BLACK RIFLE COFFEE
#22-85

Planning & Zoning Board Meeting – March 20, 2023

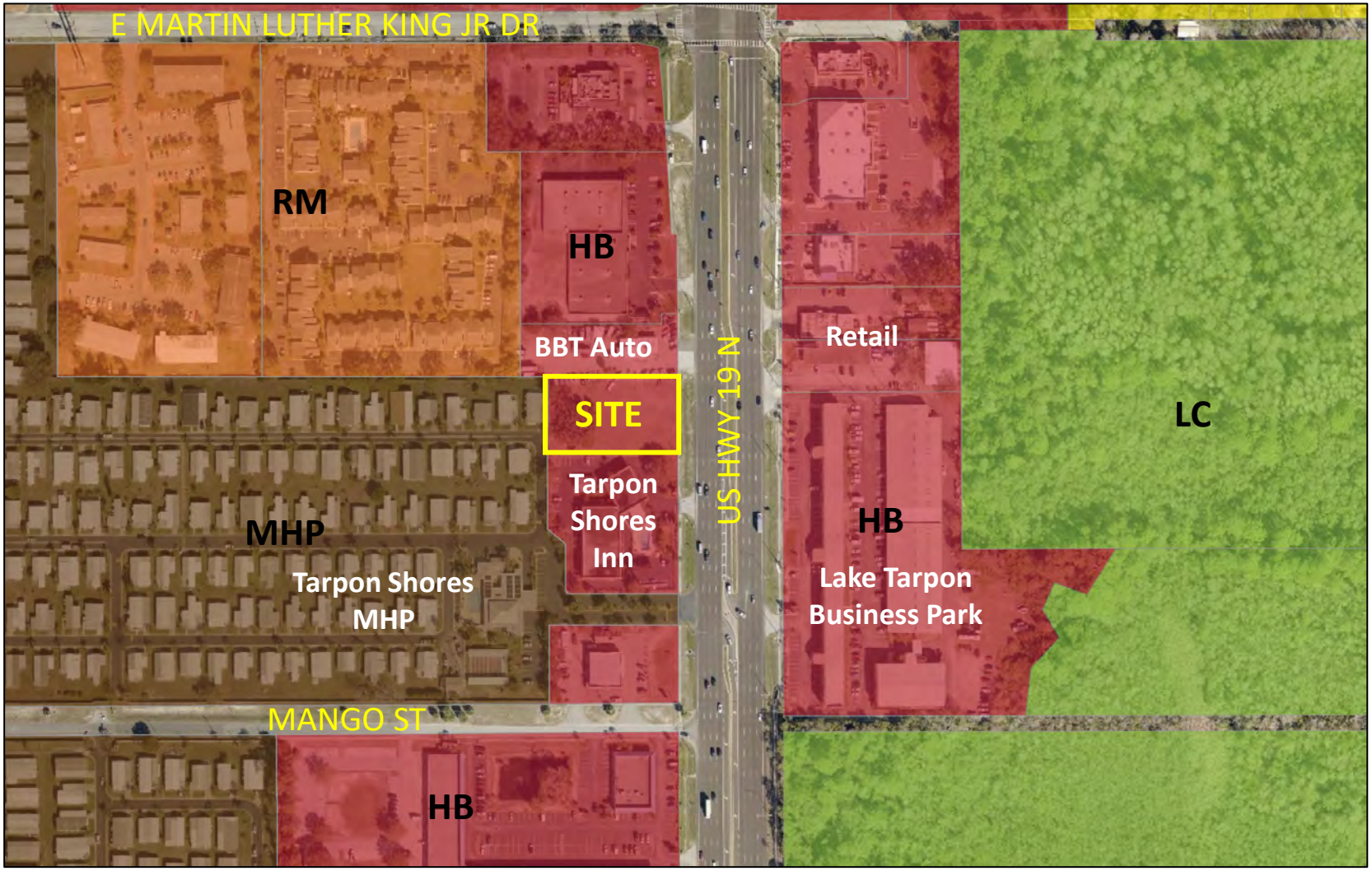
Board of Commissioners Meeting – March 28, 2023

REQUEST

- **#22-85 – Site Plan Approval – Black Rifle Coffee**
  - **Resolution #2023-13**
  - Property Size = +/- 0.82 acres
  - Current Land Use: CG (Commercial General)
  - Current Zoning: HB (Highway Business)
  - Proposed Development:
    - Drive-Through Coffee Shop (2,618 square feet)
    - Drive-Through Lane (11 stacking spaces)
    - Outdoor Seating Area
    - Parking Lot (39 Spaces)
    - Landscaping
    - Pedestrian Connections (Existing sidewalk / Adjacent Properties)

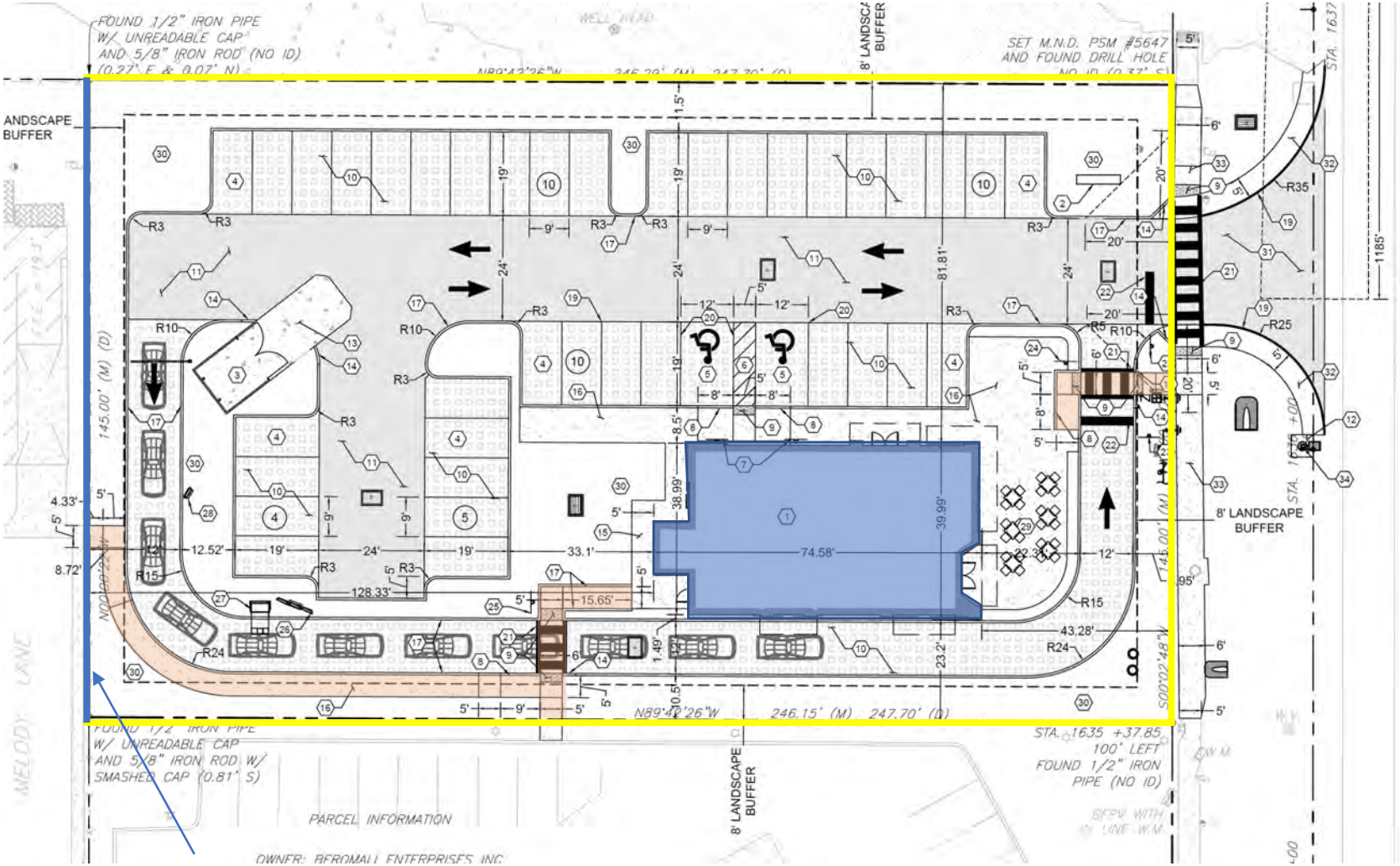
- **Location:** 40390 US Highway 19 N.
- **Applicant/Owner:** Pursuit Development / Jean F. & Gilbert Hakim

LOCATION & CONTEXT



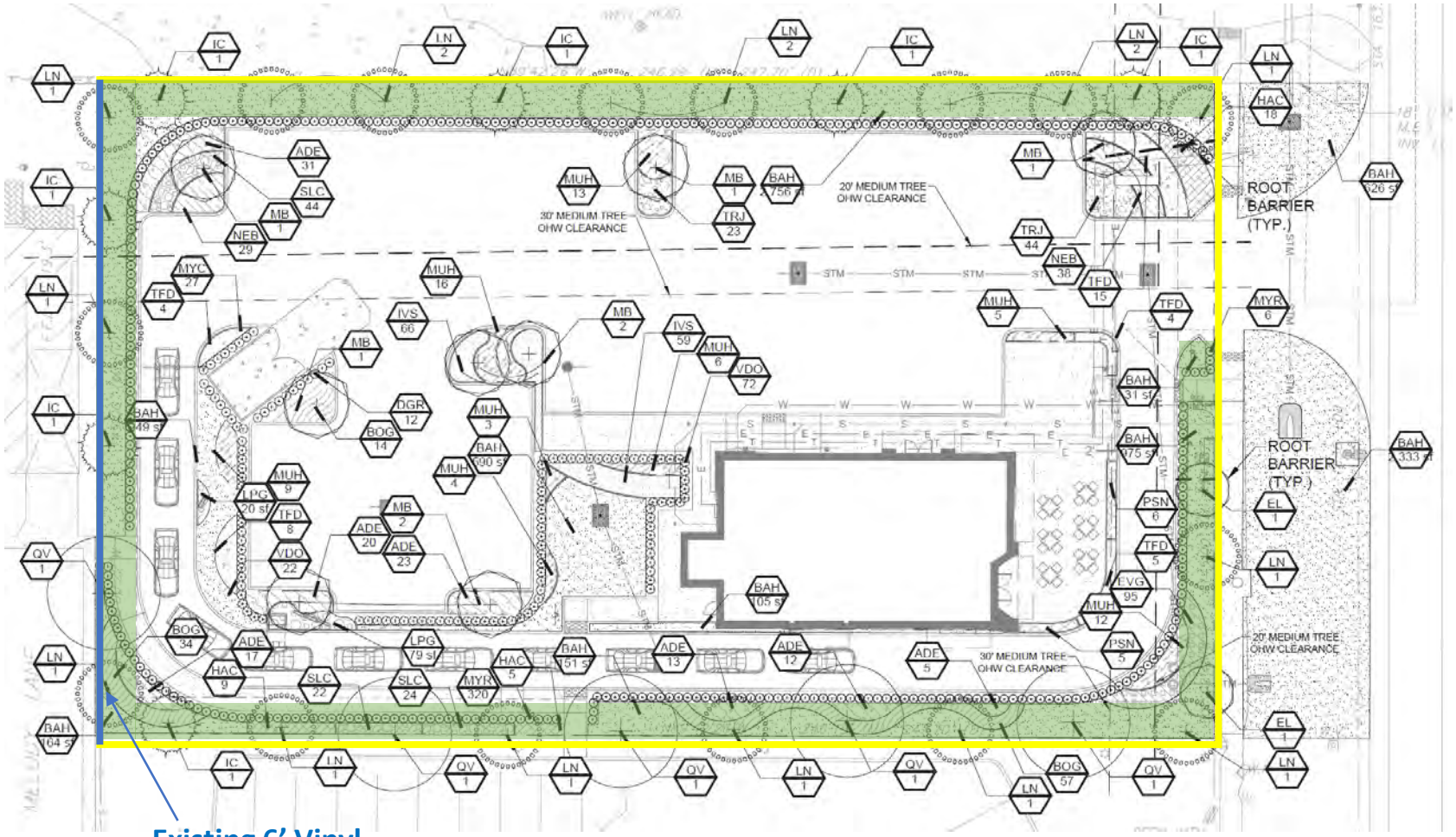
CITY OF TARPON SPRINGS
PLANNING & ZONING DEPARTMENT

SITE PLAN



Existing 6' Vinyl Fence to Remain

LANDSCAPE PLAN



Existing 6' Vinyl Fence to Remain

CITY OF TARPON SPRINGS
PLANNING & ZONING DEPARTMENT

BUILDING ELEVATIONS

North Elevation

East Elevation (US 19)

BUILDING ELEVATIONS

South Elevation

West Elevation

CONCURRENCY - TRANSPORTATION

- **LDC Section 122.11.03 – Transportation Management Plan**
  - Required for proposed developments that would generate more than 50 new peak hour trips on a deficient roadway.
  - **Purpose:** To manage the impacts of the proposed project to transportation facilities and services, options for increasing mobility for all modes, and reducing single-occupancy motor vehicle trips.
  - **Proposed Project:**
    - Single Point of Access
      - Right-In/Right-Out Only
      - Large Entry Radii
    - Pedestrian Connections
      - Existing US 19 Sidewalk
      - Proposed Connection to Tarpon Shores Inn (South)
      - Proposed Connection to Tarpon Shores MHP (West)
    - Staff recommends adding bicycle parking onsite

REVIEW CRITERIA – SITE PLAN

1) **The Comprehensive Plan.** The application is found to be consistent with the City's Comprehensive Plan, specifically the intent, allowed uses and standards of the CG (Commercial General) land use category, as outlined in the provided staff report.

2) **The Land Development Code (LDC).** The application is found to be in compliance with the City's LDC, as outlined in the provided staff report.

3) **The City's Concurrency Management System.** The project can be served by existing city's facilities and the proposed impacts of the project, as outlined in the provided staff report, are not expected to adversely effect the City's facilities. Further, the provided Transportation Management Plan was reviewed by the staff Certified Transportation Planner and found to comply with the standards of LDC Section 122.11.03.

4) **The City's Building Codes.** The project will be required to, and is expected to be able to, meet the standards of the City's Building Codes.

PRELIMINARY STAFF RECOMMENDATION

Resolution #2023-13

Staff recommends ***approval*** of the proposed site plan, subject to the following conditions:

1. Construction plans shall be consistent with the approved site plan. All requisite fees attendant to the project shall be paid in accordance with the Land Development Code.

2. Details for site lighting, including product cut sheets showing shielded fixtures, shall be provided with the building permit application showing compliance with Land Development Code Section 127.06.

3. The development must comply with the Public Art Program requirements of Land Development Code Section 296.00, if the aggregate job value is equal to or exceeds $1,000,000.00.

4. The applicant shall provide a Maintenance/SOP for Chamber Inspection and Cleaning for review and approval by the Public Works Department with the site construction permit.

5. The existing fence along the west property line shall remain to provide additional buffer between the subject property and the Tarpon Shores Mobile Home Park. In the event the fence is damaged, it shall be replaced with a 6-foot tall, opaque fence.

6. A bicycle rack providing a minimum of 2 spaces shall be provided on site and will be verified with the site construction permit.

7. The site plan shall expire at one year from the effective date unless an application has been filed for a building permit with construction plans signed and sealed by a registered engineer licensed in the State of Florida.

PLANNING & ZONING BOARD RECOMMENDATION

The Planning and Zoning Board heard this item at their regular meeting on March 20, 2023, and voted to recommend approval by a vote of 4 to 1 of Resolution 2023-13, including staff's recommended conditions. There were no members of the public present who spoke on this item.

CITY OF TARPON SPRINGS
PLANNING & ZONING BOARD / BOARD OF COMMISSIONERS
[MARCH 20, 2023 / MARCH 28, 2023]

STAFF REPORT

Application No. / Project Title:	#22-85 (Black Rifle Coffee)
Staff:	Allie Keen, AICP, Senior Planner
Applicant / Owner:	Pursuit Development / Jean F. & Gilbert Hakim
Property Size:	+/- 0.82 Acres
Current Zoning:	HB (Highway Business)
Current Land Use:	CG (Commercial General)
Location / Parcel ID:	40390 US Highway 19 N / 18-27-16-00000-240-1000
Resolution Number:	#2023-13

BACKGROUND SUMMARY:

The applicant, Pursuit Development, is requesting site plan approval to construct a drive-through coffee shop on the subject property. The proposed project includes a one-story building of 2,618 square feet, a drive through lane, parking lot, outdoor seating, parking, pedestrian connections to adjacent properties, and landscaping. Any onsite signage will require a separate permit where compliance with the Land Development Code will be verified.

PRELIMINARY STAFF RECOMMENDATION:

Staff finds the application for site plan approval consistent with the applicable review criteria and recommends ***APPROVAL*** of Resolution 2023-13, subject to the following conditions:

1. Construction plans shall be consistent with the approved site plan. All requisite fees attendant to the project shall be paid in accordance with the Land Development Code.
2. Details for site lighting, including product sheets showing shielded fixtures, shall be provided with the building permit application showing compliance with Land Development Code Section 127.06.
3. The development must comply with the Public Art Program requirements of the Land Development Code Section 296.00, if the aggregate job value is equal to or exceeds $1,000,000.00.
4. The applicant shall provide a Maintenance/SOP for Chamber Inspection and Cleaning for review and approval by the Public Works Department with the site construction permit.
5. The existing fence along the west property line shall remain to provide additional buffer between the subject property and the Tarpon Shores Mobile Home Park. In the event the fence is damaged, it shall be replaced with a 6-foot tall, opaque fence.
6. A bicycle rack providing a minimum of 2 spaces shall be provided on site and will be verified with the site construction permit.
7. The site plan shall expire at one year from the effective date unless an application has been filed for a building permit with construction plans signed and sealed by a registered engineer licensed in the State of Florida.

PLANNING AND ZONING BOARD RECOMMENDATION:

The Planning and Zoning Board heard this item at their regular meeting on March 20, 2023, and voted to recommend approval by a vote of 4 to 1 of Resolution 2023-13, including staff's recommended conditions. There were no members of the public present who spoke on this item.

CURRENT PROPERTY INFORMATION:

Use of Property:	Vacant
Site Features:	Mature oak tree and fence
Vehicle Access:	This property gains access from US Highway 19 N.

SURROUNDING ZONING & USE:

	Zoning:	**Use:**
North:	HB (Highway Business)	CG (Commercial General)
South:	HB (Highway Business)	CG (Commercial General)
East:	HB (Highway Business)	CG (Commercial General)
West:	MHP (Mobile Home Park)	RU (Residential Urban)

REVIEW STANDARD – COMPREHENSIVE PLAN MAP:

The subject property is located in the CG (Commercial General) Future Land Use Map (FLUM) category. The CG category is intended to designate existing commercial areas which may be either highway or commercial oriented and include uses of varying degree and intensity. The proposed project meets the designation intent of the CG land use category and complies with the permitted floor area ratio (FAR), impervious surface ratio (ISR), and primary uses.

REVIEW STANDARD - ZONING:

The property is located within the HB (Highway Business) zoning district. This district permits a drive-through coffee shop (eating establishment, fast food) as a use by right. The proposed site plan is consistent with the permitted uses and requirements of the HB zoning district, as summarized in the table below:

Standards (HB District)		**Proposed Project**	
Dimensional Standards [LDC Section 25.12(D)]			
	Max. Height = 35 feet	✓	21.5 feet
	Min. Front Yard Setback = 30 feet	✓	43.28 feet
	Min. Side Yard Setback = 10 feet	✓	23.2 feet (south) / 81.81 feet (north)
	Min. Rear Setback = 25 feet	✓	128.33 feet
	Max. FAR = 0.40	✓	0.07
	Min. Open Space = 15%	✓	15%
	Max. ISR = 0.85	✓	0.85
Parking Requirements [LDC Section 127.00]			
	Min. Parking Space Dimensions = 9 feet x 18 feet (90 degree)	✓	9 feet x 18 feet
	Min. Aisle Width = 24 feet (90 degree)	✓	24 feet

	Min. Number of Spaces = 38 spaces	✓	39 spaces
	Min. Stacking Spaces = 8 spaces	✓	11 spaces
Driveway & Access [LDC Section 129.00]			
	Max. Width = 30 feet	✓	24 feet
	Min. Curb Radius = 25 feet (arterial street)	✓	25 feet (south) / 35 feet (north)
	Min. Separation Distance from Property Line = 30 feet	✓	30 feet
Landscaping & Screening [LDC Section 134.00]			
	Min. Tree Planting = 18 trees	✓	38 trees
	Parking Lot Perimeter Landscaping – Min. 8 foot wide buffer for all sides with 1 tree planted every 25 feet (along west property line) and 1 tree planted every 30 feet (east, north, and south property lines).	✓	Landscape plan complies with minimum buffer widths and plantings for all sides.
	Interior Parking Lot Landscaping – Min. 100 square feet of interior landscaping for each 5 spaces with 1 tree planted in each island.	✓	Landscape complies with minimum square footage and planting requirements.
	Screening (Tarpon Shores MHP) – Min. 8 foot wide buffer strip with 1 tree planted every 25 feet and continuous screen of shrubs.	✓	Landscape plan complies with minimum buffer width and planting. Additionally, an existing 6-foot tall PVC fence will remain along the west property line provide additional screening for Tarpon Shore MHP.
Dumpster Enclosures			
	Screening – Min. 6 foot high enclosure setback a min. 5 feet from property lines.	✓	Enclosure complies with standard and will compliment architectural design of the building as noted on Sheet C4.0 of the site plans.

SITE PLAN REVIEW PROCEDURES & STANDARDS:

The process for site plan review is set forth in Section 210.03 of the Land Development Code (LDC) and calls for the Planning and Zoning Board to review the site plan for compliance with (1) the Comprehensive Plan, (2) the Comprehensive Zoning and Land Development Code, (3) the City's Concurrency Management System, and (4) the City's Building Codes to provide a written recommendation to the Board of Commissioners as enumerated in Section 210.03(C)(4) of the LDC. The Technical Review Committee has reviewed and determined the application for site plan approval to be complete and in compliance with the above cited standards for review:

1. The application is found to be consistent with the City's Comprehensive Plan,
2. The application is found to be compliant with the City's LDC,
3. The project proposes minimal new impacts to facilities and therefore meets the City's Concurrency Management standards (see below), and,
4. The project will be required to, and is expected to be able to, meet the standards of the City's Buildings Codes.

LEVEL OF SERVICE ANALYSIS:

Article VIII of the Land Development Code requires that public facilities be available concurrent with impacts from development. Facilities impacts are listed in the table below. They are not expected to degrade the levels of services for any of the listed facilities.

Facility	Proposed Impacts
Potable Water	1,778 gal/day

Wastewater	1,063 gal/day
Solid Waste	3,214 tons/year
Transportation	1,403 trips/day 266 AM Peak Hour Trips 103 PM Peak Hour Trips **See analysis below.*

*TRANSPORTATION MANAGEMENT PLAN ANALYSIS:

The applicant has provided a Traffic Impact Statement providing trip generation information for the proposed development consistent with professional practices and standards. Because the proposed development would generate greater than 50 new peak hour trips on a deficient roadway, the applicant is required to develop a transportation management plan consistent with LDC Section 122.11.03. The Transportation Management Plan provided by the applicant evaluated potential strategies and improvements to manage the impacts of the proposed development to transportation facilities and services, options for increasing mobility for all modes, and reducing single-occupancy motor vehicle trips. The applicant has incorporated a single point access right-in/right-out driveway, a large entry radius (50 feet) for the site access driveway, and an ADA compliant connection to the existing sidewalk on US 19. In addition to these proposed features, the applicant has provided accessible pedestrian connections to the Tarpon Shores Inn to the south and Tarpon Shores Mobile Home Park. Staff would further recommend as a condition of approval the installation of bicycle parking.

TECHNICAL REVIEW COMMITTEE:

TRC reviewed this project on March 2, 2023, for completeness and conformance to the Comprehensive Zoning and Land Development Code and the Comprehensive Plan. The applicant has addressed all TRC comments, which included stormwater review and compliance. The TRC determined this application was ready for processing.

ATTACHMENTS:

1. Staff Presentation
2. Draft Resolution 2023-13
    a. Exhibit A – Site Plan
    b. Exhibit B – Landscape Plan
    c. Exhibit C – Elevations
3. Survey
4. Certificate of Concurrency Application
5. Traffic Impact Statement
6. Transportation Management Plan
7. Drainage Report
8. Geotechnical Report
9. Email to Tarpon Shores Representative

RESOLUTION NO. 2023-13

A RESOLUTION OF THE BOARD OF COMMISSIONERS OF THE CITY OF TARPON SPRINGS, FLORIDA, APPROVING APPLICATION #22-85 REQUESTING SITE PLAN APPROVAL TO CONSTRUCT A 2,618 SQUARE FOOT DRIVE-THROUGH COFFEE SHOP (BLACK RIFLE COFFEE) ON 0.82 ACRES (MORE OR LESS) LOCATED AT 40390 US HIGHWAY 19 NORTH IN THE HB (HIGHWAY BUSINESS) ZONING DISTRICT; PROVIDING FOR FINDINGS; PROVIDING FOR CONDITIONS; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the City of Tarpon Springs has received an application for site plan approval to construct a 2,618 square foot drive-through coffee shop on 0.82 acres (more or less) of land located at 40390 US Highway 19 North in the HB (Highway Business) zoning district; and,

WHEREAS, the Planning and Zoning Board held a public hearing on this application at its meeting of March 20, 2023 and voted to recommend approval of the site plan with conditions; and,

WHEREAS, pursuant to Section 210.03(C)(4) of the Comprehensive Zoning and Land Development Code, the Board of Commissioners must approve, approve with conditions, or, deny the application.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF COMMISSIONERS OF THE CITY OF TARPON SPRINGS, FLORIDA:

SECTION 1: FINDINGS

1. That the site plan, as conditioned, meets the applicable sections of the Comprehensive Zoning and Land Development Code.
2. That the site plan, as conditioned, is consistent with the Tarpon Springs Comprehensive Plan.
3. That the site plan, as conditioned, demonstrates that required facilities and services will be available at the prescribed level of service standards concurrent with the impact of the development and may, subject to Section 3 of this resolution, during the term of this site plan approval, receive a Certificate of Concurrency pursuant to Section 122.00 et seq.

SECTION 2: SITE PLAN APPROVAL

1. The site plan prepared and sealed by Armando L. Cabre, P.E., on March 6, 2023, and attached as 'Exhibit A' is hereby approved on property located at 40390 US Highway 19 North with a parcel legally described as:

   BEING A PART OF THE SOUTH ½ OF THE SOUTHEAST ¼ OF THE NORTHWEST ¼ OF SECTION 18, TOWNSHIP 27 SOUTH, RANGE 14 EAST, DESCRIBED AS FOLLOWS:

   FROM THE CENTER OF SECTION 18, TOWNSHIP 27, SOUTH, RANGE 16 EAST, RUN THENCE NORTH 89 DEGREES 59 MINUTES 38 SECONDS WEST,

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ALONG THE EAST-WEST CENTERLINE OF SAID SECTION 18, 100.00 FEET; THENCE NORTH 00 DEGREES 02 MINUTES 28 SECONDS WEST, 248.85 FEET FOR THE POINT OF BEGINNING; THENCE CONTINUE NORTH 00 DEGREES 02 MINUTES 28 SECONDS WEST, ALONG THE WEST RIGHT OF WAY OF U.S. HIGHWAY NO. 19, 408.86 FEET; THENCE NORTH 89 DEGREES 46 MINUTES 06 SECONDS WEST, 247.70 FEET; THENCE SOUTH 00 DEGREES 06 MINUTES 53 SECONDS EAST, 288.00 FEET; THENCE SOUTH 51 DEGREES 36 MINUTES 53 SECONDS EAST, 42.77 FEET; THENCE SOUTH 00 DEGREES 06 MINUTES 53 SECONDS EAST, 85.71 FEET; THENCE ALONG A CURVE TO THE LEFT, CHORD BEARING SOUTH 45 DEGREES 06 MINUTES 45 SECONDS EAST 14.14 FEET, ARC 15.71 FEET AND RADIUS 10.00 FEET; THENCE NORTH 89 DEGREES 53 MINUTES 24 SECONDS EAST, 203.70 FEET TO THE POINT OF BEGINNING.

LESS AND EXCEPT:

BEING A PART OF THE SOUTH ½ OF THE SOUTHEAST ¼ OF THE NORTHWEST ¼ OF SECTION 18, TOWNSHIP 27 SOUTH, RANGE 16 EAST, DESCRIBED AS FOLLOWS:

FROM THE CENTER OF SECTION 18, TOWNSHIP 27 SOUTH, RANGE 16 EAST, RUN THENCE NORTH 89 DEGREES 59 MINUTES 38 SECONDS WEST, ALONG THE EAST-WEST CENTERLINE OF SAID SECTION 18, 100.00 FEET; THENCE NORTH 00 DEGREES 02 MINUTES 28 SECONDS WEST, 248.85 FEET FOR THE POINT OF BEGINNING; THENCE CONTINUE NORTH 00 DEGREES 02 MINUTES 28 SECONDS WEST, 248.85 FEET FOR THE POINT OF BEGINNING; THENCE CONTINUE NORTH 00 DEGREES 02 MINUTES 28 SECONDS WEST, ALONG THE WEST RIGHT OF WAY OF U.S. HIGHWAY NO. 19, 263.86 FEET; THENCE NORTH 89 DEGREES 45 MINUTES 06 SECONDS WEST, 247.51 FEET; THENCE SOUTH 00 DEGREES 06 MINUTES 53 SECONDS EAST, 85.71 FEET; THENCE ALONG A CURVE TO THE LEFT, CHORD BEARING SOUTH 45 DEGREES 06 MINUTES 45 SECONDS EAST 14.14 FEET, ARC 15.71 FEET AND RADIUS 10.00 FEET; THENCE NORTH 89 DEGREES 53 MINUTES 24 SECONDS EAST, 203.70 FEET TO THE POINT OF BEGINNING.

THE ABOVE PROPERTY BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

A PARCEL OF THE SOUTH ½ OF THE SOUTHEAST ¼ OF THE NORTHWEST /4 OF SECTION 18, TOWNSHIP 27 SOUTH, RANGE 16 EAST, PINELLAS COUNTY, FLORIDA, DESCRIBED AS FOLLOWS:

FROM THE CENTER OF SECTION 18, TOWNSHIP 27 SOUTH, RANGE 16 EAST, RUN THENCE NORTH 89 DEGREES 59 MINUTES 28 SECONDS WEST ALONG THE EAST-WEST CENTERLINE OF SAID SECTION 18, 100.00 FEET; THENCE NORTH 00 DEGREES 02 MINUTES 28 SECONDS WEST 512.71 FEET FOR THE POINT OF BEGINNING; THENCE CONTINUE NORTH 00 DEGREES 02 MINUTES 28 SECONDS WEST, ALONG THE WEST RIGHT OF WAY OF U.S. HIGHWAY NO. 19, 145.00 FEET; THENCE NORTH 89 DEGREES 46 MINUTES 06 SECONDS WEST 247.70 FEET; THENCE SOUTH 00 DEGREES 06 MINUTES 53 SECONDS EAST, 145.00 FEET; THENCE SOUTH 89 DEGREES 46 MINUTES 06 SECONDS EAST, 247.51 FEET TO THE POINT OF BEGINNING.

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2. The landscape plan prepared and sealed by Cheryl W. Campbell, Registered Landscape Architect, is attached as 'Exhibit B'.
3. The building elevations are attached as 'Exhibit C'.

SECTION 3: CONDITIONS:

1. Construction plans shall be consistent with the approved site plan. All requisite fees attendant to the project shall be paid in accordance with the Land Development Code.
2. Details for site lighting, including product sheets showing shielded fixtures, shall be provided with the building permit application showing compliance with Land Development Code Section 127.06.
3. The development must comply with the Public Art Program requirements of the Land Development Code Section 296.00, if the aggregate job value is equal to or exceeds $1,000,000.00.
4. The applicant shall provide a Maintenance/SOP for Chamber Inspection and Cleaning for review and approval by the Public Works Department with the site construction permit.
5. The existing fence along the west property line shall remain to provide additional buffer between the subject property and the Tarpon Shores Mobile Home Park. In the event the fence is damaged, it shall be replaced with a 6-foot tall, opaque fence.
6. A bicycle rack providing a minimum of 2 spaces shall be provided on site and will be verified with the site construction permit.
7. The site plan shall expire at one year from the effective date unless an application has been filed for a building permit with construction plans signed and sealed by a registered engineer licensed in the State of Florida.

SECTION 4: EFFECTIVE DATE:

This Resolution shall become effective upon adoption.

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RES. 2023-13 - EXHIBIT 'A'

CIVIL CONSTRUCTION PLANS
FOR:
BLACK RIFLE COFFEE
40390 US HWY 19 N
TARPON SPRINGS, FL 34689

PARCEL ID NUMBER 18-27-16-00000-240-1000 | FOLIO NUMBER: 18-27-16-00000-240-1000

SECTION 18, TOWNSHIP 27 SOUTH, RANGE 16 EAST

DESIGN AND DEVELOPMENT CONTACTS:

OWNER: JEAN HAKIM
5400 TECH DATA DR.
CLEARWATER, FL 33760
CONTACT: BUCKLEY DAVIS
TEL: 727-789-0100

DEVELOPER: PURSUIT DEVELOPMENT
1021 WORTH ST.
ALBANY, GA 31705
CONTACT: BUCKLEY DAVIS
TEL: 229-886-2373
EMAIL: BUCKLEY@PURSUITDEV.COM

CIVIL ENGINEER: BOWMAN CONSULTING GROUP, LTD.
1410 N. WESTSHORE BLVD. STE. 111
TAMPA, FL 33607
CONTACT: ARMANDO CABRE P.E.
TEL: 813-687-4963

LANDSCAPE ARCHITECT: EVERGREEN DESIGN GROUP
2255 GLADES RD., SUITE 324A
BOCA RATON, FL 33431
CONTACT: KEN BATES, FASLA, PLA
TEL: 970-426-2057

SURVEYOR: CRAIG WATSON AND ASSOCIATES LLC
3372 NE CANDICE AVENUE, UNIT A
JENSEN BEACH, FL 34957
CONTACT: CRAIG D. WATSON
TEL: 772-334-0868

GOVERNING AGENCIES CONTACTS:

PLANNING AND ZONING: TARPON SPRINGS PLANNING AND ZONING DEPARTMENT
324 E PINE ST.
TARPON SPRINGS, FL 34689
TEL: 727-942-5611

BUILDING DEPARTMENT: TARPON SPRINGS BUILDING DEVELOPMENT DEPARTMENT
324 E PINE ST.
TARPON SPRINGS, FL 34689
TEL: 727-942-5617

FIRE DEPARTMENT: TARPON SPRINGS FIRE RESCUE
444 S HUEY AVE.
TARPON SPRINGS, FL 34689
CONTACT: SCOTT YOUNG
TEL: 727-938-3737

TRANSPORTATION DEPARTMENT: TARPON SPRINGS CITY MANAGER
324 E PINE ST.
TARPON SPRINGS, FL 34689
CONTACT: MARK LECOURIS
TEL: 727-938-3711

WATER/WASTEWATER: TARPON SPRINGS WATER, WASTEWATER & RECLAIMED
412 N RING AVE.
TARPON SPRINGS, FL 34689
TEL: 727-937-2557

STORMWATER TARPON SPRINGS STREETS AND STORMWATER
325 E PINE ST.
TARPON SPRINGS, FL 34689
TEL: 727-937-2557

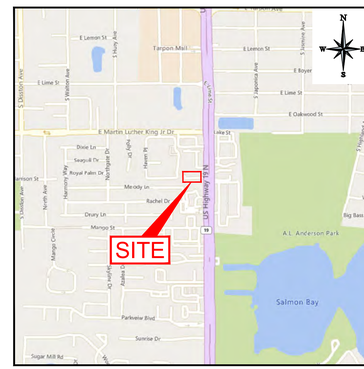
UTILITY CONTACTS:

ELECTRIC COMPANY: DUKE ENERGY
P.O. BOX 14042
ST. PETERSBURG, FL 33733
TEL: 727-443-2641

GAS COMPANY: CLEARWATER GAS SYSTEM
777 MAPLE ST.
CLEARWATER, FL 33755
TEL: 727-562-4900

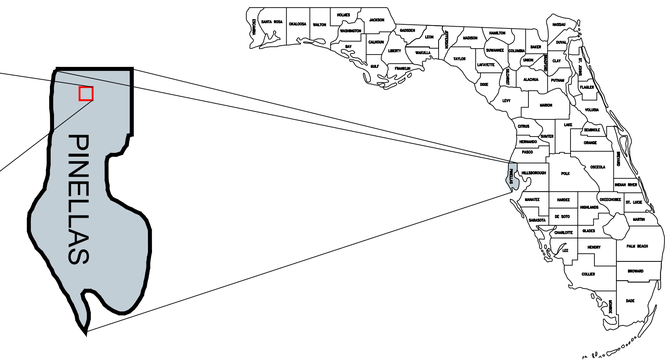
TELEPHONE / INTERNET CHARTER SPECTRUM
40952 US HWY 19 N.
TARPON SPRINGS, FL 34689
TEL: 888-406-7063

SOLID WASTE: TARPON SPRINGS SANITATION, RECYCLING & YARD WASTE
898 S LEVIS AVE.
TARPON SPRINGS, FL 34689
TEL: 727-943-4837
EMAIL: SANITATION@CTSFL.US



SITE LOCATION MAP

SCALE: 1" = 1,000'



a. FDOT PERMIT NUMBER: 2022-A-79-00049
b. STATE ROAD ID: 15150000
c. STATE ROAD NUMBER: 55
d. MILE POST NUMBER: 30.822 - 30.842

LEGAL DESCRIPTION:

BEING A PART OF THE SOUTH 1/2 OF THE SOUTHEAST 1/4 OF THE NORTHWEST 1/4 OF SECTION 18, TOWNSHIP 27 SOUTH, RANGE 16 EAST, DESCRIBED AS FOLLOWS:

FROM THE CENTER OF SECTION 18, TOWNSHIP 27 SOUTH, RANGE 16 EAST, RUN THENCE NORTH 89 DEGREES 59 MINUTES 38 SECONDS WEST, ALONG THE EAST-WEST CENTERLINE OF SAID SECTION 18, 100.00 FEET; THENCE NORTH 00 DEGREES 02 MINUTES 28 SECONDS WEST, 248.85 FEET FOR THE POINT OF BEGINNING; THENCE CONTINUE NORTH 00 DEGREES 02 MINUTES 28 SECONDS WEST, ALONG THE WEST RIGHT OF WAY OF U. S. HIGHWAY NO. 19, 408.86 FEET; THENCE NORTH 89 DEGREES 46 MINUTES 06 SECONDS WEST, 247.70 FEET; THENCE SOUTH 00 DEGREES 06 MINUTES 53 SECONDS EAST, 288.00 FEET; THENCE SOUTH 51 DEGREES 36 MINUTES 53 SECONDS EAST, 42.77 FEET; THENCE SOUTH 00 DEGREES 06 MINUTES 53 SECONDS EAST, 85.71 FEET; THENCE ALONG A CURVE TO THE LEFT, CHORD BEARING SOUTH 45 DEGREES 06 MINUTES 45 SECONDS EAST 14.14 FEET, ARC 15.71 FEET AND RADIUS 10.00 FEET; THENCE NORTH 89 DEGREES 53 MINUTES 24 SECONDS EAST, 203.70 FEET TO THE POINT OF BEGINNING.

LESS AND EXCEPT:
BEING A PART OF THE SOUTH 1/2 OF THE SOUTHEAST 1/4 OF THE NORTHWEST 1/4 OF SECTION 18, TOWNSHIP 27 SOUTH, RANGE 16 EAST, DESCRIBED AS FOLLOWS:

FROM THE CENTER OF SECTION 18, TOWNSHIP 27 SOUTH, RANGE 16 EAST, RUN THENCE NORTH 89 DEGREES 59 MINUTES 38 SECONDS WEST, ALONG THE EAST-WEST CENTERLINE OF SAID SECTION 18, 100.00 FEET; THENCE NORTH 00 DEGREES 02 MINUTES 28 SECONDS WEST, 248.85 FEET FOR THE POINT OF BEGINNING; THENCE CONTINUE NORTH 00 DEGREES 02 MINUTES 28 SECONDS WEST, ALONG THE WEST RIGHT OF WAY OF U. S. HIGHWAY NO. 19, 263.86 FEET; THENCE NORTH 89 DEGREES 45 MINUTES 06 SECONDS WEST, 247.51 FEET; THENCE SOUTH 00 DEGREES 06 MINUTES 53 SECONDS EAST, 143.00 FEET; THENCE SOUTH 51 DEGREES 36 MINUTES 53 SECONDS EAST, 42.77 FEET; THENCE SOUTH 00 DEGREES 06 MINUTES 53 SECONDS EAST, 85.71 FEET; THENCE ALONG A CURVE TO THE LEFT, CHORD BEARING SOUTH 45 DEGREES 06 MINUTES 45 SECONDS EAST 14.14 FEET, ARC 15.71 FEET AND RADIUS 10.00 FEET; THENCE NORTH 89 DEGREES 53 MINUTES 24 SECONDS EAST, 203.70 FEET TO THE POINT OF BEGINNING.

THE ABOVE PROPERTY BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:
A PARCEL OF THE SOUTH 1/2 OF THE SOUTHEAST 1/4 OF THE NORTHWEST 1/4 OF SECTION 18, TOWNSHIP 27 SOUTH, RANGE 16 EAST, PINELLAS COUNTY, FLORIDA, DESCRIBED AS FOLLOWS:

FROM THE CENTER OF SECTION 18, TOWNSHIP 27 SOUTH, RANGE 16 EAST, RUN THENCE NORTH 89 DEGREES 59 MINUTES 28 SECONDS WEST ALONG THE EAST-WEST CENTERLINE OF SAID SECTION 18, 100.00 FEET; THENCE NORTH 00 DEGREES 02 MINUTES 28 SECONDS WEST 512.71 FEET FOR THE POINT OF BEGINNING; THENCE CONTINUE NORTH 00 DEGREES 02 MINUTES 28 SECONDS WEST, ALONG THE WEST RIGHT OF WAY OF U.S. HIGHWAY NO. 19, 145.00 FEET; THENCE NORTH 89 DEGREES 46 MINUTES 06 SECONDS WEST 247.70 FEET; THENCE SOUTH 00 DEGREES 06 MINUTES 53 SECONDS EAST, 145.00 FEET; THENCE SOUTH 89 DEGREES 46 MINUTES 06 SECONDS EAST, 247.51 FEET TO THE POINT OF BEGINNING.

GENERAL STATEMENT:

THE PROJECT CONSISTS OF THE COMMERCIAL REDEVELOPMENT OF 0.82 ± ACRES OF EXISTING COMMERCIAL PARKING FOR THE USE OF 2,618 ± SF OF RESTAURANT WITH ASSOCIATED PARKING AND APPURTENANCES.

ALERT TO CONTRACTOR:

1. THE SITE WORK FOR THE PROPOSED DEVELOPMENT SHALL MEET OR EXCEED ALL CITY AND/OR COUNTY AND STATE STANDARDS FOR SITE WORK.
2. ALL NECESSARY INSPECTIONS AND/OR CERTIFICATIONS REQUIRED BY CODES AND/OR UTILITY SERVICE COMPANIES SHALL BE PERFORMED PRIOR TO PROJECT COMPLETION.

DATUM NOTE:

ELEVATIONS SHOWN HEREON ARE BASED ON NATIONAL AMERICAN VERTICAL DATUM OF 1988 (NAVD 88). THE SURVEY BENCHMARK IS BASED ON PINELLAS COUNTY.
PUBLISHED BENCHMARK: FDOT CONCRETE MONUMENT WITH BRASS DISK STAMPED BM 1643 L NGVD 1929 ELEVATION = 11.987' OR NAVD 1988 ELEVATION = 11.14', SITE BENCHMARKS ARE SHOWN AND DESCRIBED GRAPHICALLY ON THE SURVEY.

FLOOD NOTE:

PARCEL IS LOCATED IN FLOOD ZONE "X" ACCORDING TO FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAP (FIRM) MAP NUMBERS 12103C0038H, DATED 8/24/2021.

FDOT NOTE:

ANY LOCAL GOVERNMENT DETAILS AND NOTES ARE TO BE UTILIZED ONLY WITHIN THE PROPERTY. ALL WORK WITHIN THE THE RIGHT-OF-WAY SHALL CONFORM TO FDOT STANDARD PLANS, DETAILS, AND NOTES.

SHEET LIST TABLE

FDOT	WTR-MGMT DIST	CITY / COUNTY	SHEET TITLE	SHEET NUMBER	REV 1	REV 2	REV 3
X	X	X	COVER SHEET	C1.0	X	X	X
X	X	X	GENERAL NOTES	C1.1			
X	X	X	GENERAL NOTES	C1.2			
X	X	X	EROSION CONTROL PLAN - PHASE I	C2.0		X	
X	X	X	EROSION CONTROL PLAN - PHASE 2	C2.1	X	X	
X	X	X	EROSION CONTROL DETAILS	C2.2			
X	X	X	DEMOLITION PLAN	C3.0		X	
X	X	X	SITE PLAN	C4.0	X	X	
X	X	X	TRUCK TURN PLAN	C4.1			
X	X	X	GRADING AND DRAINAGE PLAN	C5.0	X	X	
X	X	X	DRIVEWAY PROFILES	C5.1			
X		X	UTILITY PLAN	C6.0	X	X	X
	X	X	CONSTRUCTION DETAILS	C7.0			
	X	X	CONSTRUCTION DETAILS	C7.1		X	
	X	X	CONSTRUCTION DETAILS	C7.2		X	
	X	X	CONSTRUCTION DETAILS	C7.3			
	X	X	CONSTRUCTION DETAILS	C7.4		X	
	X	X	CONSTRUCTION DETAILS	C7.5			
	X	X	CONSTRUCTION DETAILS	C7.6			
	X	X	CONSTRUCTION DETAILS	C7.7			
	X	X	CONSTRUCTION DETAILS	C7.8			
	X	X	CONSTRUCTION DETAILS	C7.9			
	X	X	CONSTRUCTION DETAILS	C7.10			
X		X	LANDSCAPE PLAN (BY OTHERS)	LS1 THRU LS4			
		X	PHOTOMETRIC PLAN (BY OTHERS)	1 OF 1			

PROPOSED FACILITIES IMPACT TABLE

FACILITY	PROPOSED IMPACTS
POTABLE WATER	1,778 GAL / DAY
WASTEWATER	1,063 GAL / DAY
SOLID WASTE	3,214 TONS / YEAR
DAILY TRIPS	1,403 TRIPS / DAY
PEAK HOUR TRIPS	266 TRIPS AM PEAK HOUR 103 TRIPS PM PEAK HOUR

Bowman

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CITY OF TARPON SPRINGS, FL
PINELLAS COUNTY, FL

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PLAN STATUS

REV	DATE	COMMENT
1	09/13/22	AHJ COMMENTS
2	12/23/22	AHJ COMMENTS
3	03/06/23	AHJ COMMENTS

KSP DESIGN	KSP DRAWN	ALC CHKD
SCALE	AS NOTED	
JOB No.	011046-01-001	
DATE	04/13/2022	

SHEET C1.0

THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY BOWMAN SHALL BE WITHOUT LIABILITY TO BOWMAN.

USER: KPETRI PLOT DATE/TIME: Mar. 06, 23 - 15:12:40 DRAWING: V:\011046 - Pursuit Development\011046-01-001 (ENG) - Black Rifle Coffee - Tarpon Springs, FL\Engineering\Engineering Plans\Plan Sets\011046-01-001-C1.0-COVR.dwg ;C1.0 COVER SHEET

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GENERAL DEMOLITION NOTES:

1. THE CONTRACTOR IS RESPONSIBLE FOR THE DEMOLITION, REMOVAL, AND DISPOSAL (IN A LOCATION APPROVED BY ALL GOVERNING AUTHORITIES) ALL STRUCTURES, PADS, WALLS, FLUMES, FOUNDATIONS, PARKING, DRIVES, DRAINAGE, STRUCTURES, UTILITIES, ETC., SUCH THAT THE IMPROVEMENTS SHOWN ON THE REMAINING PLANS CAN BE CONSTRUCTED. ALL FACILITIES TO BE REMOVED SHALL BE UNDERCUT TO SUITABLE MATERIAL AND BROUGHT TO GRADE WITH SUITABLE COMPACTED FILL MATERIAL PER THE SPECIFICATIONS.
2. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL DEBRIS FROM THE SITE AND DISPOSING THE DEBRIS IN A LAWFUL MANNER. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED FOR DEMOLITION AND DISPOSAL.
3. THE CONTRACTOR SHALL COORDINATE WITH RESPECTIVE UTILITY COMPANIES PRIOR TO THE REMOVAL AND/OR RELOCATION OF UTILITIES. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANY CONCERNING PORTIONS OF WORK WHICH MAY BE PERFORMED BY THE UTILITY COMPANY'S FORCES AND ANY FEES WHICH ARE TO BE PAID TO THE UTILITY COMPANY FOR THEIR SERVICES. THE CONTRACTOR IS RESPONSIBLE FOR PAYING ALL FEES AND CHARGES.
4. THE LOCATIONS OF ALL EXISTING UTILITIES SHOWN ON THIS PLAN HAVE BEEN DETERMINED FROM THE BEST INFORMATION AVAILABLE AND ARE GIVEN FOR THE CONVENIENCE OF THE CONTRACTOR. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THEIR ACCURACY. PRIOR TO THE START OF ANY DEMOLITION ACTIVITY, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES FOR ONSITE LOCATIONS OF EXISTING UTILITIES.
5. ALL EXISTING SEWERS, PIPING AND UTILITIES SHOWN ARE NOT TO BE INTERPRETED AS THE EXACT LOCATION, OR AS THE ONLY OBSTACLES THAT MAY OCCUR ON THE SITE. VERIFY EXISTING CONDITIONS AND PROCEED WITH CAUTION AROUND ANY ANTICIPATED FEATURES. GIVE NOTICE TO ALL UTILITY COMPANIES REGARDING DESTRUCTION AND REMOVAL OF ALL SERVICE LINES AND CAP ALL LINES BEFORE PROCEEDING WITH THE WORK. UTILITIES DETERMINED TO BE ABANDONED AND LEFT IN PLACE SHALL BE GROUTED.
6. ELECTRICAL, TELEPHONE, CABLE, WATER, FIBER OPTIC CABLE AND/OR GAS LINES NEEDING TO BE REMOVED OR RELOCATED SHALL BE COORDINATED WITH THE AFFECTED UTILITY COMPANY. ADEQUATE TIME SHALL BE PROVIDED FOR RELOCATION. CLOSE COORDINATION WITH THE UTILITY COMPANY IS NECESSARY TO PROVIDE A SMOOTH TRANSITION IN UTILITY SERVICE. CONTRACTOR SHALL PAY CLOSE ATTENTION TO EXISTING UTILITIES WITHIN THE ANY ROAD RIGHT-OF-WAY DURING CONSTRUCTION.
7. CONTRACTOR MUST PROTECT THE PUBLIC AT ALL TIMES WITH FENCING, BARRICADES, ENCLOSURES, ETC., (AND OTHER APPROPRIATE BEST MANAGEMENT PRACTICES) AS APPROVED BY OWNER.
8. CONTINUOUS ACCESS SHALL BE MAINTAINED FOR THE SURROUNDING PROPERTIES AT ALL TIMES DURING DEMOLITION OF THE EXISTING FACILITIES.
9. PRIOR TO DEMOLITION OCCURRING, ALL EROSION CONTROL DEVICES ARE TO BE INSTALLED.
10. SHOULD REMOVAL AND/OR RELOCATION ACTIVITIES DAMAGE FENCING, LIGHTING AND/OR ANY OTHER APPURTENANCES, THE CONTRACTOR SHALL PROVIDE NEW MATERIALS/ STRUCTURES IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. EXCEPT FOR MATERIALS DESIGNED TO BE RELOCATED ON THIS PLAN, ALL OTHER CONSTRUCTION MATERIALS SHALL BE NEW.
11. CONTRACTOR SHALL LIMIT SAW-CUT & PAVEMENT REMOVAL TO ONLY THOSE AREAS WHERE IT IS REQUIRED AS SHOWN ON THESE CONSTRUCTION PLANS BUT IF ANY DAMAGE IS INCURRED ON ANY OF THE SURROUNDING PAVEMENT, ETC. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IT'S REMOVAL AND REPAIR.
12. THE CONTRACTOR SHALL COORDINATE WATER MAIN WORK WITH THE FIRE DEPT. AND THE CITY/COUNTY UTILITY DEPARTMENT TO PLAN PROPOSED IMPROVEMENTS AND TO ENSURE ADEQUATE FIRE PROTECTION IS CONSTANTLY AVAILABLE TO SITE THROUGHOUT THIS SPECIFIC WORK AND THROUGH ALL PHASES OF CONSTRUCTION. CONTRACTOR WILL BE RESPONSIBLE FOR ARRANGING/PROVIDING ANY REQUIRED WATER MAIN SHUT OFFS WITH THE CITY/COUNTY DURING CONSTRUCTION. ANY COSTS ASSOCIATED WITH WATER MAIN SHUT OFFS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND NO EXTRA COMPENSATION WILL BE PROVIDED.
13. DAMAGE TO ALL EXISTING CONDITIONS SHOWN TO REMAIN IN THESE PLANS WILL BE REPLACED AT CONTRACTOR'S EXPENSE.

GENERAL SITE NOTES:

1. ALL CONSTRUCTION MATERIALS AND TECHNIQUES OF INSTALLATION SHALL MEET PERFORMANCE VALUES OF THE MATERIALS SPECIFIED AND COMPLY WITH ALL CITY/COUNTY REGULATIONS AND CODES AND O.S.H.A. STANDARDS.
2. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT THIS PROJECT IS CONSTRUCTED IN ACCORDANCE WITH THESE DOCUMENTS AND IN COMPLIANCE WITH CODES INDICATED HEREIN. THE QUALITY OF WORKMANSHIP AND INSTALLATION OF MATERIALS SPECIFIED BY THE ARCHITECT/ENGINEER ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE ARCHITECT/ENGINEER WILL NOT BE HELD RESPONSIBLE FOR ANY SUBSTANDARD OR INSUFFICIENT WORKMANSHIP, MATERIALS, OR SERVICES PROVIDED IN THE EXECUTION OF ANY PHASE OF CONSTRUCTION OF THIS PROJECT.
3. ALL MATERIALS ARE TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS. THE GENERAL CONTRACTOR SHALL ENSURE THAT ALL MANUFACTURER'S WARRANTIES WILL BE HONORED.
4. ALL CONDITIONS SHOWN TO BE "EXISTING" SHALL BE VERIFIED IN THE FIELD BY THE GENERAL CONTRACTOR PRIOR TO START OF CONSTRUCTION. ANY DISCREPANCIES SHALL BE NOTED AND SUBMITTED TO THE OWNER AND THE ARCHITECT/ENGINEER FOR REVIEW. CHANGES TO THE ORIGINAL DESIGN OF THE PROJECT DUE TO EXISTING SITE CONDITIONS MUST BE APPROVED BY BOTH THE OWNER AND THE ARCHITECT/ENGINEER PRIOR TO MAKING ANY CHANGES.
5. CONTRACTOR TO REVIEW AND FOLLOW CONSTRUCTION TECHNIQUES/SPECIFICATIONS OUTLINED IN THE SITE GEOTECHNICAL REPORT. ANY CONFLICTS WHICH MAY ARISE SHALL BE NOTED AND SUBMITTED TO THE OWNER AND THE ARCHITECT/ENGINEER FOR REVIEW PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.
6. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING A THOROUGH KNOWLEDGE OF EXISTING FIELD CONDITIONS AND OF ALL DRAWINGS AND SPECIFICATIONS RELATED TO THEIR FIELD. THE FAILURE TO ACQUAINT HIMSELF WITH THIS PROJECT AND HIS FIELD OF SERVICE SHALL NOT RELIEVE HIM OF ANY RESPONSIBILITY FOR PERFORMING HIS WORK PROPERLY. NO ADDITIONAL COMPENSATION SHALL BE ALLOWED DUE TO THE GENERAL CONTRACTOR'S FAILURE TO CONVEY THE NECESSARY KNOWLEDGE TO FAMILIARIZE WORKERS AND SUBCONTRACTORS WITH THIS PROJECT.
7. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THE SAFETY OF ALL PERSONS ON THE JOB SITE AT ALL TIMES INCLUDING (BUT NOT LIMITED TO) SUBCONTRACTORS, FACILITY EMPLOYEES, VENDORS, DESIGN STAFF PROFESSIONALS AND INSPECTION PERSONNEL.
8. THE GENERAL CONTRACTOR SHALL PROVIDE DUMPSTERS, PORTABLE TOILETS AND TEMPORARY POWER FOR UNRESTRICTED PROJECT RELATED USE BY OTHERS FOR THE DURATION OF THE PROJECT.
9. THE GENERAL CONTRACTOR SHALL COORDINATE PROJECT PHASING AND STORAGE OF MATERIALS WITH THE OWNER.
10. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR RECEIVING, UNLOADING, STORING AND PROTECTING OF MATERIALS AND EQUIPMENT SUPPLIED BY THE OWNER UNTIL IT HAS BEEN INSTALLED AND ACCEPTED BY THE OWNER.
11. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING THE AREA CLEAN AND FREE OF DEBRIS AT ALL TIMES DURING CONSTRUCTION. THE GENERAL CONTRACTOR SHALL POWER WASH THE ENTIRE CONSTRUCTION AREA PRIOR TO TURNOVER TO THE OWNER. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING DESIGNATED WASH-OUTS FOR CONCRETE, STUCCO, ETC. THESE SHOULD BE DESIGNATED PRIOR TO CONSTRUCTION ON THE PLANS AND ESTABLISHED AT THE PRE-CONSTRUCTION MEETING.
12. EXISTING PAVING THAT WILL REMAIN AFTER CONSTRUCTION SHALL BE PROTECTED FROM DAMAGE. AREAS OF EXISTING PAVING THAT ARE DAMAGED DURING CONSTRUCTION SHALL BE SAWCUT, THEN REMOVED AND REPLACED.
13. THE GENERAL CONTRACTOR SHALL FIELD VERIFY THE EXACT LOCATION OF ALL PUBLIC AND PRIVATE UTILITIES, INCLUDING IRRIGATION, SPECIFIC TO THIS PROJECT PRIOR TO THE START OF ANY DEMOLITION OR CONSTRUCTION. SHOULD ANY UTILITY REQUIRE RELOCATION, CONTRACTOR SHALL COORDINATE WITH THE OWNER AND THE ARCHITECT/ENGINEER.
14. SAWCUT AND REMOVE PORTIONS OF EXISTING PAVING ONLY AS REQUIRED TO INSTALL NEW UTILITIES OR TO CONSTRUCT PROPOSED FACILITIES PER THIS PLAN. REPLACE PORTIONS REMOVED TO MATCH EXISTING FLUSH AND SMOOTH.
15. IF REQUESTED BY THE OWNER, PROVIDE TEMPORARY CONSTRUCTION FENCING, MINIMUM 6'-0" HIGH, AROUND ENTIRE AREA OF CONSTRUCTION OR PER THE CLIENTS STANDARDS. FIELD VERIFY EXACT LOCATION AND SPECIFICATIONS OF FENCE WITH THE OWNER PRIOR TO START OF CONSTRUCTION. REMOVE FENCING AT COMPLETION OF PROJECT AND PATCH PAVING AS REQUIRED AT FENCE POST HOLES.
16. ALL DIMENSIONS ARE TO GROUND LEVEL IMPROVEMENTS (FACE OF CURB, CONCRETE SLAB, ETC UNLESS NOTED OTHERWISE).
17. CONTRACTOR IS RESPONSIBLE FOR PROTECTION OF ALL PROPERTY CORNERS.
18. CONTRACTOR SHALL MATCH PROPOSED CURB AND GUTTER, CONCRETE, AND PAVEMENT TO EXISTING IN GRADE AND ALIGNMENT.
19. CONTRACTOR SHALL PROVIDE PIPE BOLLARDS FOR PROTECTION OF ALL ABOVE GROUND UTILITIES AND APPURTENANCES IN DRIVE AREA.
20. CONSTRUCTION SHALL COMPLY WITH ALL GOVERNING CODES AND BE CONSTRUCTED TO SAME.
21. CONTRACTOR IS RESPONSIBLE FOR REPAIRING THE DAMAGE DONE TO ANY EXISTING ITEM TO REMAIN DURING CONSTRUCTION, SUCH AS, BUT NOT LIMITED TO, DRAINAGE, UTILITIES, PAVEMENT, STRIPING, CURB, ETC. REPAIRS SHALL BE EQUAL TO, OR BETTER THAN, EXISTING CONDITIONS. CONTRACTOR IS RESPONSIBLE TO DOCUMENT ALL EXISTING DAMAGE AND NOTIFY OWNER PRIOR TO CONSTRUCTION START.
22. CONTRACTOR SHALL REFER TO THE ARCHITECTURAL PLANS FOR EXACT LOCATIONS AND DIMENSIONS OF BUILDING APPURTENANCES, STAIRS, RAMPS, SLOPE PAVING, SIDEWALKS, PRECISE BUILDING DIMENSIONS AND EXACT BUILDING UTILITY ENTRANCE LOCATIONS.
23. ALL DISTURBED AREAS ARE TO RECEIVE FOUR INCHES OF TOPSOIL, SEED OR SOD, MULCH AND WATER UNTIL A HEALTHY STAND OF GRASS IS ESTABLISHED.
24. EXISTING STRUCTURES WITHIN CONSTRUCTION LIMITS ARE TO BE ABANDONED, REMOVED OR RELOCATED AS NECESSARY. ALL COST SHALL BE INCLUDED IN BASE BID.
25. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RELOCATIONS, (UNLESS OTHERWISE NOTED ON PLANS) INCLUDING BUT NOT LIMITED TO, ALL UTILITIES, STORM DRAINAGE, SIGNS, TRAFFIC SIGNALS & POLES, ETC. AS REQUIRED. ALL WORK SHALL BE IN ACCORDANCE WITH GOVERNING AUTHORITIES REQUIREMENTS AND PROJECT SITE WORK SPECIFICATIONS AND SHALL BE APPROVED BY SUCH. ALL COST SHALL BE INCLUDED IN BASE BID.
26. THE SITE WORK FOR THIS PROJECT SHALL MEET OR EXCEED THE SPECIFICATIONS IN THE CONTRACT DOCUMENTS.
27. ANY DISCREPANCIES ON THE DRAWINGS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER AND ENGINEER OF RECORD BEFORE COMMENCING WORK. NO FIELD CHANGES OR DEVIATIONS FROM THE DESIGN ARE TO BE MADE WITHOUT PRIOR APPROVAL.
28. IN THE EVENT THE CONSTRUCTION IS ABANDONED PRIOR TO THE COMPLETION OF THE PROJECT, ALL CONSTRUCTION AND STOCKPILED VEGETATIVE DEBRIS AND FILL SHALL BE REMOVED FROM THE SITE AND THE SITE SHALL BE STABILIZED PER THE PERMIT FOR STORM WATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES (NPDES).
29. THESE PLANS ARE INTENDED TO AND SHALL COMPLY WITH AMERICANS WITH DISABILITIES ACT.
30. ALL VEGETATION FROM CLEARING AND GRUBBING SHALL BE DISPOSED OF OFF-SITE.
31. CONTRACTOR IS RESPONSIBLE FOR PERMITTING, INSTALLATION AND MAINTENANCE OF ALL MAINTENANCE OF TRAFFIC OPERATIONS DURING CONSTRUCTION. MAINTENANCE OF TRAFFIC SHALL CONFORM TO GOVERNING AGENCY STANDARDS.
32. ALL DESIGN AND CONSTRUCTION MUST CONFORM TO THE MINIMUM STANDARDS SET DOWN IN THE CITY/COUNTY DEVELOPMENT CODE, ZONING, AND/OR RELATED ORDINANCES, AND MINIMUM TESTING FREQUENCY REQUIREMENTS.

GENERAL PAVING AND GRADING NOTES:

1. ALL PAVING AND GRADING CONSTRUCTION MATERIALS AND METHODS SHALL MEET THE STANDARD SPECIFICATIONS AND REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.
2. CONTRACTOR IS RESPONSIBLE FOR DEMOLITION OF EXISTING STRUCTURES INCLUDING REMOVAL OF ANY EXISTING UTILITIES SERVING THE STRUCTURE. UTILITIES ARE TO BE REMOVED TO THE RIGHT-OF-WAY, UNLESS OTHERWISE NOTED.
3. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
4. ALL CUT OR FILL SLOPES SHALL BE 3:1 OR FLATTER UNLESS OTHERWISE NOTED.
5. PRECAST STRUCTURES MAY BE USED AT CONTRACTORS OPTION AND SHALL MEET ALL AUTHORITY HAVING JURISDICTION REQUIREMENTS/SPECIFICATIONS AT A MINIMUM.
6. IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITIONS OR BETTER.
7. THE CONTRACTOR SHALL ADHERE TO ALL TERMS & CONDITIONS AS OUTLINED IN THE EPA AND/OR APPLICABLE STATE GENERAL NPDES PERMIT FOR STORM WATER DISCHARGE ASSOCIATED WITH CONSTRUCTION ACTIVITIES.
8. CONTRACTOR SHALL ADJUST AND/OR CUT EXISTING PAVEMENT AS NECESSARY TO ASSURE A SMOOTH FIT AND CONTINUOUS GRADE.
9. CONTRACTOR SHALL ASSURE POSITIVE DRAINAGE AWAY FROM BUILDINGS FOR ALL NATURAL AND PAVED AREAS.
10. TOPOGRAPHIC INFORMATION IS TAKEN FROM A TOPOGRAPHIC SURVEY BY A LICENSED PROFESSIONAL SURVEYOR AND MAPPER. IF THE CONTRACTOR DOES NOT ACCEPT EXISTING TOPOGRAPHY AS SHOWN ON THE PLANS, WITHOUT EXCEPTION, THEN THE CONTRACTOR SHALL SUPPLY, AT THEIR EXPENSE, A TOPOGRAPHIC SURVEY BY A REGISTERED LAND SURVEYOR TO THE ARCHITECT/ENGINEER OF RECORD AND OWNER FOR REVIEW.
11. ALL UNSURFACED AREAS DISTURBED BY GRADING OPERATION SHALL RECEIVE 4 INCHES OF TOPSOIL. CONTRACTOR SHALL APPLY STABILIZATION FABRIC TO ALL SLOPES 3H:1V OR STEEPER. CONTRACTOR SHALL STABILIZE DISTURBED AREAS IN ACCORDANCE WITH GOVERNING SPECIFICATIONS UNTIL A HEALTHY STAND OF VEGETATION IS OBTAINED.
12. CONSTRUCTION SHALL COMPLY WITH ALL APPLICABLE GOVERNING CODES AND BE CONSTRUCTED TO SAME.
13. ALL PAVING, CONSTRUCTION MATERIALS, AND WORKMANSHIP WITHIN RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH THE AUTHORITY HAVING JURISDICTION SPECIFICATIONS AND STANDARDS (LATEST EDITION) RESPECTIVELY.
14. ALL REINFORCED CONCRETE PIPE SHALL BE CLASS III UNLESS OTHERWISE NOTED AND INSTALLED IN ACCORDANCE WITH THE APPROPRIATE APPROVING AUTHORITIES LATEST REQUIREMENTS AND SPECIFICATIONS OR AUTHORITY HAVING JURISDICTION SPECIFICATIONS, WHICHEVER IS MORE STRINGENT.
15. ALL CONCRETE USED ON THE SITE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI IN 28 DAYS. ALL CONCRETE SIDEWALKS SHALL HAVE CONTROL JOINTS CUT ON 5-FOOT CENTERS AND EXPANSION JOINTS PLACED ON 60-FOOT CENTERS, CHANGES IN DIRECTION, AND ABUTTING SEPARATE POURS. CONTRACTION JOINT SPACING MATCHES WIDTH OF SIDEWALK AND EXPANSION JOINTS ARE REQUIRED AT A MAXIMUM OF 25 FEET. THIS WOULD MEAN 24 FEET FOR A 6 INCH CURB. PAVEMENT JOINTS SHALL BE SPACED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND/OR DETAILS.
16. ALL AREAS INDICATED AS PAVEMENT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE TYPICAL PAVEMENT SECTIONS AS INDICATED ON THE DRAWINGS AND GEOTECHNICAL REPORT.
17. THE CONTRACTOR SHALL ENSURE THAT ALL PLANTING AREAS (INTERIOR ISLANDS, FOUNDATION PLANTING AREAS, ETC.) ARE NOT COMPACTED AND DO NOT CONTAIN LIMEROCK OR OTHER MATERIAL (CLAY, SUBGRADE MATERIAL, MARL, ETC.) WHICH MAY ADVERSELY AFFECT DRAINAGE OF GREEN AREAS. THE CONTRACTOR SHALL ALSO EXCAVATE AND REMOVE ALL UNDESIRABLE MATERIAL FROM ALL AREAS ON THE SITE TO BE PLANTED AND BACKFILL WITH CLEAN, FREE DRAINING TOPSOIL.
18. CONTRACTOR IS SPECIFICALLY CAUTIONED, DEPENDING ON THE TIME OF YEAR AND PROJECT LOCATION, DEWATERING MAY BE REQUIRED.
19. IF DEWATERING IS REQUIRED, THE CONTRACTOR SHALL OBTAIN ANY APPLICABLE REQUIRED PERMITS. THE CONTRACTOR IS TO COORDINATE WITH THE OWNER AND ARCHITECT/ENGINEER PRIOR TO EXCAVATION.
20. STRIP TOPSOIL AND ORGANIC MATTER AND PAVING MATERIAL FROM ALL AREAS TO BE IMPERVIOUS. TOPSOIL SHALL BE STOCKPILED ON SITE FOR REPLACEMENT ON SLOPES AND ALL OTHER GREEN AND LANDSCAPE AREAS.
21. FIELD DENSITY TESTS SHALL BE TAKEN AT FREQUENCY AS REQUIRED IN THE SPECIFICATIONS OR AS REQUIRED BY THE GOVERNING REGULATORY AGENCY, WHICH EVER IS MORE STRINGENT.
22. CONTRACTOR SHALL ENSURE POSITIVE FLOW TO ALL INLETS WITHIN DRAINAGE BASINS TO PRECLUDE PONDED WATER.
23. THE CONTRACTOR SHALL TAKE ALL MEASURES NECESSARY TO CONTROL SEDIMENT, INCLUDING BUT NOT LIMITED TO THE INSTALLATION OF BARRIERS AT ALL LOCATIONS WHERE THE POSSIBILITY OF TRANSFERRING SUSPENDED SOLIDS INTO THE RECEIVING WATER BODY EXISTS DUE TO THE PROPOSED WORK. BARRIERS MUST BE MAINTAINED IN EFFECTIVE CONDITION AT ALL LOCATIONS UNTIL CONSTRUCTION IS COMPLETED.

GENERAL UTILITY NOTES:

1. CONTRACTOR SHALL COORDINATE ANY DISRUPTIONS TO EXISTING UTILITY SERVICES WITH ADJACENT PROPERTY OWNERS.
2. ALL ELECTRIC, TELEPHONE AND GAS EXTENSIONS (INCLUDING SERVICE LINES) SHALL BE CONSTRUCTED TO THE APPROPRIATE UTILITY COMPANY SPECIFICATIONS. ALL UTILITY DISCONNECTIONS SHALL BE COORDINATED WITH THE DESIGNATED UTILITY COMPANIES.
3. CONSTRUCTION SHALL NOT START ON ANY PUBLIC UTILITY SYSTEM UNTIL WRITTEN APPROVAL HAS BEEN RECEIVED BY THE ENGINEER FROM THE APPROPRIATE GOVERNING AUTHORITY AND CONTRACTOR HAS BEEN NOTIFIED BY THE ENGINEER.
4. PRIOR TO THE CONSTRUCTION OF OR CONNECTION TO ANY STORM DRAIN, SANITARY SEWER, WATER MAIN OR ANY OF THE DRY UTILITIES, THE CONTRACTOR SHALL EXCAVATE, VERIFY AND CALCULATE ALL POINTS OF CONNECTION AND ALL UTILITY CROSSINGS AND INFORM THE ENGINEER AND THE OWNER/DEVELOPER OF ANY CONFLICT OR REQUIRED DEVIATIONS FROM THE PLAN. NOTIFICATION SHALL BE MADE A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION. THE ENGINEER AND ITS CLIENTS SHALL BE HELD HARMLESS IN THE EVENT THAT THE CONTRACTOR FAILS TO MAKE SUCH NOTIFICATION.
5. PRIOR TO CONSTRUCTION, THE GENERAL CONTRACTOR SHALL VERIFY THAT "STUB OUTS" FOR POWER, TELEPHONE, FIBER OPTICS, WATER AND SEWER (IF APPLICABLE) HAVE BEEN PROVIDED BY OTHERS AT THE AREA ADJACENT TO THE PROPOSED BUILDING. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL CONNECTIONS AT THE BUILDING.
6. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE SCHEDULE FOR INSTALLATION WITH THE UTILITY COMPANIES AND THE OWNER. ALL EXISTING CONDITIONS THAT ARE REMOVED OR DISRUPTED DURING THE PLACEMENT OF NEW UTILITIES SHALL BE REPLACED OR REPAIRED TO MATCH ORIGINAL CONDITIONS. ANY EXISTING UTILITIES DISRUPTED DURING PLACEMENT OF NEW UTILITIES SHALL BE REPAIRED AND OPERATING NORMALLY THE SAME DAY OF DISRUPTION. ITEMS THAT MAY NEED TO BE REPLACED OR REPAIRED INCLUDE BUT ARE NOT LIMITED TO: EXISTING ASPHALT PAVING, EXISTING CONCRETE PAVING, WATER LINES, IRRIGATION LINES, GRASS AREAS, LANDSCAPING, AND SITE LIGHTING. THE GENERAL CONTRACTOR SHALL FIELD VERIFY THE EXACT LOCATION OF ALL EXISTING ITEMS THAT WILL BE DISRUPTED DURING THE PLACEMENT OF NEW UTILITIES AND PROVIDE THE OWNER A DETAILED PHASING SCHEDULE OUTLINING THE TIMELINE FOR INSTALLATION OF NEW UTILITIES INCLUDING THE PROPOSED TIMES THAT EXISTING ITEMS WILL BE DISRUPTED. THE NEW UTILITIES TRENCH WIDTH AND DEPTH SHALL MEET ALL LOCAL AND STATE REQUIREMENTS FOR THE DISPLACEMENT OF ALL UTILITIES. IF DIRECTIONAL BORING IS USED FOR INSTALLATION, THE ABOVE LISTED ITEMS ARE STILL REQUIRED TO BE SUBMITTED TO THE OWNER.
7. IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITIONS OR BETTER.
8. ALL SANITARY SEWER MANHOLES IN PAVED AREAS SHALL BE FLUSH WITH PAVEMENT, AND SHALL HAVE TRAFFIC BEARING RINGS & COVERS. SANITARY MANHOLES IN UNPAVED AREAS SHALL BE 6" ABOVE FINISH GRADE WITH WATER TIGHT LIDS.
9. ALL FILL MATERIAL IS TO BE IN PLACE, AND COMPACTED BEFORE INSTALLATION OF PROPOSED UTILITIES.
10. CONTRACTOR SHALL NOTIFY THE UTILITY AUTHORITIES INSPECTORS 72 HOURS BEFORE CONNECTING TO ANY EXISTING LINE.
11. UNDERGROUND UTILITY LINES SHALL BE INSTALLED, INSPECTED AND APPROVED BEFORE BACKFILLING.
12. ALL CONCRETE FOR ENCASEMENTS SHALL HAVE A MINIMUM 28 DAY COMPRESSION STRENGTH AT 4000 P.S.I.
13. REFER TO ARCHITECTURAL PLUMBING DRAWINGS FOR TIE-IN OF ALL UTILITIES.
14. CONTRACTOR IS RESPONSIBLE FOR COMPLYING TO THE SPECIFICATIONS OF THE LOCAL AUTHORITIES WITH REGARDS TO MATERIALS AND INSTALLATION OF THE WATER AND SEWER LINES.
15. CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES FOR INSTALLATION REQUIREMENTS AND SPECIFICATIONS.
16. DRAWINGS DO NOT PURPORT TO SHOW ALL EXISTING UTILITIES.
17. EXISTING UTILITIES SHALL BE VERIFIED IN FIELD PRIOR TO INSTALLATION OF ANY NEW LINES.
18. THE CONTRACTOR SHALL CONSTRUCT GRAVITY SEWER LATERALS, MANHOLES, GRAVITY SEWER LINES AND DOMESTIC WATER AND FIRE PROTECTION SYSTEM AS SHOWN ON THESE PLANS. THE CONTRACTOR SHALL FURNISH ALL NECESSARY MATERIALS, EQUIPMENT, MACHINERY, TOOLS, MEANS OF TRANSPORTATION AND LABOR NECESSARY TO COMPLETE THE WORK IN FULL AND COMPLETE IN ACCORDANCE WITH THE SHOWN, DESCRIBED AND REASONABLY INTENDED REQUIREMENTS OF THE CONTRACT DOCUMENTS AND JURISDICTIONAL AGENCY REQUIREMENTS. IN THE EVENT THAT THE CONTRACT DOCUMENTS AND THE JURISDICTIONAL AGENCY REQUIREMENTS ARE NOT IN AGREEMENT, THE MOST STRINGENT SHALL GOVERN.
19. THE CONTRACTOR SHALL RESTORE ALL DISTURBED VEGETATION IN KIND, UNLESS SHOWN OTHERWISE.
20. DEFLECTION OF PIPE JOINTS AND CURVATURE OF PIPE SHALL NOT EXCEED THE MANUFACTURER'S SPECIFICATIONS. SECURELY CLOSE ALL OPEN ENDS OF PIPE AND FITTINGS WITH A WATERTIGHT PLUG WHEN WORK IS NOT IN PROGRESS. THE INTERIOR OF ALL PIPES SHALL BE CLEAN AND JOINT SURFACES WIPED CLEAN AND DRY AFTER THE PIPE HAS BEEN LOWERED INTO THE TRENCH. VALVES SHALL BE PLUMB AND LOCATED ACCORDING TO THE PLANS.
21. ALL UTILITY AND STORM DRAIN TRENCHES LOCATED UNDER AREAS TO RECEIVE PAVING SHALL BE COMPLETELY BACKFILLED AND COMPACTED IN ACCORDANCE WITH SPECIFICATIONS. IN THE EVENT THAT THE CONTRACT DOCUMENTS AND JURISDICTIONAL AGENCY REQUIREMENTS ARE NOT IN AGREEMENT, THE MOST STRINGENT SHALL GOVERN.
22. SHOP DRAWINGS FOR ALL MATERIALS AND APPURTENANCE SHALL BE SUBMITTED TO AND APPROVED BY THE GOVERNING UTILITY DEPARTMENT. CONTRACTOR TO COPY THE ENGINEER OF RECORD WITH APPROVED DRAWINGS AS REQUIRED. NO WORK IS TO BEGIN UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED, APPROVED AND RETURNED TO THE CONTRACTOR.
23. AT LEAST THREE WEEKS PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE CITY/COUNTY AND THE UTILITY COMPANY AND SUPPLY THEM WITH ALL REQUIRED SHOP DRAWINGS, THE CONTRACTOR'S NAME, STARTING DATE, PROJECTED SCHEDULE AND OTHER INFORMATION AS REQUIRED. THE CITY/COUNTY ENGINEERING INSPECTION OFFICE SHOULD ALSO BE CONTACTED FIVE DAYS PRIOR TO CONSTRUCTION TO ENSURE AVAILABILITY OF INSPECTION PERSONAL. ANY WORK PREFORMED PRIOR TO NOTIFYING THE CITY/COUNTY ENGINEERING INSPECTION OFFICE OR WITHOUT A DEPARTMENT INSPECTOR PRESENT MAY BE SUBJECT TO REMOVAL AND REPLACEMENT AT THE SOLE EXPENSE OF THE CONTRACTOR.
24. THE CONTRACTOR SHALL PERFORM AN INFILTRATION/EXFILTRATION TEST ON ALL GRAVITY SEWERS AND A PRESSURE TEST ON ALL FORCE MAINS (AS APPLICABLE) IN ACCORDANCE WITH THE CITY/COUNTY UTILITY REGULATIONS. SAID TESTS ARE TO BE CERTIFIED BY THE ENGINEER OF RECORD AND SUBMITTED TO THE CITY/COUNTY FOR APPROVAL. THE SCHEDULING, COORDINATION AND NOTIFICATION TO ALL PARTIES IS THE CONTRACTOR'S RESPONSIBILITY.
25. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING EXISTING WATER MAINS, FORCE MAINS, SANITARY SEWER AND STORM MAINS AND MAINTAIN A MINIMUM CLEARANCE BETWEEN WATER MAINS AND OTHER UTILITIES AT ALL POINTS ALONG THEIR LENGTH AS REQUIRED IN THE PLANS, DETAILS, AND SPECIFICATIONS.
26. SANITARY SEWER, FORCE MAINS, SEWER LATERALS, AND STORM SEWERS SHOULD CROSS UNDER WATER MAINS AND/OR WATER SERVICES WHENEVER POSSIBLE. SANITARY SEWERS, FORCE MAINS, SEWER LATERALS, AND STORM SEWERS CROSSING WATER MAINS SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF

FDOT CONSTRUCTION NOTES FOR ACCESS:

1. ANY NEW PROPOSED PLAN SHALL INCLUDE CROSS SECTIONS OF THE STATE ROAD ADEQUATELY REFLECTING ALL RIGHT OF WAY FEATURES INCLUDING EXISTING UTILITIES, STORM DRAIN STRUCTURES AND ANY ABOVE OR BELOW GROUND APPURTENANCES WHERE APPLICABLE.
2. NO PEDESTRIAN PATHWAY IS TO BE REMOVED, BLOCKED, OR DISTURBED WITHOUT HAVING A SUFFICIENT DESIGNATED TEMPORARY PEDESTRIAN PATHWAY WITH ALL APPROPRIATE PEDESTRIAN MAINTENANCE OF TRAFFIC SIGNS (STANDARD PLAN 102-660) IN PLACE PRIOR TO PATHWAY BEING AFFECTED.
3. ALL TEMPORARY PEDESTRIAN PATHWAYS MUST BE FIRM AND UNYIELDING.
4. ANY SIDEWALK FRONTING THE PROPERTY THAT IS CRACKED, DAMAGED OR UNSTABLE AND IS CREATING AN ADA TRIP HAZARD MUST BE REPLACED BY SECTION, USING STANDARD #520-001, #522-002, AND #522-001 FOR THE CONSTRUCTION OF SIDEWALK AND MEET CURRENT ADA STANDARDS. ALL CONCRETE PLACED IN THE RIGHT OF WAY SHALL BE A MINIMUM OF 6" THICK, FDOT CERTIFIED CLASS 1 NON-STRUCTURAL, 2500 PSI CONCRETE WITH FIBER MESH MATERIAL FROM A FDOT APPROVED PLANT.
5. VERIFY AND ENSURE THAT THE EXISTING SIDEWALK IN THE ROW BEING RETAINED MEETS ADA REQUIREMENTS. ANY SIDEWALK FOUND DURING SUBSEQUENT SITE INSPECTIONS NOT MEETING CURRENT ADA AND FDOT DESIGN STANDARDS WILL BE REQUIRED TO BE REMOVED AND REPLACED.
6. THE DETECTIBLE WARNING SURFACE MATERIALS MUST BE ON THE STATE'S APPROVED PRODUCTS LIST. (NON-PROPRIETARY).
7. ANY SIDEWALK DAMAGED AS A RESULT OF WORK BEING PERFORMED IN ASSOCIATION WITH THE PERMITTEE AND CONTRACTOR SHALL BE REMOVED AND REPLACED PER FDOT SPECIFICATIONS.
8. ANY SIDEWALK DISTURBED WILL BE REPLACED BY SECTION WITHIN 72 HOURS, TO FDOT SPECIFICATIONS.
9. PIPE CULVERTS SHOWN ON THE PERMIT MUST MEET FDOT SPECIFICATIONS, TYPE, SIZE, AND LENGTH AS DESCRIBED ON THE PERMIT. EACH JOINT OR LENGTH OF PIPE SHALL HAVE FDOT STAMPS AFFIXED VERIFYING THIS APPROVAL. ALL CONCRETE PIPE JOINTS OTHER THAN 1" RING JOINTS MUST BE DIAPERED. ALL CULVERTS TO BE INSPECTED BY FDOT PRIOR TO PLACEMENT OF FILL.
10. THE FDOT RETAINS THE RIGHT TO MAKE ALTERATIONS TO THE PERMIT, ATTACHED SKETCH OR CHARACTER OF WORK AS MAY BE CONSIDERED NECESSARY OR DESIRABLE DURING THE PROGRESS OF THE WORK FOR SATISFACTORY COMPLETION OF THE PROPOSED CONSTRUCTION.
11. THE PERMITTEE SHALL NOTIFY THE FDOT OF DATE OF COMPLETION, REQUEST A FINAL INSPECTION AND A NOTICE OF FINAL ACCEPTANCE.
12. ALL CONSTRUCTION AND/OR MAINTENANCE ON THE FDOT RIGHT OF WAY SHALL CONFORM TO THE FEDERAL MANUAL ON UNIFORM TRAFFIC DEVICES (MUTCD). THE FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS. THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, PLANS PREPARATION MANUAL AND DRAINAGE MANUAL.
13. NO LANE CLOSURES OF ANY STATE ROADWAY ARE ALLOWED WITHOUT 48-HOUR ADVANCE NOTICE AND APPROVAL FROM FDOT.
14. LANE CLOSURES MUST BE LIMITED TO SUNDAY THROUGH THURSDAY 8:00 PM TO 5:30 AM UNLESS OTHERWISE APPROVED BY THE FDOT.
15. LANE CLOSURE NEEDS TO ACCOMMODATE FOR A BIKE LANE IF THE ROADWAY CONSISTS OF ONE.
16. NO WORK SHALL BE PERFORMED DURING THE WEEKS OF ANY STATE OR FEDERAL HOLIDAYS UNLESS OTHERWISE APPROVED IN WRITING BY THE FDOT.
17. NO WORK REQUIRING LANE OR SIDEWALK CLOSURE SHALL BE PERFORMED DURING SPRING BREAK ON SR 699 (GULF BOULEVARD). SPRING BREAK IS IDENTIFIED AS MARCH 1 THRU THE FIRST MONDAY FOLLOWING EASTER. DURING THIS TIME, LANE AND SIDEWALK CLOSURES ON ALL STATE ROADWAYS THAT LEAD TO SR 699 (GULF BOULEVARD) WILL BE RESTRICTED TO NIGHT WORK, SUNDAY THRU THURSDAY, 8:30 PM TO 5:30 AM.
18. OPEN CUTTING OF ANY ROADWAY, DRIVEWAY, OR SIDEWALK OUTSIDE THOSE LIMITS IDENTIFIED WITHIN THE PERMIT ARE NOT ALLOWED WITHOUT PRIOR APPROVAL BY THE FDOT.
19. PRIOR TO THE REMOVAL OF ANY MATERIALS THE AREA MUST BE SAW-CUT TO PREVENT ANY DAMAGE TO THE ROADWAY.
20. THE CONTRACTOR SHALL HAVE AN AUTHORIZED PERSON AVAILABLE AT/OR NEAR THE WORK SITE ON A 24-HOUR BASIS, 7 DAYS A WEEK IN ORDER TO ADDRESS EMERGENCY ISSUES ASSOCIATED WITH THE PROJECT.
21. NO STOCK PILING, STORING, OR SEMI-PERMANENT USE OF THE RIGHT OF WAY IS AUTHORIZED UNLESS SPECIFICALLY IDENTIFIED WITHIN THE PERMIT.
22. THE PERMITTED WORK SCHEDULE IS DEFINED AS MONDAY THROUGH FRIDAY 7:00 AM TO 5:30 PM UNLESS OTHERWISE NOTED WITHIN THE PERMIT. ANY WORK DESIRED OUTSIDE OF THIS PERIOD MUST BE REQUESTED IN ADVANCE AND APPROVED BEFORE WORKING THE ALTERNATE SCHEDULE.
23. THE DEPARTMENT OF TRANSPORTATION RESERVES THE RIGHT TO MAKE ADJUSTMENTS TO ANY PERMITTED METHOD OF INSTALLATION, SCOPE, RESTORATION THAT MAY BE REQUIRED TO POSITIVELY SUPPORT LIFE, SAFETY AND ENVIRONMENTAL WELL-BEING OF ALL USERS OF THE TRANSPORTATION SYSTEM.
24. ROADWAY RESTORATION SHALL UTILIZE 100 PSI EXCAVATABLE FLOWABLE FILL MATERIAL AND ASPHALT PLACED WITHIN THE STATE RIGHT-OF-WAY SHALL BE PLACED FULL-DEPTH, TWO 2.5-INCH LIFTS OF SP 12.5, TWO 1.5-INCH LIFTS OF SP 9.5. TYPICAL SECTIONS WILL NEED TO BE PROVIDED WITHIN THE PLANS FOR THE PAVEMENT PLACEMENT. A STAIR STEP METHOD SHOULD BE INCORPORATED, PRIOR TO PLACING ASPHALT, TO AVOID VERTICAL JOINTS. MILLING OF THE PATCH MAY BE REQUIRED BASED ON THE PATCHED SURFACE PERFORMANCE. THE MILLING SHALL BE UTILIZED FOR SURFACE LEVELING TO A THICKNESS EQUAL TO OR GREATER THAN THE EXISTING FRICTION COARSE MATERIAL. THE MILLING LIMITS ARE 50-FOOT OF THE PATCH ALONG THE LONGITUDINAL PATH OF THE LANE, FULL LANE WIDTH AND TO INCLUDE ANY ADJACENT BIKE LANES, SHARED PATH OR URBAN SHOULDER SECTIONS.
25. ANY DISRUPTIONS TO ANY PERMEABLE PEDESTRIAN WAY AND BIKE LANE ARE TO BE RESTORED AS WORK CONTINUES. ALL PATCHES SHALL BE FULL WIDTH FROM OUTSIDE EDGE OF PEDESTRIAN PATH TO WHITE LINE EDGE OF TRAVEL LANE WITH STAIR STEP (STAGGERED) JOINTS. RESTORATION TO INCLUDE BACKFILL WITH EXISTING SUB-GRADE MATERIAL AND #57 STONE AS BASE MATERIAL (COMPACT IN 6-INCH LIFTS) TO BOTTOM OF EXISTING PERVIOUS ASPHALT BASE, FOLLOWED BY PERMEABLE DESIGN MIX (IF AVAILABLE) OR FC-5 (FRICTION COURSE) MIX WITH A MINIMUM OF TWO 2-INCH AND A MAXIMUM OF TWO 3-INCH LIFTS. MAINTAIN INGRESS/EGRESS ON ALL DRIVES AND SIDE STREETS DURING CONSTRUCTION.
26. THE DEPARTMENT WILL REVIEW THE REVISIONS TO THE PLANS AND IF NEEDED CHANGES ARE NECESSARY THE DEPARTMENT WILL ADDRESS IT AT THAT TIME.

