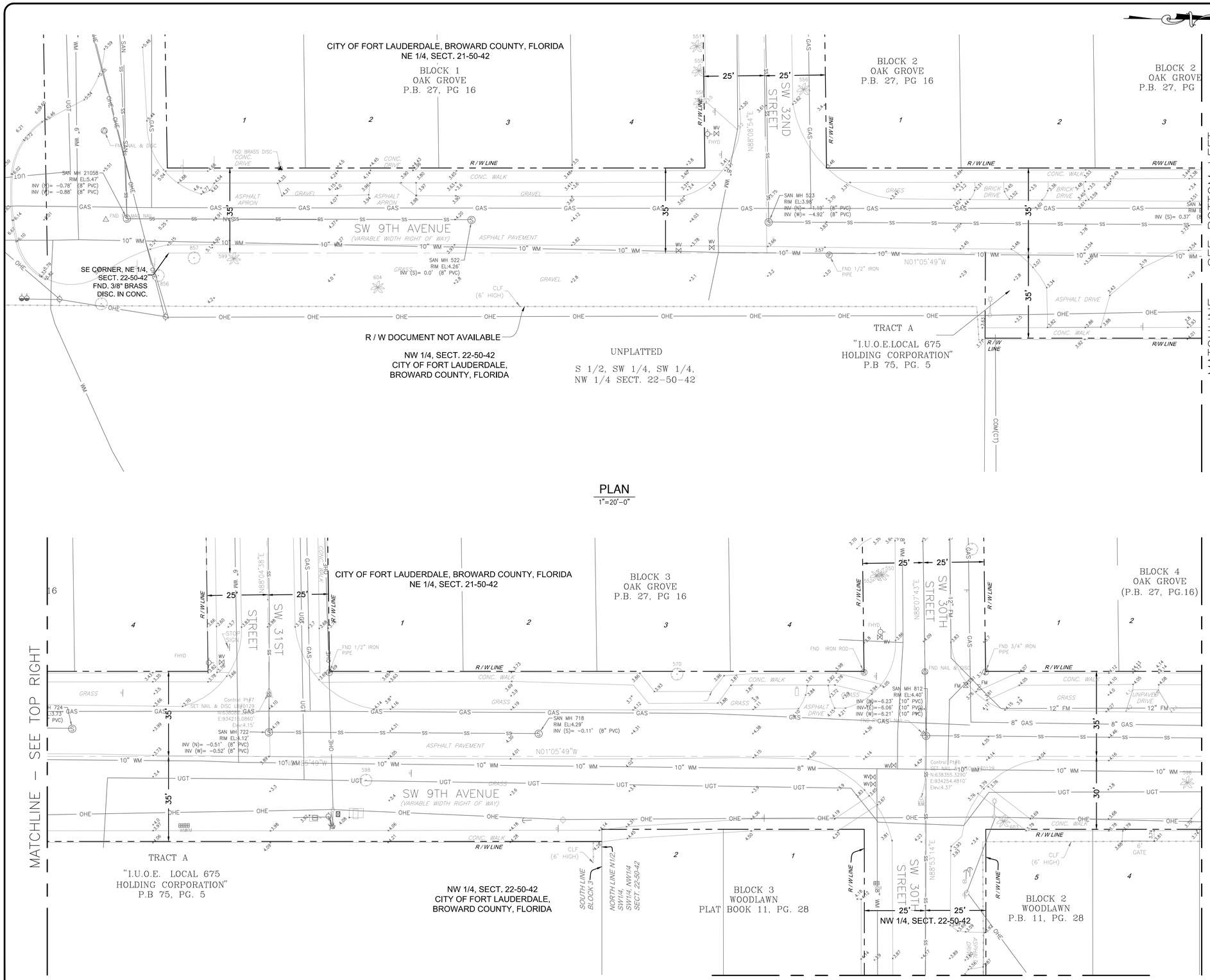
PROJECT # 11842
STORMWATER IMPROVEMENTS
EDGEWOOD NEIGHBORHOOD
EXISTING SITE AND DEMOLITION
PLAN WEST - SHEET 13

