

DRAINAGE REPORT

(Phase II)

Santa Rosa Boulevard Roadway Improvements
From East of Eglin Air Force Base to
West of SR 30 (US 98/Miracle Strip Parkway SE)

Prepared For:
Okaloosa County



Prepared by:
Halff Associates, Inc.
2255 Killearn Center Boulevard Suite 200
Tallahassee, Florida 32303
(850) 224-4400
July 19, 2024

Table of Contents

INTRODUCTION	1
EXISTING CONDITIONS.....	1
PROPOSED CONDITIONS	1
PERMITTING	2
CONCLUSION	2

Attachments

Project Location Map

Drainage Maps

Typical Sections

Spread Calculations

ASAD Storm Tabulations

Geotech Borings

Correspondences

INTRODUCTION

This roadway improvement project along Santa Rosa Boulevard from East of Eglin Air Force Base to West of SR 30 (US 98/Miracle Strip Parkway SE) consists of reconstructing the roadway to improve pedestrian safety, drainage conditions, landscaping, and the overall aesthetic of the corridor.

EXISTING CONDITIONS

The existing typical section of Santa Rosa Blvd consists of a 4-lane divided roadway with a grassed median. The existing stormwater conveyance system consists mostly of roadside swales on each side of the roadway with some closed stormwater systems located near outfall locations. The outfalls are located on the north side of Santa Rosa Blvd, across from the beach access parks. The existing stormwater infrastructure does not provide any formal treatment areas for the stormwater runoff. There are also areas of ponding along the south side of Santa Rosa Blvd during high intensity storm events. Within the Right-of-Way of Santa Rosa Blvd there is approximately 11.63 acres of pervious area, and 18.53 acres of impervious areas.

PROPOSED CONDITIONS

The proposed typical sections of Santa Rosa Blvd consist of:

- 1) Eglin AFB to Park Drive (Sta 100+15.99 to Sta 104+59.15): One travel lane in each direction with concrete ribbon curb and roadside swales, 4' sidewalk on north side
- 2) Park Drive to 1st Beach Park (Sta 104+59.15 to Sta 107+32.94): One travel lane in each direction with center two-way left turn lane, concrete ribbon curb and roadside swales, 14' Multi-Use Trail on north side
- 3) 1st Beach Park to East of Amberjack Drive (Sta 107+32.94 to Sta 193+73.16): Two westbound travel lanes and one eastbound travel lane with center two-way left turn lane/paved median, and Type F curb & gutter, 5' sidewalk on north side, 14' Multi-Use Trail on south side
- 4) East of Amberjack Drive to End of Project (Fire Department) (Sta 193+73.16 to Sta 210+81.97): Match existing configuration with two travel lanes in each direction (undivided) and paved median, proposed 5' sidewalk on north side, 14' Multi-Use Trail on south side

From Station 107+67 to Station 192+33, the roadway will be superelevated 2% to the north to allow the stormwater runoff to be collected in a series of roadside swales on the north side of Santa Rosa Blvd, which will reduce the infrequent flooding that occurs along the WB lanes during intense storm events. This will also minimize impacts to the existing landscaping and signage along the south side of Santa Rosa Blvd. The swales will provide treatment (via retention) for the stormwater runoff due to the in situ sandy soils located along the project corridor the stormwater runoff will be able to percolate back into the groundwater table (see attached Geotechnical Borings for soil conditions). Ditch Bottom Inlets will be strategically located within the swales with their grate elevation set slightly higher than the swale bottoms to provide retention volume. The existing outfall locations will be utilized with proposed closed storm water systems.

The curb and gutter section from Station 192+33 to Station 208+60 will have a proposed closed stormwater system that will collect and convey the runoff the existing outfall located across from the Blue Dolphin Beachwalk. All proposed stormwater pipes will be High Density Poly Ethylene (HDPE) to ensure longevity of the proposed drainage infrastructure. The side drains connecting the roadside swales will be Elliptical Reinforced Concrete Pipes (ERCP) in order to meet required cover and keep the swale elevations above the Seasonal High Water Table (SHWT).

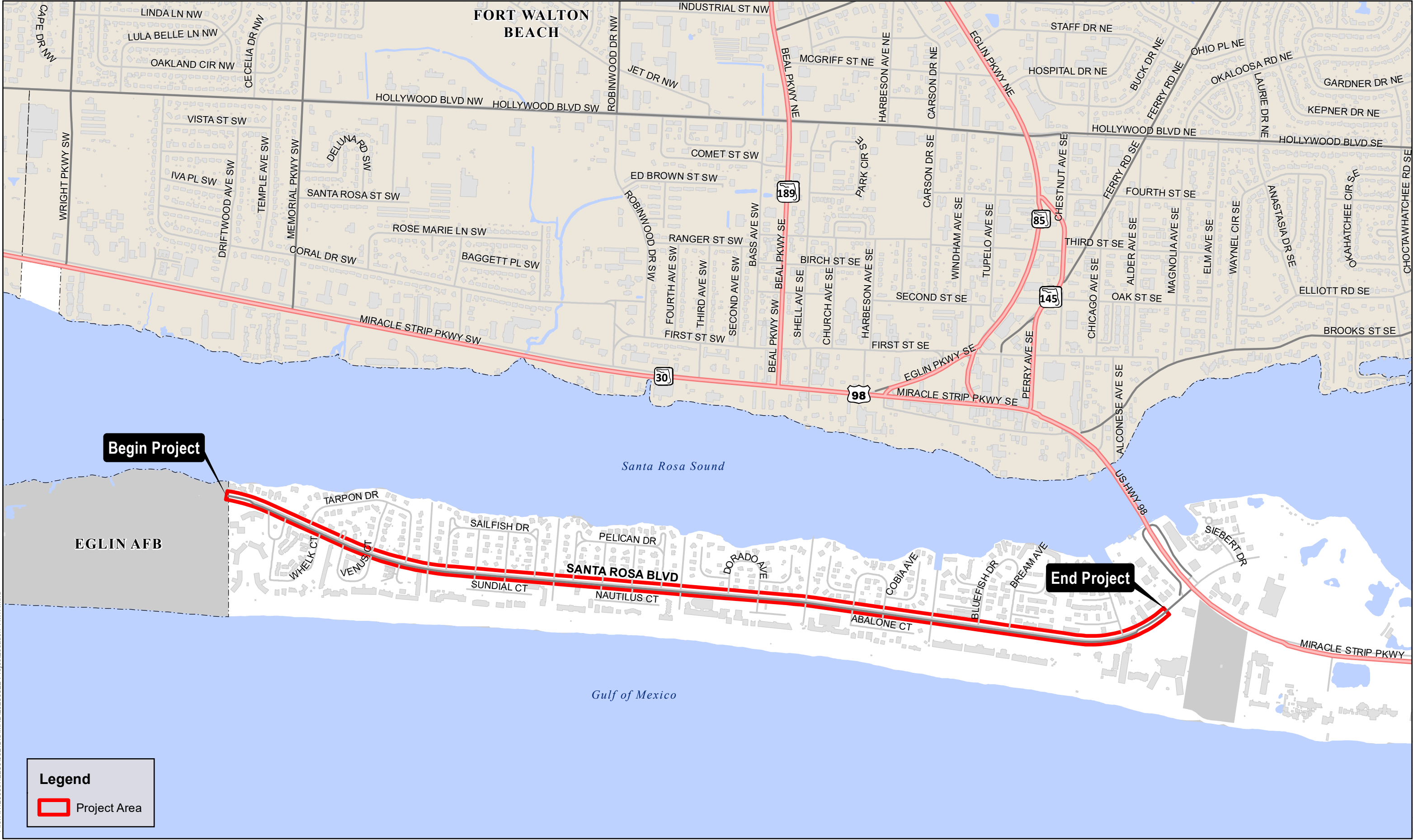
With the proposed improvements along Santa Rosa Blvd, there are approximately 13.97 acres of pervious area and 16.19 acres of impervious areas within the Right-of-Way. Resulting in a net reduction of impervious area of 2.3 acres.

PERMITTING

Halff met with the Northwest Florida Water Management District (NFWFMD) for a Pre-Application meeting on May 22, 2024 to seek guidance on the requirements for an Environmental Resource Permit (ERP) for this project. The NFWFMD determined that due to the size, location, and scope of the project area that this project qualifies for an Individual ERP. Since this project does provide a net reduction in impervious surfaces as well as providing benefits to water quality and water quantity within water resources in the area, the NFWFMD is not requiring the standard stormwater design criteria under an Individual ERP. The calculations and documentation required to meet the permitting requirements will be performed for the next submittal. See attached correspondence with the NFWFMD for required permitting criteria.

CONCLUSION

The proposed drainage design will utilize roadside swales along the north side of Santa Rosa Blvd to provide treatment for stormwater runoff that was not being formally treated in the existing condition. The roadside swales are hydraulically connected by side drains running through side streets and driveways and have ditch bottom inlets located near the outfall locations. The grate elevations of the ditch bottom inlets are raised above the swale bottom to provide the required treatment volume. A closed drainage system is proposed on the eastern portion of the project where there is curb and gutter.



Printing Date: 3/22/2023 9:56:17 AM
File: A:\42000s\42280\002\GIS\MXD\20230322-ProjectLocation-11x17.mxd



1000 N. Ashley Drive
Suite 900
Tampa, Florida 33602
813-620-4500



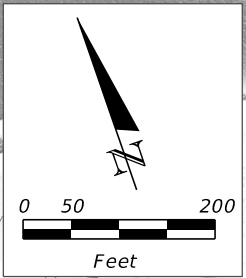
Project Location Map



42280.001
Santa Rosa Blvd

Figure 1: Project Map Location

7/11/2024 1:05:03 PM ah5401
\\halff.ad\p2a\av0\420005\42280\003\0123456789\Drainage\DRWPRD01_ExistingDrainageMaps.dgn



LEGEND:

SURFACE FLOW DIRECTION

BASIN DIVIDE

EXISTING DRAINAGE STRUCTURE

NOTE: DO NOT USE THE INFORMATION ON THIS SHEET FOR CONSTRUCTION PURPOSES. This sheet is in the plans for documentation and to assist construction personnel with drainage concerns.

AERIAL IMAGE 2022
ELEV REF. NAVD 88 DATUM
NAVD 88 = NVGD 29 -0.41'

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

MURRAY SANTORO, P.E.
LICENSE NUMBER: 66065
HALFF ASSOCIATES, INC.
TALLAHASSEE, FLORIDA 32309

OKALOOSA COUNTY

PROJECT

SANTA ROSA BOULEVARD

EXISTING DRAINAGE MAP (1)

3

SHEET NO.

3

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

7/11/2024 1:05:06 PM ah5401
\\halff.ad\p2a\av0420005\42280\003\0123456789\Drainage\DRMPRD01_ExistingDrainageMaps.dgn



LEGEND:

SURFACE FLOW DIRECTION

BASIN DIVIDE

EXISTING DRAINAGE STRUCTURE

NOTE: DO NOT USE THE INFORMATION ON THIS SHEET FOR CONSTRUCTION PURPOSES. This sheet is in the plans for documentation and to assist construction personnel with drainage concerns.

AERIAL IMAGE 2022
ELEV. REF. NAVD 88 DATUM
NAVD 88 = NVGD 29 -0.41'

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

halff
MURRAY SANTORO, P.E.
LICENSE NUMBER: 66065
HALFF ASSOCIATES, INC.
TALLAHASSEE, FLORIDA 32309



OKALOOSA COUNTY
PROJECT
SANTA ROSA BOULEVARD

EXISTING DRAINAGE MAP (2)

SHEET NO.
4

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

7/11/2024 1:05:31 PM ah5401 \\halff.ad\p2a\40\420005\42280\003\0123456789\Drainage\DRMPRD01_ExistingDrainageMaps.dgn



LEGEND:

SURFACE FLOW DIRECTION

BASIN DIVIDE

EXISTING DRAINAGE STRUCTURE

NOTE: DO NOT USE THE INFORMATION ON THIS SHEET FOR CONSTRUCTION PURPOSES. This sheet is in the plans for documentation and to assist construction personnel with drainage concerns.

AERIAL IMAGE 2022
ELEV. REF. NAVD 88 DATUM
NAVD 88 = NVGD 29 -0.41'

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

halff
MURRAY SANTORO, P.E.
LICENSE NUMBER: 66065
HALFF ASSOCIATES, INC.
TALLAHASSEE, FLORIDA 32309



OKALOOSA COUNTY
PROJECT
SANTA ROSA BOULEVARD

EXISTING DRAINAGE MAP (3)

SHEET NO.
5

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

7/11/2024 1:05:55 PM ah5401
\\halff.ad\p2\A\0\420005\42280\003\0123456789\Drainage\DRMPRD01_ExistingDrainageMaps.dgn



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION



MURRAY SANTORO, P.E.
LICENSE NUMBER: 66065
HALFF ASSOCIATES, INC.
TALLAHASSEE, FLORIDA 32309



OKALOOSA COUNTY
PROJECT
SANTA ROSA BOULEVARD

EXISTING DRAINAGE MAP (4)

SHEET NO.

6

7/11/2024 1:06:21 PM ah5401 \\halff.ad\p2a\avo\420005\42280\003\0123456789\Drainage\DRMPRD01_ExistingDrainageMaps.dgn



- 01

TRENCH DRAIN
GRATE EL. = 5.20'
- 02

DBI
GRATE EL. = 4.99'
INV. RT. = 2.65' (18" CMP)
INV. AH. = 2.68' (15" CMP)
INV. BK. = 2.61' (12" CMP)
- 03

DBI
GRATE EL. = UNK
INV. EL. = 2.98' (18" CMP)
- 04

DBI
GRATE EL. = UNK
INV. BK. = 2.52' (15" CMP)
INV. LT. = 2.36' (18" CMP)
INV. LT. = 2.36' (18" CMP)
- 05

HEADWALL
FL. EL. = 2.13' (18" CMP)
FL. EL. = 2.12' (18" CMP)
- 06

DBI
GRATE EL. = UNK
INV. LT. = 3.74' (15" CMP)
INV. RT. = 3.56' (12" CPP)
- 07

PIPE
INV. EL. = 4.12' (12" CPP)
- 08

DBI
GRATE EL. = UNK
INV. LT. = 3.35' (24" CMP)
INV. RT. = 3.18' (15" CMP)
- 09

PIPE
INV. EL. = 5.35' (12" CPP)
- 10

PIPE
INV. EL. = 2.95' (24" CMP)
- 11

PIPE
INV. EL. = 5.53' (12" CPP)
- 12

PIPE
INV. EL. = 3.10' (24" CMP)
- 13

DBI
GRATE EL. = UNK
INV. LT. = 3.13' (24" CMP)
INV. RT. = 3.31' (15" CMP)
- 14

PIPE
INV. EL. = 5.47' (12" CPP)
- 15

DBI
GRATE EL. = UNK
INV. EL. = 4.67' (12" CPP)
- 16

DBI
GRATE EL. = UNK
INV. LT. = 3.76' (15" CMP)
INV. RT. = 3.74' (12" CPP)
- 17

DBI
GRATE EL. = UNK
INV. EL. = 4.36' (15" CMP)
- 18

DBI
GRATE EL. = UNK
INV. AH. = 4.18' (24" CMP)
INV. RT. = 4.11'(15" CMP)
- 19

DBI
GRATE EL. = UNK
INV. AH. = 3.77' (24" CMP)
INV. BK. = 3.99' (24" CMP)
INV. RT. = 4.28' (18" CMP)
- 20

DBI
GRATE EL. = UNK
INV. EL. = 4.15' (18" CMP)
- 21

PIPE
NO END TREATMENT
INV. EL. = UNK
- 22

PIPE
INV. EL. = 12.14' (12" CPP")
- 23

HEADWALL
INV. EL. = 4.11 (24" CMP)
INV. EL. = 3.61' (24" CMP)
- 24

DBI
INV. LT. = 4.52' (24" CMP)
INV. RT. = 4.58' (12" CPP)
- 25

PIPE
INV. EL. = 5.31 (12" CPP")
- 26

DBI
INV. LT. = 5.92' (15" CMP)
INV. RT. = 6.06' (12" CPP)
- 27

DBI
INV. AH. = 5.01' (15" CMP)
INV. LT. = 5.15' (12" CPP)
INV. RT. = 5.32' (15" CMP)
- 28

DBI
GRATE EL. = UNK
INV. EL. = 5.85' (18" CMP)
INV. EL. = 5.75' (18" CMP)
- 29

TRENCH DRAIN
GRATE EL. = UNK
- 30

DBI
GRATE EL. = UNK
INV. EL. = 4.20' (12" CMP)
- 31

TRENCH DRAIN
GRATE EL. = UNK
INV. EL. = 3.76' (12" CMP)
- 32

DBI
INV. LT. = 3.56' (12" CMP)
INV. BK. = 3.76' (12" CMP)
INV. RT. = 3.95' (12" CMP)
- 33

TRENCH DRAIN
GRATE EL. = UNK
INV. EL. = 4.30' (12" CPP)
- 34

DBI
GRATE EL. = UNK
INV. EL. = 4.21' (12" CPP)
- 35

DBI
GRATE EL. = UNK
INV. BK. = 4.13' (12" CPP)
INV. LT. = 3.57' (12" CPP)
- 36

PIPE
INV. EL. = 0.56' (30" HDPE)
- 37

DBI
GRATE EL. = UNK
INV. EL. = 4.55' (8" PVC)
- 38

DBI
GRATE EL. = UNK
INV. LT. = 1.14' (30" HDPE)
INV. RT. = 1.17' (15" CMP)
- 39

MANHOLE
INV. LT. = 1.01' (15" UNK)
INV. RT. = 1.04' (15" CMP)
- 40

DBI
GRATE EL. = UNK
INV. LT. = 1.42' (15" CMP)
INV. RT. = 1.67' (12" CMP)
INV. AH. = 1.95' (15" CMP)
- 41

DBI
GRATE EL. = UNK
INV. BK. = 3.54' (8" PVC)
INV. LT. = 2.55' (12" CMP)
- 42

PIPE
INV. EL. = 4.52' (12" CPP)
- 43

DBI
GRATE EL. = UNK
INV. BK. = 4.66' (12" CPP)
INV. AH. = 4.54' (12" CPP)
- 44

DBI
GRATE EL. = UNK
INV. BK. = 3.99' (12" CPP)
INV. AH. = 4.56' (12" CPP)
- 45

PIPE
INV. EL. = 4.56' (12" CPP)
- 46

DBI
GRATE EL. = UNK
INV. EL. = 3.13' (15" CMP)
- 47

DBI
GRATE EL. = UNK
INV. LT. = 2.43' (15" CMP)
INV. RT. = 2.42' (15" CMP)
INV. AH. = 2.18' (15" CMP)
INV. BK. = 2.07' (15" CMP)
- 48