THE CONTRACTOR WILL BE REQUIRED TO HAVE A PRE-CON MEETING TWO WEEK PRIOR TO WORK IN THE STATE RIGHT-OF-WAY

THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY BOWMAN SHALL BE WITHOUT LIABILITY TO BOWMAN.

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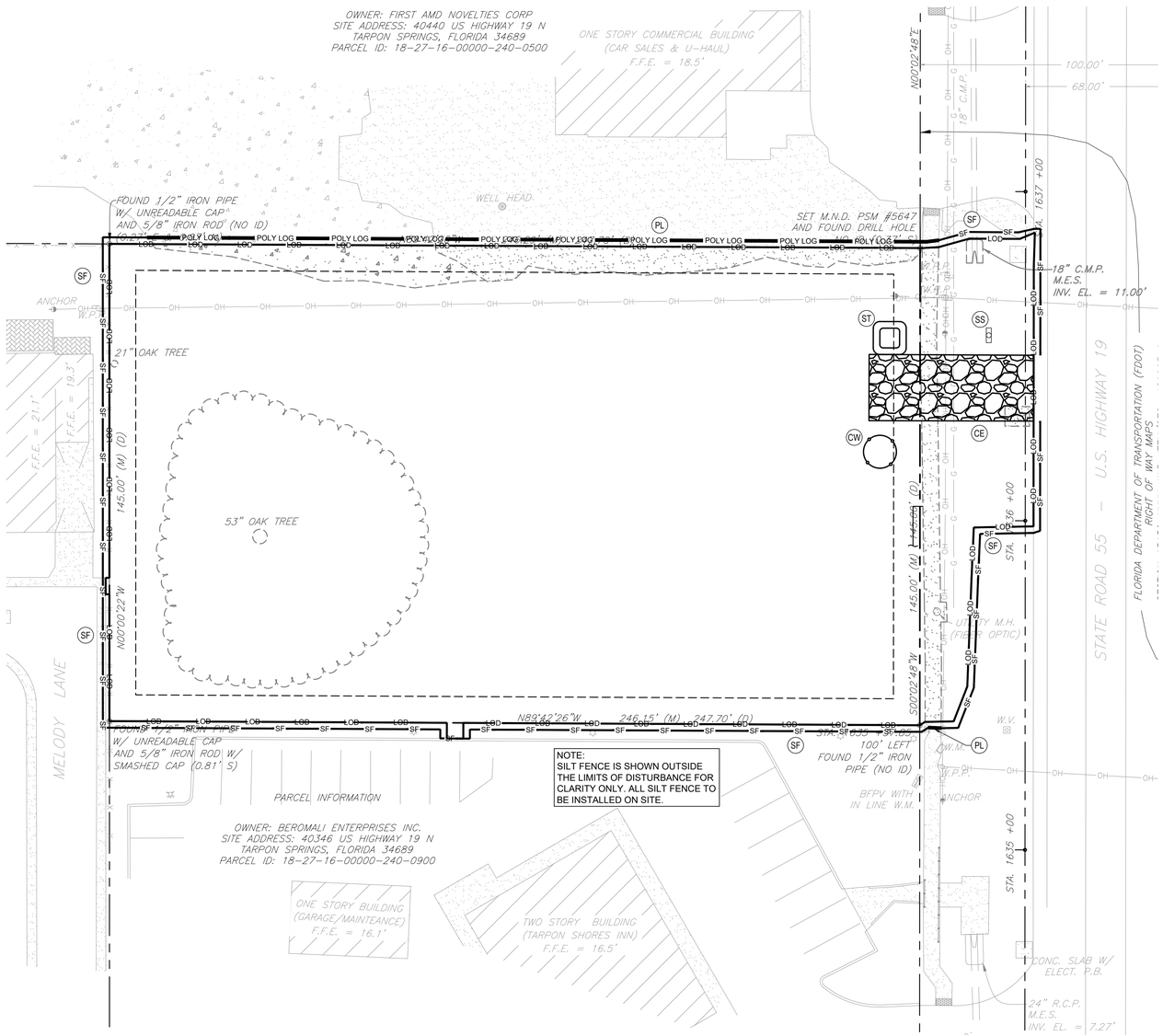
STATE OF FLORIDA
PROFESSIONAL ENGINEER

PLAN STATUS

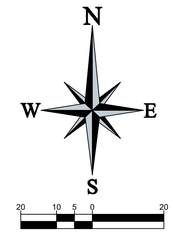
REV	DATE	COMMENT
1	09/13/22	AHJ COMMENTS
2	12/23/22	AHJ COMMENTS
3	03/06/23	AHJ COMMENTS

KSP DESIGN	KSP DRAWN	ALC CHKD
SCALE	AS NOTED	
JOB No.	011046-01-001	
DATE	04/13/2022	

SHEET C1.2



NOTE:
SILT FENCE IS SHOWN OUTSIDE THE LIMITS OF DISTURBANCE FOR CLARITY ONLY. ALL SILT FENCE TO BE INSTALLED ON SITE.



MAINTENANCE

ALL MEASURES STATED ON THIS SITE MAP, AND IN THE STORM WATER POLLUTION PREVENTION PLAN, SHALL BE MAINTAINED IN FULLY FUNCTIONAL CONDITION UNTIL NO LONGER REQUIRED FOR A COMPLETED PHASE OF WORK OR FINAL STABILIZATION OF THE SITE. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CHECKED BY A QUALIFIED PERSON IN ACCORDANCE WITH THE CONTRACT DOCUMENTS OR THE APPLICABLE PERMIT, WHICHEVER IS MORE STRINGENT, AND REPAIRED IN ACCORDANCE WITH THE FOLLOWING:

1. INLET PROTECTION DEVICES AND BARRIERS SHALL BE REPAIRED OR REPLACED IF THEY SHOW SIGNS OF UNDERMINING OR DETERIORATION.
2. ALL SEEDED AREAS SHALL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED, WATERED, AND RESEEDED AS NEEDED.
3. SILT FENCES SHALL BE REPAIRED TO THEIR ORIGINAL CONDITIONS IF DAMAGED. SEDIMENT SHALL BE REMOVED FROM THE SILT FENCES WHEN IT REACHES ONE-HALF THE HEIGHT OF THE SILT FENCE.
4. THE CONSTRUCTION EXITS SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHT OF WAY.

SEQUENCE OF CONSTRUCTION

UPON IMPLEMENTATION AND INSTALLATION OF THE FOLLOWING AREAS: TRAILER, PARKING, LAY DOWN, PORTA-POTTY, WHEEL WASH, CONCRETE WASHOUT, MASON'S AREA, FUEL AND MATERIAL STORAGE CONTAINERS, SOLID WASTE CONTAINERS, ETC., IMMEDIATELY DENOTE THEM ON THE SITE MAPS AND NOTE ANY CHANGES IN LOCATION AS THEY OCCUR THROUGHOUT THE CONSTRUCTION PROCESS.

PHASE I

1. INSTALL STABILIZED INSTALL STABILIZED CONSTRUCTION EXIT(S).
2. INSTALL SILT FENCE(S) AND SILT DIKE(S) ON THE SITE, AND INLET PROTECTION(S) (CLEAR ONLY THOSE AREAS NECESSARY TO INSTALL SILT FENCE).
3. PREPARE TEMPORARY PARKING AND STORAGE AREA.
4. HALT ALL ACTIVITIES AND CONTACT THE ENGINEER OF RECORD TO PERFORM INSPECTION OF BMP'S.
5. BEGIN DEMOLITION ACTIVITIES AND CLEARING AND GRUBBING THE SITE.
6. BEGIN GRADING THE SITE.
7. START CONSTRUCTION OF BUILDING PAD AND STRUCTURES

PHASE II

1. TEMPORARILY SEED, THROUGHOUT CONSTRUCTION, DENUDED AREAS THAT WILL BE INACTIVE FOR 7 DAYS OR MORE.
2. INSTALL UTILITIES, UNDERDRAINS, STORM SEWERS, CURBS AND GUTTERS.
3. INSTALL RIP RAP AROUND OUTLET STRUCTURES AS EACH OUTLET STRUCTURE IS INSTALLED.
4. INSTALL INLET PROTECTION AT ALL STORM SEWER STRUCTURES AS EACH INLET STRUCTURE IS INSTALLED.
5. PERMANENTLY STABILIZE AREAS TO BE VEGETATED AS THEY ARE BROUGHT TO FINAL GRADE.
6. PREPARE SITE FOR PAVING.
7. PAVE SITE.
8. INSTALL APPROPRIATE INLET PROTECTION DEVICES FOR PAVED AREAS AS WORK PROGRESSES.
9. COMPLETE GRADING AND INSTALLATION OF PERMANENT STABILIZATION OVER ALL AREAS INCLUDING OUT LOTS.
10. CALL ENGINEER OF RECORD AFTER THE SITE APPEARS TO BE FULLY STABILIZED FOR AN INSPECTION.
11. REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES AFTER APPROVAL OF THE ENGINEER OF RECORD AND STABILIZE ANY AREAS DISTURBED BY THE REMOVAL OF THE BMP.
12. CONTINUE DAILY INSPECTION REPORTS UNTIL THE FINAL DAILY INSPECTION IS SIGNED OFF BY THE OWNER THAT THE SITE IS FULLY STABILIZED AND THE PERMIT MAY BE TERMINATED.
13. CONTRACTOR TO FILE NOTICE OF TERMINATION APPLICATION TO THE FDEP AND SHALL PROVIDE A COPY OF FDEP APPROVAL TO THE OWNER AND ENGINEER OF RECORD.

NOTE: THE GENERAL CONTRACTOR MAY COMPLETE CONSTRUCTION-RELATED ACTIVITIES CONCURRENTLY ONLY IF ALL PRECEDING BMPS HAVE BEEN COMPLETELY INSTALLED.

EROSION CONTROL LEGEND

LOD	LIMITS OF DISTURBANCE
SF	SILT FENCE
PL	POLY LOG
IP#	INLET PROTECTION
CP	CULVERT PROTECTION
CW	CONCRETE WASHOUT
CE	CONSTRUCTION ENTRANCE
ST	SEDIMENT TRAP
SS	SWPPP INFORMATION SIGN

SHEET NOTES:

1. REFER TO SHEET C1.1 - C1.2 FOR GENERAL NOTES.
2. REFER TO SHEET C3.0 FOR DEMOLITION PLAN.
3. REFER TO SHEET C5.0 FOR GRADING AND DRAINAGE PLAN.
4. REFER TO SHEET C6.0 FOR UTILITY PLAN.
5. CONTRACTOR TO SEED ALL DISTURBED AREA UNLESS NOTED OTHERWISE.

BEST MANAGEMENT PRACTICES:

1. STRUCTURAL MEASURES SHALL BE MAINTAINED THROUGHOUT THE LIFE OF THE PROJECT IN EFFECTIVE OPERATING CONDITION.
2. DOCUMENTATION OF MAINTENANCE ACTIVITIES INCLUDING FREQUENCY, LOT DESIGNATION, INSPECTION OF STRUCTURAL CONTROLS, MATERIAL STORAGE AREAS, VEHICLE ENTRANCES AND EXITS: ACTIONS TAKEN AND INSPECTORS NAME.
3. CONSTRUCTION SITE NOTICE WILL BE MAINTAINED ON SITE
4. COPY OF SWPPP SHALL BE KEPT ON SITE
5. PERIMETER MUST RETAIN THE SWPPP, NOI AND INSPECTION LOG FOR A MINIMUM OF 3 YEARS FROM THE TERMINATION AND FINAL STABILIZATION OF PROJECT

A. WASTE MATERIALS ALL WASTE MATERIALS INCLUDING CONSTRUCTION DEBRIS, SHALL BE COLLECTED AND STORED IN A SECURED LIDDED METAL DUMPSTER. NO CONSTRUCTION MATERIALS SHALL BE BURIED ON SITE. THE DUMPSTER SHALL BE EMPTIED AS NECESSARY OR AS REQUIRED BY ORDINANCE 9.04 (SOLID WASTE MANAGEMENT AND THE TRASH BE HAULED TO A LICENSED LANDFILL.)

B. HAZARDOUS WASTE AT A MINIMUM, ANY PRODUCTS IN THE FOLLOWING CATEGORIES SHALL BE CONSIDERED HAZARDOUS: PAINT, ACIDS FOR CLEANING MASONRY SURFACES, CLEANING SOLVENTS. ASPHALT PRODUCTS, CHEMICAL ADDITIVES FOR SPILL STABILIZATION, CURING, COMPOUNDS AND ADDITIVES. IN EVENT OF SPILL WHICH MAY BE HAZARDOUS, THE CONTRACTOR SHALL TAKE IMMEDIATE ACTION AND CONTACT THE FIRE DEPARTMENT AND GOVERNING AUTHORITIES.

C. SANITARY WASTE ALL SANITARY WASTE SHALL BE COLLECTED FROM THE CONSTRUCTION PORTABLE UNITS AS NECESSARY BY A LICENSED SANITARY WASTE MANAGEMENT CONTRACTOR. ALL WASTE MATERIAL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

D. SPILL PREVENTION THE FOLLOWING PRACTICES SHALL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURES OF MATERIALS TO STORM WATER RUNOFF.

E. GOOD HOUSEKEEPING
- E.A. STORE ONLY ENOUGH PRODUCTS REQUIRED TO DO THE JOB
- E.B. NEATLY STORE MATERIALS ON-SITE IN A SECURE MANNER
- E.C. KEEP PRODUCTS IN THEIR ORIGINAL CONTAINER
- E.D. DO NOT MIX SUBSTANCES WITH ANOTHER, UNLESS OTHERWISE RECOMMENDED BY THE MANUFACTURER.
- E.E. USE ENTIRE CONTENTS OF A PRODUCT BEFORE DISPOSING F THE CONTAINER
- E.F. FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR PROP USE AND DISPOSAL

F. HAZARDOUS CONDITIONS
PRACTICES TO REDUCE RISKS:
- F.A. KEEP PRODUCTS IN THEIR ORIGINAL CONTAINER IF AT ALL POSSIBLE
- F.B. RETAIN ORIGINAL LABELS, PRODUCT INFORMATION AND MATERIAL SAFETY DATA SHEETS (MSDS)
- F.C. DISPOSE SURPLUS PRODUCT IN ACCORDANCE WITH MANUFACTURERS

G. PETROLEUM PRODUCTS
PRODUCTS SHALL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED, ANY ASPHALT SUBSTANCES USED ON-SITE SHALL BE APPLIED ACCORDING TO THE MANUFACTURER RECOMMENDATION.

H. SPILL CONTROL PRACTICES:
- H.A. MANUFACTURERS RECOMMENDED METHODS FOR SPILL CLEAN UP SHALL BE CLEARLY POSTED AND SITE PERSONNEL SHALL BE MADE WARE OF THE PROCEDURE
- H.B. MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP SHALL BE KEPT IN THE MATERIAL STORAGE AREA ON-SITE
- H.C. ALL SPILLS SHALL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY
- H.D. SPILL AREA SHALL BE WELL VENTILATED AND APPROPRIATE CLOTHING WILL BE WORN
- H.E. ANY SPILL SHALL BE REPORTED TO THE APPROPRIATE GOVERNMENTAL AGENCY
- H.F. MEASURES SHALL BE TAKEN TO PREVENT A SPILL FROM REOCCURRING

I. MAINTENANCE AND INSPECTION PROCEDURES ALL POLLUTION PREVENTION MEASURES SHALL BE INSPECTED AT LEAST ONCE EVERY 14 DAYS AND FOLLOWING A STORM EVENT OF 0.5 INCHES OR MORE BEST MANAGEMENT PRACTICES AND POLLUTION CONTROL PROCEDURES SHALL BE INSPECTED FOR ADEQUACY. A RECORD OF THE RESULTS OF THE INSPECTIONS OF THE SITE SHALL BE KEPT ON-SITE

J. REMARKS DISPOSAL AREAS, STOCKPILES, AND HAUL ROADS SHALL BE CONSTRUCTED IN A MANNER THAT WILL MINIMIZE AND CONTROL THE AMOUNT OF SEDIMENT THAT MAY ENTER RECEIVING WATERS, CONSTRUCTION STAGING AREAS AND VEHICLE MAINTENANCE AREAS SHALL BE CONSTRUCTED BY THE CONTRACTOR IN A MANNER TO MINIMIZE THE RUNOFF OF POLLUTANTS

ACREAGE SUMMARY

TOTAL PARCEL AREA	0.82
TOTAL PROJECT AREA	0.91
ON-SITE DISTURBED AREA	0.82
OFF-SITE DISTURBED AREA	0.09
TOTAL DISTURBED AREA (MUST MATCH NOI)	0.91
IMPERVIOUS AREA AT COMPLETION	0.59
PERVIOUS/ SEEDED AREA AT COMPLETION	0.23

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EROSION CONTROL PLAN - PHASE I
BLACK RIFLE COFFEE
40390 US HWY 19 N,
TARPON SPRINGS, FL 34689
CITY OF TARPON SPRINGS, FL
PINELLAS COUNTY, FL

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AMANDO L. CABRERA
LICENSE No. 66807
STATE OF FLORIDA
PROFESSIONAL ENGINEER

PLAN STATUS

REV	DATE	COMMENT
1	09/13/22	AHJ COMMENTS
2	12/23/22	AHJ COMMENTS
3	03/06/23	AHJ COMMENTS

KSP DESIGN	KSP DRAWN	ALC CHKD

SCALE 1" = 20'
JOB No. 011046-01-001
DATE 04/13/2022
SHEET C2.0

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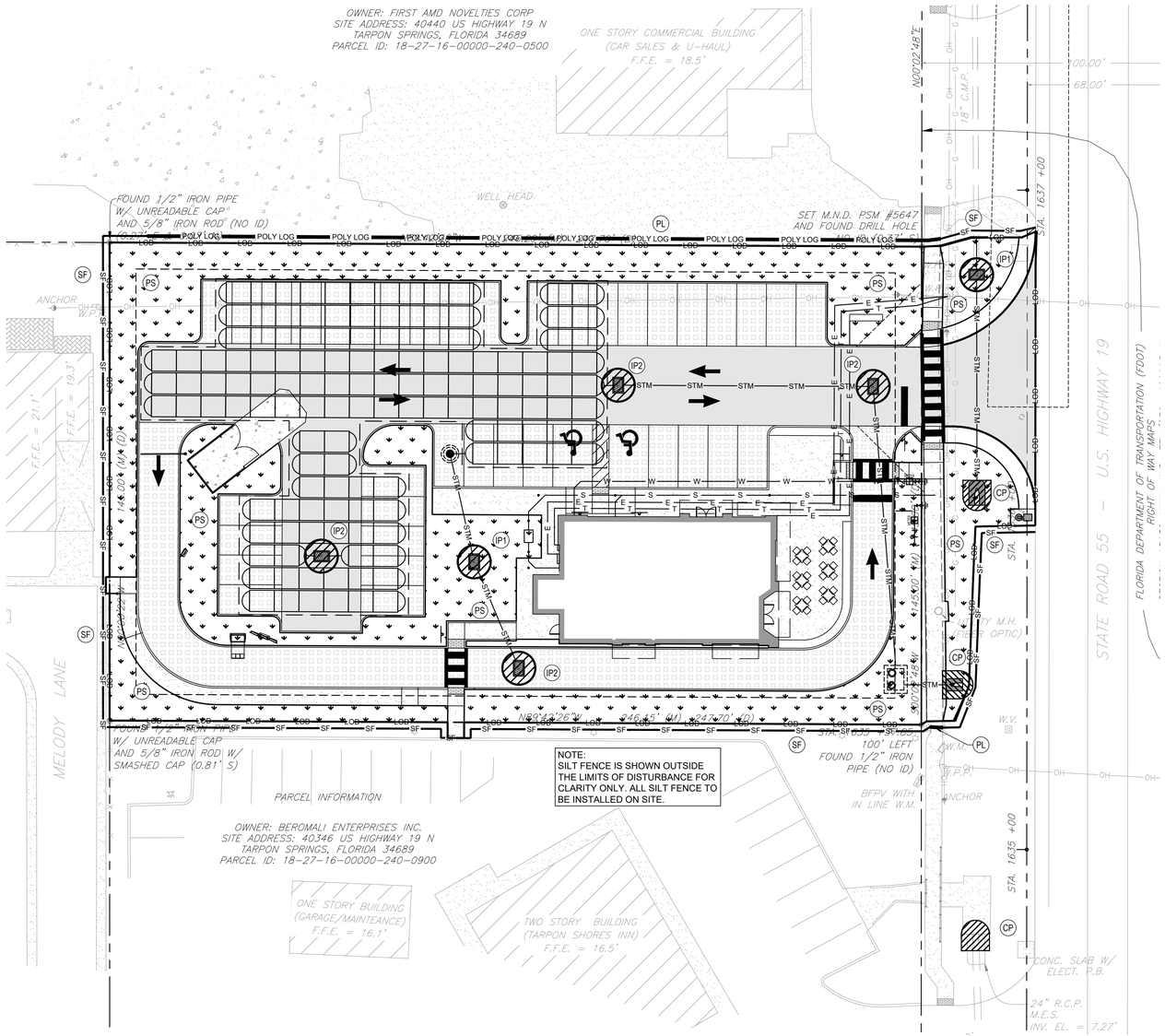
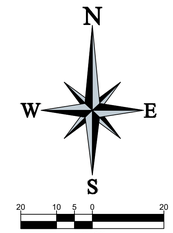
USER: KPETRI PLOT DATE/TIME: Mar. 06, 23 - 15:12:45 DRAWING: V:\011046 - Pursuit Development\011046-01-001 (ENG) - Black Rifle Coffee - Tarpon Springs, FL\Engineering\Engineering Plans\Plan Sets\011046-01-001-C2.0-EROS.dwg ,C2.0 EROSION CONTROL PLAN - PHASE I





MAINTENANCE

ALL MEASURES STATED ON THIS SITE MAP, AND IN THE STORM WATER POLLUTION PREVENTION PLAN, SHALL BE MAINTAINED IN FULLY FUNCTIONAL CONDITION UNTIL NO LONGER REQUIRED FOR A COMPLETED PHASE OF WORK OR FINAL STABILIZATION OF THE SITE. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CHECKED BY A QUALIFIED PERSON IN ACCORDANCE WITH THE CONTRACT DOCUMENTS OR THE APPLICABLE PERMIT, WHICHEVER IS MORE STRINGENT, AND REPAIRED IN ACCORDANCE WITH THE FOLLOWING:

1. INLET PROTECTION DEVICES AND BARRIERS SHALL BE REPAIRED OR REPLACED IF THEY SHOW SIGNS OF UNDERMINING OR DETERIORATION.
2. ALL SEEDED AREAS SHALL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED, WATERED, AND RESEEDED AS NEEDED.
3. SILT FENCES SHALL BE REPAIRED TO THEIR ORIGINAL CONDITIONS IF DAMAGED. SEDIMENT SHALL BE REMOVED FROM THE SILT FENCES WHEN IT REACHES ONE-HALF THE HEIGHT OF THE SILT FENCE.
4. THE CONSTRUCTION EXITS SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHT OF WAY.

SEQUENCE OF CONSTRUCTION

UPON IMPLEMENTATION AND INSTALLATION OF THE FOLLOWING AREAS: TRAILER, PARKING, LAY DOWN, PORTA-POTTY, WHEEL WASH, CONCRETE WASHOUT, MASON'S AREA, FUEL AND MATERIAL STORAGE CONTAINERS, SOLID WASTE CONTAINERS, ETC., IMMEDIATELY DENOTE THEM ON THE SITE MAPS AND NOTE ANY CHANGES IN LOCATION AS THEY OCCUR THROUGHOUT THE CONSTRUCTION PROCESS.

PHASE I

1. INSTALL STABILIZED INSTALL STABILIZED CONSTRUCTION EXIT(S).
2. INSTALL SILT FENCE(S) AND SILT DIKE(S) ON THE SITE, AND INLET PROTECTION(S) (CLEAR ONLY THOSE AREAS NECESSARY TO INSTALL SILT FENCE).
3. PREPARE TEMPORARY PARKING AND STORAGE AREA.
4. HALT ALL ACTIVITIES AND CONTACT THE ENGINEER OF RECORD TO PERFORM INSPECTION OF BMP'S.
5. BEGIN DEMOLITION ACTIVITIES AND CLEARING AND GRUBBING THE SITE.
6. BEGIN GRADING THE SITE.
7. START CONSTRUCTION OF BUILDING PAD AND STRUCTURES

PHASE II

1. TEMPORARILY SEED, THROUGHOUT CONSTRUCTION, DENUDED AREAS THAT WILL BE INACTIVE FOR 7 DAYS OR MORE.
2. INSTALL UTILITIES, UNDERDRAINS, STORM SEWERS, CURBS AND GUTTERS.
3. INSTALL RIP RAP AROUND OUTLET STRUCTURES AS EACH OUTLET STRUCTURE IS INSTALLED.
4. INSTALL INLET PROTECTION AT ALL STORM SEWER STRUCTURES AS EACH INLET STRUCTURE IS INSTALLED.
5. PERMANENTLY STABILIZE AREAS TO BE VEGETATED AS THEY ARE BROUGHT TO FINAL GRADE.
6. PREPARE SITE FOR PAVING.
7. PAVE SITE.
8. INSTALL APPROPRIATE INLET PROTECTION DEVICES FOR PAVED AREAS AS WORK PROGRESSES.
9. COMPLETE GRADING AND INSTALLATION OF PERMANENT STABILIZATION OVER ALL AREAS INCLUDING OUT LOTS.
10. CALL ENGINEER OF RECORD AFTER THE SITE APPEARS TO BE FULLY STABILIZED FOR AN INSPECTION.
11. REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES AFTER APPROVAL OF THE ENGINEER OF RECORD AND STABILIZE ANY AREAS DISTURBED BY THE REMOVAL OF THE BMP.
12. CONTINUE DAILY INSPECTION REPORTS UNTIL THE FINAL DAILY INSPECTION IS SIGNED OFF BY THE OWNER THAT THE SITE IS FULLY STABILIZED AND THE PERMIT MAY BE TERMINATED.
13. CONTRACTOR TO FILE NOTICE OF TERMINATION APPLICATION TO THE FDEP AND SHALL PROVIDE A COPY OF FDEP APPROVAL TO THE OWNER AND ENGINEER OF RECORD.

NOTE: THE GENERAL CONTRACTOR MAY COMPLETE CONSTRUCTION-RELATED ACTIVITIES CONCURRENTLY ONLY IF ALL PRECEDING BMPS HAVE BEEN COMPLETELY INSTALLED.

EROSION CONTROL LEGEND

LOD — LOD	LIMITS OF DISTURBANCE
SF — SF	(SF) SILT FENCE
POLY LOG	(PL) POLY LOG
	(IP#) INLET PROTECTION
	(CP) CULVERT PROTECTION
	(PS) PERMANENT SODDING

SHEET NOTES:

1. REFER TO SHEET C1.1 - C1.2 FOR GENERAL NOTES.
2. REFER TO SHEET C3.0 FOR DEMOLITION PLAN.
3. REFER TO SHEET C5.0 FOR GRADING AND DRAINAGE PLAN.
4. REFER TO SHEET C6.0 FOR UTILITY PLAN.
5. CONTRACTOR TO SEED ALL DISTURBED AREA UNLESS NOTED OTHERWISE.

BEST MANAGEMENT PRACTICES:

1. STRUCTURAL MEASURES SHALL BE MAINTAINED THROUGHOUT THE LIFE OF THE PROJECT IN EFFECTIVE OPERATING CONDITION.
2. DOCUMENTATION OF MAINTENANCE ACTIVITIES INCLUDING FREQUENCY, LOT DESIGNATION, INSPECTION OF STRUCTURAL CONTROLS, MATERIAL STORAGE AREAS, VEHICLE ENTRANCES AND EXITS: ACTIONS TAKEN AND INSPECTORS NAME.
3. CONSTRUCTION SITE NOTICE WILL BE MAINTAINED ON SITE
4. COPY OF SWPPP SHALL BE KEPT ON SITE
5. PERIMETER MUST RETAIN THE SWPPP, NOI AND INSPECTION LOG FOR A MINIMUM OF 3 YEARS FROM THE TERMINATION AND FINAL STABILIZATION OF PROJECT

A. WASTE MATERIALS ALL WASTE MATERIALS INCLUDING CONSTRUCTION DEBRIS, SHALL BE COLLECTED AND STORED IN A SECURED LIDDED METAL DUMPSTER. NO CONSTRUCTION MATERIALS SHALL BE BURIED ON SITE. THE DUMPSTER SHALL BE EMPTIED AS NECESSARY OR AS REQUIRED BY ORDINANCE 9.04 (SOLID WASTE MANAGEMENT AND THE TRASH BE HAULED TO A LICENSED LANDFILL.)

B. HAZARDOUS WASTE AT A MINIMUM, ANY PRODUCTS IN THE FOLLOWING CATEGORIES SHALL BE CONSIDERED HAZARDOUS: PAINT, ACIDS FOR CLEANING MASONRY SURFACES, CLEANING SOLVENTS. ASPHALT PRODUCTS, CHEMICAL ADDITIVES FOR SPILL STABILIZATION, CURING, COMPOUNDS AND ADDITIVES. IN EVENT OF SPILL WHICH MAY BE HAZARDOUS, THE CONTRACTOR SHALL TAKE IMMEDIATE ACTION AND CONTACT THE FIRE DEPARTMENT AND GOVERNING AUTHORITIES.

C. SANITARY WASTE ALL SANITARY WASTE SHALL BE COLLECTED FROM THE CONSTRUCTION PORTABLE UNITS AS NECESSARY BY A LICENSED SANITARY WASTE MANAGEMENT CONTRACTOR. ALL WASTE MATERIAL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

D. SPILL PREVENTION THE FOLLOWING PRACTICES SHALL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURES OF MATERIALS TO STORM WATER RUNOFF.

E. GOOD HOUSEKEEPING
- E.A. STORE ONLY ENOUGH PRODUCTS REQUIRED TO DO THE JOB
- E.B. NEATLY STORE MATERIALS ON-SITE IN A SECURE MANNER
- E.C. KEEP PRODUCTS IN THEIR ORIGINAL CONTAINER
- E.D. DO NOT MIX SUBSTANCES WITH ANOTHER, UNLESS OTHERWISE RECOMMENDED BY THE MANUFACTURER.
- E.E. USE ENTIRE CONTENTS OF A PRODUCT BEFORE DISPOSING F THE CONTAINER
- E.F. FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR PROP USE AND DISPOSAL

F. HAZARDOUS CONDITIONS
PRACTICES TO REDUCE RISKS:
- F.A. KEEP PRODUCTS IN THEIR ORIGINAL CONTAINER IF AT ALL POSSIBLE
- F.B. RETAIN ORIGINAL LABELS, PRODUCT INFORMATION AND MATERIAL SAFETY DATA SHEETS (MSDS)
- F.C. DISPOSE SURPLUS PRODUCT IN ACCORDANCE WITH MANUFACTURERS

G. PETROLEUM PRODUCTS
PRODUCTS SHALL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED, ANY ASPHALT SUBSTANCES USED ON-SITE SHALL BE APPLIED ACCORDING TO THE MANUFACTURER RECOMMENDATION.

H. SPILL CONTROL PRACTICES:
- H.A. MANUFACTURERS RECOMMENDED METHODS FOR SPILL CLEAN UP SHALL BE CLEARLY POSTED AND SITE PERSONNEL SHALL BE MADE WARE OF THE PROCEDURE
- H.B. MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP SHALL BE KEPT IN THE MATERIAL STORAGE AREA ON-SITE
- H.C. ALL SPILLS SHALL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY
- H.D. SPILL AREA SHALL BE WELL VENTILATED AND APPROPRIATE CLOTHING WILL BE WORN
- H.E. ANY SPILL SHALL BE REPORTED TO THE APPROPRIATE GOVERNMENTAL AGENCY
- H.F. MEASURES SHALL BE TAKEN TO PREVENT A SPILL FROM REOCCURRING

I. MAINTENANCE AND INSPECTION PROCEDURES ALL POLLUTION PREVENTION MEASURES SHALL BE INSPECTED AT LEAST ONCE EVERY 14 DAYS AND FOLLOWING A STORM EVENT OF 0.5 INCHES OR MORE BEST MANAGEMENT PRACTICES AND POLLUTION CONTROL PROCEDURES SHALL BE INSPECTED FOR ADEQUACY. A RECORD OF THE RESULTS OF THE INSPECTIONS OF THE SITE SHALL BE KEPT ON-SITE

J. REMARKS DISPOSAL AREAS, STOCKPILES, AND HAUL ROADS SHALL BE CONSTRUCTED IN A MANNER THAT WILL MINIMIZE AND CONTROL THE AMOUNT OF SEDIMENT THAT MAY ENTER RECEIVING WATERS, CONSTRUCTION STAGING AREAS AND VEHICLE MAINTENANCE AREAS SHALL BE CONSTRUCTED BY THE CONTRACTOR IN A MANNER TO MINIMIZE THE RUNOFF OF POLLUTANTS

ACREAGE SUMMARY

TOTAL PARCEL AREA	0.82
TOTAL PROJECT AREA	0.91
ON-SITE DISTURBED AREA	0.82
OFF-SITE DISTURBED AREA	0.09
TOTAL DISTURBED AREA (MUST MATCH NOI)	0.91
IMPERVIOUS AREA AT COMPLETION	0.59
PERVIOUS/ SEEDED AREA AT COMPLETION	0.23

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ARMANDO L. CARE
LICENSE No. 66807
STATE OF FLORIDA
PROFESSIONAL ENGINEER

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SHEET C2.1

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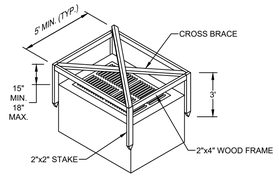
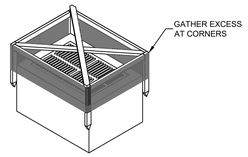
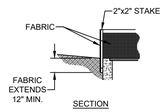
USER: KPETRI PLOT DATE/TIME: Mar. 06, 23 - 15:12:48 DRAWING: V:\011046 - Pursuit Development\011046-01-001 (ENG) - Black Rifle Coffee - Tarpon Springs, FL\Engineering\Engineering Plans\Plan Sets\011046-01-001-C2.0-EROS.dwg ,C2.1 EROSION CONTROL PLAN - PHASE II



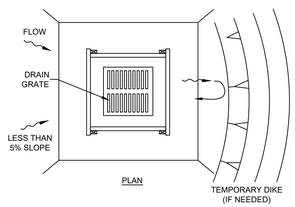
VIEW OF FRAME WITHOUT SILT FENCE



VIEW OF FRAME WITH SILT FENCE



SECTION

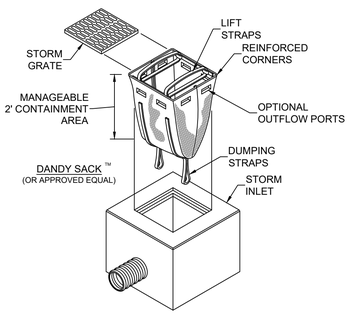


PLAN

DETAIL NOTES:

1. DROP INLET SEDIMENT BARRIERS ARE TO BE USED FOR SMALL, NEARLY LEVEL DRAINAGE AREAS
2. THE TOP OF THE FRAME (PONDING HEIGHT) MUST BE WELL BELOW THE GROUND ELEVATION DOWNSLOPE TO PREVENT RUNOFF FROM BY PASSING THE INLET. A TEMPORARY DIKE MAY BE NECESSARY ON THE DOWNSLOPE SIDE OF THE STRUCTURE.
3. THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE THE INLET DRAINS IS A RELATIVELY FLAT AREA (SLOPE NO GREATER THAN 5%) WHERE THE INLET SHEET OR OVERLAND FLOWS (NOT EXCEEDING 1 C.F.S.) ARE TYPICAL. THE METHOD SHALL NOT APPLY TO INLETS RECEIVING CONCENTRATED FLOWS, SUCH AS IN STREET OR HIGHWAY MEDIANS.

INLET PROTECTION: SILT FENCE (IP1)

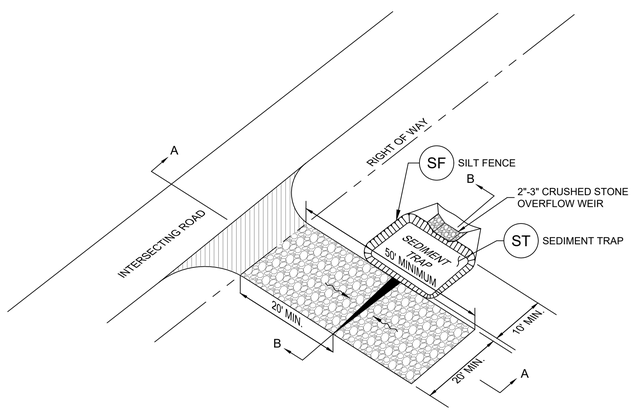


LOW TO MODERATE FLOW GEOTEXTILE FABRIC SPECIFICATION TABLE		
PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	300 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20 %
PUNCTURE	ASTM D-4833	120 LBS
MULLEN BURST	ASTM D-3786	800 PSI
TRAPEZOID TEAR	ASTM D-4533	120 LBS
UV RESISTANCE	ASTM D-4355	80 %
APPARENT OPENING SIZE	ASTM D-4751	40 US SIEVE
FLOW RATE	ASTM D-4491	40 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	0.55 SEC -1
MODERATE TO HIGH FLOW GEOTEXTILE FABRIC SPECIFICATION TABLE		
PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	265 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20 %
PUNCTURE	ASTM D-4833	135 LBS
MULLEN BURST	ASTM D-3786	420 PSI
TRAPEZOID TEAR	ASTM D-4533	45 LBS
UV RESISTANCE	ASTM D-4355	90 %
APPARENT OPENING SIZE	ASTM D-4751	20 US SIEVE
FLOW RATE	ASTM D-4491	200 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	1.5 SEC -1

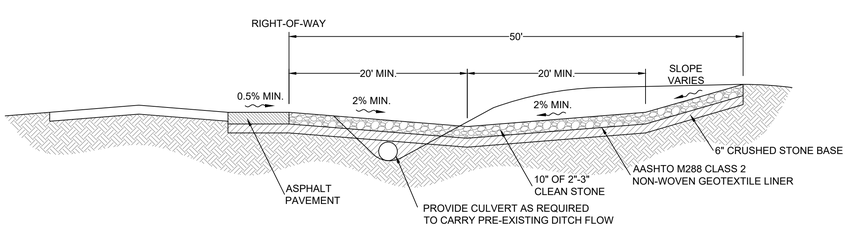
DETAIL NOTES:

1. FOR TEMPORARY USE TO CAPTURE LARGER DIAMETER SEDIMENTS. NOT TO BE UTILIZED AS THE ONLY SEDIMENT CONTAINMENT SYSTEM
2. GEOTEXTILE WILL BE A WOVEN POLYPROPYLENE FABRIC THAT MEETS OR EXCEED REQUIREMENTS IN THE SPECIFICATIONS TABLE.
3. AN OIL ADSORBENT PAD OR PILLOW CAN BE PURCHASED WHEN OIL SPILLS ARE A CONCERN.
4. INSPECT PER REGULATORY REQUIREMENTS.

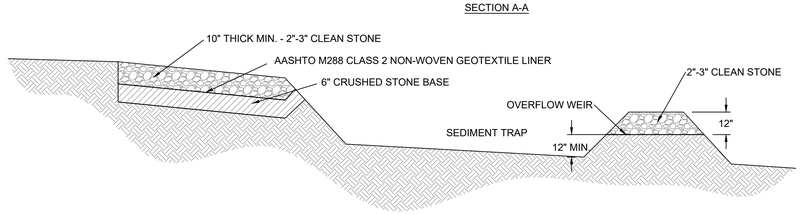
INLET PROTECTION: CATCH BASIN (IP2)



VIEW



SECTION A-A

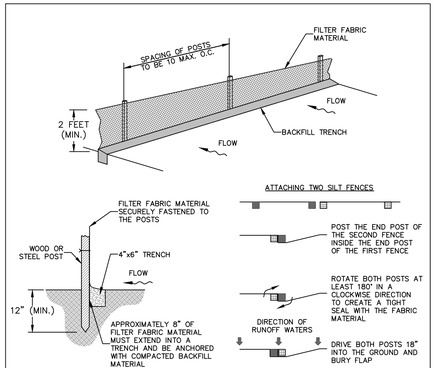


SECTION B-B

DETAIL NOTES:

1. PROVIDE SEDIMENT TRAP ON DOWN GRADIENT SIDE (OR BOTH SIDES) AS REQUIRED.
2. FLUSH SURFACE STONE TOWARD SEDIMENT TRAP WITH HIGH VOLUME WATER FLOW AS NEEDED TO MAINTAIN CLEAN SURFACE STONE.
3. PLACEMENT OF SEDIMENT TRAP SHALL BE AT LEAST THE MINIMUM DISTANCE FROM THE RIGHT OF WAY AS REQUIRED BY LOCAL JURISDICTION.

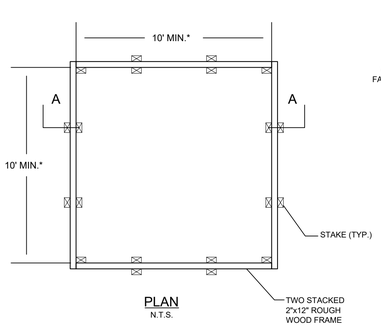
CONSTRUCTION ENTRANCE / EXIT (CE)



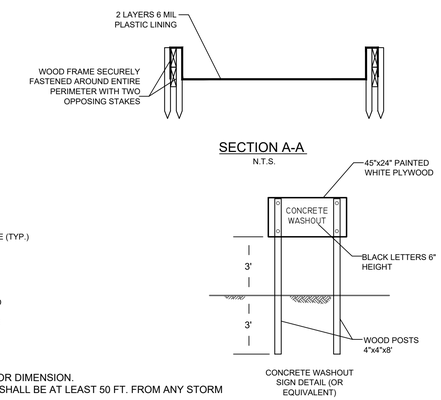
DETAIL NOTES:

1. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY.
2. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.
3. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.

SILT FENCE INSTALLATION (SF)



PLAN
N.T.S.



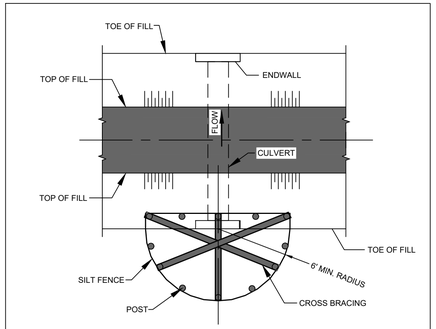
SECTION A-A
N.T.S.

CONCRETE WASHOUT SIGN DETAIL (OR EQUIVALENT)

DETAIL NOTES:

1. *DENOTES THE INTERIOR DIMENSION.
2. CONCRETE WASHOUT SHALL BE AT LEAST 50 FT. FROM ANY STORM SEWER INLET.
3. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30 FT. OF THE TEMPORARY CONCRETE WASHOUT FACILITY.

TEMPORARY CONCRETE WASHOUT (ABOVE GRADE) (CW)

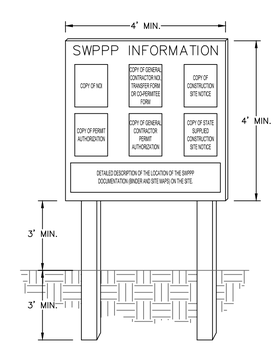


PLAN VIEW

DETAIL NOTES:

1. THE SILT FENCE SHALL MEET THE REQUIREMENTS AS SHOWN ON SILT FENCE DETAIL EXCEPT THE MAXIMUM POST SPACING SHALL BE 3 FEET AND THE TOPS OF POSTS SHALL BE CROSS BRACED.
2. SEDIMENT SHALL BE REMOVED WHEN THE SEDIMENT HAS ACCUMULATED TO ONE-HALF THE HEIGHT OF THE SILT FENCE.
3. THE MAXIMUM DRAINAGE AREA TO THE CULVERT BEING PROTECTED IS 1 ACRE.

INLET PROTECTION: CULVERT (CP)



DETAIL NOTES:

1. "SWPPP INFORMATION" MUST BE DISPLAYED PROMINENTLY ACROSS THE TOP OF THE SIGN, AS SHOWN IN THE DETAIL.
2. SIGN TO BE CONSTRUCTED OF A RIGID MATERIAL, SUCH AS PLYWOOD OR OUTDOOR SIGN BOARD. SIGN MUST BE CONSTRUCTED IN A MANNER TO PROTECT DOCUMENTS FROM DAMAGE DUE TO WEATHER (WIND, SUN, MOISTURE, ETC.).
3. THE SWPPP INFORMATION SIGN MUST BE LOCATED NEAR THE ENTRANCE/EXIT OF THE SITE, SUCH THAT IT IS ACCESSIBLE/VIEWABLE BY THE GENERAL PUBLIC, BUT NOT OBSTRUCTING VIEWS AS TO CAUSE A SAFETY HAZARD.
4. ALL POSTED DOCUMENTS MUST BE MAINTAINED IN A CLEARLY READABLE CONDITION AT ALL TIMES THROUGHOUT CONSTRUCTION AND UNTIL THE NOTICE-OF-TERMINATION (NOT) IS FILED FOR THE PERMIT.
5. CONTRACTOR SHALL POST OTHER STORM WATER AND/OR EROSION AND SEDIMENT CONTROL RELATED PERMITS ON THE SIGN AS REQUIRED BY THE LOCAL AGENCY.
6. SIGN SHALL BE LOCATED OUTSIDE OF PUBLIC RIGHT-OF-WAY AND EASEMENTS UNLESS APPROVED BY THE GOVERNING AGENCY.
7. CONTRACTOR IS RESPONSIBLE FOR ENSURING STABILITY OF THIS SWPPP INFORMATION SIGN.

SWPPP INFORMATION SIGN (SS)

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EROSION CONTROL DETAILS
BLACK RIFLE COFFEE
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ARMANDO L. CABRE. LICENSE No. 66807 STATE OF FLORIDA PROFESSIONAL ENGINEER

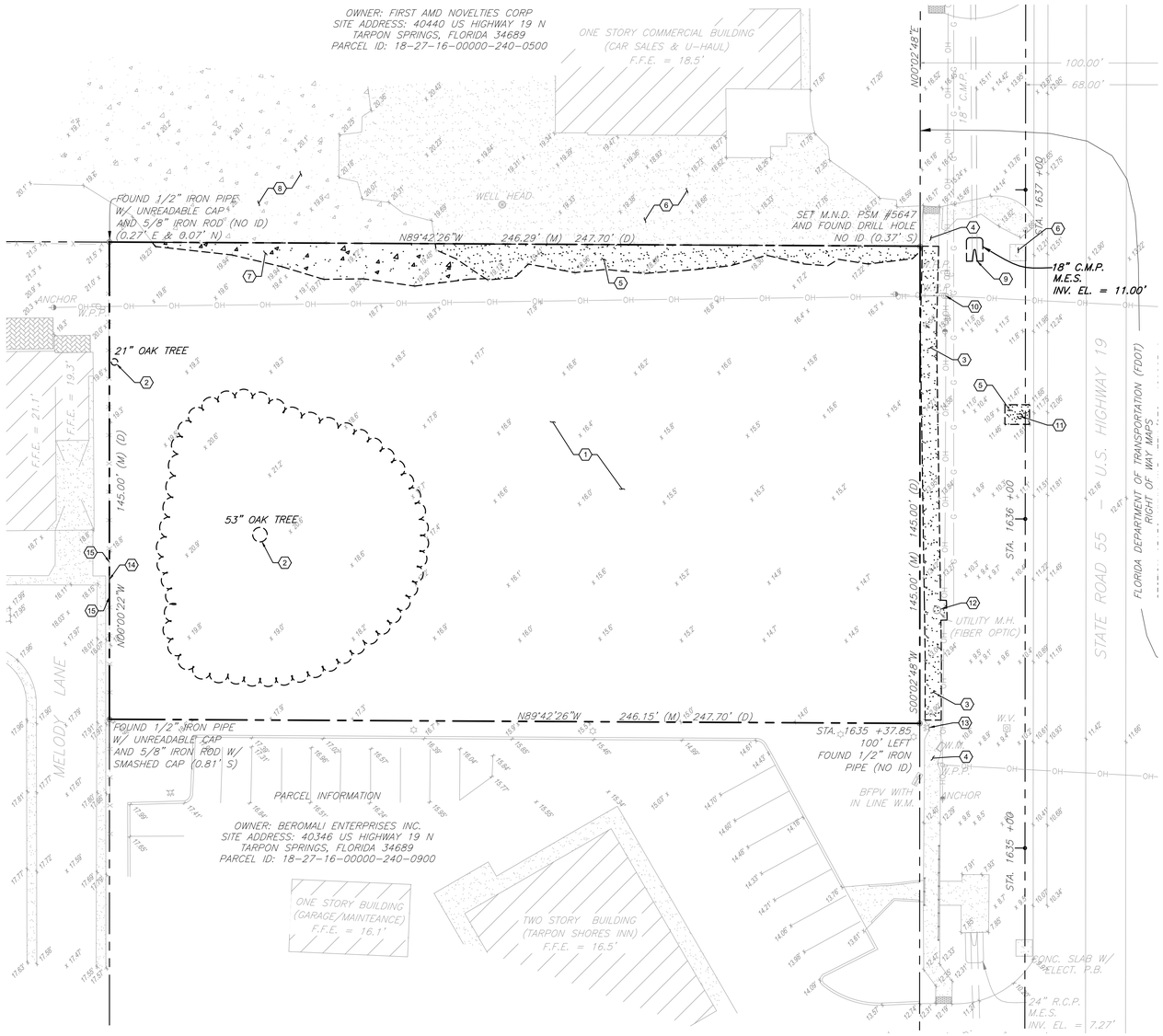
PLAN STATUS

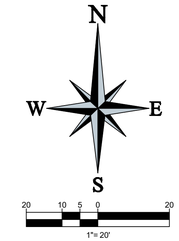
REV	DATE	COMMENT
1	09/13/22	AHJ COMMENTS
2	12/23/22	AHJ COMMENTS
3	03/06/23	AHJ COMMENTS

KSP DESIGN	KSP DRAWN	ALC CHKD

SCALE 1" = 20'
JOB No. 011046-01-001
DATE 04/13/2022

SHEET C2.2





DEMOLITION LEGEND

- PROPERTY BOUNDARY LINE
- CENTER LINE OF EXISTING ROADWAY
- ADJOINING PROPERTY LINE
- EXISTING CURB AND GUTTER
- EXISTING CURB
- EXISTING EDGE OF PAVEMENT
- EXISTING FENCE
- BLOCK 101 / LOT 7 — EXISTING BLOCK NUMBER / EXISTING LOT NUMBER
- 165 — EXISTING 5' INTERVAL CONTOUR LINE
- 166 — EXISTING 1' INTERVAL CONTOUR LINE
- EXISTING TREE
- EXISTING GAS MAIN
- EXISTING UTILITY POLE
- EXISTING SANITARY STRUCTURES
- EXISTING STORM STRUCTURES
- EXISTING WATER MAIN
- EXISTING WATER/FIRE STRUCTURES
- EXISTING UNDERGROUND ELECTRIC
- EXISTING TELEPHONE
- EXISTING OVERHEAD WIRES
- EXISTING SANITARY
- EXISTING STORM
- DEMO CURB
- DEMO GRAVEL ROAD
- DEMO ASPHALT
- DEMO PROPERTY LINE
- DEMO TREE
- DEMO UTILITY POLE
- DEMO LIGHT FIXTURE

DEMOLITION NOTES:

1. CONTRACTOR TO FIELD LOCATE ALL EXISTING ON-SITE UTILITIES PRIOR TO DEMOLITION ACTIVITIES.
2. ALL ITEMS DARK AND DASHED TO BE REMOVED OR REPLACED PER KEYED NOTES.
3. ALL PROPER EROSION CONTROL METHODS SHALL BE INSTALLED AND FUNCTIONAL PRIOR TO THE DISTURBANCE OF ANY EXISTING SURFACE.
4. ALL DIMENSIONS FROM PROPERTY LINES ARE PERPENDICULAR UNLESS OTHERWISE NOTED.
5. CONTRACTOR TO SEED ALL DISTURBED AREA UNLESS NOTED OTHERWISE.
6. TREE PROTECTION FENCING SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBANCE.

KEYED NOTES:

1. GROUND TO BE CLEARED AND GRUBBED.
2. EXISTING TREE TO BE REMOVED.
3. EXISTING SIDEWALK TO BE REMOVED.
4. EXISTING SIDEWALK TO REMAIN PROTECTED IN PLACE.
5. EXISTING CONCRETE PAVEMENT TO BE REMOVED.
6. EXISTING CONCRETE PAVEMENT TO REMAIN PROTECTED IN PLACE.
7. EXISTING GRAVEL TO BE REMOVED.
8. EXISTING GRAVEL TO REMAIN PROTECTED IN PLACE.
9. EXISTING MITERED END SECTION TO BE REMOVED.
10. EXISTING ELECTRIC UTILITY POLE TO REMAIN PROTECTED IN PLACE.
11. EXISTING ROW LIGHT POLE TO BE RELOCATED.
12. EXISTING UTILITY MANHOLE TO BE ADJUSTED TO FINAL GRADE.
13. EXISTING FIRE HYDRANT TO REMAIN PROTECTED IN PLACE.
14. EXISTING FENCE TO BE REMOVED.
15. EXISTING FENCE TO REMAIN PROTECTED IN PLACE.

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SHEET C3.0

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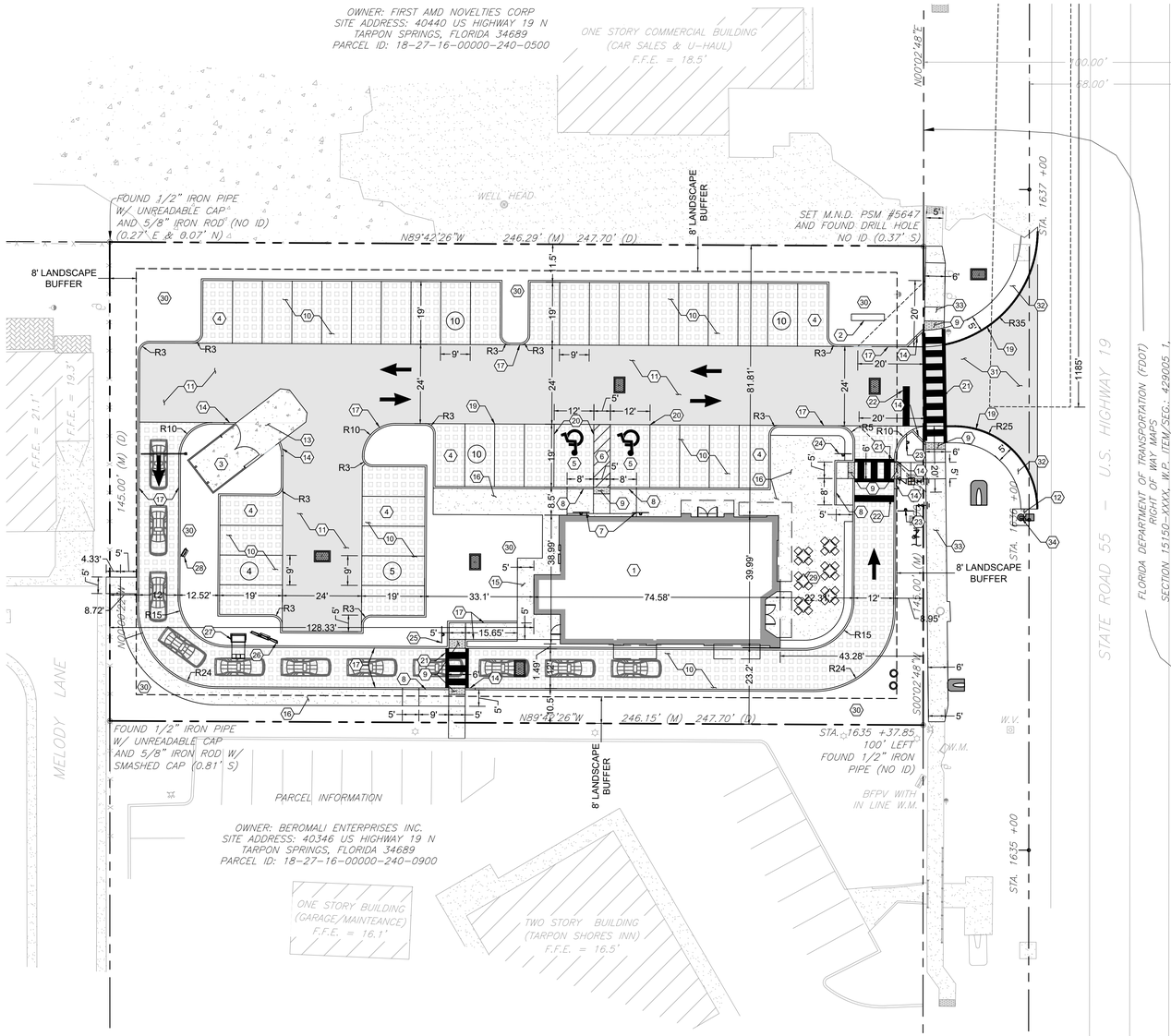

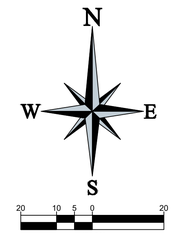

SITE DATA TABLE

PARCEL NUMBER	18-27-16-00000-240-1000
SITE ADDRESS	40390 US HWY 19 N TAPRON SPRINGS, FL 34689
FUTURE LAND USE	RETAIL & SERVICES
ZONING DISTRICT	HB HIGHWAY BUSINESS
EXISTING LAND USE	VACANT COMMERCIAL
PROPOSED LAND USE	COMMERCIAL
PARCEL AREA	35,702 SF (0.820 AC)
EXISTING GREEN SPACE	35,702 SF (100.00%)
EXISTING IMPERVIOUS AREA	0 SF (0.00%)
MAXIMUM BUILDING HEIGHT	35 FT
MAXIMUM IMPERVIOUS AREA	42,002 SF (85.00%)
PROPOSED BUILDING AREA	2,618 SF (0.060 AC)
PROPOSED PERVIOUS AREA	10,095 SF (28.28%)
PROPOSED IMPERVIOUS AREA	25,607 SF (71.72%)
LIMITS OF DISTURBANCE	39,609 SF (0.909 AC)
REQUIRED PARKING SPACES	38 (1 PER 80 SF BLDG GFA PLUS OUTDOOR SEATING AREA, ((2,618 + 400) / 80 = 38 SPACES)
PROVIDED STANDARD SPACES	37
PROVIDED ADA SPACES	2
TOTAL SPACES PROVIDED	39 TOTAL (INCLUDES ADA SPACES)
REQUIRED BICYCLE PARKING	N/A
PROVIDED BICYCLE PARKING	0
MAXIMUM FLOOR AREA RATIO	0.40
PROVIDED FLOOR AREA RATIO	0.073
PROPOSED BUILDING SETBACKS	
FRONT (EAST)	43.28 FT
SIDE (NORTH)	81.81 FT
SIDE (SOUTH)	23.20 FT
REAR (WEST)	128.33 FT
PROPOSED LANDSCAPE BUFFERS	
FRONT (EAST)	8 FT
SIDE (NORTH)	8 FT
SIDE (SOUTH)	8 FT
REAR (WEST)	8 FT

LEGEND

- EXISTING PROPERTY BOUNDARY LINE
- EXISTING ADJOINING PROPERTY LINE
- PROPOSED BUILDING SETBACK
- PROPOSED LANDSCAPE SETBACK
- PROPOSED EDGE OF PAVEMENT
- EXISTING EDGE OF PAVEMENT
- EXISTING CURB
- PROPOSED BUILDING OUTLINE
- PROPOSED PARKING COUNT
- PROPOSED SIGN
- PROPOSED CONCRETE SIDEWALK
- PROPOSED STANDARD DUTY ASPHALT
- PROPOSED HEAVY DUTY ASPHALT
- PROPOSED STANDARD DUTY CONCRETE
- PROPOSED HEAVY DUTY CONCRETE
- PROPOSED LIGHT STRUCTURE
- PROPOSED SANITARY STRUCTURES
- PROPOSED STORM STRUCTURES
- PROPOSED WATER/FIRE STRUCTURE
- EXISTING SANITARY STRUCTURES
- EXISTING STORM STRUCTURES
- EXISTING WATER/FIRE STRUCTURE
- EXISTING SITE SIGNAGE
- EXISTING LIGHT POLE AND GROUND VAULT

SHEET NOTES:

1. REFER TO SHEET C1.1 - C1.2 FOR GENERAL NOTES.
2. REFER TO SHEET C3.0 FOR DEMOLITION PLAN.
3. REFER TO SHEET C5.0 FOR GRADING AND DRAINAGE PLAN.
4. REFER TO SHEET C6.0 FOR UTILITY PLAN.
5. CONTRACTOR TO SEED ALL DISTURBED AREA UNLESS NOTED OTHERWISE.

GENERAL SITE NOTES:

1. ALL DIMENSIONS ARE TO GROUND LEVEL IMPROVEMENTS (FACE OF CURB, CONCRETE SLAB, ETC.) UNLESS NOTED OTHERWISE. REFER TO ARCHITECTURAL PLANS FOR BUILDING DETAILS.
2. ALL DIMENSIONS FROM PROPERTY LINES ARE PERPENDICULAR UNLESS OTHERWISE NOTED.
3. ALL RADII DIMENSIONS ARE 3' TO FACE OF CURB UNLESS OTHERWISE NOTED.
4. ALL DIRECTIONAL PAVEMENT MARKINGS MUST BE THERMOPLASTIC.
5. WHITE PAVEMENT MARKINGS ON CONCRETE TO HAVE BLACK OUTLINE.
6. ALL PAVEMENT MARKINGS AND SIGNAGE SHALL BE IN ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS," LATEST EDITION; AND THE CITY/COUNTY LAND DEVELOPMENT CODE.
7. FREE STANDING SIGNAGE SHOWN ONLY FOR REPRESENTATIONAL PURPOSES, AND SHALL BE PERMITTED SEPARATELY.
8. A RIGHT-OF-WAY PERMIT WILL BE REQUIRED FOR ALL WORK WITHIN THE PUBLIC RIGHT-OF-WAY. SPECIFIC STIPULATIONS OR CONDITIONS WILL BE IMPOSED AT THE TIME OF PERMIT APPLICATION.
9. CONSTRUCTION PLAN APPROVAL DOES NOT EXEMPT THE CONTRACTOR FROM OBTAINING THE REQUIRED BUILDING, ELECTRICAL, PLUMBING AND MECHANICAL PERMITS. THESE INCLUDE BUT ARE NOT LIMITED TO ANY STRUCTURE, SIGN, WALL, ENCLOSURE OR SCREENING, ETC
10. IN THE EVENT THE PROJECT IS TERMINATED PRIOR TO CONSTRUCTION COMPLETION, THE PROJECT SHALL BE BROUGHT TO GRADE, SEEDED AND ALL DEBRIS AND MATERIALS SHALL BE HAULED OFF-SITE AND DUMPED AT A STATE APPROVED FACILITY. ANY DAMAGED SIDEWALK OR CURB WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE REMOVED AND REPLACED.
11. ALL DISTURBED AREAS WITHIN THE PUBLIC RIGHT-OF-WAY WILL BE SODDED.
12. CONTRACTOR TO SEED ALL DISTURBED AREA UNLESS NOTED OTHERWISE.
13. STANDARD PLAN INDICES REFER TO THE LATEST VERSION OF FDOT "ROADWAY AND TRAFFIC DESIGN STANDARDS".
14. ALL ON SITE PARKING LOT TRAFFIC CONTROL SIGNAGE AND LIGHTING SHALL COMPLY WITH THE DESIGN STANDARDS SET IN TARPON SPRINGS LDC SECTION 127.06.

ADA ACCESSIBILITY NOTES:

1. ALL HANDICAPPED PARKING SPACES AND ACCESS AISLES ADJACENT TO THE HANDICAP PARKING SPACES SHALL HAVE A MAXIMUM OF 2% SLOPE IN ALL DIRECTIONS (THIS INCLUDES RUNNING SLOPE AND CROSS SLOPE).
2. AN ACCESSIBLE ROUTE FROM THE PUBLIC STREET OR SIDEWALK TO ALL BUILDING ENTRANCES MUST BE PROVIDED. THIS ACCESSIBLE ROUTE SHALL BE A MINIMUM OF 60" WIDE. THE RUNNING SLOPE OF AN ACCESSIBLE ROUTE SHALL NOT EXCEED 5% AND THE CROSS SLOPE SHALL NOT EXCEED 2%.
3. SLOPES EXCEEDING 5% BUT LESS THAN 8.33% WILL REQUIRE A RAMP AND MUST CONFORM TO THE REQUIREMENTS FOR RAMP DESIGN (HANDRAILS, CURBS, LANDINGS). NO RAMP SHALL EXCEED AN 8.33% RUNNING SLOPE OR 2% CROSS SLOPE.
4. IN THE CASE THAT A NEW SIDEWALK WILL BE CONSTRUCTED IN THE RIGHT-OF-WAY OF A SITE THE RUNNING SLOPE OF THE SIDEWALK SHALL NOT EXCEED 5% AND THE CROSS SLOPE SHALL NOT EXCEED 2%. THIS STANDARD APPLIES TO CROSS WALKS IN THE DRIVEWAY AS WELL AND WILL REQUIRE SPECIAL ATTENTION DURING STAKING TO MAKE SURE THE 2% CROSS SLOPE IS MET IN THE CROSS WALK.
5. IT WILL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO ENSURE THAT THE HANDICAP PARKING SPACES, ACCESSIBLE ROUTES, AND SIDEWALKS/CROSSWALKS ARE CONSTRUCTED TO MEET ADA REQUIREMENTS.
6. ANY REQUIREMENTS LISTED ABOVE THAT CAN NOT BE MET SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION IMMEDIATELY. ANYTHING NOT BUILT TO THE ABOVE STANDARDS WILL REQUIRE REMOVAL AND REPLACEMENT OF THE NON COMPLIANT AREAS AT THE GENERAL CONTRACTORS COST.

KEYED NOTES:

1. 2,618 SF BUILDING. REFER TO ARCHITECTURAL PLANS FOR DETAILS AND ELEVATIONS.
2. PYLON SIGN TO BE PROVIDED AND INSTALLED BY OTHERS. REFER TO SIGNAGE PACKAGE BY VENDOR. SIGNAGE PERMIT TO BE PROCURED BY SIGNAGE VENDOR.
3. TRASH ENCLOSURE LOCATION. ENCLOSURE WILL COMPLY WITH THE ARCHITECTURAL DESIGN OF THE DEVELOPMENT. SEE ARCHITECTURAL PLANS FOR ELEVATIONS AND DETAILS.
4. 9' X 19' PARKING SPACE (TYPICAL).
5. 12' X 19' ADA PARKING SPACE.
6. 5' WIDE ADA COMPLIANT LOADING AREA.
7. ADA PARKING SIGN.
8. ADA COMPLIANT PARALLEL CURB RAMP.
9. DETECTABLE WARNING STRIP.
10. STANDARD DUTY ASPHALT PAVEMENT.
11. HEAVY DUTY ASPHALT PAVEMENT.
12. STANDARD DUTY CONCRETE PAVEMENT.
13. HEAVY DUTY CONCRETE PAVEMENT.
14. 3' CURB TRANSITION.
15. CONCRETE SIDEWALK.
16. TURNED DOWN EDGE CONCRETE SIDEWALK.
17. TYPE "D" CURB, PER FDOT STANDARD PLANS INDEX 520-001.
18. DIRECTIONAL PAVEMENT MARKING PER FDOT STANDARD PLANS INDEX 711-001.
19. 6" SOLID WHITE PAINTED STRIPE (TYPICAL), PER FDOT STANDARD PLANS INDEX 711-001.
20. 6" SOLID BLUE PAINTED STRIPE, PER FDOT STANDARD PLANS INDEX 711-001.
21. CROSSWALK STRIPING, PER FDOT STANDARD PLANS INDEX 711-001.
22. 24" WHITE THERMOPLATIC STOP BAR, PER FDOT STANDARD PLANS INDEX 711-001.
23. 36" x 36" STOP SIGN, PER MUTCD STANDARD R1-1.
24. 30" X 30" DO NOT ENTER SIGN, PER MUTCD STANDARD R5-1.
25. CROSSWALK SIGN, PER MUTCD STANDARD W11-2.
26. DRIVE-THRU MENU BOARD SIGN. REFER TO ARCHITECTURAL PLANS.
27. DRIVE-THRU CANOPY. REFER TO ARCHITECTURAL PLANS .
28. DRIVE-THRU PRE-BROWSE SIGN. REFER TO ARCHITECTURAL PLANS.
29. OUTDOOR SEATING AREA. REFER TO ARCHITECTURAL PLANS.
30. LANDSCAPE AREA (SEE LANDSCAPE PLANS).
31. PAVED DRIVEWAY TO BE CONSTRUCTED PER FDOT STANDARD INDEX 330-001.
32. PAVED SHOULDER PER FDOT STANDARD INDEX 330-001.
33. CONCRETE SIDEWALK PER FDOT STANDARD INDEX 522-001.
34. RELOCATED LIGHT POLE.

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USER: KPETRI PLOT DATE/TIME: Mar. 06, 23 - 15:12:55 DRAWING: V:\011046 - Pursuit Development\011046-01-001 (ENG) - Black Rifle Coffee - Tarpon Springs, FL\Engineering\Engineering Plans\Plan Sets\011046-01-001-C4.0-SITE.dwg ,C4.0 SITE PLAN

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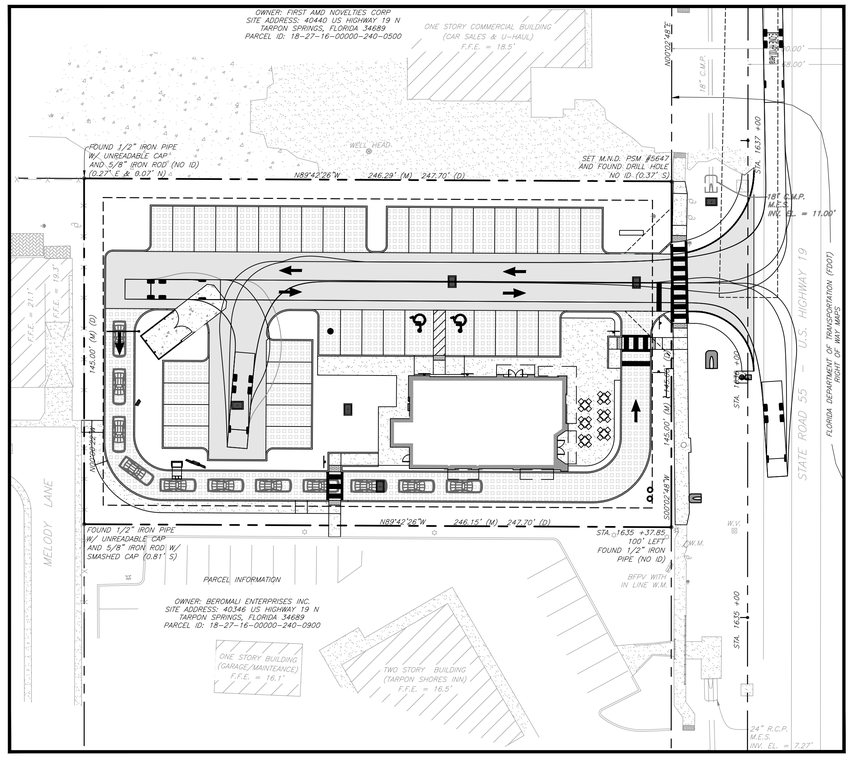
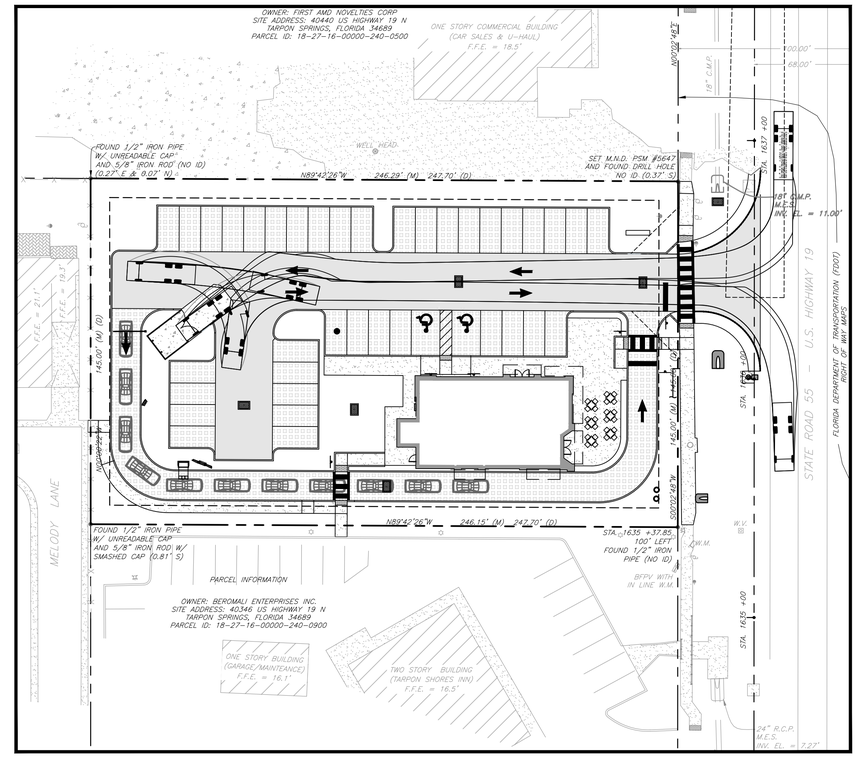


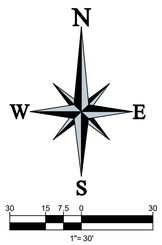
FIRE TRUCK TURN PLAN

SCALE 1" = 30'



REFUSE TRUCK TURN PLAN

SCALE 1" = 30'



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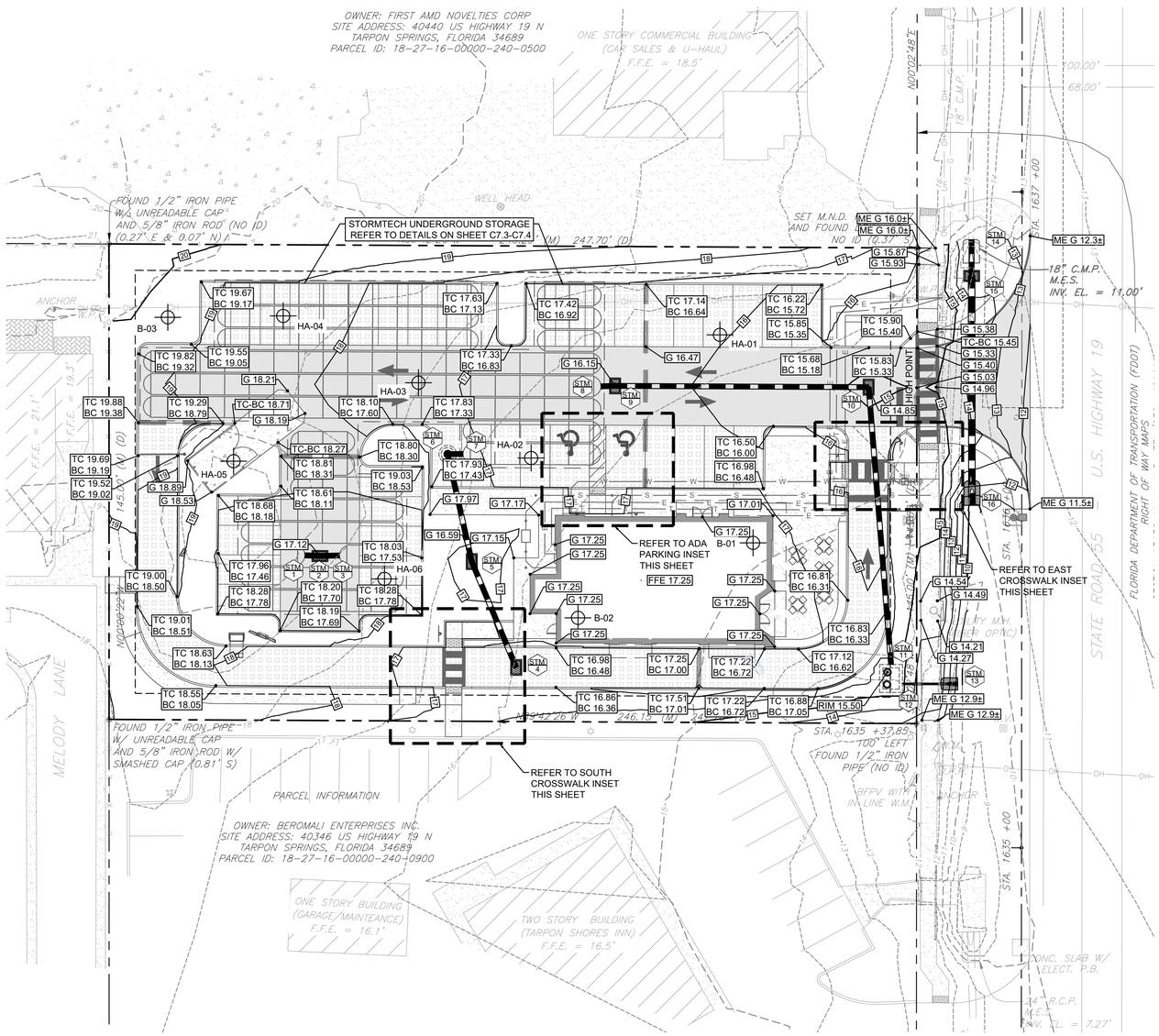
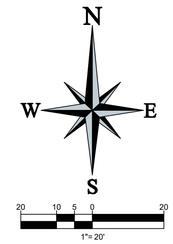
SHEET C4.1





GRADING LEGEND

- EXISTING PROPERTY BOUNDARY LINE
- EXISTING ADJOINING PROPERTY LINE
- EXISTING ACCESS EASEMENT
- EXISTING 5' INTERVAL CONTOUR LINE
- EXISTING 1' INTERVAL CONTOUR LINE
- PROPOSED 5' INTERVAL CONTOUR LINE
- PROPOSED 1' INTERVAL CONTOUR LINE
- PROPOSED SPOT SHOTS
- EXISTING CURB
- PROPOSED UTILITY EASEMENT
- PROPOSED CURB AND GUTTER
- PROPOSED CURB
- PROPOSED DEPRESSED CURB
- PROPOSED BUILDING
- PROPOSED WATER STRUCTURES
- PROPOSED STORM STRUCTURES
- PROPOSED SANITARY STRUCTURES
- EXISTING SANITARY STRUCTURES
- EXISTING WATER STRUCTURES
- EXISTING GAS MAIN
- EXISTING WATER MAIN
- EXISTING UNDERGROUND ELECTRIC
- EXISTING TELEPHONE
- EXISTING OVERHEAD WIRES
- EXISTING SANITARY
- EXISTING STORM
- PROPOSED STORM PIPE
- PROPOSED WATER
- PROPOSED SANITARY
- PROPOSED DRAINAGE BASIN DIVIDE
- SOIL BORING LOCATION

GRADING NOTES:

1. REFER TO SHEET C1.1 - C1.2 FOR GENERAL NOTES.
2. REFER TO SHEET C2.0, C2.1, & C2.2 FOR EROSION AND SEDIMENTATION CONTROL PLANS.
3. REFER TO SHEET C3.0 FOR DEMOLITION PLAN.
4. REFER TO SHEET C4.0 FOR SITE PLAN.
5. REFER TO SHEET C6.0 FOR UTILITY PLAN.
6. ALL DIMENSIONS ARE TO GROUND LEVEL IMPROVEMENTS (FACE OF CURB, CONCRETE SLAB, ETC.) UNLESS NOTED OTHERWISE. REFER TO ARCHITECTURAL PLANS FOR BUILDING DETAILS.
7. ALL DIMENSIONS FROM PROPERTY LINES ARE PERPENDICULAR UNLESS OTHERWISE NOTED.
8. CONTRACTOR TO SEED ALL DISTURBED AREA UNLESS NOTED OTHERWISE.
9. CONTRACTOR TO INSTALL MEDIUM DUTY ASPHALT IN ALL SECONDARY DRIVE AISLES AND PARKING STALLS. HEAVY DUTY ASPHALT TO BE INSTALLED IN MAIN DRIVE AISLE. REFER TO CONSTRUCTION DETAIL SHEETS FOR ASPHALT PAVING DETAILS.

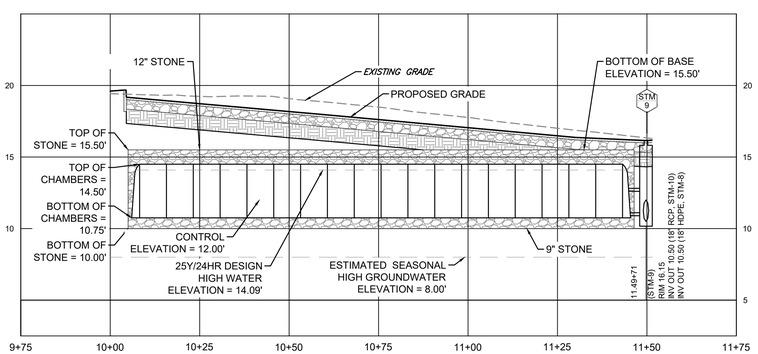
GENERAL NOTES:

1. THE PROJECT OWNER SHALL REFER TO THE STORMTECH O&M MANUAL FOR REQUIRED MAINTENANCE OF THE UNDERGROUND SYSTEM.
2. ELEVATIONS SHOWN ARE IN FEET ABOVE THE NORTH AMERICAN VERTICAL DATUM OF 1988 (N.A.V.D.) BASED ON GPS OBSERVATIONS. CONVERSION FROM NAVD 88 TO NGVD 29, NAVD 88 - 0.079' = NGVD 29.
3. ALL AREAS WITHIN CITY OR FDOT R.O.W. DISTURBED BY CONSTRUCTION MUST BE RESTORED AND SODDED.