SHEET NO.
1C-14

TOTAL: 224

CAD FILE:
11842-1C14

DRAWING FILE NO.
4-142-65

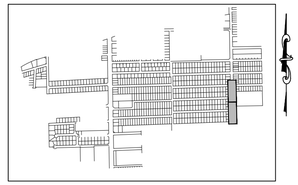


Hazen

HAZEN AND SAWYER
4000 HOLLYWOOD BLVD, SUITE 750N
HOLLYWOOD, FLORIDA 33021

ENGINEER:
ROBERT B. TAYLOR JR
REG. No. 41465
DATE: 02/28/2023

TEL: 954-987-0066
FAX: 954-987-2949



KEY MAP
NTS

ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM 1988 (NAVD 1988)

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NOTES:

1. CONTRACTOR SHALL FIELD MEASURE ALL EXISTING STORM PIPE DIAMETERS AND VERIFY PIPE MATERIAL PRIOR TO ORDERING THE APPROPRIATE INLINE CHECK VALVE AND PIPE FITTINGS. PIPE DIMENSIONS SHOWN WERE OBTAINED FROM CITY GEODATABASE AND SURVEY INFORMATION.
2. CONTRACTOR SHALL CLEAN AND DESILT PIPES AND EXISTING DRAINAGE STRUCTURES PRIOR TO INSTALLING INLINE CHECK VALVES.
3. FOR ALL CATCH BASINS TO BE REPLACED, CONTRACTOR SHALL REMOVE EXISTING PIPE AS NECESSARY FOR DEMOLITION/REMOVAL OF EXISTING STRUCTURE AND REPLACEMENT WITH PROPOSED STRUCTURE AS SHOWN ON PLANS. REMOVAL OF EXISTING PIPE SHALL BE AS TO ALLOW FOR WATER TIGHT CONNECTION TO REMAINING PIPELINE AND PROPOSED STRUCTURE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS AND/OR AASHTO M198, TYPE B REQUIREMENTS.
4. CONTRACTOR SHALL REPAIR/REPLACE SURROUNDING GROUND AFFECTED BY CONSTRUCTION, INCLUDING BUT NOT LIMITED TO: PAVERS, SIDEWALKS, SOD, LANDSCAPING AND BRING IT TO EXISTING OR BETTER CONDITIONS.
5. CONTRACTOR TO PROVIDE, REPLACE AND MAINTAIN TREE PROTECTION BARRICADES DURING CONSTRUCTION FOR ALL EXISTING TREES TO REMAIN. SEE CITY STANDARD DETAILS, SHEET GC-16.
6. TREES TO BE REMOVED, RELOCATED, OR REPLACED WITHIN THE PROJECT AREA SHALL BE SPECIFICALLY DESIGNATED IN THE FIELD AS THE PROJECT PROGRESSES. REFER TO SPECIFICATIONS.
7. CONTRACTOR SHALL BE ADVISED AS TO THE POSSIBLE PRESENCE OF ASBESTOS CEMENT PIPE (ACP) WITHIN AND IMMEDIATELY BEYOND THE PROJECT LIMITS. AS SUCH, CONTRACTOR SHALL IN THE COURSE OF PERFORMING HIS WORK, TAKE NECESSARY PRECAUTIONS AS TO NOT DISTURB, BREAK OR OTHERWISE DAMAGE ACP. CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY CONFLICTS WITH ACP BEFORE BEGINNING THE WORK.

LEGEND

PIPE TO BE REMOVED
PIPE TO ABANDONED GROUT IN PLACE
STRUCTURE TO BE REMOVED

0 20' 40'

BID SET

DRAWN BY: AA | DATE: APRIL 2021
DESIGNED BY: TAV | SCALE: 1"=20'
CHECKED BY: RBT | FIELD BOOK: XXXX

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS

NO.	DATE	BY	CHK'D	DESCRIPTION

PROJECT # 11842
STORMWATER IMPROVEMENTS
EDGEWOOD NEIGHBORHOOD
EXISTING SITE AND DEMOLITION
PLAN WEST - SHEET 14

SHEET NO.
1C-15

TOTAL: 224

CAD FILE:
11842-1C15

DRAWING FILE NO.
4-142-65