DRAINGRATE
GRATE EL. = UNK
INV. EL. = 3.43' (15" CMP)
- 49

DBI
GRATE EL. = UNK
INV. AH. = 2.94' (15" CMP)
INV. RT. = 2.86' (15" CMP)
- 50

DBI
GRATE EL. = UNK
INV. RT. = 3.05' (15" CMP)
INV. AH. = 2.79' (15" CMP)
INV. LT. = 2.97' (15" CMP)
INV. BK. = 2.87' (15" CMP)
- 51

DBI
GRATE EL. = UNK
INV. EL. = 3.77' (15" CMP)
- 52

DBI
GRATE EL. = UNK
INV. EL. = 3.66' (15" CMP)
- 53

MANHOLE
INV. BK. = 3.62' (15" CMP)
INV. LT. = 3.05' (15" CMP)
- 54

TRENCH DRAIN
GRATE EL. = UNK
- 55

PIPE
INV. EL. = 4.59' (6" PVC)
- 56

DBI
GRATE EL. = UNK
INV. RT. = 3.03' (15" CMP)
INV. BK. = 3.09' (15" CMP)
- 57

DBI
GRATE EL. = UNK
INV. LT. = 3.16' (15" CMP)
INV. AH. = 3.12' (6" PVC)
INV. BK. = 3.14' (15" CMP)
- 58

DBI
GRATE EL. = UNK
INV. AH. = 3.23' (15" CMP)
INV. BK. = 2.96' (15" CMP)
- 59

TRENCH DRAIN
GRATE EL. = UNK
INV. AH. = 5.63' (8" PVC)
INV. BK. = 5.18' (8" PVC)
- 60

DBI
GRATE EL. = UNK
INV. EL. = 3.33' (15" CMP)
- 61

DBI
GRATE EL. = UNK
INV. EL. = 3.70' (15" CMP)
- 62

MANHOLE
INV. BK. = 3.42' (15" CMP)
INV. RT. = 3.61' (15" RCP)
- 63

DBI
GRATE EL. = UNK
INV. EL. = 3.55' (15" RCP)
- 64

PIPE
INV. EL. = 5.17' (8" PVC)
- 65

PIPE
INV. EL. = 5.71' (8" PVC)
- 66

PIPE
INV. EL. = 5.52' (8" PVC)
- 67

PIPE
INV. EL. = 5.51' (8" PVC)
- 68

DBI
GRATE EL. = UNK
INV. EL. = 3.22' (15" CMP)
- 69

DBI
GRATE EL. = UNK
INV. EL. = 3.26' (15" CMP)

LEGEND:

SURFACE FLOW DIRECTION

BASIN DIVIDE

EXISTING DRAINAGE STRUCTURE

NOTE: DO NOT USE THE INFORMATION ON THIS SHEET FOR CONSTRUCTION PURPOSES. This sheet is in the plans for documentation and to assist construction personnel with drainage concerns.

AERIAL IMAGE 2022
ELEV REF. NAVD 88 DATUM
NAVD 88 = NVGD 29 -0.41'

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

halff

MURRAY SANTORO, P.E.
LICENSE NUMBER: 66065
HALFF ASSOCIATES, INC.
TALLAHASSEE, FLORIDA 32309



OKALOOSA COUNTY
PROJECT
SANTA ROSA BOULEVARD

EXISTING
DRAINAGE MAP (5)

SHEET
NO.
7

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

7/11/2024 1:06:54 PM ah5401
\\halff.ad\p2a\av0420005\42280\003\0123456789\Drainage\DRMPRD02_ProposedDrainage\lamps.dgn



LEGEND:

SURFACE FLOW DIRECTION

BASIN DIVIDE

EXISTING DRAINAGE STRUCTURE

PROPOSED DRAINAGE STRUCTURE

NOTE: DO NOT USE THE INFORMATION ON THIS SHEET FOR CONSTRUCTION PURPOSES. This sheet is in the plans for documentation and to assist construction personnel with drainage concerns.

AERIAL IMAGE 2022
ELEV. REF. NAVD 88 DATUM
NAVD 88 = NVGD 29 -0.41'

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

halff
MURRAY SANTORO, P.E.
LICENSE NUMBER: 66065
HALFF ASSOCIATES, INC.
TALLAHASSEE, FLORIDA 32309



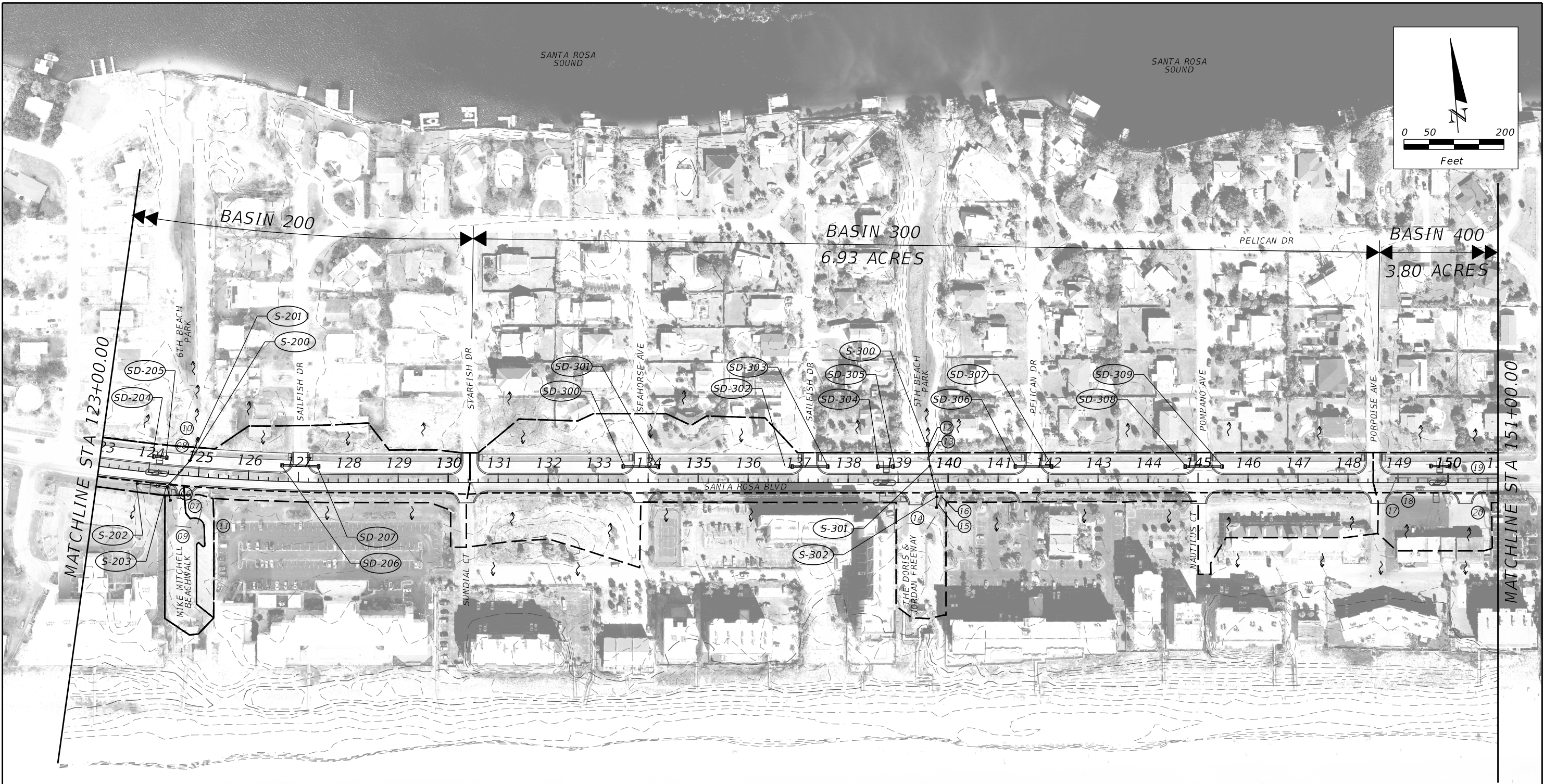
OKALOOSA COUNTY
PROJECT
SANTA ROSA BOULEVARD

**PROPOSED
DRAINAGE MAP (1)**

SHEET NO.
8

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

7/11/2024 1:06:57 PM ah5401
\\halff.ad\p2\A\0\420005\42280\003\0123456789\Drainage\DRMPRD02_ProposedDrainage\laps.dgn



LEGEND:

SURFACE FLOW DIRECTION

BASIN DIVIDE

EXISTING DRAINAGE STRUCTURE

PROPOSED DRAINAGE STRUCTURE

NOTE: DO NOT USE THE INFORMATION ON THIS SHEET FOR CONSTRUCTION PURPOSES. This sheet is in the plans for documentation and to assist construction personnel with drainage concerns.

AERIAL IMAGE 2022
ELEV. REF. NAVD 88 DATUM
NAVD 88 = NVGD 29 -0.41'

REVISIONS	
DATE	DESCRIPTION

MURRAY SANTORO, P.E.
LICENSE NUMBER: 66065
HALFF ASSOCIATES, INC.
TALLAHASSEE, FLORIDA 32309

OKALOOSA COUNTY

PROJECT

SANTA ROSA BOULEVARD

PROPOSED
DRAINAGE MAP (2)

SHEET NO.

9

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

7/11/2024 1:07:00 PM ah5401
\\halff.ad\p2a\av0420005\42280\003\0123456789\Drainage\DRMPRD02_ProposedDrainage\maps.dgn



REVISIONS		REVISIONS	
DATE	DESCRIPTION	DATE	DESCRIPTION



MURRAY SANTORO, P.E.
LICENSE NUMBER: 66065
HALFF ASSOCIATES, INC.
TALLAHASSEE, FLORIDA 32309



OKALOOSA COUNTY	
PROJECT	
SANTA ROSA BOULEVARD	

PROPOSED
DRAINAGE MAP (3)

SHEET
NO.

10

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

7/11/2024 1:07:04 PM ah5401
\\halff.ad\p2a\avo\420005\42280\003\0123456789\Drainage\DRMPRD02_ProposedDrainage\lamps.dgn



LEGEND:

SURFACE FLOW DIRECTION

BASIN DIVIDE

EXISTING DRAINAGE STRUCTURE

PROPOSED DRAINAGE STRUCTURE

NOTE: DO NOT USE THE INFORMATION ON THIS SHEET FOR CONSTRUCTION PURPOSES. This sheet is in the plans for documentation and to assist construction personnel with drainage concerns.

AERIAL IMAGE 2022
ELEV. REF. NAVD 88 DATUM
NAVD 88 = NVGD 29 -0.417'

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

MURRAY SANTORO, P.E.
LICENSE NUMBER: 66065
HALFF ASSOCIATES, INC.
TALLAHASSEE, FLORIDA 32309



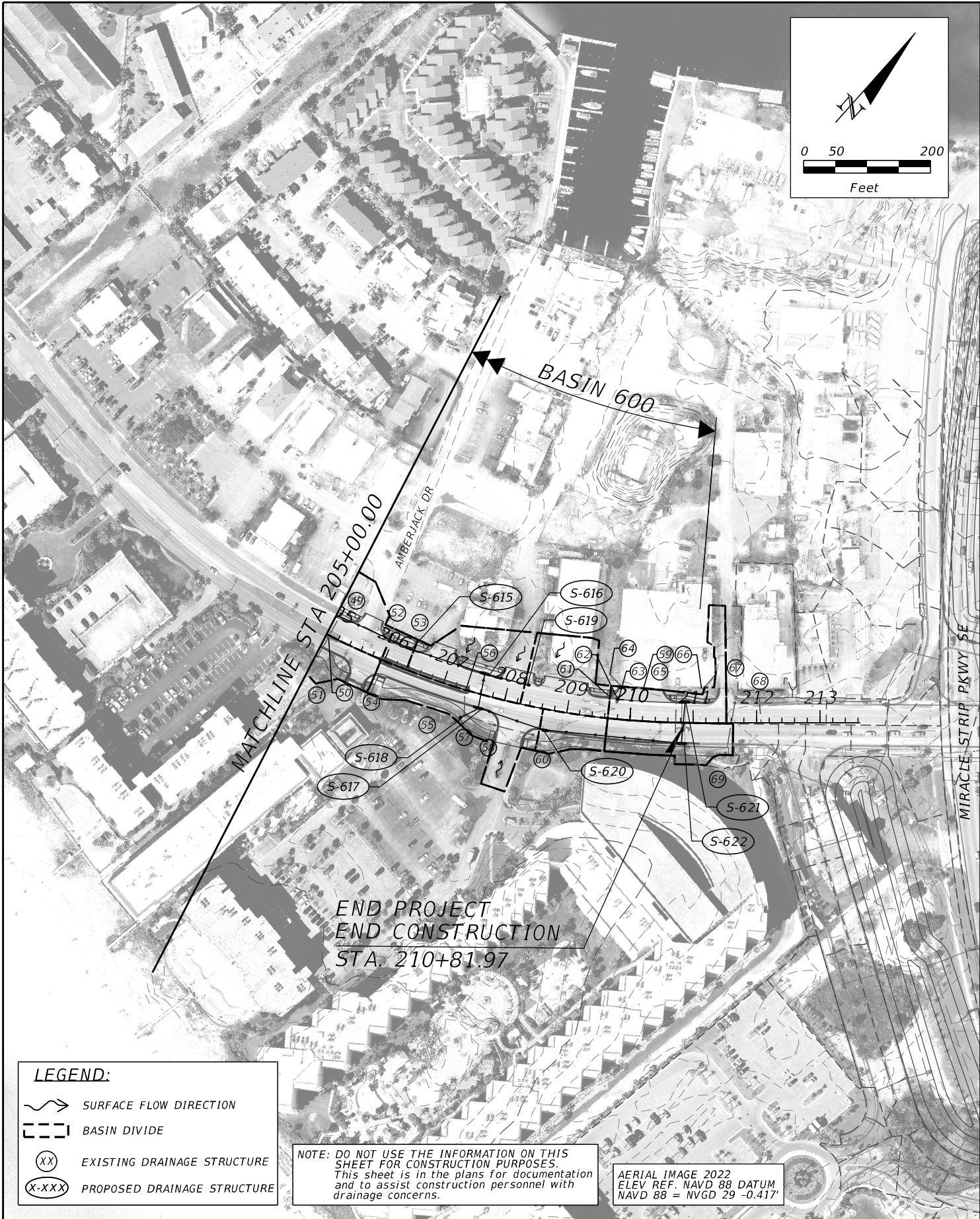
OKALOOSA COUNTY
PROJECT
SANTA ROSA BOULEVARD

PROPOSED
DRAINAGE MAP (4)

SHEET NO.
11

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

7/11/2024 1:07:06 PM ah5401 \\halff.adp\2A\A\0420005\42280\003\0123456789\Drainage\DRMPRD02_ProposedDrainage\lmap.dgn



BASIN 100

S-100	0.16 AC
S-101	0.25 AC
S-103	0.17 AC
S-106	0.28 AC
S-107	0.43 AC

BASIN 600

S-600	0.39 AC	S-608	0.26 AC	S-616	0.39 AC
S-601	2.05 AC	S-609	N/A	S-617	0.42 AC
S-602	0.99 AC	S-610	0.39 AC	S-618	N/A
S-603	0.17 AC	S-611	0.34 AC	S-619	0.32 AC
S-604	0.15 AC	S-612	0.28 AC	S-620	0.14 AC
S-605	0.16 AC	S-613	0.40 AC	S-621	0.28 AC
S-606	0.08 AC	S-614	0.40 AC	S-622	0.26 AC
S-607	0.35 AC	S-615	0.05 AC		

LEGEND:

SURFACE FLOW DIRECTION

BASIN DIVIDE

EXISTING DRAINAGE STRUCTURE

PROPOSED DRAINAGE STRUCTURE

NOTE: DO NOT USE THE INFORMATION ON THIS SHEET FOR CONSTRUCTION PURPOSES.
This sheet is in the plans for documentation and to assist construction personnel with drainage concerns.