STORM STRUCTURE TABLE

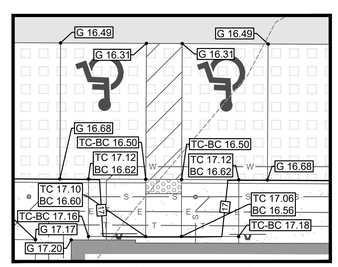
STRUCTURE NAME	STRUCTURE TYPE	RIM	UPSTREAM PIPE NAME	UPSTREAM PIPE INV	DOWNSTREAM PIPE NAME	DOWNSTREAM PIPE INV	DOWNSTREAM PIPE LENGTH	DOWNSTREAM PIPE SIZE AND TYPE	DOWNSTREAM PIPE SLOPE
1	CHAMBERS	17.17			STM 1 - STM 2	10.75'	4.61'	18" HDPE	0.00%
2	FDOT TYPE F INLET	17.12	STM 1 - STM 2	10.75'	STM 2 - STM 3	10.75'	5.98'	18" HDPE	0.00%
3	CHAMBERS	17.19	STM 2 - STM 3	10.75'					
4	FDOT TYPE F INLET	16.09			STM 4 - STM 5	10.93'	34.99'	18" RCP	0.26%
5	FDOT TYPE F INLET	16.59	STM 4 - STM 5	10.84'	STM 5 - STM 6	10.84'	33.57'	18" RCP	0.26%
6	JUNCTION BOX	17.23	STM 5 - STM 6	10.75'	STM 6 - STM 7	10.75'	4.68'	18" HDPE	0.00%
7	CHAMBERS	17.12	STM 6 - STM 7	10.75'					
8	CHAMBERS	16.20	STM 8 - STM 9	10.50'					
9	FDOT TYPE F INLET	16.15			STM 9 - STM 10 STM 8 - STM 9	10.50' 10.50'	77.29' 4.32'	18" RCP 18" HDPE	0.00% 0.00%
10	FDOT TYPE F INLET	14.85	STM 9 - STM 10	10.50'	STM 10 - STM 11	10.50'	84.86'	18" RCP	0.00%
11	OCS IN*	15.67	STM 10 - STM 11	10.50'					
12	OCS OUT*	15.18			STM 12 - STM 13	11.00'	16.80'	6" HDPE	1.49%
13	MES	10.75	STM 12 - STM 13	10.75'					
14	EX. 18" RCP	13.50			STM 14 - STM 15	11.00'	11.09'	18" RCP	1.20%
15	TYPE F INLET	13.37	STM 14 - STM 15	10.87'	STM 15 - STM 16	10.37'	69.90'	24" RCP	0.68%
16	MES	9.89	STM 15 - STM 16	9.89'					

*REFER TO DETAIL ON SHEET C7.4

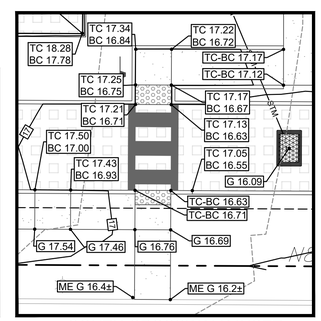


CHAMBER SECTION

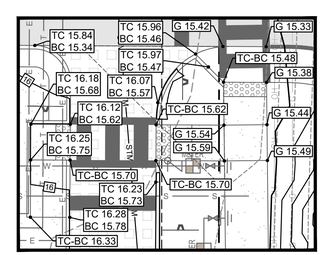
SCALE
VERTICAL 1" = 5'
HORIZONTAL 1" = 20'



ADA PARKING INSET
1" = 10'



SOUTH CROSSWALK INSET
1" = 10'



EAST CROSSWALK INSET
1" = 10'

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ARMANDO L. CABRE, LICENSE No. 66807, STATE OF FLORIDA, PROFESSIONAL ENGINEER

PLAN STATUS

REV	DATE	COMMENT
1	09/13/22	AHJ COMMENTS
2	12/23/22	AHJ COMMENTS
3	03/06/23	AHJ COMMENTS

KSP DESIGN	KSP DRAWN	ALC CHKD

SCALE 1" = 20'
JOB No. 011046-01-001
DATE 04/13/2022
SHEET C5.0

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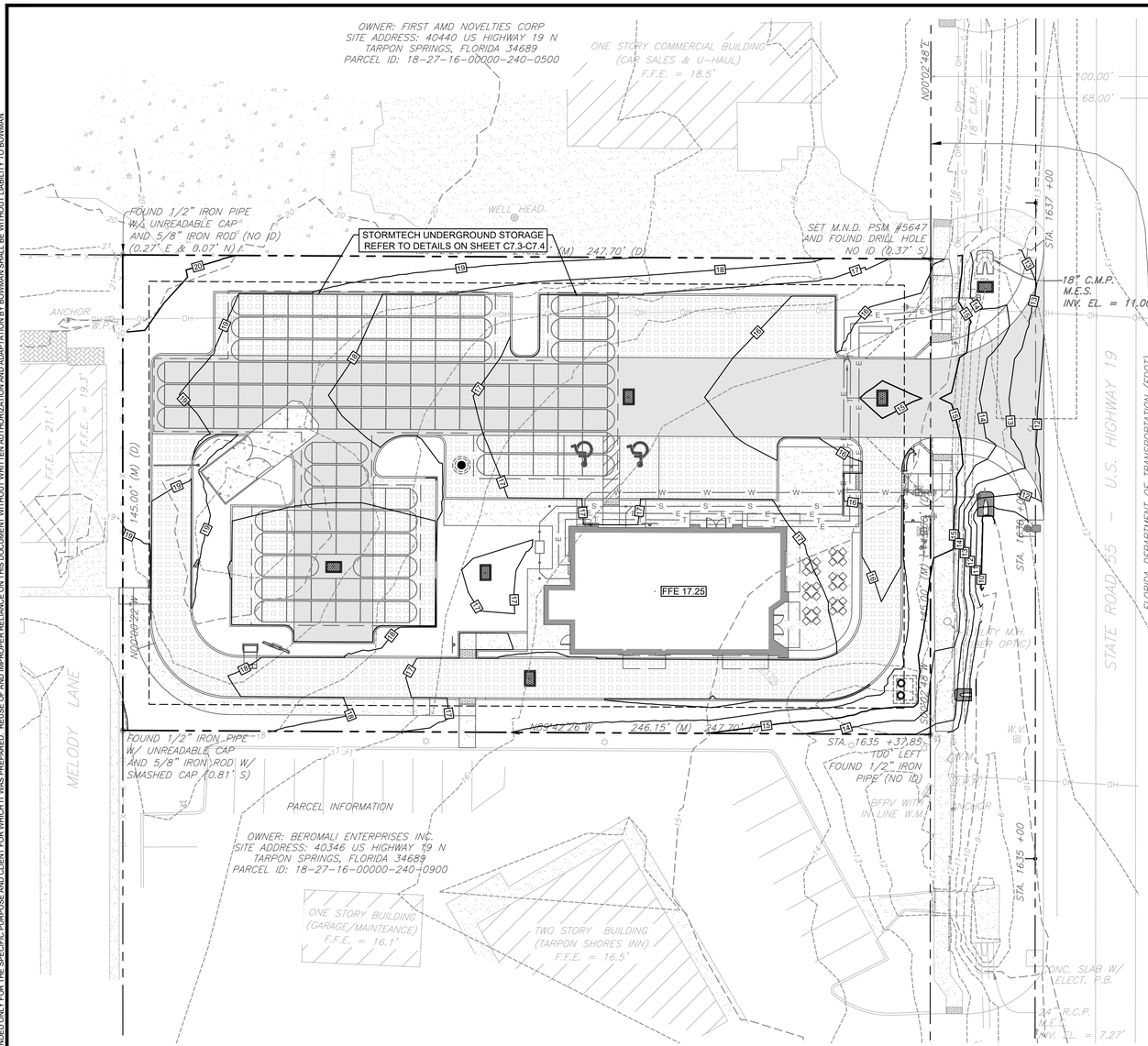
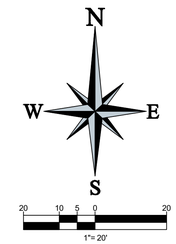
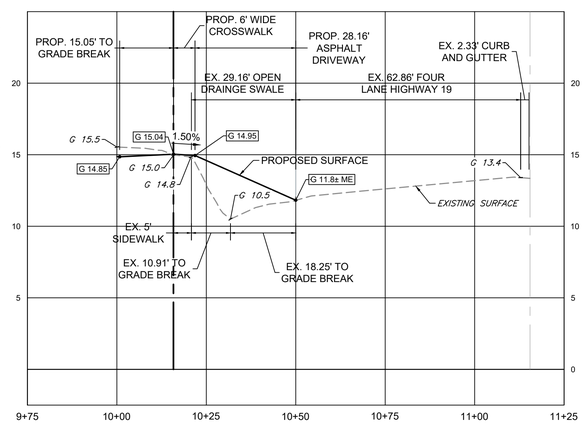
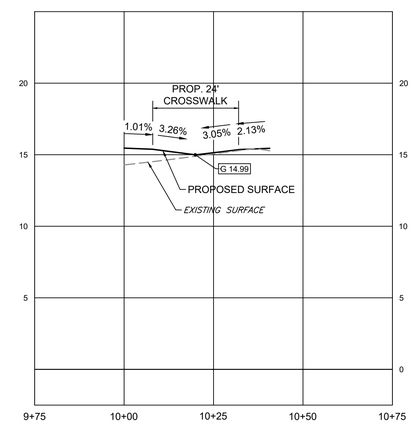






A-A

SCALE
VERTICAL 1" = 5'
HORIZONTAL 1" = 20'



B-B

SCALE
VERTICAL 1" = 5'
HORIZONTAL 1" = 20'

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KSP	KSP	ALC
DESIGN	DRAWN	CHKD

SCALE 1" = 20'
JOB No. 011046-01-001
DATE 04/13/2022
SHEET C5.1

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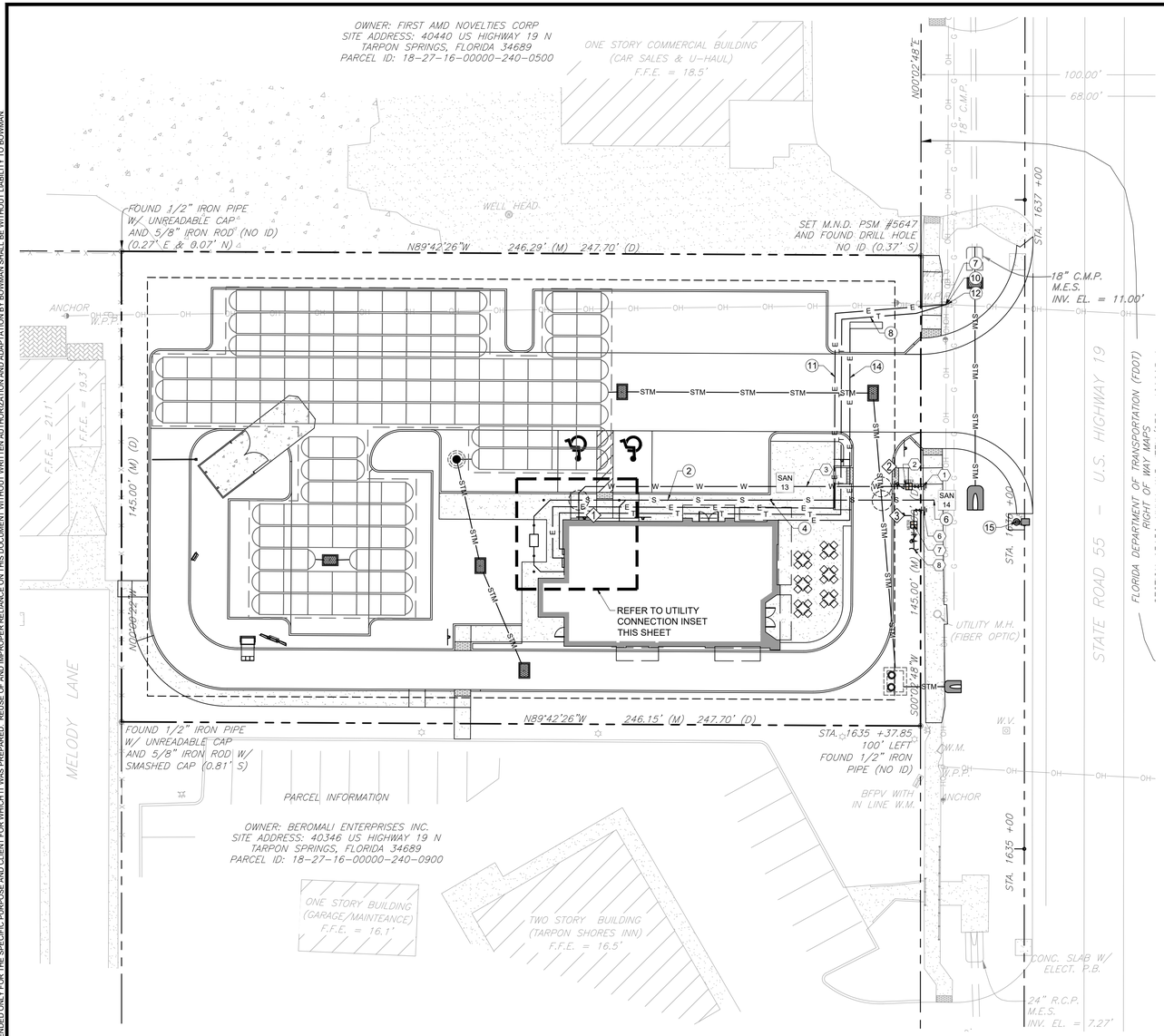
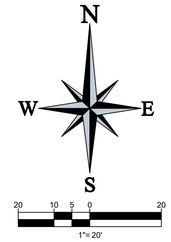




UTILITY LEGEND

- EXISTING PROPERTY BOUNDARY LINE
- EXISTING ADJOINING PROPERTY LINE
- EXISTING ACCESS EASEMENT
- EXISTING 5' INTERVAL CONTOUR LINE
- EXISTING 1' INTERVAL CONTOUR LINE
- PROPOSED 5' INTERVAL CONTOUR LINE
- PROPOSED 1' INTERVAL CONTOUR LINE
- EXISTING CURB
- PROPOSED UTILITY EASEMENT
- PROPOSED CURB AND GUTTER
- PROPOSED CURB
- PROPOSED DEPRESSED CURB
- PROPOSED BUILDING
- PROPOSED WATER STRUCTURES
- PROPOSED STORM STRUCTURES
- PROPOSED SANITARY STRUCTURES
- EXISTING SANITARY STRUCTURES
- EXISTING WATER STRUCTURES
- EXISTING GAS MAIN
- EXISTING WATER MAIN
- EXISTING UNDERGROUND ELECTRIC
- EXISTING TELEPHONE
- EXISTING OVERHEAD WIRES
- EXISTING SANITARY
- EXISTING STORM
- PROPOSED STORM PIPE
- PROPOSED WATER
- PROPOSED SANITARY

PIPE CONFLICT DATA

1	WATER OVER SANITARY PROP. 2" PVC B.O.P.= 13.33' PROP. 6" PVC T.O.P. = 11.83' CLEARANCE = 1.50'
2	STORM OVER WATER PROP. 18" RCP B.O.P. = 10.30' PROP. 2" PVC T.O.P.= 8.80' CLEARANCE = 1.50'
3	STORM OVER SANITARY PROP. 18" RCP B.O.P.= 10.30' PROP. 6" PVC T.O.P. = 8.80' CLEARANCE = 1.50'

LEGEND
B.O.P. - BOTTOM OF PIPE
T.O.P. - TOP OF PIPE
C.E. - CONCRETE ENCASEMENT
* PIPE CLEARANCES THAT ARE LESS THAN 1.00' SHALL BE CONCRETE ENCASED

GRADING NOTES:

1. REFER TO SHEET C1.1 - C1.2 FOR GENERAL NOTES.
2. REFER TO SHEET C2.0, C2.1, & C2.2 FOR EROSION AND SEDIMENTATION CONTROL PLANS.
3. REFER TO SHEET C3.0 FOR DEMOLITION PLAN.
4. REFER TO SHEET C4.0 FOR SITE PLAN.
5. REFER TO SHEET C5.0 FOR GRADING AND DRAINAGE PLAN.
6. ALL DIMENSIONS ARE TO GROUND LEVEL IMPROVEMENTS (FACE OF CURB, CONCRETE SLAB, ETC.) UNLESS NOTED OTHERWISE. REFER TO ARCHITECTURAL PLANS FOR BUILDING DETAILS.
7. ALL DIMENSIONS FROM PROPERTY LINES ARE PERPENDICULAR UNLESS OTHERWISE NOTED.
8. CONTRACTOR TO SEED ALL DISTURBED AREA UNLESS NOTED OTHERWISE.
9. CONTRACTOR TO INSTALL MEDIUM DUTY ASPHALT IN ALL SECONDARY DRIVE AISLES AND PARKING STALLS. HEAVY DUTY ASPHALT TO BE INSTALLED IN MAIN DRIVE AISLE. REFER TO CONSTRUCTION DETAIL SHEETS FOR ASPHALT PAVING DETAILS.

GENERAL NOTES:

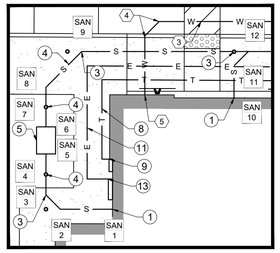
1. RETENTION / DETENTION AREAS MUST BE STABILIZED WITH SOD UNLESS AN ALTERNATIVE METHOD IS SPECIFICALLY PERMITTED PRIOR TO PLAN APPROVAL. NO ORGANIC MULCH WILL BE PERMITTED IN OR ADJOINING RETENTION / DETENTION AREA.
2. THE PROJECT OWNER IS RESPONSIBLE FOR THE PERPETUAL MAINTENANCE OF ALL FEATURES OF THE SURFACE WATER MANAGEMENT SYSTEM AS OUTLINED ON THE DRAINAGE PLAN.
3. REFER TO COVER SHEET FOR VERTICAL DATUM.

UTILITY KEYED NOTES:

1. PROPOSED LOCATION FOR SANITARY SEWER TIE IN TO THE BUILDING. REFER TO ARCHITECTURAL PLANS FOR DETAILS.
2. PROPOSED 6" (SDR 26) PVC SANITARY SEWER SERVICE. SANITARY SEWER PIPE TO BE RUN AT MINIMUM SLOPE OF 1.04% AND 36" MINIMUM PIPE COVER.
3. PROPOSED 6" (SDR 26) PVC - WYE WITH CLEANOUT. REFER TO SHEET C7.1 FOR DETAIL.
4. PROPOSED 6" (SDR 26) PVC - TWO-WAY CLEANOUT. REFER TO SHEET C7.1 FOR DETAIL
5. PROPOSED 125 GALLON GREASE INTERCEPTOR LOCATION. REFER TO SHEET C7.1 FOR DETAIL.
6. PROPOSED 6" SANITARY POINT OF CONNECTION. CONTRACTOR TO COORDINATE WITH CITY OF TARPON SPRINGS.
7. PROPOSED POINT OF CONNECTION FOR UNDERGROUND TELEPHONE/CABLE SERVICE. CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANY (CHARTER).
8. PROPOSED TELEPHONE/CABLE SERVICE (2) 4" UNDERGROUND CONDUITS. CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANY FOR SERVICE SPECIFICATIONS (CHARTER).
9. PROPOSED LOCATION FOR UNDERGROUND TELEPHONE/CABLE TIE IN TO THE BUILDING. REFER TO ELECTRICAL PLANS FOR DETAILS.
10. PROPOSED POINT OF CONNECTION FOR UNDERGROUND ELECTRIC SERVICE. CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANY (DUKE ENERGY).
11. PROPOSED SECONDARY CONDUITS FOR ELECTRICAL SERVICE. CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANY (DUKE ENERGY).
12. PROPOSED POLE MOUNTED TRANSFORMER LOCATION. CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANY (DUKE ENERGY).
13. PROPOSED WALL MOUNTED ELECTRIC METER AND MANUAL TRANSFER SWITCH. CONTRACTOR SHALL COORDINATE WITH ELECTRICAL COMPANY (DUKE ENERGY). REFER TO ELECTRICAL PLANS FOR DETAILS.
14. PROPOSED (2) 3/4" UNDERGROUND ELECTRICAL CONDUITS FOR MONUMENT/PYLON SIGNAGE. ALIGNMENT OF UNDERGROUND CONDUIT IS FOR GENERAL LOCATION ONLY. CONTRACTOR SHALL INSTALL UNDERGROUND CONDUIT TO PREVENT CONFLICTS AND FACILITATE PROPOSED WIRING SCHEMATIC.
15. ROW LIGHT POLE RELOCATION. CONTRACTOR TO COORDINATE WITH CITY OF TARPON SPRINGS.

WATER KEYED NOTES:

1. PROPOSED 10"X2" DOMESTIC WATER TAPPING SLEEVE AND CORPORATION STOP. REFER TO SHEET C7.2 FOR DETAIL.
2. PROPOSED 2" WATER METER AND DUAL CHECK BACKFLOW PREVENTER FOR DOMESTIC SERVICE. REFER TO SHEET C7.2 FOR DETAIL.
3. PROPOSED 123 LF OF 2" PVC DOMESTIC WATER SERVICE.
4. PROPOSED 2" PVC - 45° BEND.
5. PROPOSED LOCATION FOR POTABLE WATER TIE IN TO THE BUILDING. REFER TO ARCHITECTURAL PLANS FOR DETAILS.
6. PROPOSED 10"X1" IRRIGATION WATER TAPPING SLEEVE AND CORPORATION STOP. REFER TO SHEET C7.2 FOR DETAIL.
7. PROPOSED 1" WATER METER AND DUAL CHECK BACKFLOW PREVENTER FOR IRRIGATION SERVICE. REFER TO SHEET C7.2 FOR DETAIL.
8. PROPOSED 1" PVC IRRIGATION WATER SERVICE. REFER TO IRRIGATION PLANS FOR CONTINUATION.



UTILITY CONNECTION INSET
1" = 10'

SANITARY STRUCTURE TABLE

STRUCTURE NAME	STRUCTURE TYPE	RIM	UPSTREAM PIPE NAME	UPSTREAM PIPE INV	DOWNSTREAM PIPE NAME	DOWNSTREAM PIPE INV	DOWNSTREAM PIPE LENGTH	DOWNSTREAM PIPE SIZE AND TYPE	DOWNSTREAM PIPE SLOPE
1	BUILDING STUB	17.25			SAN 1 - SAN 2	12.75'	7.30'	6" PVC	3.20%
2	45° BEND	17.23	SAN 1 - SAN 2	12.52'	SAN 2 - SAN 3	12.52'	2.83'	6" PVC	3.20%
3	WYE W/ CO	17.20	SAN 2 - SAN 3	12.43'	SAN 3 - SAN 4	12.43'	2.86'	6" PVC	3.20%
4	TWO-WAY CO	17.16	SAN 3 - SAN 4	12.33'	SAN 4 - SAN 5	12.33'	2.86'	6" PVC	3.20%
5	GT IN	17.10	SAN 4 - SAN 5	12.24'					
6	GT OUT	17.07			SAN 6 - SAN 7	11.99'	2.77'	6" PVC	3.20%
7	TWO-WAY CO	17.13	SAN 6 - SAN 7	11.90'	SAN 7 - SAN 8	11.90'	2.77'	6" PVC	3.20%
8	45° BEND	17.27	SAN 7 - SAN 8	11.82'	SAN 8 - SAN 9	11.82'	7.07'	6" PVC	3.20%
9	WYE W/ CO	17.18	SAN 8 - SAN 9	11.59'	SAN 9 - SAN 12	11.59'	23.28'	6" PVC	3.20%
10	BUILDING STUB	17.18			SAN 10 - SAN 11	11.08'	4.49'	6" PVC	3.20%
11	45° BEND	16.69	SAN 10 - SAN 11	10.94'	SAN 11 - SAN 12	10.94'	2.83'	6" PVC	3.20%
12	WYE W/ CO	16.82	SAN 9 - SAN 12 SAN 11 - SAN 12	10.84' 10.84'	SAN 12 - SAN 13	10.84'	44.79'	6" PVC	3.25%
13	TWO-WAY CO	16.99	SAN 12 - SAN 13	9.39'	SAN 13 - SAN 14	9.39'	50.22'	6" PVC	3.25%
14	EX. SANITARY	15.40	SAN 13 - SAN 14	7.76'					

PROPOSED FACILITIES IMPACT TABLE

FACILITY	PROPOSED IMPACTS
POTABLE WATER	1,778 GAL / DAY
WASTEWATER	1,063 GAL / DAY
SOLID WASTE	3,214 TONS / YEAR
DAILY TRIPS	1,403 TRIPS / DAY
PEAK HOUR TRIPS	266 TRIPS AM PEAK HOUR 103 TRIPS PM PEAK HOUR

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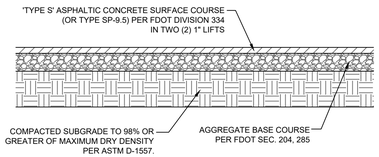
KSP	KSP	ALC
DESIGN	DRAWN	CHKD

SCALE 1" = 20'
JOB No. 011046-01-001
DATE 04/13/2022
SHEET C6.0

ASPHALT TYPE	LAYER DEPTH	
	STANDARD DUTY	HEAVY DUTY
ASPHALT LOCATION	PARKING & DRIVE THRU	DRIVE AISLES
AGGREGATE CONCRETE SURFACE COURSE	1.5"	2.0"
AGGREGATE BASE COURSE	6"	8"
COMPACTED SUBGRADE	12"	12"

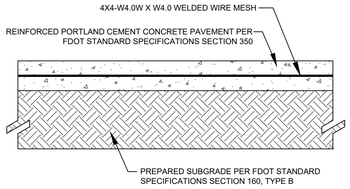


DETAIL NOTES:

1. AGGREGATE BASE COURSE CAN BE LIMEROCK OR CRUSHED CONCRETE (LBR = 100). COMPACT BASE COURSE TO 98% OF THE MATERIALS MAXIMUM DRY DENSITY PER ASTM D-1557.
2. COMPACTED SUBGRADE TO ACHIEVE A MINIMUM LBR OF 40.

ASPHALT PAVING DETAIL

SLAB COMPONENT	CONCRETE SLAB TYPE	
	STANDARD DUTY	HEAVY DUTY
CONCRETE PAVEMENT	5"	6"
COMPACTED SUBGRADE	12"	12"
MINIMUM 28 DAY STRENGTH	4,000 PSI	4,000 PSI

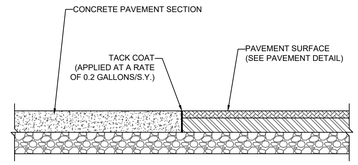


NOTE: THESE ARE MINIMUM SPECIFICATIONS. REFER TO GEOTECHNICIAL REPORT FOR FINAL SPECIFICATIONS.

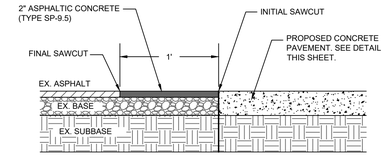
DETAIL NOTES:

1. SUBGRADE MATERIALS SHALL MEET FDOT REQUIREMENTS INCLUDING COMPACTION TO 98% OF ITS MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-1557.
2. CONCRETE PAVEMENT SHALL MEET THE MORE STRINGENT REQUIREMENT OF EITHER THE SPECIFICATIONS PROVIDED BY THE OWNER, LOCAL CITY/COUNTY REQUIREMENTS, OR FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
3. CONTRACTOR TO CONSTRUCT CONCRETE PAVEMENT WITH TRANSVERSE JOINTS AT 10' O.C. JOINTS TO BE CONSTRUCTED PER DETAIL ON THIS PAGE.
4. CONTRACTOR TO DOWEL AND JOINT BETWEEN CONCRETE SLAB AND CURB.

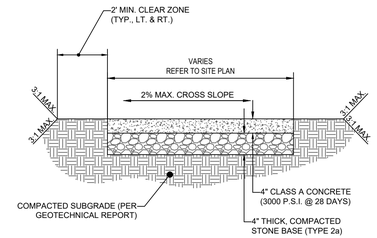
CONCRETE SLAB DETAIL



CONCRETE-TO-ASPHALT DETAIL



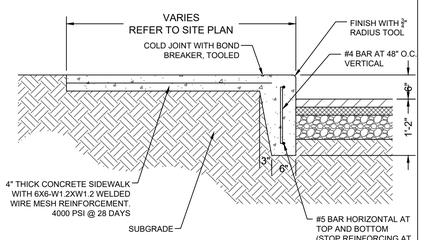
PAVEMENT CONNECTION DETAIL



DETAIL NOTES:

1. EXPANSION JOINTS 1/2" WIDE PREMOLDED BIT. MATERIAL SHALL BE INSTALLED AT 30' INTERVALS, CRACK CONTROL JOINTS TO BE SPACED AT INTERVALS EQUAL TO SIDEWALK WIDTH.

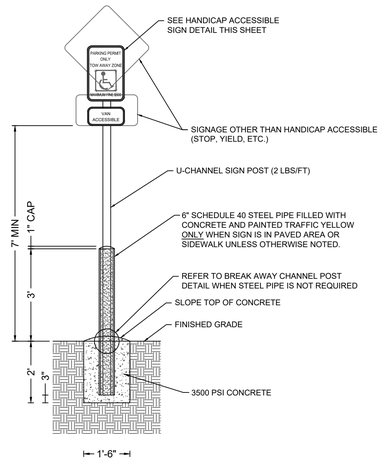
CONCRETE SIDEWALK DETAIL

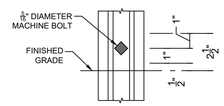


DETAIL NOTES:

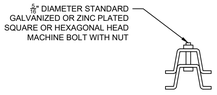
1. PROVIDE ½" PREMOLDED EXPANSION JOINT FILLER AT 60' CENTERS, CHANGES IN DIRECTION, AND ABUTTING SEPARATE POURS.
2. PROVIDE TOOLED CONTRACTION JOINTS AT 10' CENTERS.
3. SUBGRADE TO BE COMPACTED TO 95% OR GREATER OF MAX. DRY DENSITY PER ASTM D-1557

TURNED DOWN CONCRETE WALK DETAIL





BREAK AWAY POST (ELEVATION)

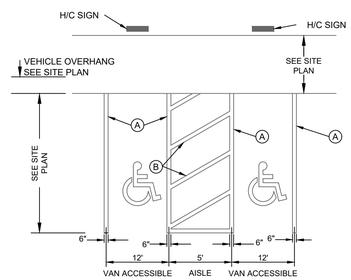


BREAK AWAY POST (PLAN)

DETAIL NOTES:

1. ALL SIGNS SHALL COMPLY WITH THE UNITED STATES DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION'S "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" (LATEST EDITION), AND LOCAL CODES AS SPECIFIED.
2. MOUNT SIGNS TO POST IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.

SIGN POST DETAIL

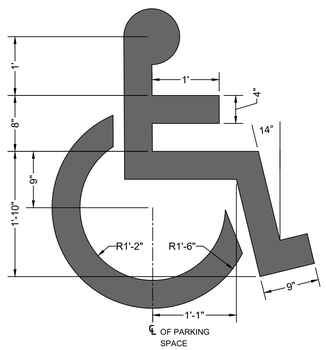


ACCESSIBLE PARKING SPACES AND ACCESS AISLES SHALL BE LEVEL WITH SURFACE SLOPES NOT EXCEEDING 1:50 (2%) IN ALL DIRECTIONS

STRIPING LEGEND

(A) 6" BLUE
(B) 6" BLUE @ 60°

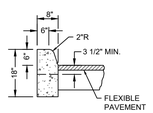
ADA ACCESSIBLE STRIPING DETAIL



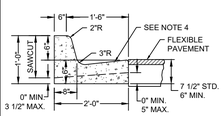
DETAIL NOTES:

1. STRIPING TO BE PAINTED 4" WIDE WHITE OR AS REQUIRED BY STATE OR LOCAL CODE.

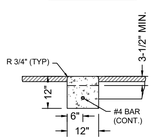
ADA SYMBOL STRIPING DETAIL



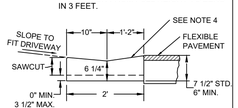
TYPE "D" CURB



TYPE "F" CURB



HEADER CURB

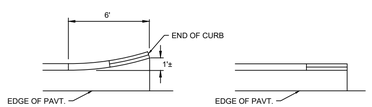


VALLEY GUTTER (DROP CURB)

NOTES:

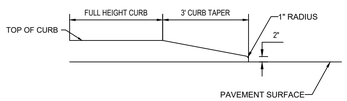
1. ULTIMATE STRENGTH OF CONCRETE FOR FOR CURBS SHALL BE 2,500 P.S.I. @ 28 DAYS.
2. 1/8" - 1/4" CONTRACTION JOINTS IN CURB AND GUTTER SHALL BE CUTS AS SHOWN AND AT 10 FT. MAXIMUM SPACING. NO SECTION SHALL BE LESS THAN 4 FT.
3. WHEN PAVEMENT IS CONCRETE, PROVIDE A 1/2" EXPANSION JOINT WITH PRE-FORMED JOINT FILLER AND JOINT SEAL BETWEEN CURB AND CONCRETE PAVEMENT. (1-1/2" TAPER ON CURB FACE NOT REQUIRED AT CONCRETE PAVEMENT.)
4. WHEN USED ON HIGH EDGE OF PAVEMENT, THE CROSS SLOPE OF TYPES "E", "F", AND VALLEY GUTTER SHALL MATCH THE CROSS SLOPE OF THE ADJACENT EDGE OF THE PAVEMENT. THE THICKNESS OF THE LIP SHALL BE 6" MIN. UNLESS OTHERWISE SHOWN ON PLANS. THE SURFACE ON THE LOW EDGE OF PAVEMENT TO BE 1/4" ABOVE LIP OF GUTTER. SURFACE ON HIGH EDGE OF PAVEMENT TO BE FLUSH WITH LIP OF CURB AND GUTTER. IF BOTH EDGES ARE AT SAME ELEVATION, SURFACE SHALL BE FLUSH.
5. ENDS OF TYPE "D" AND "F" CURB SHALL TRANSITION FROM FULL HEIGHT TO ZERO IN 3 FEET.

CONCRETE CURB DETAILS



PLAN — FLARED END

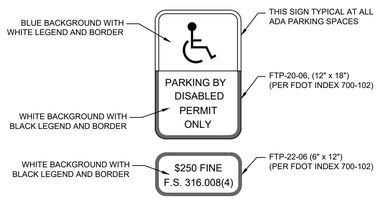
PLAN — STRAIGHT END



PROFILE

FLARED END & STRAIGHT END

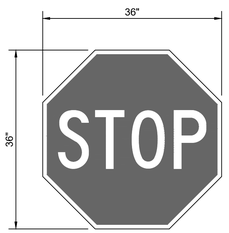
CURB TRANSITION DETAIL



DETAIL NOTES:

1. ALL SIGN BACKGROUNDS SHALL BE RETROREFLECTIVE.
2. ALL SIGN LEGENDS AND BORDERS SHALL BE RETROREFLECTIVE.
3. REFER TO FDOT INDEX 700-102 FOR SPECIFICATIONS.

ADA ACCESSIBLE SIGN DETAIL

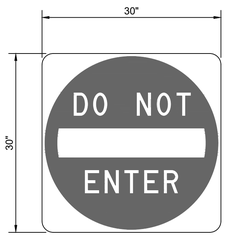


R1-1

DETAIL NOTES:

1. LEGEND AND BORDER SHALL BE WHITE (RETROREFLECTIVE).
2. BACKROUND SHALL BE RED (RETROREFLECTIVE).

"STOP" SIGN DETAIL



R5-1

DETAIL NOTES:

1. LEGEND AND SYMBOLS SHALL BE WHITE (RETROREFLECTIVE).
2. BACKGROUND SHALL BE RED (RETROREFLECTIVE).

"DO NOT ENTER" SIGN DETAIL

Bowman

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CONSTRUCTION DETAILS
BLACK RIFLE COFFEE
40390 US HWY 19 N,
TARPON SPRINGS, FL 34689

CITY OF TARPON SPRINGS, FL
PINELLAS COUNTY, FL

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ARMANDO L. CABRE LICENSE No. 66807 STATE OF FLORIDA PROFESSIONAL ENGINEER

PLAN STATUS

REV	DATE	COMMENT
1	09/13/22	AHJ COMMENTS
2	12/23/22	AHJ COMMENTS
3	03/06/23	AHJ COMMENTS

KSP DESIGN	KSP DRAWN	ALC CHKD
SCALE	1" = 20'	
JOB No.	011046-01-001	
DATE	04/13/2022	

SHEET C7.0

THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY BOWMAN SHALL BE WITHOUT LIABILITY TO BOWMAN.

USER: KPETRI PLOT DATE/TIME: Mar. 06, 23 - 15:13:31 DRAWING: V:\011046 - Pursuit Development\011046-01-001 (ENG) - Black Rifle Coffee - Tarpon Springs, FL\Engineering\Engineering Plans\Plan Sets\011046-01-001-C7.0-DETL.dwg :C7.0 CONSTRUCTION DETAILS

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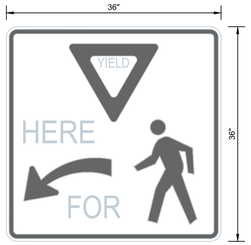
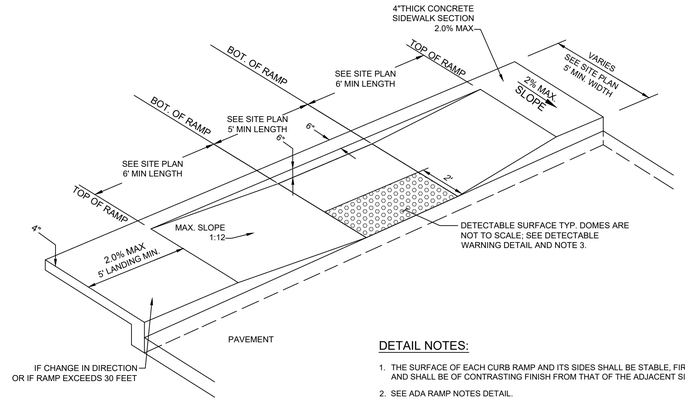


R1-5

DETAIL NOTES:

1. ALL SIGN BACKGROUNDS SHALL BE RETROREFLECTIVE.
2. ALL SIGN LEGENDS AND BORDERS SHALL BE RETROREFLECTIVE.

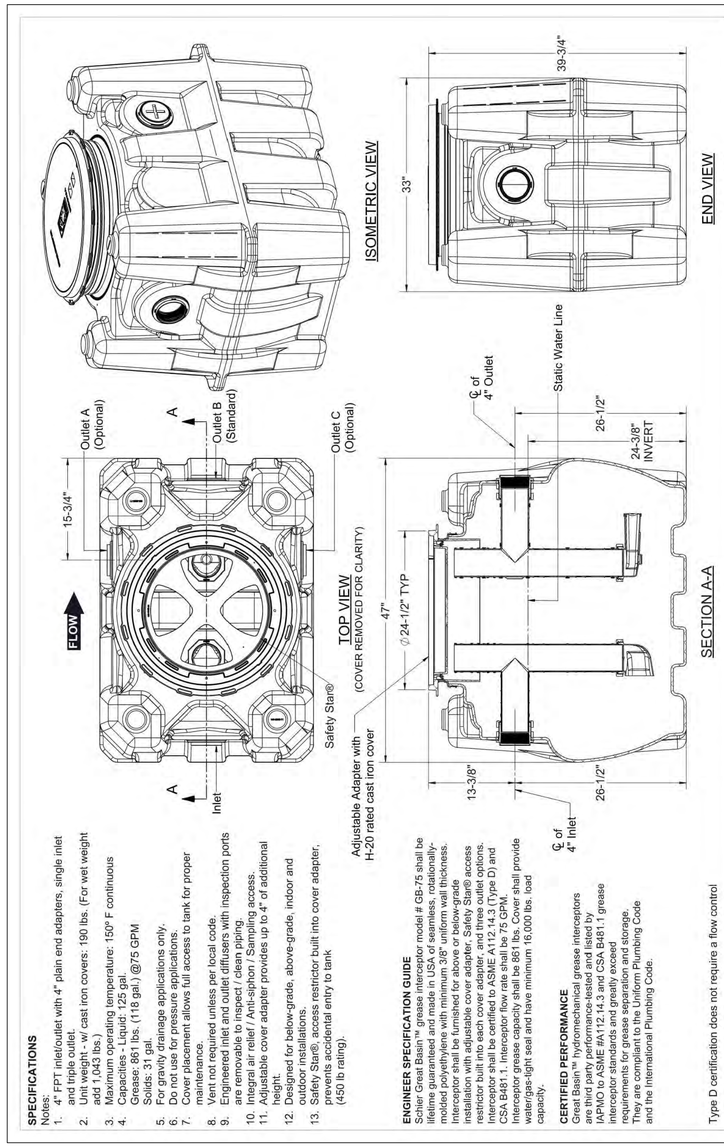
"YIELD TO PEDESTRIANS" SIGN DETAIL



DETAIL NOTES:

1. THE SURFACE OF EACH CURB RAMP AND ITS SIDES SHALL BE STABLE, FIRM AND SLIP-RESISTANT AND SHALL BE OF CONTRASTING FINISH FROM THAT OF THE ADJACENT SIDEWALK.
2. SEE ADA RAMP NOTES DETAIL.
3. THE SURFACE OF RAMP SHALL HAVE DETECTABLE WARNINGS AS SHOWN. DETECTABLE WARNINGS SHALL CONSIST OF RAISED TRUNCATED DOMES. SEE DETECTABLE WARNINGS DETAIL.

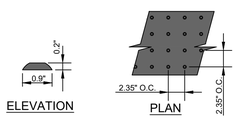
PARALLEL CURB RAMP DETAIL



DETAIL NOTES:

1. THE SURFACE OF RAMP SHALL HAVE DETECTABLE WARNINGS AS SHOWN. DETECTABLE WARNINGS SHALL CONSIST OF RAISED TRUNCATED DOMES. SEE DETECTABLE WARNINGS DETAIL.
2. CONSTRUCT PER A.D.A. STANDARDS AND FLORIDA BUILDING CODE STANDARDS.
3. REFER TO PLANS FOR ADJACENT SLOPES.
4. THE CROSS SLOPE OF THE RAMP SURFACE SHALL BE NO GREATER THAN 1.5 %. SHOULD THE CROSS SLOPE EXCEED 2% THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING THE SIDEWALK AND CURB RAMP AS NECESSARY TO CONFORM TO THE REQUIREMENTS OF THE AMERICANS WITH DISABILITY ACT AND THE FLORIDA BUILDING CODE.
5. THE LONGITUDINAL SLOPE OF THE RAMP SURFACE SHALL BE NO GREATER THAN 8.33%. SHOULD THE LONGITUDINAL SLOPE EXCEED 8.33%, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING THE SIDEWALK AND CURB RAMP AS NECESSARY TO CONFORM TO THE REQUIREMENTS OF THE AMERICANS WITH DISABILITY ACT AND THE FLORIDA BUILDING CODE.
6. ALL ADA ACCESSIBLE RAMPS TO BE CONSTRUCTED IN ACCORDANCE WITH THE AMERICANS WITH DISABILITIES ACT (ADA) AND THE FLORIDA ACCESSIBILITY CODE.
7. SEE DETAIL FOR DETECTABLE WARNING LOCATION, TYPE, AND EXTENTS.
8. ALL RAMPS OUTSIDE THE PROPERTY SHALL CONFORM TO THE STANDARDS OF THE GOVERNING REGULATING AGENCY.

ADA RAMP NOTES

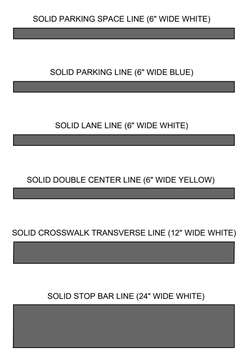


NOTE:
PREFABRICATED PANELS PER A.D.A. ACCESSIBILITY GUIDELINES SECTION 4.29.2 & A4.29.2 SHALL BE USED.

DETAIL NOTES:

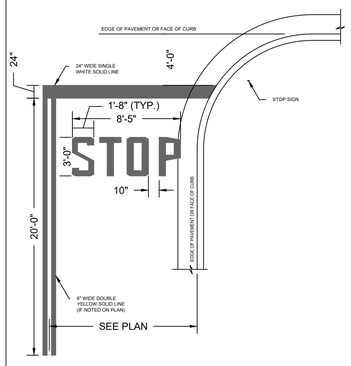
1. CONSTRUCT PER A.D.A. STANDARDS AND FLORIDA BUILDING CODE STANDARDS.

DETECTABLE WARNING DETAIL



NOTE: ALL STRIPING SHALL BE PAINTED UNLESS OTHERWISE SPECIFIED ON THE SITE PLAN AND SHALL MEET THE CRITERIA OF STATE AND LOCAL AUTHORITIES HAVING JURISDICTION.

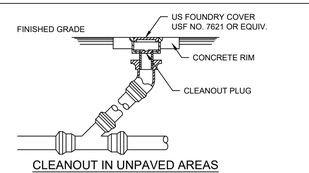
STRIPING DETAIL



DETAIL NOTES:

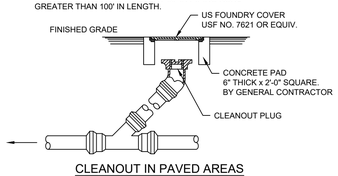
1. STOP BAR ONLY TO BE THERMOPLASTIC PAINTED REFLECTIVE WHITE.

STOP BAR DETAIL



CLEANOUT IN UNPAVED AREAS

NOTE: G.C. IS TO INSTALL CLEANOUT AT ANY PIPING ANGLE CHANGES AND AT EVERY 50' IN PIPING RUNS GREATER THAN 100' IN LENGTH.

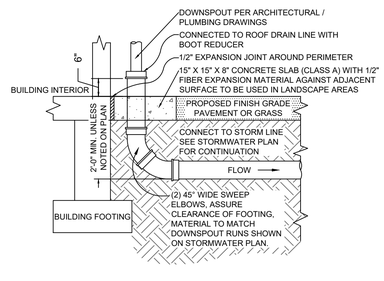


CLEANOUT IN PAVED AREAS

NOTE: G.C. IS TO INSTALL CLEANOUT AT ANY PIPING ANGLE CHANGES AND AT EVERY 50' IN PIPING RUNS GREATER THAN 100' IN LENGTH.

NOTE: REFER TO HILLSBOROUGH COUNTY CLEANOUT DETAIL THIS SHEET FOR CLEANOUT PROPOSED 1-FOOT FROM THE PROPERTY LINE.

CLEANOUT DETAIL



EXTERIOR DOWNSPOUT BOOT DETAIL

Bowman

BOWMAN CONSULTING GROUP, LTD.
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PLAN STATUS

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3	03/06/23	AHJ COMMENTS

KSP DESIGN	KSP DRAWN	ALC CHKD
SCALE	1" = 20'	
JOB No.	011046-01-001	
DATE	04/13/2022	

SHEET C7.1

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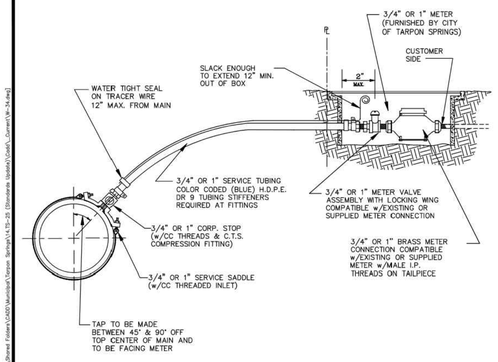
NOTES FOR SANITARY STRUCTURES

1. ALL MANHOLES SHALL BE PRECAST CONCRETE OR FIBERGLASS REINFORCED POLYESTER (FRP), UNLESS OTHERWISE SHOWN OR APPROVED BY THE ENGINEER.
2. ALL PIPE STUBS FROM PRECAST MANHOLES, FOR FUTURE CONNECTIONS, SHALL BE INSTALLED WITH REMOVABLE WATERTIGHT PLUGS, PLACED FROM WITHIN THE MANHOLE.
3. ALL TYPE I CONE SECTIONS SHALL BE CONCENTRIC WITH RING CASTING CENTERED IN STRUCTURE, UNLESS OTHERWISE SHOWN OR DIRECTED BY THE ENGINEER.
4. THE CONE SECTION OF TYPE I PRECAST MANHOLE SHALL BE PRECAST.
5. NO PIPE SHALL BE IN THE MANHOLE CONE SECTION.
6. ALL MANHOLES WITH SLAB TOP SHALL BE TYPE II, SEE STANDARD DETAIL–TYPE II MANHOLE TOP SLAB.
7. A DROP MANHOLE SHALL BE REQUIRED WHEN THE INVERT OF ANY INCOMING PIPE IS 24" OR MORE ABOVE THE INVERT OF THE MANHOLE. ALL DROP PIPE SHALL BE ON THE OUTSIDE OF THE MANHOLE.
8. PRIOR TO PRECASTING STRUCTURES THE PRECASTER SHALL SUBMIT SITE SPECIFIC INDIVIDUAL SHOP DRAWINGS FOR APPROVAL. SHOP DRAWINGS SUBMITTED FOR NONSTANDARD STRUCTURES OR STRUCTURES THAT DEVIATE FROM THE STANDARD DETAILS MUST BE DESIGNED AND CERTIFIED BY A REGISTERED FLORIDA PROFESSIONAL ENGINEER.
9. PRECAST MANHOLES SHALL CONSIST OF A MINIMUM NUMBER OF SECTIONS, AS APPROVED BY THE ENGINEER.
10. ALL PRECAST STRUCTURES SHALL HAVE AN INTEGRAL FLOOR AND BASE RISER SECTION, SEE STANDARD DETAIL–TYPE I AND II MANHOLE BASE AND WALL.
11. FOR PRECAST STRUCTURE JOINT, SEE STANDARD DETAIL–PRECAST STRUCTURE JOINT ASSEMBLY.
12. ALL EXPOSED EDGES TO HAVE A 3/4" CHAMFER.
13. FOR THE APPLICABLE RING AND COVER, SEE STANDARD DETAIL–MANHOLE RING AND COVER CASTING.
14. PRECAST BASE SECTION SHALL BE INSTALLED ON A CONCRETE MAT WITHIN 2 HOURS OF PLACEMENT OF THE MAT.
15. ALL BRICK SHALL BE CLAY BRICK AND SHALL HAVE A MINIMUM 3/4" CEMENT PLASTER ON ALL SURFACES.
16. BENCH SHALL SLOPE @ 1:12 MINIMUM.
17. A PROTECTIVE COATING SHALL BE APPLIED TO THE INSIDE AND OUTSIDE SURFACES OF STRUCTURES, EXCEPT FRP'S. THE PROTECTIVE COATING SHALL COVER THE COMPLETE EXTERIOR AND INTERIOR SURFACE OF THE STRUCTURE, (INCLUDING CONE SECTIONS, RISERS, AND INVERT) FROM THE BOTTOM SLAB TO THE GROUND SURFACE EXCLUDING THE COVER CASTING, LID, AND THE HORIZONTAL PLANE OF THE PIPE PENTRATIONS OR CUT OPENINGS. THE UNDERSIDE OF THE BOTTOM SLAB MAY ALSO BE EXCLUDED AT THE CONTRACTORS OPTION. 2 COATS OF THE PROTECTIVE COATING SHALL BE APPLIED TO THE INSIDE, AND 1 SHALL BE APPLIED TO THE OUTSIDE. THE COATING SHALL BE OF TAR EPOXY, KOP–COAT BITUMASTIC 300–M OR APPROVED EQUAL. EACH COATING SHALL YIELD A FINAL DRY FILM 9 mils IN THICKNESS.
18. PRIOR TO MANUFACTURING OF FRP MANHOLE, MANUFACTURER SHALL SUBMIT SIGNED AND SEALED SHOP DRAWINGS FOR THE DESIGN OF INVERT AND BENCH AREA, PIPE CONNECTIONS, FABRICATION DETAILS AND INSTALLATION METHODS FOR APPROVAL.
19. FOR FRP MANHOLES A FIBERGLASS ENCLOSED INVERT AND BENCH MAY BE INSTALLED BY THE MANUFACTURER OR CONCRETE MAY BE USED FOR THE BENCH AREA AND INVERT, AS DIRECTED BY THE ENGINEER.
20. FRP STIFFENING RIBS ARE REQUIRED AT 10' DEPTH OR MORE.

CITY OF TARPON SPRINGS, PINELLAS COUNTY, FLORIDA	SANITARY STRUCTURE NOTES	DATE 12/15/15 · INDEX SS-01 · SCALE N.T.S. · SHEET 1 OF 1



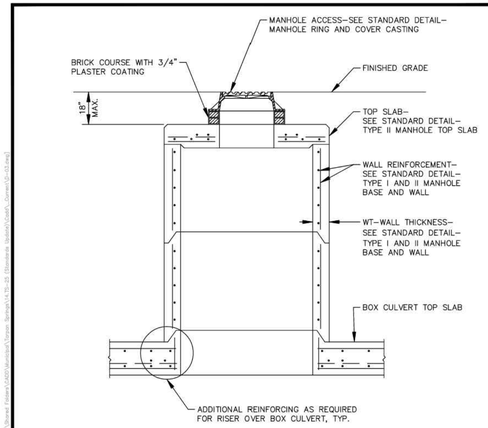
NOTES:
1. ALL CORPORATION STOPS TO BE FOR USE WITH DR 9 (C.T.S.) H.D.P.E. TUBING.
2. SERVICE SADDLE REQUIRED FOR ALL TAPS.
3. METER ONLY TO BE FURNISHED BY CITY OF TARPON SPRINGS.
4. METER BOXES SHALL BE PER CITY OF TARPON SPRINGS APPROVED MATERIAL SPECIFICATIONS.
5. ALL METER BOXES LOCATED WITHIN VEHICULAR TRAVEL AREAS SHALL BE H–20 LOADING. ALL OTHERS SHALL BE H–10 LOADING.
6. TRACER WIRE ONLY REQUIRED ON SERVICES OVER 40' IN LENGTH.
7. 1" SERVICE TUBING SHALL BE USED FOR ALL 3/4" SERVICES OVER 60' IN LENGTH.

CITY OF TARPON SPRINGS, PINELLAS COUNTY, FLORIDA	¾" OR 1" POTABLE WATER SERVICE CONNECTION	DATE 12/15/15 · INDEX W-34 · SCALE N.T.S. · SHEET 1 OF 1

NOTES FOR STORM STRUCTURES

1. ALL PIPE STUBS FROM STRUCTURES FOR FUTURE CONNECTIONS, SHALL BE INSTALLED WITH REMOVABLE WATERTIGHT PLUGS, PLACED FROM WITHIN THE STRUCTURE.
2. FOR APPLICABLE RING AND COVER, SEE STANDARD DETAIL–MANHOLE RING AND COVER CASTING.
3. STORM STRUCTURES SHALL NOT HAVE OUTSIDE DROP CONNECTIONS.
4. PROVIDE MINIMUM 8" SOLID WALL BETWEEN ALL OPENINGS FOR PIPES. SEAL BETWEEN PIPE AND STRUCTURE WITH NON SHRINK GROUT.
5. ALL BRICK SHALL BE CONCRETE OR CLAY BRICK AND SHALL HAVE A MINIMUM 3/4" CEMENT PLASTER COATING ON ALL SURFACES.
6. BENCH SHALL SLOPE @ 1:12 MINIMUM.
7. PRECAST AND CAST–IN–PLACE MANHOLES, CATCH BASINS, AND GRATE INLETS ARE DESIGNED FOR A MAXIMUM DEPTH OF 12 FEET, STRUCTURES IN EXCESS OF 12 FEET, AS MEASURED FROM THE FINISHED GRADE TO THE INSIDE OF THE BASE SLAB, SHALL REQUIRE VERIFICATION OF THE STRUCTURAL DESIGN AND SPECIFIC MODIFICATIONS TO THE REINFORCING REQUIREMENTS FOR THE DEPTH REQUIRED.
8. PRIOR TO PRECASTING STRUCTURES THE PRECASTER SHALL SUBMIT SITE SPECIFIC INDIVIDUAL SHOP DRAWINGS FOR APPROVAL. SHOP DRAWINGS SUBMITTED FOR NON–STANDARD STRUCTURES OR STRUCTURES THAT DEVIATE FROM THE STANDARD DETAILS MUST BE DESIGNED AND CERTIFIED BY A REGISTERED FLORIDA PROFESSIONAL ENGINEER.
9. PRECAST MANHOLES SHALL CONSIST OF A LIMITED NUMBER OF SECTIONS, AS APPROVED BY THE ENGINEER.
10. ALL PRECAST STRUCTURES SHALL HAVE AN INTEGRAL FLOOR AND BASE RISER SECTION.
11. SEE STANDARD DETAIL–PRECAST STRUCTURE JOINT ASSEMBLY AND STRUCTURE SEALING.
12. ALL EXPOSED EDGES TO HAVE 3/4" CHAMFER.
13. ALL REINFORCING STEEL SHALL HAVE A MINIMUM 2" CONCRETE COVER, UNLESS NOTED ELSEWHERE.
14. ADDITIONAL REINFORCEMENT IS REQUIRED IN ALL TYPE CATCH BASIN WALLS, GRATE INLETS, AND TYPE II, III, IV, AND TYPE V MANHOLE WALLS WITH OPENINGS FOR PIPE OR CULVERT. THE VERTICAL AND HORIZONTAL WALL REINFORCEMENT DISPLACED DUE TO OPENINGS SHALL BE REPLACED WITH ADDITIONAL REINFORCEMENT BARS ABOVE, BELOW, AND ON BOTH SIDES OF OPENING, EQUAL IN AREA TO THOSE DISPLACED. REPLACEMENT REINFORCEMENT SHALL BE PLACED WITH 3" CLEARANCE TO THE EDGES OF OPENINGS.

CITY OF TARPON SPRINGS, PINELLAS COUNTY, FLORIDA	STORM STRUCTURE NOTES	DATE 12/15/15 · INDEX D-01 · SCALE N.T.S. · SHEET 1 OF 1

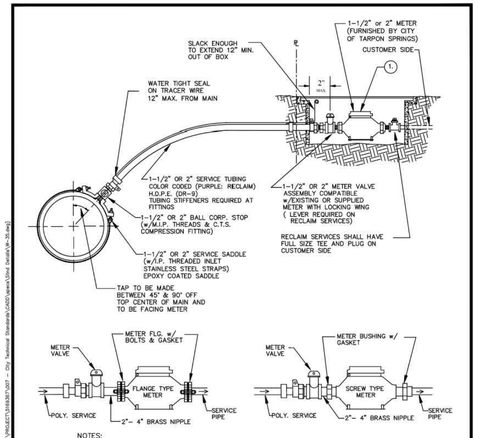


NOTE:
1. GENERAL NOTES, SEE STANDARD DETAIL–STORM STRUCTURE NOTES.

CITY OF TARPON SPRINGS, PINELLAS COUNTY, FLORIDA	PRECAST MANHOLE RISER FOR BOX CULVERT DETAIL	DATE 12/15/15 · INDEX D-03 · SCALE N.T.S. · SHEET 1 OF 1

1. ALL PRESSURE PIPE MATERIALS AND CONSTRUCTION METHODS SHALL CONFORM TO THE SPECIFICATIONS AND DETAILS AS SHOWN HEREIN, OR AS DIRECTED BY THE ENGINEER.
2. PIPE JOINT DEFLECTION SHALL NOT EXCEED 75% OF THE PIPE MANUFACTURE REQUIREMENTS.
3. THE CONTRACTOR SHALL ADJUST PIPELINE ALIGNMENTS HORIZONTALLY AND/OR VERTICALLY AS REQUIRED TO AVOID CONFLICTS WITH ACTUAL FIELD CONDITIONS AS UNCOVERED DURING CONSTRUCTION. FIELD ADJUSTMENTS SHALL BE COORDINATED WITH AND APPROVED BY THE ENGINEER.
4. PRESSURE PIPE CLEARANCES SHALL BE AS FOLLOWS:
   A) POTABLE WATER MAINS IN PARALLEL INSTALLATIONS SHALL MAINTAIN A MINIMUM 10 FEET OUTSIDE TO OUTSIDE HORIZONTAL CLEARANCE FROM ALL SANITARY SEWERS, STORM DRAINS, AND FORCE MAINS.
   B) POTABLE WATER MAINS WHERE CROSSING SHALL MAINTAIN A MINIMUM OF 18 INCHES OUTSIDE TO OUTSIDE VERTICAL CLEARANCE FROM ALL SANITARY SEWERS, STORM DRAINS, AND FORCE MAINS.
   C) POTABLE WATER MAINS SHALL MAINTAIN A MINIMUM OF 5 FOOT CENTER TO CENTER HORIZONTAL CLEARANCE OR 3 FOOT OUTSIDE TO OUTSIDE HORIZONTAL CLEARANCE AND 18 INCHES OUTSIDE TO OUTSIDE VERTICAL CLEARANCE FROM RECLAIMED WATER MAINS.
5. THE CONTRACTOR SHALL PROVIDE ALL DEWATERING EQUIPMENT NECESSARY TO KEEP EXCAVATIONS DRY AND SHALL PROVIDE ALL SHORING, SHEETING, AND BRACING NECESSARY TO PROTECT WORKMEN, ADJACENT STRUCTURES, UTILITIES, EXISTING PAVEMENT, OR TO MINIMIZE TRENCH WIDTH AT NO ADDITIONAL COST TO THE CITY.
6. THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER REGARDING SHUTTING DOWN WATER MAINS. PROPER AND ADEQUATE NOTIFICATION MUST BE MADE TO PROPERTY OWNERS, BUT IN NO CASE SHALL LESS THAN 24 HOURS WRITTEN NOTICE BE GIVEN.
7. THE OPENING AND/OR CLOSING OF EXISTING VALVES OR NEW VALVES INSTALLED IN PRESSURE PIPE SYSTEMS SHALL BE BY A CITY SANITARIAN AFTER COORDINATION WITH THE ENGINEER.
8. THE CONTRACTOR SHALL PROVIDE NECESSARY EQUIPMENT AND LABOR TO MAKE TAPS IN PRESSURE PIPE MAINS WHERE TAPPING SLEEVES AND VALVES ARE SHOWN ON THE PLANS.
9. ALL NEW DUCTILE IRON PRESSURE PIPE, FITTINGS, AND VALVE BODIES SHALL BE WRAPPED IN POLYETHYLENE IN ACCORDANCE WITH ANSI/AWWA C105.
10. THE CONTRACTOR SHALL BE RESPONSIBLE TO LOCATE AND PROTECT ALL EXISTING POTABLE AND RE–CLAIMED SERVICE LINES UNDER PAVEMENT OR ELSEWHERE IN THE CONSTRUCTION ZONE. REPLACE SERVICE LINES WHERE SHOWN OR DIRECTED BY THE ENGINEER. ALL RELOCATED SERVICE LINES SHALL BE RE–LOCATED SO THAT THE METER ASSEMBLY WILL NOT BE IN AN ALLEY, DRIVEWAY, OR OTHER VEHICULAR TRAVEL PATH.
11. ALL EXISTING POTABLE AND/OR RECLAIMED WATER SERVICE LINES SHALL BE TRANSFERRED TO THE NEW MAIN, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
12. MAINTAIN A MINIMUM COVER OF 36 INCHES UNDER ROADWAYS, ALLEYS, AND DRIVEWAYS. MAINTAIN A MINIMUM OF 30 INCHES OF COVER IN SODDED AND LANDSCAPED AREAS.
13. THRUST BLOCKING SHALL NOT BE USED, UNLESS ORDERED BY THE ENGINEER. HARNESSED PIPE JOINTS SHALL BE USED. THE LENGTH OF HARNESSED JOINTS SHALL BE AS SHOWN ON THE PLANS.
14. SANITARY SEWER FORCE MAINS SHALL NOT USE GREATER THAN 45° BENDS FOR OFFSETS OR REALIGN–MENT OF THE FORCE MAIN. THE 45° BENDS SHALL HAVE A MINIMUM OF 5 FEET BETWEEN THEM, WHEN POSSIBLE.

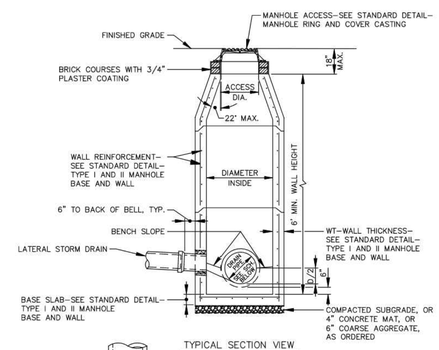
CITY OF TARPON SPRINGS, PINELLAS COUNTY, FLORIDA	NOTES FOR PRESSURE PIPE	DATE 12/15/15 · INDEX W-01 · SCALE N.T.S. · SHEET 1 OF 1



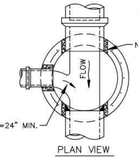
NOTES:
1. ALL CORPORATION STOPS TO BE FOR USE WITH DR 9 (C.T.S.) H.D.P.E. TUBING.
2. SERVICE SADDLE REQUIRED FOR ALL TAPS.
3. METER ONLY, TO BE FURNISHED BY CITY OF TARPON SPRINGS.
4. METER BOXES SHALL BE PER CITY OF TARPON SPRINGS APPROVED MATERIAL SPECIFICATIONS.(ALL RECLAIMED BOXES SHALL HAVE LOCKING LIDS)
5. ALL METER BOXES LOCATED WITHIN VEHICULAR TRAVEL AREAS SHALL BE H–20 LOADING. ALL OTHERS SHALL BE H–10 LOADING.
6. TRACER WIRE ONLY REQUIRED ON SERVICES OVER 40' IN LENGTH.

*W-19, POTABLE WATER IS ABOVE GROUND

CITY OF TARPON SPRINGS, PINELLAS COUNTY, FLORIDA	1½" OR 2" METERED RECLAIM WATER * SERVICE CONNECTION	DATE 10/16/17 · INDEX W-35 · SCALE N.T.S. · SHEET 1 OF 1



TYPICAL SECTION VIEW

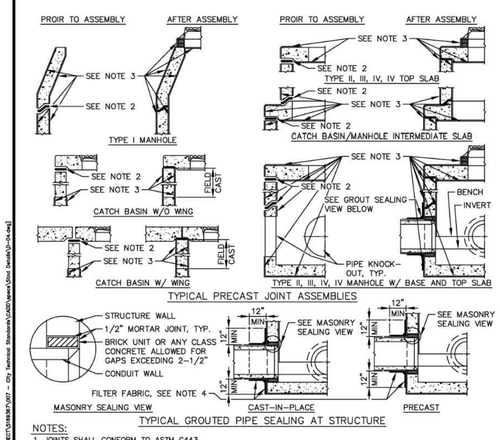


PLAN VIEW

SCHEDULE		
RECOMMENDED MIMINUM DIAMETER MANHOLE DIMENSION		
RCP	ERCP	DIA.
24"	N/A	4'
30"	19"x30"	5'

NOTE:
FOR GENERAL NOTES, SEE STANDARD DETAIL–STORM STRUCTURE NOTES.

CITY OF TARPON SPRINGS, PINELLAS COUNTY, FLORIDA	PRECAST STORM MANHOLE TYPE I DETAIL	DATE 12/15/15 · INDEX D-05 · SCALE N.T.S. · SHEET 1 OF 1



TYPICAL PRECAST JOINT ASSEMBLIES

TYPICAL GROUTED PIPE SEALING AT STRUCTURE

NOTES:
1. JOINTS SHALL CONFORM TO ASTM C443.
2. A LAYER OF PREFORMED JOINT SEALING COMPOUND SUCH AS "RAM–NEK" SHALL BE INSTALLED AT ALL PRECAST STRUCTURE JOINTS AND STRUCTURE TOP AND CATCH BASIN LID PEDESTALS PRIOR TO ASSEMBLY.
3. ONE COAT OF PROTECTIVE SEALER SHALL BE APPLIED TO THE EXTERIOR AND INTERIOR OF ALL PRECAST, CAST–IN–PLACE, AND BRICK STRUCTURES. THE EXTERIOR COATING SHALL COVER FROM THE BOTTOM OF THE BASE UPTO AND INCLUDING BRICK GRADE RINGS FOR THE COVER CASTING, THE INTERIOR COATING SHALL COVER FROM THE BENCH UPTO AND INCLUDING THE BOTTOM OF THE TOP SLAB, EXCLUDING CATCH BASIN COVER AND WING COVER(S). THE BOTTOM SLAB MAY ALSO BE EXCLUDED AT THE CONTRACTORS OPTION. THE CONTRACTOR SHALL TOUCH UP THOSE PLACES DISTURBED DURING ASSEMBLY AND THOSE CAST–IN–PLACE PORTIONS OF CATCH BASINS PRIOR TO ACCEPTANCE AND BACK FILLING. THE SEALER SHALL BE COAL TAR EPOXY SUCH AS "CARBOLINE" 300–M OR APPROVED EQUAL, WITH A DRY FILM THICKNESS OF 9 mils.
4. FILTER FABRIC SHALL BE MIRAFI 140–N, OR APPROVED EQUAL. FILTER FABRIC IS TO BE PLACED IN A BEDDING OF BITUMINOUS MASTIC AND APPLIED AS PER FDOT DESIGN STANDARDS INDEX NO. 425–001.
5. FOR ADDITIONAL NOTES, SEE STANDARD DETAIL–STORM STRUCTURE NOTES.

CITY OF TARPON SPRINGS, PINELLAS COUNTY, FLORIDA	PRECAST STRUCTURE JOINT ASSEMBLY AND STRUCTURE SEALING DETAIL	DATE 10/05/20 · INDEX D-04 · SCALE N.T.S. · SHEET 1 OF 1

Bowman
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TAMPA, FL 33607
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WWW.BOWMAN.COM

CONSTRUCTION DETAILS
BLACK RIFLE COFFEE
40390 US HWY 19 N,
TARPON SPRINGS, FL 34689
CITY OF TARPON SPRINGS, FL
PINELLAS COUNTY, FL

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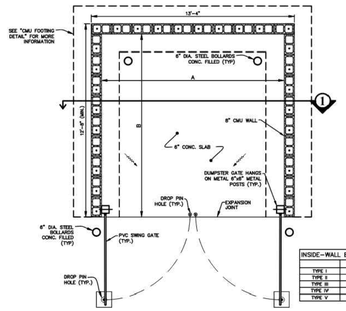
ARMANDO L. CABRE, LICENSE No. 66807, STATE OF FLORIDA, PROFESSIONAL ENGINEER

PLAN STATUS

REV	DATE	COMMENT
1	09/13/22	AHJ COMMENTS
2	12/23/22	AHJ COMMENTS
3	03/06/23	AHJ COMMENTS

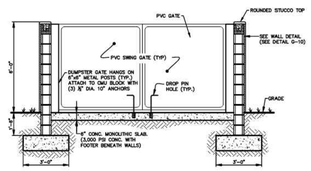
KSP DESIGN	KSP DRAWN	ALC CHKD

SCALE 1" = 20'
JOB No. 011046-01-001
DATE 04/13/2022
SHEET C7.2



INSIDE-WALL ENCLOSURE DIMENSIONS		
	A	B
TYPE I	12'-0"	10'-4"
TYPE II	14'-0"	10'-4"
TYPE III	14'-0"	12'-4"
TYPE IV	14'-0"	14'-4"
TYPE V	16'-0"	16'-4"

DUMPSTER ENCLOSURE: PLAN

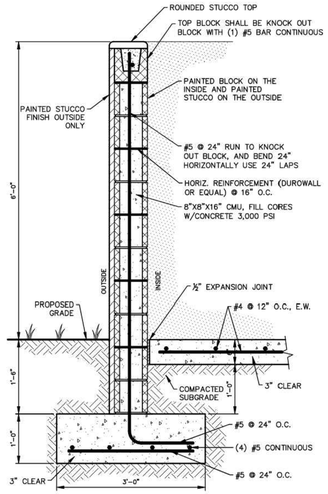


DUMPSTER ENCLOSURE: SECTION

CITY OF TARPON SPRINGS
PINELLAS COUNTY, FLORIDA

DUMPSTER ENCLOSURE

DATE 10/16/17 | INDEX G-09 | SCALE 1/2"=1-0" | SHEET 1 OF 1



CITY OF TARPON SPRINGS
PINELLAS COUNTY, FLORIDA

DUMPSTER: CMU WALL FOOTING

DATE 1/4/17 | INDEX G-10 | SCALE 3/4"=1-0" | SHEET 1 OF 1

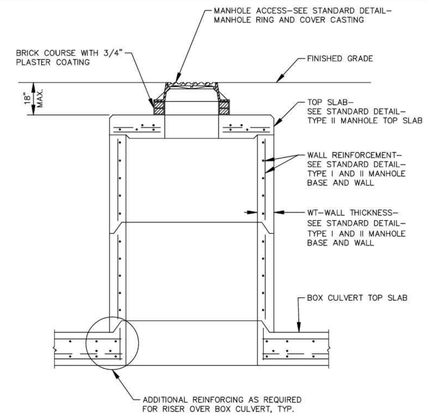
NOTES FOR STORM STRUCTURES

1. ALL PIPE STUBS FROM STRUCTURES FOR FUTURE CONNECTIONS, SHALL BE INSTALLED WITH REMOVABLE WATERTIGHT PLUGS, PLACED FROM WITHIN THE STRUCTURE.
2. FOR APPLICABLE RING AND COVER, SEE STANDARD DETAIL–MANHOLE RING AND COVER CASTING.
3. STORM STRUCTURES SHALL NOT HAVE OUTSIDE DROP CONNECTIONS.
4. PROVIDE MINIMUM 8" SOLID WALL BETWEEN ALL OPENINGS FOR PIPES. SEAL BETWEEN PIPE AND STRUCTURE WITH NON SHRINK GROUT.
5. ALL BRICK SHALL BE CONCRETE OR CLAY BRICK AND SHALL HAVE A MINIMUM 3/4" CEMENT PLASTER COATING ON ALL SURFACES.
6. BENCH SHALL SLOPE @ 1:12 MINIMUM.
7. PRECAST AND CAST–IN–PLACE MANHOLES, CATCH BASINS, AND GRATE INLETS ARE DESIGNED FOR A MAXIMUM DEPTH OF 12 FEET, STRUCTURES IN EXCESS OF 12 FEET, AS MEASURED FROM THE FINISHED GRADE TO THE INSIDE OF THE BASE SLAB, SHALL REQUIRE VERIFICATION OF THE STRUCTURAL DESIGN AND SPECIFIC MODIFICATIONS TO THE REINFORCING REQUIREMENTS FOR THE DEPTH REQUIRED.
8. PRIOR TO PRECASTING STRUCTURES THE PRECASTER SHALL SUBMIT SITE SPECIFIC INDIVIDUAL SHOP DRAWINGS FOR APPROVAL. SHOP DRAWINGS SUBMITTED FOR NON–STANDARD STRUCTURES OR STRUCTURES THAT DEVIATE FROM THE STANDARD DETAILS MUST BE DESIGNED AND CERTIFIED BY A REGISTERED FLORIDA PROFESSIONAL ENGINEER.
9. PRECAST MANHOLES SHALL CONSIST OF A LIMITED NUMBER OF SECTIONS, AS APPROVED BY THE ENGINEER.
10. ALL PRECAST STRUCTURES SHALL HAVE AN INTEGRAL FLOOR AND BASE RISER SECTION.
11. SEE STANDARD DETAIL–PRECAST STRUCTURE JOINT ASSEMBLY AND STRUCTURE SEALING.
12. ALL EXPOSED EDGES TO HAVE 3/4" CHAMFER.
13. ALL REINFORCING STEEL SHALL HAVE A MINIMUM 2" CONCRETE COVER, UNLESS NOTED ELSEWHERE.
14. ADDITIONAL REINFORCEMENT IS REQUIRED IN ALL TYPE CATCH BASIN WALLS, GRATE INLETS, AND TYPE II, III, IV, AND TYPE V MANHOLE WALLS WITH OPENINGS FOR PIPE OR CULVERT. THE VERTICAL AND HORIZONTAL WALL REINFORCEMENT DISPLACED DUE TO OPENINGS SHALL BE REPLACED WITH ADDITIONAL REINFORCEMENT BARS ABOVE, BELOW, AND ON BOTH SIDES OF OPENING, EQUAL IN AREA TO THOSE DISPLACED. REPLACEMENT REINFORCEMENT SHALL BE PLACED WITH 3" CLEARANCE TO THE EDGES OF OPENINGS.

CITY OF TARPON SPRINGS
PINELLAS COUNTY, FLORIDA

STORM STRUCTURE NOTES

DATE 12/15/15 | INDEX D-01 | SCALE N.T.S. | SHEET 1 OF 1

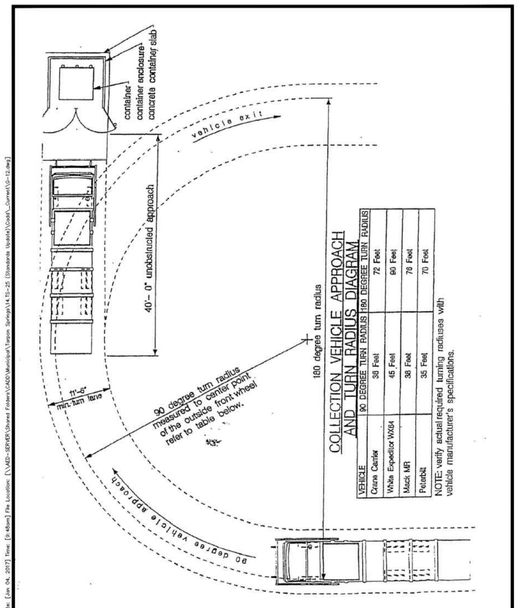


NOTE:
1. GENERAL NOTES, SEE STANDARD DETAIL–STORM STRUCTURE NOTES.

CITY OF TARPON SPRINGS
PINELLAS COUNTY, FLORIDA

PRECAST MANHOLE RISER FOR BOX CULVERT DETAIL

DATE 12/15/15 | INDEX D-03 | SCALE N.T.S. | SHEET 1 OF 1



COLLECTION VEHICLE APPROACH AND TURN RADIUS DIAGRAM

VEHICLE	90 DEGREE TURN RADIUS	180 DEGREE TURN RADIUS
Crane Carrier	38 Feet	72 Feet
White Expeditor WX64	45 Feet	60 Feet
Mack MR	38 Feet	70 Feet
Peterbilt	35 Feet	70 Feet

NOTE: verify actual required turning radiuses with vehicle manufacturer's specifications.

CITY OF TARPON SPRINGS
PINELLAS COUNTY, FLORIDA

COLLECTION VEHICLE TURNING RADIUS

DATE 1/4/17 | INDEX G-12 | SCALE N.T.S. | SHEET 1 OF 1

NOTES:

1. WALLS; MAXIMUM 6'–0' HIGH AND CONSTRUCTED OF CONCRETE BLOCK (8"X8"X16").
2. GATES; CONSTRUCTED OF PVC MATERIAL, HINGE–MOUNTED ON MIN. 6"x6" HOT DIPPED GALVANIZED STEEL POST (PAINTED) OR EQUAL.
3. DROP PIN; 1" GAL. STEEL SLEEVE CENTERED IN 12"x12"x18" CONCRETE FOOTING FLUSH WITH GRADE FOR CANE BOLT ANCHORING (TYP.).
4. BOLLARD; 3'–6" HIGH, 6" DIAMETER STEEL PIPE BOLLARD FILLED WITH CONCRETE, PAINTED TRAFFIC YELLOW, IMBEDDED 3'–0" DEEP IN 18" CONCRETE FOUNDATION. (SEE DETAIL G–11)

CONCRETE MASONRY WALL CONSTRUCTION

MATERIALS, CONSTRUCTION AND QUANTITY CONTROL OF MASONRY SHALL BE IN ACCORDANCE WITH UNIFORM BUILDING CODE (UBC), CHAPTER 24. GENERAL CONDITIONS AND CONSTRUCTION REQUIREMENTS SHALL BE APPLIED AS SPECIFIED IN UBC, SECTION 2404 (F), DURING GROUTED MASONRY WORK.

1. ALL REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM A–615, GRADE 60. VERTICAL REINFORCEMENT SHALL BE PLACED IN THE CENTER OF THE MASONRY CELL, AND SHALL BE HELD IN POSITION AT THE TOP AND BOTTOM.
2. HORIZONTAL WALL REINFORCEMENT SHALL BE STANDARD TRUSS TYPE DUR–O–WALL (OR EQUIVALENT) AT 16" O.C..
3. HOLLOW LOAD–BEARING CONCRETE MASONRY UNITS SHALL BE NORMAL WEIGHT CONFORMING TO ASTM C–90, WITH A MINIMUM COMPRESSIVE STRENGTH OF 1,900 PSI.
4. MORTAR SHALL BE TYPE M OR S, IN ACCORDANCE WITH ASTM C–270. PLACE ALL MASONRY IN RUNNING BOND WITH 3/8" MORTAR JOINTS. PROVIDE COMPLETE COVERAGE FACE SHELL MORTAR BEDDING, HORIZONTAL AND VERTICAL.
5. COARSE GROUT SHALL CONFORM TO ASTM C–476, WITH A MAXIMUM AGGREGATE SIZE OF 3/8", 8" TO 10" SLUMP, AND A MINIMUM COMPRESSIVE STRENGTH OF 2,500 PSI AT 28 DAYS.

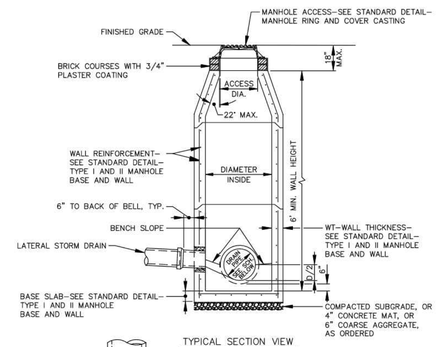
DESIGN CRITERIA:

DESIGN CRITERIA BASED ON 2014 FLORIDA BUILDING CODE, 5TH EDITION AND ASCE 7–10.

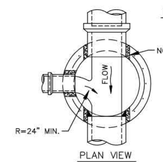
CITY OF TARPON SPRINGS
PINELLAS COUNTY, FLORIDA

DUMPSTER ENCLOSURE STRUCTURE NOTES

DATE 1/4/17 | INDEX G-13 | SCALE N.T.S. | SHEET 1 OF 1



TYPICAL SECTION VIEW



PLAN VIEW

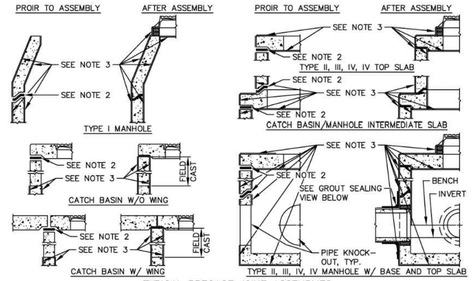
SCHEDULE		
RECOMMENDED MIMINUM DIAMETER MANHOLE DIMENSION		
RCP	ERCP	DIA.
24"	N/A	4'
30"	19"x30"	5'

NOTE:
FOR GENERAL NOTES, SEE STANDARD DETAIL–STORM STRUCTURE NOTES.

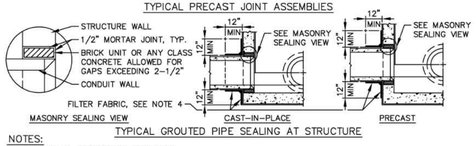
CITY OF TARPON SPRINGS
PINELLAS COUNTY, FLORIDA

PRECAST STORM MANHOLE TYPE I DETAIL

DATE 12/15/15 | INDEX D-05 | SCALE N.T.S. | SHEET 1 OF 1



TYPICAL PRECAST JOINT ASSEMBLIES



TYPICAL GROUTED PIPE SEALING AT STRUCTURE

NOTES:
1. JOINTS SHALL CONFORM TO ASTM C443.
2. A LAYER OF PREFORMED JOINT SEALING COMPOUND SUCH AS "RAM–NEK" SHALL BE INSTALLED AT ALL PRECAST STRUCTURE JOINTS AND STRUCTURE TOP AND CATCH BASIN LID PEDESTALS PRIOR TO ASSEMBLY.
3. ONE COAT OF PROTECTIVE SEALER SHALL BE APPLIED TO THE EXTERIOR AND INTERIOR OF ALL PRECAST, CAST–IN–PLACE, AND BRICK STRUCTURES. THE EXTERIOR COATING SHALL COVER FROM THE BOTTOM OF THE BASE UPTO AND INCLUDING BRICK GRADE RINGS FOR THE COVER CASTING, THE INTERIOR COATING SHALL COVER FROM THE BENCH UPTO AND INCLUDING THE BOTTOM OF THE TOP SLAB, EXCLUDING CATCH BASIN COVER AND WING COVER(S). THE BOTTOM SLAB MAY ALSO BE EXCLUDED AT THE CONTRACTORS OPTION.
THE CONTRACTOR SHALL TOUCH UP THOSE PLACES DISTURBED DURING ASSEMBLY AND THOSE CAST–IN–PLACE PORTIONS OF CATCH BASINS PRIOR TO ACCEPTANCE AND BACK FILLING.
THE SEALER SHALL BE COAL TAR EPOXY SUCH AS "CARBOLINE" 300–M OR APPROVED EQUAL, WITH A DRY FILM THICKNESS OF 9 mils.
4. FILTER FABRIC SHALL BE MIRAFI 140–N, OR APPROVED EQUAL. FILTER FABRIC IS TO BE PLACED IN A BEDDING OF BITUMINOUS MASTIC AND APPLIED AS PER FDOT DESIGN STANDARDS INDEX NO. 425–001.
5. FOR ADDITIONAL NOTES, SEE STANDARD DETAIL–STORM STRUCTURE NOTES.

CITY OF TARPON SPRINGS
PINELLAS COUNTY, FLORIDA

PRECAST STRUCTURE JOINT ASSEMBLY AND STRUCTURE SEALING DETAIL

DATE 10/05/20 | INDEX D-04 | SCALE N.T.S. | SHEET 1 OF 1

Bowman

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CONSTRUCTION DETAILS
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TARPON SPRINGS, FL 34689
PINELLAS COUNTY, FL
CITY OF TARPON SPRINGS, FL

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ARMANDO L. CABRE. LICENSE No. 66807 STATE OF FLORIDA PROFESSIONAL ENGINEER

PLAN STATUS

REV	DATE	COMMENT
1	09/13/22	AHJ COMMENTS
2	12/23/22	AHJ COMMENTS
3	03/06/23	AHJ COMMENTS

KSP DESIGN	KSP DRAWN	ALC CHKD

SCALE 1" = 20'
JOB No. 011046-01-001
DATE 04/13/2022
SHEET C7.3

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USER: KPETRI PLOT DATE/TIME: Mar. 06, 23 - 15:13:34 DRAWING: V:\011046 - Pursuit Development\011046-01-001 (ENG) - Black Rifle Coffee - Tarpon Springs, FL\Engineering\Engineering Plans\Plan Sets\011046-01-001-C7.0-DETL.dwg ;C7.3 CONSTRUCTION DETAILS

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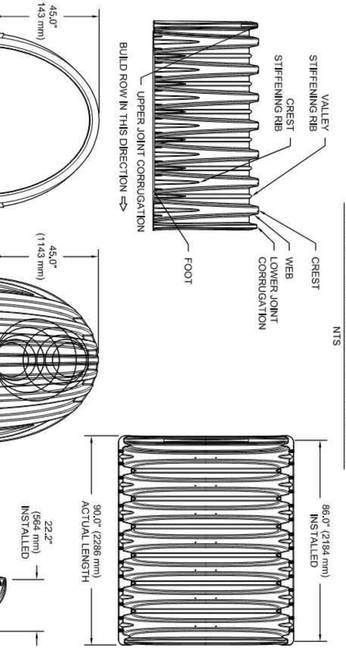
MC-3500 TECHNICAL SPECIFICATION

NTS



NOMINAL CHAMBER SPECIFICATIONS
SIZE (W x H x L INSTALLED LENGTH)
CHAMBER STORAGE
MINIMUM INSTALLED STORAGE*
WEIGHT
77.0" X 45.0" X 86.0"
109.9 CUBIC FEET
1750 CUBIC FEET
134 lbs.