AERIAL IMAGE 2022
ELEV REF. NAVD 88 DATUM
NAVD 88 = NVGD 29 -0.41'

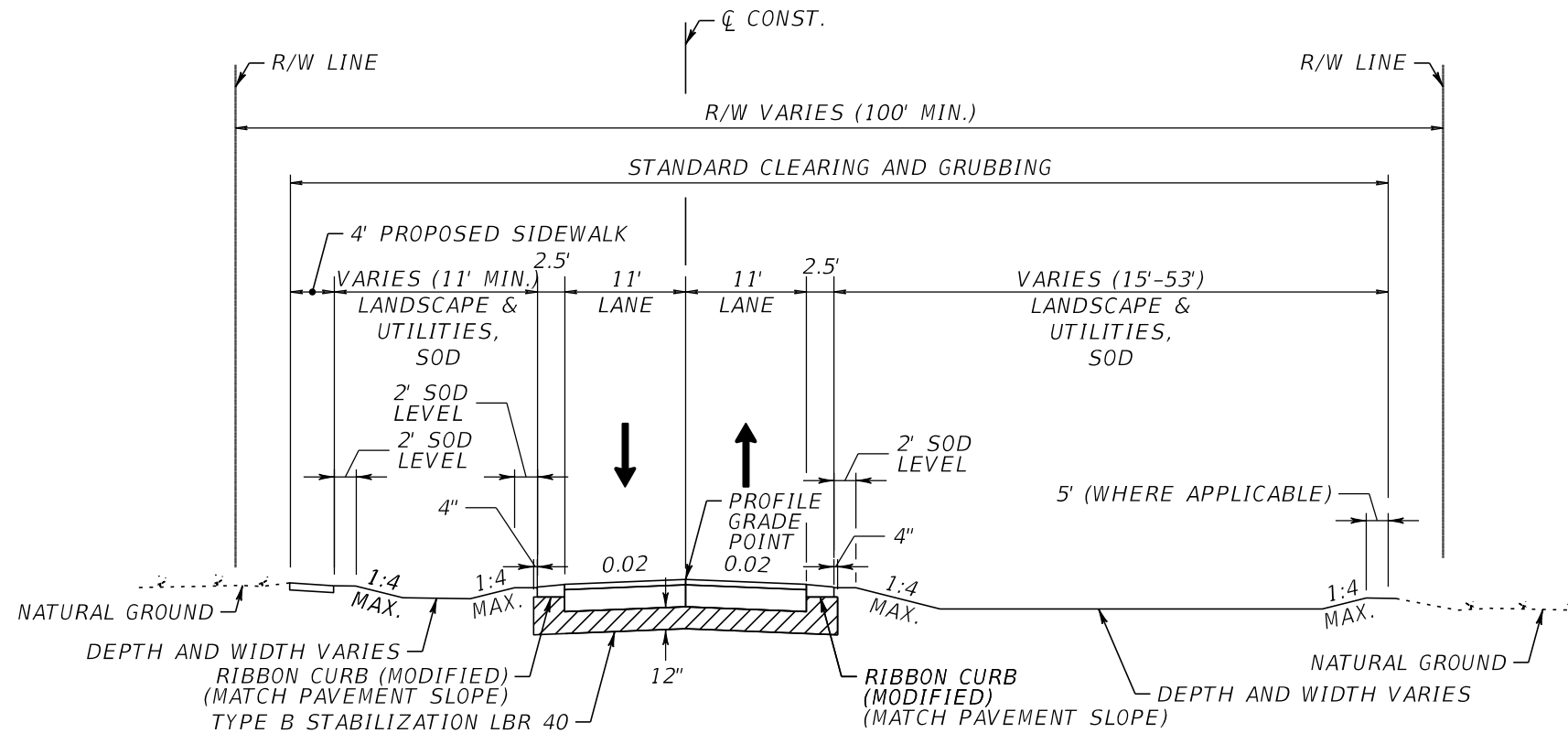
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

halff
MURRAY SANTORO, P.E.
LICENSE NUMBER: 66065
HALFF ASSOCIATES, INC.
TALLAHASSEE, FLORIDA 32309

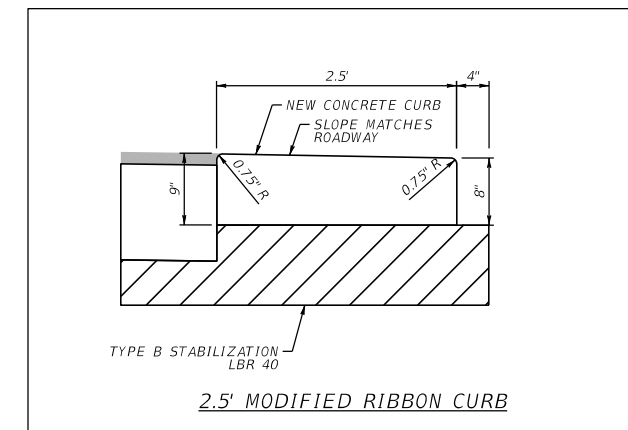
OKALOOSA COUNTY
PROJECT
SANTA ROSA BOULEVARD

PROPOSED
DRAINAGE MAP (5)

SHEET
NO.
12



TYPICAL SECTION
SANTA ROSA BLVD
STA. 100+15.99 TO STA. 104+59.15



TRAFFIC DATA

CURRENT YEAR = 2022 AADT = 14200
ESTIMATED OPENING YEAR = N/A AADT = N/A
ESTIMATED DESIGN YEAR = N/A AADT = N/A
K = 9.0% D = 57.9% T = 2.7% (24 HOUR)
DESIGN HOUR T = %
TARGET SPEED = 20 MPH
DESIGN SPEED = 20 MPH
POSTED SPEED = 20 MPH

TRAVEL LANE RECONSTRUCTION

OPTIONAL BASE GROUP 9 (12" GRADED AGGREGATE BASE)
SP-9.5 STRUCTURAL COURSE (TRAFFIC B) (1.5")
FRICTION COURSE FC-12.5 (TRAFFIC B) (1.5") (PG 76-22)

COMMERCIAL DRIVEWAY & SIDE STREET RECONSTRUCTION

OPTIONAL BASE GROUP 9 (12" GRADED AGGREGATE BASE)
SP-9.5 STRUCTURAL COURSE (TRAFFIC B) (1.5")

RESIDENTIAL DRIVEWAY RECONSTRUCTION

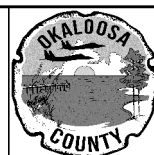
6" CONCRETE

7/19/2024 5:43:09 PM ah3923 A:\420005\42280\003\0123456789\Roadway\TYP5R001.dgn

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION



MARK T. LLEWELLYN, JR., P.E.
LICENSE NUMBER: 80712
HALFF ASSOCIATES, INC.
TALLAHASSEE, FLORIDA 32309



OKALOOSA COUNTY
PROJECT
SANTA ROSA BOULEVARD

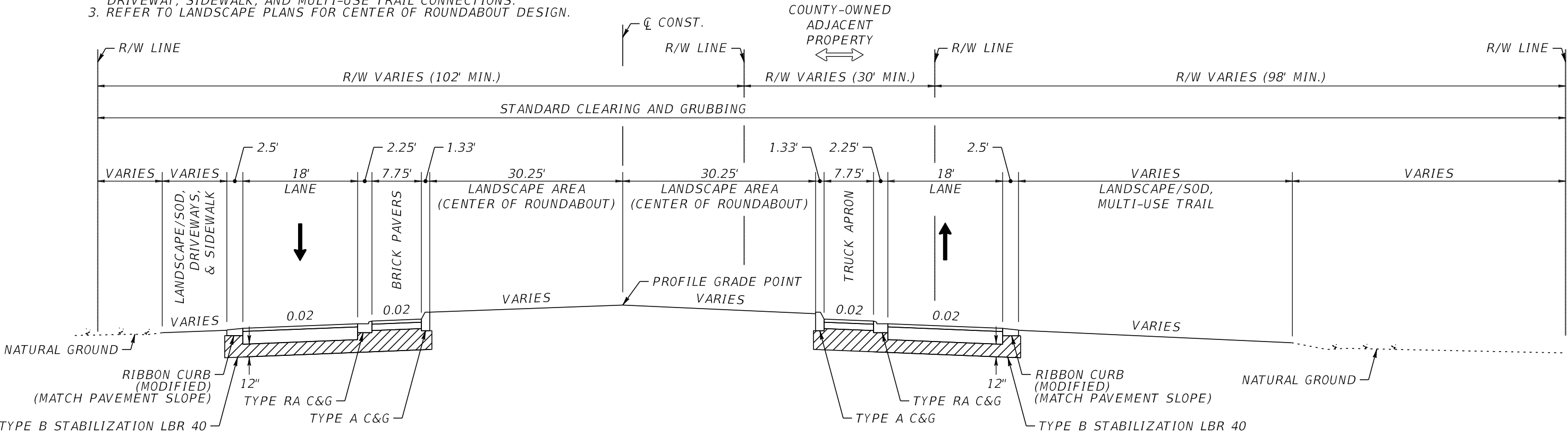
TYPICAL SECTIONS
13

SHEET NO.
13

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

NOTES:

1. THIS TYPICAL SECTION IS BASED ON OFFSETS AT STA. 105+90.14 (CENTER OF ROUNDABOUT).
2. SEE ROADWAY PLAN AND PROFILE SHEETS AND CROSS SECTIONS FOR MORE DETAILS ON DRIVEWAY, SIDEWALK, AND MULTI-USE TRAIL CONNECTIONS.
3. REFER TO LANDSCAPE PLANS FOR CENTER OF ROUNDABOUT DESIGN.



TYPICAL SECTION
SANTA ROSA BLVD (ROUNDABOUT)
STA. 104+59.15 TO STA. 107+32.94

TRAVEL LANE RECONSTRUCTION

OPTIONAL BASE GROUP 9 (12" GRADED AGGREGATE BASE)
SP-9.5 STRUCTURAL COURSE (TRAFFIC B) (1.5")
FRICTION COURSE FC-12.5 (TRAFFIC B) (1.5") (PG 76-22)

14' MULTI-USE PATH

OPTIONAL BASE GROUP 1 (4.5" GRADED AGGREGATE BASE)
SP-9.5 STRUCTURAL COURSE (TRAFFIC B) (1.5")

5' SIDEWALK

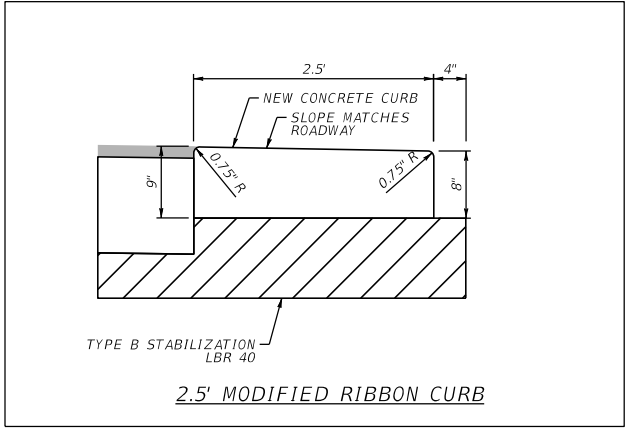
4" CONCRETE

COMMERCIAL DRIVEWAY & SIDE STREET RECONSTRUCTION

OPTIONAL BASE GROUP 9 (12" GRADED AGGREGATE BASE)
SP-9.5 STRUCTURAL COURSE (TRAFFIC B) (1.5")

RESIDENTIAL DRIVEWAY RECONSTRUCTION

6" CONCRETE



TRAFFIC DATA

CURRENT YEAR = 2022 AADT = 14200
ESTIMATED OPENING YEAR = N/A AADT = N/A
ESTIMATED DESIGN YEAR = N/A AADT = N/A
K = 9.0% D = 57.9% T = 2.7% (24 HOUR)
DESIGN HOUR T = %
TARGET SPEED = 20 MPH
DESIGN SPEED = 20 MPH
POSTED SPEED = 20 MPH

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

halff
MARK T. LLEWELLYN, JR., P.E.
LICENSE NUMBER: 80712
HALFF ASSOCIATES, INC.
TALLAHASSEE, FLORIDA 32309



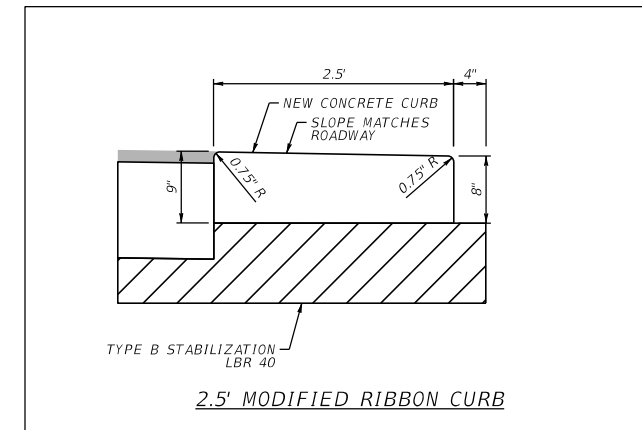
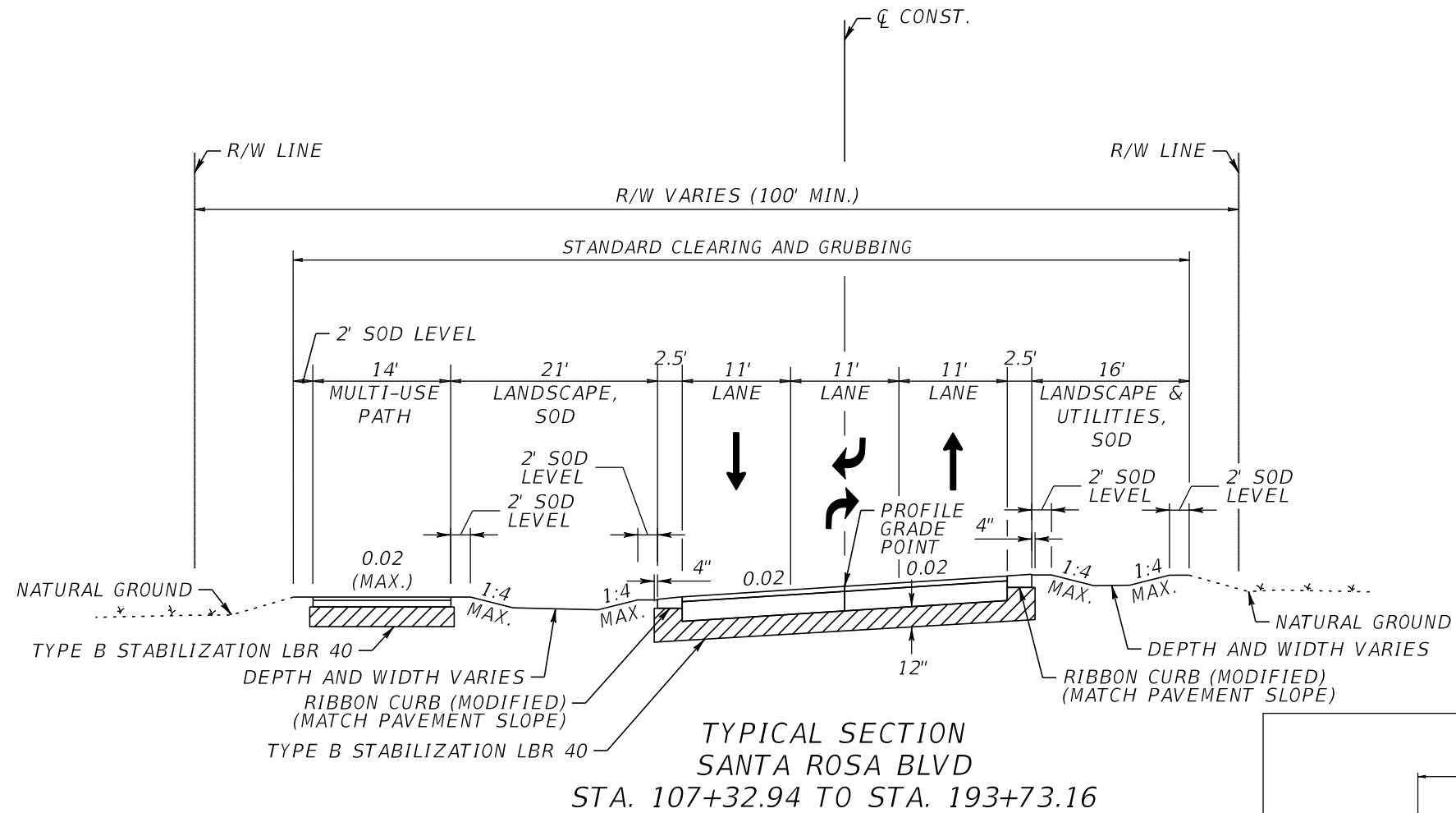
OKALOOSA COUNTY
PROJECT
SANTA ROSA BOULEVARD

TYPICAL SECTIONS
14

SHEET NO.
14

7/19/2024 6:44:06 PM ah3923 A:\420003\42280\003\0123456789\Roadway\TYP5R001.dgn

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



TRAFFIC DATA

CURRENT YEAR = 2022 AADT = 14200
ESTIMATED OPENING YEAR = N/A AADT = N/A
ESTIMATED DESIGN YEAR = N/A AADT = N/A
K = 9.0% D = 57.9% T = 2.7% (24 HOUR)
DESIGN HOUR T = %
TARGET SPEED = 35 MPH
DESIGN SPEED = 35 MPH
POSTED SPEED = 35 MPH

TRAVEL LANE RECONSTRUCTION

OPTIONAL BASE GROUP 9 (12" GRADED AGGREGATE BASE)
SP-9.5 STRUCTURAL COURSE (TRAFFIC B) (1.5")
FRICTION COURSE FC-12.5 (TRAFFIC B) (1.5") (PG 76-22)

14' MULTI-USE PATH

OPTIONAL BASE GROUP 1 (4.5" GRADED AGGREGATE BASE)
SP-9.5 STRUCTURAL COURSE (TRAFFIC B) (1.5")