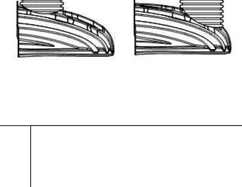
NOMINAL END CAP SPECIFICATIONS
SIZE (W x H x INSTALLED LENGTH)
STORAGE
MINIMUM INSTALLED STORAGE*
WEIGHT
75.0" X 45.0" X 22.2"
19.4 CUBIC FEET
45.1 CUBIC FEET
49 lbs.
(1905 mm X 1143 mm X 564 mm)
(549 mm³)
(1276 mm³)
(22.2 kg)

*ASSUMES 12" (305 mm) STONE ABOVE, 9" (229 mm) STONE FOUNDATION, 6" (152 mm) OF STONE BETWEEN CHAMBERS, 6" (152 mm) STONE PERIMETER IN FRONT OF END CAPS AND 40% STONE POROSITY

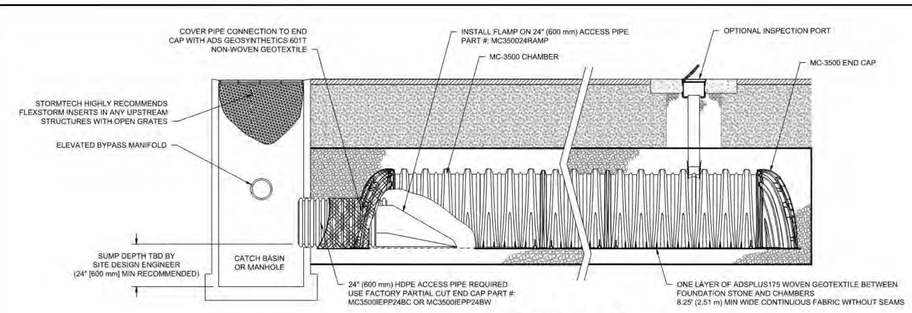
STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"
END CAPS WITH A WELDED CROWN PLATE END WITH "C"
END CAPS WITH A PREFABRICATED WELDED STUB END WITH "W"

PART #	STUB	B	C
MC3500IEPP06T	6" (150 mm)	33.21" (844 mm)	0.66" (17 mm)
MC3500IEPP06B	—	31.16" (791 mm)	—
MC3500IEPP08B	8" (200 mm)	—	0.81" (21 mm)
MC3500IEPP10T	10" (250 mm)	29.04" (738 mm)	—
MC3500IEPP10B	—	—	0.93" (24 mm)
MC3500IEPP12T	12" (300 mm)	26.36" (670 mm)	—
MC3500IEPP12B	—	—	1.35" (34 mm)
MC3500IEPP15T	15" (375 mm)	23.39" (594 mm)	—
MC3500IEPP15B	—	—	1.50" (38 mm)
MC3500IEPP18TC	18" (450 mm)	20.03" (509 mm)	—
MC3500IEPP18TW	—	—	1.77" (45 mm)
MC3500IEPP18BC	—	—	—
MC3500IEPP18BW	—	—	—
MC3500IEPP24TC	24" (600 mm)	14.48" (368 mm)	—
MC3500IEPP24TW	—	—	—
MC3500IEPP24BC	—	—	2.06" (52 mm)
MC3500IEPP24BW	—	—	—
MC3500IEPP30BC	30" (750 mm)	—	2.75" (70 mm)

NOTE: ALL DIMENSIONS ARE NOMINAL



CUSTOM PRECORED INVERTS ARE AVAILABLE UPON REQUEST. INVENTORIED MANIFOLDS INCLUDE TYPICALLY 12"(300mm) SIZE ON SIZE AND 15"-48" (375"-1200 mm) ECCENTRIC MANIFOLDS. CUSTOM INVERT LOCATIONS ON THE MC-3500 END CAP CUT IN THE FIELD ARE NOT RECOMMENDED FOR PIPE SIZES NEXT THAN 12" (300 mm). THE INVERT LOCATION (COLUMN "B") ARE THE HIGHEST POSSIBLE FOR THE PIPE SIZE.



MC-3500 ISOLATOR ROW PLUS DETAIL

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INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT.
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN.
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED.
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG.
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL).
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR PLUS ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS.
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE:
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY.
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE.
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

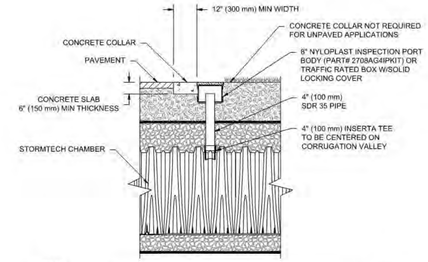
STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS.
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS PREFERRED.
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN.
- C. VACUUM STRUCTURE SUMP AS REQUIRED.

STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

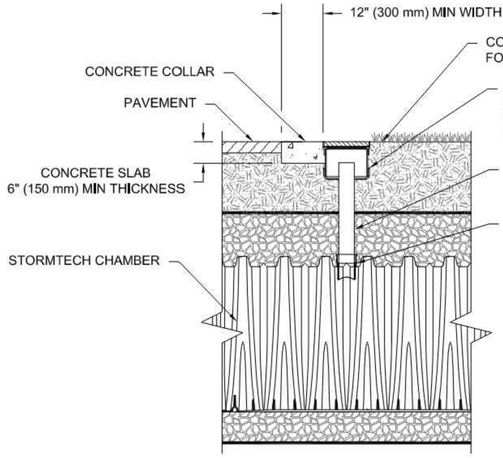
1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.



NOTE:
INSPECTION PORTS MAY BE CONNECTED THROUGH ANY CHAMBER CORRUGATION VALLEY.

4" PVC INSPECTION PORT DETAIL (MC SERIES CHAMBER)

NTS



NOTE:
INSPECTION PORTS MAY BE CONNECTED THROUGH ANY CHAMBER CORRUGATION VALLEY.

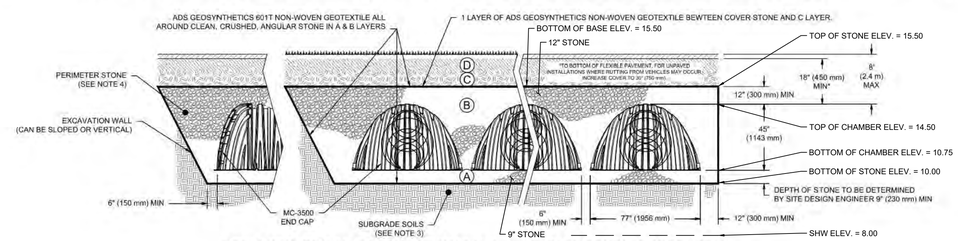
4" PVC INSPECTION PORT DETAIL (MC SERIES CHAMBER)

NTS

ACCEPTABLE FILL MATERIALS: STORMTECH MC-3500 CHAMBER SYSTEMS

	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE (B' LAYER) TO **24"** (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE (A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 4	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 4	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



*FOR COVER DEPTHS GREATER THAN 8.0' (2.4 m) PLEASE CONTACT STORMTECH

CONTROL ELEV. = 12.00
25YR/24HR DHW = 14.09
REFER TO SHEET C5.0

NOTES:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45x76 DESIGNATION SS.
2. MC-3500 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 500 LBS/IN/IN AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

MC-3500
ISOLATOR ROW PLUS DETAILS
DATE: 06/29/20 DRAWN: ALI
PROJECT #: — CHECKED: ALI
REVISIONS
DATE DRAWN CHKD

StormTech
SPECIFICATION CHAMBERS | PRECAST | STORM CARE
70 MAXCONNECT PARK | 100 PLAINFIELD, | CT 06067
TOLL FREE 888.892.2694 | TEL 860.928.1131 | FAX 860.928.1101

ADS
4640 TRUEMAN BLVD
HILLIARD, OH 43026
800.821.6710 | 614.658.6050 | 614.658.6030 | FAX
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SHEET 1 OF 1

MC-3500
STANDARD CROSS SECTION
DATE: 05-10-18 DRAWN: KR
PROJECT #: — CHECKED: KR
REVISIONS
DATE DRAWN CHKD

StormTech
SPECIFICATION CHAMBERS | PRECAST | STORM CARE
70 MAXCONNECT PARK | 100 PLAINFIELD, | CT 06067
TOLL FREE 888.892.2694 | TEL 860.928.1131 | FAX 860.928.1101

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SHEET 1 OF 1

Bowman

BOWMAN CONSULTING GROUP, LTD.
1410 N. WESTSHORE BLVD
SUITE 111
TAMPA, FL 33607
PHONE: (321) 255-5434
FAX: (321) 255-7751
WWW.BOWMAN.COM

CONSTRUCTION DETAILS
BLACK RIFLE COFFEE
40390 US HWY 19 N,
TARPON SPRINGS, FL 34689
CITY OF TARPON SPRINGS, FL
PINELLAS COUNTY, FL

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PLAN STATUS

REV	DATE	COMMENT
1	09/13/22	AHJ COMMENTS
2	12/23/22	AHJ COMMENTS
3	03/06/23	AHJ COMMENTS

KSP	KSP	ALC
DESIGN	DRAWN	CHKD

SCALE 1" = 20'
JOB No. 011046-01-001
DATE 04/13/2022
SHEET C7.4

StormTech® MC-3500 Chamber

Designed to meet the most stringent industry performance standards for superior structural integrity while providing designers with a cost-effective method to save valuable land and protect water resources. The StormTech system is designed primarily to be used under parking lots, thus maximizing land usage for private (commercial) and public applications. StormTech chambers can also be used in conjunction with Green Infrastructure, thus enhancing the performance and extending the service life of these practices.

Nominal Chamber Specifications
(not to scale)

Size (L x W x H)
90" x 77" x 45"
2286 mm x 1956 mm x 1143 mm

Chamber Storage
109.9 ft³ (3.11 m³)

Min. Installed Storage*
175.0 ft³ (4.96 m³)

Weight
134 lbs (60.8 kg)

Shipping
15 chambers/pallet
7 end caps/pallet
7 pallets/truck

*Assumes a minimum of 12" (300 mm) of stone above, 9" (230 mm) of stone below chambers, 6" (150 mm) of stone between chambers/end caps and 40% stone porosity.

Nominal End Cap Specifications
(not to scale)

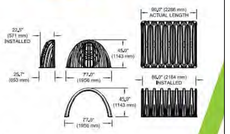
Size (L x W x H)
26.5" x 71" x 45.1"
673 mm x 1803 mm x 1145 mm

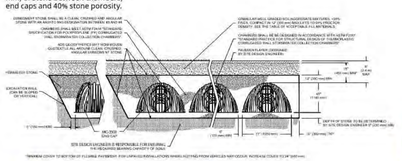
End Cap Storage
14.9 ft³ (0.42 m³)

Min. Installed Storage*
45.1 ft³ (1.28 m³)

Weight
49 lbs (22.2 kg)

*Assumes a minimum of 12" (300 mm) of stone above, 9" (230 mm) of stone below, 6" (150 mm) of stone perimeter, 6" (150 mm) of stone between chambers/end caps and 40% stone porosity.





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StormTech MC-3500 Specifications

Storage Volume Per Chamber

	Bare Chamber Storage ft³ (m³)	Chamber and Stone Foundation Depth in. (mm)			
		9 in (230 mm)	12 in (300 mm)	15 in (375 mm)	18 in (450 mm)
Chamber	109.9 (3.11)	175.0 (4.96)	179.9 (5.09)	184.9 (5.24)	189.9 (5.38)
End Cap	14.9 (0.42)	45.1 (1.28)	46.6 (1.32)	48.3 (1.37)	49.9 (1.41)

Note: Assumes 6" (150 mm) row spacing, 40% stone porosity, 12" (300 mm) stone above and includes the bare chamber/end cap volume.

Amount of Stone Per Chamber

English Tons (yds³)	Stone Foundation Depth			
	9 in	12 in	15 in	18 in
Chamber	8.5 (6.0)	9.1 (6.5)	9.7 (6.9)	10.4 (7.4)
End Cap	3.9 (2.8)	4.1 (2.9)	4.3 (3.1)	4.5 (3.2)
Metric Kilograms (m³)	**230 mm**	**300 mm**	**375 mm**	**450 mm**
Chamber	7711 (4.6)	8255 (5.0)	8800 (5.3)	9435 (5.7)
End Cap	3538 (2.1)	3719 (2.2)	3901 (2.4)	4082 (2.5)

Note: Assumes 12" (300 mm) of stone above and 6" (150 mm) row spacing and 6" (150 mm) of perimeter stone in front of end caps.

Volume Excavation Per Chamber yd³ (m³)

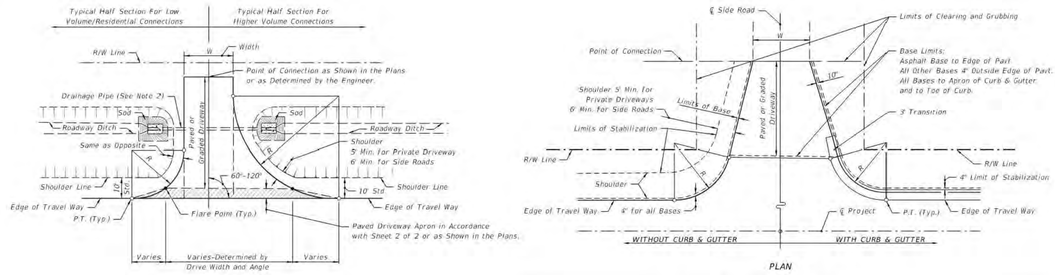
	Stone Foundation Depth			
	9 in (230 mm)	12 in (300 mm)	15 in (375mm)	18 in (450 mm)
Chamber	11.9 (9.1)	12.4 (9.5)	12.8 (9.8)	13.3 (10.2)
End Cap	4.0 (3.1)	4.1 (3.3)	4.3 (3.3)	4.4 (3.4)

Note: Assumes 6" (150 mm) of separation between chamber rows and 24" (600 mm) of cover. The volume of excavation will vary as depth of cover increases.

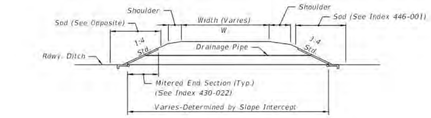
Working on a project?
Visit us at www.stormtech.com and utilize the Design Tool

ADS StormTech

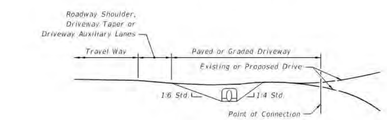
adspipe.com
800-821-6710



LIMITS OF CLEARING & GRUBBING, STABILIZING AND BASE AT DRIVEWAYS



DRAINAGE SECTION



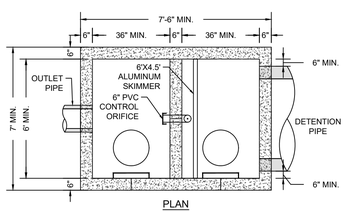
DRIVEWAY PROFILE AND END VIEW

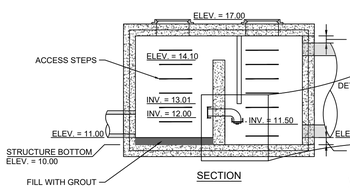
FLUSH SHOULDER ROADWAY - DRIVEWAY CONSTRUCTION

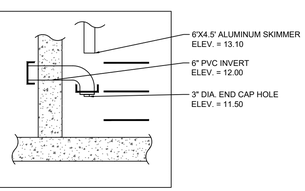
DRIVEWAY ENTRANCES NOTES:

1. See Plans for Driveway Width (W) and Return Radius (R).
2. See the Plans for drainage pipe size and length or as determined by the Engineer. The size will be no less than 15" diameter or equivalent.
3. Stable material may be required for graded driveways to private property as directed by the Engineer in accordance with Specification 102-8.
4. The driveway pavement requirement at graded connections may be waived for connections serving one or two homes or field entrances with less than 20 trips per day, or 5 trips per hour as approved by the Engineer, or when not shown in the Plans.
5. Point of Connection:
   a. Construct paved driveways for all paved connecting facilities. The connecting point will be determined by the Engineer.
   b. Construct paved driveways for all business, commercial, industrial or high volume residential graded connecting facilities. Construct the connecting point 30'-0" from edge of travel way or at R/W line, whichever is less.
   c. Construct paved driveways for all side road connections. The R/W is the connecting point.

LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2023-24 STANDARD PLANS	PAVED AND GRADED DRIVEWAYS	INDEX	SHEET
11/01/18					330-001	1 of 2







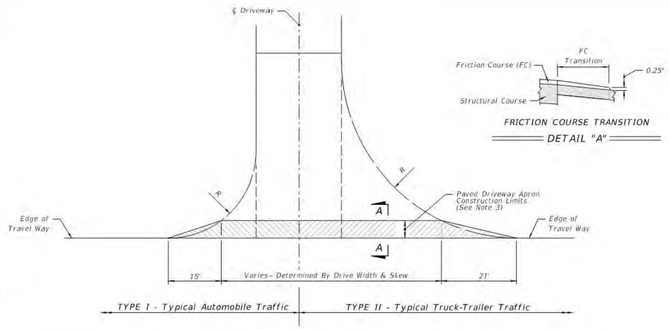
WEIR SHALL BE CONSTRUCTED TO THE FOLLOWING SPECIFICATIONS:

WEIR ELEVATION: 14.10'
OUTLET PIPE: 6" HDPE

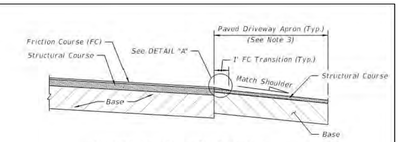
DETAIL NOTES:

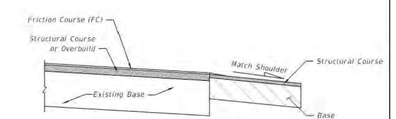
1. SKIMMER TO BE ALUMINUM OR APPROVED EQUAL.
2. REFER TO ORIFICE END-CAP DETAIL.
3. REFER TO MANHOLE LID DETAIL.
4. IF OCS IS LOCATED IN AREA ACCESSIBLE TO VEHICULAR TRAFFIC, MANHOLE LID AND STRUCTURES TO BE TRAFFIC RATED.
5. ALL CONCRETE TO BE 6" MINIMUM THICKNESS AND SHALL BE 4000 PSI.
6. OCS MANHOLE SHALL BE OFFSET TO PROVIDE DIRECT ACCESS TO STRUCTURE ACCESS STEPS.
7. TWO MANHOLES ARE TO BE PROVIDED SO THAT BOTH SIDES OF THE WEIR WALL CAN BE EASILY ACCESSED.

OUTFALL CONTROL STRUCTURE DETAIL

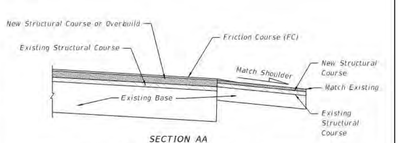


DRIVEWAY TYPES





NEW DRIVEWAY



RESURFACING EXISTING DRIVEWAY

AREAS FOR ONE 5' DEEP DRIVEWAY APRON (SY)

Drive Width (Ft.)	Intersection			
	Normal		Skewed	
	Type I	Type II	Type I	Type II
12	26	51	31	60
14	27	52	33	61
16	28	53	34	63
18	29	54	35	64
20	31	55	37	65
22	32	56	38	67
24	33	57	39	68
26	34	58	40	69
28	35	59	42	70
30	36	61	43	72
32	37	62	44	73
34	38	63	46	74
36	39	64	47	76
38	41	65	48	77
40	42	66	49	78
42	43	67	51	79
44	44	68	52	81
46	45	69	53	82
48	46	71	55	83
50	47	72	56	85
52	48	73	57	86
54	49	74	58	87
56	51	75	60	88
58	52	76	61	90
60	53	77	62	91

MATERIAL TYPES AND THICKNESSES FOR PAVED CONNECTIONS

Course	Materials	Minimum Thickness (in.)	
		Connections	Roadway*
Structural	Asphaltic Concrete	1½"	1½"
Bases	Optional Base (See Specification 285)	O.B.G. 2	O.B.G. 3

* Travel way flares (bypass lanes), auxiliary lanes serving more than a single connection, and all median crossovers including their auxiliary lanes and/or transition tapers.

NOTES

1. Use same material for driveway structural course and roadway overbuild or structural course, except as approved by the Engineer for graded connections. Other Department-approved equivalent pavements may be used at the discretion of the Engineer.
2. Auxiliary lanes and their transition tapers shall be the same structure as the abutting travel way pavement thickness or any of the roadway structures tabulated above, whichever is thicker.
3. If an asphalt base course is used for a driveway, its thickness may be increased to match the edge of travel way pavement thickness in lieu of a separate structural course. 6" of Portland cement concrete will be acceptable in lieu of the asphalt base and structural courses. See Notes 4 and 5 below.
4. A structural course is required for flexible pavements when they are used for auxiliary lanes serving more than a single connection.
5. Use Class NS concrete at least 6" thick for driveways paved with Portland Cement Concrete. Construct in accordance with Specifications 347, 350, and 522.
6. The Department may require other pavement criteria where local conditions warrant.

GENERAL NOTES:

1. Driveways are to be constructed or resurfaced for low volume (single family, duplex, farm, etc.) residential connections as directed by the Engineer.
2. Driveways construction is not required for low volume residential connections where roadway shoulders are paved.
3. Match existing paved shoulder widths ≥ 4'. For all other shoulders conditions, construct at 5' wide.
4. Connections beyond the shoulder width are to be constructed as directed by the Engineer.
5. Construct Driveway Base in accordance with Specification 286.
6. Payment for structural course and friction course is to be included in roadway pavement pay item.

LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2023-24 STANDARD PLANS	PAVED AND GRADED DRIVEWAYS	INDEX	SHEET
11/01/18					330-001	2 of 2

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CONSTRUCTION DETAILS
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ARMANDO L. CABRE LICENSE No. 66807 STATE OF FLORIDA PROFESSIONAL ENGINEER

PLAN STATUS

REV	DATE	COMMENT
1	09/13/22	AHJ COMMENTS
2	12/23/22	AHJ COMMENTS
3	03/06/23	AHJ COMMENTS

KSP DESIGN	KSP DRAWN	ALC CHKD
SCALE 1" = 20'		
JOB No. 011046-01-001		
DATE 04/13/2022		

SHEET C7.5

THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY BOWMAN SHALL BE WITHOUT LIABILITY TO BOWMAN.

USER: KPETRI PLOT DATE/TIME: Mar. 06, 23 - 15:13:37 DRAWING: V:\011046 - Pursuit Development\011046-01-001 (ENG) - Black Rifle Coffee - Tarpon Springs, FL\Engineering\Engineering Plans\Plan Sets\011046-01-001-C7.0-DETL.dwg /C7.5 CONSTRUCTION DETAILS

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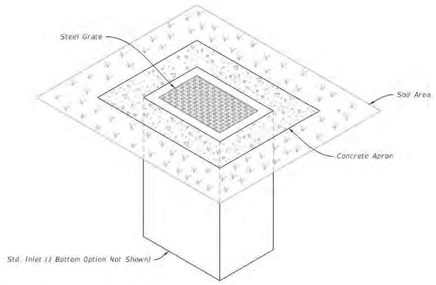
GENERAL NOTES:

1. Work this Index with Index 425-001 and Index 425-010.
2. When inlet is placed in areas subject to bicycle traffic, install filler bar when clearance or gap is greater than ⅝" as shown in Index 425-031.
3. These inlets may be used with Alternate B structure bottoms, Index 425-010.
4. Chamfer all exposed edges and corners ¾" chamfer or tooled to ½" radius.
5. See Index for supplemental details.
6. Reinforcing bars are Grade 60 with 2" minimum cover unless otherwise noted. Cut or bend bars to provide 1½" clearance around pipe opening. Provide one additional #4 bar above and at each side of pipe opening as shown.
7. Dimensions are for both precast and cast-in-place inlets unless otherwise noted.
8. Quantities are for informational and estimating purposes only.



DITCH BOTTOM INLET TYPE F
(Type G Similar, Pipe Connection Not Shown)

TABLE OF CONTENTS:

Sheet	Description
1	General Notes and Contents
2	Type F - Dimensional, Reinforcing, and Grate Details
3	Type G - Dimensional, Reinforcing, and Grate Details
4	Concrete Apron and Sodded Area Details

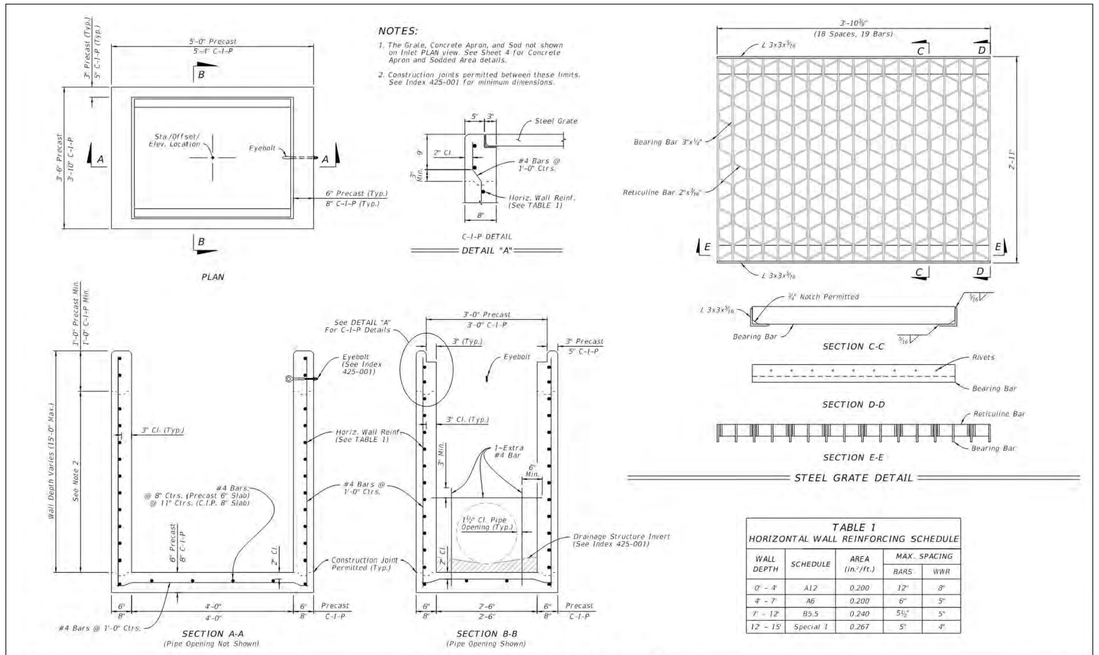


TABLE 1
HORIZONTAL WALL REINFORCING SCHEDULE

WALL DEPTH	SCHEDULE	AREA (in.²/ft.)	MAX. SPACING BARS	MAX. SPACING WWR
0' - 4'	A12	0.200	12"	8"
4' - 7'	A6	0.200	6"	5"
7' - 12'	B5.5	0.240	5½"	5"
12' - 15'	Special 1	0.267	5"	4"

TYPE F - DIMENSIONAL, REINFORCING, AND GRATE DETAILS

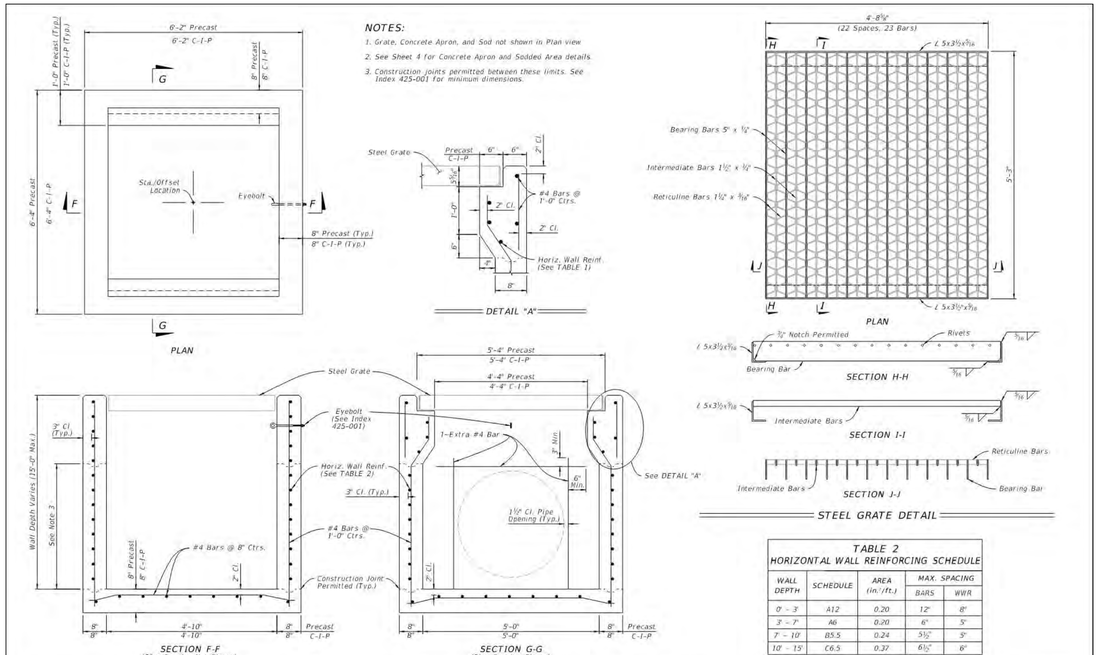


TABLE 2
HORIZONTAL WALL REINFORCING SCHEDULE

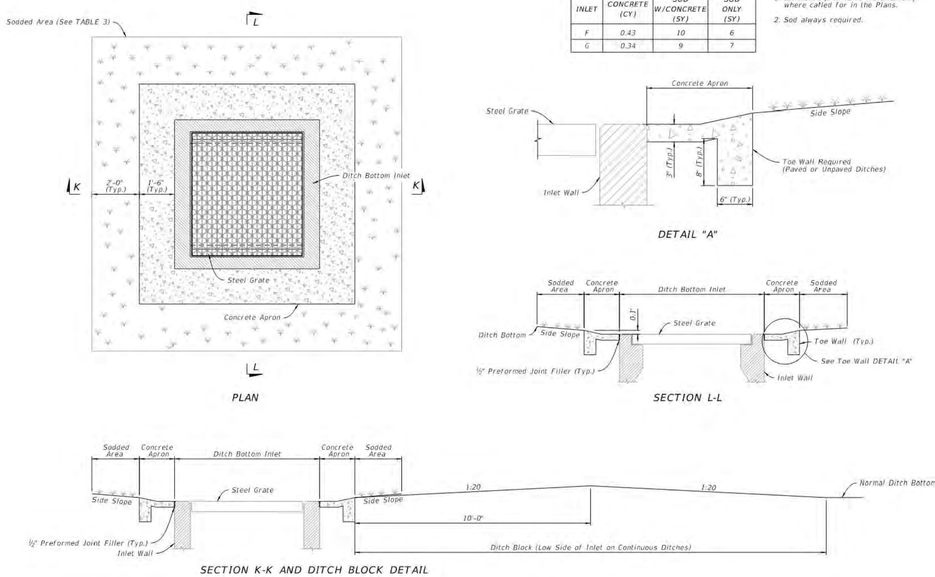
WALL DEPTH	SCHEDULE	AREA (in.²/ft.)	MAX. SPACING BARS	MAX. SPACING WWR
0' - 3'	A12	0.20	12"	8"
3' - 7'	A6	0.20	6"	5"
7' - 10'	B5.5	0.24	5½"	5"
10' - 15'	C6.5	0.37	6½"	6"

TYPE G - DIMENSIONAL, REINFORCING, AND GRATE DETAILS

TABLE 3
CONCRETE APRON AND SOD QUANTITIES

INLET	CONCRETE (CY)	SOD W/CONCRETE (SY)	SOD ONLY (SY)
F	0.43	10	6
G	0.34	9	7

NOTES:
1. Concrete Apron to be installed only where called for in the Plans.
2. Sod always required.



CONCRETE APRON AND SODDED AREA DETAILS

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KSP DESIGN	KSP DRAWN	ALC CHKD
SCALE 1" = 20'		
JOB No. 011046-01-001		
DATE 04/13/2022		

SHEET C7.6

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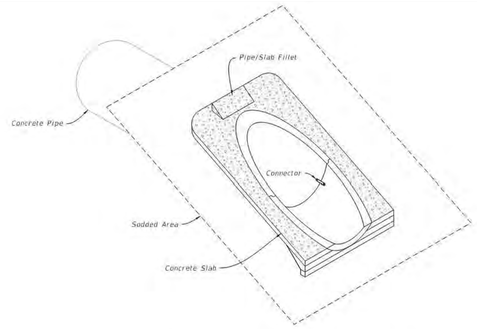
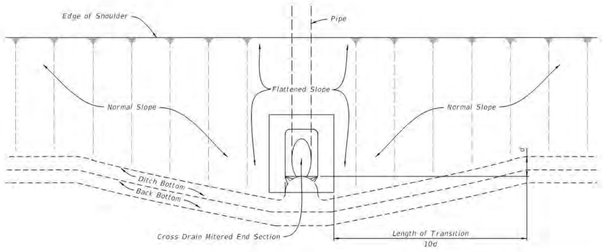
GENERAL NOTES:

1. Unless otherwise designated in the plans, concrete pipe mitered end sections may be used with any type of cross drain pipe; corrugated steel pipe mitered end sections may be used with any type of cross drain pipe except aluminum pipe; and, corrugated aluminum mitered end sections may be used with any type of cross drain pipe except steel pipe. When bituminous coated metal pipe is specified for cross drain pipe, construct the mitered end sections with like pipe or concrete pipe. When the mitered end section pipe is dissimilar to the cross drain pipe, construct a concrete jacket in accordance with Index 430-001.
2. Use either corrugated metal or concrete mitered end sections for corrugated polyethylene pipe (HDPE), polyvinyl-chloride pipe (PVC), steel reinforced polyethylene pipe (SRPE), and polypropylene pipe (PP). When used in conjunction with corrugated mitered end sections, make connection using either a formed metal band specifically designated to join HDPE, PVC, SRPE, or PP pipe, with metal pipe. When used in conjunction with a concrete mitered end sections, construct concrete jacket in accordance with Index 430-001.
3. Class NS concrete cast-in-place reinforced slabs are required for all sizes of cross drain pipes. Construct slabs at 5½" thick, unless 3" thickness is called for in the Plans.
4. Select lengths of concrete pipe that avoid excessive connections in the assembly of the mitered end section.
5. Repair corrugated metal pipe galvanizing that is damaged during beveling and perforating.
6. When existing multiple cross drain pipes are spaced other than the dimensions shown in this Index, have nonparallel axes, or non-uniform sections, either construct the mitered end sections separately as single pipe or collectively as multiple pipe end sections as directed by the Engineer.
7. Saddle Slope:
   - 1:4 Miter – Slope to ℄ of pipe for round pipes less than or equal to 18" diameter and 1:1 for round pipes greater than or equal to 24" diameter.
     Slope to the major axis for elliptical pipes 24"x38" or smaller and 1:2 for pipes 29"x45" or larger.
     Slope to the span line for pipe arch 28"x20" or smaller and 1:2 for pipe arch 35"x24" or larger.
   - 1:2 Miter – Slope to ℄ of pipe for round pipes less than or equal to 18"diameter and 1:2 for round pipes greater than or equal to 24" diameter.
     Slope to the major axis for elliptical pipes 29"x45" or smaller and 1:1 for pipes 34"x53" or larger.
     Slope 1:1 for all pipe arch sizes.
8. Quantities shown are for estimating purposes only.



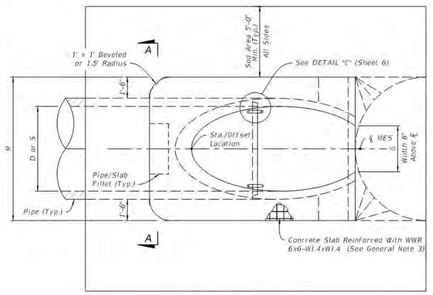
CROSS DRAIN MITERED END SECTION
(Concrete Pipe Shown, Corrugated Metal Pipe Similar)



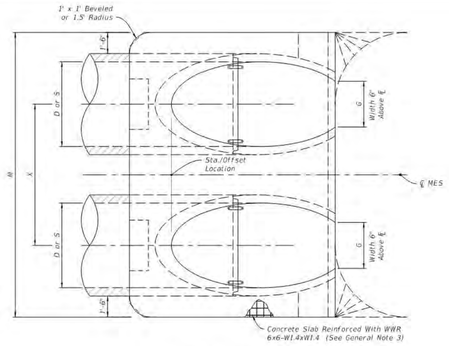
SLOPE AND DITCH TRANSITIONS

TABLE OF CONTENTS:

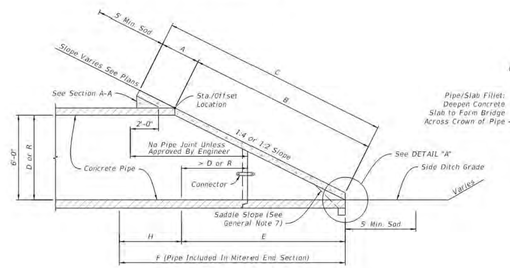
Sheet	Description
1	General Notes and Contents
2	Single and Multiple Concrete Pipe
3	Concrete Pipe Dimensions and Quantities
4	Single and Multiple Corrugated Metal Pipe
5	Corrugated Metal Pipe Dimensions and Quantities
6	Concrete Pipe Connections and Corrugated Metal Pipe (CMP) Anchor Detail



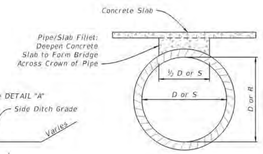
PLAN - SINGLE PIPE



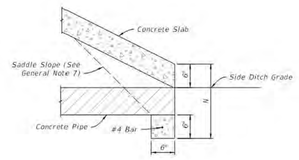
PLAN - MULTIPLE PIPE



ELEVATION



SECTION A-A
(Pipe/Slab Fillet)



DETAIL "A"

ROUND CONCRETE PIPE
(Elliptical Pipe Similar)

NOTE: See Table 1 on Sheet 3 for Dimensions and Quantities.

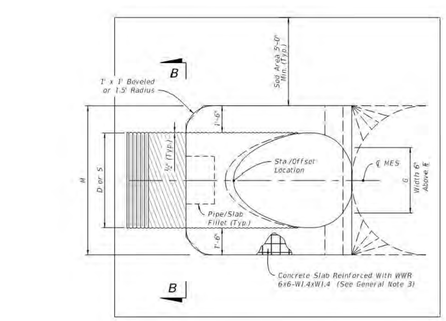
SINGLE AND MULTIPLE CONCRETE PIPE

TABLE 1
SINGLE AND MULTIPLE CONCRETE PIPE DIMENSIONS AND QUANTITIES

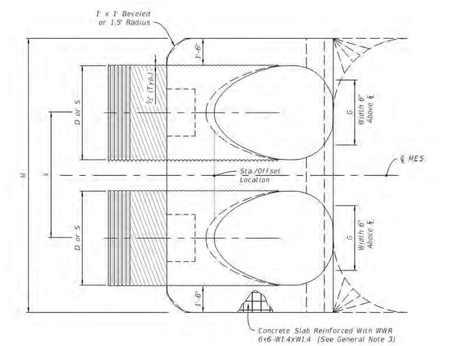
		Dia. D	Rise R	Span S	X	A	B	C	E	F	G	H	M Single Pipe	M Double Pipe	M Triple Pipe	M Quad. Pipe	N	5½" CONC. SLAB (CY) (See General Note 3) Single Pipe	Double Pipe	Triple Pipe	Quad. Pipe	3" CONC. SLAB (CY) (See General Note 3) Single Pipe	Double Pipe	Triple Pipe	Quad. Pipe	SODDING (SY) Single Pipe	Double Pipe	Triple Pipe	Quad. Pipe
Round Concrete Pipe	1:2 Slope	15"	—	—	2'-7"	1.92'	2.18'	4.10'	2.06'	5'	1.22'	2.9'	4.63'	7.21'	9.79'	12.37'	1.19'	0.38'	0.58'	0.77'	0.96'	0.27'	0.41'	0.54'	0.67'	21'	24'	27'	30'
		18"	—	—	2'-10"	1.97'	2.74'	4.71'	2.50'	6'	1.41'	3.4'	4.92'	7.75'	10.58'	13.42'	1.21'	0.44'	0.65'	0.87'	1.09'	0.31'	0.45'	0.60'	0.75'	22'	25'	28'	31'
		24"	—	—	3'-5"	2.06'	3.85'	5.91'	3.58'	7'	1.73'	3.4'	5.50'	8.42'	12.33'	15.75'	1.25'	0.54'	0.83'	1.12'	1.42'	0.39'	0.59'	0.79'	1.00'	24'	26'	32'	35'
		30"	—	—	4'-3"	2.15'	4.95'	7.10'	4.58'	8'	2.07'	3.4'	6.08'	10.33'	14.58'	18.83'	1.29'	0.66'	1.09'	1.50'	1.91'	0.46'	0.76'	1.04'	1.32'	26'	31'	35'	40'
		36"	—	—	5'-1"	2.25'	6.08'	8.33'	5.50'	9'	2.24'	3.4'	6.67'	11.75'	16.83'	21.92'	1.33'	0.81'	1.38'	1.95'	2.51'	0.55'	0.94'	1.33'	1.71'	28'	34'	39'	45'
		42"	—	—	6'-0"	2.34'	7.21'	9.55'	6.50'	10'	2.45'	3.4'	7.25'	13.25'	19.25'	25.25'	1.38'	0.97'	1.70'	2.45'	3.19'	0.66'	1.15'	1.66'	2.15'	30'	37'	43'	50'
		48"	—	—	6'-9"	2.43'	8.33'	10.76'	7.50'	11'	2.65'	3.4'	7.83'	14.58'	21.33'	28.08'	1.42'	1.13'	2.04'	2.93'	3.84'	0.76'	1.37'	1.96'	2.57'	32'	39'	47'	54'
		54"	—	—	7'-8"	2.52'	9.44'	11.98'	8.50'	12'	2.83'	3.4'	8.42'	16.08'	23.75'	31.42'	1.46'	1.33'	2.44'	3.56'	4.72'	0.87'	1.62'	2.38'	3.14'	34'	42'	51'	59'
		60"	—	—	8'-6"	2.62'	10.56'	13.18'	9.58'	14'	3.00'	4.4'	9.00'	17.50'	26.00'	34.50'	1.50'	1.51'	2.89'	4.28'	5.69'	0.99'	1.90'	2.81'	3.73'	36'	45'	55'	64'
		66"	—	—	9'-2"	2.71'	11.68'	14.39'	10.56'	15'	3.18'	4.4'	9.58'	18.75'	27.92'	37.08'	1.54'	1.68'	3.25'	4.84'	6.43'	1.11'	2.15'	3.21'	4.27'	38'	48'	58'	68'
		72"	—	—	10'-0"	2.80'	12.80'	15.60'	11.58'	16'	3.30'	4.4'	10.16'	20.16'	30.16'	40.16'	1.58'	1.89'	3.74'	5.59'	7.45'	1.24'	2.46'	3.68'	4.90'	40'	51'	62'	73'
	1:4 Slope	15"	—	—	2'-7"	2.77'	4.09'	6.36'	4.03'	8'	1.55'	4.0'	4.63'	7.21'	9.79'	12.37'	1.19'	0.57'	0.87'	1.15'	1.44'	0.40'	0.61'	0.80'	1.00'	23'	26'	29'	32'
		18"	—	—	2'-10"	2.86'	5.12'	7.48'	5.07'	9'	1.41'	4.0'	4.92'	7.75'	10.58'	13.42'	1.21'	0.66'	0.99'	1.31'	1.65'	0.47'	0.69'	0.91'	1.14'	25'	28'	31'	35'
		24"	—	—	3'-5"	2.95'	7.18'	9.71'	7.07'	11'	1.73'	4.0'	5.50'	8.92'	12.33'	15.75'	1.25'	0.85'	1.30'	1.75'	2.20'	0.60'	0.90'	1.21'	1.52'	28'	32'	36'	40'
		30"	—	—	4'-3"	3.70'	9.25'	11.95'	9.03'	13'	2.00'	4.0'	6.08'	10.33'	14.58'	18.83'	1.29'	1.10'	1.74'	2.39'	3.05'	0.76'	1.19'	1.63'	2.07'	31'	36'	41'	46'
		36"	—	—	5'-1"	3.87'	11.31'	14.18'	11.03'	15'	2.24'	4.0'	6.67'	11.75'	16.83'	21.92'	1.33'	1.32'	2.21'	3.08'	3.96'	0.89'	1.48'	2.05'	2.63'	34'	40'	46'	52'
		42"	—	—	6'-0"	3.05'	13.37'	16.42'	13.07'	17'	2.45'	4.0'	7.25'	13.25'	19.25'	25.25'	1.38'	1.58'	2.76'	3.91'	5.09'	1.05'	1.82'	2.57'	3.34'	38'	44'	51'	58'
		48"	—	—	6'-9"	3.22'	15.43'	18.65'	15.07'	19'	2.65'	4.0'	7.83'	14.58'	21.33'	28.08'	1.42'	1.85'	3.30'	4.75'	6.17'	1.21'	2.15'	3.07'	4.00'	41'	48'	56'	63'
		54"	—	—	7'-8"	3.29'	17.49'	20.68'	17.07'	21'	2.83'	4.0'	8.42'	16.08'	23.75'	31.42'	1.46'	2.14'	3.85'	5.57'	7.38'	1.39'	2.55'	3.72'	4.88'	44'	52'	61'	69'
		60"	—	—	8'-6"	3.56'	19.55'	23.11'	19.03'	23'	3.00'	4.0'	9.00'	17.50'	26.00'	34.50'	1.50'	2.45'	4.66'	6.87'	9.07'	1.59'	3.02'	4.44'	5.86'	47'	58'	66'	75'
		66"	—	—	9'-2"	3.73'	21.62'	25.35'	21.07'	25'	3.18'	4.0'	9.58'	18.75'	27.92'	37.08'	1.54'	2.88'	5.54'	8.18'	10.84'	1.91'	3.68'	5.45'	7.15'	49'	59'	69'	80'
		72"	—	—	10'-0"	3.91'	23.68'	27.59'	23.07'	27'	3.30'	4.0'	10.16'	20.16'	30.16'	40.16'	1.58'	3.54'	6.61'	9.87'	13.13'	2.12'	4.18'	6.24'	8.30'	52'	63'	74'	85'
Elliptical Concrete Pipe	1:2 Slope	12"	18"	29"	2'-10"	1.97'	1.62'	3.59'	1.56'	4'	1.50'	2.4'	4.92'	7.75'	10.58'	13.42'	1.21'	0.30'	0.49'	0.67'	0.85'	0.19'	0.33'	0.45'	0.57'	21'	24'	27'	30'
		14"	23"	34"	3'-4"	2.01'	1.99'	4.00'	1.89'	5'	1.90'	3.1'	5.38'	8.71'	12.04'	15.38'	1.23'	0.37'	0.59'	0.81'	1.02'	0.25'	0.40'	0.55'	0.69'	22'	26'	29'	33'
		19"	30"	43"	4'-0"	2.11'	2.92'	5.03'	2.73'	6'	2.37'	3.3'	6.04'	10.04'	14.04'	18.04'	1.27'	0.50'	0.80'	1.09'	1.39'	0.34'	0.55'	0.75'	0.95'	24'	28'	33'	37'
		24"	38"	53"	5'-0"	2.29'	3.85'	6.05'	3.56'	7'	2.85'	3.4'	6.79'	11.79'	16.79'	21.79'	1.31'	0.62'	1.03'	1.45'	1.86'	0.43'	0.71'	1.00'	1.28'	26'	31'	37'	42'
		29"	45"	57"	5'-10"	2.34'	4.79'	7.13'	4.39'	8'	3.19'	3.6'	7.50'	13.42'	19.33'	25.25'	1.38'	0.75'	1.30'	1.84'	2.39'	0.52'	0.90'	1.27'	1.65'	28'	34'	41'	47'
		34"	53"	71"	7'-0"	2.43'	5.72'	8.15'	5.23'	9'	3.57'	3.8'	8.25'	15.25'	22.25'	29.25'	1.42'	0.90'	1.61'	2.32'	3.03'	0.62'	1.11'	1.60'	2.09'	30'	37'	45'	53'
		38"	60"	76"	7'-10"	2.52'	6.46'	8.98'	5.89'	9'	3.95'	3.1'	8.92'	16.75'	24.58'	32.42'	1.46'	1.03'	1.89'	2.74'	3.60'	0.70'	1.29'	1.87'	2.46'	31'	40'	49'	57'
		43"	68"	81"	8'-11"	2.62'	7.39'	10.01'	6.73'	10'	4.29'	3.3'	9.67'	18.58'	27.50'	36.42'	1.50'	1.19'	2.26'	3.33'	4.40'	0.81'	1.54'	2.26'	2.99'	33'	43'	53'	63'
		48"	76"	91"	9'-11"	2.71'	8.33'	11.04'	7.56'	11'	4.59'	3.4'	10.42'	20.33'	30.25'	40.17'	1.54'	1.38'	2.65'	3.93'	5.21'	0.93'	1.79'	2.66'	3.53'	35'	46'	57'	68'
		53"	83"	101"	10'-8"	2.80'	9.26'	12.06'	8.39'	12'	4.77'	3.6'	11.08'	21.75'	32.42'	43.08'	1.58'	1.55'	3.03'	4.50'	5.96'	1.04'	2.04'	3.03'	4.02'	37'	49'	61'	73'
		58"	91"	110"	11'-6"	2.90'	10.19'	13.09'	9.22'	13'	5.07'	3.8'	11.83'	23.50'	35.17'	46.83'	1.63'	1.75'	3.47'	5.20'	6.93'	1.17'	2.33'	3.49'	4.66'	39'	52'	65'	78'
	1:4 Slope	12"	18"	24"	2'-10"	2.36'	3.06'	5.42'	3.07'	5'	1.50'	2.0'	4.92'	7.75'	10.58'	13.42'	1.21'	0.37'	0.59'	0.81'	1.02'	0.25'	0.40'	0.55'	0.69'	22'	26'	29'	32'
		14"	23"	29"	3'-4"	2.44'	3.75'	6.19'	3.70'	6'	1.90'	2.3'	5.38'	8.71'	12.04'	15.38'	1.23'	0.53'	0.83'	1.13'	1.42'	0.36'	0.56'	0.76'	0.95'	24'	28'	32'	35'
		19"	30"	40"	4'-0"	2.62'	5.47'	8.09'	5.36'	8'	2.37'	2.6'	6.04'	10.04'	14.04'	18.04'	1.27'	0.74'	1.15'	1.57'	1.98'	0.51'	0.79'	1.08'	1.36'	27'	32'	36'	40'
		24"	38"	50"	5'-0"	2.79'	7.18'	9.97'	7.03'	10'	2.85'	3.0'	6.79'	11.79'	16.79'	21.79'	1.31'	0.91'	1.57'	2.19'	2.81'	0.68'	1.10'	1.53'	1.96'	30'	36'	41'	47'
		29"	45"	57"	5'-11"	3.05'	8.90'	11.95'	8.70'	12'	3.19'	3.3'	7.50'	13.42'	19.33'	25.25'	1.38'	1.22'	2.07'	2.92'	3.77'	0.86'	1.45'	2.04'	2.63'	33'	40'	46'	53'
		34"	53"	71"	7'-0"	3.22'	10.62'	13.84'	10.38'	13'	3.57'	2.6'	8.25'	15.25'	22.25'	29.25'	1.42'	1.48'	2.62'	3.77'	4.92'	1.02'	1.81'	2.60'	3.39'	36'	44'	52'	59'
		38"	60"	76"	7'-10"	3.39'	11.99'	15.38'	11.70'	15'	3.95'	3.3'	8.92'	16.75'	24.58'	32.42'	1.46'	1.72'	3.12'	4.53'	5.92'	1.18'	2.14'	3.10'	4.05'	38'	47'	56'	65'
		43"	68"	81"	8'-11"	3.56'	13.71'	17.27'	13.36'	17'	4.29'	3.6'	9.67'	18.58'	27.50'	36.42'	1.50'	2.02'	3.78'	5.56'	7.32'	1.38'	2.58'	3.79'	4.99'	41'	51'	61'	71'
		48"	76"	91"	9'-11"	3.73'	15.43'	19.16'	15.03'	19'	4.59'	4.0'	10.42'	20.33'	30.25'	40.17'	1.54'	2.34'	4.49'	6.64'	8.79'	1.59'	3.05'	4.51'	5.97'	44'	55'	66'	77'
		53"	83"	101"	10'-8"	3.91'	17.15'	21.06'	16.70'	20'	4.77'	3.3'	11.08'	21.75'	32.42'	43.08'	1.58'	2.66'	5.17'	7.66'	10.16'	1.80'	3.50'	5.19'	6.88'	47'	59'	71'	83'
		58"	91"	110"	11'-8"	4.08'	18.87'	22.95'	18.38'	22'	5.00'	3.6'	11.83'	23.50'	35.17'	46.83'	1.63'	3.02'	5.98'	8.95'	11.90'	2.04'	4.04'	6.05'	8.05'	50'	63'	76'	89'

B: ⊥ 6.42' ⊥ 10.40
E: ⊥ 6.25' ⊥ 10.10'
Dimensions permitted to allow use of 8' standard pipe lengths.
Dimensions permitted to allow use of 12' standard pipe lengths.

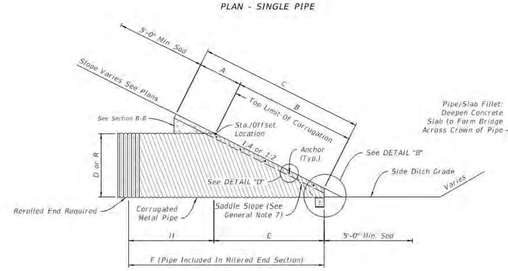
CONCRETE PIPE DIMENSIONS AND QUANTITIES



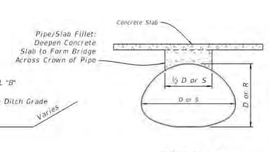
PLAN - SINGLE PIPE



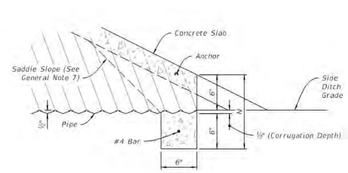
PLAN - MULTIPLE PIPE



ELEVATION



SECTION B-B
(Pipe/Slab Fillet)



DETAIL "B"

ARCHED CORRUGATED METAL PIPE
(Round Pipe Similar)

NOTE: See Table 2 on Sheet 5 for Dimensions and Quantities.

SIMGLE AND MULTIPLE CORRUGATED METAL PIPE

Bowman
BOWMAN CONSULTING GROUP, LTD.
1410 N. WESTSHORE BLVD
SUITE 111
TAMPA, FL 33607
PHONE: (321) 255-5434
FAX: (321) 255-7751
WWW.BOWMAN.COM

CONSTRUCTION DETAILS
BLACK RIFLE COFFEE
40390 US HWY 19 N,
TARPON SPRINGS, FL 34689
CITY OF TARPON SPRINGS, FL
PINELLAS COUNTY, FL

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ARMANDO L. CABRE LICENSE No. 66807 STATE OF FLORIDA PROFESSIONAL ENGINEER

PLAN STATUS

REV	DATE	COMMENT
1	09/13/22	AHJ COMMENTS
2	12/23/22	AHJ COMMENTS
3	03/06/23	AHJ COMMENTS

KSP DESIGN	KSP DRAWN	ALC CHKD
SCALE 1" = 20'		
JOB No. 011046-01-001		
DATE 04/13/2022		

SHEET C7.7

USER: KPETRI PLOT DATE/TIME: Mar. 06, 23 - 15:13:39 DRAWING: V:\011046 - Pursuit Development\011046-01-001 (ENG) - Black Rifle Coffee - Tarpon Springs, FL\Engineering\Engineering Plans\Plan Sets\011046-01-001-C7.0-DETL.dwg /C7.7 CONSTRUCTION DETAILS

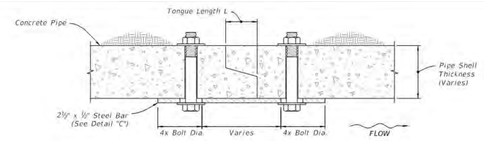
THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY BOWMAN SHALL BE WITHOUT LIABILITY TO BOWMAN.

TABLE 2
SINGLE AND MULTIPLE CORRUGATED METAL PIPE DIMENSIONS AND QUANTITIES

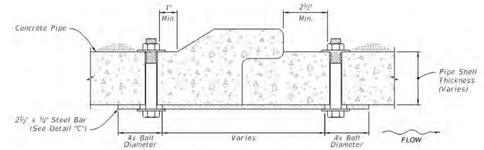
	Dia. D	Rise R	Span S	X	A	B	C	E	F	G	H	M Single Pipe	M Double Pipe	M Triple Pipe	M Quad. Pipe	N	5½" CONC. SLAB (CY) (See General Note 3) Single Pipe	Double Pipe	Triple Pipe	Quad. Pipe	3" CONC. SLAB (CY) (See General Note 3) Single Pipe	Double Pipe	Triple Pipe	Quad. Pipe	SODDING (SY) Single Pipe	Double Pipe	Triple Pipe	Quad. Pipe
Round Corrugated Metal Pipe, 1:2 Slope	15"	—	—	2'-7"	2'-5"	1'-68"	4'-18"	1'-5"	5'-0"	1'-23"	3'-5"	4'-33"	6'-92"	9'-50"	12'-08"	1'-04"	0'-35.	0'-54.	0'-74.	0'-94.	0'-24.	0'-37.	0'-51.	0'-64.	21	24	27	29
	18"	—	—	2'-10"	2'-5"	2'-24"	4'-74"	2'-0"	6'-0"	1'-41"	4'-0"	4'-58"	7'-42"	10'-25"	13'-08"	1'-04"	0'-38.	0'-62.	0'-87.	1'-12.	0'-26.	0'-43.	0'-61.	0'-78.	22	25	28	31
	24"	—	—	3'-5"	2'-5"	3'-35"	5'-85"	3'-0"	7'-0"	1'-73"	4'-0"	5'-08"	8'-50"	11'-92"	15'-33"	1'-04"	0'-47.	0'-76.	1'-05.	1'-34.	0'-32.	0'-52.	0'-72.	0'-91.	23	27	31	35
	30"	—	—	4'-3"	2'-5"	4'-47"	6'-97"	4'-0"	8'-0"	2'-00"	4'-0"	5'-58"	9'-83"	14'-08"	18'-33"	1'-04"	0'-57.	0'-96.	1'-37.	1'-77.	0'-38.	0'-64.	0'-91.	1'-18.	25	30	35	39
	36"	—	—	5'-1"	2'-5"	5'-59"	8'-09"	5'-0"	9'-0"	2'-24"	4'-0"	6'-08"	11'-17"	16'-25"	21'-33"	1'-04"	0'-67.	1'-19.	1'-72.	2'-26.	0'-44.	0'-78.	1'-13.	1'-48.	27	33	38	44
	42"	—	—	6'-0"	2'-5"	6'-71"	9'-21"	6'-0"	10'-0"	2'-45"	4'-0"	6'-58"	12'-58"	18'-58"	24'-58"	1'-04"	0'-78.	1'-48.	2'-17.	2'-87.	0'-51.	0'-96.	1'-41.	1'-87.	29	36	42	49
	48"	—	—	6'-9"	2'-5"	7'-83"	10'-33"	7'-0"	11'-0"	2'-65"	4'-0"	7'-08"	13'-83"	20'-58"	27'-33"	1'-04"	0'-89.	1'-71.	2'-54.	3'-36.	0'-57.	1'-09.	1'-62.	2'-15.	31	38	46	53
	54"	—	—	7'-8"	2'-5"	8'-94"	11'-44"	8'-0"	12'-0"	2'-83"	4'-0"	7'-58"	15'-25"	22'-92"	30'-58"	1'-04"	1'-02.	2'-06.	3'-10.	4'-14.	0'-65.	1'-32.	1'-99.	2'-66.	33	41	50	58
	60"	—	—	8'-6"	2'-5"	10'-06"	12'-56"	9'-0"	13'-0"	3'-02"	4'-0"	8'-08"	16'-58"	25'-08"	33'-58"	1'-04"	1'-14.	2'-38.	3'-63.	4'-89.	0'-71.	1'-49.	2'-28.	3'-07.	34	44	53	63
Corrugated Metal Pipe Arch, 1:4 Slope	15"	—	—	2'-7"	2'-5"	3'-09"	5'-59"	3'-0"	7'-0"	1'-23"	4'-0"	4'-33"	6'-92"	9'-50"	12'-08"	1'-04"	0'-44.	0'-68.	0'-91.	1'-15.	0'-31.	0'-47.	0'-63.	0'-79.	22	25	28	31
	18"	—	—	2'-10"	2'-5"	4'-12"	6'-62"	4'-0"	8'-0"	1'-41"	4'-0"	4'-58"	7'-42"	10'-25"	13'-08"	1'-04"	0'-49.	0'-77.	1'-03.	1'-31.	0'-34.	0'-53.	0'-71.	0'-90.	24	27	30	33
	24"	—	—	3'-5"	2'-5"	6'-18"	8'-68"	6'-0"	10'-0"	1'-73"	4'-0"	5'-08"	8'-50"	11'-92"	15'-33"	1'-04"	0'-65.	1'-09.	1'-38.	1'-77.	0'-44.	0'-69.	0'-92.	1'-18.	27	30	34	38
	30"	—	—	4'-3"	2'-5"	8'-25"	10'-75"	8'-0"	12'-0"	2'-00"	4'-0"	5'-58"	9'-83"	14'-08"	18'-33"	1'-04"	0'-81.	1'-34.	1'-90.	2'-44.	0'-53.	0'-88.	1'-25.	1'-60.	29	34	39	44
	36"	—	—	5'-1"	2'-5"	10'-31"	12'-81"	10'-0"	14'-0"	2'-24"	4'-0"	6'-08"	11'-17"	16'-25"	21'-33"	1'-04"	0'-97.	1'-68.	2'-41.	3'-14.	0'-62.	1'-07.	1'-53.	2'-00.	32	38	44	49
	42"	—	—	6'-0"	2'-5"	12'-37"	14'-87"	12'-0"	16'-0"	2'-45"	4'-0"	6'-58"	12'-58"	18'-58"	24'-58"	1'-04"	1'-13.	2'-08.	3'-06.	4'-02.	0'-71.	1'-30.	1'-92.	2'-52.	35	42	48	55
	48"	—	—	6'-9"	2'-5"	14'-43"	16'-93"	14'-0"	18'-0"	2'-65"	4'-0"	7'-08"	13'-83"	20'-58"	27'-33"	1'-04"	1'-29.	2'-49.	3'-69.	4'-88.	0'-80.	1'-54.	2'-29.	3'-02.	38	46	53	60
	54"	—	—	7'-8"	2'-5"	16'-49"	18'-99"	16'-0"	20'-0"	2'-83"	4'-0"	7'-58"	15'-25"	22'-92"	30'-58"	1'-04"	1'-48.	2'-98.	4'-47.	5'-98.	0'-91.	1'-83.	2'-74.	3'-67.	41	49	58	66
	60"	—	—	8'-6"	2'-5"	18'-55"	21'-05"	18'-0"	22'-0"	3'-02"	4'-0"	8'-08"	16'-58"	25'-08"	33'-58"	1'-04"	1'-66.	3'-49.	5'-31.	7'-13.	1'-02.	2'-15.	3'-27.	4'-39.	44	53	63	72
	18"	13"	23"	2'-6"	2'-5"	1'-30"	3'-80"	1'-17"	4"	1'-39"	2'-8"	4'-50"	7'-08"	9'-50"	12'-08"	1'-04"	0'-41.	0'-61.	0'-81.	1'-02.	0'-33.	0'-49.	0'-65.	0'-81.	21	23	26	29
	21"	15"	29"	2'-10"	2'-5"	1'-68"	4'-17"	1'-50"	5"	1'-76"	3'-5"	4'-83"	7'-67"	10'-50"	13'-33"	1'-04"	0'-43.	0'-66.	0'-88.	1'-10.	0'-33.	0'-50.	0'-67.	0'-83.	22	25	28	31
	28"	20"	36"	3'-5"	2'-5"	2'-61"	5'-11"	2'-33"	6"	2'-22"	3'-7"	5'-42"	8'-83"	12'-25"	15'-67"	1'-04"	0'-51.	0'-78.	1'-06.	1'-33.	0'-37.	0'-56.	0'-76.	0'-95.	23	27	30	34
	35"	24"	44"	4'-0"	2'-5"	3'-35"	5'-85"	3'-00"	7"	2'-55"	4'-3"	6'-00"	10'-00"	14'-00"	18'-00"	1'-04"	0'-57.	0'-90.	1'-22.	1'-55.	0'-40.	0'-62.	0'-84.	1'-07.	24	29	33	38
	42"	29"	49"	4'-9"	2'-5"	4'-29"	6'-79"	3'-83"	8"	2'-97"	4'-2"	6'-58"	11'-33"	16'-08"	20'-83"	1'-04"	0'-64.	1'-04.	1'-46.	1'-87.	0'-43.	0'-70.	0'-98.	1'-25.	26	31	37	42
	49"	33"	56"	5'-6"	2'-5"	5'-03"	7'-53"	4'-50"	9"	3'-34"	4'-5"	7'-17"	12'-67"	18'-17"	23'-67"	1'-04"	0'-73.	1'-23.	1'-72.	2'-22.	0'-49.	0'-82.	1'-15.	1'-48.	28	34	40	46
	57"	38"	64"	6'-4"	2'-5"	5'-96"	8'-46"	5'-33"	10"	3'-69"	4'-7"	7'-83"	14'-17"	20'-50"	26'-83"	1'-04"	0'-83.	1'-44.	2'-04.	2'-64.	0'-55.	0'-95.	1'-35.	1'-75.	29	36	44	51
	64"	43"	71"	7'-1"	2'-5"	6'-89"	9'-39"	6'-17"	11"	3'-89"	4'-8"	8'-42"	15'-50"	22'-58"	29'-67"	1'-04"	0'-95.	1'-67.	2'-39.	3'-11.	0'-62.	1'-10.	1'-57.	2'-05.	31	39	47	55
	71"	47"	79"	7'-10"	2'-5"	7'-64"	10'-14"	6'-83"	12"	4'-14"	5'-2"	9'-00"	16'-83"	24'-67"	32'-50"	1'-04"	1'-05.	1'-89.	2'-74.	3'-57.	0'-69.	1'-24.	1'-80.	2'-35.	33	41	50	59
	17"	13"	24"	2'-6"	2'-5"	2'-41"	4'-91"	2'-33"	7"	1'-39"	4'-7"	4'-50"	7'-00"	9'-50"	12'-00"	1'-04"	0'-48.	0'-71.	0'-95.	1'-18.	0'-38.	0'-56.	0'-74.	0'-92.	22	25	27	30
	21"	15"	29"	2'-10"	2'-5"	3'-09"	5'-59"	3'-00"	8"	1'-76"	5'-0"	4'-83"	7'-67"	10'-50"	13'-33"	1'-04"	0'-52.	0'-80.	1'-09.	1'-31.	0'-39.	0'-59.	0'-80.	0'-95.	23	26	29	32
	28"	20"	36"	3'-5"	2'-5"	4'-81"	7'-31"	4'-67"	9"	2'-22"	4'-3"	5'-42"	8'-83"	12'-25"	15'-67"	1'-04"	0'-61.	0'-92.	1'-27.	1'-59.	0'-43.	0'-64.	0'-88.	1'-10.	25	29	33	37
	35"	24"	44"	4'-0"	2'-5"	6'-18"	8'-68"	6'-00"	11"	2'-55"	5'-0"	6'-00"	10'-00"	14'-00"	18'-00"	1'-04"	0'-73.	1'-14.	1'-55.	1'-97.	0'-49.	0'-77.	1'-05.	1'-33.	28	32	37	41
	42"	29"	49"	4'-9"	2'-5"	7'-90"	10'-40"	7'-67"	12"	2'-97"	4'-3"	6'-58"	11'-33"	16'-08"	20'-83"	1'-04"	0'-87.	1'-39.	1'-92.	2'-45.	0'-57.	0'-92.	1'-27.	1'-62.	30	35	41	46
	49"	33"	56"	5'-6"	2'-5"	9'-28"	11'-78"	9'-00"	14"	3'-34"	5'-0"	7'-17"	12'-67"	18'-17"	23'-67"	1'-04"	1'-00.	1'-66.	2'-30.	2'-96.	0'-65.	1'-08.	1'-50.	1'-93.	32	38	45	51
	57"	38"	64"	6'-4"	2'-5"	11'-00"	13'-50"	10'-67"	16"	3'-63"	5'-2"	7'-83"	14'-17"	20'-50"	26'-83"	1'-04"	1'-18.	2'-00"	2'-82"	3'-64.	0'-76.	1'-30.	1'-83.	2'-37.	35	42	49	56
	64"	43"	71"	7'-1"	2'-5"	12'-71"	15'-21"	12'-33"	17"	3'-89"	4'-7"	8'-42"	15'-50"	22'-58"	29'-67"	1'-04"	1'-38.	2'-39.	3'-38.	4'-38.	0'-87.	1'-55.	2'-18.	2'-83.	38	45	53	61
	71"	47"	79"	7'-10"	2'-5"	14'-09"	16'-59"	13'-67"	19"	4'-14"	5'-3"	9'-00"	16'-83"	24'-67"	32'-50"	1'-04"	1'-50.	2'-65.	3'-81.	4'-97.	0'-95.	1'-68.	2'-43.	3'-17.	40	48	57	66

CORRUGATED METAL PIPE DIMENSIONS AND QUANTITIES

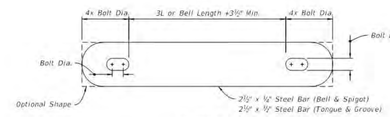
LAST REVISION	DESCRIPTION:			INDEX	SHEET
11/01/19		FDOT FY 2023-24 STANDARD PLANS	CROSS DRAIN MITERED END SECTION	430-021	5 of 6



TONGUE AND GROOVE CONNECTOR DETAIL



BELL AND SPIGOT CONNECTOR DETAIL



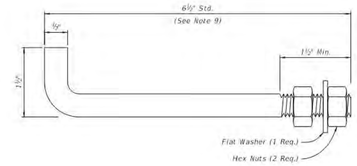
STEEL BAR

NOTES:

1. Use galvanized steel for all bars, bolts, nuts, and washers.
2. Two connectors required per joint, located 60" right and left of bottom center of pipe.
3. Bolt holes in pipe shell are to be drilled.

Bolt Dia.	Pipe Dia.
¾"	15" to 36"
⅞"	42" to 72"

CONCRETE PIPE CONNECTION DETAIL
DETAIL "C"



NOTES:

1. Anchors required for CMP only.
2. Use galvanized steel for all anchors, nuts, and washers.
3. Bend anchor where required to center in concrete slab.
4. Repair damaged surfaces after bending.
5. Space anchors a distance equal to four (4) corrugations.
6. Place the anchors in the outside crest of corrugation.
7. Place flat washers on inside wall of pipe.
8. Drill or punch holes in the mitered end pipe; burning not permitted.
9. A 6" x ½" bolt substitution is permitted.

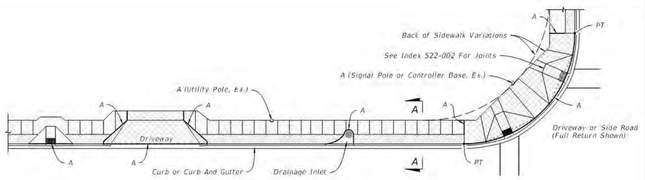
CORRUGATED METAL PIPE (CMP) ANCHOR DETAIL
DETAIL "D"

CONCRETE PIPE CONNECTION AND CORRUGATED PIPE ANCHOR DETAILS

LAST REVISION	DESCRIPTION:			INDEX	SHEET
11/01/19		FDOT FY 2023-24 STANDARD PLANS	CROSS DRAIN MITERED END SECTION	430-021	6 of 6

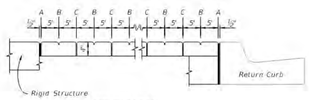
GENERAL NOTES:

1. Construct sidewalks in accordance with Specification 522. Use 6" concrete for Sidewalks and Curb Ramps Located within Curb Returns (See Plan View). Install all other concrete with thickness as shown, unless otherwise detailed in the Plans.
2. Include detectable warnings on sidewalk curb ramps in accordance with Index 522-002.
3. For Driveways see Index 522-003.
4. Bond breaker material can be any impermeable coated or sheet membrane or preformed material having a thickness of not less than 6 mils and not more than ½".
5. Construct sidewalks with Edge Beam through the limits of any surface mounted Pedestrian/Bicycle Railing or Pipe Guiderail shown in the plans. (See RAILING DETAIL)

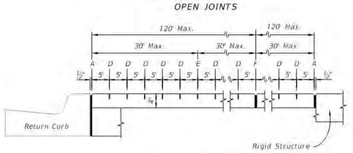


PLAN

SIDEWALK WITH UTILITY STRIP



OPEN JOINTS

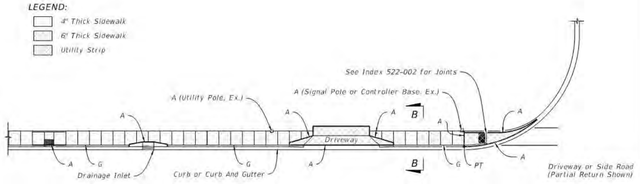


SAWED JOINTS

LONGITUDINAL SECTION

LEGEND:

4" Thick Sidewalk
6" Thick Sidewalk
Utility Strip



PLAN

SIDEWALK WITHOUT UTILITY STRIP

LEGEND:

A- ½" Expansion Joints (Preformed Joint Filler) between the sidewalk and: driveways, sidewalk-intersections, and all other fixed objects (e.g. drainage inlets and utility poles).

B- ⅛" Dummy Joints, Tooled

C- ½" Formed Open Joints

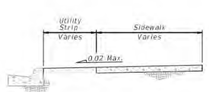
D- 3/16" Saw Cut Joints, 1½" Deep (within 96 hours) Max. 5' Centers

E- 3/16" Saw Cut Joints, 1½" Deep (within 12 hours) Max. 30' Centers Joint(s) Required When Length Exceeds 30'

F- ½" Expansion Joint When Run Of Sidewalk Exceeds 120'. Intermediate locations when called for in the plans or at locations as directed by the Engineer.

G- Cold Joint With Bond Breaker, Tooled

SIDEWALK JOINTS



SECTION A-A

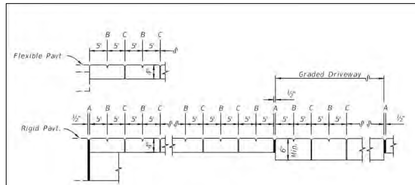
SECTION B-B

Varies Based on Railing Used

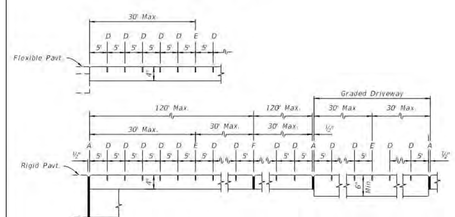
RAILING DETAIL

GENERAL NOTES AND CONCRETE SIDEWALK ON CURBED ROADWAYS

LAST REVISION	DESCRIPTION:			INDEX	SHEET
11/01/18		FDOT FY 2023-24 STANDARD PLANS	CONCRETE SIDEWALK	522-001	1 of 2



OPEN JOINTS



SAWED JOINTS

LONGITUDINAL SECTION

LEGEND:

A- ½" Expansion Joints (Preformed Joint Filler) between the sidewalk and driveways, sidewalk-intersections, and all other fixed objects (e.g. drainage inlets and utility poles).

B- ⅛" Dummy Joints, Tooled

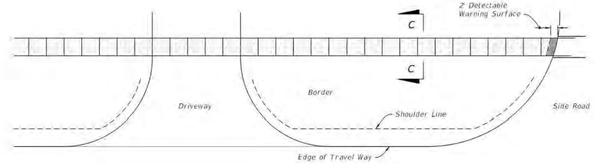
C- ½" Formed Open Joints

D- 3/16" Saw Cut Joints, 1½" Deep (within 96 hours) Max. 5' Centers

E- 3/16" Saw Cut Joints, 1½" Deep (within 12 hours) Max. 30' Centers Joint(s) Required When Length Exceeds 30'

F- ½" Expansion Joint When Run Of Sidewalk Exceeds 120'. Intermediate locations when called for in the plans or at locations as directed by the Engineer.

SIDEWALK JOINTS

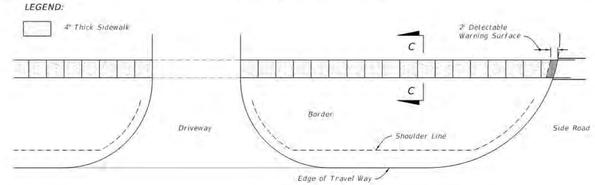


PLAN

CONTINUOUS SIDEWALK

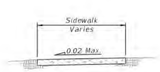
LEGEND:

4" Thick Sidewalk



PLAN

DISCONTINUOUS SIDEWALK



SECTION C-C

CONCRETE SIDEWALK ON FLUSH SHOULDER ROADWAYS

LAST REVISION	DESCRIPTION:			INDEX	SHEET
11/01/18		FDOT FY 2023-24 STANDARD PLANS	CONCRETE SIDEWALK	522-001	2 of 2

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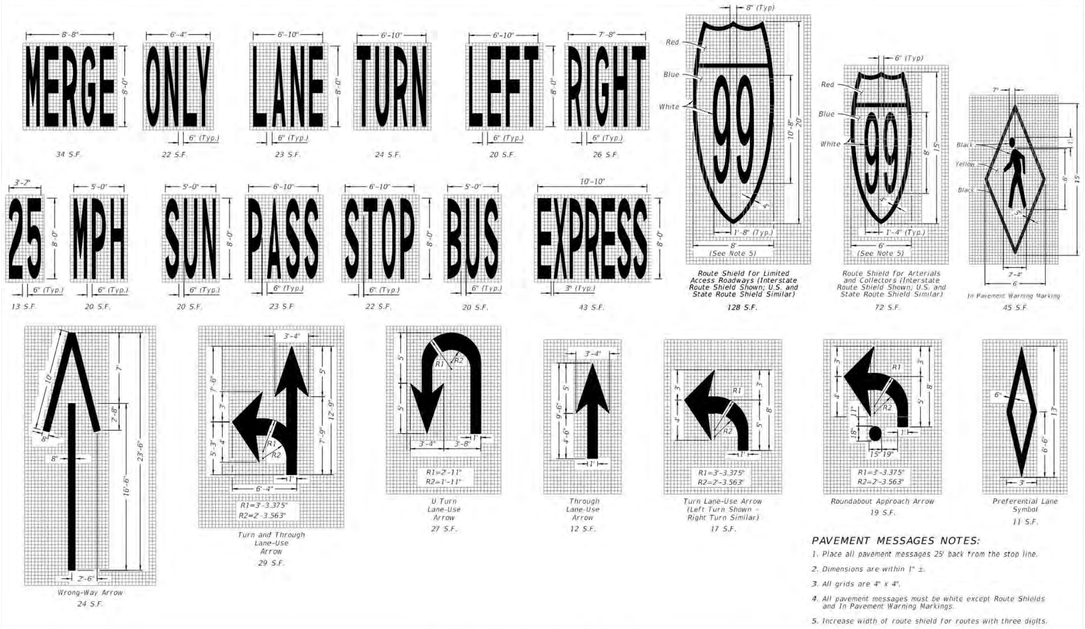
ARMANDO L. CABRE, LICENSE No. 66807, STATE OF FLORIDA, PROFESSIONAL ENGINEER

PLAN STATUS

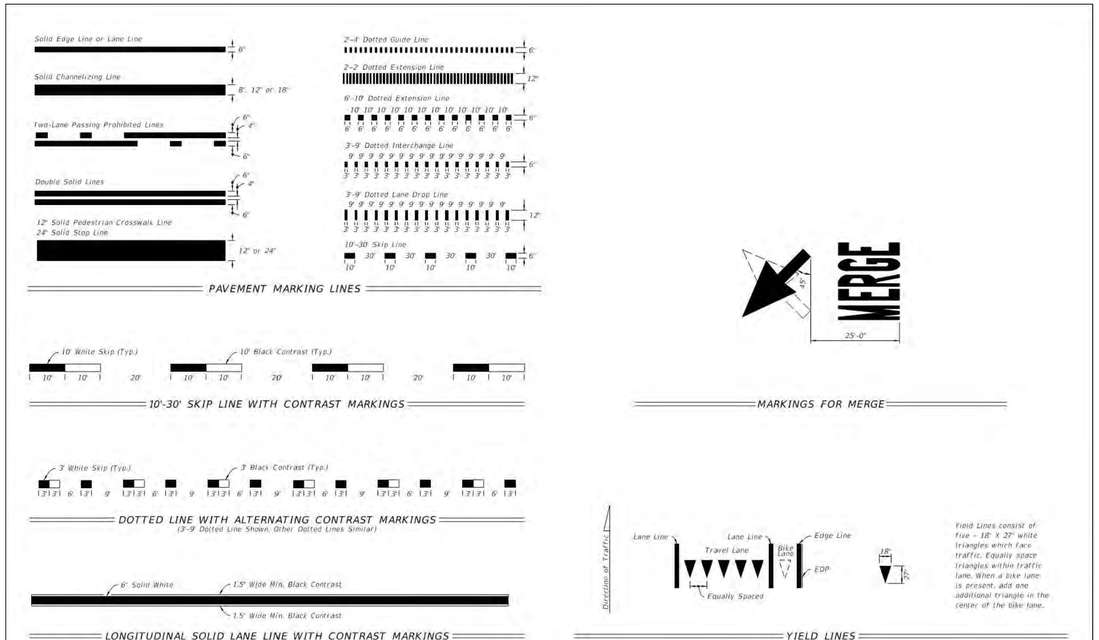
REV	DATE	COMMENT
1	09/13/22	AHJ COMMENTS
2	12/23/22	AHJ COMMENTS
3	03/06/23	AHJ COMMENTS

KSP DESIGN	KSP DRAWN	ALC CHKD
SCALE 1" = 20'		
JOB No. 011046-01-001		
DATE 04/13/2022		

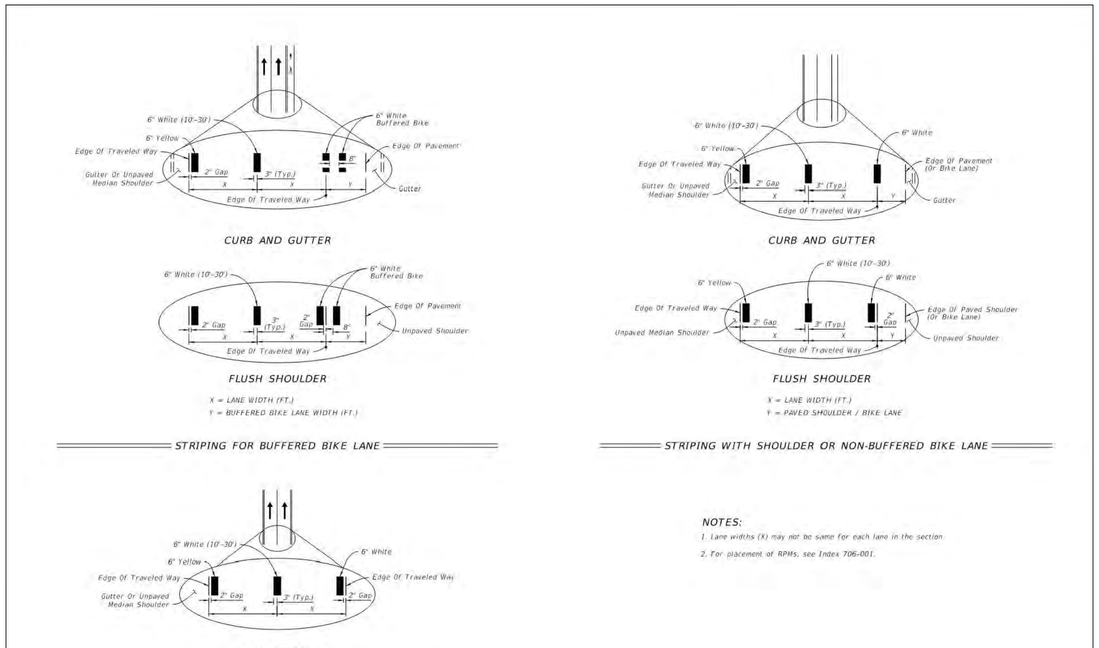
SHEET C7.8



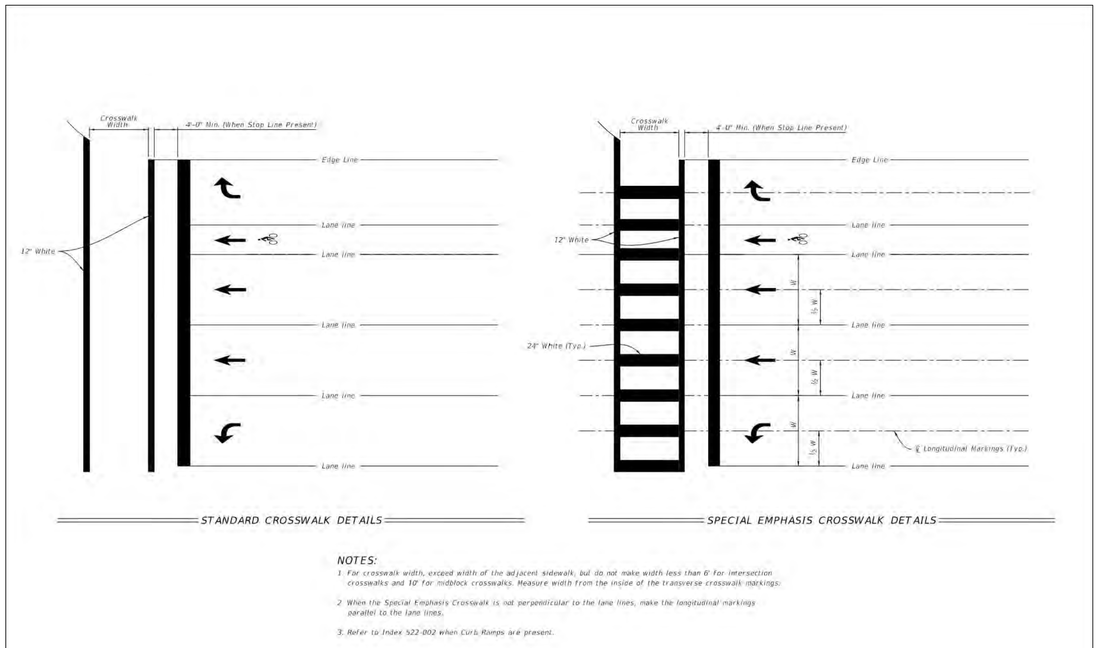
LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2023-24 STANDARD PLANS	PAVEMENT MARKINGS	INDEX	SHEET
11/01/21						711-001	1 of 13



LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2023-24 STANDARD PLANS	PAVEMENT MARKINGS	INDEX	SHEET
11/01/22						711-001	2 of 13



LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2023-24 STANDARD PLANS	PAVEMENT MARKINGS	INDEX	SHEET
11/01/21						711-001	3 of 13



LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2023-24 STANDARD PLANS	PAVEMENT MARKINGS	INDEX	SHEET
11/01/21						711-001	9 of 13

THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY BOWMAN SHALL BE WITHOUT LIABILITY TO BOWMAN.