COMMERCIAL DRIVEWAY & SIDE STREET RECONSTRUCTION

OPTIONAL BASE GROUP 9 (12" GRADED AGGREGATE BASE)
SP-9.5 STRUCTURAL COURSE (TRAFFIC B) (1.5")

RESIDENTIAL DRIVEWAY RECONSTRUCTION

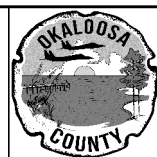
6" CONCRETE

7/19/2024 6:44:07 PM ah3923 A:\420005\42280\003\0123456789\Roadway\TYP5R001.dgn

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION



MARK T. LLEWELLYN, JR., P.E.
LICENSE NUMBER: 80712
HALFF ASSOCIATES, INC.
TALLAHASSEE, FLORIDA 32309

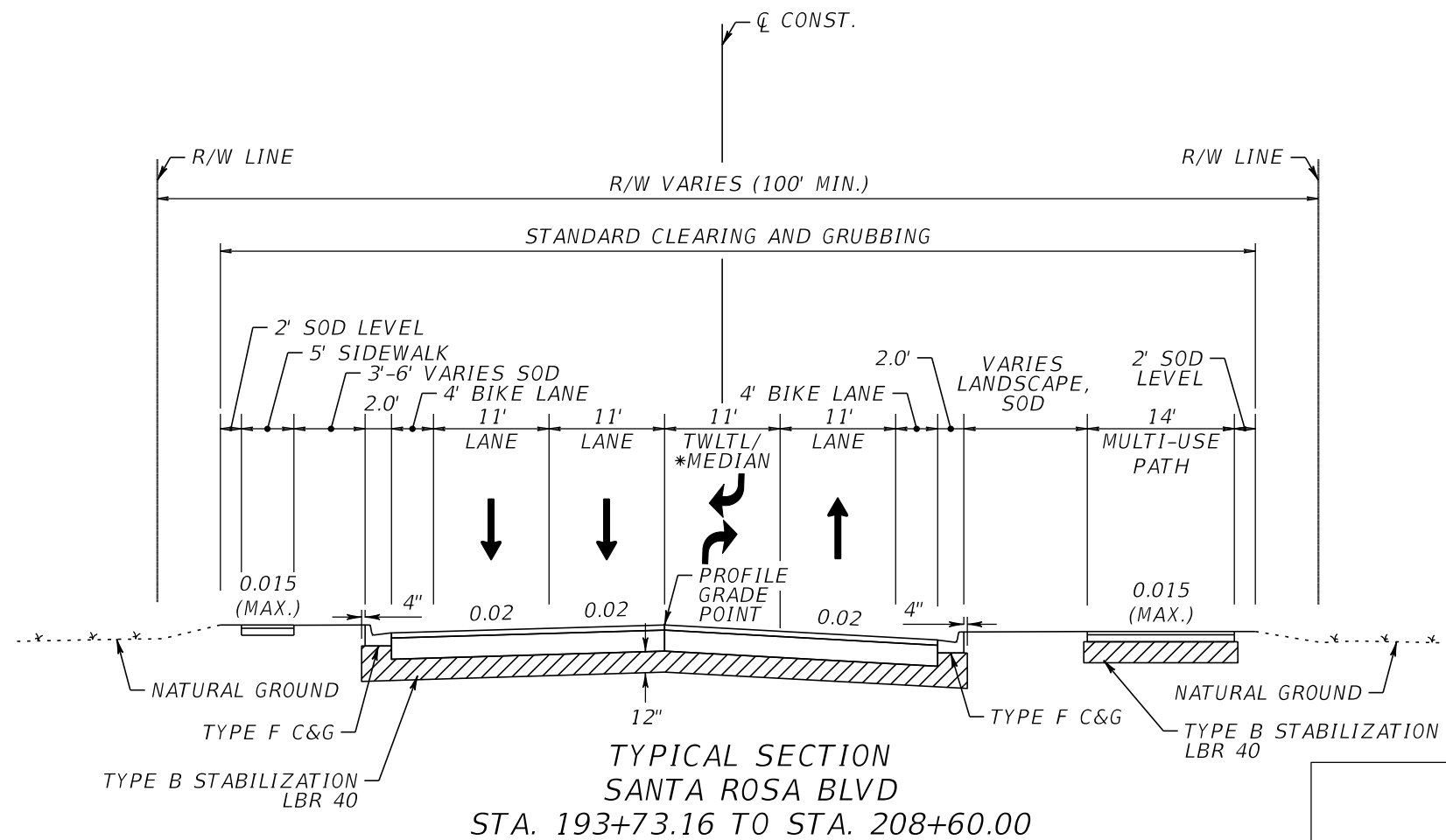


OKALOOSA COUNTY
PROJECT
SANTA ROSA BOULEVARD

TYPICAL SECTIONS
15

SHEET NO.
15

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



TYPICAL SECTION
SANTA ROSA BLVD
STA. 193+73.16 TO STA. 208+60.00

TRAVEL LANE RECONSTRUCTION

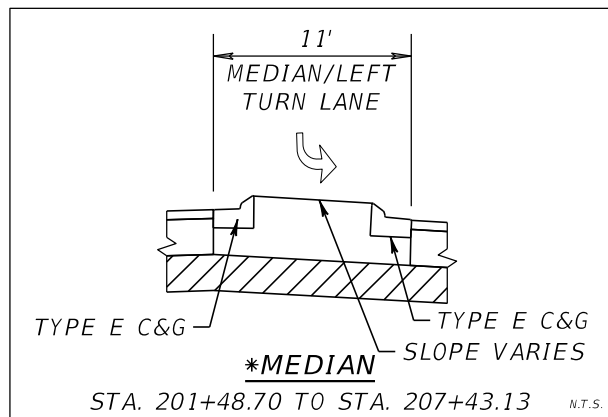
OPTIONAL BASE GROUP 9 (12" GRADED AGGREGATE BASE)
SP-9.5 STRUCTURAL COURSE (TRAFFIC B) (1.5")
FRICTION COURSE FC-12.5 (TRAFFIC B) (1.5") (PG 76-22)

14' MULTI-USE PATH

OPTIONAL BASE GROUP 1 (4.5" GRADED AGGREGATE BASE)
SP-9.5 STRUCTURAL COURSE (TRAFFIC B) (1.5")

5' SIDEWALK

4" CONCRETE



COMMERCIAL DRIVEWAY & SIDE STREET RECONSTRUCTION

OPTIONAL BASE GROUP 9 (12" GRADED AGGREGATE BASE)
SP-9.5 STRUCTURAL COURSE (TRAFFIC B) (1.5")

RESIDENTIAL DRIVEWAY RECONSTRUCTION

6" CONCRETE

TRAFFIC DATA

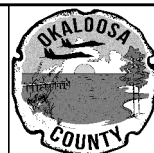
CURRENT YEAR = 2022 AADT = 14200
ESTIMATED OPENING YEAR = N/A AADT = N/A
ESTIMATED DESIGN YEAR = N/A AADT = N/A
K = 9.0% D = 57.9% T = 2.7% (24 HOUR)
DESIGN HOUR T = %
TARGET SPEED = 35 MPH
DESIGN SPEED = 35 MPH
POSTED SPEED = 35 MPH

REVISIONS

DATE	DESCRIPTION	DATE	DESCRIPTION



MARK T. LLEWELLYN, JR., P.E.
LICENSE NUMBER: 80712
HALFF ASSOCIATES, INC.
TALLAHASSEE, FLORIDA 32309



OKALOOSA COUNTY

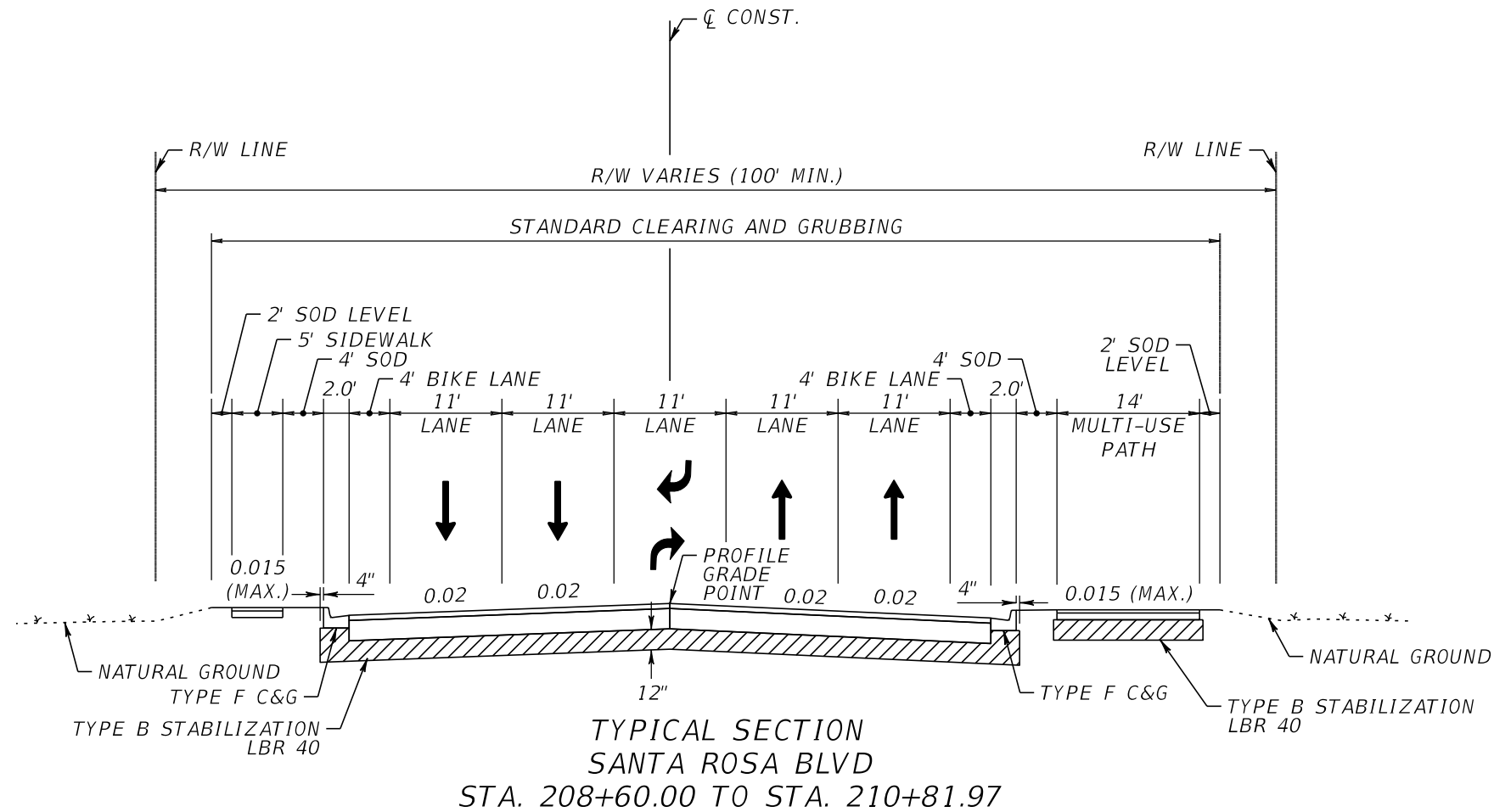
PROJECT

SANTA ROSA BOULEVARD

TYPICAL SECTIONS

SHEET NO.

16



TRAVEL LANE RECONSTRUCTION
OPTIONAL BASE GROUP 9 (12" GRADED AGGREGATE BASE)
SP-9.5 STRUCTURAL COURSE (TRAFFIC B) (1.5")
FRICTION COURSE FC-12.5 (TRAFFIC B) (1.5") (PG 76-22)

14' MULTI-USE PATH
OPTIONAL BASE GROUP 1 (4.5" GRADED AGGREGATE BASE)
SP-9.5 STRUCTURAL COURSE (TRAFFIC B) (1.5")

5' SIDEWALK
4" CONCRETE

COMMERCIAL DRIVEWAY & SIDE STREET RECONSTRUCTION
OPTIONAL BASE GROUP 9 (12" GRADED AGGREGATE BASE)
SP-9.5 STRUCTURAL COURSE (TRAFFIC B) (1.5")

RESIDENTIAL DRIVEWAY RECONSTRUCTION
6" CONCRETE

TRAFFIC DATA
CURRENT YEAR = 2022 AADT = 14200
ESTIMATED OPENING YEAR = N/A AADT = N/A
ESTIMATED DESIGN YEAR = N/A AADT = N/A
K = 9.0% D = 57.9% T = 2.7% (24 HOUR)
DESIGN HOUR T = %
TARGET SPEED = 35 MPH
DESIGN SPEED = 35 MPH
POSTED SPEED = 35 MPH

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION



MARK T. LLEWELLYN, JR., P.E.
LICENSE NUMBER: 80712
HALFF ASSOCIATES, INC.
TALLAHASSEE, FLORIDA 32309



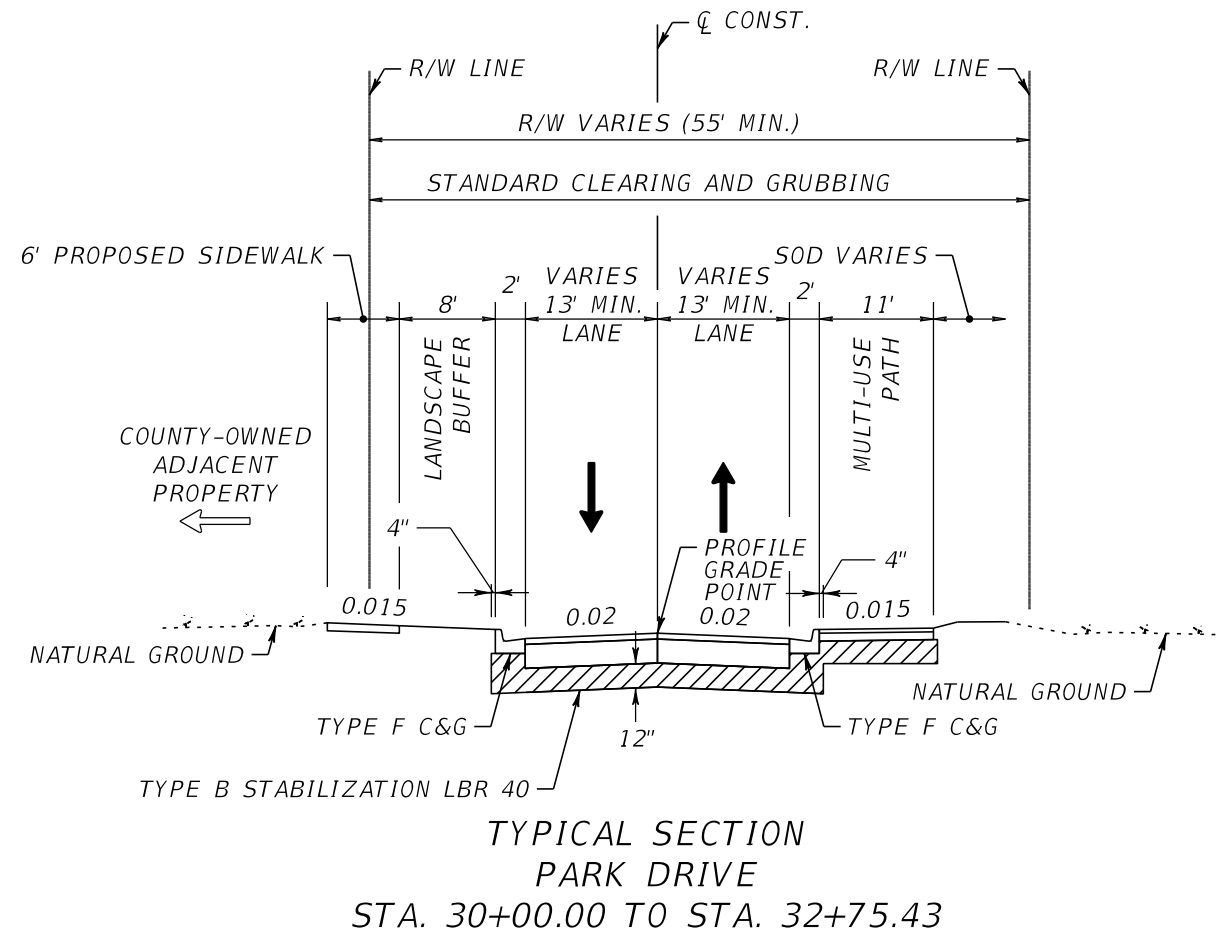
OKALOOSA COUNTY
PROJECT
SANTA ROSA BOULEVARD

TYPICAL SECTIONS
17

7/19/2024 5:43:12 PM ah3923 A:\420005\42280\003\0123456789\Roadway\TYP5RD01.dgn

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

NOTES:
1. 6' PROPOSED SIDEWALK CONTINUES TO STA. 35+92.06.



TRAVEL LANE RECONSTRUCTION

OPTIONAL BASE GROUP 9 (12" GRADED AGGREGATE BASE)
SP-9.5 STRUCTURAL COURSE (TRAFFIC B) (1.5")
FRICTION COURSE FC-12.5 (TRAFFIC B) (1.5") (PG 76-22)

14' MULTI-USE PATH

OPTIONAL BASE GROUP 1 (4.5" GRADED AGGREGATE BASE)
SP-9.5 STRUCTURAL COURSE (TRAFFIC B) (1.5")

5' SIDEWALK

4" CONCRETE

COMMERCIAL DRIVEWAY & SIDE STREET RECONSTRUCTION

OPTIONAL BASE GROUP 9 (12" GRADED AGGREGATE BASE)
SP-9.5 STRUCTURAL COURSE (TRAFFIC B) (1.5")

RESIDENTIAL DRIVEWAY RECONSTRUCTION

6" CONCRETE

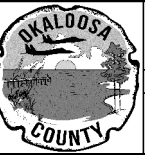
TRAFFIC DATA

CURRENT YEAR = 2022 AADT = 14200
ESTIMATED OPENING YEAR = N/A AADT = N/A
ESTIMATED DESIGN YEAR = N/A AADT = N/A
K = 9.0% D = 57.9% T = 2.7% (24 HOUR)
DESIGN HOUR T = %
TARGET SPEED = 20 MPH
DESIGN SPEED = 20 MPH
POSTED SPEED = 20 MPH

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION



MARK T. LLEWELLYN, JR., P.E.
LICENSE NUMBER: 80712
HALFF ASSOCIATES, INC.
TALLAHASSEE, FLORIDA 32309



OKALOOSA COUNTY
PROJECT
SANTA ROSA BOULEVARD

TYPICAL SECTIONS
18

SHEET NO.
18

7/19/2024 5:43:12 PM ah3923 \\halff.adn\2A\A\0\420005\42280\003\0123456789\Roadway\TypSRD01.dgn

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



JOB: Santa Rosa Blvd
FPID:
CALC'D BY: MJA
CHECK'D BY: MBS

COUNTY: Okaloosa
DISTRICT:
DATE: 31-May-24
DATE: 3-Jun-24

SHEET
1
OF
1

INLET SPREAD CALCULATIONS

Reference: Section 6.3.2.4, Chapter 6, FDOT Drainage Design Guide, 2023

STRUCTURE NUMBER	INLET TYPE	STATION (ft.)		SLOPES		FLOWS										SPREAD			COMMENTS
				LONG.	CROSS	ROADWAY				GUTTER MAX	BYPASS-IN	TOTAL IN	INTERCEPT	BYPASS-OUT		ALLOWABLE SPREAD (T)	GUTTER SPREAD (T _{gutter})	GUTTER SPREAD CHECK	
				S	S _x	RUNOFF COEFFICIENT	INTENSITY	AREA	Q _r	Q _g	Q _{BI}	Q _t	Q _i	Q _{bo}	To Structure				
Proposed Conditions																			
S-622	Type 6	210+82	RT	0.30%	2.00%	0.95	4.00 in./hr	0.26 ac.	0.99 cfs	1.69 cfs	0.00 cfs	0.99 cfs	0.83 cfs	SAG		11.00 ft.	8.99 ft.	OK	
S-621	Type 6	210+87	LT	0.30%	2.00%	0.95	4.00 in./hr	0.28 ac.	1.06 cfs	1.69 cfs	0.00 cfs	1.06 cfs	0.88 cfs	SAG		11.00 ft.	9.25 ft.	OK	
S-620	Type 5	208+68	RT	0.30%	2.00%	0.95	4.00 in./hr	0.14 ac.	0.53 cfs	1.69 cfs	0.00 cfs	0.53 cfs	0.49 cfs	0.04 cfs	S-617	11.00 ft.	7.13 ft.	OK	
S-617	Type 6	207+65	RT	0.30%	2.00%	0.95	4.00 in./hr	0.42 ac.	1.60 cfs	1.69 cfs	0.04 cfs	1.64 cfs	1.25 cfs	SAG		11.00 ft.	10.87 ft.	OK	
S-619	S-Gutter	208+64	LT	0.30%	2.00%	0.95	4.00 in./hr	0.32 ac.	1.22 cfs	1.69 cfs	0.00 cfs	1.22 cfs	1.06 cfs	0.15 cfs	S-616	11.00 ft.	9.72 ft.	OK	
S-616	Type 6	207+65	LT	0.30%	2.00%	0.95	4.00 in./hr	0.38 ac.	1.44 cfs	1.69 cfs	0.15 cfs	1.60 cfs	1.23 cfs	SAG		11.00 ft.	10.77 ft.	OK	
S-615	Type 5	206+50	LT	0.30%	2.00%	0.95	4.00 in./hr	0.05 ac.	0.19 cfs	1.69 cfs	0.00 cfs	0.19 cfs	0.19 cfs	0.00 cfs	S-616	11.00 ft.	4.85 ft.	OK	
S-612	Type 5	204+12	LT	0.30%	2.00%	0.95	4.00 in./hr	0.27 ac.	1.03 cfs	1.69 cfs	0.00 cfs	1.03 cfs	0.86 cfs	0.17 cfs	S-613	11.00 ft.	9.12 ft.	OK	
S-613	Type 6	204+75	LT	0.30%	2.00%	0.95	4.00 in./hr	0.39 ac.	1.48 cfs	1.69 cfs	0.17 cfs	1.65 cfs	1.26 cfs	SAG		11.00 ft.	10.90 ft.	OK	
S-614	Type 6	204+75	RT	0.30%	2.00%	0.95	4.00 in./hr	0.39 ac.	1.48 cfs	1.69 cfs	0.00 cfs	1.48 cfs	1.16 cfs	SAG		11.00 ft.	10.47 ft.	OK	
S-610	Type 6	201+75	LT	0.30%	2.00%	0.95	4.00 in./hr	0.38 ac.	1.44 cfs	1.69 cfs	0.00 cfs	1.44 cfs	1.13 cfs	SAG		11.00 ft.	10.37 ft.	OK	
S-611	Type 6	201+75	RT	0.30%	2.00%	0.95	4.00 in./hr	0.38 ac.	1.44 cfs	1.69 cfs	0.00 cfs	1.44 cfs	1.13 cfs	SAG		11.00 ft.	10.37 ft.	OK	
S-605	Type 5	199+04	LT	0.30%	2.00%	0.95	4.00 in./hr	0.10 ac.	0.38 cfs	1.69 cfs	0.00 cfs	0.38 cfs	0.36 cfs	0.02 cfs	S-608	11.00 ft.	6.28 ft.	OK	
S-608	Type 6	198+10	LT	0.30%	2.00%	0.95	4.00 in./hr	0.26 ac.	0.99 cfs	1.69 cfs	0.02 cfs	1.01 cfs	0.84 cfs	SAG		11.00 ft.	9.05 ft.	OK	
S-607	Type 6	198+20	RT	0.30%	2.00%	0.95	4.00 in./hr	0.44 ac.	1.67 cfs	1.69 cfs	0.00 cfs	1.67 cfs	1.27 cfs	SAG		11.00 ft.	10.95 ft.	OK	
S-603	Type 6	195+25	LT	0.30%	2.00%	0.95	4.00 in./hr	0.17 ac.	0.65 cfs	1.69 cfs	0.00 cfs	0.65 cfs	0.58 cfs	0.07 cfs		11.00 ft.	7.67 ft.	OK	
S-604	Type 6	195+25	RT	0.20%	2.00%	0.95	4.00 in./hr	0.15 ac.	0.57 cfs	1.38 cfs	0.07 cfs	0.64 cfs	0.56 cfs	0.07 cfs		11.00 ft.	8.23 ft.	OK	

FLORIDA DEPARTMENT OF TRANSPORTATION

STORM DRAIN TABULATION FORM

Page: 1

Financial Prj Id .
Description: **Basin 600**

County: **Okaloosa County**
Organization **HALFF ASSOCIATES**

Network: **BSN 600**
State Road: **Santa Rosa Blvd**

Designed by **MJA**
Checked by: **MBS**

Date: 6/28/2024
Date: 6/28/2024

LOCATION OF UPPER END			STR. NO.	TYPE OF STR.	LEN.	AREAS (Ac)		SUB-TOTAL (C*A)	TIME OF CONC	TIME OF FLOW SECT.	INTEN	TOTAL (C*A)	BASE FLOW SUMM BASE	TOTAL FLOW	MINOR LOSS	INLET ELEV.	HGL CLEAR	HYDRAULIC GRADE			# B R L S	PIPE SIZE (in.) RISE	SLOPE % HGL PHYS	ACTUAL VEL. (fps) VEL.	FULL FLOW CAP.	NOTES & REMARKS				
ALIGNMENT NAME			UPPER LOWER			INC	TOTAL											CROWN								UPPER	LOWER	FALL	ZONE:	
STATION	DIST	SD																FLOWLINE											1	
																		C= 0.20	C= 0.50	C= 0.95									FREQ. (Yrs):	MANNINGS n:
				(ft.)			(min)	(min)	(in/hr)		(cfs)	(cfs)	(ft.)	(ft.)	(ft.)	(ft.)	(ft.)	(ft.)						TAILW EL (ft):	3.00					
-L-			S-600	DBI-C	53.10	0.22	0.22	0.04	10.00	0.44	6.97	0.21	0.00	1.43	0.01	6.00	0.43	5.57	5.56	0.01	1	18.00	0.025	0.81	6.98	Located in Swale. Check location of the exist WM				
191+80	27.00	Rt.	S-601		0.00	0.00	0.00	0.17	0.17	0.16				0.00				3.10	2.90		1	18.00	0.377							
-L-			S-601		0.00	0.22	0.00	0.17	0.17	0.16				0.00				1.60	1.40	0.20	1	18.00	0.150	3.95						
191+80	28.10	Lt.	S-602	DBI-C	167.00	0.00	0.00	0.00	10.44	1.39	6.87	0.21	1.67	3.09	0.04	5.00	-0.56	5.56	5.40	0.16	1	18.00	0.096	1.75	4.40	Base flow added from ICPR. Located in Swale				
-L-			S-602		0.00	0.00	0.00	0.00	0.17	0.00				1.67				2.90	2.65		1	18.00	0.150							
-L-			S-602		0.00	0.17	0.00			0.00				1.67				1.40	1.15	0.25	1	18.00	0.150	2.49						
193+50	29.00	Lt.	S-603	DBI-C	172.00	0.18	0.40	0.04	11.83	0.77	6.59	0.75	0.00	6.62	0.11	5.00	-0.40	5.40	4.70	0.69	1	18.00	0.402	3.75	4.34	Located in Swale				
-L-			S-603		0.58	0.58	0.29	0.23	0.40	0.22				1.67				2.65	2.40		1	18.00	0.145							
-L-			S-603		0.00	0.40	0.00			0.00				1.67				1.15	0.90	0.25	1	18.00	0.150	2.46						
195+25.00	22.78	Lt.	S-608	P-6	282.00	0.00	0.58	0.00	12.60	1.74	6.45	1.05	0.00	8.47	0.08	6.25	1.55	4.70	4.29	0.42	1	24.00	0.177		10.32					
-L-			S-604		0.17	0.72	0.16			0.00				1.67				2.90	2.40		1	24.00	0.102	3.28						
-L-			S-604		0.00	0.00	0.00			0.00				1.67				0.90	0.40	0.50	1	18.00	0.014	0.56						
195+25	16.50	Rt.	S-603	P-6	39.00	0.00	0.00	0.00	10.00	0.32	6.97	0.14	0.00	0.99	0.00	6.37	1.66	4.71	4.70	0.01	1	18.00	0.513		8.15					
-L-			S-603		0.15	0.15	0.14			0.00				0.00				2.60	2.40		1	18.00	0.150	4.61						
-L-			S-605		0.04	0.47	0.01			0.00				0.00				1.10	0.90	0.20	1	36.00	0.188	3.22						
199+04.00	31.50	Lt.	S-608	P-5	91.00	0.00	0.23	0.00	18.14	0.47	5.64	3.69	0.00	22.77	0.08	6.32	1.86	4.46	4.29	0.17	1	36.00	0.220		33.87					
-L-			S-606		0.06	3.66	0.06			0.06				2.00				3.60	3.40		1	36.00	0.059	4.79						
-L-			S-606		0.08	0.08	0.02			0.00				0.00				0.60	0.40	0.20	1	18.00	0.003	0.25						
197+98.63	47.88	Rt.	S-607	DBI-C	33.00	0.00	0.00	0.00	10.00	0.28	6.97	0.06	0.00	0.44	0.00	5.45	1.13	4.32	4.32	0.00	1	18.00	0.303		6.26					
-L-			S-607		0.05	0.05	0.05			0.05				0.00				2.90	2.80		1	18.00	0.150	3.54						
-L-			S-607		0.03	0.11	0.01			0.01				0.00				1.40	1.30	0.10	1	18.00	0.063	1.27						
198+20.00	20.50	Rt.	S-608	P-6	52.00	0.00	0.00	0.00	10.27	0.43	6.91	0.33	0.00	2.25	0.01	6.30	1.98	4.32	4.29	0.03	1	18.00	0.192		4.99					
-L-			S-608		0.27	0.32	0.26			0.26				0.00				2.80	2.70		1	18.00	0.150	2.82						
-L-			S-608		0.04	1.02	0.01			0.01				0.00				1.30	1.20	0.10	1	42.00	0.181	3.45						
198+09.52	31.50	Lt.	S-609	J-6	187.00	0.00	0.81	0.00	18.61	0.90	5.58	5.28	0.00	33.15	0.17	6.11	1.82	4.29	3.95	0.34	1	42.00	0.053		25.20					
-L-			S-609		0.22	4.92	0.21			0.21				3.67				3.90	3.80		1	42.00	0.048	2.62						
-L-			S-609		0.00	1.02	0.00			0.00				0.00				0.40	0.30	0.10	1	42.00	0.127	3.39						
197+99	223.00	Lt.	S-699	MH-7J	235.00	0.00	0.81	0.00	19.51	0.00	5.48	5.28	0.00	32.61	0.09	4.42	0.47	3.80	3.65		1	42.00	0.064		27.54					
-L-			S-610		0.00	4.92	0.00			0.00				3.67				0.30	0.15	0.15	1	42.00	0.048	2.86						
-L-			S-610		0.09	0.43	0.02			0.02				0.00				4.81	4.46	0.35	1	36.00	0.133	3.26						
201+75.00	31.50	Lt.	S-605	P-6	263.00	0.00	0.23	0.00	16.79	1.35	5.81	3.62	0.00	23.02	0.08	5.95	1.14	3.80	3.60		1	36.00	0.076		19.93					
-L-			S-611		0.30	3.60	0.29			0.29				2.00				0.80	0.60	0.20	1	36.00	0.059	2.82						
-L-			S-611		0.03	0.03	0.01			0.01				0.00				4.84	4.81	0.03	1	18.00	0.055	1.19						
201+75.00	20.50	Rt.	S-610	P-6	51.00	0.00	0.00	0.00	10.00	0.43	6.97	0.30	0.00	2.10	0.01	6.17	1.33	3.30	3.20		1	18.00	0.196		5.04					
-L-			S-610		0.31	0.31	0.29			0.29				0.00				1.80	1.70	0.10	1	18.00	0.150	2.85						
-L-			S-612		0.04	0.31	0.01			0.01				0.00				5.05	4.81	0.24	1	36.00	0.105	2.84						
204+12	31.50	Lt.	S-610	P-5	228.00	0.00	0.23	0.00	15.45	1.34	5.99	3.02	0.00	20.08	0.06	5.98	0.93	4.00	3.80		1	36.00	0.088		21.40					
-L-			S-610		0.24	2.99	0.23			0.23				2.00				1.00	0.80	0.20	1	36.00	0.059	3.03						
-L-			S-613		0.04	0.27	0.01			0.01				0.00				5.14	5.05	0.09	1	36.00	0.163	2.66						
204+75.00	31.50	Lt.	S-612	P-6	58.00	0.00	0.23	0.00	15.09	0.36	6.04	2.78	0.00	18.81	0.06	5.80	0.66	4.10	4.00		1	36.00	0.172		30.00					
-L-			S-612		0.36	2.75	0.34			0.34				2.00				1.10	1.00	0.10	1	36.00	0.059	4.24						
-L-			S-612		0.00	0.23	0.00			0.00				2.00				1.10	1.00	0.10	1	36.00	0.059	4.24						

Units: ENGLISH

HGL method: Standard FDOT (Jump HGL to pipe crown).

Automated Storm sewer Analysis & Design (ASAD), copyright 1992-2007, Hiteshew Engineering Systems, Inc. Ph: (352) 383-4191

Portions of ASAD were developed by Kenneth J. Leeming, P.E. at International Engineering Consultants, Inc.