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PROFESSIONAL ENGINEER

PLAN STATUS

REV	DATE	COMMENT
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2	12/23/22	AHJ COMMENTS
3	03/06/23	AHJ COMMENTS

KSP DESIGN	KSP DRAWN	ALC CHKD
SCALE 1" = 20'		
JOB No. 011046-01-001		
DATE 04/13/2022		

SHEET C7.9

GENERAL NOTES:

1. Cross Slopes and Grades:

   A. Sidewalk, ramp, and landing slopes (i.e. 0.02, 0.05, and 1:12) shown in this Index are maximums. With approval of the Engineer, provide the minimum feasible slope where the requirements cannot be met.

   B. Landings must have cross-slopes less than or equal to 0.02 in any direction.

   C. Maintain a single longitudinal slope along each side of the curb ramp. Ramp slopes are not required to exceed 15 feet in length.

   D. Joints permitted at the location of Slope Breaks. Otherwise locate joints in accordance with Index 522-001. No joints are permitted within the ramp portion of the Curb Ramp.

2. Curb, Curb and Gutter and/or Sidewalk:

   A. Refer to Index 522-001 for concrete thickness and sidewalk details.

   B. Remove any existing curb, curb and gutter, or sidewalk to the nearest joint beyond the curb transition or to the extent that no remaining section is less than 5 feet long.

   C. Width of Curb Ramp is 4'-0" minimum. Match sidewalk or Shared Use Path width as shown in the Plans.

3. Curb Ramp Alpha-Identification:

   A. Sidewalk curb ramp alpha-identifications (e.g. CR-A) are provided for reference purposes in the Plans.

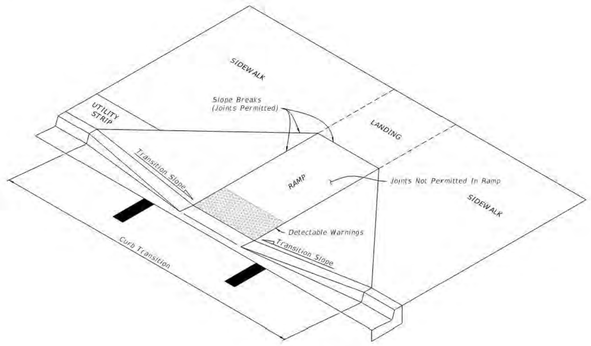
   B. Alpha-ideotifications CR-I and CR-J are intentionally omitted.

4. Detectable Warnings:

   A. Install detectable warnings in accordance with Specification 527.

   B. Place detectable warnings across the full width of the ramp or landing, to a minimum depth of 2 feet measured perpendicular to the curb line and no greater than 5 feet from the back of the curb or edge of pavement.

   C. If detectable warnings are shown in the Plans on slopes greater than 5%, align the truncated domes with the centerline of the ramp; otherwise, the truncated domes are not required to be aligned.



CURB RAMP NOMENCLATURE

LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2023-24 STANDARD PLANS	DETECTABLE WARNINGS AND SIDEWALK CURB RAMPS	INDEX	SHEET
11/01/21						522-002	1 of 7

THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY BOWMAN SHALL BE WITHOUT LIABILITY TO BOWMAN.

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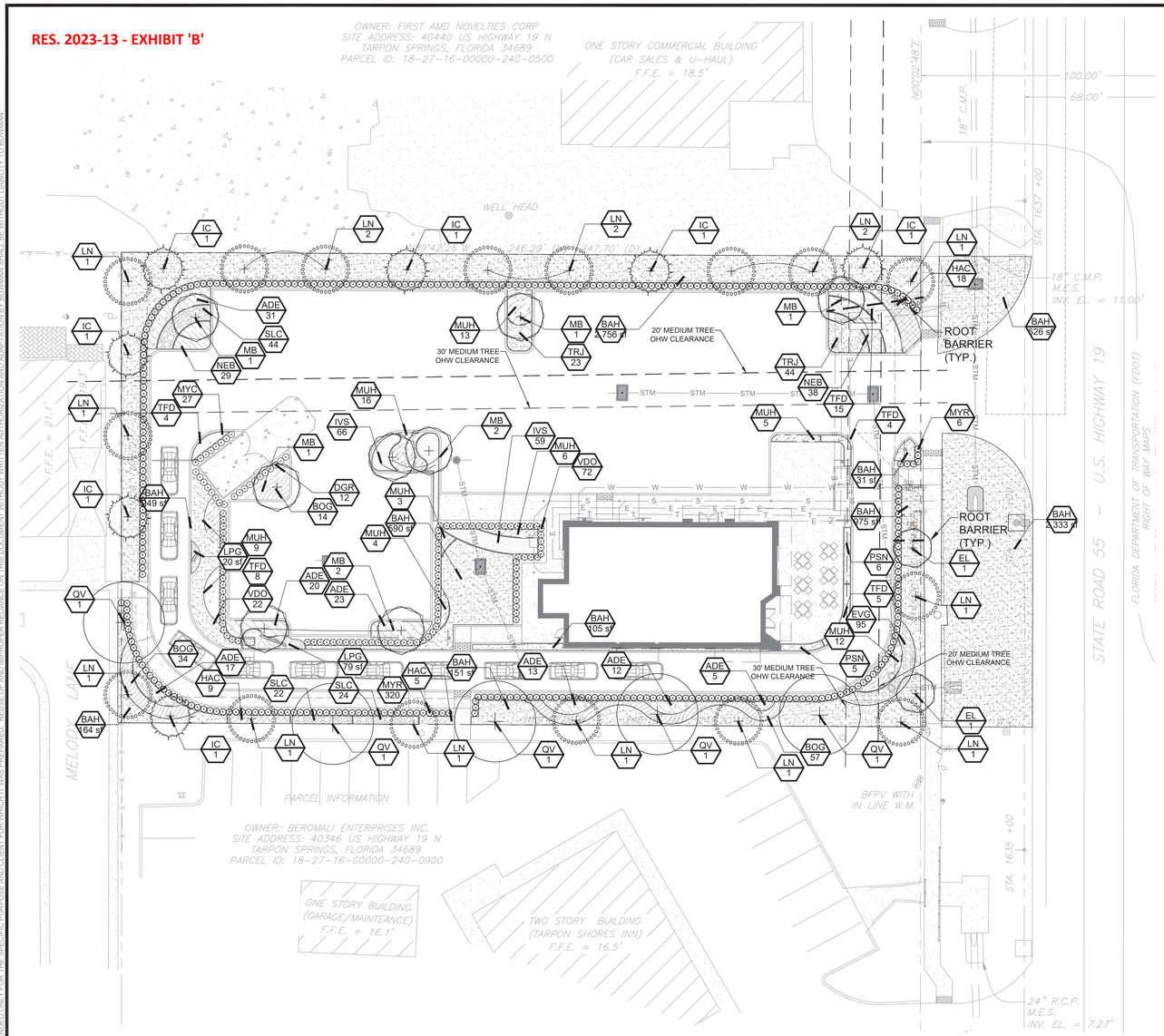
PLAN STATUS

REV	DATE	COMMENT
1	09/13/22	AHJ COMMENTS
2	12/23/22	AHJ COMMENTS
3	03/06/23	AHJ COMMENTS

KSP DESIGN	KSP DRAWN	ALC CHKD
SCALE	1" = 20'	
JOB No.	011046-01-001	
DATE	04/13/2022	

SHEET C7.10

RES. 2023-13 - EXHIBIT 'B'



NOTE:
ALL AREAS WITHIN CITY OR FDOT RIGHT-OF-WAY DISTURBED BY CONSTRUCTION MUST BE RESTORED AND SODDED

PLANT SCHEDULE

SHADE TREES	QTY	COMMON NAME	BOTANICAL NAME	SPECIFICATIONS	CAL/DBH	HEIGHT	SPREAD	NATIVE	XERIC	REMARKS
QV	5	Southern Live Oak	Quercus virginiana	B & B	4"Cal	16` Ht	8`	Yes	High	6-7' CT

UNDERSTORY TREES	QTY	COMMON NAME	BOTANICAL NAME	SPECIFICATIONS	CAL/DBH	HEIGHT	SPREAD	NATIVE	XERIC	REMARKS
EL	2	Japanese Blueberry Tree	Elaeocarpus decipiens	B & B	2" DBH	10` Ht	4`	No	High	4` CT; STD
IC	7	Dahoon Holly	Ilex cassine	NA	2" DBH	12` Ht	5`	No	Medium	5` CT
LN	16	Natchez Crape Myrtle	Lagerstroemia indica x fauriei 'Natchez'	B & B	2"Cal	10` Ht	5`	No	Medium	
MB	8	Bracken`s Magnolia	Magnolia grandiflora `Brackens`	NA	3" Cal	12` Ht	4`	Yes	Medium	4` CT

SHRUBS	QTY	COMMON NAME	BOTANICAL NAME	SPECIFICATIONS	SPACING	HEIGHT	SPREAD	NATIVE	XERIC	REMARKS
MYC	27	Wax Myrtle	Myrica cerifera	NA	30"	18"	18"	Yes	High	
MYR	330	Compact Simpson`s Stopper	Myrcianthes fragrans `compacta`	NA	24"	18"	18"	Yes	High	Full to Base
VDO	94	Walter`s Viburnum	Viburnum obovatum `Densa`	NA	30"	36"	24"	Yes	High	

SHRUB AREAS	QTY	COMMON NAME	BOTANICAL NAME	SPECIFICATIONS	SPACING	HEIGHT	SPREAD	NATIVE	XERIC	REMARKS
ADE	121	'Formosa' azalea	Azalea indica 'Formosa'	n/a	24"	16"	12"	No	Medium	
HAC	37	Firebush	Hamelia patens	n/a	30"	18"	16-18"	Yes	High	
MUH	68	Pink Muhly Grass	Muhlenbergia capillaris	n/a	30"	16-18"	14-16"	Yes	High	
PSN	11	Wild Coffee	Psychotria nervosa	n/a	30"	18"	16-18"	Yes	High	
SLC	90	Scarlet Sage	Salvia coccinea	n/a	18"	16-18"	16-18"	Yes	High	Full to base
TFD	36	Fakahatchee Grass	Tripsacum dactyloides	n/a	36"	30"	24-30"	Yes	High	

GROUND COVERS	QTY	COMMON NAME	BOTANICAL NAME	SPECIFICATIONS	SPACING	HEIGHT	SPREAD	NATIVE	XERIC	REMARKS
BOG	105	Compact Bougainvillea	Bougainvillea x `Helen Johnson`	n/a	24"	12"	12"	No	High	Full
DGR	12	Butterfly Iris	Dietes grandiflora	n/a	24"	16"-18"	12-14"	Yes	High	
EVG	95	Dwarf Morning Glory	Evolvulus glomeratus `Blue Daze`	n/a	15"	8-10"	10-12"	No	High	
IVS	125	Schillings Yaupon Holly	Ilex vomitoria `Schillings`	n/a	18"	8-10"	10-12"	Yes	High	
NEB	67	Boston Fern	Nephrolepis exaltata	n/a	20"	10-12"	12"	Yes	High	
TRJ	67	Confederate Jasmine	Trachelospermum jasminoides	n/a	20"	6"	10-12"	No	Medium	

MISCELLANEOUS	QTY	COMMON NAME	BOTANICAL NAME	SPECIFICATIONS	SPACING	HEIGHT	SPREAD	NATIVE	XERIC	REMARKS
LPG	99 sf	White River Rock	RIVER ROCK	n/a						3-8" Diameter

SOD/SEED	QTY	COMMON NAME	BOTANICAL NAME	SPECIFICATIONS	SPACING	HEIGHT	SPREAD	NATIVE	XERIC	REMARKS
BAH	7,976 sf	Argentine Bahia Grass	Paspalum notatum `Argentine`	sod				No	High	

TARPON SPRINGS, FL - LANDSCAPE CODE COMPLIANCE CHART
ARTICLE IX: DEVELOPMENT STANDARDS

Canopy Trees: 3" Cal. in Bufferyards, 2" Cal. in VUA, 12' ht. Min.
Street trees: 2" Cal., 12' ht., 7' ct Min.
Understory Trees: 10' ht. Min.
Palms: 8' ct. Min. in Bufferyards
Shrubs: Evergreen Medium or Large, 36" Min. in Bufferyards

GROSS SITE AREA: 35,701.6 SF (0.82 AC)
ZONING DISTRICT: HB Highway Business

		REQUIRED	PROVIDED
Sec.134.05. LANDSCAPE BUFFERS			
A minimum 8 foot wide buffer strip planted with 1 tree every 25 feet and a continuous screen maintained at a minimum height of between 4 and ½ and 6 feet above grade. The required screen shall be spaced at 5 feet on center. The remaining areas shall be surfaced with grass, ground covers, or with at least 2 inches of wood chips or bark.			
NORTH: 246.1 lf	*(246.1 lf /25)*	**10 TREES**	**10 TREES**
SOUTH: 246.2 lf	*(246.2 lf /25)*	**10 TREES**	**10 TREES**
WEST: 145 lf	*(145 lf /25)*	**6 TREES**	**6 TREES**
SEC.134.05 PLANTING ALONG R-O-W			
Where a new parking lot abuts a public right-of-way or private street a minimum buffer strip 8 feet wide is required. This buffer strip shall be planted with 1 tree every 30 linear feet and a continuous hedge maintained at a maximum height of 3 feet above grade. The required shrubbery shall be spaced at 30 inches on center. The remaining areas shall be surfaced with grass, ground covers, or with at least 2 inches of wood chip or bark.			
EAST: 144.9- 25 lf of drive = 119.9 lf	*(119.9 lf /30)*	**4 TREES**	**4 TREES**
SEC.134.05. LANDSCAPING IN PARKING LOTS/FOUNDATION PLANTINGS			
All internal landscaped areas shall be no less than 8 feet wide and contain at least 1 tree.	*(7) PARKING ISLANDS*	**8 TREES**	***8 TREES***
SEC.134.04 TREE PROTECTION AND PRESERVATION			
If any protected trees are removed from a site governed by this section those trees shall be replaced using the following minimum tree planting requirements: (One for each 2,000 square feet, or portion thereof, in excess of 15,000 square feet.)	35,701.6 sqft/2000sqft	***18 TREES***	**38 TREES**
	TOTALS	**38 TREES**	**38 TREES**

Bowman

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SUITE 111
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WWW.BOWMAN.COM

LANDSCAPE PLAN
BLACK RIFLE COFFEE
40390 US HWY 19 N,
TARPON SPRINGS, FL 34689
CITY OF TARPON SPRINGS, FL
PINELLAS COUNTY, FL

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Digitally signed by Christopher W. Campbell
DN: E=ccampbell@bowman.com, CN=Christopher W. Campbell, O=Bowman Consulting Group, L=Melbourne, S=Florida, C=US
Date: 2023.05.25 09:48:55-05'00'

REGISTERED LANDSCAPE ARCHITECT CHRISTOPHER W. CAMPBELL LA 0001708 STATE OF FLORIDA

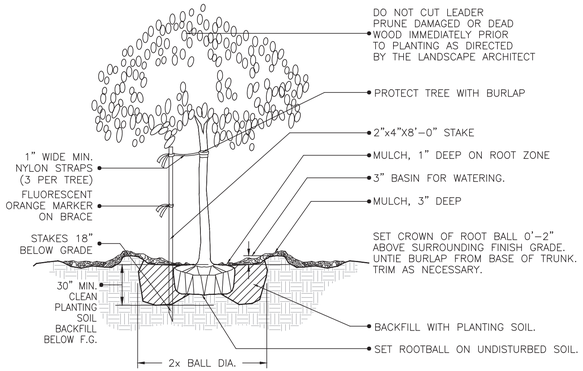
PLAN STATUS		
REV	DATE	COMMENT

GD	GD	CWC
DESIGN	DRAWN	CHKD

SCALE 1" = 20'
JOB No. 011046-01-001
DATE 04/13/2022
SHEET L-1

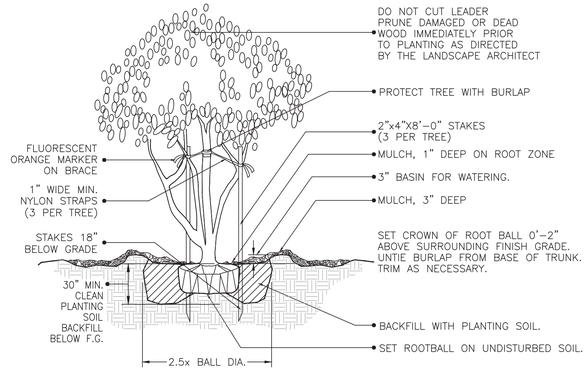
THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY BOWMAN SHALL BE WITHOUT LIABILITY TO BOWMAN.

USER: GDAMOS PLOT DATE/TIME: Jan. 31, 23 - 10:21:51 DRAWING: V:\011046 - Pursuit Developers\011046-01-001 (ENG) - Black Rifle Coffee - Tarpon Springs, FL\Engineering\Landscape\LANDSCAPE PLAN.dwg L-1



(2" cal. and under) SMALL TREE PLANTING DETAIL

N.T.S.



MULTI- TRUNK AND SMALL TREE (4" cal. and under) PLANTING DETAIL

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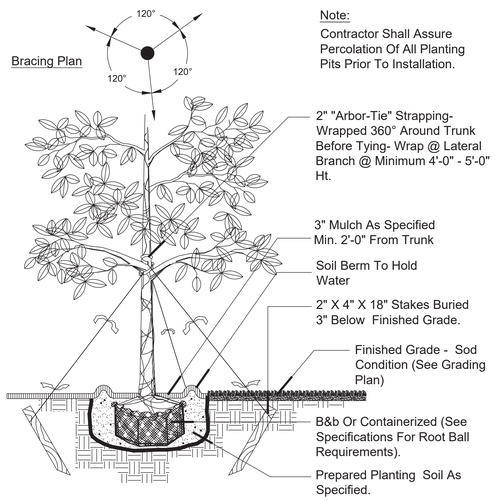
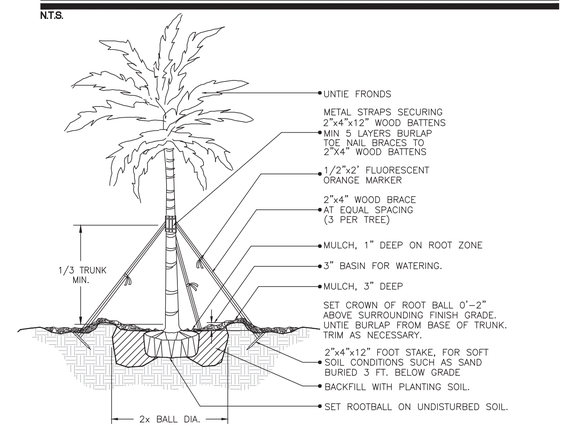


LARGE TREE PLANTING DETAIL

N.T.S.



LARGE PALM PLANTING DETAIL

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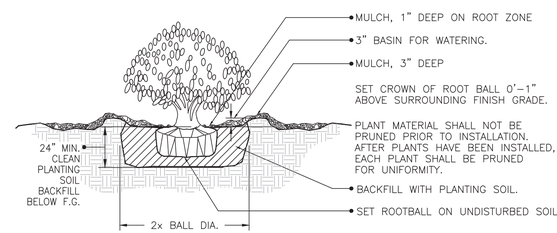
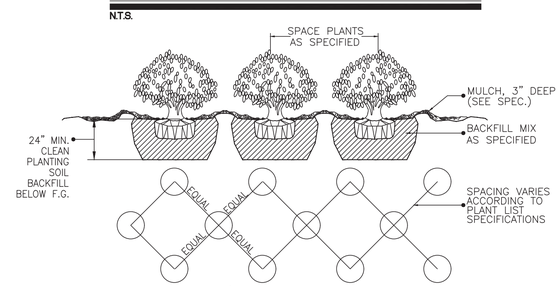


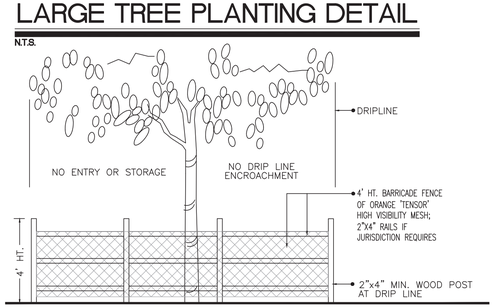
SHRUB PLANTING DETAIL

N.T.S.



SHRUB / GROUNDCOVER SPACING / PLANTING DETAIL

N.T.S.



TREE PRESERVATION BARRICADE FENCING DETAIL

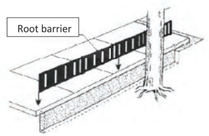
N.T.S.

Drawing B - Specifications for Root Barriers

Write the following root barrier specifications* on each copy of the plan drawing, or attach a copy of this sheet.

1. Panels of 0.085" thick polypropylene
2. Zipper joining system
3. Rounded edges
4. 24" depth
5. Anti-lift pads

*Contact the Landscape Division if you propose an equivalent root barrier option.



GENERAL LANDSCAPE NOTES:

1. PLANT MATERIAL: ALL PLANT MATERIAL SHALL BE FLORIDA #1 OR BETTER AS ESTABLISHED BY "GRADES AND STANDARDS FOR NURSERY PLANTS" OF THE STATE OF FLORIDA,(FL) . DEPARTMENT OF AGRICULTURE. UNLESS OTHERWISE NOTED, ALL TREES SHALL BE SINGLE LEADER, FIELD GROWNBALLED & BURLAPPED (F/GBB); CONTAINER GROWN TREES ARE NOT ACCEPTABLE & WILL BE IMMEDIATELY REJECTED UPON INSPECTION. ALL SUBSTITUTIONS AND CHANGES SHALL BE APPROVED IN WRITING PRIOR TO INSTALLATION. ANY DISCREPANCIES BETWEEN PLANS, SITE AND SPECIFICATIONS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE LANDSCAPE ARCHITECT, THE OWNER AND GOVERNING MUNICIPALITY. OPTIONS FOR ALTERNATE SPECIES BASED ON LACK OF STATEWIDE AVAILABILITY SHALL BE FURNISHED TO LANDSCAPE ARCHITECT OF RECORD A MINIMUM OF 30 DAYS BEFORE COMMENCEMENT OF CONSTRUCTION; LACK OF AVAILABILITY WILL BE VERIFIED USING THE LATEST INDUSTRY ACCEPTED PUBLICATION LISTINGS
2. ALL TREES, SHRUBS AND GROUNDCOVERS SHALL, AT A MINIMUM, BE OF THE SIZES AS SPECIFIED IN THE PLANT LIST. WHERE THERE IS A DISCREPANCY EITHER IN QUANTITIES, PLANT NAMES, SIZES OR SPECIFICATIONS BETWEEN THE PLAN OR PLANT LIST, THE PLAN TAKES PRECEDENCE. QUANTITIES LISTED ON THE THE PLANT LIST ARE FOR ESTIMATING PURPOSES. CONTRACTOR SHALL VERIFY ALL QUANTITIES. MULCH, TOPSOIL, FERTILIZER, ETC. SHALL BE INCLUDED IN THE UNIT COST OF THE PLANTS. THE PLANTING PLAN SHALL BE INSTALLED IN COMPLIANCE WITH ALL EXISTING CODES AND APPLICABLE DEED RESTRICTIONS.
3. SOD: ALL AREAS NOT USED FOR BUILDINGS, VEHICULAR USE AREAS, WALKS OR PLANTING BEDS SHALL BE GRASSED. GRASSING SHALL EXTEND TO ANY ABUTTING STREET PAVEMENT EDGE AND TO THE MEAN WATERLINE OF ANY ABUTTING CANAL, LAKE OR WATERWAY. STENOTAPHRUM SECUNDATUM, V. FLORITAM' UNLESS OTHERWISE NOTED (ST. AUGUSTINE SOLID SOD). PASPALUM NOTATUM 'ARGENTINE' ('ARGENTINE' BAHIA SOLID SOD) SHALL BE PROVIDED IN THE RIGHT-OF-WAYS & ON THE BANKS & BOTTOM OF DETENTION PONDS. OFFSITE DISTURBED AREAS SHALL BE RE-SODDED TO MATCH EXISTING. ALL AREAS DISTURBED BY CONSTRUCTION & NOT NOTED TO HAVE SHRUBS OR GROUNDCOVERS ON THE LANDSCAPE PLAN SHALL BE SODDED BY THE CONTRACTOR.
4. AMENDED PLANTING SOIL: PLANTING SOIL FOR USE IN BACK FILLING PLANTING HOLES SHALL BE FORTY PERCENT (40%) TOPSOIL AND SIXTY PERCENT (60%) SAND AND BE FERTILE, FRIABLE, AND OF A LOAMY CHARACTER, WITHOUT MIXTURE OF SUBSOIL MATERIALS, AND OBTAINED FROM A WELL-DRAINED, ARABLE SITE. IT SHALL CONTAIN THREE (3) TO FIVE (5) PERCENT DECOMPOSED ORGANIC MATTER AND SHALL BE FREE FROM HEAVY CLAY, COARSE SAND, STONES, LIME, LUMPS, PLANTS, ROOTS OR OTHER FOREIGN MATERIALS, OR NOXIOUS WEEDS. IT SHALL NOT CONTAIN TOXIC SUBSTANCES WHICH MAY BE HARMFUL TO PLANT GROWTH. PH RANGE SHALL BE 5.0 TO 7.0 INCLUSIVE. ALL PLANT MATERIAL TO RECEIVE PLANTING SOIL AS PER DETAILS & NOTES.
5. GENERAL RECOMMENDED PLANTING SOIL DEPTH: ALL TREES AND SHRUBS SHALL BE PLANTED WITH A MINIMUM OF 12" TOPSOIL AROUND AND BENEATH THE ROOTBALL. MINIMUM TOPSOIL SHALL BE 6" FOR GROUNDCOVER AREAS AND 2" FOR SODDED GRASS AREAS. THIS IS IN ADDITION TO A MINIMUM OF 10" OF UNDISTURBED OR NATIVE SOIL THAT WAS STORED/STOCKPILED ON SITE AND REUSED, OR CLEAN IMPORTED PLANTING SOIL WITH A RANGE OF ORGANIC MATTER BETWEEN 3-5% WITH NO STONES GREATER THAN AN INCH AND A HALF IN DIAMETER IN ANY DIRECTION. TOPSOIL DEPTHS PLUS PLANTING SOIL/EXISTING NATIVE SOIL MINIMUM DEPTHS ARE IN ADDITION TO ANY LIMESTONE/ LIMEROCK SUBGRADE, & IN ADDITION TO EXCAVATION WIDTHS REQUIRED FOR TREE PITS AS SHOWN ON THE PLANTING DETAILS. TREE PITS SHALL BE EXCAVATED & BACKFILLED TO A MINIMUM DEPTH OF 30".
6. CONTRACTOR TO NOTIFY "SUNSHINE STATE ONE CALL OF FLORIDA, INC." AT 1-800-432-4770 TWO FULL BUSINESS DAYS PRIOR TO DIGGING FOR UNDERGROUND UTILITY LOCATIONS.
7. CONTRACTOR IS RESPONSIBLE FOR DETERMINING ALL UTILITY LOCATIONS AND INSTALLING FACILITIES SO AS TO NOT CONFLICT. ALL DAMAGE TO EXISTING UTILITIES OR IMPROVEMENTS CAUSED BY CONTRACTOR SHALL BE REPAIRED AT NO ADDITIONAL COST TO THE OWNER. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS IN THE FIELD AND REPORT ANY DISCREPANCIES IN THE SITE SURVEY OR DISPOSITION PLAN TO THE OWNER & LANDSCAPE ARCHITECT OF RECORD PRIOR TO STARTING WORK. ANY OVERHEAD POWERLINES, UNDERGROUND UTILITIES, EXISTING TREES, ETC. IN CONFLICT WITH PROPOSED LANDSCAPING, INCLUDING FPL RIGHT ")TREE")RIGHT")PLACE GUIDELINES, SHALL BE REPORTED IMMEDIATELY TO THE OWNER'S REPRESENTATIVE OR DESIGNEE, AND TO THE LANDSCAPE ARCHITECT OF RECORD PRIOR TO SUBJECT PLANT MATERIAL INSTALLATION. FAILURE TO NOTIFY THE LANDSCAPE ARCHITECT & OWNER OF ANY DISCREPANCIES SHALL BE THE FULL RESPONSIBILITY OF THE CONTRACTOR AND WILL RESULT IN THE CONTRACTOR MOVING OR REPLACING THE PLANT MATERIAL AT THEIR OWN EXPENSE. LARGE MATURING SHADE TREES (THOSE THAT TYPICALLY GROW TO A SPREAD OR HEIGHT GREATER THAN 25 FEET) SHALL NOT BE PLANTED WITHIN 20 FEET OF ANY OTHER LARGE MATURING SHADE TREES UNLESS OTHERWISE SPECIFICALLY SHOWN ON THE LANDSCAPE PLAN. CONTRACTOR SHALL NOT WILLFULLY INSTALL PLANT MATERIALS IN CONFLICT WITH EXISTING OR PROPOSED SITE FEATURES.
8. ROOT BARRIERS SHALL BE PROVIDED FOR ADJACENT TO ALL PROPOSED UTILITIES. SEE ROOT BARRIER DETAIL ON THIS SHEET. PRODUCT SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS AND INSTRUCTIONS FOR ROOT CONTROL SYSTEMS. USE PRODUCT WHERE TREES ARE WITHIN TEN FEET (10') OR LESS OF HARDSCAPE SURFACES OR UTILITIES INCLUDING BUT NOT LIMITED TO CURBS, SIDEWALKS, STEPS, ROADWAYS, WATER & SEWER LINES. SMALL TREES THAT TYPICALLY MATURE AT 18' HEIGHT OR LESS REQUIRE ROOT BARRIERS WHERE SMALL TREES ARE WITHIN SIX FEET (6') OR LESS OF HARDSCAPE SURFACES OR UTILITIES. EXISTING TREES TO BE PRESERVED (THAT ARE NOT WITHIN TEN FEET (10') OF ANY NEW UTILITIES) DO NOT REQUIRE ROOT BARRIERS. ROOT BARRIERS ARE NOTREQUIRED WHERE PROPOSED TREES ARE LOCATED ADJACENT TO D-TYPE CURBING. THE USE OF ROOT BARRIERS SHALL BE MINIMUM 6' OVERALL LENGTH FROM THE CENTER OF THE TRUNK PARALLEL TO LINEAR FEATURES TO BE PROTECTED FOR SMALL TREES, OR MINIMUM 10' OVERALL LENGTH FROM THE CENTER OF THE TRUNK FOR MEDIUM TO LARGE MATURING SHADE TREES. MINIMUM LENGTHS OF ROOT BARRIER PRODUCTS MAY BE INCREASED BASED ON LENGTH GRAPHICALLY DEPICTED ON PLAN, OR AT THE DISCRETION OF THE LANDSCAPE INSPECTOR. IN PARKING LOT ISLANDS ONLY, THE ROOT BARRIER LENGTH SHALL BE PROVIDED FOR THE FULL LENGTH OF FEATURE (UTILITY, STRUCTURE, OR PAVEMENT) TO BE PROTECTED.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING FINAL GRADING OF ALL ASSOCIATED PLANTING AREAS. AFTER FINAL GRADE, AREA TO BE RAKED TO 6" DEPTH AND ALL ROCK AND FOREIGN INORGANIC MATERIALS REMOVED AND DISPOSED OF PROPERLY OFF-SITE.
10. ALL PLANTING HOLES TO BE HAND DUG EXCEPT WHERE MACHINE DUG HOLES WILL NOT ADVERSELY AFFECT OR DAMAGE UTILITIES OR IMPROVEMENTS. ALL TRENCES & EXCAVATION REQUIRED FOR INSTALLATION OF UNDERGROUND UTILITIES OR IRRIGATION EQUIPMENT ADJACENT TO EXISTING TREES & VEGETATION TO BE PRESERVED SHALL BE HAND-DUG CAREFULLY AS FAR FROM THE TRUNK AS POSSIBLE.
11. NO PLUNGING OF ANY TREE OR PALM WILL BE ACCEPTED. TRUNK FLARE SHALL BE SET 1-2" ABOVE FINISH GRADE FOR ALL TREES & PALMS. ALL PLANTS TO BE PLANTED AT THE NURSERY GRADE OR SLIGHTLY HIGHER.
12. CONTRACTOR SHALL STAKE & GUY ALL TREES AND PALMS AT TIME OF PLANTING AS PER THE APPROPRIATE DETAIL. CONTRACTOR IS RESPONSIBLE FOR THE MAINTENANCE AND/OR REPAIR OF ALL STAKING AND GUYING DURING WARRANTY PERIOD AND REMOVAL & DISPOSAL OF STAKING AFTER ESTABLISHMENT PERIOD.
13. FERTILIZER FOR GRASS AREAS SHALL BE NPK 16-4-8 @ 12.5 LBS/1000 S.F. OR 545 LBS/ACRE. NITROGEN 50% SLOW RELEASE FORM & FERTILIZER TO INCLUDE SECONDARY MICRONUTRIENTS.
14. WATERING: ALL PLANT MATERIAL SHALL BE WATERED IN AT TIME OF PLANTING IN ACCORDANCE WITH STANDARD NURSERY PRACTICES. IN ADDITION, CONTRACTOR WILL CONTINUE WATERING OF PLANT MATERIAL UNTIL SUBSTANTIAL COMPLETION AND AS NEEDED THEREAFTER FOR A PERIOD OF 2 MONTHS.
15. ALL PLANTS AND PLANTING MATERIALS INCLUDED UNDER THIS CONTRACT SHALL BE MAINTAINED BY WATERING, CULTIVATING, SPRAYING, AND ALL OTHER OPERATIONS (SUCH AS RE")STAKING OR REPAIRING GUY SUPPORTS) NECESSARY TO INSURE A HEALTHY CONDITION BY THE CONTRACTOR UNTIL CERTIFICATION OF ACCEPTABILITY BY THE OWNER OR OWNER'S DESIGNEE. MAINTENANCE AFTER THE CERTIFICATION OF AN ACCEPTABILITY SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS IN THIS SECTION. CONTRACTORS AREREQUESTED TO PROVIDE A BID ESTIMATE TO COVER LANDSCAPE AND IRRIGATION MAINTENANCE FOR A PERIODOF NINETY (90) CALENDAR DAYS COMMENCING AFTER ACCEPTANCE
16. GUARANTEE: ALL NEW PLANT MATERIAL SHALL BE GUARANTEED FOR 1 YEAR FROM TIME OF FINAL ACCEPTANCE OF PROJECT . ANY PLANT MATERIAL NOT IN A HEALTHY GROWING CONDITION WILL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER WITHIN 10 DAYS OF NOTIFICATION. FOR ALL REPLACEMENT PLANT MATERIAL, THE WARRANTY PERIOD SHALL BE EXTENDED AN ADDITIONAL 45 DAYS BEYOND THE ORIGINAL WARRANTY PERIOD. ALL TREES THAT LEAN OR ARE BLOWN OVER, CAUSED BY WINDS LESS THAN 75 MPH, WILL BE RE-SET AND BRACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. FINAL INSPECTION BY OWNER OR THEIR DESIGNEE AT THE END OF THE 1 YR GUARANTEE PERIOD SHALL INCLUDE PLANTING, CONSTRUCTION AND ALL OTHER INCIDENTAL WORK PERTAINING TO THIS CONTRACT. ANY PLANTS NOT MEETING THE CRITERIA OF HEALTHY, VIGOROUS, AND THRIVING AT THIS TIME, AND THAT HAVE NOT ALREADY BEEN REPLACED PREVIOUSLY UNDER SAID WARRANTY, SHALL BE SUBJECT TO THE SAME ONE (1) YEAR GUARANTEE (OR AS SPECIFIED BY THE OWNER IN WRITING) BEGINNING WITH THE TIME OF REPLACEMENT AND ENDING WITH THE SAME INSPECTION AND ACCEPTANCE HEREIN DESCRIBED.
17. THE SUCCESSFUL BIDDER SHALL FURNISH TO THE OWNER A UNIT PRICE BREAKDOWN FOR ALL MATERIALS.
18. NO PLANT MATERIAL WILL BE ACCEPTED SHOWING EVIDENCE OF CABLE, CHAIN MARKS, EQUIPMENT SCARS, OR OTHERWISE DAMAGED. PLANT MATERIAL WILL NOT BE ACCEPTED WHEN THE BALL OF EARTH SURROUNDING ITS ROOTS HAS BEEN CRACKED, BROKEN OR OTHERWISE DAMAGED.
19. ROOT-PRUNE ALL NEW TREES A MINIMUM OF (90) DAYS PRIOR TO PLANTING.
20. ALL LANDSCAPED AREAS WILL BE IRRIGATED BY AN UNDERGROUND, AUTOMATIC, RUST-FREE IRRIGATION SYSTEM PROVIDING 100% COVERAGE AND MINIMUM 50% SPRAY OVERLAP. THE SYSTEM SHALL BE MAINTAINED IN GOOD WORKING ORDER AND DESIGNED TO MINIMIZE WATER ON IMPERVIOUS SERVICES AND NOT OVERSPRAY WALKWAYS. A RAIN SENSOR DEVICE IS REQUIRED BY FL LAW & SHALL BE OPERATIONAL TO OVERRIDE THE IRRIGATION CYCLE OF THE SYSTEM WHEN ADEQUATE RAINFALL HAS OCCURRED.
21. ALL PLANT MATERIAL PLANTED WITHIN THE SIGHT DISTANCE TRIANGLE AREAS (SEE PLAN) SHALL PROVIDE UNOBSTRUCTED CROSS-VISIBILITY AT A HORIZONTAL LEVEL BETWEEN 30 INCHES AND 8 FEET ABOVE ADJACENT STREET GRADE.
22. NO CANOPY TREES SHALL BE PLANTED WITHIN 12 FEET OF A LIGHT POLE. NO PALM SPECIES SHALL BE PLANTED WITHIN 6 FEET OF A LIGHT POLE.
23. TREE PROTECTION BARRICADES SHALL BE PROVIDED BY LANDSCAPE CONTRACTOR AROUND EXISTING TREES THAT MAY BE IMPACTED BY THE PROPOSED CONSTRUCTION. PRIOR TO ANY CONSTRUCTION A TREE PROTECTION BARRICADE INSPECTION SHALL BE CONDUCTED BY THE LANDSCAPE ARCHITECT, OWNER OR GOVERNING MUNICIPALITY. REFER TO LANDSCAPE DETAIL FOR TREE PRESERVATION BARRICADE FENCING.
24. IN ALL PEDESTRIAN AREAS, ALL TREES AND PALMS SHALL BE MAINTAINED TO ALLOW FOR CLEAR PASSAGE AT AN 8 FOOT CLEAR TRUNK.
25. ALL LANDSCAPE MATERIAL SHALL BE SETBACK A MINIMUM OF 4' FROM ANY FIRE HYDRANT.
26. MULCH SHALL BE FROM SHREDDED WOOD DERIVED FROM MELALEUCA OR OTHER INVASIVE TREE SPECIES AND SHALL BE STERILIZED TO EFFECTIVELY ELIMINATE ALL SEEDS, SPORES, ETC. AND RENDER THEM BARREN. MULCH MATERIAL SHALL BE MOISTENED AT THE TIME OF APPLICATION TO PREVENT WIND DISPLACEMENT AND APPLIED AT A DEPTH OF THREE INCHES (3"). MULCH IS TO BE KEPT 2-3" FROM THE STEM OF ALL GROUNDCOVERS & 3-6' FROM THE TRUNK OF ALL TREES & PALMS. MULCH SHALL BE GRADE 'B' SHREDDED, AND SHALL BE APPLIED EVENLY AND SMOOTH TO PLANTED AREAS. NO RED OR COLORED MULCH SHALL BE ACCEPTED UNLESS SPECIFIED ACCORDINGLY. NO CYPRESS MULCH OR PINE BARK SHALL BE USED.
27. PLANTINGS SHALL BE INSTALLED IN COMPLIANCE WITH ALL EXISTING CODES AND APPLICABLE DEED RESTRICTIONS. WHERE DISCREPANCIES EXIST, JURISDICTIONAL CODES, STANDARDS, & REGULATIONS SHALL GOVERN.
28. ALL ABOVE GROUND EQUIPMENT SHALL BE VISUALLY SCREENED A MIN. OF 6" ABOVE THE TOP OF EQUIPMENT. BACKFLOW PREVENTERS SHALL BE PAINTED BLACK.

GENERAL EXISTING TREE NOTES:

1. TREE PROTECTION BARRICADES SHALL BE PROVIDED BY LANDSCAPE CONTRACTOR AROUND EXISTING TREES THAT MAY BE IMPACTED BY THE PROPOSED CONSTRUCTION. PRIOR TO ANY CONSTRUCTION A TREE PROTECTION BARRICADE INSPECTION SHALL BE CONDUCTED BY THE LANDSCAPE ARCHITECT, OWNER OR GOVERNING MUNICIPALITY. REFER TO LANDSCAPE DETAIL FOR TREE PRESERVATION BARRICADE FENCING. DURING PERIODS OF DEVELOPMENT & CONSTRUCTION, THE AREAS WITHIN THE DRIP-LINE OF PRESERVED TREES SHALL BE MAINTAINED AT THEIR ORIGINAL GRADE WITH PERVIOUS LANDSCAPE MATERIAL. WITHIN THESE AREAS, THERE SHALL BE NO TRENCHING OR CUTTING OF ROOTS, EXCEPT WHERE NECESSARY DUE TO PROPOSED CONSTRUCTION; NO FILL, COMPACTION, OR REMOVAL OF SOIL; & NO USE OF CONCRETE, PAINT, CHEMICALS, OR OTHER FOREIGN SUBSTANCES.
2. ALL ROOT-PRUNING & CANOPY TRIMMING ACTIVITIES SHALL BE CONDUCTED UNDER THE SUPERVISION OF AN ISA CERTIFIED ARBORIST UTILIZING BEST MANAGEMENT PRACTICES TO ENSURE VIABILITY OF EXISTING TREES; NO TREE CANOPY SHALL BE TRIMMED BY MORE THAN 25%. ALL TREES TO REMAIN SHALL BE STRUCTURALLY PRUNED ANY NECESSARY TREE TRIMMING SHALL BE IN ACCORDANCE WITH THE JURISDICTIONAL PRUNING STANDARDS PRIOR TO ANY CONSTRUCTION WORK TAKING PLACE.
3. ROOT-PRUNE ALL TREES IN CONSTRUCTION AREA FOR THIS SITE A MINIMUM OF (6) WEEKS PRIOR TO ANY CONSTRUCTION OR INSTALLATION OF UTILITIES. TRENCHES FOR PROPOSED UTILITIES SHALL BE HAND DUG AS FAR FROM THE TRUNK OF EXISTING TREES TO REMAIN AS POSSIBLE.
4. LIQUIDATED DAMAGES SHALL BE ASSESSED TO THE CONTRACTOR FOR TREES SPECIFIED TO BE PRESERVED THAT DIE OR ARE DAMAGED AS A RESULT OF IMPROPER TREE PROTECTION PROCEDURES &/OR CONSTRUCTION OPERATIONS. TREES KILLED OR DAMAGED SO THAT THEY ARE MISSHAPEN AND/OR UNSIGHTLY SHALL BE REPLACED AT THE COST TO THE CONTRACTOR OF ONE HUNDRED DOLLARS ($100) PER CALIPER INCH ON AN ESCALATING SCALE WHICH ADDS AN ADDITIONAL TWENTY PERCENT (20%) PER INCH OVER FOUR INCHES (4") CALIPER AS FIXED AND AGREED LIQUIDATED DAMAGES, OR AS MAY BE REQUIRED BY THE REGULATING GOVERNMENT AGENCY, WHICHEVER IS GREATER. CALIPER SHALL BE MEASURED AT BREAST HEIGHT OR FOUR FEET (4') ABOVE SURROUNDING GROUND.
5. IN ALL VEHICULAR USE AREAS, ALL TREES SHALL BE PRUNED & MAINTAINED TO ALLOW FOR CLEAR PASSAGE AT AN 8.5 FT HEIGHT. EXISTING TREES ADJACENT TO VEHICULAR USE AREAS MAY BE TRIMMED UP TO 13.5 FT ABOVE VEHICULAR USE AREAS.
6. ROOT BARRIERS SHALL BE PROVIDED FOR ADJACENT TO ALL PROPOSED UTILITIES. SEE ROOT BARRIER DETAIL ON THIS SHEET.
7. ALL INVASIVE EXOTIC PLANT MATERIALS SHALL BE REMOVED & ERADICATED FROM THE ENTIRE SITE & ADJACENT RIGHT-OF-WAYS IN PERPETUITY PRIOR TO FINAL LANDSCAPE CERTIFICATION. PERPETUAL MAINTENANCE IS REQUIRED TO PROHIBIT THE REESTABLISHMENT OF INVASIVE EXOTIC SPECIES THROUGHOUT THE SITE & WITHIN ALL PRESERVATION & RESTORATION AREAS.
8. ALL TREES SCHEDULED TO BE REMOVED OR THAT HAVE BEEN PREVIOUSLY REMOVED & HAVE REMAINING STUMPS SHALL BE CUT DOWN, STUMP GROUND, & SHALL HAVE ALL ROOTS REMOVED
9. DURING LAND ALTERATION & CONSTRUCTION ACTIVITIES, IT SHALL BE UNLAWFUL TO REMOVE VEGETATION BY GRUBBING OR TO PLACE SOIL DEPOSITS, DEBRIS, SOLVENTS, CONSTRUCTION MATERIALS, MACHINERY, OR OTHER EQUIPMENT OF ANY KIND WITHIN THE DRIPLINE OF A TREE TO REMAIN UNLESS OTHERWISE APPROVED BY THE JURISDICTION
10. UNLESS OTHERWISE NOTED, ALL SHRUBS, ACCENT PLANTS, & GROUNDCOVERS SHALL BE REMOVED FROM CONSTRUCTION AREA, EXCEPT NATIVE PLANTS IN PRESERVATION AREAS
11. VIABLE & ARABLE WELL DRAINED NATIVE SOILS SHALL BE LAB TESTED, STOCKPILED, AMENDED IF NECESSARY, & REUSED BENEATH IMPORTED TOPSOILS IN LANDSCAPE AREAS

Trunk diameter of tree	Irrigation schedule for vigor*	Irrigation schedule for survival
< 2"	Daily for 2 weeks, every other day for 2 months, then weekly until established.	Twice weekly for 2-3 months.
2" to 4"	Daily for 1 month, every other day for 3 months, then weekly until established.	Twice weekly for 3-4 months.
Over 4"	Daily for 6 weeks, every other day for 5 months, then weekly until established.	Twice weekly for 4-5 months.

IRRIGATION SCHEDULE FOR NEW TREES BASED ON UF/IFAS ENH857

NOTE: NEWLY PLANTED & RELOCATED TREES SHALL RECEIVE 3 GAL PER CALIPER INCH FOR EACH DAY THAT WATERING IS SCHEDULED PER THE ABOVE CHART; I.E. FOR VIGOR, A 4" TREE SHALL RECEIVE 12 GALLONS OF WATER DAILY FOR 1 MONTH, THEN EVERY OTHER DAY FOR 3 MONTHS, THEN WEEKLY UNTIL ESTABLISHED

Bowman

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DETAILS AND NOTES
BLACK RIFLE COFFEE
40390 US HWY 19 N,
TARPON SPRINGS, FL 34689
CITY OF TARPON SPRINGS, FL
PINELLAS COUNTY, FL

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Digitally signed by Cheryl W. Campbell
DN: E=ccampbell@bowman.com, C=US, O=Bowman Consulting Group, L=Melbourne, S=Florida, C=US
Date: 2023.02.09 09:50:03-05'00'

REGISTERED LANDSCAPE ARCHITECT CHERYL W. CAMPBELL LA0001768 STATE OF FLORIDA

PLAN STATUS

REV	DATE	COMMENT

GD	GD	CWC
DESIGN	DRAWN	CHKD

SCALE 1" = 20'
JOB No. 011046-01-001
DATE 04/13/2022
SHEET L-2

THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY BOWMAN SHALL BE WITHOUT LIABILITY TO BOWMAN.

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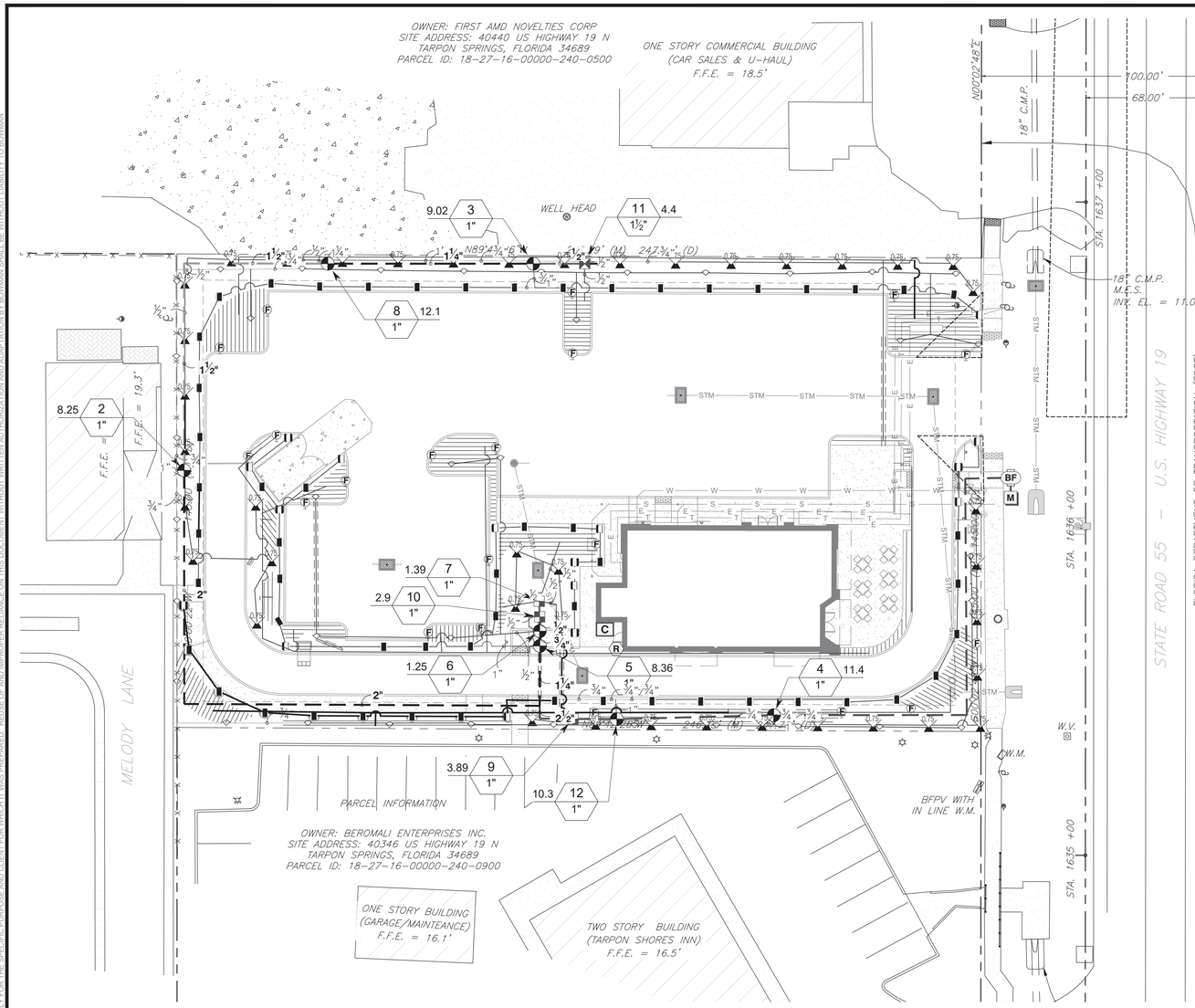


NOTE:

MAINLINE, LATERAL LINES, CONTROL VALVES, AND RELATED EQUIPMENT SHOWN WITHIN PAVING FOR CLARITY ONLY; INSTALL WITHIN PERVIOUS AREA AND A MINIMUM OF 18" OFF ADJACENT HARDSCAPE AND OTHER OBSTACLES TYP. CONFIRM ALL LAYOUT IN FIELD WITH OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO STARTING WORK.

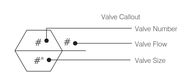
IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	PSI
LCS SST RCS	Rain Bird R-VAN-STRIP 1812-SAM-P45 Shrub Rotary, 5'x15' (LCS and RCS), 5'x30' (SST) Hand Adjustable Multi-Stream Rotary w/ 1800 shrub spray body on 12" pop-up, with check valve and 45 psi in-stem pressure regulator. 1/2" NPT Female Threaded Inlet.	71	35
1401 1402 1404 1408	Rain Bird 1800-1400 Flood 1401 Fixed flow rate (0.25-2.0GPM), full circle bubbler, 1/2" FIPT.	38	30

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	PSI	GPM	RADIUS
0.75	Rain Bird 3504-PC 0.75 Turf Rotor, 4" Pop-Up. Adjustable and Full Circle.	41	35	0.67	17'

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	Rain Bird XCZ-100-PRB-COM Wide Flow Drip Control Kit for Commercial Applications. 1" Ball Valve with 1" PESB Valve and 1" Pressure Regulating 40psi Quick-Check Basket Filter. 0.3gpm to 20gpm.	3
	Rain Bird XCZ-150-LCS High Flow Control Zone Kit, for Large Commercial Drip Zones. 1-1/2" PEB Globe Valve with single 1-1/2" Pressure Regulating 40psi Quick-Check Basket Filter. Flow range: 15-62 GPM.	1
F	Rain Bird MDCFCAP Dripline Flush Valve cap in compression fitting coupler.	20
	Area to Receive Dripline Rain Bird XFD-06-18 XFD On-Surface Pressure Compensating Landscape Dripline. 0.6 GPH emitters at 18" O.C. Dripline laterals spaced at 18" apart, with emitters offset for triangular pattern. UV Resistant. Specify XF insert fittings.	1,898 l.f.

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	Rain Bird PEB 1", 1-1/2", 2" Plastic Industrial Valves. Low Flow Operating Capability, Globe Configuration.	7
BF	Febco 765 2" Pressure Vacuum Breaker, brass with ball valve SOV. Install 12" above highest downstream outlet and the highest point in the downstream piping.	1
C	Rain Bird ESP4ME3 with (2) ESP-SM3 10 Station, Hybrid Modular Outdoor Controller. For Residential or Light Commercial Use. LNK WiFi Module and Flow Sensor Ready.	1
R	Rain Bird RSD-BEx Rain Sensor, with metal latching bracket, extension wire.	1
M	Water Meter 1-1/2" NEW 1 1/2" WATER METER AND 2" SERIVCE LINE	1
	Irrigation Lateral Line: Polyethylene Pipe SDR-7 Polyethylene Pipe SDR-7 up to 1-1/4". Only lateral transition pipes 1" and above are indicated on the plan, with all others being 3/4" in size.	3,615 l.f.
	Irrigation Mainline: PVC Class 200 SDR 21	630.7 l.f.
	Pipe Sleeve: PVC Schedule 80	116.4 l.f.



GENERAL IRRIGATION NOTES:

1. POINTS OF CONNECTION SHALL BE A NEW 1.5" METER & 2" SERVICE LINE WITH CITY WATER. VERIFY THE ACTUAL LOCATION, SIZE AND WATER PRESSURE IN THE FIELD PRIOR TO STARTING WORK. IF ANY OF THE POC INFORMATION SHOWN ON THESE DRAWING IS FOUND TO BE DIFFERENT THAN THE ACTUAL POC INFORMATION GATHERED IN THE FIELD, IMMEDIATELY NOTIFY THE LANDSCAPE ARCHITECT. SHOULD THE CONTRACTOR FAIL TO VERIFY THE POC INFORMATION ANY CHANGES REQUIRED BY LOW PRESSURE OR VOLUME SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
   MINIMUM PRESSURE REQUIRED 56.15 PSI
   DESIGN STATIC WATER PRESSURE 60 PSI
   MAXIMUM SYSTEM DEMAND 50 GPM
2. ALL LOCAL MUNICIPAL AND STATE LAWS, RULES AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK ARE HEREBYINCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS AND THEIR PROVISIONS SHALL BE CARRIED OUT BY THE CONTRACTOR. CONTRACTOR SHALL BE RESPONSIBLE TO COMPLY WITH THE CODES & STANDARDS OF THE LOCAL CITY, COUNTY, STATE, FBC APPENDIX F, NATIONAL FIRE PROTECTION ASSOCIATION (NFPA), AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM), NATIONAL SANITATION FOUNDATION (NSF), & THE IRRIGATION ASSOCIATION (IA) STANDARDS & CODES WITH REGARDS TO MATERIALS, EQUIPMENT, AND INSTALLATION METHODS
3. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING UTILITIES, STRUCTURES AND SERVICES BEFORE COMMENCING WORK. THE LOCATIONS OF UTILITIES, STRUCTURES AND SERVICES SHOWN IN THESE PLANS ARE APPROXIMATE ONLY. ANY DISCREPANCIES BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS SHALL BE REPORTED TO THE OWNER'S REPRESENTATIVE.
4. THE CONTRACTOR SHALL OBTAIN THE PERTINENT ENGINEERING, ARCHITECTURAL, OR OTHER RELEVANT CONSULTANT PLANS BEFORE BEGINNING WORK. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS REQUIRED TO PERFORM THE WORK INDICATED HEREIN BEFORE BEGINNING WORK.
5. THIS DESIGN IS DIAGRAMMATIC. ALL EQUIPMENT SHOWN IN PAVED AREAS IS FOR DESIGN CLARITY ONLY AND IS TO BE INSTALLED WITHIN PLANTING AREAS.
6. THE CONTRACTOR SHALL NOT WILLFULLY INSTALL ANY EQUIPMENT AS SHOWN ON THE PLANS WHEN IT IS OBVIOUS IN THE FIELD THAT UNKNOWN CONDITIONS EXIST THAT WERE NOT EVIDENT AT THE TIME THESE PLANS WERE PREPARED. ANY SUCH CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE PRIOR TO ANY WORK OR THE IRRIGATION CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY FOR ANY FIELD CHANGES DEEMED NECESSARY BY THE OWNER.
7. INSTALL ALL EQUIPMENT AS SHOWN IN THE DETAILS AND SPECIFICATIONS.
8. PLASTIC PIPE, FITTINGS, AND CONNECTIONS SHALL BE AS FOLLOWS:
   1. POLYVINYL CHLORIDE PIPE: ASTM D2241, RIGID, UNPLASTICIZED PVC, EXTRUDED FROM VIRGIN PARENT MATERIAL. PROVIDE PIPE HOMOGENEOUS THROUGHOUT AND FREE FROM VISIBLE CRACKS, HOLES, FOREIGN MATERIALS, BLISTERS, WRINKLES AND DENTS. SDR 21, CLASS 200 FOR MAINLINE. SDR 16, CLASS 160 FOR 1-1/2" AND LARGER, OR OTHERWISE SDR 7 POLYETHYLENE PIPE FOR LATERALS.
   2. POLYETHYLENE PIPE: ASTM D2239 FLEXIBLE POLYETHYLENE PIPE RATED AT 100 PSI MINIMUM WORKING PRESSURE.
   3. PVC PIPE FITTINGS: ASTM D2241 SCHEDULE 40 PVC MOLDED FITTINGS SUITABLE FOR SOLVENT WELD. SLIP JOINT RING TIGHT SEAL, OR SCREWED CONNECTIONS. FITTINGS MADE OF OTHER MATERIALS ARE NOT PERMITTED.
      A. SIZE SLIP FITTING SOCKET TAPER TO PERMIT A DRY UNSOFTENED PIPE END TO BE INSERTED NO MORE THAN HALFWAY INTO THE SOCKET. NO SADDLE AND CROSS FITTINGS.
      B. SCHEDULE 80 PVC PIPE MAY BE THREADED.
   4. INSERT FITTINGS: ASTM D2466 INSERT TYPE FITTINGS.
   5. SPRINKLER RISERS SHALL BE CUT-OFF POLYETHYLENE, HEIGHT AS REQUIRED FOR 100% COVERAGE.
   6. LOW VOLTAGE WIRE CONNECTORS SHALL BE SOCKET SEAL TYPE WIRE CONNECTORS AND 3M DBY DIRECT BURY SPLICE KIT.
9. ACTUAL LOCATION FOR THE INSTALLATION OF THE BACKFLOW PREVENTER AND THE AUTOMATIC CONTROLLER IS TO BE DETERMINED IN THE FIELD BYTHE OWNER'S AUTHORIZED REPRESENTATIVE.
10. CONTRACTOR IS TO PROVIDE AN ADDITIONAL PILOT WIRE FROM CONTROLLER ALONG ENTIRETY OF MAIN LINE TO THE LAST RCV ON EACH AND EVERY LEG OF MAIN LINE. LABEL SPARE WIRES AT BOTH ENDS.
11. MAINLINE, LATERAL LINES, CONTROL VALVES, AND RELATED EQUIPMENT SHOWN WITHIN PAVING FOR CLARITY ONLY; INSTALL WITHIN PERVIOUS AREA AND A MINIMUM OF 18" OFF ADJACENT HARDSCAPE AND OTHER OBSTACLES TYP.CONFIRM ALL LAYOUT IN FIELD WITH OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO STARTING WORK.
12. ALL PIPE UNDER PAVED AREAS TO BE INSTALLED IN SCHEDULE 80 PVC SLEEVING AT LEAST TWICE THE DIAMETER OF THE PIPE CARRIED. ALL WIRE UNDER PAVED AREAS TO BE INSTALLED IN A SCH. 40 SLEEVE THE SIZE REQUIRED TO EASILY PULL WIRE THROUGH. ALL SLEEVES TO BE INSTALLED WITH A MINIMUM DEPTH AS SHOWN ON THE SLEEVING DETAILS. SLEEVES TO EXTEND AT LEAST 12" PAST THE EDGE OF THE PAVING.
13. ALL QUICK COUPLER AND REMOTE CONTROL VALVES TO BE INSTALLED IN SHRUB OR GROUND COVER AREAS WHERE POSSIBLE. ALL QUICK COUPLER AND REMOTE CONTROL VALVES TO BE INSTALLED AS SHOWN ON THE INSTALLATION DETAILS. INSTALL ALL QUICK COUPLER AND REMOTE CONTROL VALVES WITHIN 18" OF HARDSCAPE.
14. ALL HEADS ARE TO BE INSTALLED WITH THE NOZZLE, SCREEN AND ARCS SHOWN ON THE PLANS. ALL HEADS ARE TO BE ADJUSTED TO PREVENT OVERSPRAY ONTO BUILDINGS, WALLS, FENCES AND HARDSCAPE. THIS INCLUDES, BUT NOT LIMITED TO, ADJUSTMENT OF DIFFUSER PIN OR ADJUSTMENT SCREW, REPLACEMENT OF PRESSURE COMPENSATING SCREENS, REPLACEMENT OF NOZZLES WITH MORE APPROPRIATE RADIUS UNITS AND THE REPLACEMENT OF NOZZLES WITH ADJUSTABLE ARC UNITS.
15. CONTRACTOR SHALL ADJUST ALL HEADS AS REQUIRED TO PROVIDE 100% COVERAGE WITH MIN. 50% OVERLAP TO ACCOMMODATE ANY VERTICAL OBSTRUCTIONS THAT MAY OCCUR, INCLUDING BUT NOT LIMITED TO LIGHT POLES, FIRE HYDRANTS, ETC. VERIFY ALL HEAD LAYOUT WITH OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO STARTING WORK.
16. CONTROLLER IS AS SPECIFIED. PRIOR TO STARTING WORK, CONTRACTOR TO VERIFY CONDITION AND FINAL LOCATION OF CONTROLLER AND ELECTRICAL POC SHALL BE CONFIRMED WITH OWNER'S AUTHORIZED REPRESENTATIVE.
17. MANUFACTURERS SPECIFICATIONS & PROPER GROUNDING TECHNIQUES SHALL BE ADHERED TO FOR GROUNDING THE CONTROLLER AND RELATED EQUIPMENT. A PROPERLY INSTALLED GROUNDING SYSTEM SHOULD MAINTAIN A MAXIMUM GROUND RESISTANCE OF 10 OHMS, OR LESS. MEASURE FOR PROPER GROUND AT LEAST ONCE ANNUALLY, AND NECESSARY ADJUSTMENTS MADE TO COMPLY WITH MANUFACTURER SPECIFICATIONS. INSPECT THE GROUNDING SYSTEM'S CLAMPED CONNECTIONS TO THE CONTROLLER ONCE A YEAR TO MAKE SURE THEY ARE SECURE AND CORROSION-FREE.
18. INSTALLER IS REQUIRED TO CONDUCT FINAL TESTING & ADJUSTMENT TO ACHIEVE DESIGN SPECIFICATIONS, FREE OF LEAKS, PRIOR TO COMPLETION OF THE SYSTEM & ACCEPTANCE BY THE OWNER OR OWNER'S REPRESENTATIVE.
19. FOR A PERIOD OF ONE (1) YEAR FROM DATE OF FINAL ACCEPTANCE OF WORK PERFORMED UNDER THE IRRIGATION CONTRACT DOCUMENTS, THE CONTRACTOR SHALL PROMPTLY FURNISH AND INSTALL ANY AND ALL PARTS AND EQUIPMENT WHICH PROVE DEFECTIVE IN MATERIAL, WORKMANSHIP OR INSTALLATION AT NO ADDITIONAL COST TO THE OWNER.

CRITICAL ANALYSIS

Generated:	2023-01-06 09:53
P.O.C. NUMBER: 01	
Water Source Information:	NEW 1 1/2" WATER METER AND 2" SERIVCE LINE
FLOW AVAILABLE	
Water Meter Size:	1-1/2"
Flow Available	69.4 GPM
PRESSURE AVAILABLE	
Static Pressure at POC:	60 PSI
Elevation Change:	5.00 ft
Service Line Size:	2"
Length of Service Line:	20 ft
Pressure Available:	57 PSI
DESIGN ANALYSIS	
Maximum Multi-valve Flow:	50 GPM
Flow Available at POC:	69.4 GPM
Residual Flow Available:	19.4 GPM
Critical Station:	11
Design Pressure:	40 PSI
Friction Loss:	3.03 PSI
Fittings Loss:	0.3 PSI
Elevation Loss:	0 PSI
Loss through Valve:	0 PSI
Pressure Req. at Critical Station:	43.3 PSI
Loss for Fittings:	0 PSI
Loss for Main Line:	5.13 PSI
Loss for POC to Valve Elevation:	0 PSI
Loss for Backflow:	3.4 PSI
Loss for Water Meter:	4.9 PSI
Critical Station Pressure at POC:	56.8 PSI
Pressure Available:	57 PSI
Residual Pressure Available:	0.24 PSI

VALVE SCHEDULE

NUMBER	MODEL	SIZE	TYPE	GPM	WIRE	PSI	PSI @ POC	PRECIP
2	Rain Bird PEB	1"	Bubbler	8.25	227.6	37.3	48.2	0.85 in/h
3	Rain Bird PEB	1"	Shrub Rotary	9.02	397.9	42.2	55.0	0.48 in/h
4	Rain Bird PEB	1"	Turf Rotor	11.39	122.8	42.7	51.9	0.56 in/h
5	Rain Bird PEB	1"	Shrub Rotary	8.36	29.0	41.7	51.5	0.43 in/h
6	Rain Bird PEB	1"	Bubbler	1.25	24.4	31.6	41.4	0.85 in/h
7	Rain Bird XCZ-100-PRB-COM	1"	Area for Dripline	1.39	29.2	41.7	51.8	0.42 in/h
8	Rain Bird PEB	1"	Turf Rotor	12.06	335.0	43.5	55.8	0.54 in/h
9	Rain Bird XCZ-100-PRB-COM	1"	Area for Dripline	3.89	61.4	44.8	54.4	0.43 in/h
10	Rain Bird XCZ-100-PRB-COM	1"	Area for Dripline	2.9	24.4	44.0	54.1	0.43 in/h
11	Rain Bird XCZ-150-LCS	1-1/2"	Area for Dripline	4.4	413.6	43.3	56.8	0.43 in/h
12	Rain Bird PEB	1"	Shrub Rotary	10.34	74.8	43.0	52.5	0.47 in/h
	Common Wire				630.7			

WATERING SCHEDULE

NUMBER	MODEL	TYPE	PRECIP	IN./WEEK	MIN./WEEK	GAL./WEEK	GAL./DAY
2	Rain Bird PEB	Bubbler	0.85 in/h	1	71	586	
3	Rain Bird PEB	Shrub Rotary	0.48 in/h	1	125	1,128	
4	Rain Bird PEB	Turf Rotor	0.56 in/h	1	107	1,219	
5	Rain Bird PEB	Shrub Rotary	0.43 in/h	1	140	1,170	
6	Rain Bird PEB	Bubbler	0.85 in/h	1	71	88.8	
7	Rain Bird XCZ-100-PRB-COM	Area for Dripline	0.42 in/h	1	142	197	
8	Rain Bird PEB	Turf Rotor	0.54 in/h	1	111	1,339	
9	Rain Bird XCZ-100-PRB-COM	Area for Dripline	0.43 in/h	1	141	548	
10	Rain Bird XCZ-100-PRB-COM	Area for Dripline	0.43 in/h	1	140	406	
11	Rain Bird XCZ-150-LCS	Area for Dripline	0.43 in/h	1	141	620	
12	Rain Bird PEB	Shrub Rotary	0.47 in/h	1	127	1,313	
		TOTALS:			1,316	8,615	

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Digitally signed by Cheryl W. Campbell
DN: E=ccampbell@bowman.com, CN=Cheryl W. Campbell, O=Bowman Consulting Group, L=Melbourne, S=Florida, C=US
Date: 2023.02.03 09:51:11-05'00'

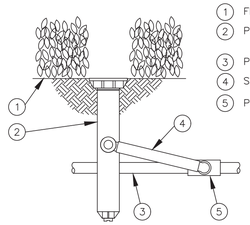
REGISTERED LANDSCAPE ARCHITECT CHERYL W. CAMPBELL LA0001788 STATE OF FLORIDA

PLAN STATUS

REV	DATE	COMMENT

GD	GD	CWC
DESIGN	DRAWN	CHKD

SCALE 1" = 20'
JOB No. 011046-01-001
DATE 04/13/2022
SHEET L-3

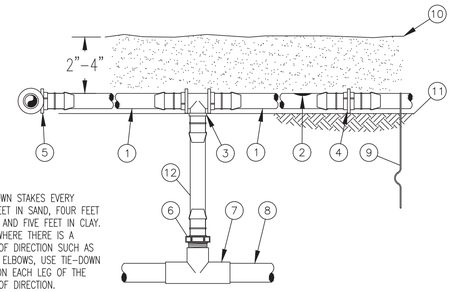


1. FINISH GRADE/TOP OF MULCH
2. POP-UP SPRAY SPRINKLER: RAIN BIRD 1806-SI
3. PVC LATERAL PIPE
4. SWING ASSEMBLY: RAIN BIRD MODEL SA 6050
5. PVC SCH 40 TEE OR ELL

NOTE:
SIDE INLET CONNECTION SHOULD NOT BE USED IN FREEZING CLIMATES.

A POP-UP SPRAY SPRINKLER 1806-SI WITH SWING PIPE

N.T.S.



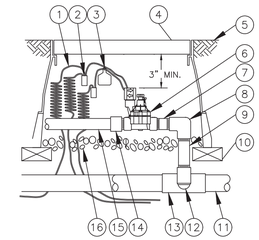
NOTES:
1. PLACE TIE DOWN STAKES EVERY THREE FEET IN SAND, FOUR FEET IN LOAM, AND FIVE FEET IN CLAY.
2. AT FITTINGS WHERE THERE IS A CHANGE OF DIRECTION SUCH AS TEES OR ELBOWS, USE TIE-DOWN STAKES ON EACH LEG OF THE CHANGE OF DIRECTION.
3. SAVE YOUR HANDS. USE THE RAIN BIRD FITTINS-TOOL XF INSERTION TOOL FOR FITTING ASSEMBLY.

1. ON-SURFACE DRIPLINE: RAIN BIRD XF SERIES DRIPLINE POTABLE: XFD DRIPLINE NON-POTABLE: XFDP DRIPLINE
2. INLINE DRIP EMITTER OUTLET, SEE PLANS FOR DRIPLINE OUTLET SPACING.
3. BARB TEE 17x17x17mm RAIN BIRD XFF-TEE
4. BARB COUPLING 17x17mm RAIN BIRD XFF-COUP
5. BARB ELBOW 17x17mm RAIN BIRD XFF-ELBOW
6. BARB MALE ADAPTER 17mm X 1/2" MPT RAIN BIRD XFF-MA-050 17mm X 3/4" MPT RAIN BIRD XFF-MA-075
7. PVC TEE SxSxT
8. PVC LATERAL SUPPLY HEADER
9. TIE DOWN STAKE: RAIN BIRD TDS-050 WITH BEND (TYPICAL)
10. MULCH
11. FINISH GRADE
12. RAIN BIRD XF SERIES BLANK TUBING LENGTH AS REQUIRED

B XFD ON-SURFACE DRIPLINE RISER ASSEMBLY

N.T.S. 12-19-2012

IRRIGATION PLAN

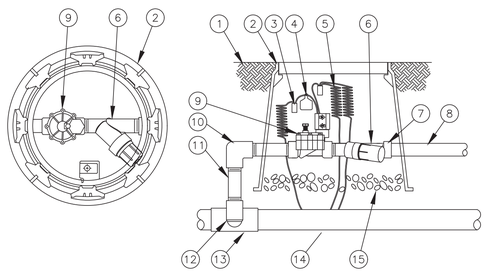


1. 30-INCH LINEAR LENGTH OF WIRE, COILED
2. WATERPROOF CONNECTION: RAIN BIRD SPLICE-1 (1 OF 2)
3. ID TAG: RAIN BIRD VID SERIES
4. VALVE BOX WITH COVER: RAIN BIRD VB-STD
5. FINISH GRADE/TOP OF MULCH
6. REMOTE CONTROL VALVE: RAIN BIRD 100-DVF
7. PVC SCH 80 NIPPLE (CLOSE)
8. PVC SCH 40 ELL
9. PVC SCH 80 NIPPLE (LENGTH AS REQUIRED)
10. BRICK (1 OF 4)
11. PVC MAINLINE PIPE
12. SCH 80 NIPPLE (2-INCH LENGTH, HIDDEN) AND SCH 40 ELL
13. PVC SCH 40 TEE OR ELL
14. PVC SCH 40 MALE ADAPTER
15. PVC LATERAL PIPE
16. 3.0-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL

C ELECTRIC REMOTE-CONTROL VALVE DVF SERIES 100-DVF

N.T.S. 1-23-04

1-100-DVF.DWG



TOP VIEW

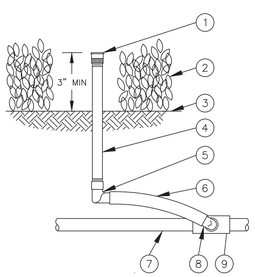
SIDE VIEW

1. FINISH GRADE
2. ROUND VALVE BOX WITH COVER: RAIN BIRD VB-10RND
3. WATERPROOF CONNECTION: RAIN BIRD DB SERIES
4. VALVE ID TAG
5. 30-INCH LINEAR LENGTH OF WIRE, COILED PRESSURE REGULATING FILTER:
6. RAIN BIRD PRF-100-RBY (INCLUDED IN XCZ-100-PRF KIT)
7. PVC SCH 40 FEMALE ADAPTOR
8. LATERAL PIPE
9. REMOTE CONTROL VALVE: RAIN BIRD 100-DV (INCLUDED IN XCZ-100-PRF KIT)
10. PVC SCH 40 ELL
11. PVC SCH 80 NIPPLE (LENGTH AS REQUIRED)
12. PVC SCH 80 NIPPLE (2-INCH LENGTH, HIDDEN) AND PVC SCH 40 ELL)
13. PVC SCH 40 TEE OR ELL
14. PVC MAINLINE
15. 3-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL

D XCZ-100-PRF 1" CONTROL ZONE KIT IN ROUND VALVE BOX OPTION 2

N.T.S. 1-23-10

XCZ-100-PRF Option 2.dwg

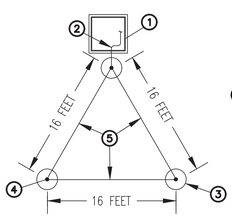


1. PRESSURE COMPENSATING FULL CIRCLE BUBBLER: RAIN BIRD 1400
2. PLANT MATERIAL
3. FINISH GRADE/TOP OF MULCH
4. UV RADIATION RESISTANT 1/2 INCH PVC SCH 80 NIPPLE (LENGTH AS REQUIRED)
5. 1/2-INCH FEMALE NPT x 0.490-INCH BARB ELBOW: RAIN BIRD MODEL SBFE-050
6. SWING PIPE, 12-INCH LENGTH:
7. PVC LATERAL PIPE
8. 1/2-INCH MALE NPT x .490-INCH BARB ELBOW: RAIN BIRD MODEL SBE-050
9. PVC SCH 40 TEE OR ELL

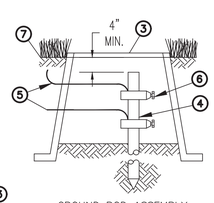
G PRESSURE COMPENSATING FULL-CIRCLE BUBBLER 1400 SERIES ON RISER

N.T.S. 1/14/04

1-1400 CK RISER.dwg



GROUND ROD LAYOUT

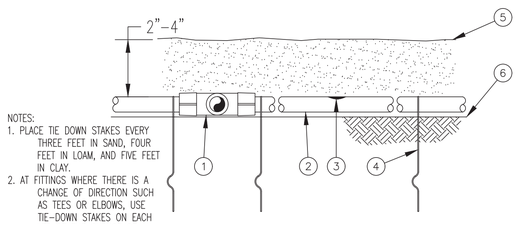


GROUND ROD ASSEMBLY

1. RAIN BIRD CONTROLLER
2. SOLID BARE COPPER WIRE (#10 AWG) FROM GROUNDING ROD TO CONTROLLER. MAKE WIRE AS SHORT AND STRAIGHT AS POSSIBLE
3. COVER GROUNDING ROD WITH 10-INCH ROUND VALVE BOX AS SHOWN
4. 5/8-INCH X 8 FT COPPER CLAD GROUNDING ROD OR GROUNDING PLATE. INSTALL RODS IN SOIL IN A TRIAGULAR PATTERN SPACED A MINIMUM OF 16 FT APART FROM EACH OTHER. GROUNDING GRID TO HAVE A RESISTANCE OF TEN (10) OHMS OR LESS
5. BARE COPPER WIRE (#10 AWG MIN.) BETWEEN GROUNDING RODS
6. GROUND ROD CLAMP OR WELDS
7. FINISH GRADE

J CONTROLLER GROUNDING GRID Y DESIGN LAYOUT

N.T.S.



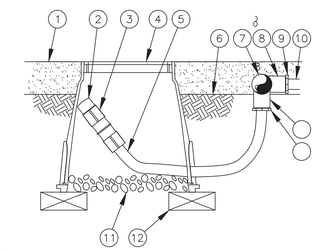
NOTES:
1. PLACE TIE DOWN STAKES EVERY THREE FEET IN SAND, FOUR FEET IN LOAM, AND FIVE FEET IN CLAY.
2. AT FITTINGS WHERE THERE IS A CHANGE OF DIRECTION SUCH AS TEES OR ELBOWS, USE TIE-DOWN STAKES ON EACH LEG OF THE CHANGE OF DIRECTION.

1. EASY FIT COMPRESSION TEE: RAIN BIRD MDCFTEE
2. ON-SURFACE DRIPLINE: RAIN BIRD XF SERIES DRIPLINE POTABLE: XFD DRIPLINE NON-POTABLE: XFDP DRIPLINE
3. INLINE DRIP EMITTER OUTLET
4. TIE DOWN STAKE: RAIN BIRD TDS-050 WITH BEND (TYPICAL)
5. MULCH
6. FINISH GRADE

E XFD ON-SURFACE DRIPLINE AT GRADE

N.T.S. 12-19-2012

IRRIGATION PLAN



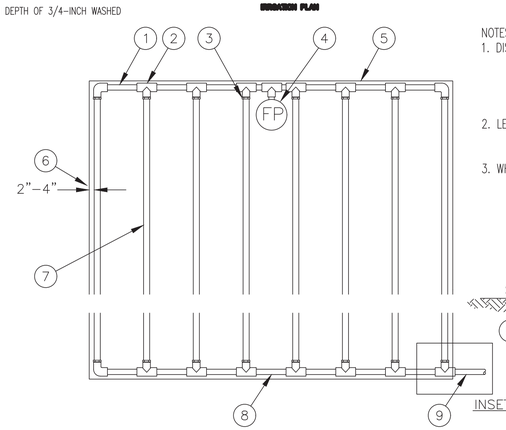
NOTE:
1. ALLOW A MINIMUM OF 6-INCHES OF DRIPLINE TUBING IN VALVE BOX IN ORDER TO DIRECT FLUSHED WATER OUTSIDE VALVE BOX.

1. MULCH
2. FLUSH CAP FOR EASY FIT COMPRESSION FITTINGS: POTABLE: RAIN BIRD MDCFCAP NON-POTABLE: RAIN BIRD MDCFPCAP
3. EASY FIT COUPLING: RAIN BIRD MDCFCOUP
4. SUBTERRANEAN EMITTER BOX: RAIN BIRD SEB 7XB
5. RAIN BIRD XF BLANK TUBING
6. FINISH GRADE
7. PVC EXHAUST HEADER
8. PVC SCH 40 TEE OR EL
9. BARB X MALE FITTING: RAIN BIRD XFF-MA FITTING (TYPICAL)
10. ON-SURFACE DRIPLINE: RAIN BIRD XF SERIES DRIPLINE POTABLE: XFD DRIPLINE NON-POTABLE: XFDP DRIPLINE
11. 3-INCH MINIMUM DEPTH OF 3/4 WASHED GRAVEL
12. BRICK (1 OF 2)

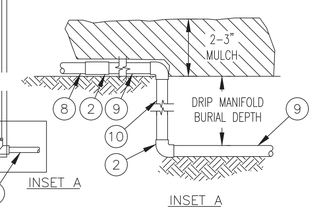
F XFD ON-SURFACE DRIPLINE FLUSH POINT WITH EASY FIT COMPRESSION FITTINGS

N.T.S. 12-19-2012

IRRIGATION PLAN



NOTES:
1. DISTANCE BETWEEN LATERAL ROWS AND EMITTER SPACING TO BE BASED ON SOIL TYPE, PLANT MATERIALS AND CHANGES IN ELEVATION. SEE INSTALLATION SPECIFICATIONS ON RAIN BIRD WEB SITE (WWW.RAINBIRD.COM) FOR SUGGESTED SPACING.
2. LENGTH OF LONGEST DRIPLINE LATERAL SHOULD NOT EXCEED THE MAXIMUM SPACING SHOWN IN THE ACCOMPANYING TABLE.
3. WHEN USING 17MM INSERT FITTINGS WITH DESIGN PRESSURE OVER 50PSI, IT IS RECOMMENDED THAT STAINLESS STEEL CLAMPS BE INSTALLED ON EACH FITTING.

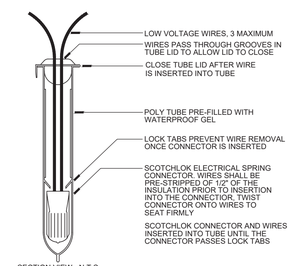


1. PVC EXHAUST HEADER
2. PVC SCH 40 TEE OR EL (TYPICAL)
3. BARB X MALE FITTING: RAIN BIRD XFF-MA FITTING (TYPICAL)
4. FLUSH POINT (TYPICAL) SEE RAIN BIRD DETAIL "XFD FLUSH POINT"
5. PERIMETER OF AREA
6. PERIMETER DRIPLINE PIPE TO BE INSTALLED 2"-4" FROM PERIMETER OF AREA
7. ON-SURFACE DRIPLINE: RAIN BIRD XF SERIES DRIPLINE (TYPICAL) POTABLE: XFD DRIPLINE NON-POTABLE: XFDP DRIPLINE
8. PVC SUPPLY HEADER
9. PVC DRIP MANIFOLD FROM RAIN BIRD CONTROL ZONE VALVE KIT (SIZED TO MEET LATERAL FLOW DEMAND)
10. PVC SCH 40 RISER PIPE

H XFD ON-SURFACE DRIPLINE END FEED LAYOUT

N.T.S. 12-19-2012

IRRIGATION PLAN



SECTION VIEW - N.T.S.

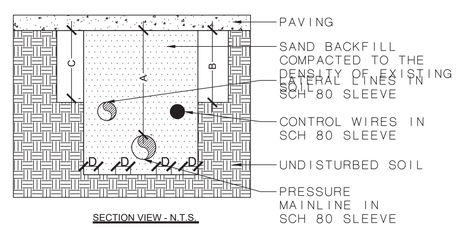
NOTE:
WIRE CONNECTOR SHALL BE A 3M DBY-6 DIRECT BURY SPLICE KITS

KIT SHALL INCLUDE A SCOTCHLOK Y SPRING CONNECTOR, A POLYPROPYLENE TUBE AND A WATERPROOF SEALING GEL. TUBE SHALL BE SUPPLIED PRE-FILLED WITH GEL.

DIRECT BURY SPLICE KIT SHALL BE USED TO ELECTRICALLY CONNECT 2-3 #14 OR 2 #12 PRE-STRIPPED COPPER WIRES. LARGER WIRES OR GREATER QUANTITIES OF WIRES SHALL REQUIRE A LARGER APPROVED WIRE CONNECTION.

I WIRE CONNECTION

N.T.S.



SECTION VIEW - N.T.S.

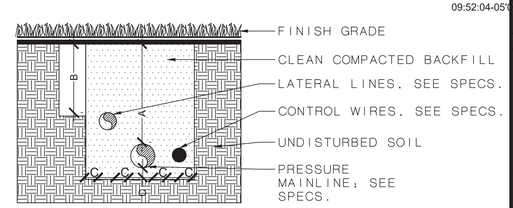
DIMENSION	A	B	C	D
1 1/2" TO 6" IN SIZE	36"	24"	24"	4"

TWICE THE DIAMETER OFF THE PIPE OR WIRE BUNDLE CARRIED

DETAIL ALSO FOR PIPE INSTALLED IN ROCK SOIL

K SLEEVE INSTALLATION

N.T.S.



SECTION VIEW - N.T.S.

DIMENSION	A	B	C
1/2" TO 2-1/2" IN SIZE	18"	12"	4"
3" TO 6" IN SIZE	24"		4"

L PIPE INSTALLATION

N.T.S.

Bowman

BOWMAN CONSULTING GROUP, LTD.
1410 N. WESTSHORE BLVD
SUITE 111
TAMPA, FL 33607
PHONE: (321) 255-5454
FAX: (321) 255-7751
WWW.BOWMAN.COM

IRRIGATION DETAILS AND NOTES
BLACK RIFLE COFFEE
40390 US HWY 19 N,
TARPON SPRINGS, FL 34689
CITY OF TARPON SPRINGS, FL — PINELLAS COUNTY, FL

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

Digitally signed by Cheryl W. Campbell
DN: E=ccampbell@bowman.com, C=US, CN=Cheryl C. Campbell, O=Bowman Consulting Group, L=Melbourne, S=Florida, C=US
Date: 2023.02.07 09:52:04-05'00'

REGISTERED LANDSCAPE ARCHITECT CHERYL W. CAMPBELL LA0001768 STATE OF FLORIDA

PLAN STATUS

REV	DATE	COMMENT

GD	GD	CWC
DESIGN	DRAWN	CHKD

SCALE NTS
JOB No. 011046-01-001
DATE 04/13/2022
SHEET L-4

THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY BOWMAN SHALL BE WITHOUT LIABILITY TO BOWMAN.

USER: GDAMKIS PLOT DATE/TIME: Jan. 31, 23 - 10:39:53 DRAWING: V:\011046 - Pursuit Development\011046-01-001 (ENG)\ - Black Rifle Coffee - Tarpon Springs, FL\Engineering\Landscape\IRRIGATION PLAN.dwg L-4 IRRIG. NOTES AND DETAILS

RES. 2023-13 - EXHIBIT 'C'

EXHIBIT D
PRELIMINARY ELEVATIONS & SIGNAGE

Sign Layout Detail
Scale: 1/4" = 1'-0"

Allowable SQFT. TBD Per Municipality

Front Elevation
Scale: 1/8" = 1'-0"

BLACK RIFLE COFFEE COMPANY

FRONT ELEVATION

AnchorSign.

Sign Layout Detail
Scale: 1/4" = 1'-0"

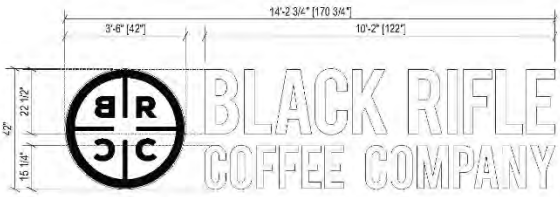
Allowable SQFT. TBD Per Municipality

Left Elevation
Scale: 1/8" = 1'-0"

BLACK RIFLE COFFEE COMPANY

LEFT ELEVATION

AnchorSign.



Sign Layout Detail
Scale: 3/8" = 1'-0"

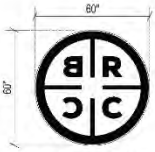
Allowable SQFT. TBD Per Municipality

Right Elevation
Scale: 1/8" = 1'-0"

BLACK RIFLE COFFEE COMPANY

RIGHT ELEVATION

AnchorSign.



Sign Layout Detail
Scale: 1/4" = 1'-0"

Sign Layout Detail
Scale: 1/4" = 1'-0"

Allowable SQFT. TBD Per Municipality

Rear Elevation
Scale: 1/8" = 1'-0"

BLACK RIFLE COFFEE COMPANY

REAR ELEVATION

AnchorSign.

BOUNDARY & TOPOGRAPHIC SURVEY

ALSO BEING AN

ALTA / NSPS LAND TITLE SURVEY

LOCATED AT

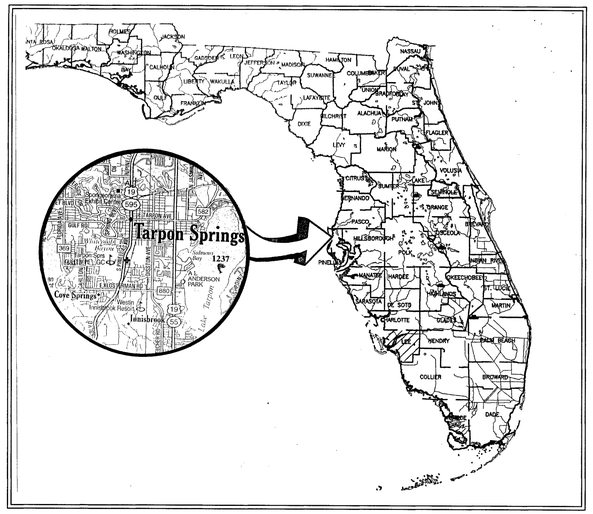
40390 US HIGHWAY 19 N

TARPON SPRINGS, FLORIDA 34689

SECTION 18 - TOWNSHIP 27 SOUTH - RANGE 16 EAST
PINELLAS COUNTY, FLORIDA

(SHEET 1 OF 2)

(NOT VALID WITHOUT SHEET 2 OF 2)

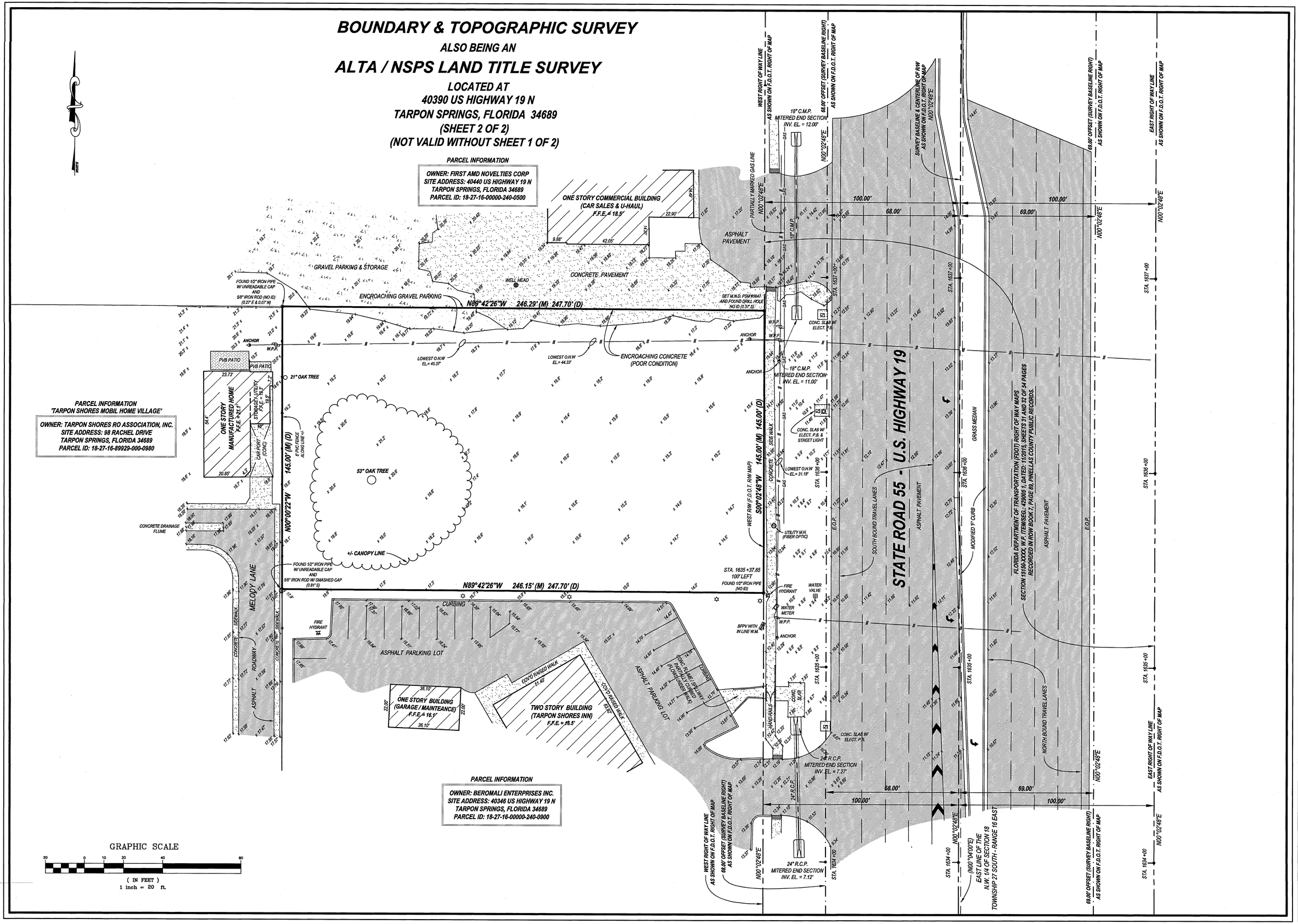

Tarpon Springs
Core Springs
Anclote Key
Anclote Rec Area
Anclote Park
Sponge Docks
Spring Bayou
Lake Tarpon
Klosterman
Sutcliffe Park
Pinellas Co Rec Area
Brooker Creek Preserve
Boy Scout Camp
Lake Chinsegut
Lake Lindsey
Lake Bryant
Lake Ida
Lake Eustis
Lake Ella
Lake Alice
Lake Apopka
Lake Jackson
Lake Kissimmee
Lake Okeechobee
Lake Istokpoga
Lake Tohopekaliga
Lake Marion
Lake Hamilton
Lake Weohyakapka
Lake Rosalie
Lake Tsala Apopka
Lake Panasoffkee
Lake Miccosukee
Lake Talquin
Lake Iamonia
Lake Miccosukee
Lake Seminole
Lake Wimico
Lake Santa Fe
Lake Sarah
Lake Lafayette
Lake Ocklawaha
Lake Dorr
Lake Harney
Lake Monroe
Lake Jesup
Lake Poinsett
Lake Washington
Lake Worth
Lake Okeechobee
Lake Istokpoga
Lake Tohopekaliga
Lake Kissimmee

BOUNDARY & TOPOGRAPHIC SURVEY

ALSO BEING AN

ALTA / NSPS LAND TITLE SURVEY

LOCATED AT
40390 US HIGHWAY 19 N
TARPON SPRINGS, FLORIDA 34689
(SHEET 2 OF 2)
(NOT VALID WITHOUT SHEET 1 OF 2)



GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

DATE	REVISIONS

SITE ADDRESS:
40390 US HIGHWAY 19 N
TARPON SPRINGS, FLORIDA 34689

PREPARED FOR:
BOWMAN CONSULTING GROUP
1410 N. WESTSHORE BLVD, TAMPA, FL

CRAIG WATSON AND ASSOCIATES LLC
PROFESSIONAL SURVEYING MAPPING
3372 NE CANDICE AVENUE · UNIT A · JENSEN BEACH FLORIDA · 34957
O 772-334-0868 C 772-260-0249 CRAIGWATSONOLIVE.COM

3372 NE CANDICE AVE
JENSEN BEACH, FL 34957
CRAIGWATSON@LIVE.COM
PHONE 772-334-0868
CELL 772-260-0249

DATE:	2-4-2022
SCALE:	1" = 20'
DWNG. BY	CDW
CHECKED BY:	CDW
JOB NUMBER:	22027

SHEET NUMBER
2 OF 2

CITY OF TARPON SPRINGS, FLORIDA
Certificate of Concurrency

Return to:
Planning & Zoning Division
324 E. Pine Street
Tarpon Springs, FL 34689
(727) 942-5611

(Please type or print clearly)

Property Owner(s)

Name HAKIM, JEAN F / HAKIM, GILBERT		Email N/A
Address 5400 Tech Data Dr		
City Clearwater	State FL	Zip 33760
Phone N/A	Fax N/A	Cellular N/A

Applicant

Name Pursuit Development		Email buckley@pursuitdev.com
Address 1021 Worth St		
City Albany	State GA	Zip 31705
Phone 229-938-3130	Fax N/A	Cellular N/A

Agent (if applicable)

Name Maleia Storum - Bowman Consulting		Email mstorum@bowman.com
Address 1410 N Westshore Blvd		
City Tampa	State FL	Zip 33607
Phone 813-642-4924	Fax N/A	Cellular N/A

General Information

Project Name 22-85 PNZ Black Rifle Coffee	
Property Location or Address 40390 US Hwy 19 Tarpon Springs, Fl 34689	
Legal Description (attach additional sheets as necessary)	PT of S 1/2 of SE 1/4 DESC as FR SE COR of NW 1/4 TH N ALG W R/W of US HWY 19 512.71FT for POB TH W 247.51FT TH N 145FTH TH E 247.7FT TH S ALG W R/W of SD HWY 145FT to POB
Tax Parcel Number(s) 18-27-16-00000-240-1000	Site Acreage 0.820 AC

Type of Development Activity [check only one]

- ☒ Site Plan for Commercial Development
- ☐ Site Plan for Residential Subdivision
- ☐ Site Plan for Multiple Residential Development
- ☐ Final Subdivision Plat
- ☐ Residential Planned Development
- ☐ Commercial Planned Development
- ☐ Industrial Planned Development
- ☐ Conditional Use
- ☒ Building Permit
- ☐ Other: _____

Proposed Development

1. Number of Residential Units

_____ Single-Family _____ Multi-Family _____ Recreational Vehicle Sites

_____ Two-Family _____ Mobile Home _____ Beds (ACLF, ALF, etc.)

CITY OF TARPON SPRINGS, FLORIDA
Certificate of Concurrency

2. Non-Residential Uses

a. Type of Use: Commercial - QSR with Drive Thru Gross Square Footage: 2,630 SF

b. Type of Use: _____ Gross Square Footage: _____

c. Type of Use: _____ Gross Square Footage: _____

d. Type of Use: _____ Gross Square Footage: _____

3. Marina (Number of slips)

_____ Wet Slips _____ Dry Slips _____ TOTAL

Applicable Concurrency Exceptions [check all that apply]

☐ §122.01(A)(1) ☐ §122.01(A)(2) ☐ §122.01(A)(3) ☐ §122.01(A)(4)

Level of Service

Calculate the impact of the proposed development on each of the following:

1. Potable Water: 1,778 gallons per day (gpd)
2. Sanitary Sewer: 1,063 gallons per day (gpd)
3. Solid Waste: 3,214 tons per year (tpy)
4. Storm Drainage: *Provide separate analysis for review by the Engineering Division
5. Transportation: ITE Category 937 - Coffee/Donut shop with Drive Thru
   a. 1,403 Trips total trips per day (tpd)
   b. 226 trips AM peak hour. 103 trips PM peak hour peak hour trips
6. Hurricane Shelter: N/A total required space

Maleia P Storum — Maleia Storum — 11/9/2022

Signature of Owner or Authorized Agent — Printed Name — Date

STATE OF FLORIDA)

COUNTY OF PINELLAS)

The foregoing instrument was acknowledged before me this 9th day of NOVEMBER, A.D., 2022 by MALEIA STORUM, who is personally known to me or who has produced _____ as identification and who did (did not) take an oath.

NOTARY PUBLIC

Name: VERONICA HATLEY

Signature: Veronica Hatley

Stamp:

VERONICA MINERVA HATLEY
Notary Public - State of Florida
Commission # HH 160483
My Comm. Expires Aug 3, 2025
Bonded through National Notary Assn.

Memorandum

To: City of Tarpon Springs
Planning and Engineering Division

From: Andrew Petersen, PE
Daniela Jurado, Analyst
Rodrigo Meirelles, Analyst

Date: 04/14/2022

04/14/2022

Re: Black Rifle Coffee, Tarpon Springs, FL – Traffic Impact Statement

Bowman has been retained by Pursuit Development to perform a Traffic Impact Statement for the proposed 2,630 SF Black Rifle coffee shop with drive-through window to be located at 40390 US Hwy 19 N, in the city of Tarpon Springs, Florida. The latest conceptual site plan is presented in **Appendix A**. **Figure 1** depicts the location of the proposed development.

Figure 1 Project Site Location

Access to the development is proposed to be provided by (*i*) one right-in/right-out driveway along US Hwy 19 N, as depicted in **Figure 1**.

The purpose for the study is threefold: *(i)* to determine the number of trips generated by the proposed site; *(ii)* to determine the potential impact, if any, of the proposed development on the roadway network; *(iii)* to propose improvements, if required.

For the purposes of this memorandum the site is proposed to be constructed and fully operational by the year 2023.

The following intersections were analyzed on this report:

- US Hwy 19 N & E Martin Luther King Dr/Lake St (Signalized)
- Us Hwy 19 N & Melody Way/Tarpon Lake Center Dwy (Unsignalized)
- US Hwy 19 N & Site Driveway (Unsignalized)

Data Collection

For the purposes of this study the following data was collected:

- Inspections were conducted to obtain an inventory of existing roadway geometry, traffic control devices, and location of the proposed driveway.
- Published FDOT Counts and Functional Classification and seasonal adjustment factor.
- Turning movement counts were collected during an average weekday, Tuesday, March 22nd, 2022, for the morning (7:00 AM – 9:00 AM) and evening (4:00 PM – 6:00 PM) peak periods at the following intersections:
  - US Hwy 19 N & E Martin Luther King Dr/Lake St (Signalized)
  - Us Hwy 19 N & Melody Way/Tarpon Lake Center Dwy (Unsignalized)
- Signal Phasing and Timing information for the Intersection of US Hwy 19 N & E Martin Luther King Dr/Lake St.

The information described on this section is contained in **Appendix B**.

Traffic Forecast and Background Traffic

The following scenarios were evaluated as part of this study:

- Existing Conditions (2022)
- Future Conditions (2023) without the proposed development (No Build)
- Future Conditions (2023) with the proposed development (Build)

To assess the 2022 Existing Peak Hour Traffic Volumes the turning movement counts were affected by a FDOT seasonal factor for the corresponding week of the year.

The 2022 Existing Morning and Evening Peak Hour Traffic Volumes are depicted on **Exhibits 1** and **2** in **Appendix C**.

To develop the 2023 No Build Traffic Volumes, a background growth rate applicable for the overall study area roadway segments was defined. The annual growth rate was calculated based on the historical FDOT (2015-2019) Average Annual Daily Traffic information using Trend analysis. The results yielded an overall study area annual growth rate of 2.19%. The growth rate calculations are presented on **Appendix D**.

This growth rate was applied to the 2022 Existing Peak Hour Traffic Volumes to develop the 2023 No Build Traffic Volumes. The 2023 No Build Morning and Evening Traffic Volumes are presented on **Exhibits 3** and **4** in **Appendix C**.

Trip Generation

As mentioned previously on this memorandum, Black Rifle Coffee Company is proposing a 2,630 square foot Coffee Shop building with drive-thru window.

Table 1 displays the trip generation for the proposed development.

Table 1 Site Trip Generation

Land Use	Land Use Code(1)	Intensity	Units	Time period	Average Rate/ Fitted Curve Eq. (1)	Trips (1)			Pass-By Trips(2)			Primary Trips		
						In	Out	Total	In	Out	Total	In	Out	Total
Proposed Coffee/Donut Shop with Drive-Though Window	937	2.63	KSF of GFA	Weekday	533.57	701	702	1,403	589	590	1,179	112	112	224
				AM (3)	85.88	115	111	226	97	93	190	18	18	36
				PM (3)	38.99	51	52	103	43	44	87	8	8	16

(1) Based on the Institute of Transportation Engineers Trip Generation, 11th Edition
(2) LU 937 does not have Pass-By Rates on the ITE Trip Generation Handbook, 3rd Edition, the smallest rate for the closest LU was used (LU 938)
(3) Peak Hour of Adjacent Street

The proposed development is expected to generate a total of 226 trips during the morning peak hour and 103 trips during the evening peak hour. Of these trips, 36 are expected to be new trips during the morning peak hour, and 16 trips are expected to be new trips during the evening peak hour, the remaining trips are anticipated to be pass-by trips.

Trip Distribution and Assignment

The anticipated trip distribution for the proposed site was developed based on the review of the proposed access for the project, and locations of population centers in the area.

Distribution

It is anticipated that of the primary trips, 50% will travel to/from South on US Hwy 19 N; the remaining 50% will travel to/from North on US Hwy 19, of which, 10% will travel to/from West on Martin Luther King Jr Dr.

- The Primary Site trip distribution is presented in **Exhibit 5**, **Appendix C**.

It is anticipated that of the pass-by trips, 85% will travel to the South on US Hwy 19 N, and 15% will travel to the North on US Hwy 19.

- The Pass-By Site trip distribution is presented in **Exhibit 6**, **Appendix C**.

Assignment

For a conservative approach, all anticipated site trips were considered to be completed using private vehicle.

- The Morning Peak Hour Primary Site Trips are presented in **Exhibit 7**, **Appendix C**.
- The Evening Peak Hour Primary Site Trips are presented in **Exhibit 8**, **Appendix C**.

- The Morning Peak Hour Pass-By Site Trips are presented in **Exhibit 9**, **Appendix C**.
- The Evening Peak Hour Pass-By Site Trips are presented in **Exhibit 10**, **Appendix C**.

The primary and pass-by site trips were combined to yield the Morning and the Evening Total Site Trips, presented in **Exhibits 11** and **12**, **Appendix C** respectively.

The Total Site Trips were added to the 2023 No Build Traffic Volumes to yield the 2023 Build Traffic Volumes. The 2023 Build Traffic Volumes for the morning and evening peak hours are presented on **Exhibits 13** and **14** in **Appendix C** respectively.

Turn Lane Warrant Analysis

Turn lane warrant analysis were conducted for the proposed Site Driveway to determine the need for the installation of auxiliary turning lanes. The analysis was completed per the criteria set forth in the 2019 FDOT Access Management Guidebook.

The forecasted right turn volumes at the proposed site driveway were evaluated to determine the need for the installation of an auxiliary right turn lane to access the proposed site as showed on the total trips depicted on the 2023 Build conditions **Exhibits 13** and **14** in **Appendix C**.

The following number of entering right turns are anticipated at the site driveway:

US Hwy 19 N & Black Rifle Coffee Site Driveway (RI/RO):

AM Peak Hour – 115
PM Peak Hour – 51

According to the Florida Department of Transportation 2019 Access Management Guidebook, the installation of an auxiliary right turning lane is warranted on Roadways with speed limit of 45 MPH or less when the number of right turning vehicles exceed 80-125.

The lower threshold of 80 right turns is more appropriately used on for higher volume roads and two-lane roads where lateral movement is restricted while the 125 right turn vehicles per hour upper threshold would be most appropriate on lower volume roadways, multilane highways, or driveways with a large entry radius (50 feet or greater).

Based on the abovementioned guidelines a right turn lane is not warranted at the site driveway considering that the peak hour volumes for both morning and evening do not exceed the 125 right-turning vehicles per hour threshold applicable for multilane highways. A large entry radius is recommended at the access driveway.

Capacity Analysis

The study intersections were analyzed for No Build and Build Conditions following the Highway Capacity Manual (HCM 6th Edition) methodologies using the computer software package Synchro 10. The analysis uses capacity, Level of Service, and control delay as the criteria for the performance of the driveways.

Capacity, as defined by the HCM, is a measure of the maximum number of vehicles in an hour that can travel through an intersection or section of roadway under typical conditions.

Table 2 shows the LOS for unsignalized intersections as defined by the HCM.

Table 2 HCM Level of Service Criteria

Unsignalized Intersections		Signalized Intersections	
Level of Service	Average Control Delay (sec/veh)	Level of Service	Average Control Delay (sec/veh)
A	≤10	A	≤10
B	>10-15	B	>10-20
C	>15-25	C	>20-35
D	>25-35	D	>35-55
E	>35-50	E	>55-80
F	≥50	F	≥80

Control delay is a measure of the total amount of delay experienced by an individual vehicle and includes delay related to deceleration, queue delay, stopped delay, and acceleration.

Table 2 displays the amount of control delay (in seconds per vehicle) that corresponds to the LOS for signalized and unsignalized intersections.

Capacity Analysis – 2022 Existing Conditions

A capacity analysis was conducted for the Existing Conditions (2022) for the intersections previously described in this report. This capacity analysis is based on the existing traffic volumes, lane configurations and intersection configurations. The results are included in **Appendix E**.

Table 3 presents the 2022 Existing Conditions capacity analysis results for both the morning and evening peak hours.

Table 3 2022 Existing Conditions Capacity Analysis

2022 EXISTING CONDITIONS			Morning Peak		Evening Peak	
Intersection		Approach	DELAY (S)	LOS	DELAY (S)	LOS
1	US Hwy 19 N & E MLK Dr/Lake St (Signalized)	EB	108.4	F	150.9	F
		WB	91.7	F	79.8	E
		NB	20.0	B	46.0	D
		SB	38.6	D	52.0	D
		Intersection	34.8	C	54.3	D
11	US Hwy 19 N & Site Driveway (Unsignalized)	EB	-	-	-	-
		NB	0.0	A	0.0	A
		SB	0.0	A	0.0	A
		Intersection	0.0	A	0.0	A
12	Us Hwy 19 N & Melody Way/Tarpon Lake Center Drwy (Unsignalized)	EB	14.3	B	10.2	B
		WB	15.3	C	40.1	E
		NB	8.8	A	0.3	A
		SB	0.2	A	2.1	A
		Intersection	3.3	A	1.0	A

Extracted from Synchro10 HCM 6th Edition

Capacity Analysis for the Unsignalized Intersections was performed using HCM 2000 due to the roadway geometry

Based on the results of the Existing Conditions Capacity Analysis, all intersections currently operate at LOS D or better during both the morning and evening peak hours. During the morning peak hour, the eastbound and westbound approaches of the intersection of US Hwy 19 N & Martin Luther King Jr Dr/Lake St operates at LOS F. During the evening peak hour, the eastbound and westbound approaches of the intersection of US Hwy 19 N & Martin Luther King Jr Dr/Lake St operate at LOS F and E, respectively. The westbound approach of the intersection of US Hwy 19 N and Melody Way/Tarpon Lake Center Dwy currently operates at LOS E during the evening peak hour. All other approaches and turning movements currently operate at acceptable LOS D or better during both analyzed peak hours.

Capacity Analysis Comparison – No Build Vs. Build Conditions (Year 2023)

Capacity Analyses comparison were conducted for the No Build and Build conditions (Year 2023). The primary purpose for this approach was to compare the results to identify areas impacted by the proposed development. The capacity results are included in **Appendix E**.

The capacity results for the study intersections during the morning peak hour are summarized in **Table 4**.

Table 4 Study Intersections 2023 AM Peak Hour Capacity Analysis

2023 MORNING PEAK HOUR CONDITIONS			NO BUILD		BUILD	
			DELAY (S)	LOS	DELAY (S)	LOS
Intersection		Approach				
1	US Hwy 19 N & E MLK Dr/Lake St (Signalized)	EB	108.5	F	108.3	F
		WB	91.1	F	91.1	F
		NB	20.4	C	22.3	C
		SB	42.2	D	47.3	D
		Intersection	37.0	D	40.9	D
11	US Hwy 19 N & Site Driveway (Unsignalized)	EB	-	-	17.6	C
		NB	0.0	A	0.0	A
		SB	0.0	A	0.0	A
		Intersection	0.0	A	0.3	A
12	Us Hwy 19 N & Melody Way/Tarpon Lake Center Drwy (Unsignalized)	EB	14.4	B	14.0	B
		WB	15.5	C	15.6	C
		NB	12.8	B	13.2	B
		SB	0.2	A	0.4	A
		Intersection	4.8	A	5.0	A

Extracted from Synchro10 HCM 6th Edition

Capacity Analysis for the Unsignalized Intersections was performed using HCM 2000 due to the roadway geometry

Based on the results of the capacity analysis comparison, during the morning peak hour, the intersection of US Hwy 19 N & Martin Luther King Jr Dr/Lake St is expected to operate at acceptable overall LOS D under No Build and Build Conditions, with an increase in the overall delay of 3.9 seconds. The eastbound and westbound approaches of the intersection of US Hwy 19 N & Martin Luther King Jr Dr/Lake St are expected to operate at LOS F under both, No Build and Build conditions.

All other Intersections, approaches, and turning movements are expected to operate at acceptable LOS D or better under both No Bild and Build conditions.

The capacity results for the study intersections during the evening peak hour are summarized in **Table 5**.

Table 5 Study Intersections 2023 PM Peak Hour Capacity Analysis

2023 EVENING PEAK HOUR CONDITIONS			NO BUILD		BUILD	
			DELAY (S)	LOS	DELAY (S)	LOS
Intersection		Approach				
1	US Hwy 19 N & E MLK Dr/Lake St (Signalized)	EB	156.2	F	156.2	F
		WB	79.8	E	79.8	E
		NB	48.6	D	49.0	D
		SB	53.0	D	53.0	D
		Intersection	56.5	E	56.7	E
11	US Hwy 19 N & Site Driveway (Unsignalized)	EB	-	-	10.7	B
		NB	0.0	A	0.0	A
		SB	0.0	A	0.0	A
		Intersection	0.0	A	0.1	A
12	Us Hwy 19 N & Melody Way/Tarpon Lake Center Drwy (Unsignalized)	EB	10.3	B	10.3	B
		WB	42.1	E	42.2	E
		NB	0.3	A	0.3	A
		SB	2.3	A	4.8	A
		Intersection	1.2	A	2.1	A

Extracted from Synchro10 HCM 6th Edition

Capacity Analysis for the Unsignalized Intersections was performed using HCM 2000 due to the roadway geometry

Based on the results of the capacity analysis comparison during the evening peak hour, the signalized intersection of US Hwy 19 N & Martin Luther King Jr Dr/Lake St is expected to operate at LOS E under both No Build and Build conditions, with minimal increase in overall intersection delay under Build Conditions. The eastbound and westbound approaches of the intersection of US Hwy 19 N & Martin Luther King Jr Dr/Lake St are expected to operate at LOS F and E respectively with no changes under Build conditions.

The westbound approach of the intersection of US Hwy 19 N and Melody Way/Tarpon Lake Center Dwy is expected to operate at LOS E under No Build and Build Conditions.

All other Intersections approaches, and turning movements are expected to operate at acceptable LOS D or better under both analysis scenarios.

Queueing Analysis Comparison – No Build Vs. Build Conditions (Year 2023)

A queueing analysis was performed to determine if the existing storage of the turn lanes is exceeded under any analysis scenario observed. The 95th percentile queue results are included in **Appendix E**.

The queue results for the morning peak hour are presented on **Table 6**.

Table 6 Morning Peak Hour Queueing Analysis

MORNING PEAK HOUR CONDITIONS - Queueing Analysis				Storage (ft)	NO BUILD 2023 Queue (ft)	BUILD 2023 Queue (ft)
Intersection		Approach	Movement			
1	US Hwy 19 N & E MLK Dr/Lake St (Signalized)	NB	L	500	319	#422
		SB	L	345	42	42
11	US Hwy 19 N & Site Driveway (Unsignalized)	EB	R	100		31
12	Us Hwy 19 N & Melody Way/Tarpon Lake Center Drwy (Unsignalized)	EB	R	200	1	1
		WB	R	100	2	2
		NB	L	445	140	142
		SB	L	490	14	25

Extracted from Synchro10 HCM 6th Edition

The queueing analysis results for the evening peak hour are presented on **Table 7**.

Table 7 Evening Peak Hour Queueing Analysis

EVENING PEAK HOUR CONDITIONS - Queueing Analysis				Storage (ft)	NO BUILD 2023 Queue (ft)	BUILD 2023 Queue (ft)
Intersection		Approach	Movement			
1	US Hwy 19 N & E MLK Dr/Lake St (Signalized)	NB	L	500	345	371
		SB	L	345	#185	#185
11	US Hwy 19 N & Site Driveway (Unsignalized)	EB	R	100		7
12	Us Hwy 19 N & Melody Way/Tarpon Lake Center Drwy (Unsignalized)	EB	R	200	0	0
		WB	R	100	8	8
		NB	L	445	23	23
		SB	L	490	64	97

Extracted from Synchro10 HCM 6th Edition

Based on the queues presented on **Tables 6** and **7**, the queues do not appear to exceed the provided turn lane lengths during the morning and evening peak hours.

Based on the results of the capacity and turn lane warrant analysis presented on this report, the development of the proposed Black Rifle Coffee Company Shop at 40390 US Hwy 19 N, in the City of Tarpon Springs, Florida is not expected to adversely impact the surrounding roadway network.

Summary of Findings and Conclusions

- The proposed development is expected to generate a total of 226 trips during the morning peak hour and 103 trips during the evening peak hour. Of these trips, 36 are expected to be new trips during the morning peak hour, and 16 trips are expected to be new trips during the evening peak hour, the remaining trips are anticipated to be pass-by trips.
- It is anticipated that of the primary trips, 50% will travel to/from South on US Hwy 19 N; the remaining 50% will travel to/from North on US Hwy 19, of which, 10% will travel to/from West on Martin Luther King Jr Dr. It is anticipated that of the pass-by trips, 85% will travel to the South on US Hwy 19 N, and 15% will travel to the North on US Hwy 19.
- The results of the Turn Lane Warrant indicate that a right turn lane is not warranted at the site driveway considering that the peak hour volumes for both morning and evening do not exceed the 125 right-turning vehicles per hour threshold applicable for multilane highways. **A large entry radius** is recommended at the access driveway.

The results of the Existing Conditions intersection capacity analyses indicate the following:

- All intersections currently operate at LOS D or better during both the morning and evening peak hours. During the morning peak hour, the eastbound and westbound approaches of the intersection of US Hwy 19 N & Martin Luther King Jr Dr/Lake St operates at LOS F. During the evening peak hour, the eastbound and westbound approaches of the intersection of US Hwy 19 N & Martin Luther King Jr Dr/Lake St operate at LOS F and E, respectively.
- The westbound approach of the intersection of US Hwy 19 N and Melody Way/Tarpon Lake Center Dwy currently operates at LOS E during the evening peak hour.

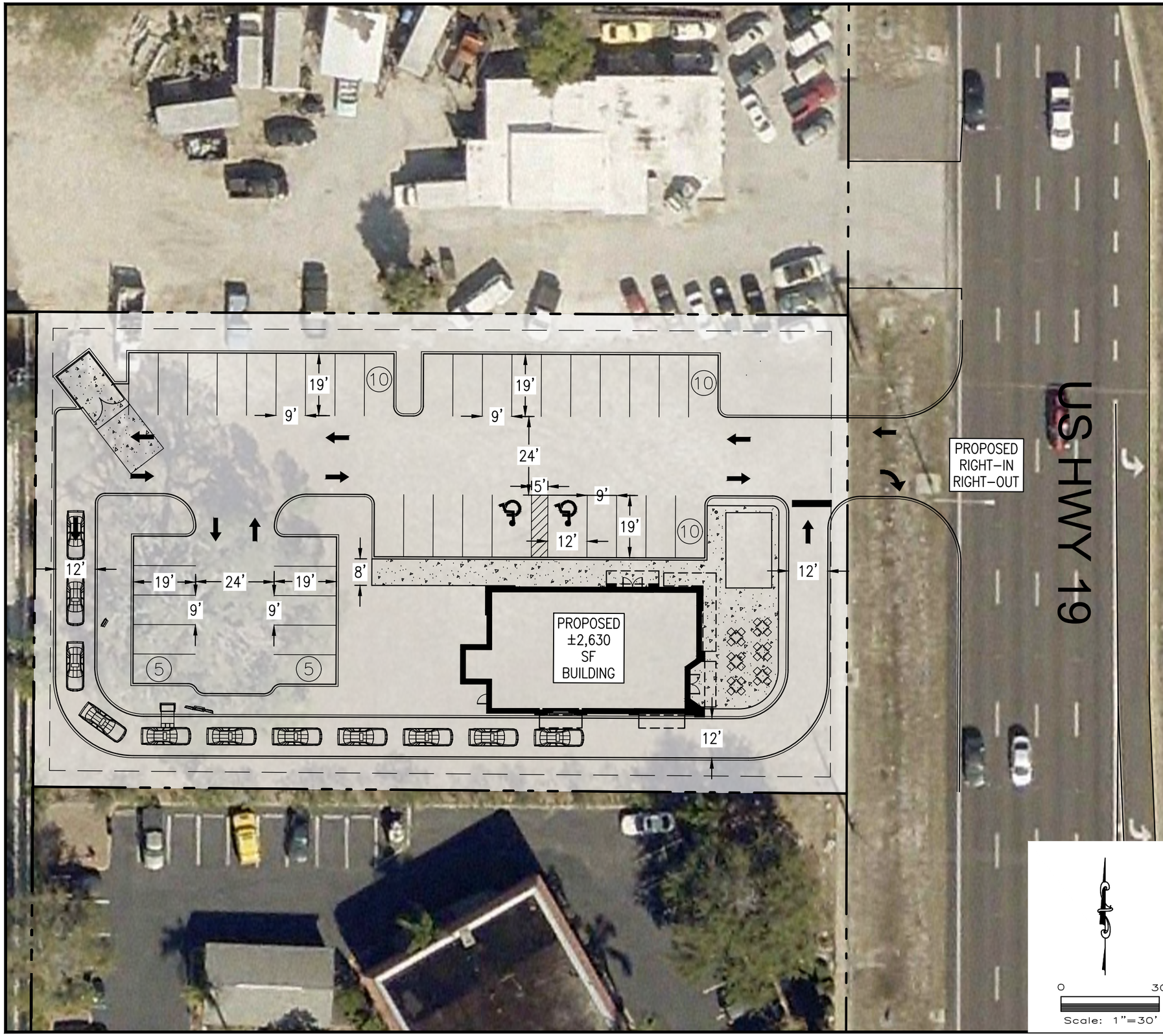
The results of the capacity analysis comparison No Build vs Build indicate the following:

- *During the 2023 morning peak hour:*
  - The intersection of US Hwy 19 N & Martin Luther King Jr Dr/Lake St is expected to operate at acceptable overall LOS D under No Build and Build Conditions, with an increase in the overall delay of 3.9 seconds. The eastbound and westbound approaches of the intersection of US Hwy 19 N & Martin Luther King Jr Dr/Lake St are expected to operate at LOS F under both, No Build and Build conditions.

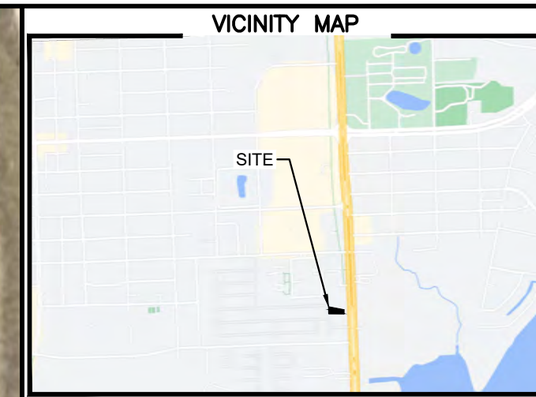
- *During the 2023 evening peak hour:*
  - The signalized intersection of US Hwy 19 N & Martin Luther King Jr Dr/Lake St is expected to operate at LOS E under both No Build and Build conditions, with minimal increase in overall intersection delay under Build Conditions. The eastbound and westbound approaches of the intersection of US Hwy 19 N & Martin Luther King Jr Dr/Lake St are expected to operate at LOS F and E respectively with no changes under Build conditions.
  - The westbound approach of the intersection of US Hwy 19 N and Melody Way/Tarpon Lake Center Dwy is expected to operate at LOS E under No Build and Build Conditions.

- The queue analysis results show that the queues do not appear to exceed the provided turn lane lengths during the morning and evening peak hours.
- Based on the results of the capacity and turn lane warrant analysis presented on this report, the development of the proposed Black Rifle Coffee Company Shop at 40390 US Hwy 19 N, in the City of Tarpon Springs, Florida is not expected to adversely impact the surrounding roadway network.

Appendix A



VICINITY MAP



SITE DATA TABLE

PROJECT NAME	BLACK RIFLE COFFEE
PROJECT ADDRESS	40390 US HIGHWAY 19 N
PROJECT DESCRIPTION	BLACK RIFFLE COFFE (QSR) 3,150 SQF
TOTAL PARCEL/SITE AREA	36,105 SF (0.82 AC)
EXISTING ZONING	VACANT COMMERCIAL
JURISDICTION	CITY OF PINELLAS
PARCEL NUMBER	18-27-16-00000-240-1000
MAX. BUILDING HEIGHT	N/A
REQUIRED LANDSCAPE BUFFERS	
FRONT	5'
SIDE/REAR	5' STREET
PARKING REQUIREMENTS	10 PER 1,000 SQF BUILDING = 30
TOTAL PARKING PROVIDED	
STANDARD SPACES (9'x18')	38
ACCESSIBLE PARKING (12'x18')	2
TOTAL PROPOSED SPACES	40

GENERAL SITE NOTES:

1. SIGNS REQUIRE A SEPARATE PERMIT.
2. DUMPSTERS AND MECHANICAL EQUIPMENT WILL BE SCREENED FROM THE PUBLIC.
3. WALLS OVER 6' HIGH APPROVED BY SEPARATE PERMIT.
4. PARKING WILL BE PAVED.
5. PARKING WILL BE WITHIN 600' OF BUILDING.
6. THERE SHALL BE NO OBSTRUCTION OF SITE SIGNAGE BY LANDSCAPE PLANT MATERIAL, AND SUCH MUST BE RELOCATED/CORRECTED BEFORE THE FIELD INSPECTION WILL ACCEPT/PASS THE SIGN IN THE FIELD OR ISSUE A CERTIFICATE OF OCCUPANCY FOR A PROJECT.
7. ALL ROOF MOUNTED MECHANICAL EQUIPMENT SHALL BE FULLY SCREENED BY PARAPET WALLS EQUAL TO, OR GREATER THAN, THE HIGHEST POINT ON THE MECHANICAL EQUIPMENT.
8. SOLID MASONRY WALLS AND GATES EQUAL TO, OR GREATER THAN, THE HIGHEST POINT ON THE MECHANICAL EQUIPMENT SHALL SCREEN ALL GROUND MOUNTED MECHANICAL EQUIPMENT.
9. ALL SITE IMPROVEMENTS, INCLUDING LANDSCAPE AND SITE CLEANUP, MUST BE COMPLETED PRIOR TO CERTIFICATE OF OCCUPANCY FOR ANY BUILDING WITHIN A PHASE.
10. THE FIRE DEPT. DOUBLE CHECK ASSEMBLY SHALL BE PAINTED TO MATCH ADJACENT WALL COLOR.
11. ALL EXTERNAL LIGHTING SHALL BE LOCATED AND DESIGNED TO PREVENT RAYS FROM BEING DIRECTED OFF OF THE PROPERTY UPON WHICH THE LIGHTING IS LOCATED.
12. CONDITIONS MAY EXIST THAT COULD RESTRICT THE DEVELOPMENT OF THIS SITE AS SHOWN. THIS DRAWING IS INTENDED TO BE CONCEPTUAL ONLY AND ADDITIONAL RESEARCH AND DESIGN WOULD BE REQUIRED FOR THE PREPARATION OF A SITE PLAN THAT MEETS LOCAL JURISDICTIONAL CODES.
13. BCG DOES NOT PURPORT THAT THIS SITE CAN BE DEVELOPED AS SHOWN. THE PURCHASE OF THIS SITE SHALL BE AT THE OWNER/DEVELOPER'S SOLE EXPENSE.
14. STORMWATER MANAGEMENT FACILITY SHOWN ON THIS PLAN ARE PURELY CONCEPTUAL AND IS SUBJECT TO CHANGE UPON FINAL CIVIL DESIGN. BCG DOES NOT PURPORT THAT WHAT IS SHOWN IS ADEQUATE TO MEET ALL JURISDICTIONAL REQUIREMENTS.
15. NO SITE VISITS HAVE BEEN PERFORMED TO ENSURE THE ACCURACY OF THE AERIAL IMAGE SHOWN HEREON.
16. THIS EXHIBIT IS NOT INTENDED TO BE USED AS A CONSTRUCTION DOCUMENT, AND SHOULD NOT BE CONSTRUED IN ANYWAY TO BE USED FOR CONSTRUCTION PURPOSES.

PROPOSED LEGEND

PROPERTY LINE
BUILDING SETBACK LINE
LANDSCAPE BUFFER
(12) PARKING COUNT

Bowman Consulting Group, Ltd.
1410 N Westshore Blvd
Suite 111
Tampa, FL 33607
Phone: (813) 474-7424
www.bowmanconsulting.com
© Bowman Consulting Group, Ltd.

CONCEPTUAL DESIGN

BLACK RIFLE COFFEE

40390 US HIGHWAY 19 N
TARPON SPRINGS, FLORIDA

Bowman CONSULTING
Certificate of Authorization License No. 30462

TK	TK	XX
DSGN	DRAWN	CHKD

211021.1
PROJECT NUMBER

SCALE 1" = 30'

VERSION 7B

Appendix B

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2020 HISTORICAL AADT REPORT

COUNTY: 15 - PINELLAS

SITE: 5165 - SR 55/US 19, SOUTH OF TARPON AVE

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2020	81000 C	N 40500	S 40500	9.00	55.30	3.70
2019	78000 C	N 38000	S 40000	9.00	55.70	3.70
2018	77500 C	N 38000	S 39500	9.00	55.50	3.50
2017	74500 F	N 36500	S 38000	9.00	54.50	4.00
2016	73500 C	N 36000	S 37500	9.00	55.90	4.00
2015	72000 C	N 35000	S 37000	9.00	55.00	4.20
2014	65500 F	N 32000	S 33500	9.00	55.40	4.00
2013	64500 C	N 31500	S 33000	9.00	55.20	3.20
2012	64500 C	N 31500	S 33000	9.00	55.00	3.20
2011	68500 C	N 34500	S 34000	9.00	56.50	3.40
2010	76500 C	N 38000	S 38500	10.52	55.26	3.80
2009	71000 C	N 35000	S 36000	10.53	55.79	3.40
2008	75500 C	N 37500	S 38000	10.29	58.46	3.20
2007	84000 C	N 42000	S 42000	10.31	56.79	3.50
2006	75000 C	N 36500	S 38500	9.88	58.53	3.20
2005	68500 C	N 33500	S 35000	9.90	58.50	8.60

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE
V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN
*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

2020 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL
CATEGORY: 1500 PINELLAS COUNTYWIDE

MOCF: 0.90

WEEK	DATES	SF	PSCF
* 1	01/01/2020 - 01/04/2020	1.02	1.13
* 2	01/05/2020 - 01/11/2020	0.94	1.04
* 3	01/12/2020 - 01/18/2020	0.85	0.94
* 4	01/19/2020 - 01/25/2020	0.84	0.93
* 5	01/26/2020 - 02/01/2020	0.82	0.91
* 6	02/02/2020 - 02/08/2020	0.81	0.90
* 7	02/09/2020 - 02/15/2020	0.79	0.88
* 8	02/16/2020 - 02/22/2020	0.83	0.92
* 9	02/23/2020 - 02/29/2020	0.86	0.96
*10	03/01/2020 - 03/07/2020	0.90	1.00
*11	03/08/2020 - 03/14/2020	0.94	1.04
*12	03/15/2020 - 03/21/2020	0.97	1.08
*13	03/22/2020 - 03/28/2020	1.11	1.23
14	03/29/2020 - 04/04/2020	1.25	1.39
15	04/05/2020 - 04/11/2020	1.39	1.54
16	04/12/2020 - 04/18/2020	1.53	1.70
17	04/19/2020 - 04/25/2020	1.42	1.58
18	04/26/2020 - 05/02/2020	1.32	1.47
19	05/03/2020 - 05/09/2020	1.21	1.34
20	05/10/2020 - 05/16/2020	1.10	1.22
21	05/17/2020 - 05/23/2020	1.08	1.20
22	05/24/2020 - 05/30/2020	1.06	1.18
23	05/31/2020 - 06/06/2020	1.04	1.16
24	06/07/2020 - 06/13/2020	1.02	1.13
25	06/14/2020 - 06/20/2020	1.00	1.11
26	06/21/2020 - 06/27/2020	1.01	1.12
27	06/28/2020 - 07/04/2020	1.02	1.13
28	07/05/2020 - 07/11/2020	1.02	1.13
29	07/12/2020 - 07/18/2020	1.03	1.14
30	07/19/2020 - 07/25/2020	1.03	1.14
31	07/26/2020 - 08/01/2020	1.03	1.14
32	08/02/2020 - 08/08/2020	1.02	1.13
33	08/09/2020 - 08/15/2020	1.02	1.13
34	08/16/2020 - 08/22/2020	1.02	1.13
35	08/23/2020 - 08/29/2020	1.02	1.13
36	08/30/2020 - 09/05/2020	1.02	1.13
37	09/06/2020 - 09/12/2020	1.02	1.13
38	09/13/2020 - 09/19/2020	1.02	1.13
39	09/20/2020 - 09/26/2020	1.01	1.12
40	09/27/2020 - 10/03/2020	1.00	1.11
41	10/04/2020 - 10/10/2020	0.99	1.10
42	10/11/2020 - 10/17/2020	0.98	1.09
43	10/18/2020 - 10/24/2020	0.99	1.10
44	10/25/2020 - 10/31/2020	0.99	1.10
45	11/01/2020 - 11/07/2020	1.00	1.11
46	11/08/2020 - 11/14/2020	1.00	1.11
47	11/15/2020 - 11/21/2020	1.01	1.12
48	11/22/2020 - 11/28/2020	1.01	1.12
49	11/29/2020 - 12/05/2020	1.01	1.12
50	12/06/2020 - 12/12/2020	1.02	1.13
51	12/13/2020 - 12/19/2020	1.02	1.13
52	12/20/2020 - 12/26/2020	0.94	1.04
53	12/27/2020 - 12/31/2020	0.85	0.94

* PEAK SEASON

National Data & Surveying Services Intersection Turning Movement Count

Location: US 19 & E Martin Luther King Jr Dr/Lake St
City: Tarpon Springs
Control: Signalized

Project ID: 22-120121-001
Date: 3/22/2022

Data - Total

NS/EW Streets:	US 19				US 19				E Martin Luther King Jr Dr/Lake St				E Martin Luther King Jr Dr/Lake St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	27	339	3	3	2	819	21	0	35	1	24	0	1	0	0	0	1275
7:15 AM	13	322	5	0	4	943	20	1	34	3	34	0	3	2	0	0	1384
7:30 AM	41	463	2	2	2	900	18	0	35	0	40	0	0	0	0	0	1503
7:45 AM	31	447	2	2	0	891	21	0	46	3	41	0	1	1	2	0	1488
8:00 AM	17	479	1	1	4	898	23	1	34	1	38	0	1	0	3	0	1501
8:15 AM	24	507	2	2	0	801	13	1	51	2	32	0	3	0	4	0	1442
8:30 AM	15	412	0	1	4	814	30	2	40	4	39	0	1	2	0	0	1364
8:45 AM	32	446	1	5	6	843	27	1	29	0	43	0	1	2	0	0	1436
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	200	3415	16	16	22	6909	173	6	304	14	291	0	11	7	9	0	11393
APPROACH %'s :	5.48%	93.64%	0.44%	0.44%	0.31%	97.17%	2.43%	0.08%	49.92%	2.30%	47.78%	0.00%	40.74%	25.93%	33.33%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	113	1896	7	7	6	3490	75	2	166	6	151	0	5	1	9	0	5934
PEAK HR FACTOR :	0.689	0.935	0.875	0.875	0.375	0.969	0.815	0.500	0.814	0.500	0.921	0.000	0.417	0.250	0.563	0.000	0.987
	0.945				0.965				0.897				0.536				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	36	884	1	3	8	487	24	2	63	3	45	0	3	4	7	0	1570
4:15 PM	13	932	3	2	3	506	32	7	48	1	30	0	2	3	4	0	1586
4:30 PM	31	825	2	4	6	592	25	11	74	1	33	0	8	1	10	0	1623
4:45 PM	32	865	3	3	2	521	26	6	57	1	34	0	7	3	4	0	1564
5:00 PM	37	874	2	0	4	596	27	10	91	1	34	0	4	3	8	0	1691
5:15 PM	28	899	1	2	5	460	26	5	71	2	41	0	7	2	5	0	1554
5:30 PM	24	957	4	0	1	539	17	7	39	0	34	0	0	4	0	0	1626
5:45 PM	37	901	2	1	4	475	24	7	60	1	31	0	5	3	6	0	1557
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	238	7137	18	15	33	4176	201	55	503	10	282	0	36	23	44	0	12771
APPROACH %'s :	3.21%	96.34%	0.24%	0.20%	0.74%	93.53%	4.50%	1.23%	63.27%	1.26%	35.47%	0.00%	34.95%	22.33%	42.72%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	113	3496	10	9	15	2215	110	34	270	4	131	0	21	10	26	0	6464
PEAK HR FACTOR :	0.764	0.938	0.833	0.563	0.625	0.929	0.859	0.773	0.742	1.000	0.963	0.000	0.656	0.833	0.650	0.000	0.956
	0.955				0.932				0.804				0.750				

Prepared by National Data & Surveying Services

US 19 & E Martin Luther King Jr Dr/Lake St

Peak Hour Turning Movement Count

ID: 22-120121-001
City: Tarpon Springs

Day: Tuesday
Date: 3/22/2022

PEAK HOURS	COUNT PERIODS
07:30 AM - 08:30 AM	7:00 AM - 09:00 AM
NONE	NONE
04:15 PM - 05:15 PM	4:00 PM - 06:00 PM

SOUTHBOUND (US 19)

AM	75	3490	6	2	2073	AM
NOON	0	0	0	0	0	NOON
PM	110	2215	15	34	3826	PM

EASTBOUND (E Martin Luther King Jr Dr/Lake St)

AM	NOON	PM
189	0	233
0	0	0
166	0	270
6	0	4
151	0	131

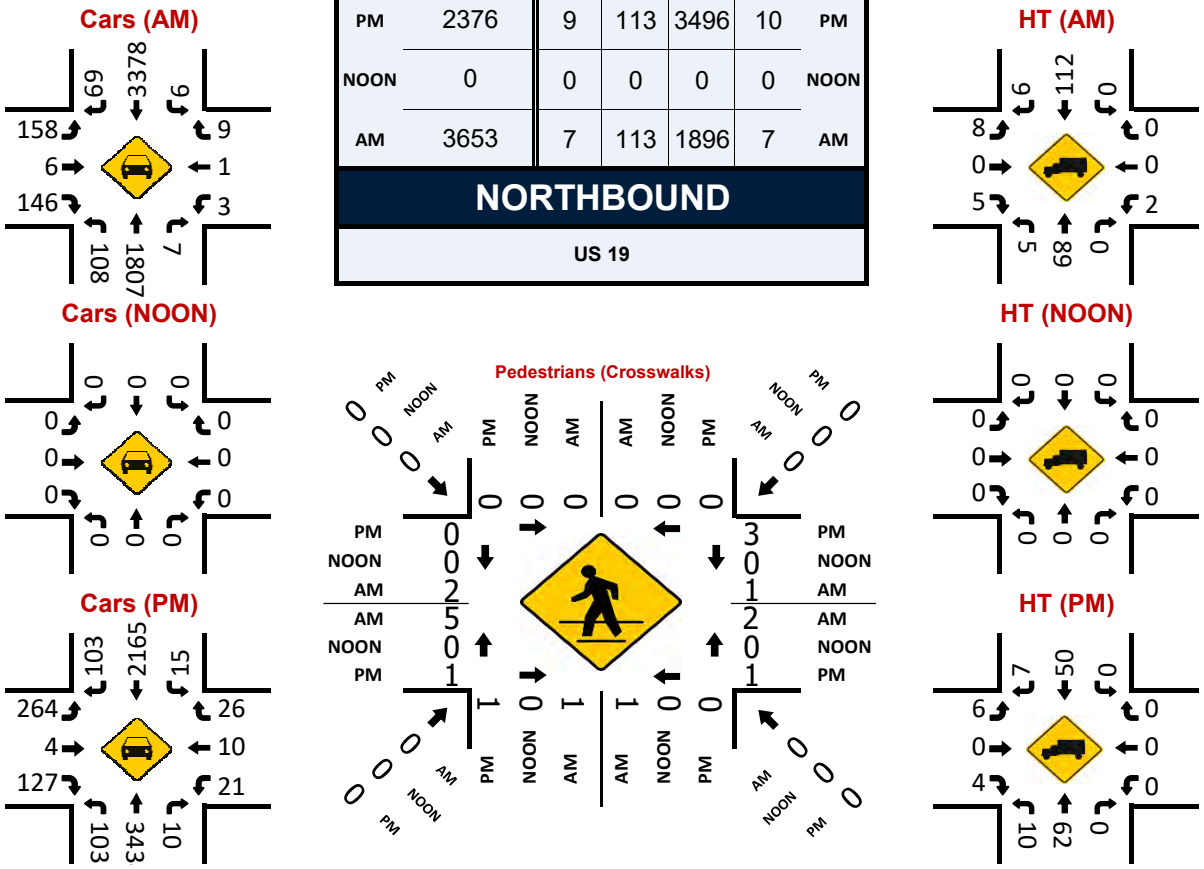
WESTBOUND (E Martin Luther King Jr Dr/Lake St)

PM	NOON	AM
26	0	9
10	0	1
21	0	5
0	0	0
29	0	19

NORTHBOUND (US 19)

PM	2376	9	113	3496	10	PM
NOON	0	0	0	0	0	NOON
AM	3653	7	113	1896	7	AM

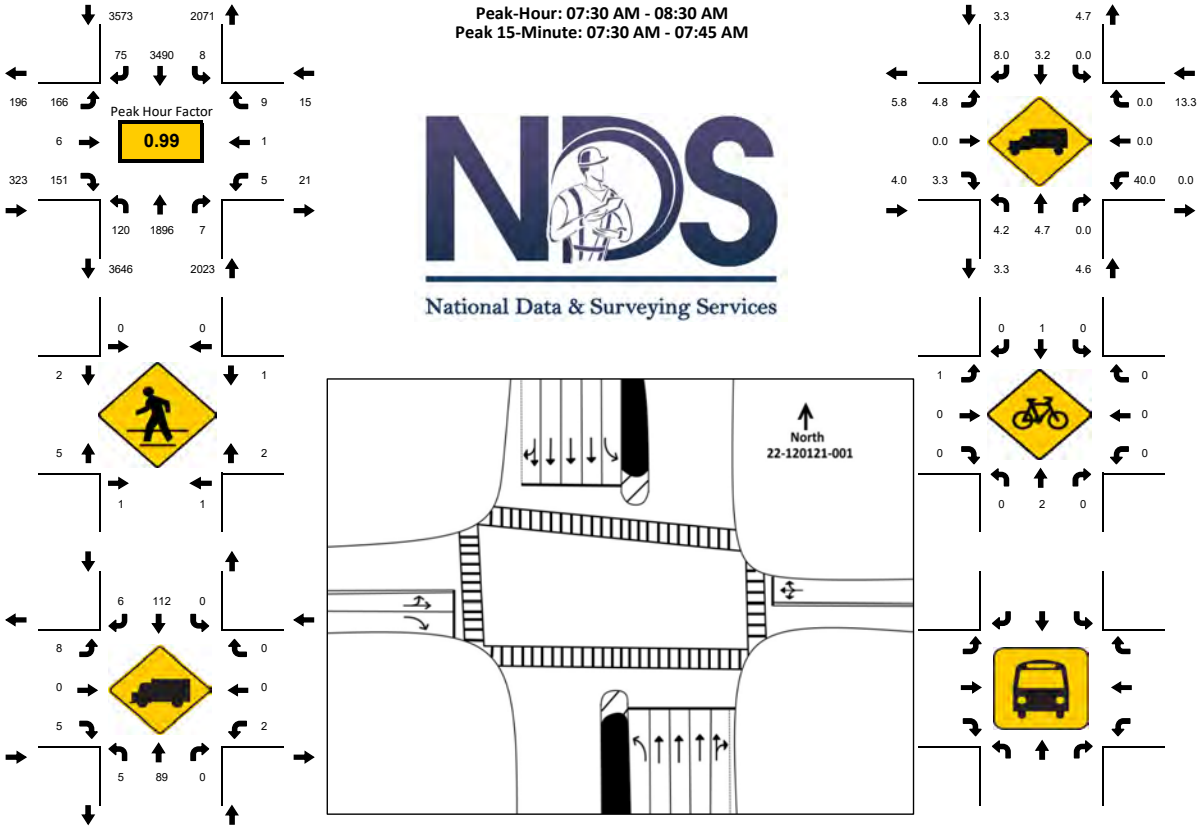
CONTROL			
Signalized			
TEV	5934	0	6464
	AM	NOON	PM
PHF	0.99		0.96



LOCATION: US 19 & E Martin Luther King Jr Dr/Lake St
CITY/STATE: Tarpon Springs, FL

PROJECT ID: 22-120121-001
DATE: Tue, Mar 22, 2022

Peak-Hour: 07:30 AM - 08:30 AM
Peak 15-Minute: 07:30 AM - 07:45 AM

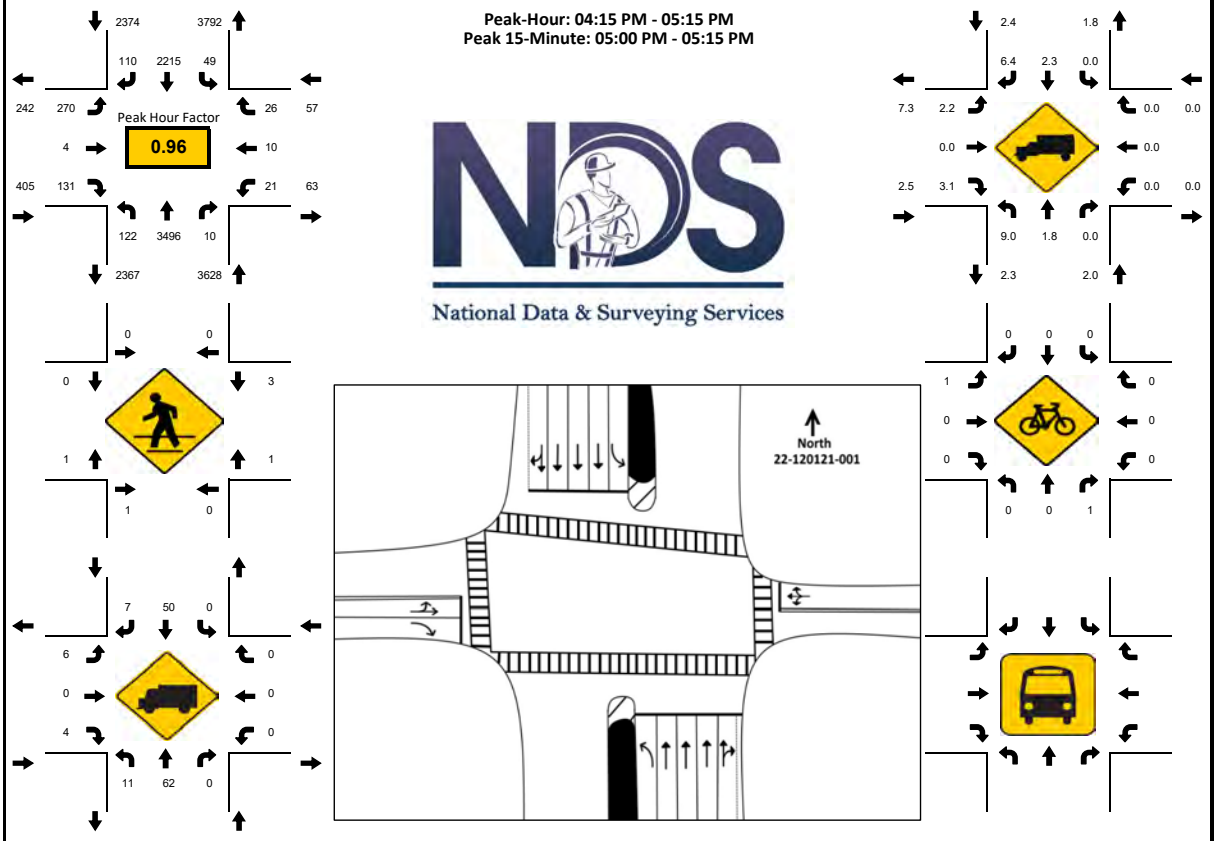


15-Min Count Period Beginning At	US 19 Northbound					US 19 Southbound					E Martin Luther King Jr Dr/Lake St Eastbound					E Martin Luther King Jr Dr/Lake St Westbound						Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Total	
7:00 AM	27	339	3	3		2	819	21	0		35	1	24	0		1	0	0	0		1275	5650
7:15 AM	13	322	5	0		4	943	20	1		34	3	34	0		3	2	0	0		1384	5876
7:30 AM	41	463	2	2		2	900	18	0		35	0	40	0		0	0	0	0		1503	5934
7:45 AM	31	447	2	2		0	891	21	0		46	3	41	0		1	1	2	0		1488	5795
8:00 AM	17	479	1	1		4	898	23	1		34	1	38	0		1	0	3	0		1501	5743
8:15 AM	24	507	2	2		0	801	13	1		51	2	32	0		3	0	4	0		1442	4242
8:30 AM	15	412	0	1		4	814	30	2		40	4	39	0		1	2	0	0		1364	2800
8:45 AM	32	446	1	5		6	843	27	1		29	0	43	0		1	2	0	0		1436	1436
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
All Vehicles	164	2028	8	8		16	3600	92	4		204	12	164	0		12	4	16	0		**6332**	
Heavy Trucks	12	112	0	0		0	136	8	0		12	0	8	0		4	0	0	0		**292**	
Pedestrians		4					0					12					8				**24**	
Bicycles	0	8	0	0		0	4	0	0		0	0	0	4		0	0	0	0		**12**	
Buses																						
Stopped Buses																						

LOCATION: US 19 & E Martin Luther King Jr Dr/Lake St
CITY/STATE: Tarpon Springs, FL

PROJECT ID: 22-120121-001
DATE: Tue, Mar 22, 2022

Peak-Hour: 04:15 PM - 05:15 PM
Peak 15-Minute: 05:00 PM - 05:15 PM



15-Min Count Period Beginning At	US 19 Northbound					US 19 Southbound					E Martin Luther King Jr Dr/Lake St Eastbound					E Martin Luther King Jr Dr/Lake St Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
4:00 PM	36	884	1	3		8	487	24	2		63	3	45	0		3	4	7	0		1570	6343
4:15 PM	13	932	3	2		3	506	32	7		48	1	30	0		2	3	4	0		1586	6464
4:30 PM	31	825	2	4		6	592	25	11		74	1	33	0		8	1	10	0		1623	6432
4:45 PM	32	865	3	3		2	521	26	6		57	1	34	0		7	3	4	0		1564	6435
5:00 PM	37	874	2	0		4	596	27	10		91	1	34	0		4	3	8	0		1691	6428
5:15 PM	28	899	1	2		5	460	26	5		71	2	41	0		7	2	5	0		1554	4737
5:30 PM	24	957	4	0		1	539	17	7		39	0	34	0		0	4	0	0		1626	3183
5:45 PM	37	901	2	1		4	475	24	7		60	1	31	0		5	3	6	0		1557	1557
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
All Vehicles	148	3728	12	16		24	2384	128	44		364	4	136	0		32	12	40	0		**7072**	
Heavy Trucks	16	84	0	4		0	60	12	0		8	0	12	0		0	0	0	0		**192**	
Pedestrians		4					0					4					8				**16**	
Bicycles	0	0	4	0		0	0	0	0		0	0	0	4		0	0	0	0		**4**	
Buses																						
Stopped Buses																						

National Data & Surveying Services Intersection Turning Movement Count

Location: US 19 & Melody Way/Tarpon Lake Center Pkg Dwy
City: Tarpon Springs
Control: 1-Way Stop(EB)

Project ID: 22-120121-002
Date: 3/22/2022

Data - Total

NS/EW Streets:	US 19				US 19				Melody Way/Tarpon Lake Center Pkg Dwy				Melody Way/Tarpon Lake Center Pkg Dwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	372	0	7	1	843	0	5	0	0	2	0	0	0	0	0	1230
7:15 AM	0	391	1	3	6	976	0	2	0	0	2	0	0	0	0	0	1381
7:30 AM	0	466	2	11	4	892	0	5	0	0	1	0	0	0	1	0	1382
7:45 AM	0	484	3	13	5	898	0	2	0	0	1	0	0	0	0	0	1406
8:00 AM	0	489	3	10	3	908	0	5	0	0	2	0	0	0	3	0	1423
8:15 AM	0	533	3	7	4	820	1	3	0	0	0	0	0	0	2	0	1373
8:30 AM	2	457	1	6	2	844	0	4	0	0	3	0	0	0	1	0	1320
8:45 AM	2	443	2	4	2	846	0	10	0	0	1	0	0	0	1	0	1311
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	4	3635	15	61	27	7027	1	36	0	0	12	0	0	0	8	0	10826
APPROACH %'s :	0.11%	97.85%	0.40%	1.64%	0.38%	99.10%	0.01%	0.51%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	0	1830	9	37	18	3674	0	14	0	0	6	0	0	0	4	0	5592
PEAK HR FACTOR :	0.000	0.936	0.750	0.712	0.750	0.941	0.000	0.700	0.000	0.000	0.750	0.000	0.000	0.000	0.333	0.000	0.982
	0.934				0.942				0.750				0.333				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	1	917	4	8	2	522	0	5	0	0	0	0	0	0	3	0	1462
4:15 PM	2	984	5	11	0	517	0	3	0	0	0	0	0	0	2	0	1524
4:30 PM	0	912	2	7	0	644	0	3	0	0	1	0	0	0	3	0	1572
4:45 PM	1	884	1	12	1	561	0	5	0	0	1	0	0	0	1	0	1467
5:00 PM	0	954	2	9	2	618	0	2	0	0	2	0	0	0	6	0	1595
5:15 PM	1	1009	3	15	3	568	0	4	0	0	0	0	0	0	0	0	1603
5:30 PM	2	919	1	12	1	563	0	6	0	0	2	0	0	0	1	0	1507
5:45 PM	0	1000	1	16	0	500	0	3	0	0	0	0	0	0	0	0	1520
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	7	7579	19	90	9	4493	0	31	0	0	6	0	0	0	16	0	12250
APPROACH %'s :	0.09%	98.49%	0.25%	1.17%	0.20%	99.12%	0.00%	0.68%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	2	3759	8	43	6	2391	0	14	0	0	4	0	0	0	10	0	6237
PEAK HR FACTOR :	0.500	0.931	0.667	0.717	0.500	0.928	0.000	0.700	0.000	0.000	0.500	0.000	0.000	0.000	0.417	0.000	0.973
	0.927				0.932				0.500				0.417				

Prepared by National Data & Surveying Services

US 19 & Melody Way/Tarpon Lake Center Pkg Dwy

Peak Hour Turning Movement Count

ID: 22-120121-002
City: Tarpon Springs

Day: Tuesday
Date: 3/22/2022

PEAK HOURS	COUNT PERIODS
07:15 AM - 08:15 AM	7:00 AM - 09:00 AM
NONE	NONE
04:30 PM - 05:30 PM	4:00 PM - 06:00 PM

US 19

SOUTHBOUND

AM	0	3674	18	14	1848	AM
NOON	0	0	0	0	0	NOON
PM	0	2391	6	14	3783	PM

EASTBOUND

Melody Way/Tarpon Lake Center Pkg Dwy

AM	NOON	PM
0	0	2
0	0	0
0	0	0
0	0	0
6	0	4

WESTBOUND

Melody Way/Tarpon Lake Center Pkg Dwy

PM	NOON	AM
10	0	4
0	0	0
0	0	0
0	0	0
14	0	27

0	0	0	0	
0	0	0	0	
0	0	0	0	
0	0	0	0	

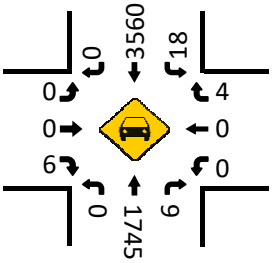
CONTROL			
1-Way Stop(EB)			
TEV	5592	0	6237
	AM	NOON	PM
PHF	0.98		0.97

NORTHBOUND

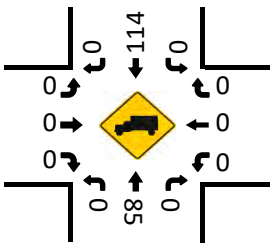
PM	2438	43	2	3759	8	PM
NOON	0	0	0	0	0	NOON
AM	3717	37	0	1830	9	AM

US 19

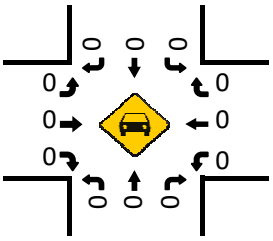
Cars (AM)



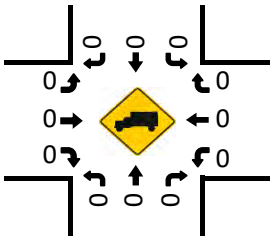
HT (AM)



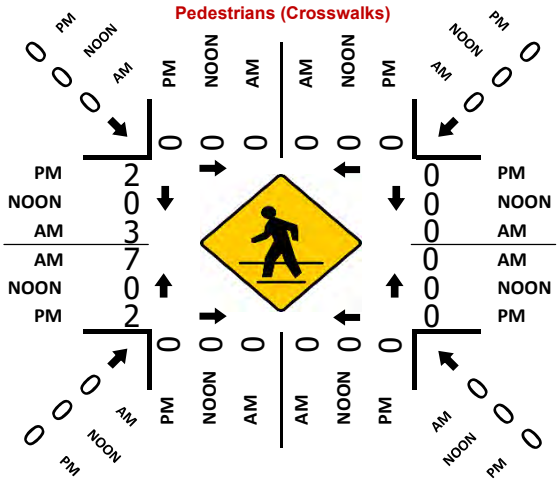
Cars (NOON)



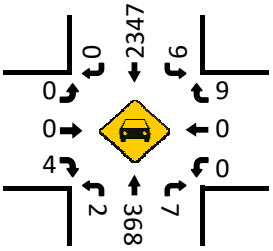
HT (NOON)



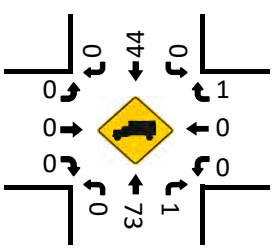
Pedestrians (Crosswalks)



Cars (PM)



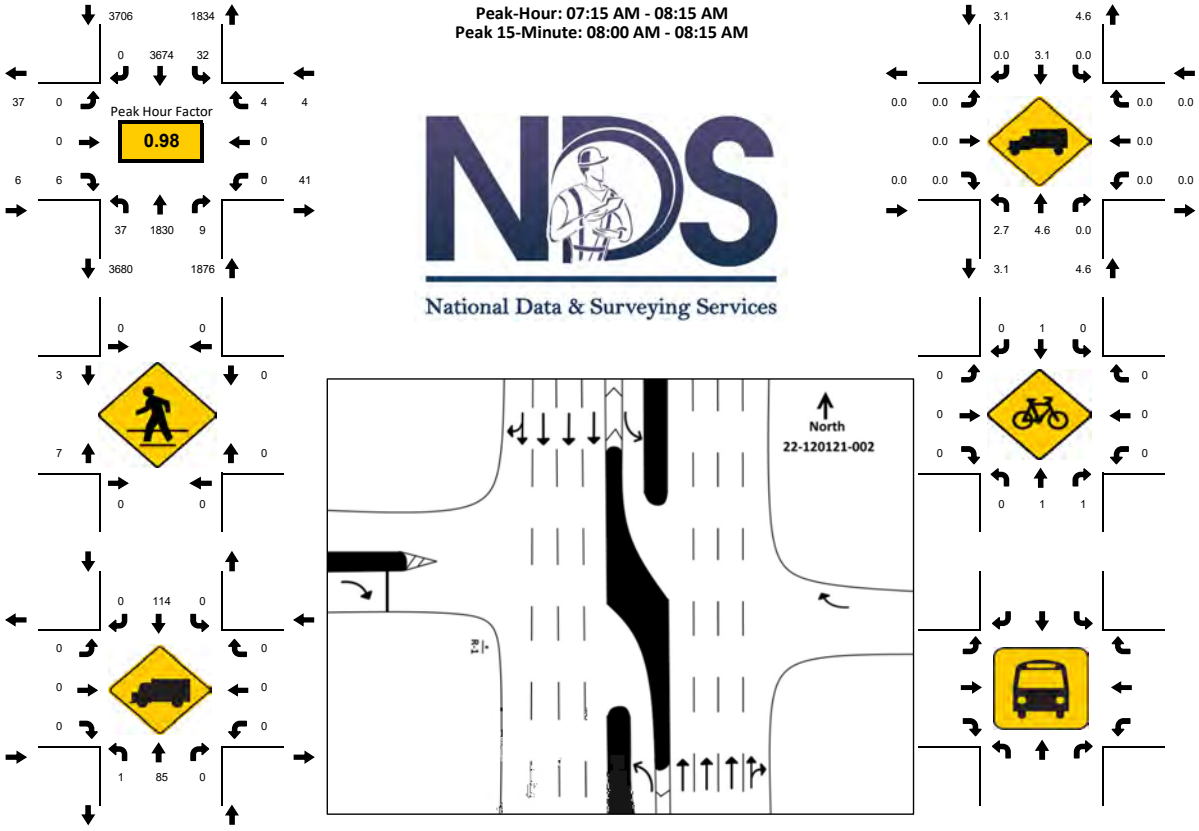
HT (PM)



LOCATION: US 19 & Melody Way/Tarpon Lake Center Pkg Dwy
CITY/STATE: Tarpon Springs, FL

PROJECT ID: 22-120121-002
DATE: Tue, Mar 22, 2022

Peak-Hour: 07:15 AM - 08:15 AM
Peak 15-Minute: 08:00 AM - 08:15 AM

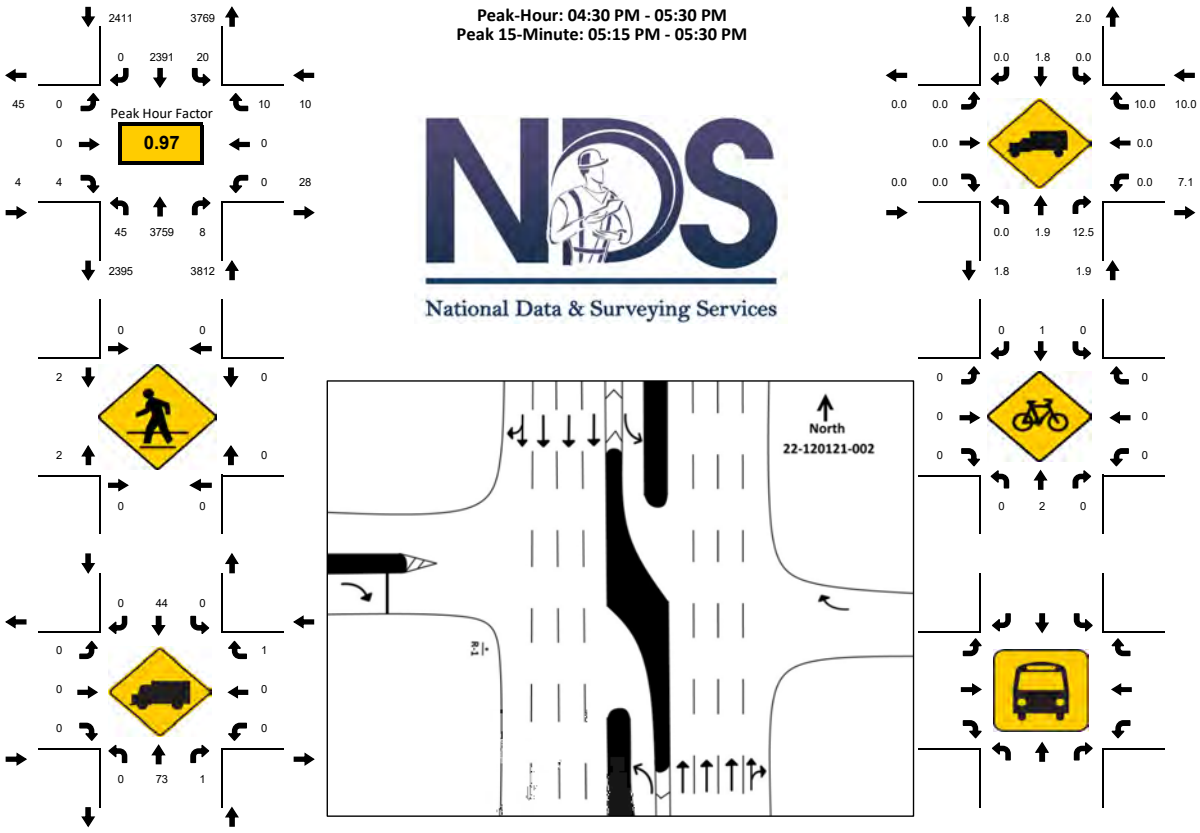


15-Min Count Period Beginning At	US 19 Northbound					US 19 Southbound					dy Way/Tarpon Lake Center Pkg Eastbound					dy Way/Tarpon Lake Center Pkg Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
7:00 AM	0	372	0	7		1	843	0	5		0	0	2	0		0	0	0	0		1230	5399
7:15 AM	0	391	1	3		6	976	0	2		0	0	2	0		0	0	0	0		1381	5592
7:30 AM	0	466	2	11		4	892	0	5		0	0	1	0		0	0	1	0		1382	5584
7:45 AM	0	484	3	13		5	898	0	2		0	0	1	0		0	0	0	0		1406	5522
8:00 AM	0	489	3	10		3	908	0	5		0	0	2	0		0	0	3	0		1423	5427
8:15 AM	0	533	3	7		4	820	1	3		0	0	0	0		0	0	2	0		1373	4004
8:30 AM	2	457	1	6		2	844	0	4		0	0	3	0		0	0	1	0		1320	2631
8:45 AM	2	443	2	4		2	846	0	10		0	0	1	0		0	0	1	0		1311	1311
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
All Vehicles	0	1956	12	52		24	3904	0	20		0	0	8	0		0	0	12	0		**5988**	
Heavy Trucks	0	108	0	4		0	124	0	0		0	0	0	0		0	0	0	0		**232**	
Pedestrians		0					0					32					0				**32**	
Bicycles	0	4	4	0		0	4	0	0		0	0	0	0		0	0	0	0		**12**	
Buses																						
Stopped Buses																						

LOCATION: US 19 & Melody Way/Tarpon Lake Center Pkg Dwy
CITY/STATE: Tarpon Springs, FL

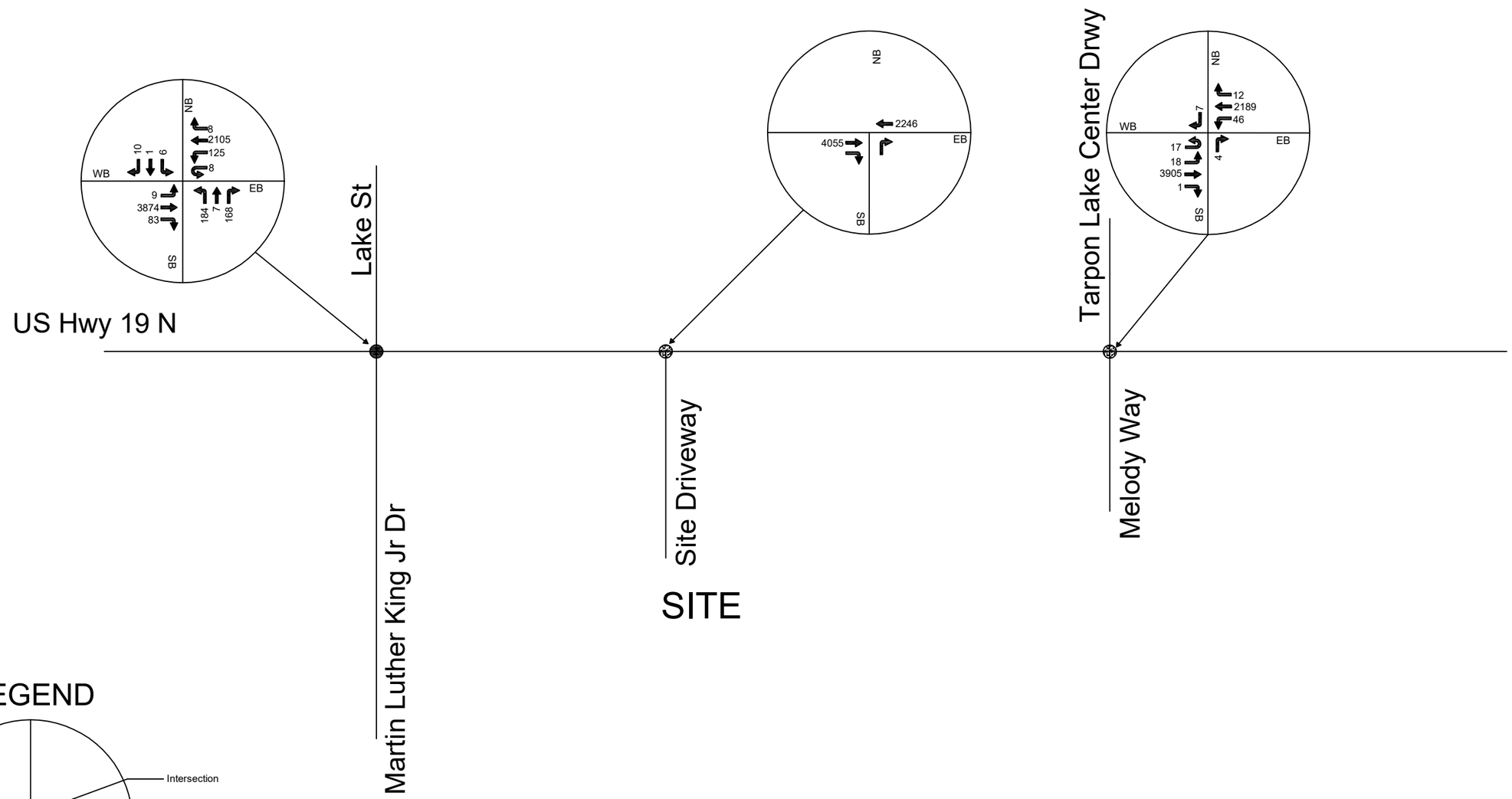
PROJECT ID: 22-120121-002
DATE: Tue, Mar 22, 2022

Peak-Hour: 04:30 PM - 05:30 PM
Peak 15-Minute: 05:15 PM - 05:30 PM



15-Min Count Period Beginning At	US 19 Northbound					US 19 Southbound					dy Way/Tarpon Lake Center Pkg Eastbound					dy Way/Tarpon Lake Center Pkg Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
4:00 PM	1	917	4	8		2	522	0	5		0	0	0	0		0	0	3	0		1462	6025
4:15 PM	2	984	5	11		0	517	0	3		0	0	0	0		0	0	2	0		1524	6158
4:30 PM	0	912	2	7		0	644	0	3		0	0	1	0		0	0	3	0		1572	6237
4:45 PM	1	884	1	12		1	561	0	5		0	0	1	0		0	0	1	0		1467	6172
5:00 PM	0	954	2	9		2	618	0	2		0	0	2	0		0	0	6	0		1595	6225
5:15 PM	1	1009	3	15		3	568	0	4		0	0	0	0		0	0	0	0		1603	4630
5:30 PM	2	919	1	12		1	563	0	6		0	0	2	0		0	0	1	0		1507	3027
5:45 PM	0	1000	1	16		0	500	0	3		0	0	0	0		0	0	0	0		1520	1520
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
All Vehicles	4	4036	12	60		12	2576	0	20		0	0	8	0		0	0	24	0		**6752**	
Heavy Trucks	0	88	4	0		0	68	0	0		0	0	0	0		0	0	4	0		**164**	
Pedestrians		0					0					8					0				**8**	
Bicycles	0	4	0	0		0	4	0	0		0	0	0	0		0	0	0	0		**8**	
Buses																						
Stopped Buses																						

Appendix C



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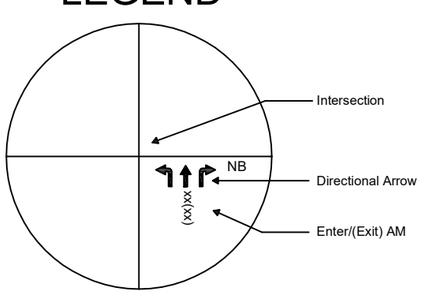

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2022 Existing AM Peak Hour Volumes