T60v3FDOT.RPT 7/10/2008

FLORIDA DEPARTMENT OF TRANSPORTATION STORM DRAIN TABULATION FORM

Page: 2

Financial Prj Id .
Description: **Basin 600**

County: **Okaloosa County**
Organization **HALFF ASSOCIATES**

Network: **BSN 600**
State Road: **Santa Rosa Blvd**

Designed by **MJA**
Checked by: **MBS**

Date: 6/28/2024
Date: 6/28/2024

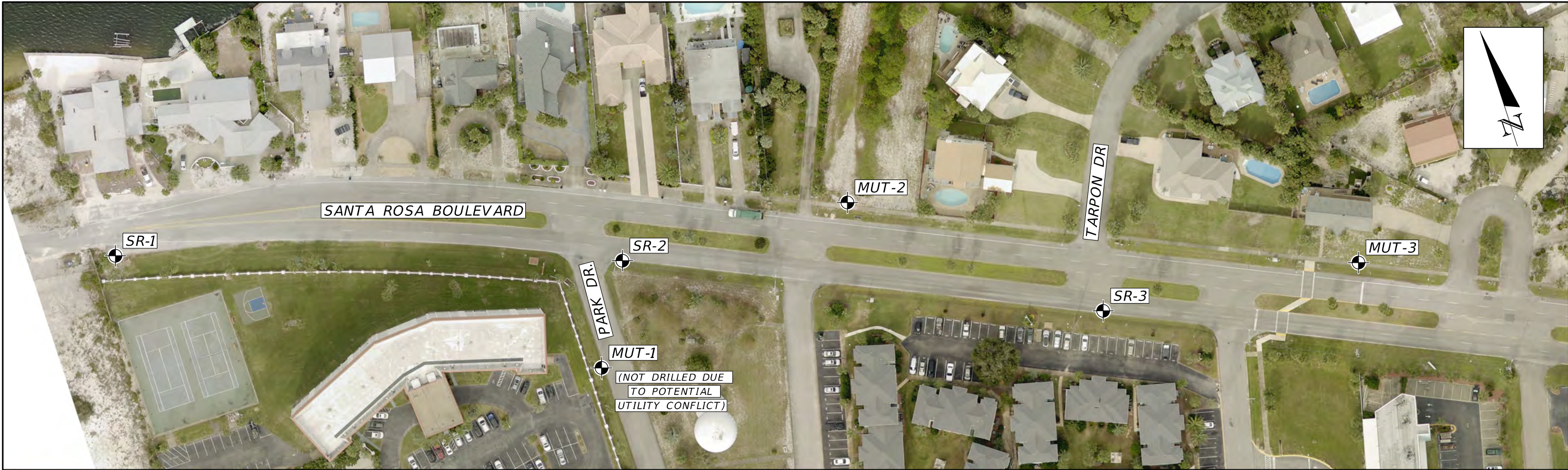
LOCATION OF UPPER END			STR. NO.	TYPE OF STR.	LEN.	AREAS (Ac)		SUB-TOTAL (C*A)	TIME OF CONC	TIME OF FLOW SECT.	INTEN	TOTAL (C*A)	BASE FLOW SUMM BASE	TOTAL FLOW	MINOR LOSS	INLET ELEV.	HGL CLEAR	HYDRAULIC GRADE			#	PIPE SIZE (in.)	SLOPE %	ACTUAL VEL. (fps)	FULL FLOW CAP.	NOTES & REMARKS												
						C= 0.20	C= 0.50											CROWN																				
ALIGNMENT NAME			UPPER															FLOWLINE			R	B																
STATION	DIST	SD	LOWER		(ft.)	INC	TOTAL		(min)	(min)	(in/hr)		(cfs)	(cfs)	(ft.)	(ft.)	(ft.)	(ft.)	(ft.)	(ft.)	S	SPAN	MIN.	(fps)	(cfs)													
-L-			S-614	P-6	52.00	0.08	0.08	0.02	10.00	0.43	6.97	0.30	0.00	2.10	0.01	6.02	0.85	5.17	5.14	0.03	1	18.00	0.055	1.19	4.99													
204+75.00	22.00	Rt.	S-613			0.30	0.30	0.29										0.00	0.00	0.00		0.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	1.20	1.10	0.10	18.00	0.150	2.82	
-L-			S-615	P-5	150.00	0.01	0.15	0.00	14.28	0.81	6.17	2.13	0.00	15.14	0.07	5.99	0.60	5.39	5.14	0.25	1	30.00	0.165	3.08	16.23													
206+50.00	33.00	Lt.	S-613			0.04	2.09	0.04										0.00	0.00	0.00		0.00	0.00	0.00			2.00	1.30	1.10	0.20	1.30	1.10	0.20	30.00	0.133	0.076	3.31	
-L-			S-616	P-6	121.00	0.02	0.14	0.00	13.63	0.66	6.27	2.09	0.00	15.11	0.07	5.66	0.06	5.60	5.39	0.21	1	30.00	0.177	3.08	12.77													
207+65	31.50	Lt.	S-615			0.17	0.23	0.09										0.00	0.00	0.00		0.00	0.00	0.00			2.00	3.90	3.80	0.10	1.40	1.30	0.10	30.00	0.083	0.076	2.60	
-L-			S-617	P-6	52.00	0.04	0.12	0.01	13.19	0.43	6.34	1.12	0.00	9.09	0.03	5.87	0.22	5.65	5.60	0.05	1	30.00	0.093	1.85	19.49													
207+65	20.50	Rt.	S-616			0.06	0.06	0.03										0.00	0.00	0.00		0.00	0.00	0.00			2.00	4.00	3.90	0.10	1.50	1.40	0.10	30.00	0.192	0.076	3.97	
-L-			S-618	MH-7	32.00	0.00	0.00	0.00	10.00	0.21	6.97	0.00	2.00	2.00	0.05	6.40	0.61	5.79	5.65	0.14	1	12.00	0.426	2.55	2.16	Offsite (Verify Invert) Add Baseflow												
207+40	44.00	Rt.	S-617			0.00	0.00	0.00										0.00	0.00	0.00		0.00	0.00	0.00			2.00	1.50	1.40	0.10	1.50	1.40	0.10	12.00	0.257	2.75		
-L-			S-619	DBI-C	68.00	0.00	0.00	0.00	10.00	0.41	6.97	0.69	0.00	4.84	0.06	5.98	0.19	5.79	5.60	0.18	1	18.00	0.266	2.74	4.36													
208+32	32.00	Lt.	S-616			0.00	0.00	0.00										0.00	0.00	0.00		0.00	0.00	0.00			0.00	3.00	2.90	0.10	1.50	1.40	0.10	18.00	0.147	0.150	2.47	
-L-			S-620	P-5	106.00	0.01	0.08	0.00	12.31	0.88	6.50	0.82	0.00	5.35	0.01	5.96	0.28	5.68	5.65	0.02	1	30.00	0.023	1.09	13.65	Check adj project for any flow coiming to us												
208+68.00	31.50	Rt.	S-617			0.00	0.00	0.00										0.00	0.00	0.00		0.00	0.00	0.00			0.00	4.00	3.90	0.10	1.50	1.40	0.10	30.00	0.094	0.076	2.78	
-L-			S-621	P-6	62.00	0.01	0.01	0.00	10.00	0.52	6.97	0.26	0.00	1.80	0.00	5.91	0.18	5.73	5.72	0.01	1	24.00	0.010	0.57	12.05													
210+86.66	31.50	Lt.	S-622			0.27	0.27	0.26										0.00	0.00	0.00		0.00	0.00	0.00			0.00	1.90	1.75	0.15	1.90	1.75	0.15	24.00	0.242	0.102	3.84	
-L-			S-622	P-6	215.00	0.06	0.07	0.01	10.52	1.79	6.86	0.46	0.00	3.16	0.01	5.91	0.19	5.72	5.68	0.04	1	24.00	0.020	1.01	8.36													
210+81.97	31.50	Rt.	S-620			0.00	0.00	0.00										0.00	0.00	0.00		0.00	0.00	0.00			0.00	3.75	3.50	0.25	1.75	1.50	0.25	24.00	0.116	0.102	2.66	

Units: **ENGLISH**

HGL method: **Standard FDOT (Jump HGL to pipe crown).**

Automated Storm sewer Analysis & Design (ASAD), copyright 1992-2007, Hiteshew Engineering Systems, Inc. Ph: (352) 383-4191
Portions of ASAD were developed by Kenneth J. Leeming, P.E. at International Engineering Consultants, Inc.

T60v3FDOT.RPT 7/10/2008

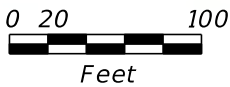


LEGEND HAND AUGER SOIL BORING	020100 Feet	PREPARED: A. BOWEN, E.I. CHECKED: K. SWEENEY, P.E. REVISED: A. BOWEN, E.I. ENGINEER: C. DUNKEBERGER, P.E.	ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC. 3676 HARTSFIELD ROAD TALLAHASSEE, FLORIDA 32303 OFFICE : (850) 386-1253	SOIL BORING LOCATION MAP ROADWAY SOIL SURVEY SANTA ROSA BOULEVARD IMPROVEMENTS OKALOOSA COUNTY, FLORIDA SCALE: AS SHOWN DATE: MAY 2023 PROJ. NO.: 18-158-23-01/02 FIGURE NO.: 3A
--	---	---	--	--



LEGEND

HAND AUGER SOIL BORING

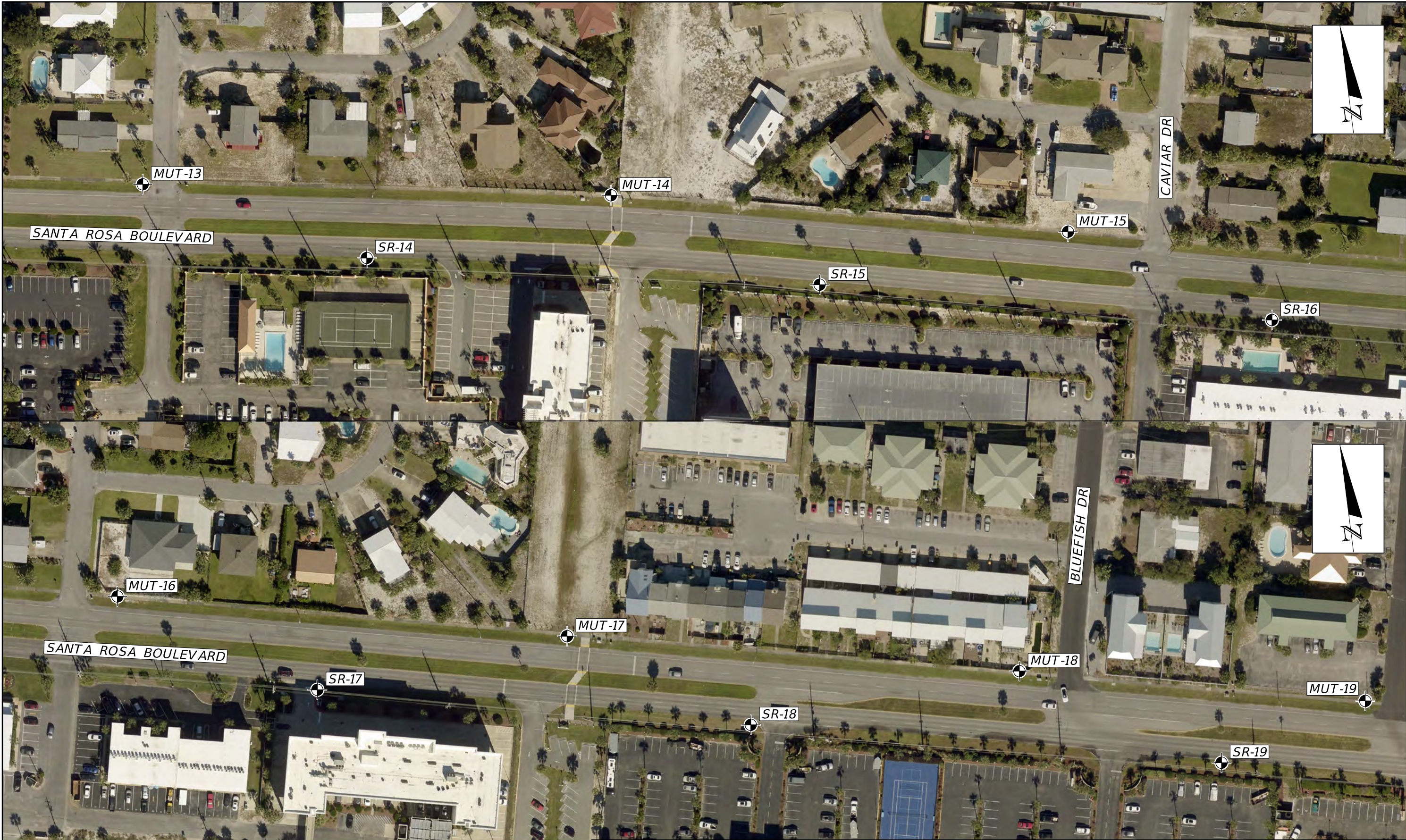


PREPARED:	A. BOWEN, E.I.
CHECKED:	K. SWEENEY, P.E.
REVISED:	A. BOWEN, E.I.
ENGINEER:	C. DUNKEBERGER, P.E.

ENVIRONMENTAL AND GEOTECHNICAL
SPECIALISTS, INC.

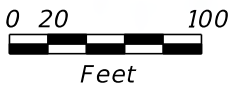
3676 HARTSFIELD ROAD
TALLAHASSEE, FLORIDA 32303
OFFICE : (850) 386-1253

SOIL BORING LOCATION MAP ROADWAY SOIL SURVEY SANTA ROSA BOULEVARD IMPROVEMENTS OKALOOSA COUNTY, FLORIDA	
SCALE: AS SHOWN	DATE: MAY 2023
PROJ. NO.: 18-158-23-01/02	FIGURE NO.: 3B



LEGEND

HAND AUGER SOIL BORING



PREPARED:	A. BOWEN, E.I.
CHECKED:	K. SWEENEY, P.E.
REVISED:	A. BOWEN, E.I.
ENGINEER:	C. DUNKEBERGER, P.E.

ENVIRONMENTAL AND GEOTECHNICAL
SPECIALISTS, INC.

3676 HARTSFIELD ROAD
TALLAHASSEE, FLORIDA 32303
OFFICE : (850) 386-1253

SOIL BORING LOCATION MAP ROADWAY SOIL SURVEY SANTA ROSA BOULEVARD IMPROVEMENTS OKALOOSA COUNTY, FLORIDA			
SCALE:	AS SHOWN	DATE:	MAY 2023
PROJ. NO.:	18-158-23-01/02	FIGURE NO.:	3C



LEGEND HAND AUGER SOIL BORING		020100 Feet		PREPARED: A. BOWEN, E.I. CHECKED: K. SWEENEY, P.E. REVISED: A. BOWEN, E.I. ENGINEER: C. DUNKEBERGER, P.E.		ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC. 3676 HARTSFIELD ROAD TALLAHASSEE, FLORIDA 32303 OFFICE : (850) 386-1253		SOIL BORING LOCATION MAP ROADWAY SOIL SURVEY SANTA ROSA BOULEVARD IMPROVEMENTS OKALOOSA COUNTY, FLORIDA	
SCALE: AS SHOWN		DATE: MAY 2023		PROJ. NO.: 18-158-23-01/02		FIGURE NO.: 3D			

APPENDIX A
GEOTECHNICAL PLAN SHEET

DATE OF SURVEY: MAY 2023

SURVEY MADE BY: ENVIRONMENTAL AND GEOTECHNICAL
SPECIALISTS, INC.

SUBMITTED BY: CRAIG DUNKELBERGER, P.E.

SANTA ROSA BOULEVARD IMPROVEMENTS
REPORT OF TESTS

DISTRICT: 3

ROAD NO.: --

COUNTY: OKALOOSA

ORGANIC CONTENT				SIEVE ANALYSIS RESULTS PERCENT PASS (%)						ATTERBERG LIMITS (%)				DESCRIPTION	
STRATUM NO.	NO. OF TESTS	% ORGANIC	MOISTURE CONTENT	NO. OF TESTS	10 MESH	40 MESH	60 MESH	100 MESH	200 MESH	NO. OF TESTS	LIQUID LIMIT	PLASTIC INDEX	ASSHTO GROUP		
1	--	--	--	44	81-100	29-90	10-36	1-9	1-7	--	--	--	A-1-b, A-3	GRAY, BROWN	MEDIUM SAND TO FINE SAND

STRATA NOTES

1. STRATA BOUNDARIES ARE APPROXIMATE AND REPRESENT SOIL STRATA AT EACH BORING ONLY. ANY SUBSOIL CONNECTING LINES SHOWN ARE FOR ESTIMATING ONLY AND DO NOT INDICATE ACTUAL STRATUM LIMITS. SUBSURFACE VARIATIONS BETWEEN BORINGS SHOULD BE ANTICIPATED.
2. STRATA DESCRIPTIONS ARE BASED ON FDOT STANDARD PLANS INDEX 120-001.
3. STRATUM 1 REPRESENTS A "SELECT" MATERIAL.

REVISIONS						SEAL:	Environmental & Geotechnical Specialists, Inc. EGS 3676 HARTSFIELD ROAD TALLAHASSEE, FLORIDA 32303 OFFICE (850) 386-1253	HALFF ASSOCIATES		REPORT OF TESTS	SHEET NO.
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION			PROJECT TITLE			--
								SANTA ROSA BOULEVARD IMPROVEMENTS			
						C. DUNKELBERGER, P.E. P.E. NO.: 49932					

LEGEND

LABORATORY TESTING RESULTS

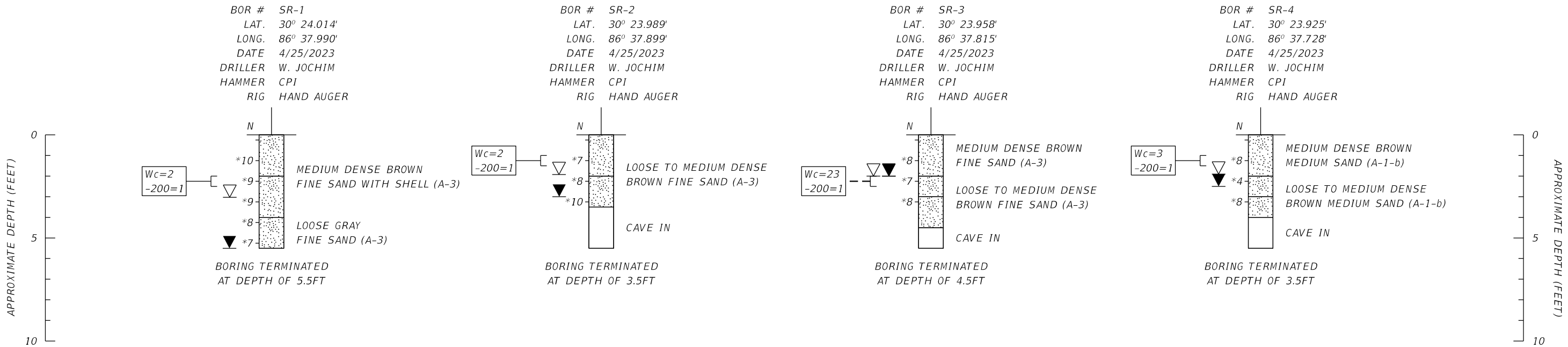
N-VALUE EQUIVALENT (NOTE 3)	*N
ESTIMATED "NORMAL" SEASONAL HIGH GROUNDWATER TABLE	
MEASURED GROUNDWATER	
GROUNDWATER NOT ENCOUNTERED	GNE
WATER CONTENT (%)	Wc=
-200 SIEVE	-200=
MEDIUM TO FINE SAND (A-1-b, A-3)	
NO RECOVERY (CAVE IN)	
ASSHTO SOIL CLASSIFICATION GROUP SYMBOL	(A-3)

NOTES

- NUMBERS LEFT OF BORING INDICATE EQUIVALENT STANDARD PENETRATION TEST (SPT) N-VALUES.
- N-VALUES DENOTED WITH AN ASTERISK (*) INDICATE EQUIVALENT SPT N-VALUES CONVERTED FROM CONE PENETROMETER INDEX (CPI) VALUES.
- GNE INDICATES "GROUNDWATER NOT ENCOUNTERED" WITHIN THE BOREHOLE AT TIME OF DRILLING.
- MEASURED GROUNDWATER LEVEL SHOWN IS THE GROUNDWATER LEVEL ENCOUNTERED DURING THE SUBSURFACE INVESTIGATION. GROUNDWATER LEVEL FLUCTUATIONS SHOULD BE ANTICIPATED.
- SOIL DESCRIPTIONS, TEST DATA, AND STANDARD PENETRATION VALUES SHOWN ARE FOR THE SOIL BORING ONLY AND MAY NOT APPLY TO ANY OTHER LOCATIONS EXCEPT AT THE LOCATIONS OF THE SOIL BORING. EXTRAPOLATION OF THE SOIL DATA TO OTHER LOCATIONS IS THE SOLE RESPONSIBILITY OF THE PERSON PERFORMING THE EXTRAPOLATION.