BLACK RIFLE COFFEE

40390 US HIGHWAY 19 N
TARPON SPRINGS, FLORIDA

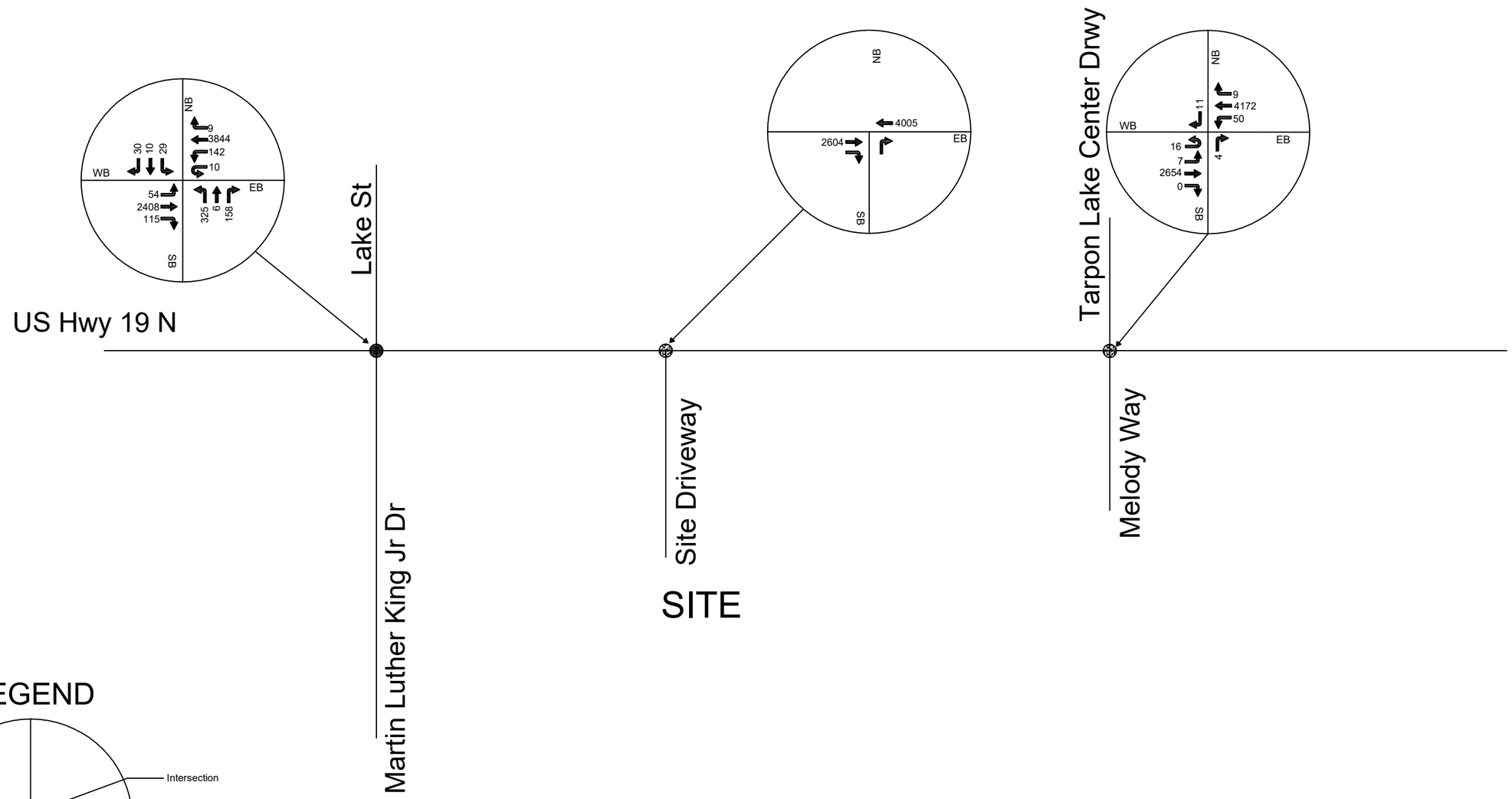
Bowman CONSULTING
Certificate of Authorization License No. 30462

RM	RM	DJ
DSGN	DRAWN	CHKD

011046-01-001
PROJECT NUMBER

SCALE Non Scale

EXHIBIT 1



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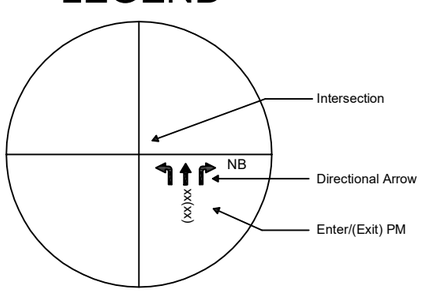

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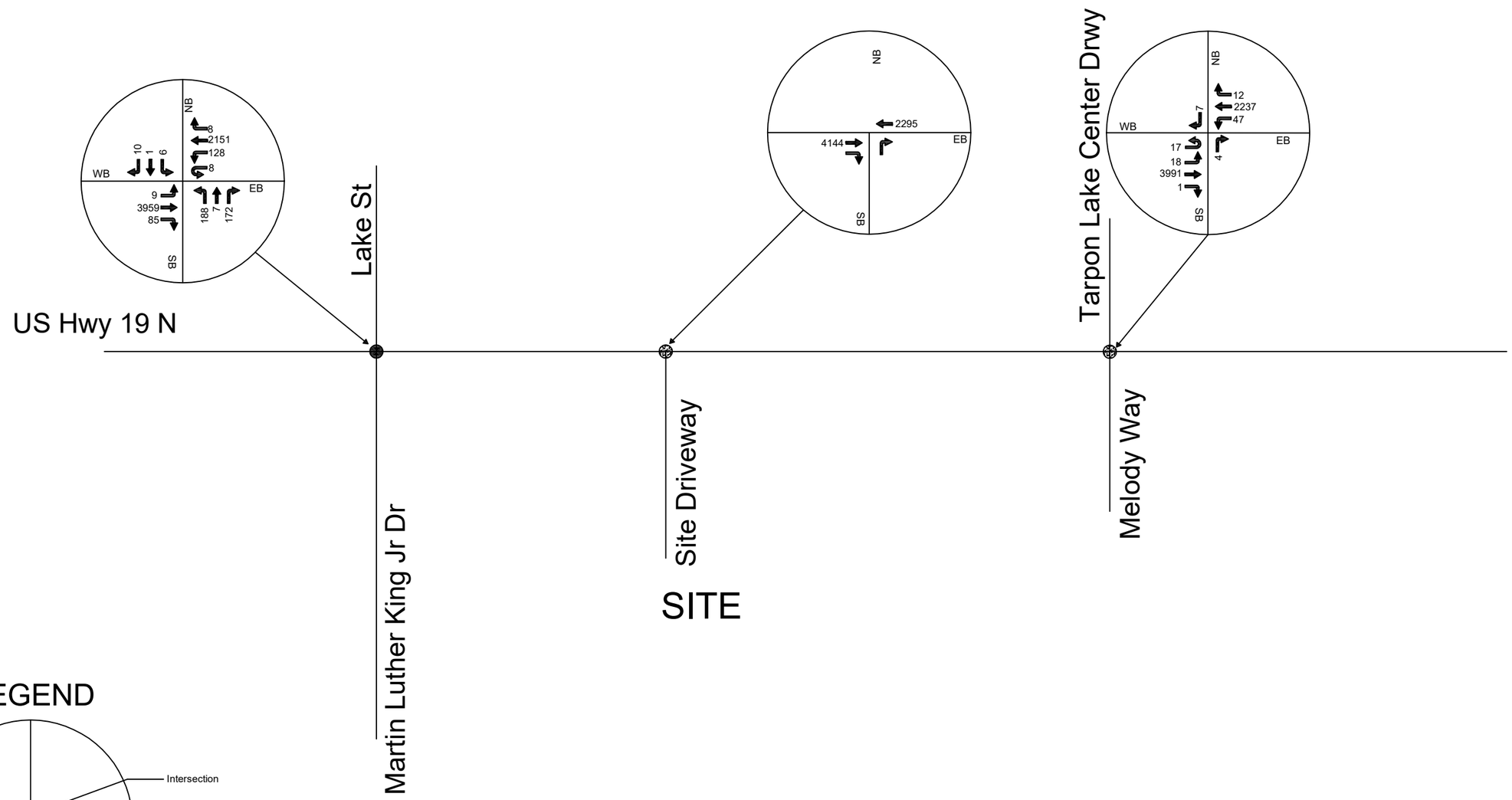
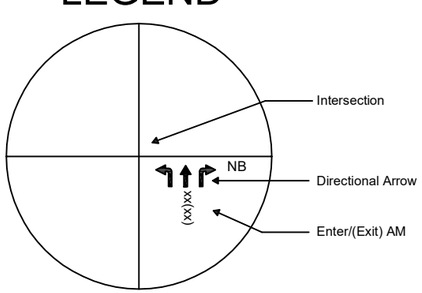
DSGN	DRAWN	CHKD

011046-01-001
PROJECT NUMBER

SCALE Non Scale

EXHIBIT 2





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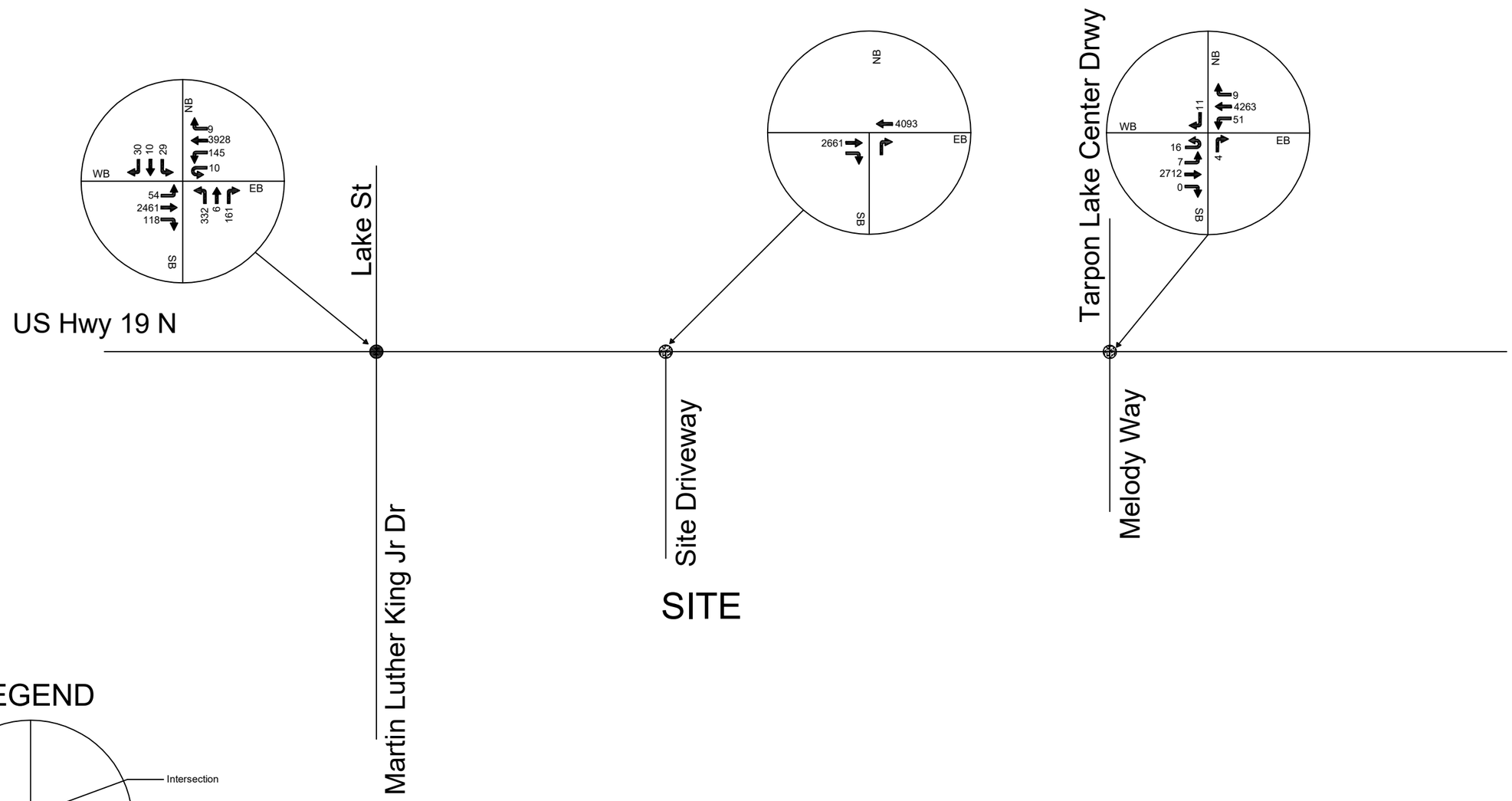
DSGN	DRAWN	CHKD

011046-01-001
PROJECT NUMBER

SCALE Non Scale

EXHIBIT 3



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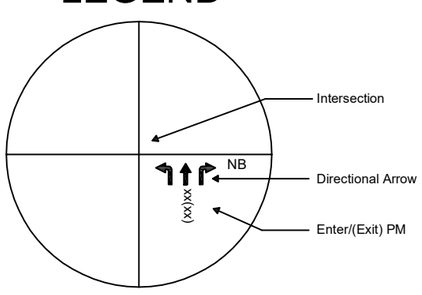

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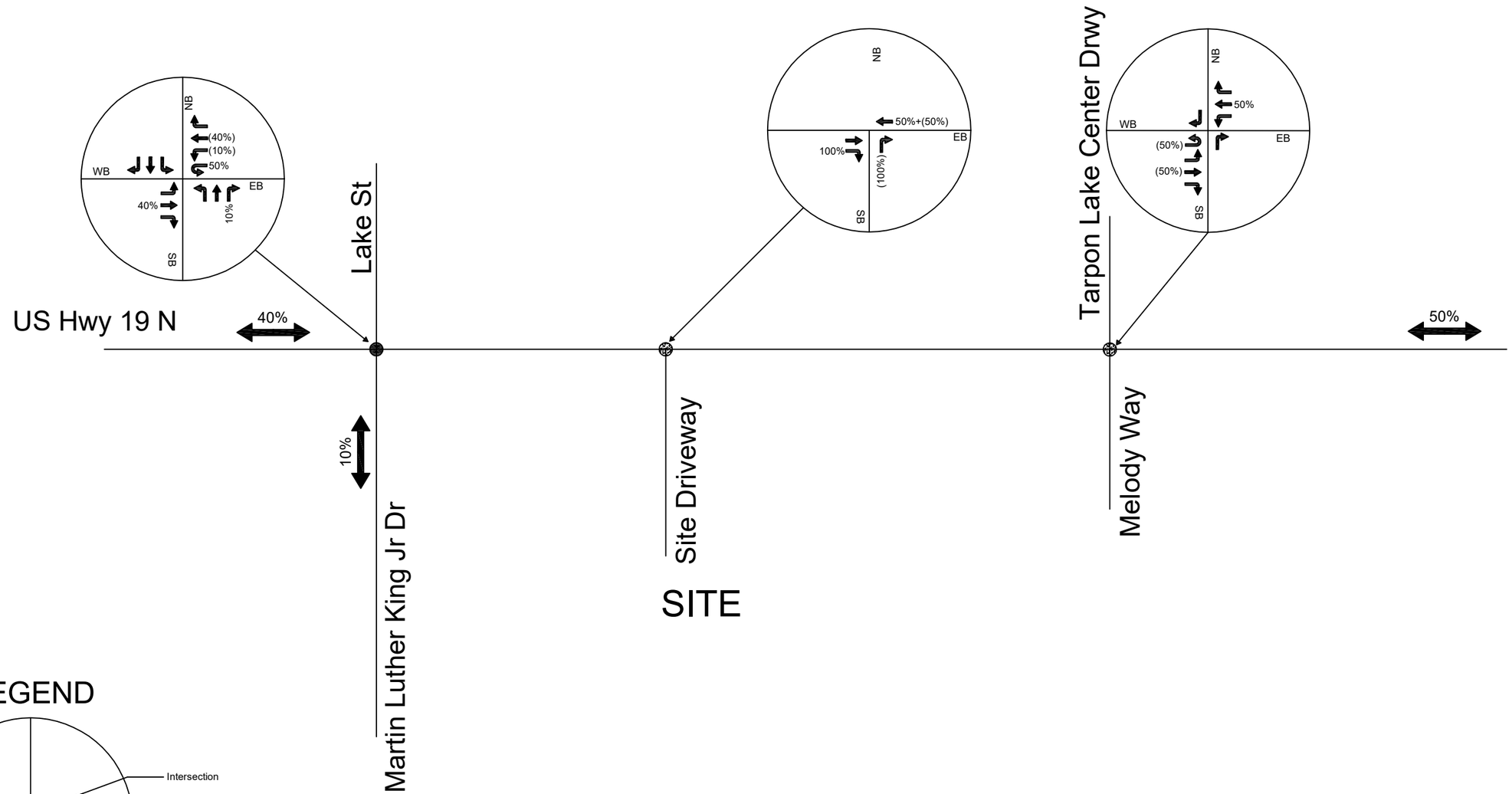
DSGN	DRAWN	CHKD

011046-01-001
PROJECT NUMBER

SCALE Non Scale

EXHIBIT 4



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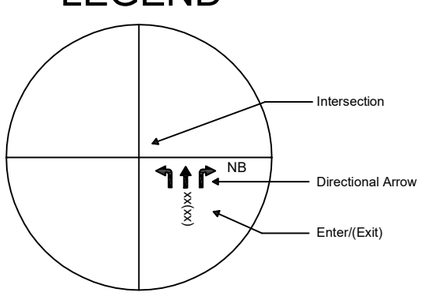

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DSGN	DRAWN	CHKD

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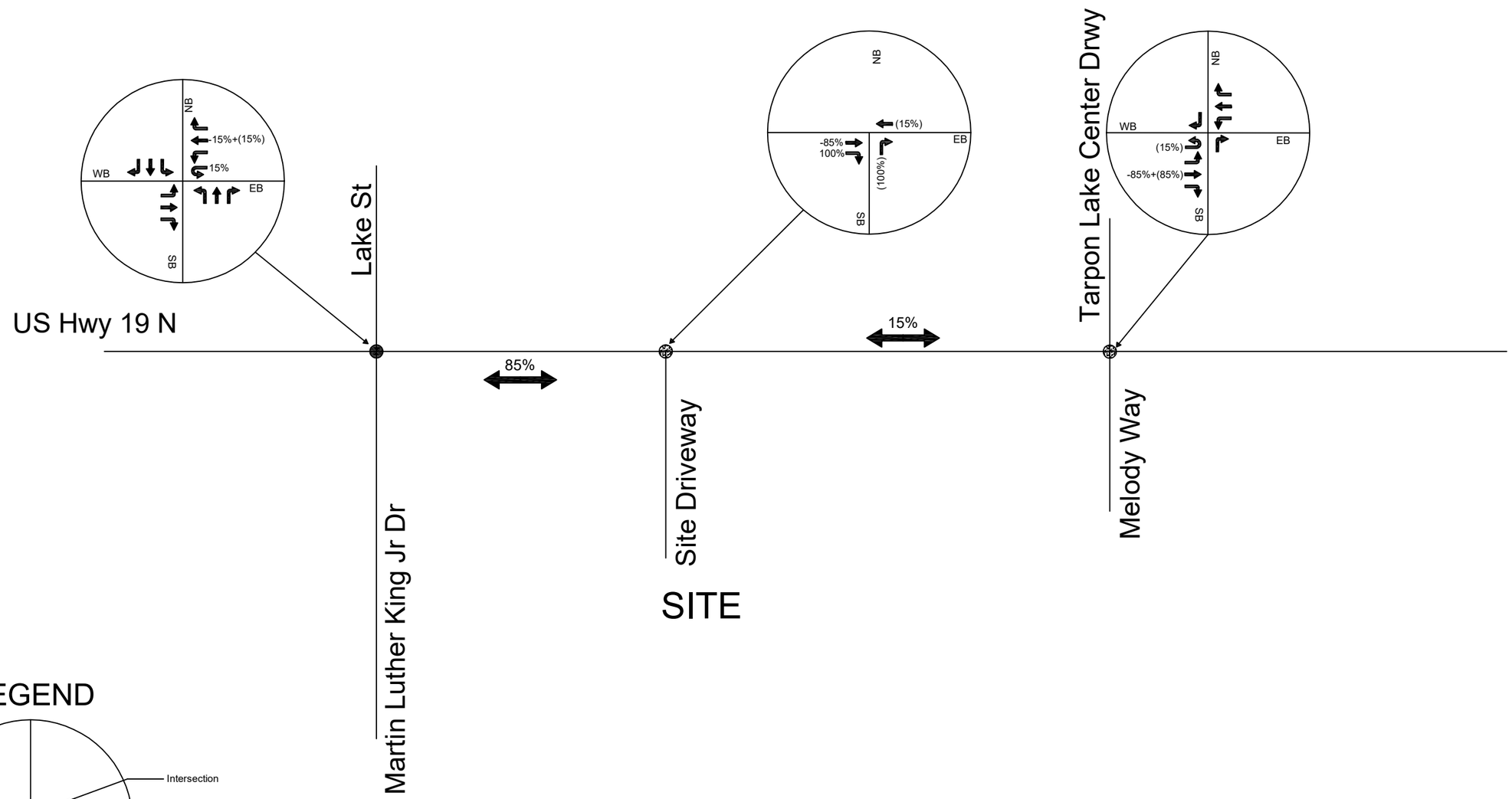
PROJECT NUMBER

SCALE Non Scale

EXHIBIT 5



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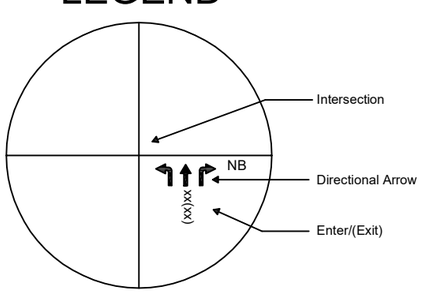

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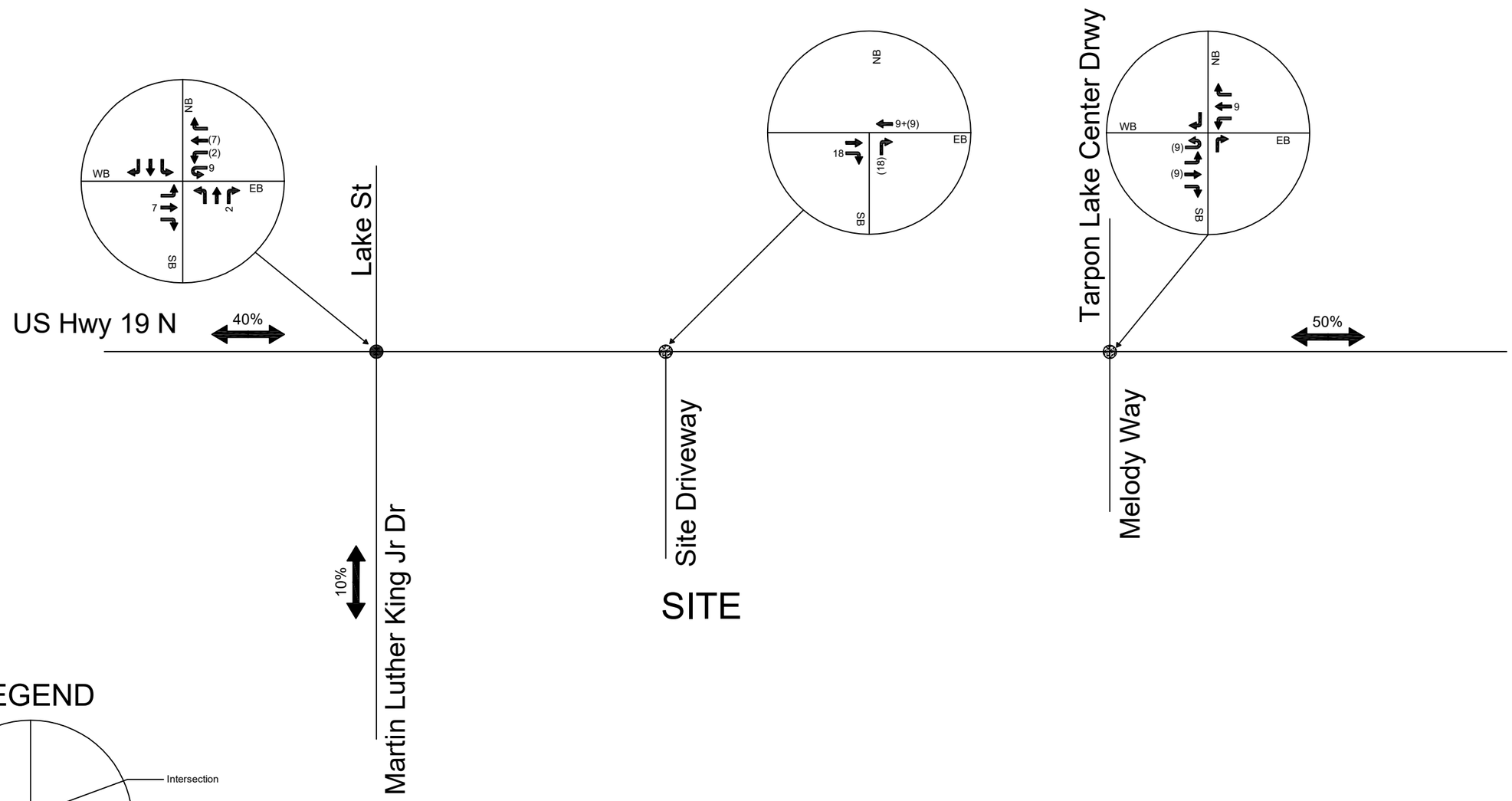
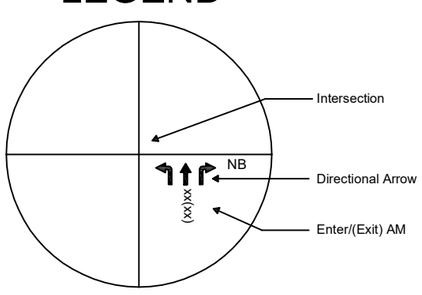
DSGN	DRAWN	CHKD

011046-01-001
PROJECT NUMBER

SCALE Non Scale

EXHIBIT 6





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Primary Trips AM

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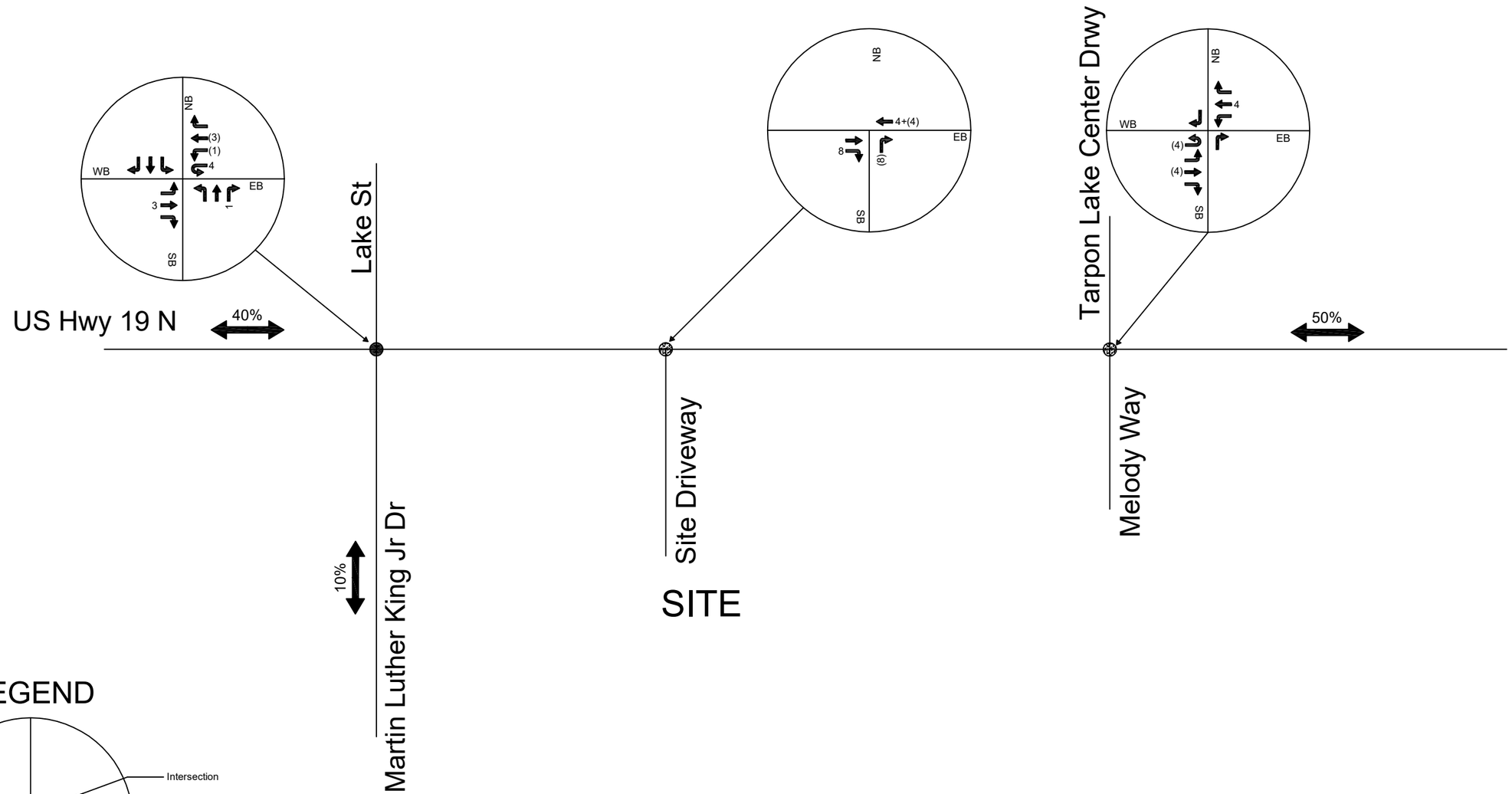
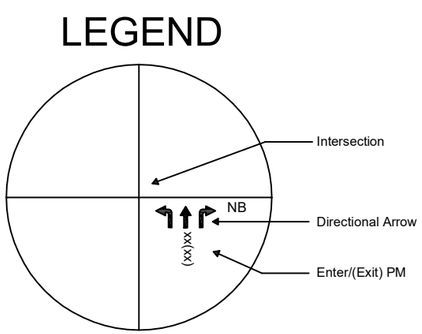
DSGN	DRAWN	CHKD

011046-01-001
PROJECT NUMBER

SCALE Non Scale

EXHIBIT 7





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Primary Trips PM

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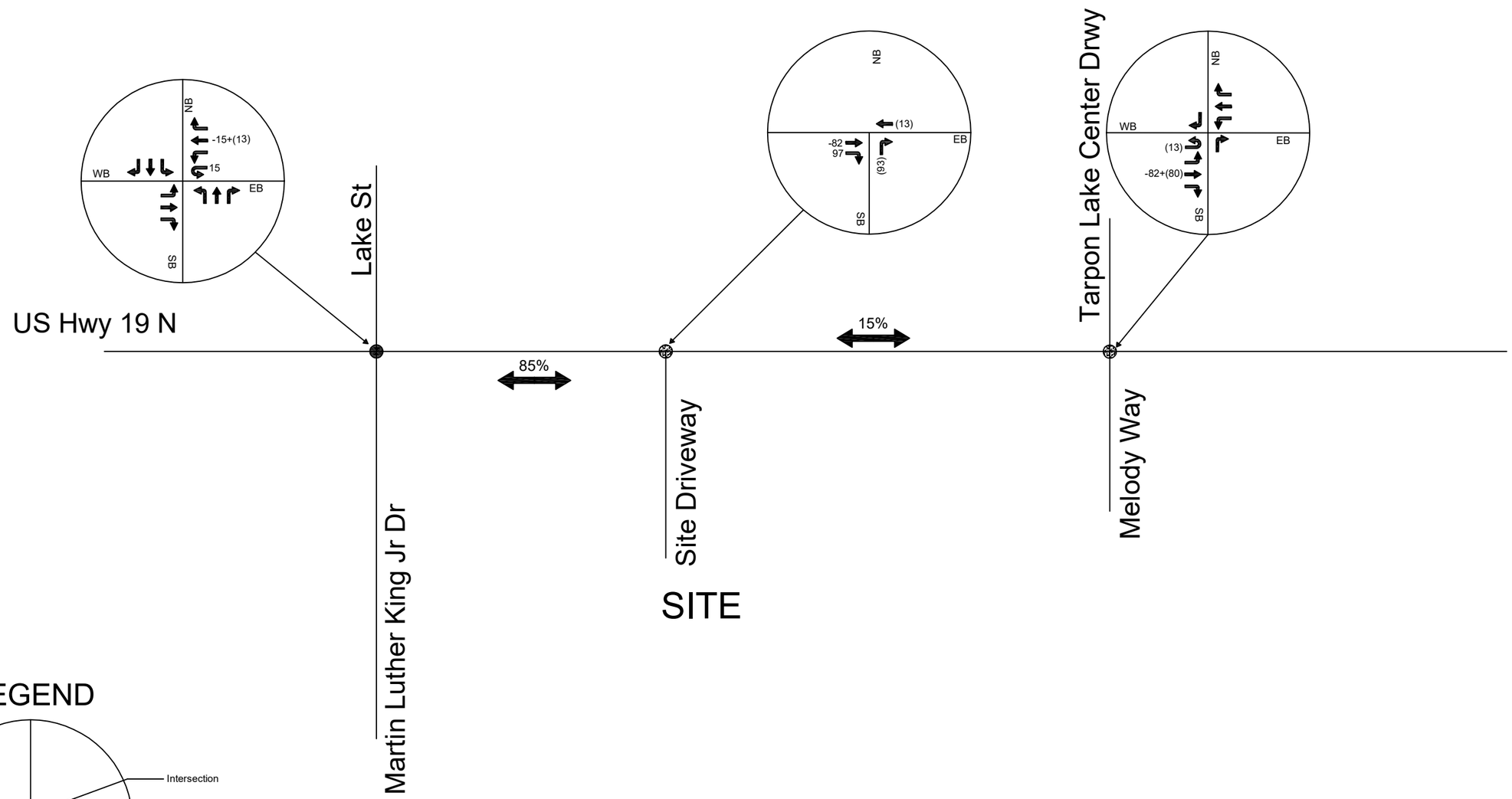
DSGN	DRAWN	CHKD

011046-01-001
PROJECT NUMBER

SCALE Non Scale

EXHIBIT 8



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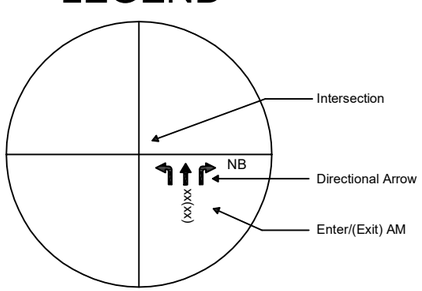

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Pass-By Trips AM

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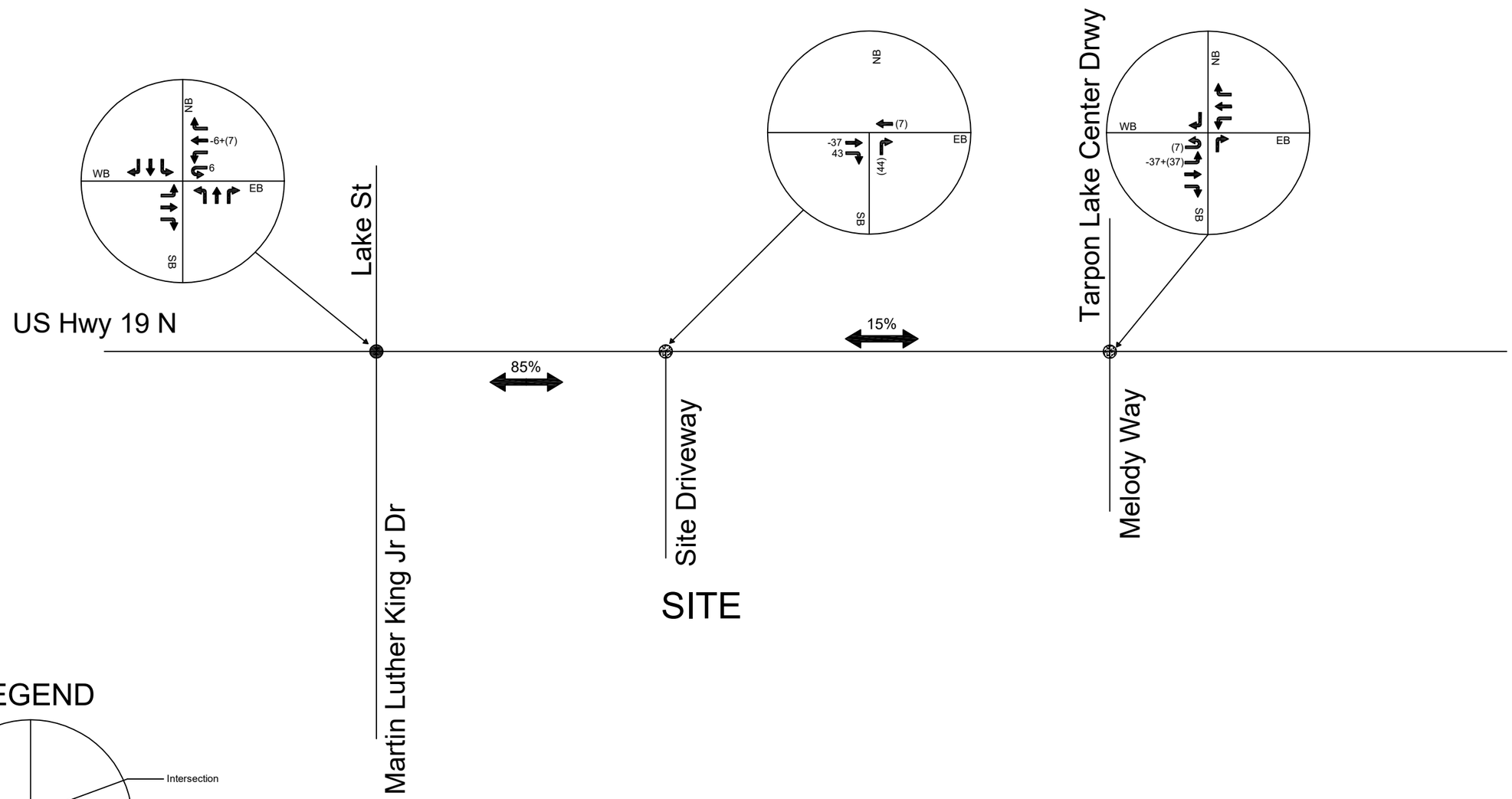
DSGN	DRAWN	CHKD

011046-01-001
PROJECT NUMBER

SCALE Non Scale

EXHIBIT 9



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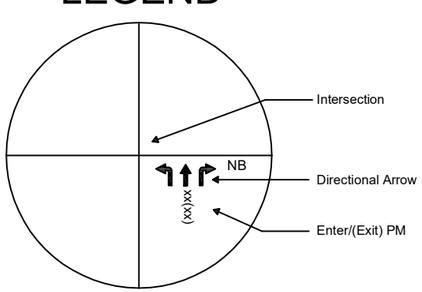

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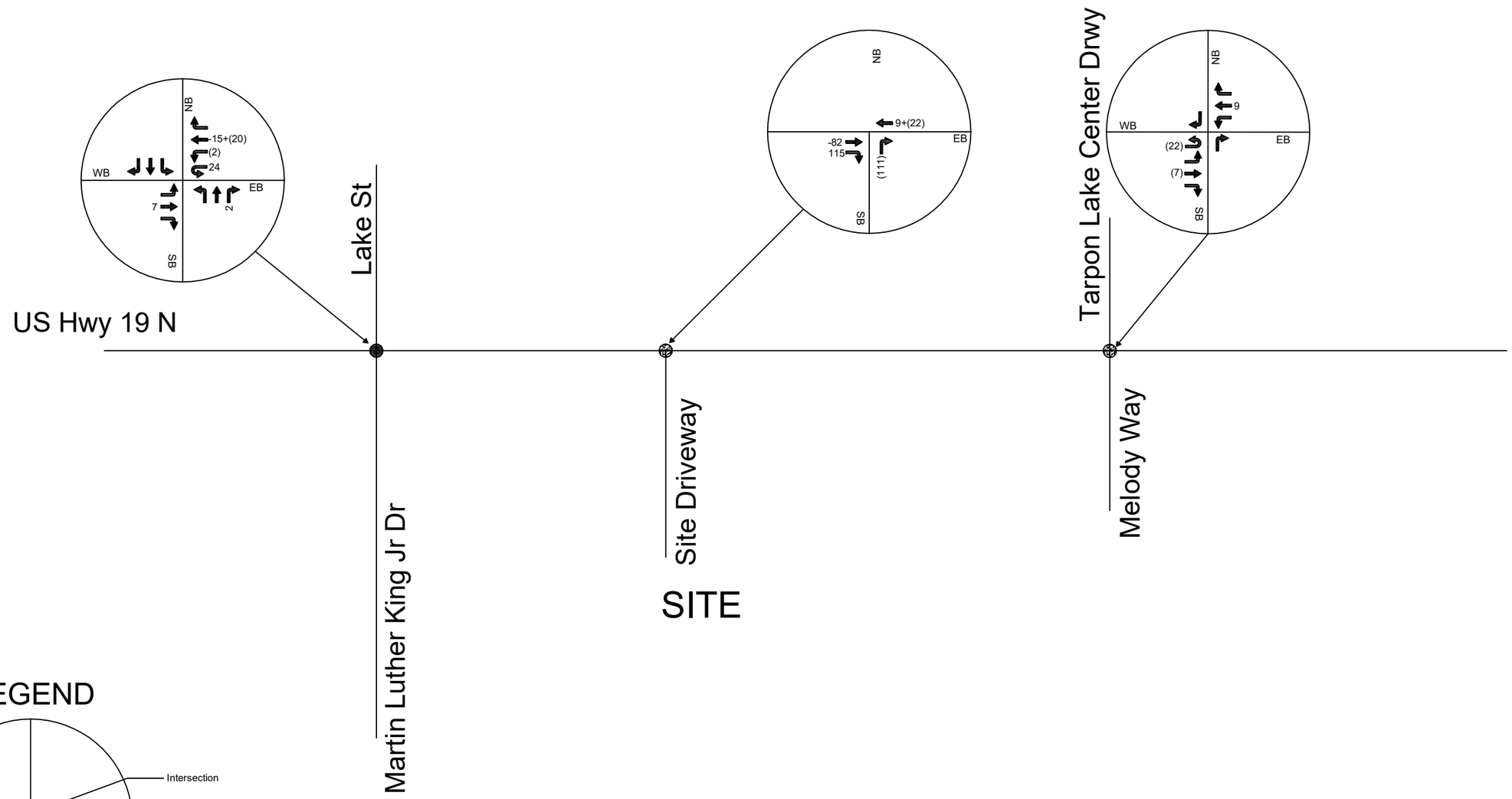
RM	RM	DJ
DSGN	DRAWN	CHKD

011046-01-001
PROJECT NUMBER

SCALE Non Scale

EXHIBIT 10



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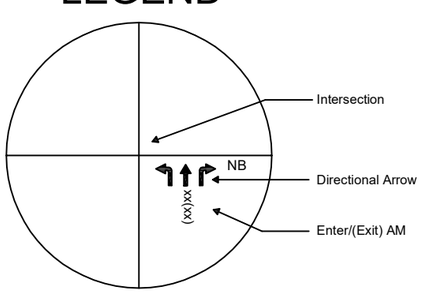

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Total Site Trips AM

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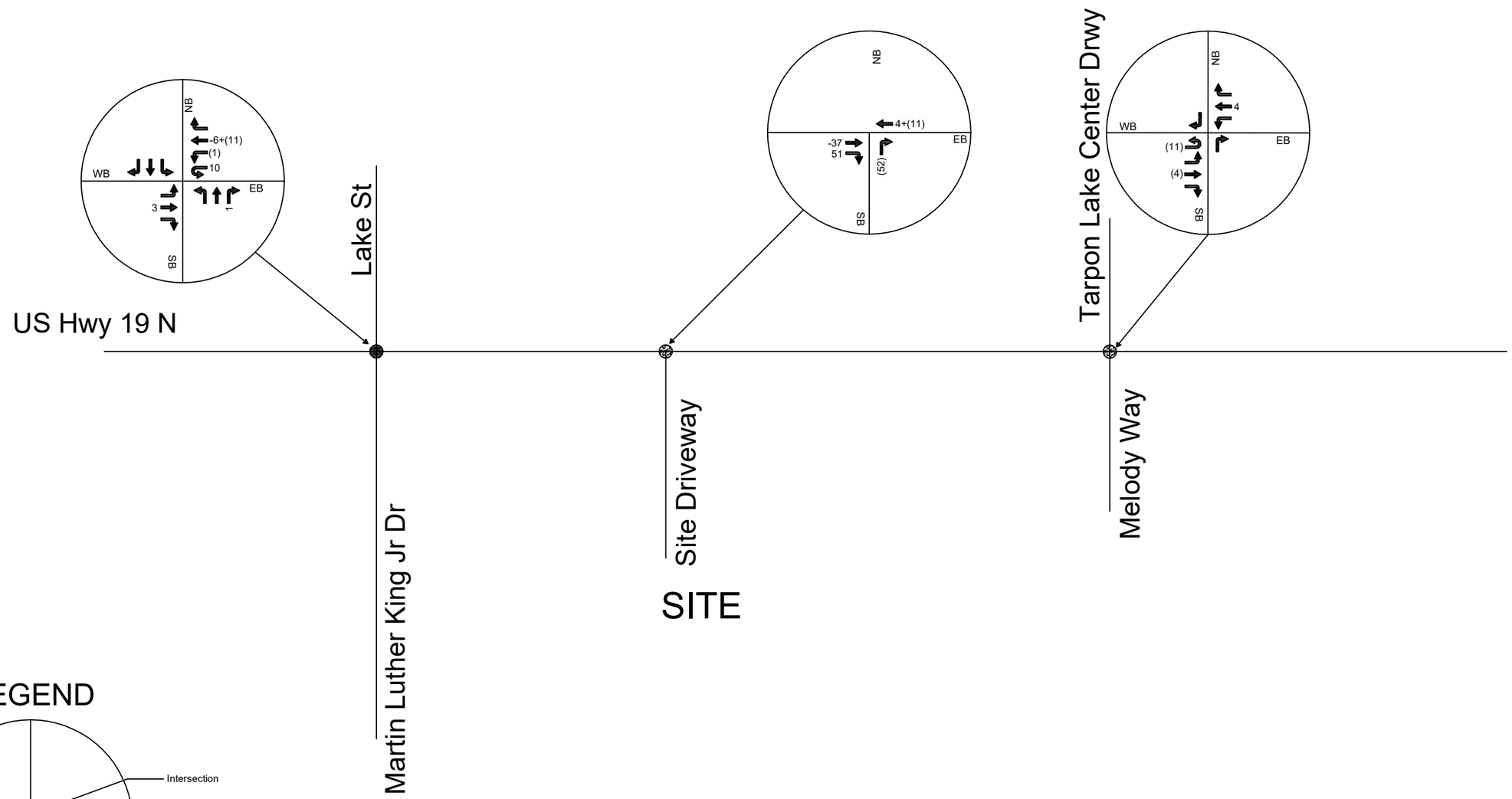
RM	RM	DJ
DSGN	DRAWN	CHKD

011046-01-001
PROJECT NUMBER

SCALE Non Scale

EXHIBIT 11



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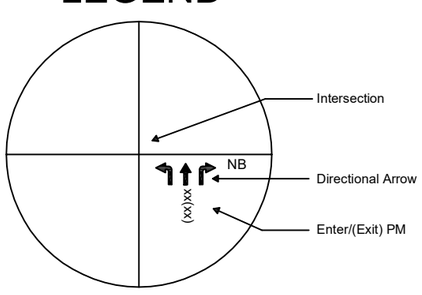

XX% Global Trip Distribution

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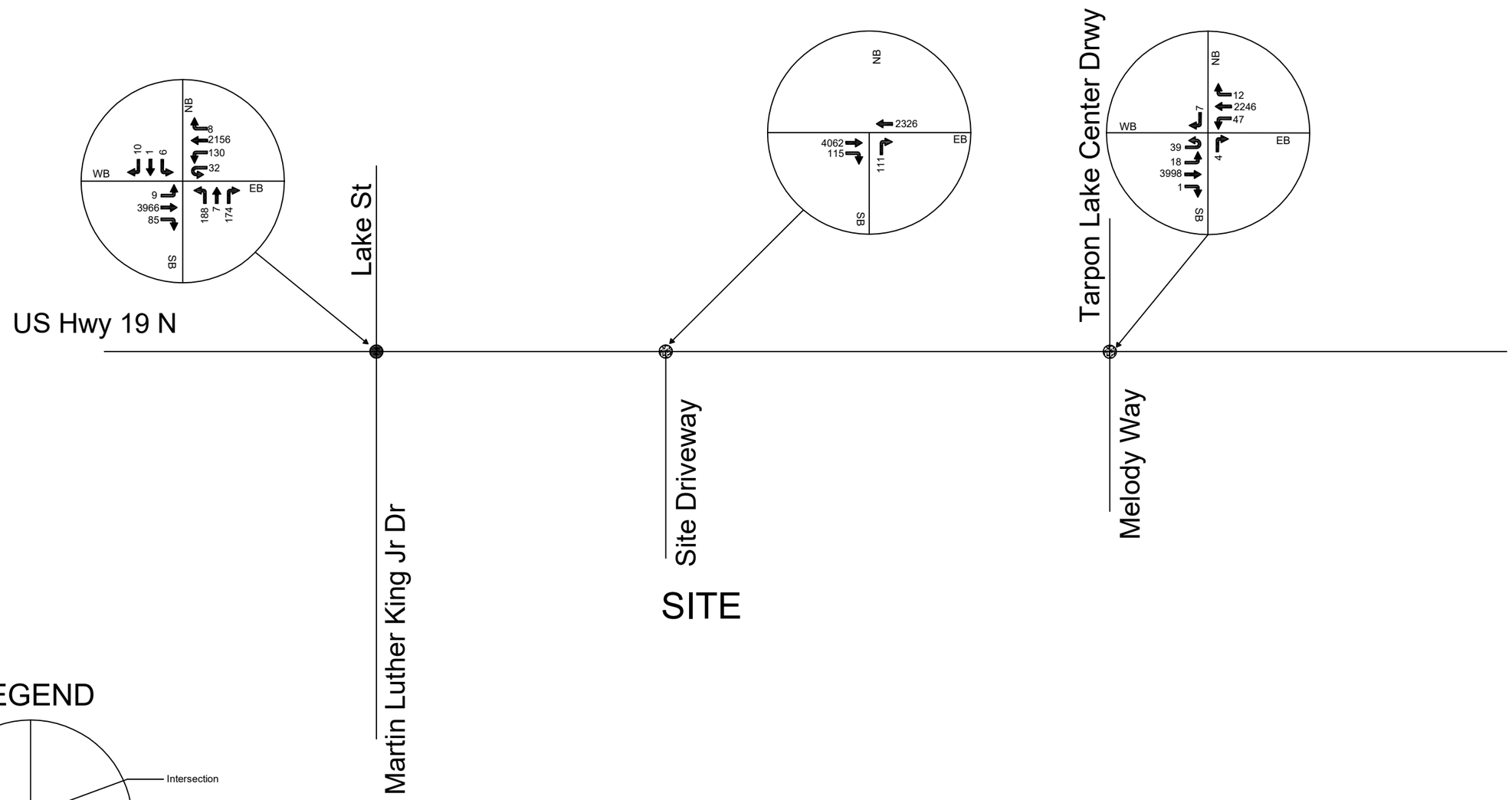
DSGN	DRAWN	CHKD

011046-01-001
PROJECT NUMBER

SCALE Non Scale

EXHIBIT 12



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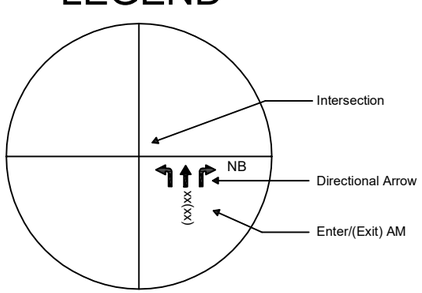

XX% Global Trip Distribution

SIGNALIZED INTERSECTION

UNSIGNALIZED INTERSECTION

Bowman Consulting Group, Ltd.
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2023 Build AM Peak Hour Volumes

BLACK RIFLE COFFEE

40390 US HIGHWAY 19 N
TARPON SPRINGS, FLORIDA

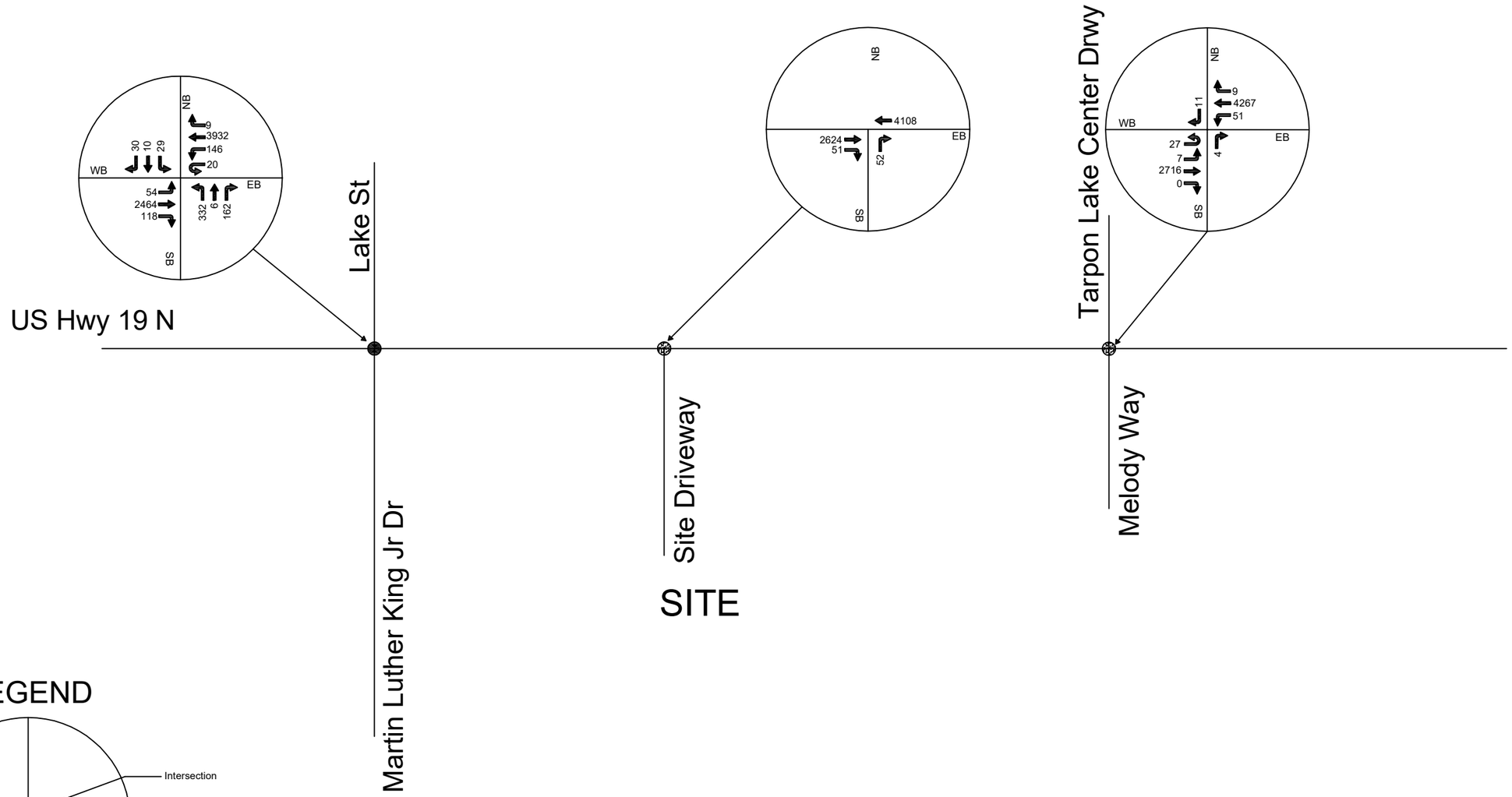
Bowman CONSULTING
Certificate of Authorization License No. 30462

RM	RM	DJ
DSGN	DRAWN	CHKD

011046-01-001
PROJECT NUMBER

SCALE Non Scale

EXHIBIT 13



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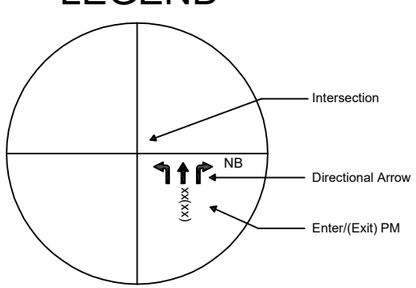

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Certificate of Authorization License No. 30462

RM	RM	DJ
DSGN	DRAWN	CHKD

011046-01-001
PROJECT NUMBER

SCALE Non Scale

EXHIBIT 14

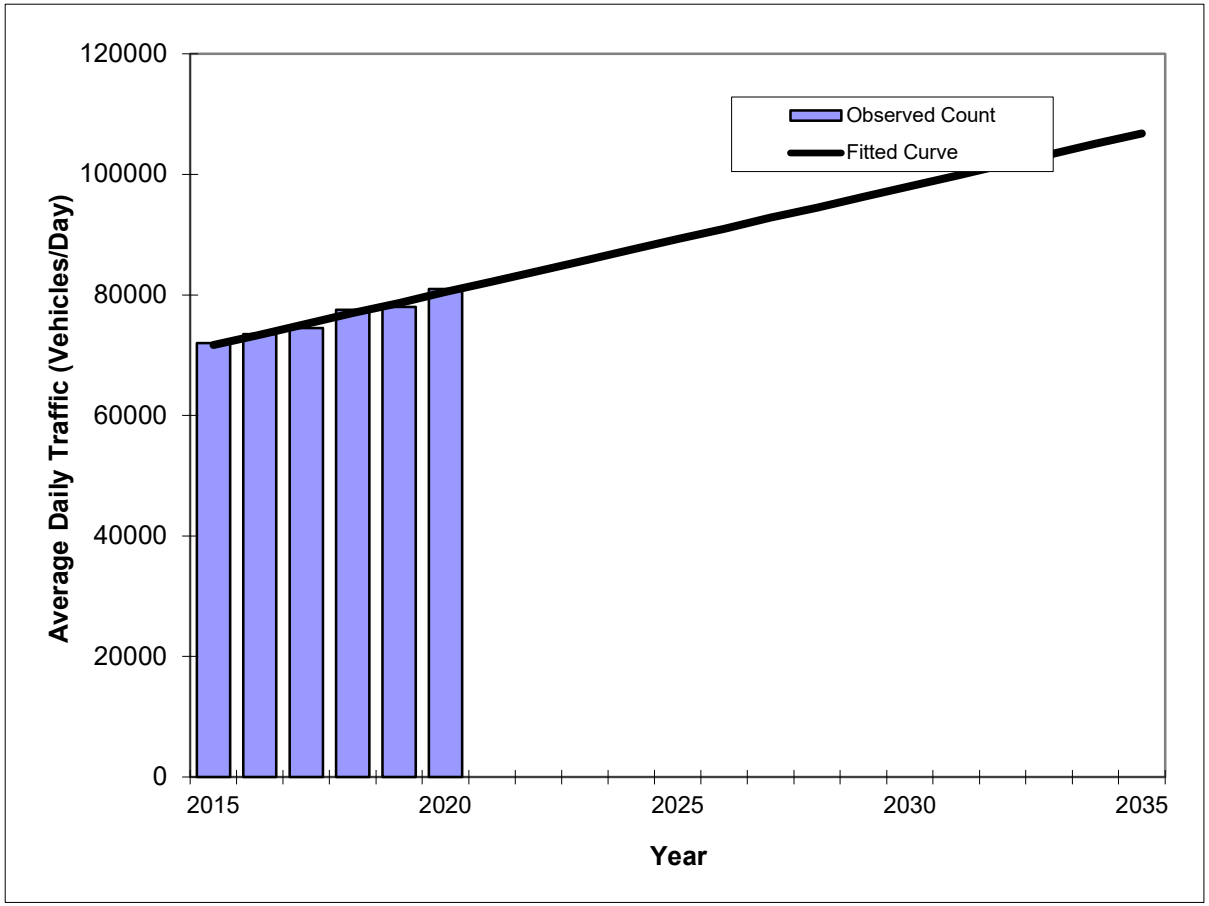
Appendix D

Traffic Trends - V03.a

US 19 -- 15150000

FIN#	1234
Location	1

County:	Pinellas (15)
Station #:	1234
Highway:	US 19



Year	Traffic (ADT/AADT) Count*	Trend**
2015	72000	71700
2016	73500	73400
2017	74500	75200
2018	77500	77000
2019	78000	78700
2020	81000	80500
2023 Opening Year Trend		
2023	N/A	85700
2024 Mid-Year Trend		
2024	N/A	87500
2025 Design Year Trend		
2025	N/A	89300
TRANPLAN Forecasts/Trends		

** Annual Trend Increase:	1,757
Trend R-squared:	96.99%
Trend Annual Historic Growth Rate:	2.45%
Trend Growth Rate (2020 to Design Year):	2.19%
Printed:	18-Mar-22

Straight Line Growth Option

*Axle-Adjusted

Appendix E

2022 EXISTING CONDITIONS
Capacity Analysis

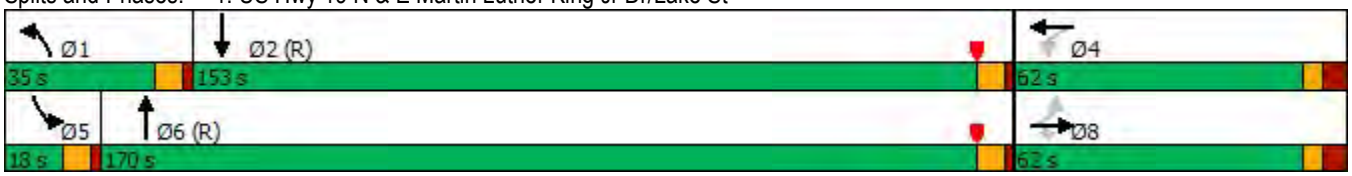
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	184	7	168	6	1	10	133	2015	8	9	3874	83
Future Volume (vph)	184	7	168	6	1	10	133	2015	8	9	3874	83
Adj. Flow (vph)	186	7	170	6	1	10	134	2035	8	9	3913	84
Lane Group Flow (vph)	0	193	170	0	17	0	134	2043	0	9	3997	0
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8		8	4								
Detector Phase	8	8	8	4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		7.0	20.0		7.0	20.0	
Minimum Split (s)	59.6	59.6	59.6	61.6	61.6		14.2	27.2		14.2	29.2	
Total Split (s)	62.0	62.0	62.0	62.0	62.0		35.0	170.0		18.0	153.0	
Total Split (%)	24.8%	24.8%	24.8%	24.8%	24.8%		14.0%	68.0%		7.2%	61.2%	
Maximum Green (s)	53.4	53.4	53.4	53.4	53.4		27.8	162.8		10.8	145.8	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7		5.2	5.2		5.2	5.2	
All-Red Time (s)	4.9	4.9	4.9	4.9	4.9		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		8.6	8.6		8.6		7.2	7.2		7.2	7.2	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	4.0		2.0	4.0	
Recall Mode	None	None	None	None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0			7.0			7.0	
Flash Dont Walk (s)	44.0	44.0	44.0	46.0	46.0			9.0			15.0	
Pedestrian Calls (#/hr)	0	0	0	0	0			0			0	
Act Effct Green (s)		43.1	43.1		43.1		22.8	185.3		7.1	161.0	
Actuated g/C Ratio		0.17	0.17		0.17		0.09	0.74		0.03	0.64	
v/c Ratio		0.92	0.47		0.07		0.85	0.44		0.18	0.98	
Control Delay		144.8	24.6		45.4		151.5	14.1		126.3	52.3	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		144.8	24.6		45.4		151.5	14.1		126.3	52.3	
LOS		F	C		D		F	B		F	D	
Approach Delay		88.5			45.4			22.5			52.4	
Approach LOS		F			D			C			D	
Queue Length 50th (ft)		318	50		10		222	330		15	1859	
Queue Length 95th (ft)		420	136		39		311	497		42	#2098	
Internal Link Dist (ft)		1193			443			637			909	
Turn Bay Length (ft)							500			345		
Base Capacity (vph)		260	414		297		193	4608		77	4068	
Starvation Cap Reductn		0	0		0		0	0		0	0	
Spillback Cap Reductn		0	0		0		0	0		0	0	
Storage Cap Reductn		0	0		0		0	0		0	0	
Reduced v/c Ratio		0.74	0.41		0.06		0.69	0.44		0.12	0.98	

Intersection Summary
Cycle Length: 250
Actuated Cycle Length: 250
Offset: 16 (6%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow

Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay: 44.5	Intersection LOS: D
Intersection Capacity Utilization 102.9%	ICU Level of Service G
Analysis Period (min) 15	

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: US Hwy 19 N & E Martin Luther King Jr Dr/Lake St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	184	7	168	6	1	10	133	2015	8	9	3874	83
Future Volume (veh/h)	184	7	168	6	1	10	133	2015	8	9	3874	83
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1856	1900	1900	1900	1841	1826	1826	1900	1856	1856
Adj Flow Rate, veh/h	186	7	34	6	1	0	134	2035	7	9	3913	81
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	0	0	3	0	0	0	4	5	5	0	3	3
Cap, veh/h	233	8	227	247	39	0	147	4881	17	24	4400	90
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.00	0.08	0.75	0.75	0.01	0.68	0.68
Sat Flow, veh/h	1407	53	1566	1514	270	0	1753	6510	22	1810	6484	133
Grp Volume(v), veh/h	193	0	34	7	0	0	134	1473	569	9	2878	1116
Grp Sat Flow(s),veh/h/ln	1460	0	1566	1784	0	0	1753	1570	1821	1810	1596	1829
Q Serve(g_s), s	31.7	0.0	4.7	0.0	0.0	0.0	19.0	28.4	28.4	1.2	121.1	125.6
Cycle Q Clear(g_c), s	32.5	0.0	4.7	0.8	0.0	0.0	19.0	28.4	28.4	1.2	121.1	125.6
Prop In Lane	0.96		1.00	0.86		0.00	1.00		0.01	1.00		0.07
Lane Grp Cap(c), veh/h	240	0	227	286	0	0	147	3532	1366	24	3249	1241
V/C Ratio(X)	0.80	0.00	0.15	0.02	0.00	0.00	0.91	0.42	0.42	0.38	0.89	0.90
Avail Cap(c_a), veh/h	339	0	334	387	0	0	195	3532	1366	78	3249	1241
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	105.1	0.0	93.4	91.7	0.0	0.0	113.5	11.4	11.4	122.4	32.4	33.1
Incr Delay (d2), s/veh	5.9	0.0	0.1	0.0	0.0	0.0	29.9	0.4	0.9	3.7	4.0	10.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.0	0.0	2.0	0.4	0.0	0.0	9.9	9.8	11.6	0.6	45.8	56.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	111.1	0.0	93.5	91.7	0.0	0.0	143.4	11.7	12.3	126.1	36.4	43.5
LnGrp LOS	F	A	F	F	A	A	F	B	B	F	D	D
Approach Vol, veh/h		227			7			2176			4003	
Approach Delay, s/veh		108.4			91.7			20.0			38.6	
Approach LOS		F			F			C			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	28.2	176.9		44.9	10.5	194.6		44.9
Change Period (Y+Rc), s	7.2	7.2		* 8.6	7.2	7.2		* 8.6
Max Green Setting (Gmax), s	27.8	145.8		* 53	10.8	162.8		* 53
Max Q Clear Time (g_c+I1), s	21.0	127.6		2.8	3.2	30.4		34.5
Green Ext Time (p_c), s	0.1	18.1		0.0	0.0	45.8		0.7

Intersection Summary	
HCM 6th Ctrl Delay	34.8
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	2246	4055	0
Future Volume (vph)	0	0	0	2246	4055	0
Adj. Flow (vph)	0	0	0	2441	4408	0
Lane Group Flow (vph)	0	0	0	2441	4408	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Control Type: Unsignalized	
Intersection Capacity Utilization 81.7%	ICU Level of Service D
Analysis Period (min) 15	

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	2246	4055	0
Future Volume (Veh/h)	0	0	0	2246	4055	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	2441	4408	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				Raised	Raised	
Median storage veh)				1	1	
Upstream signal (ft)					717	
pX, platoon unblocked	0.36	0.36	0.36			
vC, conflicting volume	5222	1469	4408			
vC1, stage 1 conf vol	4408					
vC2, stage 2 conf vol	814					
vCu, unblocked vol	6507	0	4244			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	1	390	12			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	0	814	814	814	1763	1763	882
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.48	0.48	0.48	1.04	1.04	0.52
Queue Length 95th (ft)	0	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A						
Approach Delay (s)	0.0	0.0			0.0		
Approach LOS	A						

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	81.7%	ICU Level of Service	D
Analysis Period (min)	15		

12: US Hwy 19 N & Melody Way/Tarpon Lake Center Drwy

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	4	0	0	7	46	2189	12	35	3905	1
Future Volume (vph)	0	0	4	0	0	7	46	2189	12	35	3905	1
Adj. Flow (vph)	0	0	4	0	0	7	47	2234	12	36	3985	1
Lane Group Flow (vph)	0	0	4	0	0	7	47	2246	0	36	3986	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Control Type: Unsignalized	
Intersection Capacity Utilization 88.3%	ICU Level of Service E
Analysis Period (min) 15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	4	0	0	7	46	2189	12	35	3905	1
Future Volume (Veh/h)	0	0	4	0	0	7	46	2189	12	35	3905	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	0	0	4	0	0	7	47	2234	12	36	3985	1
Pedestrians		10						10				
Lane Width (ft)		12.0						12.0				
Walking Speed (ft/s)		3.5						3.5				
Percent Blockage		1						1				
Right turn flare (veh)												
Median type								Raised			Raised	
Median storage veh)								1			1	
Upstream signal (ft)											1118	
pX, platoon unblocked	0.36	0.36	0.36	0.36	0.36		0.36					
vC, conflicting volume	4913	6408	1349	3748	6402	751	3996			2246		
vC1, stage 1 conf vol	4068	4068		2334	2334							
vC2, stage 2 conf vol	846	2340		1414	4068							
vCu, unblocked vol	5635	9739	0	2436	9723	751	3116			2246		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.2			4.1		
tC, 2 stage (s)	6.5	5.5		6.5	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	0	99	0	0	98	0			85		
cM capacity (veh/h)	0	0	390	0	0	358	36			233		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4
Volume Total	4	7	47	894	894	459	36	1594	1594	798
Volume Left	0	0	47	0	0	0	36	0	0	0
Volume Right	4	7	0	0	0	12	0	0	0	1
cSH	390	358	36	1700	1700	1700	233	1700	1700	1700
Volume to Capacity	0.01	0.02	1.31	0.53	0.53	0.27	0.15	0.94	0.94	0.47
Queue Length 95th (ft)	1	1	124	0	0	0	13	0	0	0
Control Delay (s)	14.3	15.3	427.7	0.0	0.0	0.0	23.2	0.0	0.0	0.0
Lane LOS	B	C	F				C			
Approach Delay (s)	14.3	15.3	8.8				0.2			
Approach LOS	B	C								

Intersection Summary			
Average Delay	3.3		
Intersection Capacity Utilization	88.3%	ICU Level of Service	E
Analysis Period (min)	15		

1: US Hwy 19 N & E Martin Luther King Jr Dr/Lake St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	325	6	158	29	10	30	152	3844	9	54	2408	115
Future Volume (vph)	325	6	158	29	10	30	152	3844	9	54	2408	115
Adj. Flow (vph)	339	6	165	30	10	31	158	4004	9	56	2508	120
Lane Group Flow (vph)	0	345	165	0	71	0	158	4013	0	56	2628	0
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8		8	4								
Detector Phase	8	8	8	4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		7.0	20.0		7.0	20.0	
Minimum Split (s)	59.6	59.6	59.6	61.6	61.6		14.2	27.2		14.2	29.2	
Total Split (s)	62.0	62.0	62.0	62.0	62.0		51.0	170.0		18.0	137.0	
Total Split (%)	24.8%	24.8%	24.8%	24.8%	24.8%		20.4%	68.0%		7.2%	54.8%	
Maximum Green (s)	53.4	53.4	53.4	53.4	53.4		43.8	162.8		10.8	129.8	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7		5.2	5.2		5.2	5.2	
All-Red Time (s)	4.9	4.9	4.9	4.9	4.9		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		8.6	8.6		8.6		7.2	7.2		7.2	7.2	
Lead/Lag							Lag	Lag		Lead	Lead	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	4.0		2.0	4.0	
Recall Mode	None	None	None	None	None		C-Max	C-Max		None	Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0			7.0			7.0	
Flash Dont Walk (s)	44.0	44.0	44.0	46.0	46.0			9.0			15.0	
Pedestrian Calls (#/hr)	0	0	0	0	0			0			0	
Act Effct Green (s)		53.4	53.4		53.4		43.8	163.5		10.1	129.8	
Actuated g/C Ratio		0.21	0.21		0.21		0.18	0.65		0.04	0.52	
v/c Ratio		1.39	0.43		0.57		0.54	0.96		0.78	0.80	
Control Delay		259.6	38.3		89.9		101.9	47.3		170.6	51.5	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		259.6	38.3		89.9		101.9	47.3		170.6	51.5	
LOS		F	D		F		F	D		F	D	
Approach Delay		188.0			89.9			49.3			54.0	
Approach LOS		F			F			D			D	
Queue Length 50th (ft)		~752	99		87		243	1760		94	1031	
Queue Length 95th (ft)		#991	191		164		338	1708		#185	1048	
Internal Link Dist (ft)		1193			443			637			909	
Turn Bay Length (ft)							500			345		
Base Capacity (vph)		249	383		124		290	4189		77	3298	
Starvation Cap Reductn		0	0		0		0	0		0	0	
Spillback Cap Reductn		0	0		0		0	0		0	0	
Storage Cap Reductn		0	0		0		0	0		0	0	
Reduced v/c Ratio		1.39	0.43		0.57		0.54	0.96		0.73	0.80	

Intersection Summary

Cycle Length: 250

Actuated Cycle Length: 250

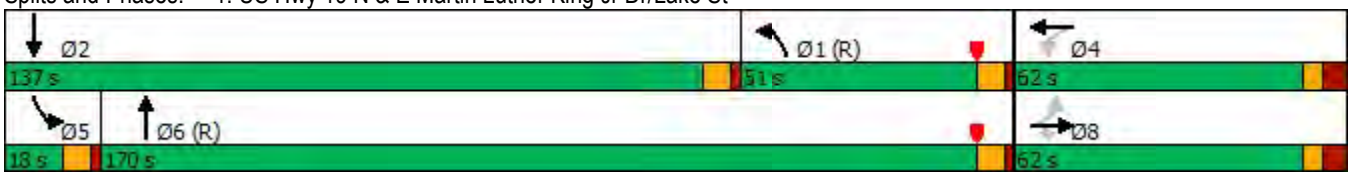
Offset: 1 (0%), Referenced to phase 1:NBL and 6:NBT, Start of Yellow

Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.39	
Intersection Signal Delay: 60.9	Intersection LOS: E
Intersection Capacity Utilization 107.0%	ICU Level of Service G
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: US Hwy 19 N & E Martin Luther King Jr Dr/Lake St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	325	6	158	29	10	30	152	3844	9	54	2408	115
Future Volume (veh/h)	325	6	158	29	10	30	152	3844	9	54	2408	115
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		1.00	1.00		0.99	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1856	1900	1900	1900	1767	1870	1870	1900	1870	1870
Adj Flow Rate, veh/h	339	6	65	30	10	16	158	4004	9	56	2508	114
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	3	0	0	0	9	2	2	0	2	2
Cap, veh/h	323	5	335	227	77	113	286	4384	10	69	3333	151
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.17	0.66	0.66	0.04	0.52	0.52
Sat Flow, veh/h	1380	24	1568	959	362	528	1682	6678	15	1810	6356	288
Grp Volume(v), veh/h	345	0	65	56	0	0	158	2892	1121	56	1903	719
Grp Sat Flow(s),veh/h/ln	1404	0	1568	1849	0	0	1682	1609	1867	1810	1609	1818
Q Serve(g_s), s	47.2	0.0	8.5	0.0	0.0	0.0	21.5	128.5	129.0	7.7	77.4	77.8
Cycle Q Clear(g_c), s	53.4	0.0	8.5	6.2	0.0	0.0	21.5	128.5	129.0	7.7	77.4	77.8
Prop In Lane	0.98		1.00	0.54		0.29	1.00		0.01	1.00		0.16
Lane Grp Cap(c), veh/h	328	0	335	417	0	0	286	3168	1226	69	2531	954
V/C Ratio(X)	1.05	0.00	0.19	0.13	0.00	0.00	0.55	0.91	0.91	0.82	0.75	0.75
Avail Cap(c_a), veh/h	328	0	335	417	0	0	295	3168	1226	78	2531	954
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	100.6	0.0	80.6	79.7	0.0	0.0	95.0	36.8	36.9	119.4	46.7	46.8
Incr Delay (d2), s/veh	63.5	0.0	0.1	0.1	0.0	0.0	1.1	5.3	12.0	38.0	2.1	5.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	27.7	0.0	3.5	3.0	0.0	0.0	9.5	49.8	60.3	4.4	31.1	36.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	164.1	0.0	80.7	79.8	0.0	0.0	96.2	42.1	48.9	157.4	48.8	52.3
LnGrp LOS	F	A	F	E	A	A	F	D	D	F	D	D
Approach Vol, veh/h		410			56			4171			2678	
Approach Delay, s/veh		150.9			79.8			46.0			52.0	
Approach LOS		F			E			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	49.7	138.3		62.0	16.7	171.3		62.0
Change Period (Y+Rc), s	7.2	7.2		* 8.6	7.2	7.2		* 8.6
Max Green Setting (Gmax), s	43.8	129.8		* 53	10.8	162.8		* 53
Max Q Clear Time (g_c+I1), s	23.5	79.8		8.2	9.7	131.0		55.4
Green Ext Time (p_c), s	0.2	40.6		0.2	0.0	31.5		0.0

Intersection Summary	
HCM 6th Ctrl Delay	54.3
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	4005	2604	0
Future Volume (vph)	0	0	0	4005	2604	0
Adj. Flow (vph)	0	0	0	4353	2830	0
Lane Group Flow (vph)	0	0	0	4353	2830	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Control Type: Unsignalized	
Intersection Capacity Utilization 80.7%	ICU Level of Service D
Analysis Period (min) 15	

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	4005	2604	0
Future Volume (Veh/h)	0	0	0	4005	2604	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	4353	2830	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				Raised	Raised	
Median storage veh)				1	1	
Upstream signal (ft)					717	
pX, platoon unblocked	0.65	0.65	0.65			
vC, conflicting volume	4281	943	2830			
vC1, stage 1 conf vol	2830					
vC2, stage 2 conf vol	1451					
vCu, unblocked vol	4161	0	1914			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	44	700	197			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	0	1451	1451	1451	1132	1132	566
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.85	0.85	0.85	0.67	0.67	0.33
Queue Length 95th (ft)	0	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A						
Approach Delay (s)	0.0	0.0			0.0		
Approach LOS	A						

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	80.7%	ICU Level of Service	D
Analysis Period (min)	15		

12: US Hwy 19 N & Melody Way/Tarpon Lake Center Drwy

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	4	0	0	11	50	4172	9	23	2654	0
Future Volume (vph)	0	0	4	0	0	11	50	4172	9	23	2654	0
Adj. Flow (vph)	0	0	4	0	0	11	52	4301	9	24	2736	0
Lane Group Flow (vph)	0	0	4	0	0	11	52	4310	0	24	2736	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Control Type: Unsignalized	
Intersection Capacity Utilization 90.8%	ICU Level of Service E
Analysis Period (min) 15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	4	0	0	11	50	4172	9	23	2654	0
Future Volume (Veh/h)	0	0	4	0	0	11	50	4172	9	23	2654	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	0	0	4	0	0	11	52	4301	9	24	2736	0
Pedestrians		4						4				
Lane Width (ft)		12.0						12.0				
Walking Speed (ft/s)		3.5						3.5				
Percent Blockage		0						0				
Right turn flare (veh)												
Median type								Raised			Raised	
Median storage veh)								1			1	
Upstream signal (ft)											1118	
pX, platoon unblocked	0.64	0.64	0.64	0.64	0.64		0.64					
vC, conflicting volume	4337	7202	920	5378	7198	1438	2740			4310		
vC1, stage 1 conf vol	2788	2788		4410	4410							
vC2, stage 2 conf vol	1549	4414		968	2788							
vCu, unblocked vol	4246	8703	0	5865	8696	1438	1762			4310		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	7.1	4.1			4.1		
tC, 2 stage (s)	6.5	5.5		6.5	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.4	2.2			2.2		
p0 queue free %	100	100	99	100	100	90	77			30		
cM capacity (veh/h)	11	0	696	1	0	114	230			34		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4
Volume Total	4	11	52	1720	1720	869	24	1094	1094	547
Volume Left	0	0	52	0	0	0	24	0	0	0
Volume Right	4	11	0	0	0	9	0	0	0	0
cSH	696	114	230	1700	1700	1700	34	1700	1700	1700
Volume to Capacity	0.01	0.10	0.23	1.01	1.01	0.51	0.70	0.64	0.64	0.32
Queue Length 95th (ft)	0	8	21	0	0	0	61	0	0	0
Control Delay (s)	10.2	40.1	25.2	0.0	0.0	0.0	236.5	0.0	0.0	0.0
Lane LOS	B	E	D				F			
Approach Delay (s)	10.2	40.1	0.3				2.1			
Approach LOS	B	E								

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	90.8%	ICU Level of Service	E
Analysis Period (min)	15		

2023 NO BUILD CONDITIONS
Capacity Analysis

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	188	7	172	6	1	10	136	2151	8	9	3959	85
Future Volume (vph)	188	7	172	6	1	10	136	2151	8	9	3959	85
Adj. Flow (vph)	190	7	174	6	1	10	137	2173	8	9	3999	86
Lane Group Flow (vph)	0	197	174	0	17	0	137	2181	0	9	4085	0
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8		8	4								
Detector Phase	8	8	8	4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		7.0	20.0		7.0	20.0	
Minimum Split (s)	59.6	59.6	59.6	61.6	61.6		14.2	27.2		14.2	29.2	
Total Split (s)	62.0	62.0	62.0	62.0	62.0		35.0	170.0		18.0	153.0	
Total Split (%)	24.8%	24.8%	24.8%	24.8%	24.8%		14.0%	68.0%		7.2%	61.2%	
Maximum Green (s)	53.4	53.4	53.4	53.4	53.4		27.8	162.8		10.8	145.8	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7		5.2	5.2		5.2	5.2	
All-Red Time (s)	4.9	4.9	4.9	4.9	4.9		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		8.6	8.6		8.6		7.2	7.2		7.2	7.2	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	4.0		2.0	4.0	
Recall Mode	None	None	None	None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0			7.0			7.0	
Flash Dont Walk (s)	44.0	44.0	44.0	46.0	46.0			9.0			15.0	
Pedestrian Calls (#/hr)	0	0	0	0	0			0			0	
Act Effct Green (s)		43.9	43.9		43.9		23.2	184.4		7.1	159.9	
Actuated g/C Ratio		0.18	0.18		0.18		0.09	0.74		0.03	0.64	
v/c Ratio		0.92	0.48		0.07		0.85	0.48		0.18	1.01	
Control Delay		144.0	25.8		45.2		151.3	14.9		126.3	59.6	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		144.0	25.8		45.2		151.3	14.9		126.3	59.6	
LOS		F	C		D		F	B		F	E	
Approach Delay		88.6			45.2			23.0			59.8	
Approach LOS		F			D			C			E	
Queue Length 50th (ft)		325	55		10		227	372		15	~2077	
Queue Length 95th (ft)		431	143		39		319	546		42	#2181	
Internal Link Dist (ft)		1193			443			637			909	
Turn Bay Length (ft)							500			345		
Base Capacity (vph)		260	414		297		193	4588		77	4039	
Starvation Cap Reductn		0	0		0		0	0		0	0	
Spillback Cap Reductn		0	0		0		0	0		0	0	
Storage Cap Reductn		0	0		0		0	0		0	0	
Reduced v/c Ratio		0.76	0.42		0.06		0.71	0.48		0.12	1.01	

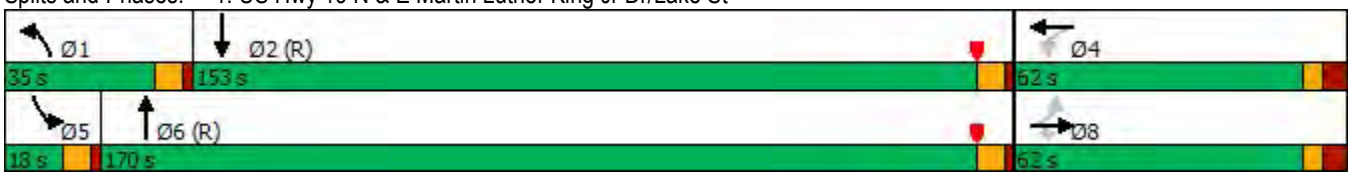
Intersection Summary
Cycle Length: 250
Actuated Cycle Length: 250
Offset: 16 (6%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow

Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 48.8	Intersection LOS: D
Intersection Capacity Utilization 104.6%	ICU Level of Service G
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: US Hwy 19 N & E Martin Luther King Jr Dr/Lake St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	188	7	172	6	1	10	136	2151	8	9	3959	85
Future Volume (veh/h)	188	7	172	6	1	10	136	2151	8	9	3959	85
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1856	1900	1900	1900	1841	1826	1826	1900	1856	1856
Adj Flow Rate, veh/h	190	7	38	6	1	0	137	2173	7	9	3999	86
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	0	0	3	0	0	0	4	5	5	0	3	3
Cap, veh/h	236	8	231	251	40	0	150	4865	16	24	4368	93
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.00	0.09	0.75	0.75	0.01	0.67	0.67
Sat Flow, veh/h	1407	52	1566	1515	270	0	1753	6511	21	1810	6478	138
Grp Volume(v), veh/h	197	0	38	7	0	0	137	1572	608	9	2944	1141
Grp Sat Flow(s),veh/h/ln	1459	0	1566	1785	0	0	1753	1570	1822	1810	1596	1828
Q Serve(g_s), s	32.4	0.0	5.3	0.0	0.0	0.0	19.4	31.7	31.7	1.2	130.0	135.2
Cycle Q Clear(g_c), s	33.2	0.0	5.3	0.8	0.0	0.0	19.4	31.7	31.7	1.2	130.0	135.2
Prop In Lane	0.96		1.00	0.86		0.00	1.00		0.01	1.00		0.08
Lane Grp Cap(c), veh/h	244	0	231	291	0	0	150	3520	1361	24	3228	1233
V/C Ratio(X)	0.81	0.00	0.16	0.02	0.00	0.00	0.91	0.45	0.45	0.38	0.91	0.93
Avail Cap(c_a), veh/h	339	0	335	388	0	0	195	3520	1361	78	3228	1233
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	104.8	0.0	93.0	91.1	0.0	0.0	113.3	12.0	12.0	122.4	34.4	35.3
Incr Delay (d2), s/veh	6.6	0.0	0.1	0.0	0.0	0.0	31.2	0.4	1.1	3.7	5.1	13.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.3	0.0	2.2	0.4	0.0	0.0	10.2	11.0	13.0	0.6	49.6	61.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	111.4	0.0	93.2	91.1	0.0	0.0	144.5	12.4	13.1	126.1	39.5	48.3
LnGrp LOS	F	A	F	F	A	A	F	B	B	F	D	D
Approach Vol, veh/h		235			7			2317			4094	
Approach Delay, s/veh		108.5			91.1			20.4			42.2	
Approach LOS		F			F			C			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	28.7	175.8		45.6	10.5	194.0		45.6
Change Period (Y+Rc), s	7.2	7.2		* 8.6	7.2	7.2		* 8.6
Max Green Setting (Gmax), s	27.8	145.8		* 53	10.8	162.8		* 53
Max Q Clear Time (g_c+I1), s	21.4	137.2		2.8	3.2	33.7		35.2
Green Ext Time (p_c), s	0.1	8.6		0.0	0.0	53.1		0.7