AUTOMATIC HAMMER			
GRANULAR MATERIALS RELATIVE DENSITY	SPT (BLOWS/12 IN.)	SILTS AND CLAYS CONSISTENCY	SPT (BLOWS/12 IN.)
VERY LOOSE	LESS THAN 3	VERY SOFT	LESS THAN 1
LOOSE	3 - 8	SOFT	1 - 3
MEDIUM DENSE	8 - 24	FIRM	3 - 6
DENSE	24 - 40	STIFF	6 - 12
VERY DENSE	GREATER THAN 40	VERY STIFF HARD	12 - 24 GREATER THAN 24

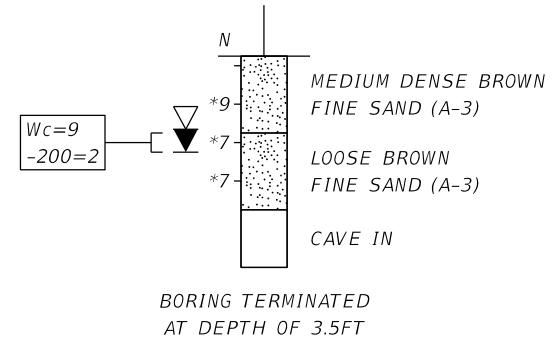
ROADWAY SOIL BORINGS



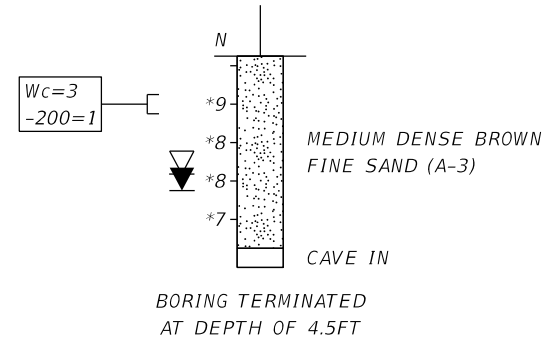
REVISIONS						SEAL:	Environmental & Geotechnical Specialists, Inc.	HALFF ASSOCIATES	REPORT OF SOIL BORINGS	SHEET NO.
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION					
						C. DUNKELBERGER, P.E.	EGS 3676 HARTSFIELD ROAD TALLAHASSEE, FLORIDA 32303 OFFICE (850) 386-1253	SANTA ROSA BOULEVARD IMPROVEMENTS		--
						P.E. NO.: 49932				

ROADWAY SOIL BORINGS

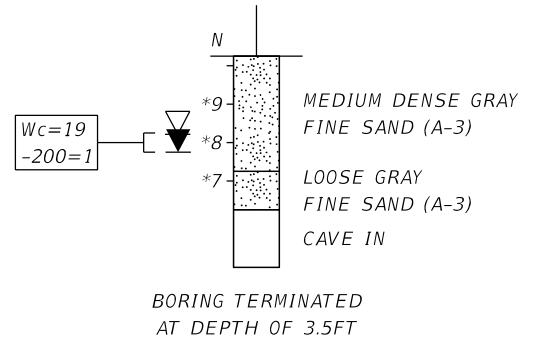
BOR # SR-5
LAT. 30° 23.900'
LONG. 86° 37.639'
DATE 4/25/2023
DRILLER W. JOCHIM
HAMMER CPI
RIG HAND AUGER



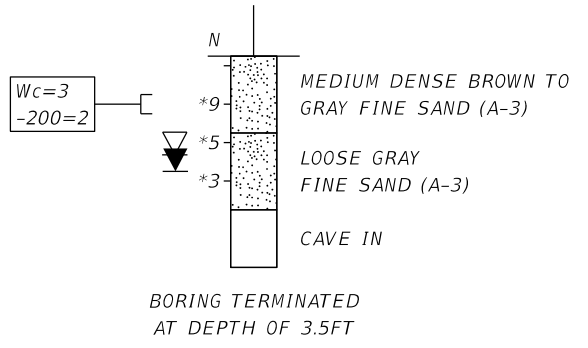
BOR # SR-6
LAT. 30° 23.881'
LONG. 86° 37.544'
DATE 4/25/2023
DRILLER W. JOCHIM
HAMMER CPI
RIG HAND AUGER



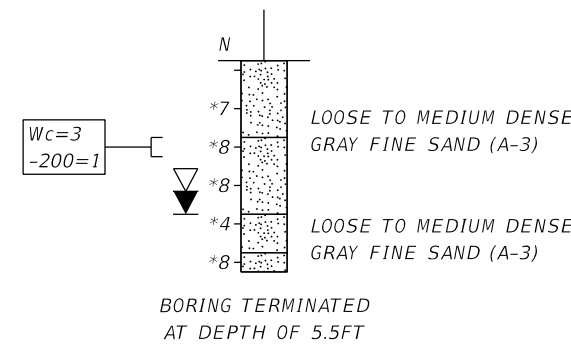
BOR # SR-7
LAT. 30° 23.876'
LONG. 86° 37.444'
DATE 4/25/2023
DRILLER W. JOCHIM
HAMMER CPI
RIG HAND AUGER



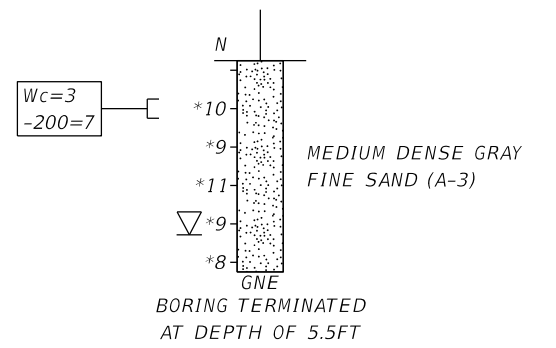
BOR # SR-8
LAT. 30° 23.871'
LONG. 86° 37.355'
DATE 4/25/2023
DRILLER W. JOCHIM
HAMMER CPI
RIG HAND AUGER



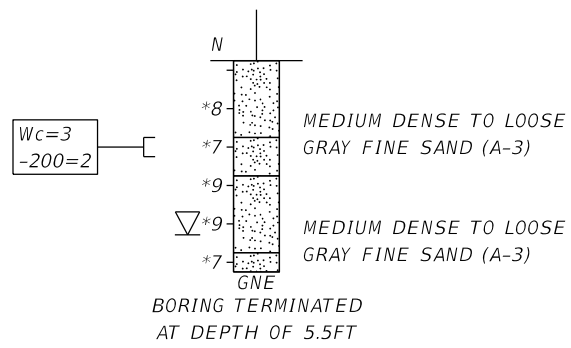
BOR # SR-9
LAT. 30° 23.865'
LONG. 86° 37.260'
DATE 4/25/2023
DRILLER W. JOCHIM
HAMMER CPI
RIG HAND AUGER



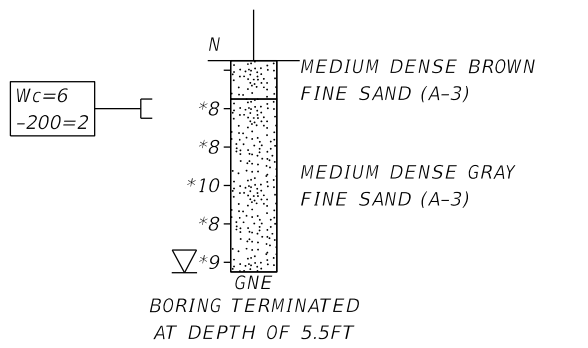
BOR # SR-10
LAT. 30° 23.59'
LONG. 86° 37.165'
DATE 4/25/2023
DRILLER W. JOCHIM
HAMMER CPI
RIG HAND AUGER



BOR # SR-11
LAT. 30° 23.854'
LONG. 86° 37.060'
DATE 4/25/2023
DRILLER W. JOCHIM
HAMMER CPI
RIG HAND AUGER



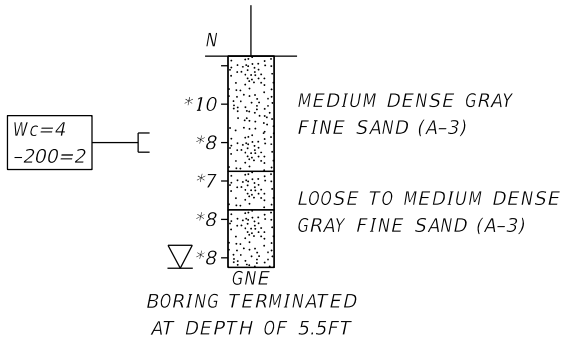
BOR # SR-12
LAT. 30° 23.849'
LONG. 86° 36.975'
DATE 4/25/2023
DRILLER W. JOCHIM
HAMMER CPI
RIG HAND AUGER



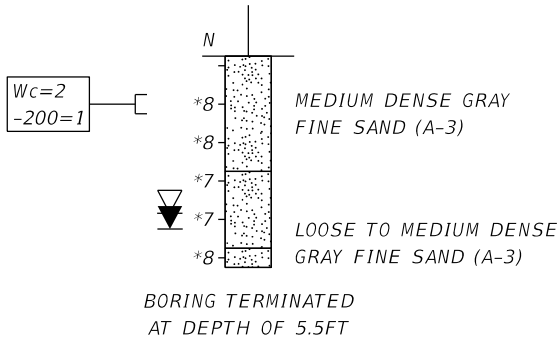
REVISIONS						SEAL:	Environmental & Geotechnical Specialists, Inc.	HALFF ASSOCIATES	REPORT OF SOIL BORINGS	SHEET NO.
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION					
						C. DUNKELBERGER, P.E.	3676 HARTSFIELD ROAD TALLAHASSEE, FLORIDA 32303 OFFICE (850) 386-1253	PROJECT TITLE SANTA ROSA BOULEVARD IMPROVEMENTS		--
						P.E. NO.: 49932				

ROADWAY SOIL BORINGS

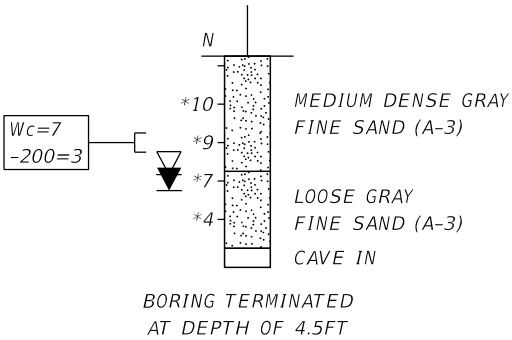
BOR # SR-13
LAT. 30° 23.843'
LONG. 86° 36.879'
DATE 4/25/2023
DRILLER W. JOCHIM
HAMMER CPI
RIG HAND AUGER



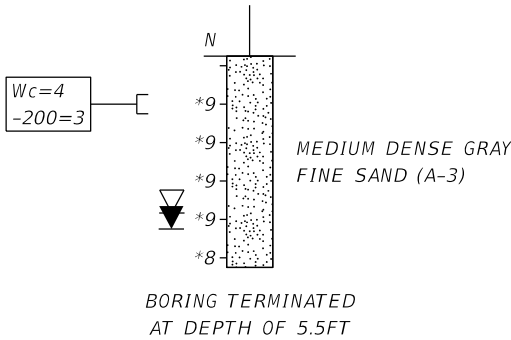
BOR # SR-14
LAT. 30° 23.838'
LONG. 86° 36.786'
DATE 4/25/2023
DRILLER W. JOCHIM
HAMMER CPI
RIG HAND AUGER



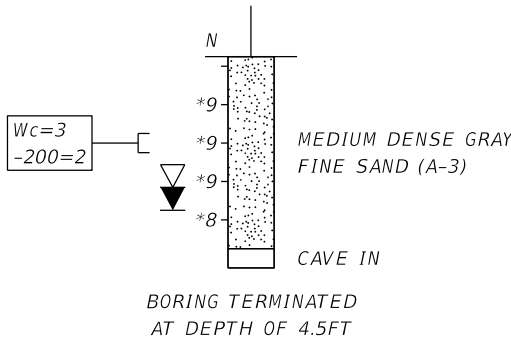
BOR # SR-15
LAT. 30° 23.830'
LONG. 86° 36.691'
DATE 4/25/2023
DRILLER W. JOCHIM
HAMMER CPI
RIG HAND AUGER



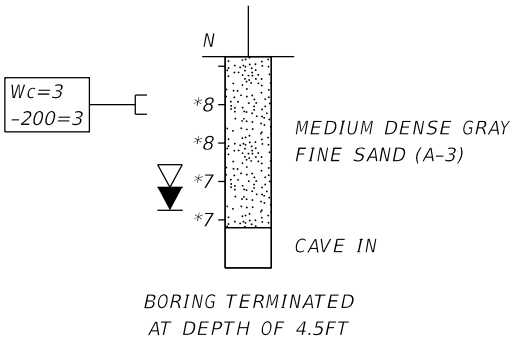
BOR # SR-16
LAT. 30° 23.821'
LONG. 86° 36.596'
DATE 4/25/2023
DRILLER W. JOCHIM
HAMMER CPI
RIG HAND AUGER



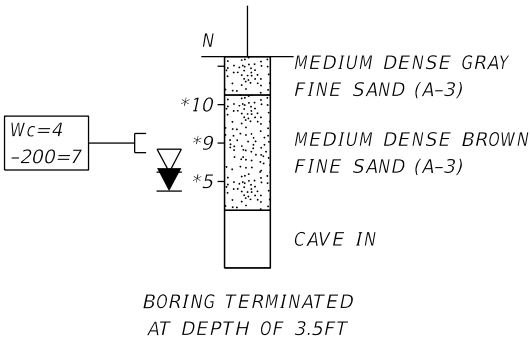
BOR # SR-17
LAT. 30° 23.810'
LONG. 86° 36.502'
DATE 4/25/2023
DRILLER W. JOCHIM
HAMMER CPI
RIG HAND AUGER



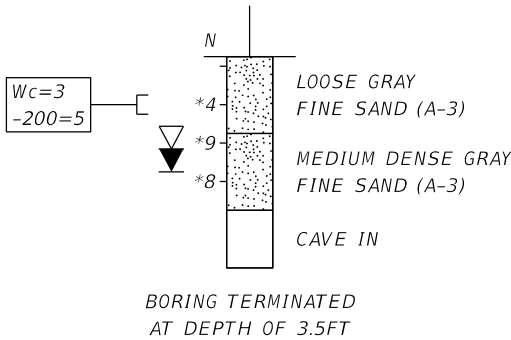
BOR # SR-18
LAT. 30° 23.800'
LONG. 86° 36.412'
DATE 4/25/2023
DRILLER W. JOCHIM
HAMMER CPI
RIG HAND AUGER



BOR # SR-19
LAT. 30° 23.790'
LONG. 86° 36.313'
DATE 4/25/2023
DRILLER W. JOCHIM
HAMMER CPI
RIG HAND AUGER

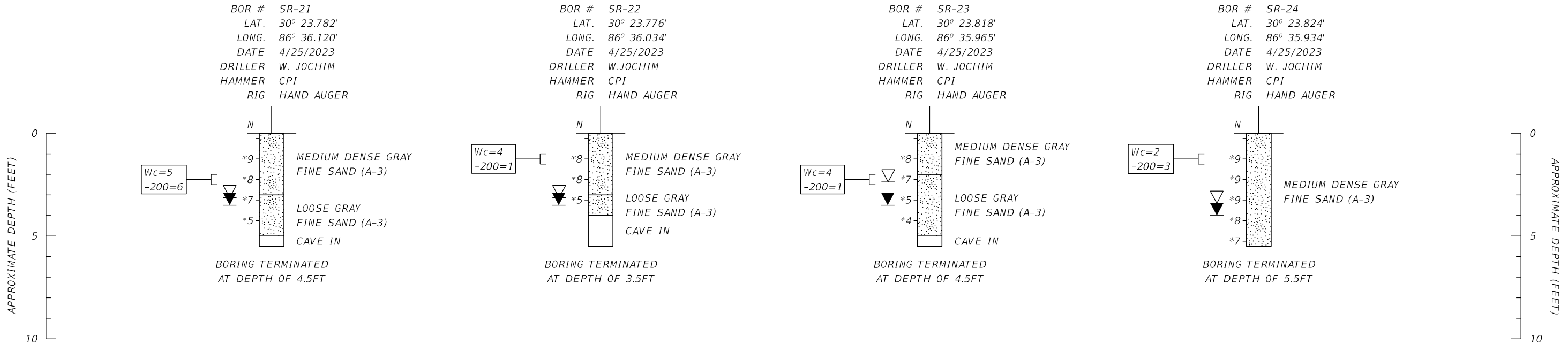


BOR # SR-20
LAT. 30° 23.780'
LONG. 86° 36.218'
DATE 4/25/2023
DRILLER W. JOCHIM
HAMMER CPI
RIG HAND AUGER

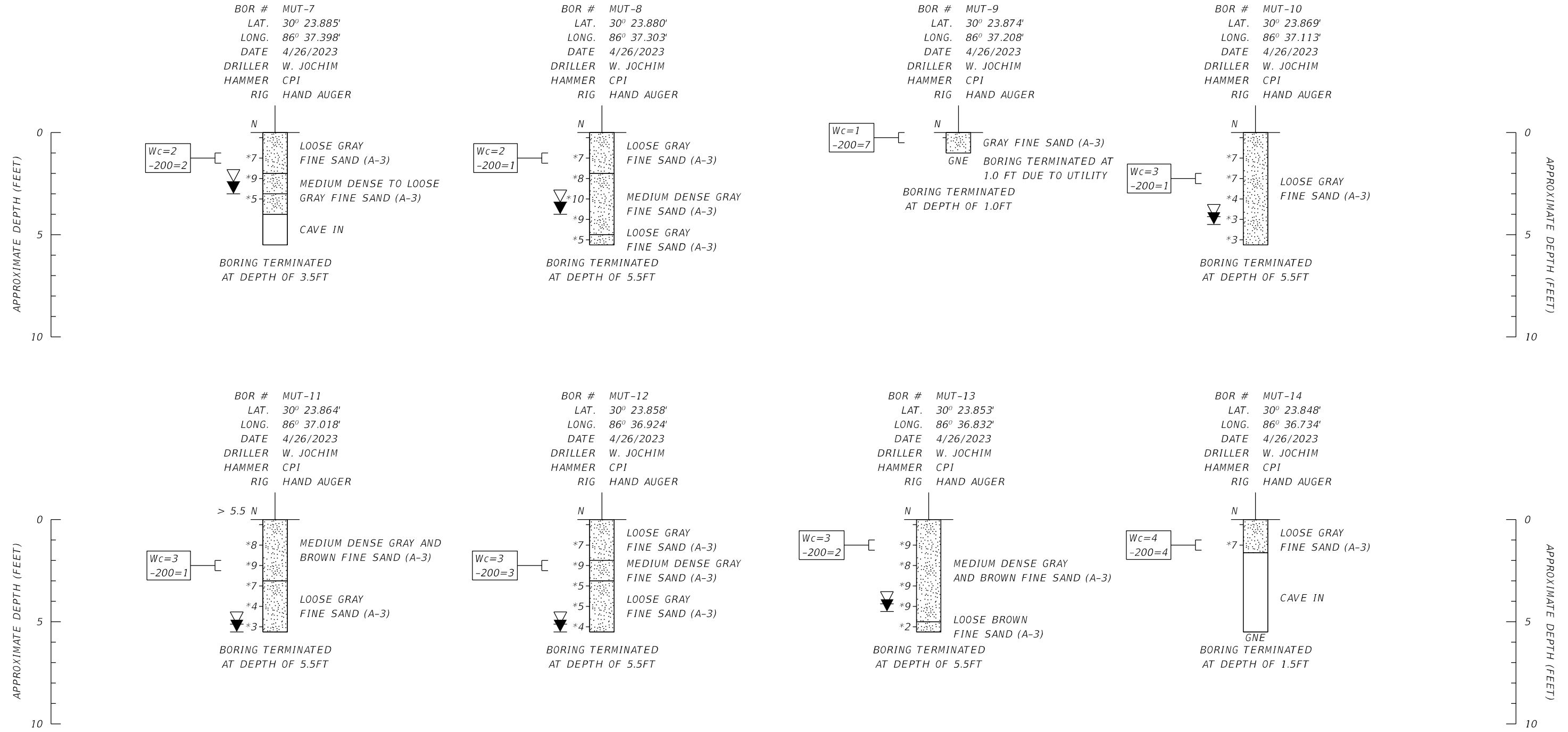


REVISIONS						SEAL:	Environmental & Geotechnical Specialists, Inc.	HALFF ASSOCIATES	REPORT OF SOIL BORINGS	SHEET NO.
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION					
						C. DUNKELBERGER, P.E.	EGS	SANTA ROSA BOULEVARD IMPROVEMENTS		--
						P.E. NO.: 49932	3676 HARTSFIELD ROAD TALLAHASSEE, FLORIDA 32303 OFFICE (850) 386-1253			

ROADWAY SOIL BORINGS

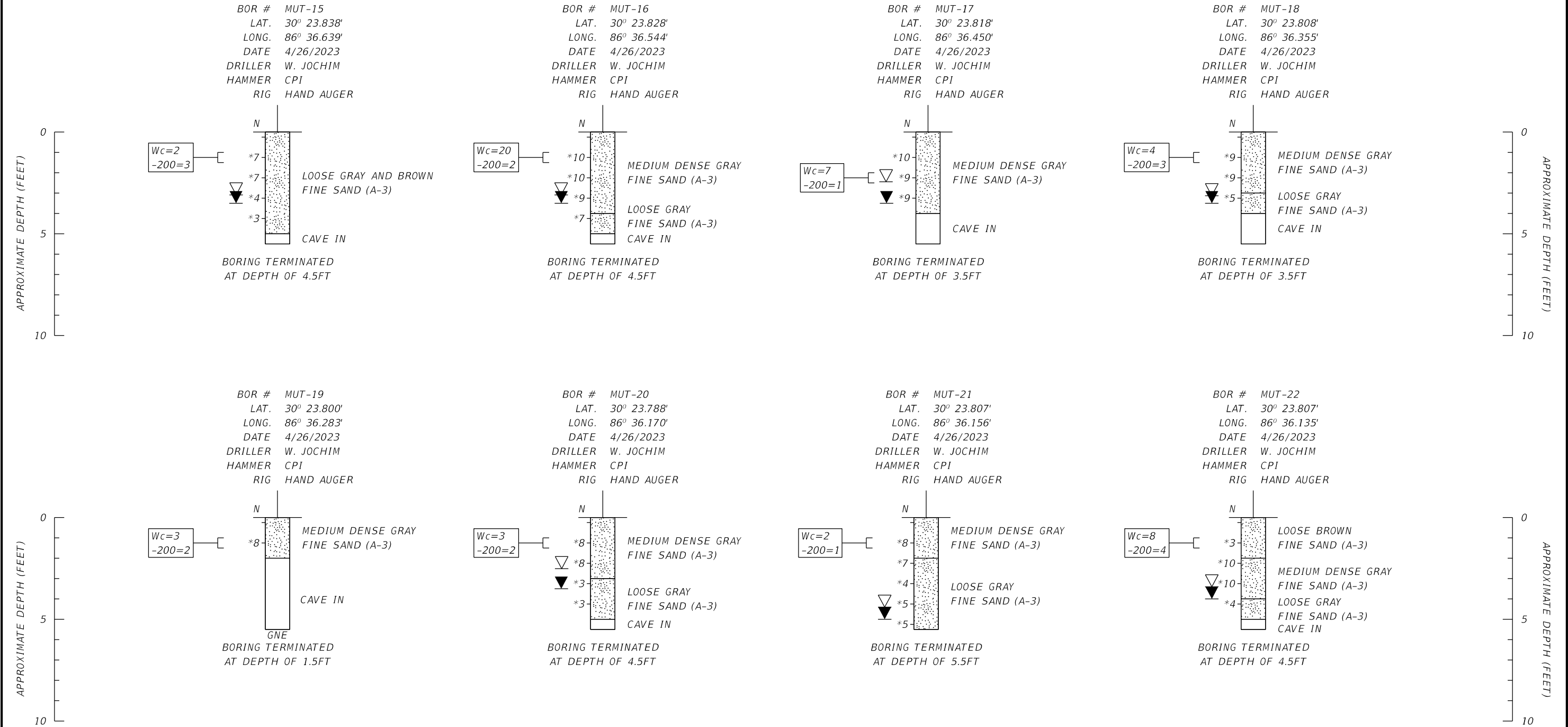


MULTI-USE PATH SOIL BORINGS



REVISIONS						SEAL:	Environmental & Geotechnical Specialists, Inc.	HALFF ASSOCIATES	REPORT OF SOIL BORINGS	SHEET NO.
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION					
						C. DUNKELBERGER, P.E.	3676 HARTSFIELD ROAD TALLAHASSEE, FLORIDA 32303 OFFICE (850) 386-1253	PROJECT TITLE SANTA ROSA BOULEVARD IMPROVEMENTS		--
						P.E. NO.: 49932				

MULTI-USE PATH SOIL BORINGS



REVISIONS						SEAL:	Environmental & Geotechnical Specialists, Inc.	HALFF ASSOCIATES	REPORT OF SOIL BORINGS	SHEET NO.
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION					
						C. DUNKELBERGER, P.E.	EGS 3676 HARTSFIELD ROAD TALLAHASSEE, FLORIDA 32303 OFFICE (850) 386-1253	PROJECT TITLE SANTA ROSA BOULEVARD IMPROVEMENTS		--
						P.E. NO.: 49932				



Meeting Notes: Northwest Florida Water Management District Pre-Application Discussion
Project: Santa Rosa Boulevard Roadway Improvements – Okaloosa County, Florida
Date: Wednesday, May 22, 2024
Time: 1:00 PM (Central Time)

Location: Virtual (Microsoft Teams)

Attendees:	<u>NWFWMD</u>	<u>Okaloosa County</u>	<u>Halff</u>
	Duc Le	Carisse LeJeune	Murray Santoro
	Aaron Waits		Mike Almeida
	Courtney Triplett		Richard Davenport
	Joel Ealum		

Staff Introductions and Project Discussion:

- Existing Conditions/Observations
 - Eglin AFB to East of Amberjack Drive: Four total travel (thru) lanes, two travel (thru) lanes in each direction (divided) with miscellaneous turn lanes, grassed medians, and paved crossovers
 - East of Amberjack Drive to End of Project (Fire Department): Four total travel (thru) lanes, two travel (thru) lanes in each direction (undivided) with paved median
 - Concrete sidewalk along north side of Santa Rosa Blvd
 - No formal treatment areas
 - There are 7 existing outfalls located on the north side of Santa Rosa Blvd. where runoff enters before traveling over several hundred feet across sandy soils and outfalling into the Santa Rosa Sound to the north
 - Existing soils in the area consist of Type A Sandy Soils. The percolation rates obtained from testing are 52.9 in/hr.
- Proposed Roadway/Pedestrian Improvements
 - Reduction of travel lanes for majority of project limits (*reduced total impervious area by 2.37 AC*)
 - Eglin AFB to Park Drive: One travel lane in each direction with concrete ribbon curb and roadside swales, 4' sidewalk on north side
 - Roundabout at Park Drive: Adjacent to County-owned property
 - Park Drive to 1st Beach Park: One travel lane in each direction with center two-way left turn lane, concrete ribbon curb and roadside swales, 14' Multi-Use Trail on north side
 - 1st Beach Park to East of Amberjack Drive: Two westbound travel lanes and one eastbound travel lane with center two-way left turn lane/paved median, and Type F curb & gutter, 5' sidewalk on north side, 14' Multi-Use Trail on south side
 - East of Amberjack Drive to End of Project (Fire Department): Match existing configuration with two travel lanes in each direction (undivided) and paved median, proposed 5' sidewalk on north side, 14' Multi-Use Trail on south side
 - Pedestrian mobility and safety improvements
 - Midblock crossings
 - 14' Multi-Use Trail
 - Significant increase in landscaping and vegetation
- Proposed Drainage/Storm Sewer Conveyance/Roadside Swales
 - Proposed swales will have Ditch Bottom Inlets, with the grate elevation placed ~6" above the swale bottom
 - Proposed swales will provide some retention and treatment (around 1 ac-ft) for the stormwater runoff via infiltration.
 - Infiltration rate: the maximum value of 20 in/hr will be used per the handbook
 - No wetlands or other surface waters (OSWs) within the project corridor
 - There are 7 existing outfalls located on the north side of Santa Rosa Blvd that will be maintained in the proposed condition
 - Endangered species impacts are not anticipated
- Overall Goals of this Project
 - Increased pedestrian mobility and safety
 - Reduction in travel lanes and significant reduction in impervious area
 - Formal storm sewer conveyance and treatment system
 - No impacts to existing wetlands or other surface waters (OSWs)

Mike Almeida

From: Duc Le <Duc.Le@nwfwater.com>
Sent: Thursday, June 6, 2024 1:37 PM
To: Richard Davenport
Cc: Dana Palermo; Carisse LeJeune; Mark Llewellyn, Jr.; Murray Santoro; Mike Almeida; Aaron Waits; Courtney Triplett; Joel Ealum
Subject: Re: Pre-App: Roadway project in Okaloosa County
Attachments: 20240513_Santa Rosa Blvd_Rendering_72X36 (Full Project Limits).pdf; 20240522_Santa Rosa Blvd Pre-Application Meeting.pdf

Good Afternoon Richard,

Thank you for your patience. We wanted to make sure we discussed this project again with our team to ensure we all come to a common understanding of what is most appropriate for this proposed development in Okaloosa County moving forward with permitting. Unfortunately, the District was not able to fit all the proposed activities under an exemption or General Permit due to specific conditions of this project.

Though we understand this development is mainly a roadway project that does contain some minor roadway safety improvements, due to the size, location, and scope of the project area, we are recommending that this development be permitted under an Individual Environmental Resource Permit (ERP). This project does appear to provide for a net reduction in impervious surfaces as well as provide a benefit to water quality and water quantity within water resources in this area. We will not be requiring the standard stormwater design criteria under an Individual ERP for this project like we normally would. This project will just need to demonstrate that this project meets the conditions of issuance in accordance with Subsection 62-330.301(1), F.A.C., in particular demonstrating that this development will not adversely affect the water quality and water quantity of the receiving waters. The following items were discussed regarding the stormwater design of this project:

1. Since less impervious surfaces are proposed, it is understood that less pollutants will be generated in post-development. In order to demonstrate/quantify that less pollutants will discharge offsite, a pollutant loading analysis is recommended to show that the pollutant loading in post-development is less than pre-development conditions. The District encourages the use of BMP Trains, a user-friendly software that can assist in determining the pre- and post-development pollutant loading of this development.
2. It appears that onsite treatment will be proposed for this development. The District typically sees treatment volume capacity for proposed systems be provided for the first 1.00 inch of rainfall over the contributing area. The geotechnical information discussed indicated sandy soils with favorable infiltration rates which could support a dry retention system as pretreatment before stormwater runoff discharges downstream. [Section 5.2, ERP A.H. Vol. II; Part 1.1.b, Section E, Form 62-330.060(1)]

3. Given that less impervious surfaces are proposed, this would typically demonstrate water quantity has been reduced for this site in post-development and would usually not require attenuation onsite to meet the conditions of issuance. But since the majority of the project site will still be more than 50% impervious surfaces, the attenuation of the 2-year / 24-hour storm event utilizing SCS Method Rainfall Distribution III will be required in accordance with Section 4.5.1 of ERP Applicant's Handbook Volume II.
4. It was determined that stormwater runoff from the development will eventually discharge into the Gulf Islands National Seashore, an Outstanding Florida Water. Upon investigation of the outfall areas along this project site, it does not appear that the existing drainage structures along Santa Rosa Boulevard will directly discharge into this waterbody. There was one except with the drainage inlet adjacent to Stewby's Seafood Shanty restaurant (235 Santa Rosa Blvd) where we were not able to be determined if the structure routes to a headwall or an outfall pipe further downstream before discharging to the adjacent waterbody. From aerials, it does not appear an outfall pipe is located out along the waterbody. The District would need clarification that all these drainage structures do not directly discharge to the OFW. If this can be demonstrated, this project would not be required to meet the design criteria under Subsection 2.0.2 of ERP Applicant's Handbook Volume II.
5. The application processing fee would be dependent of the project site's limits of disturbance (total area disturbed during construction). The fee schedule is as follows (\$100 discount may be applied to fee if submitting through ePermit Portal; fees below do not show this discount):
 - a. Less than 10 acres: \$420
 - b. 10- less than 40 acres : \$1500
 - c. 40- less 100 acres: \$5000
 - d. 100-640 acres: \$9000
- 6.
7. The typical documents to be submitted under and Individual ERP:
 - a. Section A of Application Form 62-330.060(1) with Part 4 executed by the Applicant (the entity that the permit will be issued to and who will be doing the work)
 - b. A set of construction plans (signed and sealed)
 - c. Stormwater management report with detailed project narrative and stormwater calculations (signed and sealed)
 - d. Geotechnical report (signed and sealed)
 - e. Location Map of Project site's limits of disturbance
 - f. Pre- and Post-Development Drainage Basin Map
 - g. Operation & Maintenance Plan for proposed stormwater management system(s)

If there is something that we missed in this email or if you have any additional questions/comments/concerns, please let us know and we can set up a time to discuss.