Intersection Summary	
HCM 6th Ctrl Delay	37.0
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	2295	4144	0
Future Volume (vph)	0	0	0	2295	4144	0
Adj. Flow (vph)	0	0	0	2495	4504	0
Lane Group Flow (vph)	0	0	0	2495	4504	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Control Type: Unsignalized	
Intersection Capacity Utilization 83.4%	ICU Level of Service E
Analysis Period (min) 15	

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	2295	4144	0
Future Volume (Veh/h)	0	0	0	2295	4144	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	2495	4504	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				Raised	Raised	
Median storage veh)				1	1	
Upstream signal (ft)					717	
pX, platoon unblocked	0.36	0.36	0.36			
vC, conflicting volume	5336	1501	4504			
vC1, stage 1 conf vol	4504					
vC2, stage 2 conf vol	832					
vCu, unblocked vol	6824	0	4511			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	1	390	10			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	0	832	832	832	1802	1802	901
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.49	0.49	0.49	1.06	1.06	0.53
Queue Length 95th (ft)	0	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A						
Approach Delay (s)	0.0	0.0			0.0		
Approach LOS	A						

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	83.4%	ICU Level of Service	E
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	4	0	0	7	47	2237	12	35	3991	1
Future Volume (vph)	0	0	4	0	0	7	47	2237	12	35	3991	1
Adj. Flow (vph)	0	0	4	0	0	7	48	2283	12	36	4072	1
Lane Group Flow (vph)	0	0	4	0	0	7	48	2295	0	36	4073	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Control Type: Unsignalized	
Intersection Capacity Utilization 90.0%	ICU Level of Service E
Analysis Period (min) 15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	4	0	0	7	47	2237	12	35	3991	1
Future Volume (Veh/h)	0	0	4	0	0	7	47	2237	12	35	3991	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	0	0	4	0	0	7	48	2283	12	36	4072	1
Pedestrians		10						10				
Lane Width (ft)		12.0						12.0				
Walking Speed (ft/s)		3.5						3.5				
Percent Blockage		1						1				
Right turn flare (veh)												
Median type								Raised			Raised	
Median storage veh)								1			1	
Upstream signal (ft)											1118	
pX, platoon unblocked	0.36	0.36	0.36	0.36	0.36		0.36					
vC, conflicting volume	5018	6546	1378	3828	6540	767	4083			2295		
vC1, stage 1 conf vol	4154	4154		2385	2385							
vC2, stage 2 conf vol	864	2391		1443	4155							
vCu, unblocked vol	5931	10144	0	2647	10129	767	3349			2295		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.2			4.1		
tC, 2 stage (s)	6.5	5.5		6.5	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	0	99	0	0	98	0			84		
cM capacity (veh/h)	0	0	388	0	0	349	29			223		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4
Volume Total	4	7	48	913	913	469	36	1629	1629	815
Volume Left	0	0	48	0	0	0	36	0	0	0
Volume Right	4	7	0	0	0	12	0	0	0	1
cSH	388	349	29	1700	1700	1700	223	1700	1700	1700
Volume to Capacity	0.01	0.02	1.67	0.54	0.54	0.28	0.16	0.96	0.96	0.48
Queue Length 95th (ft)	1	2	140	0	0	0	14	0	0	0
Control Delay (s)	14.4	15.5	625.3	0.0	0.0	0.0	24.2	0.0	0.0	0.0
Lane LOS	B	C	F				C			
Approach Delay (s)	14.4	15.5	12.8				0.2			
Approach LOS	B	C								

Intersection Summary			
Average Delay	4.8		
Intersection Capacity Utilization	90.0%	ICU Level of Service	E
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	332	6	161	29	10	30	155	3928	9	54	2461	118
Future Volume (vph)	332	6	161	29	10	30	155	3928	9	54	2461	118
Adj. Flow (vph)	346	6	168	30	10	31	161	4092	9	56	2564	123
Lane Group Flow (vph)	0	352	168	0	71	0	161	4101	0	56	2687	0
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8		8	4								
Detector Phase	8	8	8	4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		7.0	20.0		7.0	20.0	
Minimum Split (s)	59.6	59.6	59.6	61.6	61.6		14.2	27.2		14.2	29.2	
Total Split (s)	62.0	62.0	62.0	62.0	62.0		51.0	170.0		18.0	137.0	
Total Split (%)	24.8%	24.8%	24.8%	24.8%	24.8%		20.4%	68.0%		7.2%	54.8%	
Maximum Green (s)	53.4	53.4	53.4	53.4	53.4		43.8	162.8		10.8	129.8	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7		5.2	5.2		5.2	5.2	
All-Red Time (s)	4.9	4.9	4.9	4.9	4.9		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		8.6	8.6		8.6		7.2	7.2		7.2	7.2	
Lead/Lag							Lag	Lag		Lead	Lead	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	4.0		2.0	4.0	
Recall Mode	None	None	None	None	None		C-Max	C-Max		None	Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0			7.0			7.0	
Flash Dont Walk (s)	44.0	44.0	44.0	46.0	46.0			9.0			15.0	
Pedestrian Calls (#/hr)	0	0	0	0	0			0			0	
Act Effct Green (s)		53.4	53.4		53.4		43.8	163.5		10.1	129.8	
Actuated g/C Ratio		0.21	0.21		0.21		0.18	0.65		0.04	0.52	
v/c Ratio		1.41	0.44		0.61		0.56	0.98		0.78	0.81	
Control Delay		269.8	39.4		94.1		102.4	51.0		170.6	52.5	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		269.8	39.4		94.1		102.4	51.0		170.6	52.5	
LOS		F	D		F		F	D		F	D	
Approach Delay		195.3			94.1			52.9			54.9	
Approach LOS		F			F			D			D	
Queue Length 50th (ft)		~776	103		87		248	1868		94	1072	
Queue Length 95th (ft)		#1015	196		166		345	1806		#185	1088	
Internal Link Dist (ft)		1193			443			637			909	
Turn Bay Length (ft)							500			345		
Base Capacity (vph)		249	383		117		290	4189		77	3298	
Starvation Cap Reductn		0	0		0		0	0		0	0	
Spillback Cap Reductn		0	0		0		0	0		0	0	
Storage Cap Reductn		0	0		0		0	0		0	0	
Reduced v/c Ratio		1.41	0.44		0.61		0.56	0.98		0.73	0.81	

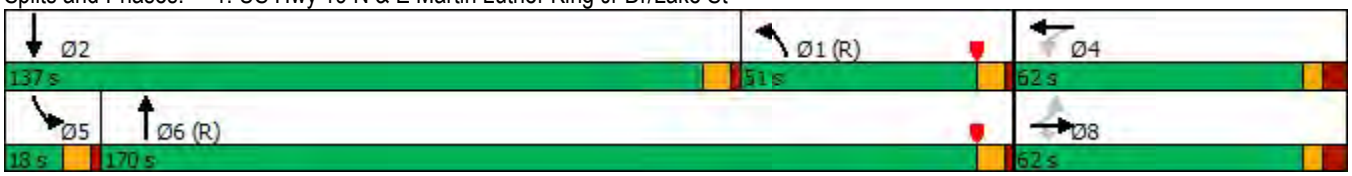
Intersection Summary
Cycle Length: 250
Actuated Cycle Length: 250
Offset: 1 (0%), Referenced to phase 1:NBL and 6:NBT, Start of Yellow

Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.41	
Intersection Signal Delay: 63.8	Intersection LOS: E
Intersection Capacity Utilization 108.6%	ICU Level of Service G
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: US Hwy 19 N & E Martin Luther King Jr Dr/Lake St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	332	6	161	29	10	30	155	3928	9	54	2461	118
Future Volume (veh/h)	332	6	161	29	10	30	155	3928	9	54	2461	118
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		1.00	1.00		0.99	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1856	1900	1900	1900	1767	1870	1870	1900	1870	1870
Adj Flow Rate, veh/h	346	6	68	30	10	16	161	4092	9	56	2564	123
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	3	0	0	0	9	2	2	0	2	2
Cap, veh/h	323	5	335	227	77	113	286	4384	10	69	3324	159
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.17	0.66	0.66	0.04	0.52	0.52
Sat Flow, veh/h	1380	24	1568	959	362	528	1682	6678	15	1810	6338	303
Grp Volume(v), veh/h	352	0	68	56	0	0	161	2955	1146	56	1950	737
Grp Sat Flow(s),veh/h/ln	1404	0	1568	1849	0	0	1682	1609	1867	1810	1609	1816
Q Serve(g_s), s	47.2	0.0	8.9	0.0	0.0	0.0	22.0	135.7	136.3	7.7	80.6	81.2
Cycle Q Clear(g_c), s	53.4	0.0	8.9	6.2	0.0	0.0	22.0	135.7	136.3	7.7	80.6	81.2
Prop In Lane	0.98		1.00	0.54		0.29	1.00		0.01	1.00		0.17
Lane Grp Cap(c), veh/h	328	0	335	417	0	0	286	3168	1226	69	2531	952
V/C Ratio(X)	1.07	0.00	0.20	0.13	0.00	0.00	0.56	0.93	0.93	0.82	0.77	0.77
Avail Cap(c_a), veh/h	328	0	335	417	0	0	295	3168	1226	78	2531	952
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	100.7	0.0	80.8	79.7	0.0	0.0	95.2	38.1	38.2	119.4	47.4	47.6
Incr Delay (d2), s/veh	70.0	0.0	0.1	0.1	0.0	0.0	1.3	6.5	14.2	38.0	2.3	6.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	28.2	0.0	3.7	3.0	0.0	0.0	9.7	52.9	64.3	4.4	32.4	37.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	170.7	0.0	80.9	79.8	0.0	0.0	96.6	44.6	52.3	157.4	49.8	53.7
LnGrp LOS	F	A	F	E	A	A	F	D	D	F	D	D
Approach Vol, veh/h		420			56			4262			2743	
Approach Delay, s/veh		156.2			79.8			48.6			53.0	
Approach LOS		F			E			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	49.7	138.3		62.0	16.7	171.3		62.0
Change Period (Y+Rc), s	7.2	7.2		* 8.6	7.2	7.2		* 8.6
Max Green Setting (Gmax), s	43.8	129.8		* 53	10.8	162.8		* 53
Max Q Clear Time (g_c+I1), s	24.0	83.2		8.2	9.7	138.3		55.4
Green Ext Time (p_c), s	0.2	39.0		0.2	0.0	24.4		0.0

Intersection Summary	
HCM 6th Ctrl Delay	56.5
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	4093	2661	0
Future Volume (vph)	0	0	0	4093	2661	0
Adj. Flow (vph)	0	0	0	4449	2892	0
Lane Group Flow (vph)	0	0	0	4449	2892	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Control Type: Unsignalized	
Intersection Capacity Utilization 82.4%	ICU Level of Service E
Analysis Period (min) 15	

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	4093	2661	0
Future Volume (Veh/h)	0	0	0	4093	2661	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	4449	2892	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				Raised	Raised	
Median storage veh)				1	1	
Upstream signal (ft)					717	
pX, platoon unblocked	0.63	0.63	0.63			
vC, conflicting volume	4375	964	2892			
vC1, stage 1 conf vol	2892					
vC2, stage 2 conf vol	1483					
vCu, unblocked vol	4302	0	1954			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	41	685	186			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	0	1483	1483	1483	1157	1157	578
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.87	0.87	0.87	0.68	0.68	0.34
Queue Length 95th (ft)	0	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A						
Approach Delay (s)	0.0	0.0			0.0		
Approach LOS	A						

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	82.4%	ICU Level of Service	E
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	4	0	0	11	51	4263	9	23	2712	0
Future Volume (vph)	0	0	4	0	0	11	51	4263	9	23	2712	0
Adj. Flow (vph)	0	0	4	0	0	11	53	4395	9	24	2796	0
Lane Group Flow (vph)	0	0	4	0	0	11	53	4404	0	24	2796	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Control Type: Unsignalized	
Intersection Capacity Utilization 92.6%	ICU Level of Service F
Analysis Period (min) 15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	4	0	0	11	51	4263	9	23	2712	0
Future Volume (Veh/h)	0	0	4	0	0	11	51	4263	9	23	2712	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	0	0	4	0	0	11	53	4395	9	24	2796	0
Pedestrians		4						4				
Lane Width (ft)		12.0						12.0				
Walking Speed (ft/s)		3.5						3.5				
Percent Blockage		0						0				
Right turn flare (veh)												
Median type								Raised			Raised	
Median storage veh)								1			1	
Upstream signal (ft)											1118	
pX, platoon unblocked	0.63	0.63	0.63	0.63	0.63		0.63					
vC, conflicting volume	4430	7358	940	5494	7354	1470	2800			4404		
vC1, stage 1 conf vol	2848	2848		4506	4506							
vC2, stage 2 conf vol	1582	4510		988	2848							
vCu, unblocked vol	4389	9049	0	6081	9042	1470	1794			4404		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	7.1	4.1			4.1		
tC, 2 stage (s)	6.5	5.5		6.5	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.4	2.2			2.2		
p0 queue free %	100	100	99	100	100	90	76			23		
cM capacity (veh/h)	8	0	680	1	0	108	219			31		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4
Volume Total	4	11	53	1758	1758	888	24	1118	1118	559
Volume Left	0	0	53	0	0	0	24	0	0	0
Volume Right	4	11	0	0	0	9	0	0	0	0
cSH	680	108	219	1700	1700	1700	31	1700	1700	1700
Volume to Capacity	0.01	0.10	0.24	1.03	1.03	0.52	0.77	0.66	0.66	0.33
Queue Length 95th (ft)	0	8	23	0	0	0	64	0	0	0
Control Delay (s)	10.3	42.1	26.7	0.0	0.0	0.0	273.0	0.0	0.0	0.0
Lane LOS	B	E	D				F			
Approach Delay (s)	10.3	42.1	0.3				2.3			
Approach LOS	B	E								

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	92.6%	ICU Level of Service	F
Analysis Period (min)	15		

2023 BUILD CONDITIONS
Capacity Analysis

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	188	7	174	6	1	10	162	2156	8	9	3966	85
Future Volume (vph)	188	7	174	6	1	10	162	2156	8	9	3966	85
Adj. Flow (vph)	190	7	176	6	1	10	164	2178	8	9	4006	86
Lane Group Flow (vph)	0	197	176	0	17	0	164	2186	0	9	4092	0
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8		8	4								
Detector Phase	8	8	8	4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		7.0	20.0		7.0	20.0	
Minimum Split (s)	59.6	59.6	59.6	61.6	61.6		14.2	27.2		14.2	29.2	
Total Split (s)	62.0	62.0	62.0	62.0	62.0		35.0	170.0		18.0	153.0	
Total Split (%)	24.8%	24.8%	24.8%	24.8%	24.8%		14.0%	68.0%		7.2%	61.2%	
Maximum Green (s)	53.4	53.4	53.4	53.4	53.4		27.8	162.8		10.8	145.8	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7		5.2	5.2		5.2	5.2	
All-Red Time (s)	4.9	4.9	4.9	4.9	4.9		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		8.6	8.6		8.6		7.2	7.2		7.2	7.2	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	4.0		2.0	4.0	
Recall Mode	None	None	None	None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0			7.0			7.0	
Flash Dont Walk (s)	44.0	44.0	44.0	46.0	46.0			9.0			15.0	
Pedestrian Calls (#/hr)	0	0	0	0	0			0			0	
Act Effct Green (s)		43.9	43.9		43.9		26.8	184.4		7.1	156.3	
Actuated g/C Ratio		0.18	0.18		0.18		0.11	0.74		0.03	0.63	
v/c Ratio		0.92	0.48		0.07		0.89	0.48		0.18	1.04	
Control Delay		144.0	26.6		45.2		148.8	14.9		126.3	68.7	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		144.0	26.6		45.2		148.8	14.9		126.3	68.7	
LOS		F	C		D		F	B		F	E	
Approach Delay		88.6			45.2			24.3			68.9	
Approach LOS		F			D			C			E	
Queue Length 50th (ft)		325	58		10		270	373		15	~2151	
Queue Length 95th (ft)		431	148		39		#422	547		42	#2187	
Internal Link Dist (ft)		1193			443			637			909	
Turn Bay Length (ft)							500			345		
Base Capacity (vph)		260	414		297		199	4588		77	3949	
Starvation Cap Reductn		0	0		0		0	0		0	0	
Spillback Cap Reductn		0	0		0		0	0		0	0	
Storage Cap Reductn		0	0		0		0	0		0	0	
Reduced v/c Ratio		0.76	0.43		0.06		0.82	0.48		0.12	1.04	

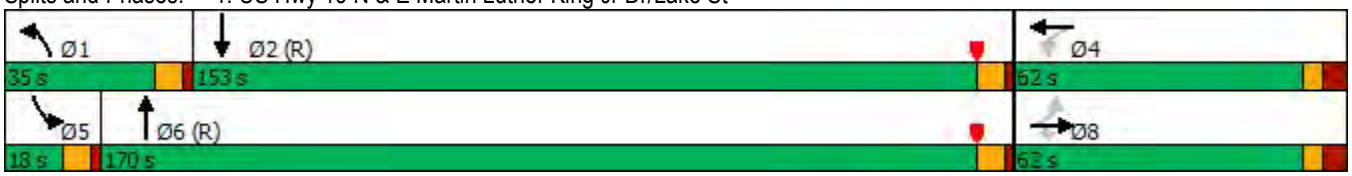
Intersection Summary
Cycle Length: 250
Actuated Cycle Length: 250
Offset: 16 (6%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow

Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay: 54.6	Intersection LOS: D
Intersection Capacity Utilization 106.1%	ICU Level of Service G
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: US Hwy 19 N & E Martin Luther King Jr Dr/Lake St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	188	7	174	6	1	10	162	2156	8	9	3966	85
Future Volume (veh/h)	188	7	174	6	1	10	162	2156	8	9	3966	85
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1856	1900	1900	1900	1841	1826	1826	1900	1856	1856
Adj Flow Rate, veh/h	190	7	40	6	1	0	164	2178	7	9	4006	86
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	0	0	3	0	0	0	4	5	5	0	3	3
Cap, veh/h	236	8	232	251	40	0	177	4865	16	24	4270	91
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.00	0.10	0.75	0.75	0.01	0.66	0.66
Sat Flow, veh/h	1407	52	1566	1515	270	0	1753	6511	21	1810	6478	138
Grp Volume(v), veh/h	197	0	40	7	0	0	164	1576	609	9	2949	1143
Grp Sat Flow(s),veh/h/ln	1459	0	1566	1785	0	0	1753	1570	1822	1810	1596	1828
Q Serve(g_s), s	32.4	0.0	5.6	0.0	0.0	0.0	23.2	31.8	31.8	1.2	136.7	142.1
Cycle Q Clear(g_c), s	33.2	0.0	5.6	0.8	0.0	0.0	23.2	31.8	31.8	1.2	136.7	142.1
Prop In Lane	0.96		1.00	0.86		0.00	1.00		0.01	1.00		0.08
Lane Grp Cap(c), veh/h	244	0	232	291	0	0	177	3520	1361	24	3156	1205
V/C Ratio(X)	0.81	0.00	0.17	0.02	0.00	0.00	0.93	0.45	0.45	0.38	0.93	0.95
Avail Cap(c_a), veh/h	339	0	335	388	0	0	195	3520	1361	78	3156	1205
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	104.8	0.0	93.2	91.1	0.0	0.0	111.5	12.0	12.0	122.4	37.8	38.7
Incr Delay (d2), s/veh	6.6	0.0	0.1	0.0	0.0	0.0	40.7	0.4	1.1	3.7	6.6	16.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.3	0.0	2.3	0.4	0.0	0.0	12.6	11.0	13.0	0.6	52.9	66.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	111.4	0.0	93.3	91.1	0.0	0.0	152.1	12.4	13.1	126.1	44.5	54.9
LnGrp LOS	F	A	F	F	A	A	F	B	B	F	D	D
Approach Vol, veh/h		237			7			2349			4101	
Approach Delay, s/veh		108.3			91.1			22.3			47.5	
Approach LOS		F			F			C			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	32.4	172.0		45.6	10.5	194.0		45.6
Change Period (Y+Rc), s	7.2	7.2		* 8.6	7.2	7.2		* 8.6
Max Green Setting (Gmax), s	27.8	145.8		* 53	10.8	162.8		* 53
Max Q Clear Time (g_c+I1), s	25.2	144.1		2.8	3.2	33.8		35.2
Green Ext Time (p_c), s	0.1	1.7		0.0	0.0	53.4		0.7

Intersection Summary	
HCM 6th Ctrl Delay	40.9
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	111	0	2326	4062	115
Future Volume (vph)	0	111	0	2326	4062	115
Adj. Flow (vph)	0	121	0	2528	4415	125
Lane Group Flow (vph)	0	121	0	2528	4540	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Control Type: Unsignalized	
Intersection Capacity Utilization 94.6%	ICU Level of Service F
Analysis Period (min) 15	

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	111	0	2326	4062	115
Future Volume (Veh/h)	0	111	0	2326	4062	115
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	121	0	2528	4415	125
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				Raised	Raised	
Median storage veh)				1	1	
Upstream signal (ft)					717	
pX, platoon unblocked	0.37	0.37	0.37			
vC, conflicting volume	5320	1534	4540			
vC1, stage 1 conf vol	4478					
vC2, stage 2 conf vol	843					
vCu, unblocked vol	6695	0	4607			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	70	100			
cM capacity (veh/h)	1	405	9			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	121	843	843	843	1766	1766	1008
Volume Left	0	0	0	0	0	0	0
Volume Right	121	0	0	0	0	0	125
cSH	405	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.30	0.50	0.50	0.50	1.04	1.04	0.59
Queue Length 95th (ft)	31	0	0	0	0	0	0
Control Delay (s)	17.6	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	C						
Approach Delay (s)	17.6	0.0			0.0		
Approach LOS	C						

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	94.6%	ICU Level of Service	F
Analysis Period (min)	15		

12: US Hwy 19 N & Melody Way/Tarpon Lake Center Drwy

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	4	0	0	7	47	2246	12	57	3998	1
Future Volume (vph)	0	0	4	0	0	7	47	2246	12	57	3998	1
Adj. Flow (vph)	0	0	4	0	0	7	48	2292	12	58	4080	1
Lane Group Flow (vph)	0	0	4	0	0	7	48	2304	0	58	4081	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Control Type: Unsignalized	
Intersection Capacity Utilization 90.1%	ICU Level of Service E
Analysis Period (min) 15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	4	0	0	7	47	2246	12	57	3998	1
Future Volume (Veh/h)	0	0	4	0	0	7	47	2246	12	57	3998	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	0	0	4	0	0	7	48	2292	12	58	4080	1
Pedestrians		10						10				
Lane Width (ft)		12.0						12.0				
Walking Speed (ft/s)		3.5						3.5				
Percent Blockage		1						1				
Right turn flare (veh)												
Median type								Raised			Raised	
Median storage veh)								1			1	
Upstream signal (ft)											1118	
pX, platoon unblocked	0.38	0.38	0.38	0.38	0.38		0.38					
vC, conflicting volume	5074	6606	1380	3884	6601	770	4091			2304		
vC1, stage 1 conf vol	4206	4206		2394	2394							
vC2, stage 2 conf vol	867	2400		1490	4207							
vCu, unblocked vol	6021	10086	0	2866	10071	770	3415			2304		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.2			4.1		
tC, 2 stage (s)	6.5	5.5		6.5	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	0	99	0	0	98	0			74		
cM capacity (veh/h)	0	0	404	0	0	348	28			221		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4
Volume Total	4	7	48	917	917	470	58	1632	1632	817
Volume Left	0	0	48	0	0	0	58	0	0	0
Volume Right	4	7	0	0	0	12	0	0	0	1
cSH	404	348	28	1700	1700	1700	221	1700	1700	1700
Volume to Capacity	0.01	0.02	1.71	0.54	0.54	0.28	0.26	0.96	0.96	0.48
Queue Length 95th (ft)	1	2	142	0	0	0	25	0	0	0
Control Delay (s)	14.0	15.6	647.1	0.0	0.0	0.0	27.0	0.0	0.0	0.0
Lane LOS	B	C	F				D			
Approach Delay (s)	14.0	15.6	13.2				0.4			
Approach LOS	B	C								

Intersection Summary			
Average Delay	5.0		
Intersection Capacity Utilization	90.1%	ICU Level of Service	E
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	332	6	162	29	10	30	166	3932	9	54	2464	118
Future Volume (vph)	332	6	162	29	10	30	166	3932	9	54	2464	118
Adj. Flow (vph)	346	6	169	30	10	31	173	4096	9	56	2567	123
Lane Group Flow (vph)	0	352	169	0	71	0	173	4105	0	56	2690	0
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8		8	4								
Detector Phase	8	8	8	4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		7.0	20.0		7.0	20.0	
Minimum Split (s)	59.6	59.6	59.6	61.6	61.6		14.2	27.2		14.2	29.2	
Total Split (s)	62.0	62.0	62.0	62.0	62.0		51.0	170.0		18.0	137.0	
Total Split (%)	24.8%	24.8%	24.8%	24.8%	24.8%		20.4%	68.0%		7.2%	54.8%	
Maximum Green (s)	53.4	53.4	53.4	53.4	53.4		43.8	162.8		10.8	129.8	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7		5.2	5.2		5.2	5.2	
All-Red Time (s)	4.9	4.9	4.9	4.9	4.9		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		8.6	8.6		8.6		7.2	7.2		7.2	7.2	
Lead/Lag							Lag	Lag		Lead	Lead	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	4.0		2.0	4.0	
Recall Mode	None	None	None	None	None		C-Max	C-Max		None	Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0			7.0			7.0	
Flash Dont Walk (s)	44.0	44.0	44.0	46.0	46.0			9.0			15.0	
Pedestrian Calls (#/hr)	0	0	0	0	0			0			0	
Act Effct Green (s)		53.4	53.4		53.4		43.8	163.5		10.1	129.8	
Actuated g/C Ratio		0.21	0.21		0.21		0.18	0.65		0.04	0.52	
v/c Ratio		1.41	0.44		0.61		0.60	0.98		0.78	0.82	
Control Delay		269.8	39.2		94.1		104.5	51.2		170.6	52.6	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		269.8	39.2		94.1		104.5	51.2		170.6	52.6	
LOS		F	D		F		F	D		F	D	
Approach Delay		195.0			94.1			53.3			55.0	
Approach LOS		F			F			D			E	
Queue Length 50th (ft)		~776	103		87		269	1874		94	1074	
Queue Length 95th (ft)		#1015	196		166		371	1811		#185	1090	
Internal Link Dist (ft)		1193			443			637			909	
Turn Bay Length (ft)							500			345		
Base Capacity (vph)		249	384		117		290	4189		77	3298	
Starvation Cap Reductn		0	0		0		0	0		0	0	
Spillback Cap Reductn		0	0		0		0	0		0	0	
Storage Cap Reductn		0	0		0		0	0		0	0	
Reduced v/c Ratio		1.41	0.44		0.61		0.60	0.98		0.73	0.82	

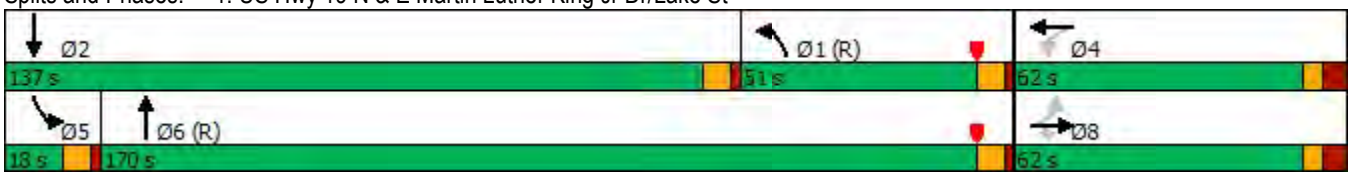
Intersection Summary
Cycle Length: 250
Actuated Cycle Length: 250
Offset: 1 (0%), Referenced to phase 1:NBL and 6:NBT, Start of Yellow

Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.41	
Intersection Signal Delay: 64.0	Intersection LOS: E
Intersection Capacity Utilization 108.6%	ICU Level of Service G
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: US Hwy 19 N & E Martin Luther King Jr Dr/Lake St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	332	6	162	29	10	30	166	3932	9	54	2464	118
Future Volume (veh/h)	332	6	162	29	10	30	166	3932	9	54	2464	118
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		1.00	1.00		0.99	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1856	1900	1900	1900	1767	1870	1870	1900	1870	1870
Adj Flow Rate, veh/h	346	6	68	30	10	16	173	4096	9	56	2567	117
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	3	0	0	0	9	2	2	0	2	2
Cap, veh/h	323	5	335	227	77	113	286	4384	10	69	3333	151
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.17	0.66	0.66	0.04	0.52	0.52
Sat Flow, veh/h	1380	24	1568	959	362	528	1682	6678	15	1810	6355	289
Grp Volume(v), veh/h	352	0	68	56	0	0	173	2958	1147	56	1947	737
Grp Sat Flow(s),veh/h/ln	1404	0	1568	1849	0	0	1682	1609	1867	1810	1609	1818
Q Serve(g_s), s	47.2	0.0	8.9	0.0	0.0	0.0	23.8	136.1	136.7	7.7	80.4	81.0
Cycle Q Clear(g_c), s	53.4	0.0	8.9	6.2	0.0	0.0	23.8	136.1	136.7	7.7	80.4	81.0
Prop In Lane	0.98		1.00	0.54		0.29	1.00		0.01	1.00		0.16
Lane Grp Cap(c), veh/h	328	0	335	417	0	0	286	3168	1226	69	2531	954
V/C Ratio(X)	1.07	0.00	0.20	0.13	0.00	0.00	0.61	0.93	0.94	0.82	0.77	0.77
Avail Cap(c_a), veh/h	328	0	335	417	0	0	295	3168	1226	78	2531	954
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	100.7	0.0	80.8	79.7	0.0	0.0	96.0	38.1	38.2	119.4	47.4	47.5
Incr Delay (d2), s/veh	70.0	0.0	0.1	0.1	0.0	0.0	2.3	6.6	14.3	38.0	2.3	6.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	28.2	0.0	3.7	3.0	0.0	0.0	10.6	53.1	64.5	4.4	32.4	37.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	170.7	0.0	80.9	79.8	0.0	0.0	98.3	44.7	52.5	157.4	49.7	53.6
LnGrp LOS	F	A	F	E	A	A	F	D	D	F	D	D
Approach Vol, veh/h		420			56			4278			2740	
Approach Delay, s/veh		156.2			79.8			49.0			53.0	
Approach LOS		F			E			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	49.7	138.3		62.0	16.7	171.3		62.0
Change Period (Y+Rc), s	7.2	7.2		* 8.6	7.2	7.2		* 8.6
Max Green Setting (Gmax), s	43.8	129.8		* 53	10.8	162.8		* 53
Max Q Clear Time (g_c+I1), s	25.8	83.0		8.2	9.7	138.7		55.4
Green Ext Time (p_c), s	0.2	39.2		0.2	0.0	24.0		0.0

Intersection Summary	
HCM 6th Ctrl Delay	56.7
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	52	0	4108	2624	51
Future Volume (vph)	0	52	0	4108	2624	51
Adj. Flow (vph)	0	57	0	4465	2852	55
Lane Group Flow (vph)	0	57	0	4465	2907	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Control Type: Unsignalized	
Intersection Capacity Utilization 82.7%	ICU Level of Service E
Analysis Period (min) 15	

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	52	0	4108	2624	51
Future Volume (Veh/h)	0	52	0	4108	2624	51
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	57	0	4465	2852	55
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				Raised	Raised	
Median storage veh)				1	1	
Upstream signal (ft)					717	
pX, platoon unblocked	0.63	0.63	0.63			
vC, conflicting volume	4368	978	2907			
vC1, stage 1 conf vol	2880					
vC2, stage 2 conf vol	1488					
vCu, unblocked vol	4290	0	1974			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	92	100			
cM capacity (veh/h)	42	684	183			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	57	1488	1488	1488	1141	1141	625
Volume Left	0	0	0	0	0	0	0
Volume Right	57	0	0	0	0	0	55
cSH	684	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.08	0.88	0.88	0.88	0.67	0.67	0.37
Queue Length 95th (ft)	7	0	0	0	0	0	0
Control Delay (s)	10.7	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B						
Approach Delay (s)	10.7	0.0			0.0		
Approach LOS	B						

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	82.7%	ICU Level of Service	E
Analysis Period (min)	15		

12: US Hwy 19 N & Melody Way/Tarpon Lake Center Drwy

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	4	0	0	11	51	4267	9	34	2716	0
Future Volume (vph)	0	0	4	0	0	11	51	4267	9	34	2716	0
Adj. Flow (vph)	0	0	4	0	0	11	53	4399	9	35	2800	0
Lane Group Flow (vph)	0	0	4	0	0	11	53	4408	0	35	2800	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Control Type: Unsignalized	
Intersection Capacity Utilization 92.6%	ICU Level of Service F
Analysis Period (min) 15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	4	0	0	11	51	4267	9	34	2716	0
Future Volume (Veh/h)	0	0	4	0	0	11	51	4267	9	34	2716	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	0	0	4	0	0	11	53	4399	9	35	2800	0
Pedestrians		4						4				
Lane Width (ft)		12.0						12.0				
Walking Speed (ft/s)		3.5						3.5				
Percent Blockage		0						0				
Right turn flare (veh)												
Median type								Raised			Raised	
Median storage veh)								1			1	
Upstream signal (ft)											1118	
pX, platoon unblocked	0.63	0.63	0.63	0.63	0.63		0.63					
vC, conflicting volume	4457	7388	941	5521	7384	1471	2804			4408		
vC1, stage 1 conf vol	2874	2874		4510	4510							
vC2, stage 2 conf vol	1583	4514		1011	2874							
vCu, unblocked vol	4432	9084	0	6120	9077	1471	1808			4408		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	7.1	4.1			4.1		
tC, 2 stage (s)	6.5	5.5		6.5	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.4	2.2			2.2		
p0 queue free %	0	0	99	0	0	90	76			0		
cM capacity (veh/h)	0	0	682	0	0	108	216			31		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4
Volume Total	4	11	53	1760	1760	889	35	1120	1120	560
Volume Left	0	0	53	0	0	0	35	0	0	0
Volume Right	4	11	0	0	0	9	0	0	0	0
cSH	682	108	216	1700	1700	1700	31	1700	1700	1700
Volume to Capacity	0.01	0.10	0.24	1.04	1.04	0.52	1.12	0.66	0.66	0.33
Queue Length 95th (ft)	0	8	23	0	0	0	97	0	0	0
Control Delay (s)	10.3	42.2	26.9	0.0	0.0	0.0	390.3	0.0	0.0	0.0
Lane LOS	B	E	D				F			
Approach Delay (s)	10.3	42.2	0.3				4.8			
Approach LOS	B	E								

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	92.6%	ICU Level of Service	F
Analysis Period (min)	15		

Memorandum

To: City of Tarpon Springs
Planning and Engineering Division

From: Andrew Petersen, PE
Daniela Jurado, Analyst
Rodrigo Meirelles, Analyst

Date: 04/14/2022

04/14/2022

Re: Black Rifle Coffee, Tarpon Springs, FL – Transportation Management Plan

Bowman has been retained by Pursuit Development to perform a Transportation Management Plan for the proposed Black Rifle Coffee, a 2,630 SF coffee shop with drive-through window to be located at 40390 US Hwy 19 N, Tarpon Springs, Florida. The latest conceptual site plan is presented in **Appendix A**. **Figure 1** depicts the location of the proposed development.

Figure 1 Project Site Location

Access to the development is proposed to be provided by (*i*) one right-in/right-out driveway along US Hwy 19 N, as depicted in **Figure 1**.

For the purposes of this memorandum the site is proposed to be constructed and fully operational by the year 2023.

This Transportation Management Plan has been prepared to meet the requirements set forth in the city of Tarpon Spring Land Development Code (LDC). The LDC states that development projects located within deficient road corridors that generate between 51 and 300 new peak hour trips are classified as Tier 1." *Tier 1 projects are required to submit a transportation management plan designed to address their impacts while increasing mobility and reducing the demand for single occupant vehicle travel. Transportation management plans are required for development applications seeking to utilize transportation management strategies/improvements to address their development impacts".*

The purposes of this Memorandum are as follows: (*i*) provide the anticipated morning and evening peak trip generation for the proposed development, (*ii*) provide transportation management strategies to minimize the proposed development's impact.

Trip Generation

As mentioned previously on this memorandum, Black Rifle Coffee Company is proposing a 2,630 square foot Coffee Shop building with drive-thru window.

The Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition defines Land Use 937 – Coffee/Donut Shop with Drive-thru Window as follows:

> This land use includes any coffee and donut restaurant that has a drive-through window as well as a walk-in entrance area at which a patron can purchase and consume items. The restaurant sells freshly brewed coffee (along with coffee-related accessories) and a variety of food/drink products such as donuts, bagels, breads, muffins, cakes, sandwiches, wraps, salads, and other hot and cold beverages. The restaurant marketing and sales may emphasize coffee beverages over food (or vice versa).

Table 1 displays the trip generation for the proposed development.

Table 1 Site Trip Generation

Land Use	Land Use Code(1)	Intensity	Units	Time period	Average Rate/ Fitted Curve Eq. (1)	Trips (1)			Pass-By Trips(2)			Primary Trips		
						In	Out	Total	In	Out	Total	In	Out	Total
Proposed Coffee/Donut Shop with Drive-Though Window	937	2.63	KSF of GFA	Weekday	533.57	701	702	1,403	351	351	702	350	351	701
				AM (3)	85.88	115	111	226	58	56	114	57	55	112
				PM (3)	38.99	51	52	103	26	26	52	25	26	51

(1) Based on the Institute of Transportation Engineers Trip Generation, 11th Edition
(2) LU 937 does not have Pass-By Rates on the ITE Trip Generation Handbook, 3rd Edition, therefore assumed 50%
(3) Peak Hour of Adjacent Street

The proposed development is expected to generate a total of 226 trips during the morning peak hour and 103 trips during the evening peak hour. Of these trips 112 are expected to be new trips during the morning peak hour, and 51 are expected to be new trips during the evening peak hour, the remaining trips are anticipated to be pass-by trips.

Roadway Conditions

Based on the Pinellas County Transportation Supplemental Roadway Level of Service, roads operating at peak hour LOS E or F or a v/c ratio of 0.9 or higher in Pinellas County are considered deficient. **Figure 2** shows the 2020 Level of Service Map Existing Conditions.

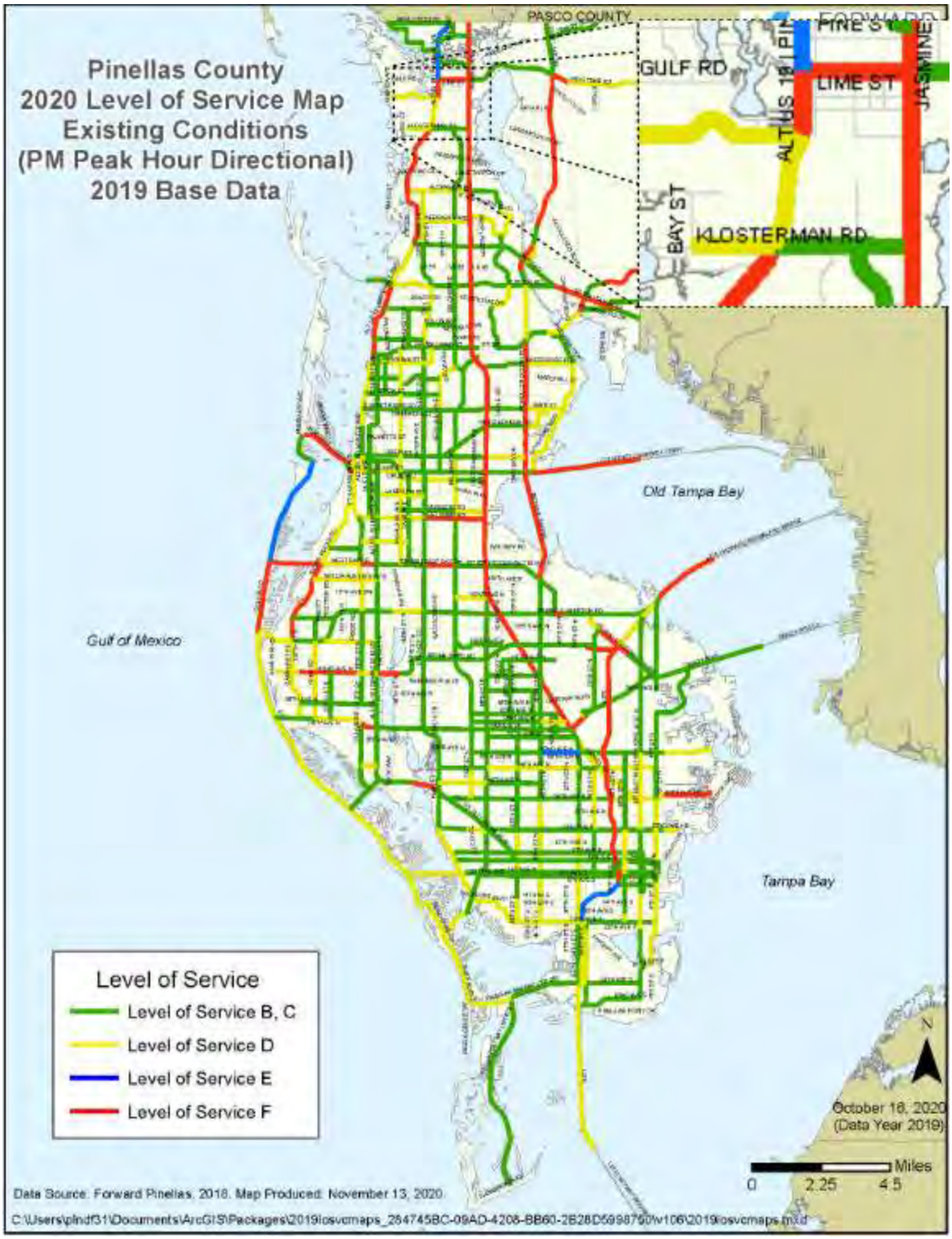


Figure 2 Pinellas County 2020 Level of Service Map

As shown in **Figure 2**, US Hwy 19 N is already operating at LOS F.

Transportation Management Plan Strategies

The Tarpon Spring Land Development Code Transportation Management Plan strategies/improvements include, but are not limited to those listed below:

(1) Intensity reduction.
(2) Density reduction. **(Not Applicable) –** *A reduction of units per acre is not feasible in this case.*
(3) Project phasing. **(Not Applicable) -** *Project will be developed in a single phase.*
(4) Outparcel deletion. **(Not Applicable) –** *There are no outparcels in this site.*
(5) Physical highway improvements.
(6) Operational improvements (signal).
(7) Access management strategies.
(8) Mass transit initiatives.
(9) Demand management/commuter assistance.
(10) Bicycle/pedestrian improvements.
(11) Intelligent transportation system improvements. **(Not Applicable) –** *The portion of US 19 that the project is adjacent to does not currently have intelligent transportation systems.*
(12) Livable community site design features.

The description of each applicable transportation management strategy was applied for the Black Rifle Coffee Company Store is presented below.

1. Intensity Reduction

This site is currently zoned for commercial use; According to the city of Tarpon Springs code of ordinances Appendix A, Article II section 25.12 - 2-D-2-F, the maximum floor area ratio for nonresidential developments is 0.4 of the total site area. The lot size where this development is proposed is of 36,105 SF, therefore, the allowed square footage of a building that can occupy this site is of 14,442 square feet. The developer is proposing to develop the site with a 2,630 SF building, which represents a 81.79% reduction from the maximum allowed building size on the property.

A comparison of the proposed land use and other potential land uses is provided in **Table 2**.

Table 2 Trip Generation Comparison

Land Use	Land Use Code(1)	Intensity	Units	Time period	Average Rate/ Fitted Curve Eq. (1)	Trips (1)			% Increase over Coffee/Donut Store w/ Drive-Through Window
						In	Out	Total	
Proposed Coffee/Donut Shop with Drive-Though Window	937	2.63	KSF of GFA	AM (2)	85.88	115	111	226	-
				PM (2)	38.99	51	52	103	-
Alternative Land Use 1 Fast-Food Restaurant with Drive-Through Window	934	5.50	KSF of GFA	AM (2)	44.61	125	120	245	8%
				PM (2)	33.03	94	88	182	77%

(1) Based on the Institute of Transportation Engineers Trip Generation, 11th Edition
(2) Peak Hour of Adjacent Street

Based on the comparison shown above, if the site was developed with a 5,500 SF Fast-Food Restaurant with Drive Through Window, it is expected that the site would generate 8% more trips than the proposed site during the morning peak hour, and 77% more trips than the proposed site during the evening peak hour.

5. Physical Highway Improvements

According to the results of the Black Rifle Coffee Tarpon Spring Traffic Impact Study, prepared by Bowman Consulting Group, dated April 14th, 2022, the proposed site is not expected to significantly impact the surrounding roadway network. The study proposed a large entry radii (50' feet) for the site access driveway. No additional physical highway improvements were proposed at build out conditions.

6. Operational Improvements (signal)

According to the results of the Black Rifle Coffee Tarpon Spring Traffic Impact Study, prepared by Bowman Consulting Group, dated April 14th, 2022, the proposed site is not expected to adversely impact the surrounding roadway network. The study found that no signal phasing or timing improvements were required at build-out conditions.

7. Access Management Strategies

To provide access to the site, a large entry radius (50 feet) is recommended at the proposed access driveway. This feature is anticipated to reduce the impact on the through traffic.

8. Mass Transit Initiatives

The site is served by Bus Route 19 of the Pinellas Suncoast Transit Authority which provides access to/from mass transit. Stop 5613 is located at approximately 460 ft north of the site entrance and stops 5610 and 5608 are located at 700 ft and 950 ft south of the site entrance on US 19 N. Access to these bus stops will be provided via the existing sidewalks along US 19 N connecting the bus stops and the site.

9. Demand Management/Commuter Assistance

Black Rifle has implemented online, App and subscription-based product delivery services, this is expected to reduce the number of trips to/from the proposed site. The sidewalk connectivity to the existing facilities is expected to enhance no-motorized modes trips to the proposed site.

10. Bicycle/pedestrian Improvements

An ADA connection to the existing sidewalk along US 19 N is proposed allowing pedestrian connectivity to mass transit and to the Fred Marquis Pinellas Trail. The Fred Marquis Pinellas Trail is located approximately 1-mile away from the proposed site, access to this will be provided via the existing sidewalk along US 19 N and Martin Luther King Jr Dr.

12. Livable Community Site Design Features

This site design is pedestrian friendly as it will include a sidewalk connection to the existing sidewalk along the west side of US 19 N.

Summary of Findings and Conclusions

- The proposed development is expected to generate a total of 226 trips during the morning peak hour and 103 trips during the evening peak hour. Of these trips 112 are expected to be new trips during the morning peak hour, and 51 are expected to be new trips during the evening peak hour, the remaining trips are anticipated to be pass-by trips.

- The developer is proposing to develop the site with a 2,630 SF building, which represents a 81.79% reduction from the maximum allowed building size on the property.

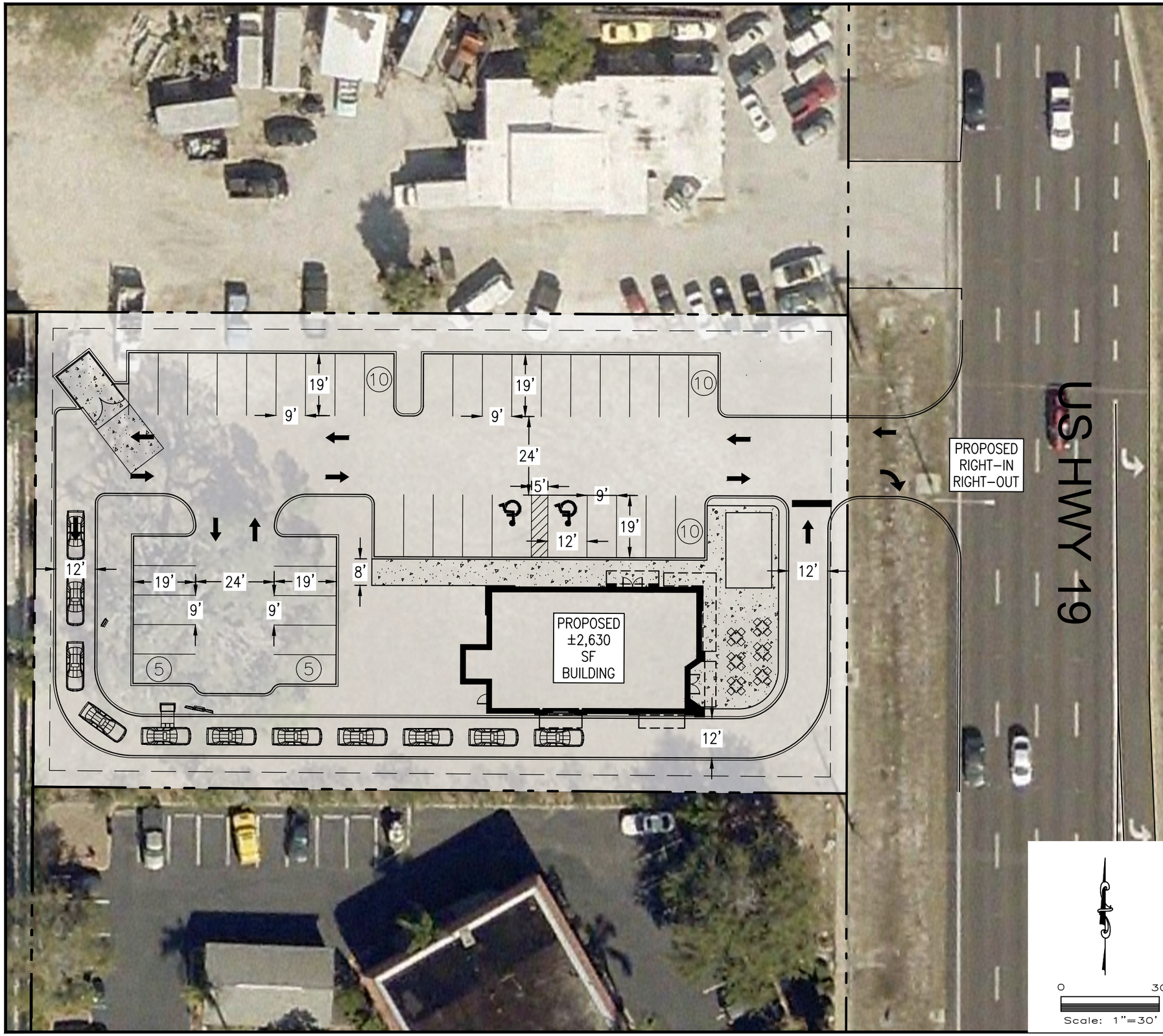
- If the site was developed with a 5,500 SF Fast-Food Restaurant with Drive Through Window, it is expected that the site would generate 8% more trips than the proposed site during the morning peak hour, and 77% more trips than the proposed site during the evening peak hour.

- The proposed site is not expected to significantly impact the surrounding roadway network. The study proposed a large entry radii (50' feet) for the site access driveway. No additional physical highway improvements were proposed at build out conditions.

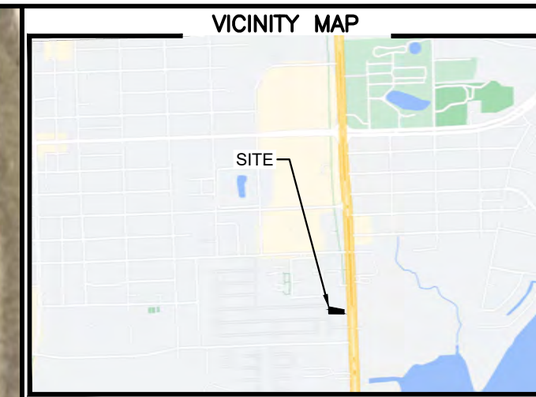
- An ADA connection to the existing sidewalk along US 19 N is proposed allowing pedestrian connectivity to mass transit and to the Fred Marquis Pinellas Trail.

- Access to the Bus Route 19 of the Pinellas Suncoast Transit Authority bus stops will be provided via the existing sidewalks along US 19 N connecting the bus stops and the site.

Appendix A



VICINITY MAP



SITE DATA TABLE

PROJECT NAME	BLACK RIFLE COFFEE
PROJECT ADDRESS	40390 US HIGHWAY 19 N
PROJECT DESCRIPTION	BLACK RIFFLE COFFE (QSR) 3,150 SQF
TOTAL PARCEL/SITE AREA	36,105 SF (0.82 AC)
EXISTING ZONING	VACANT COMMERCIAL
JURISDICTION	CITY OF PINELLAS
PARCEL NUMBER	18-27-16-00000-240-1000
MAX. BUILDING HEIGHT	N/A
REQUIRED LANDSCAPE BUFFERS	
FRONT	5'
SIDE/REAR	5' STREET
PARKING REQUIREMENTS	10 PER 1,000 SQF BUILDING = 30
TOTAL PARKING PROVIDED	
STANDARD SPACES (9'x18')	38
ACCESSIBLE PARKING (12'x18')	2
TOTAL PROPOSED SPACES	40

GENERAL SITE NOTES:

1. SIGNS REQUIRE A SEPARATE PERMIT.
2. DUMPSTERS AND MECHANICAL EQUIPMENT WILL BE SCREENED FROM THE PUBLIC.
3. WALLS OVER 6' HIGH APPROVED BY SEPARATE PERMIT.
4. PARKING WILL BE PAVED.
5. PARKING WILL BE WITHIN 600' OF BUILDING.
6. THERE SHALL BE NO OBSTRUCTION OF SITE SIGNAGE BY LANDSCAPE PLANT MATERIAL, AND SUCH MUST BE RELOCATED/CORRECTED BEFORE THE FIELD INSPECTION WILL ACCEPT/PASS THE SIGN IN THE FIELD OR ISSUE A CERTIFICATE OF OCCUPANCY FOR A PROJECT.
7. ALL ROOF MOUNTED MECHANICAL EQUIPMENT SHALL BE FULLY SCREENED BY PARAPET WALLS EQUAL TO, OR GREATER THAN, THE HIGHEST POINT ON THE MECHANICAL EQUIPMENT.
8. SOLID MASONRY WALLS AND GATES EQUAL TO, OR GREATER THAN, THE HIGHEST POINT ON THE MECHANICAL EQUIPMENT SHALL SCREEN ALL GROUND MOUNTED MECHANICAL EQUIPMENT.
9. ALL SITE IMPROVEMENTS, INCLUDING LANDSCAPE AND SITE CLEANUP, MUST BE COMPLETED PRIOR TO CERTIFICATE OF OCCUPANCY FOR ANY BUILDING WITHIN A PHASE.
10. THE FIRE DEPT. DOUBLE CHECK ASSEMBLY SHALL BE PAINTED TO MATCH ADJACENT WALL COLOR.
11. ALL EXTERNAL LIGHTING SHALL BE LOCATED AND DESIGNED TO PREVENT RAYS FROM BEING DIRECTED OFF OF THE PROPERTY UPON WHICH THE LIGHTING IS LOCATED.
12. CONDITIONS MAY EXIST THAT COULD RESTRICT THE DEVELOPMENT OF THIS SITE AS SHOWN. THIS DRAWING IS INTENDED TO BE CONCEPTUAL ONLY AND ADDITIONAL RESEARCH AND DESIGN WOULD BE REQUIRED FOR THE PREPARATION OF A SITE PLAN THAT MEETS LOCAL JURISDICTIONAL CODES.
13. BCG DOES NOT PURPORT THAT THIS SITE CAN BE DEVELOPED AS SHOWN. THE PURCHASE OF THIS SITE SHALL BE AT THE OWNER/DEVELOPER'S SOLE EXPENSE.
14. STORMWATER MANAGEMENT FACILITY SHOWN ON THIS PLAN ARE PURELY CONCEPTUAL AND IS SUBJECT TO CHANGE UPON FINAL CIVIL DESIGN. BCG DOES NOT PURPORT THAT WHAT IS SHOWN IS ADEQUATE TO MEET ALL JURISDICTIONAL REQUIREMENTS.
15. NO SITE VISITS HAVE BEEN PERFORMED TO ENSURE THE ACCURACY OF THE AERIAL IMAGE SHOWN HEREON.
16. THIS EXHIBIT IS NOT INTENDED TO BE USED AS A CONSTRUCTION DOCUMENT, AND SHOULD NOT BE CONSTRUED IN ANYWAY TO BE USED FOR CONSTRUCTION PURPOSES.

PROPOSED LEGEND

PROPERTY LINE
BUILDING SETBACK LINE
LANDSCAPE BUFFER
(12) PARKING COUNT

Bowman Consulting Group, Ltd.
1410 N Westshore Blvd
Suite 111
Tampa, FL 33607
Phone: (813) 474-7424
www.bowmanconsulting.com
© Bowman Consulting Group, Ltd.

CONCEPTUAL DESIGN

BLACK RIFLE COFFEE

40390 US HIGHWAY 19 N
TARPON SPRINGS, FLORIDA

Bowman CONSULTING
Certificate of Authorization License No. 30462

TK	TK	XX
DSGN	DRAWN	CHKD

211021.1
PROJECT NUMBER

SCALE 1" = 30'

VERSION 7B

Black Rifle Coffee Company

Stormwater Management Report

40390 US Hwy 19 N

Tarpon Springs, FL 34689

Coordinate: 28°08’21.5”N, 82°44’27.2”W

Project No.: 011046-01-001

Prepared By:

1410 N. Westshore Blvd, Suite 111

Tampa, FL 33607

Certificate of Authorization No. 30462

ARMANDO L. CABRE
LICENSE
No. 66807
STATE OF FLORIDA
PROFESSIONAL ENGINEER

Armando Cabre, P.E.

FL License No. 66807

STORMWATER MANAGEMENT NARRATIVE

The purpose of this report is to demonstrate that the proposed project complies with the requirements of governmental agencies having jurisdiction over the stormwater management design. These agencies include Tarpon Springs, Pinellas County, and the Florida Department of Transportation (FDOT). The proposed development will utilize underground stormwater chambers to provide treatment and attenuation. The report consists of a review of available hydrologic data, method analyses, development of existing and proposed hydrographs, water quality and quantity evaluation, and proposed development information.

SITE INFORMATION

The project is in the jurisdiction of Tarpon Springs and is located at 40390 YS Hwy 19 N, Tarpon Springs, FL 34689.

Table 1: Site Information

Parcel ID	18-27-16-00000-240-1000
Parcel Area	0.82 ± acres
Flood Zone	Zone 'X' from FEMA FIRM Map No. 12103CO038H, dated 9/24/2021

The predominant on-site soils as defined by NRCS (National Resources Conservation Service) are described in Table 2. According to the Web Soil Survey, the subject site falls within the hydrologic soil group A. For the purposes of design, the same hydrologic group was utilized for both Pre and Post Development conditions, HSG Type A. FEMA Flood Maps and NRCS Web Soil Survey are included in Appendix A.

Table 2: Hydrologic Soil Groups

Group	Description
A/D	Astatula soils and Urban land, 0 to 5 percent slopes
A/D	Matlacha and St. Augustine soils and Urbans land, 0 to 2 percent slopes

DESIGN REQUIREMENTS

Stormwater design was based on the Pinellas County water quality and FDOT flood criteria with a de minimis exemption qualification from SWFWMD.

1. Water Quantity Control:
    - Post-development stormwater peak discharge rates shall not exceed pre-development peak discharge rates for the required design storms
2. Water Quality:
    - Treatment of the 1 inch of runoff over the basin area & net improvement
3. Recovery of the treatment volume within 3 days

RAINFALL DATA

Pinellas County rainfall amounts are listed below.

Table 3: Pinellas County Rainfall Data, Return Periods of 24 hours (Source: SWFWMD ERP Applicant's Handbook Volume II, Rainfall Maps)

10 yr – 24 hr	25 yr – 24 hr	100 yr – 24 hr
7.5"	9"	12"

HYDROLOGY ANALYSIS AND CALCULATIONS

Hydrology and stormwater modeling calculations were performed using ICPR4. Input and results can be found summarized in tables throughout this report and in the appendices. No offsite areas drain through the site in both the pre- and post-development conditions.

PRE-DEVELOPMENT CONDITIONS

The existing site is an undeveloped property. The entire site drains to the surrounding FDOT stormwater conveyance system with no treatment prior to discharge. Pre-Development drainage basin data is shown below in Table 4. A drainage map showing the Pre-Development Basin can be found in Appendix A.

Table 4: Pre-Development Basin Summaries

Pre-Development Drainage Basin Data

Location	Land Use	Area [acres]	Composite Curve Number (CN)	Time of Concentration (Tc) [min.]
Site	Impervious	0.00	39.0	39.82
	Pervious	0.82		
	Total	0.82		

Asphalt CN = 98 and Pervious CN = 39 & 61

POST-DEVELOPMENT CONDITIONS

Development of the project site consists of construction of a coffee shop with drive thru and associated infrastructure. The post-development condition contains one basin, Basin 1. The characteristics for the post-development basins are shown below. A time of concentration of 10 minutes is assumed.

Table 5: Post Development Basin Summaries

Post Development Drainage Basin Data

Location	Land Use	Area [acres]	Composite Curve Number (CN)	Time of Concentration (Tc) [min.]
Site	Impervious	0.57	81.9	10
	Pervious	0.25		
	Total	0.82		

Impervious CN = 98 and Pervious CN = 39 & 61

WATER QUANTITY

The on-site stormwater system was modeled using ICPR4 with the Basin routed through the dry retention pond. The model shows the Basin's peak discharges and peak stages for the various design storm events. The pre- and post-development peak discharges for the site are presented below in Tables 6(a). Please see Appendix B for the ICPR4 data.

Table 6(a): County/SWFWMD Model Results for Basin 1

Basin 1

Agency	Design Storm Event Frequency	Return	Pre-Dev. (cfs)	Post-Dev. (cfs)	Post Dev. Peak Stage (ft)
County/SWFWMD	25 year	24 hour	0.71	0.48	13.14

WATER QUALITY

Drainage on site is conveyed through a series of inlets and pipes into an underground chamber system. The retained volumes will infiltrate into the soil. The water quality calculations are shown below:

Basin 1 area = 0.82 acres
Impervious area = 0.57 acres
Pervious area = 0.25 acres
Composite Runoff Coefficient (c) = (0.95 x 0.57 ac + 0.25 x 0.25 ac)/0.82 ac = 0.80
Required Water Quality Volume = c x 1 inch x Basin Area (ac)
Treatment Volume = 0.80 x 1 inch x 0.82 ac = 0.05 ac-ft (0.05 inches over the site)
Since 1 inch over the site is required, then:
Required Water Quality Volume = 1 inch x Basin Area (ac)
Treatment Volume = 1 inch x 0.82 ac = 0.07 ac-ft
Proposed Water Quality Provided = 0.07 ac-ft (2,977 cu. ft.)

Provided Water Quality Volume = 0.07 ac-ft (2,977 cu. ft.) Stage Elevation – 10.83'

RECOVERY

Recovery of the treatment volume will occur through infiltration into the surrounding existing and imported soils. Recovery of the treatment volume occurs within 72 hours.

Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	19.5
Vertical Saturated Hydraulic Conductivity, [Kh] (ft/day):	9.75
Fillable Porosity, [n] (%):	20.0

The geotechnical report did not provide infiltration test results. The infiltration rates used in the model are per the USDA Web Soil Survey results. See Appendix A for infiltration rate information.

APPENDICES

Appendix A: Maps

- Aerial Location Map
- NRCS Hydrologic Soil Map
- FEMA Firmette Flood Map
- Pre-Development Basin Map
- Post-Development Basin Map

Appendix B: Calculations

- Stage – Storage Data

Appendix C: ICPR Model Data

- Input Data
- Pre Development Model Results
- Post Development Model Results

Appendix D: Recovery ICPR Model Data

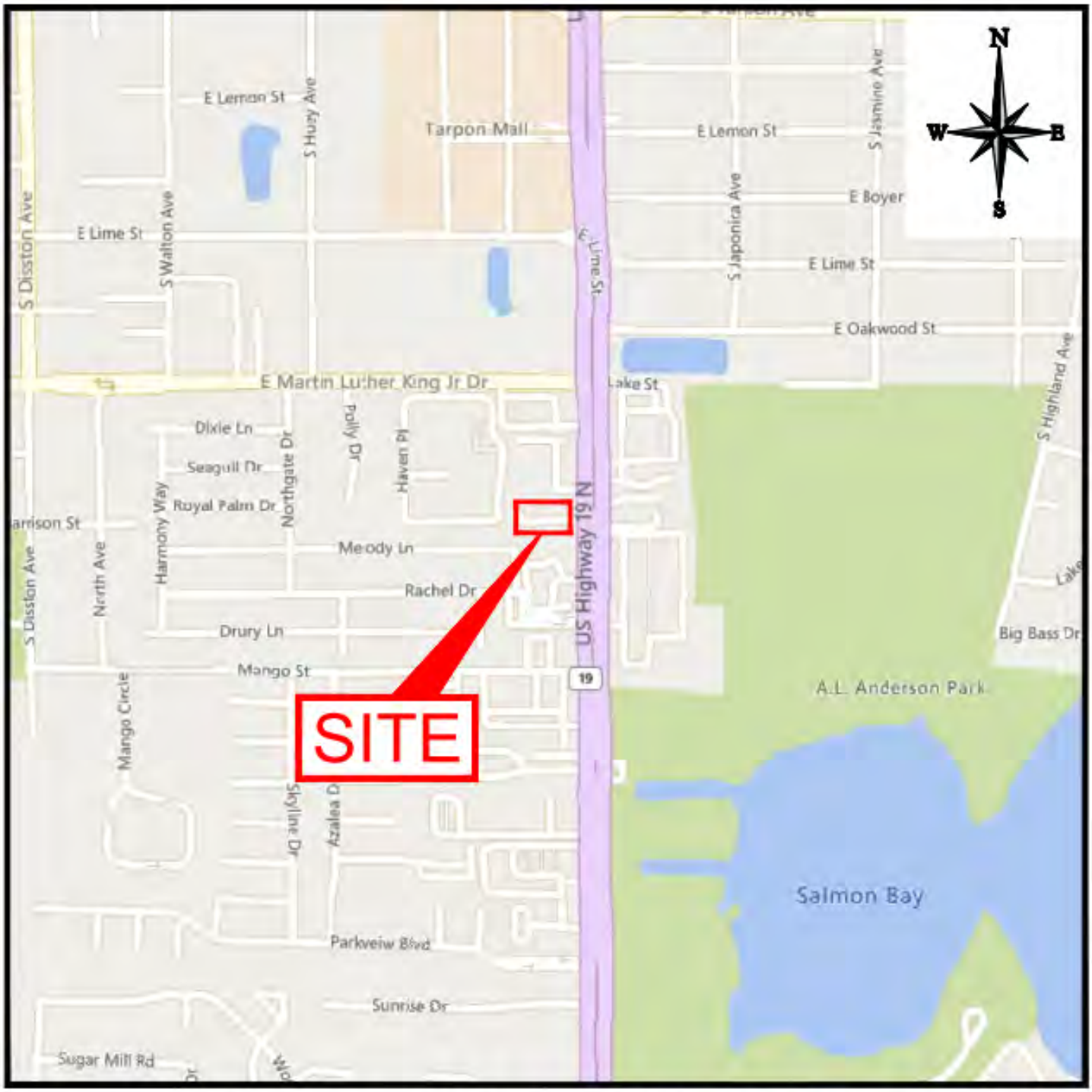
- Recovery Model Results

Appendix E: Storm Tabs

- Storm Tabulation Calculations

APPENDIX A
Maps

SECTION 18, TOWNSHIP 27 SOUTH, RANGE 16 EAST



SITE LOCATION MAP

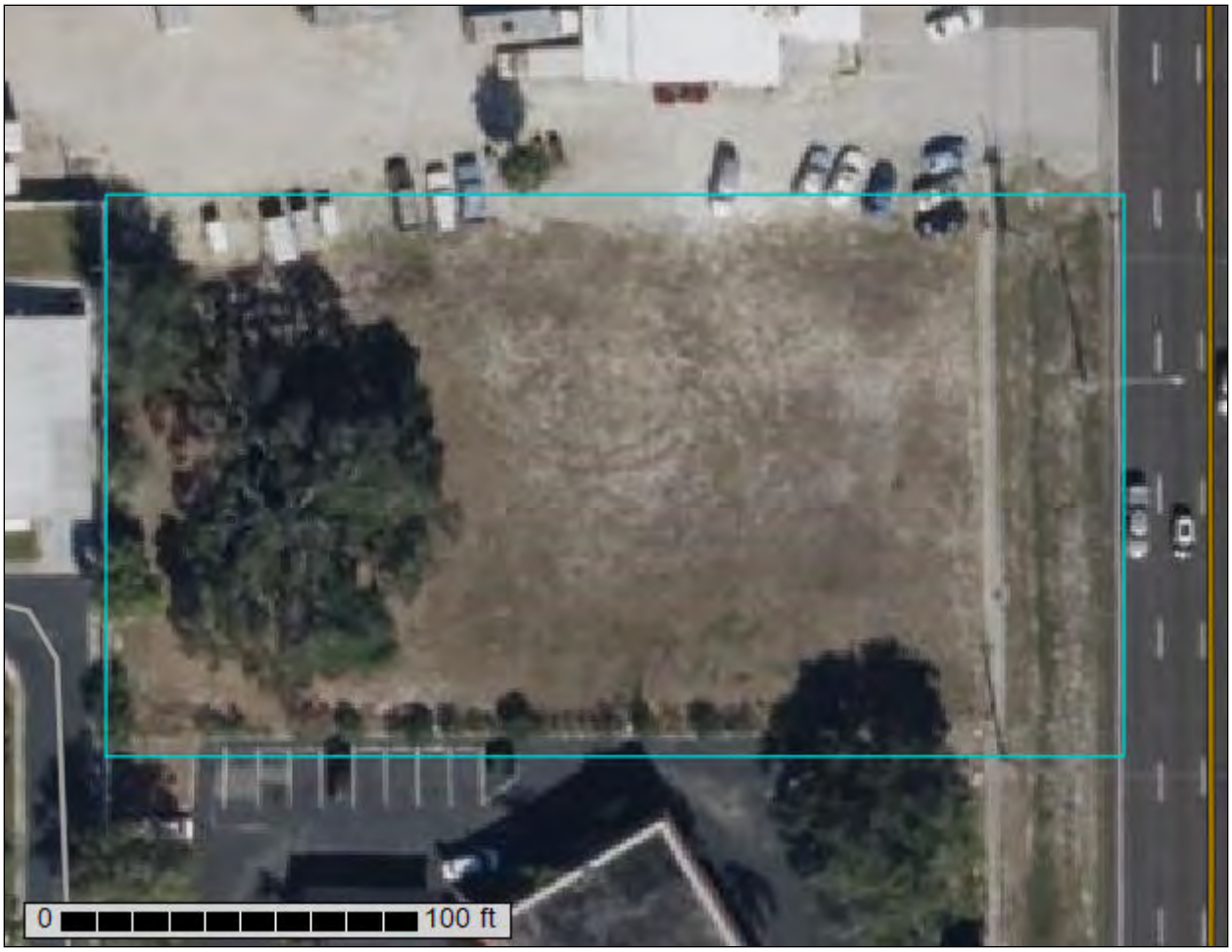
SCALE: 1" = 1,000'

United States Department of Agriculture

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Pinellas County, Florida



September 2, 2022

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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4—Astatula soils and Urban land, 0 to 5 percent slopes.....13
16—Matlacha and St. Augustine soils and Urban land.....14
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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

Map Scale: 1:478 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 5 10 20 30

Feet: 0 20 40 80 120

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Unit Polygons

Soil Map Unit Lines

Soil Map Unit Points

Special Point Features

Blowout

Borrow Pit

Clay Spot

Closed Depression

Gravel Pit

Gravelly Spot

Landfill

Lava Flow

Marsh or swamp

Mine or Quarry

Miscellaneous Water

Perennial Water

Rock Outcrop

Saline Spot

Sandy Spot

Severely Eroded Spot

Sinkhole

Slide or Slip

Sodic Spot

Spoil Area

Stony Spot

Very Stony Spot

Wet Spot

Other

Special Line Features

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Pinellas County, Florida
Survey Area Data: Version 18, Aug 27, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 6, 2022—Jan 30, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
4	Astatula soils and Urban land, 0 to 5 percent slopes	0.5	52.4%
16	Matlacha and St. Augustine soils and Urban land	0.5	47.6%
Totals for Area of Interest		**1.0**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Pinellas County, Florida

4—Astatula soils and Urban land, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: 134cw
Elevation: 10 to 150 feet
Mean annual precipitation: 48 to 56 inches
Mean annual air temperature: 70 to 77 degrees F
Frost-free period: 335 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Astatula and similar soils: 50 percent
Urban land: 45 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Astatula

Setting

Landform: Ridges on marine terraces, hills on marine terraces
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Eolian or sandy marine deposits

Typical profile

A - 0 to 3 inches: fine sand
C - 3 to 80 inches: fine sand

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Very high (20.00 to 50.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Very low (about 2.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Forage suitability group: Forage suitability group not assigned (G154XB999FL)
Other vegetative classification: Forage suitability group not assigned (G154XB999FL)
Hydric soil rating: No

Description of Urban Land

Setting

Landform: Marine terraces
Landform position (three-dimensional): Interfluve, talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: No parent material

Interpretive groups

Land capability classification (irrigated): None specified
Forage suitability group: Forage suitability group not assigned (G154XB999FL)
Other vegetative classification: Forage suitability group not assigned (G154XB999FL)
Hydric soil rating: Unranked

Minor Components

Adamsville

Percent of map unit: 3 percent
Landform: Ridges on marine terraces, knolls on marine terraces
Landform position (three-dimensional): Interfluve, talf
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Forage suitability group not assigned (G154XB999FL)
Hydric soil rating: No

Tavares

Percent of map unit: 2 percent
Landform: Ridges on marine terraces, knolls on marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Forage suitability group not assigned (G154XB999FL)
Hydric soil rating: No

16—Matlacha and St. Augustine soils and Urban land

Map Unit Setting

National map unit symbol: 134ch
Elevation: 0 to 80 feet
Mean annual precipitation: 48 to 56 inches
Mean annual air temperature: 70 to 77 degrees F
Frost-free period: 335 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Matlacha and similar soils: 33 percent
St. augustine and similar soils: 32 percent
Urban land: 31 percent
Minor components: 4 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Matlacha

Setting

Landform: Ridges on marine terraces
Landform position (three-dimensional): Interfluve, rise
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Sandy mine spoil or earthy fill

Typical profile

C - 0 to 42 inches: sand
A/Eb - 42 to 80 inches: fine sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: About 24 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Low (about 3.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Forage suitability group: Forage suitability group not assigned (G154XB999FL)
Other vegetative classification: Forage suitability group not assigned (G154XB999FL)
Hydric soil rating: No

Description of St. Augustine

Setting

Landform: Ridges on marine terraces, rises on marine terraces
Landform position (three-dimensional): Interfluve, rise
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Sandy mine spoil or earthy fill

Typical profile

A - 0 to 8 inches: sand
C1 - 8 to 33 inches: loamy fine sand

C2 - 33 to 48 inches: fine sand
C3 - 48 to 63 inches: sandy loam
C4 - 63 to 80 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (2.00 to 20.00 in/hr)
Depth to water table: About 18 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Low (about 3.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: A
Forage suitability group: Forage suitability group not assigned (G154XB999FL)
Other vegetative classification: Forage suitability group not assigned (G154XB999FL)
Hydric soil rating: No

Description of Urban Land

Setting

Landform: Marine terraces
Landform position (three-dimensional): Interfluve, talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: No parent material

Interpretive groups

Land capability classification (irrigated): None specified
Forage suitability group: Forage suitability group not assigned (G154XB999FL)
Other vegetative classification: Forage suitability group not assigned (G154XB999FL)
Hydric soil rating: Unranked

Minor Components

Kesson

Percent of map unit: 2 percent
Landform: Tidal marshes on marine terraces
Landform position (three-dimensional): Interfluve, talf
Down-slope shape: Linear
Across-slope shape: Linear
Other vegetative classification: Forage suitability group not assigned (G154XB999FL)
Hydric soil rating: Yes

Wulfert

Percent of map unit: 2 percent
Landform: Tidal marshes on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Other vegetative classification: Forage suitability group not assigned (G154XB999FL)
Hydric soil rating: Yes

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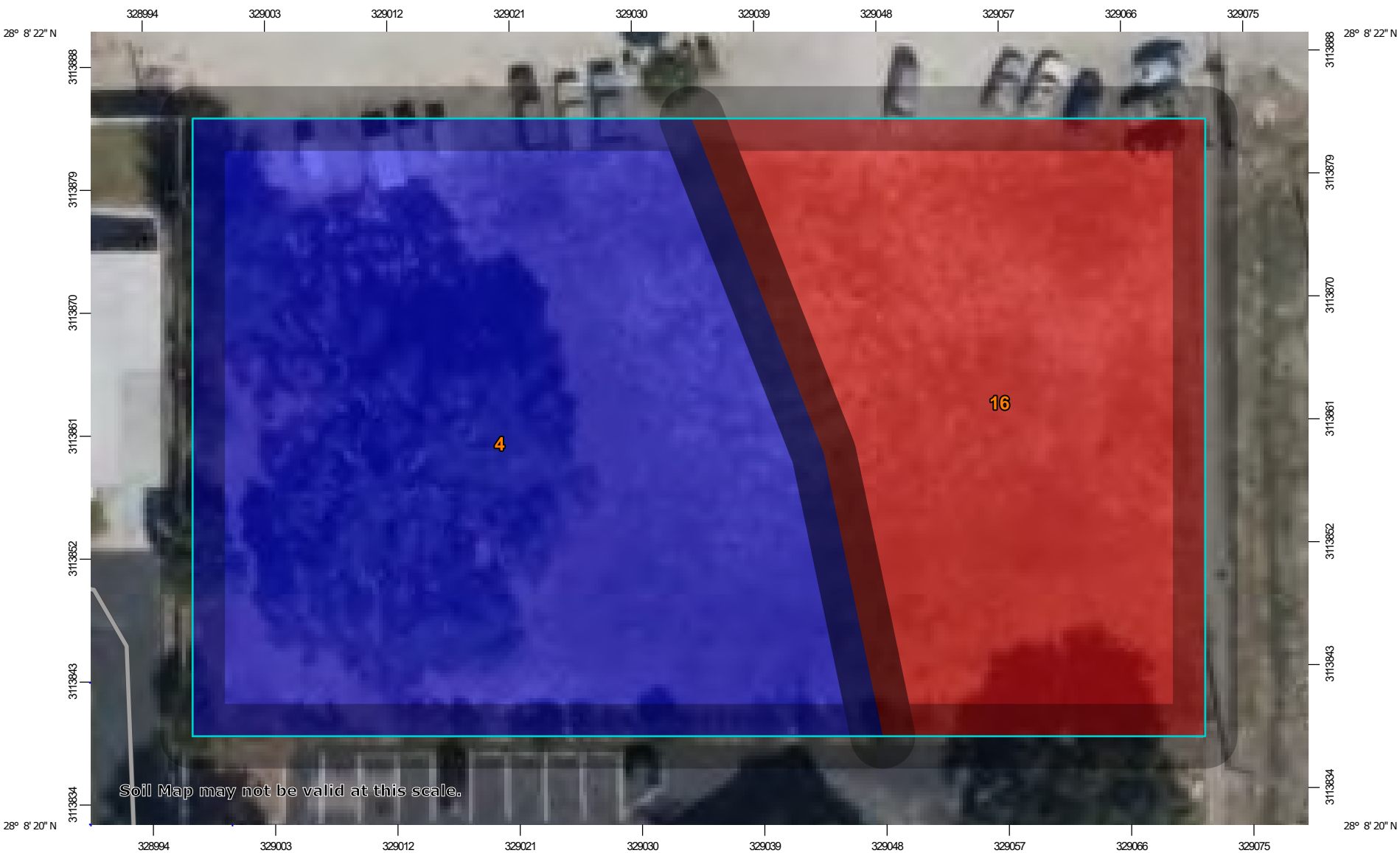
Saturated Hydraulic Conductivity (Ksat)—Pinellas County, Florida
(BRCC - Tarpon Springs)



Map Scale: 1:410 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 5 10 20 30

Feet: 0 15 30 60 90

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

<= 28.0000

> 28.0000 and <= 246.9950

Not rated or not available

Soil Rating Lines

<= 28.0000

> 28.0000 and <= 246.9950

Not rated or not available

Soil Rating Points

<= 28.0000

> 28.0000 and <= 246.9950

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Pinellas County, Florida
Survey Area Data: Version 19, Sep 1, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 6, 2022—Jan 30, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Saturated Hydraulic Conductivity (Ksat)

Map unit symbol	Map unit name	Rating (micrometers per second)	Acres in AOI	Percent of AOI
4	Astatula soils and Urban land, 0 to 5 percent slopes	246.9950 (70.0 FPD)	0.5	60.1%
16	Matlacha and St. Augustine soils and Urban land	28.0000 (8.0 FPD)	0.3	39.9%
Totals for Area of Interest			**0.8**	**100.0%**

Description

Saturated hydraulic conductivity (Ksat) refers to the ease with which pores in a saturated soil transmit water. The estimates are expressed in terms of micrometers per second. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Saturated hydraulic conductivity is considered in the design of soil drainage systems and septic tank absorption fields.

For each soil layer, this attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

The numeric Ksat values have been grouped according to standard Ksat class limits.

Rating Options

Units of Measure: micrometers per second

Aggregation Method: Dominant Component

Component Percent Cutoff: None Specified

Tie-break Rule: Fastest

Interpret Nulls as Zero: No

Layer Options (Horizon Aggregation Method): Depth Range (Weighted Average)

Top Depth: 10

Bottom Depth: 15

Units of Measure: Centimeters

National Flood Hazard Layer FIRMette

FEMA

82°44'44"W 28°8'37"N

82°44'7"W 28°8'5"N

Feet

0 250 500 1,000 1,500 2,000

1:6,000

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS

- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD

- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS

- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES

- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES

- B 20.2 / 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
- 8 Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS

- Digital Data Available
- No Digital Data Available
- Unmapped

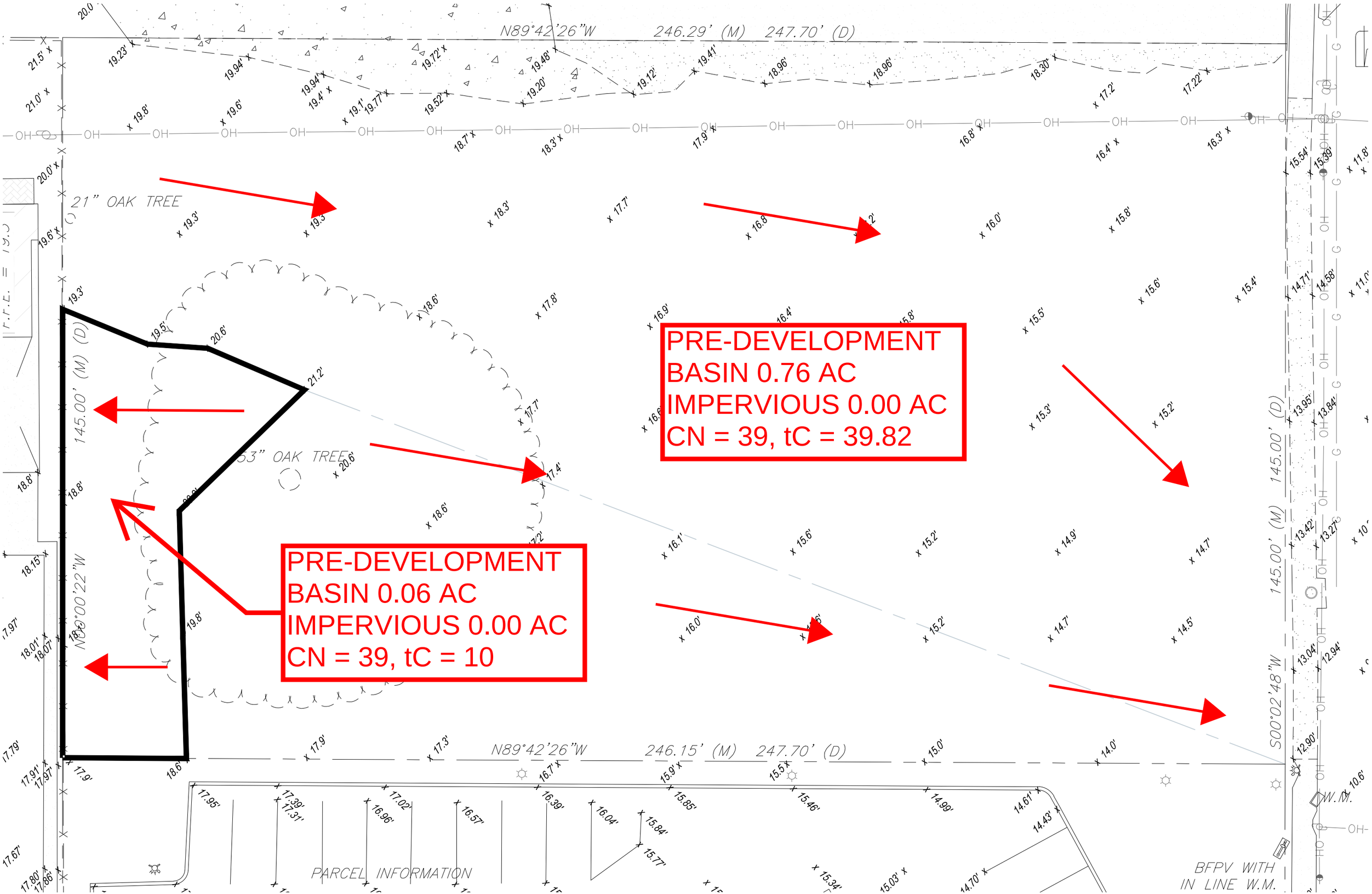
N

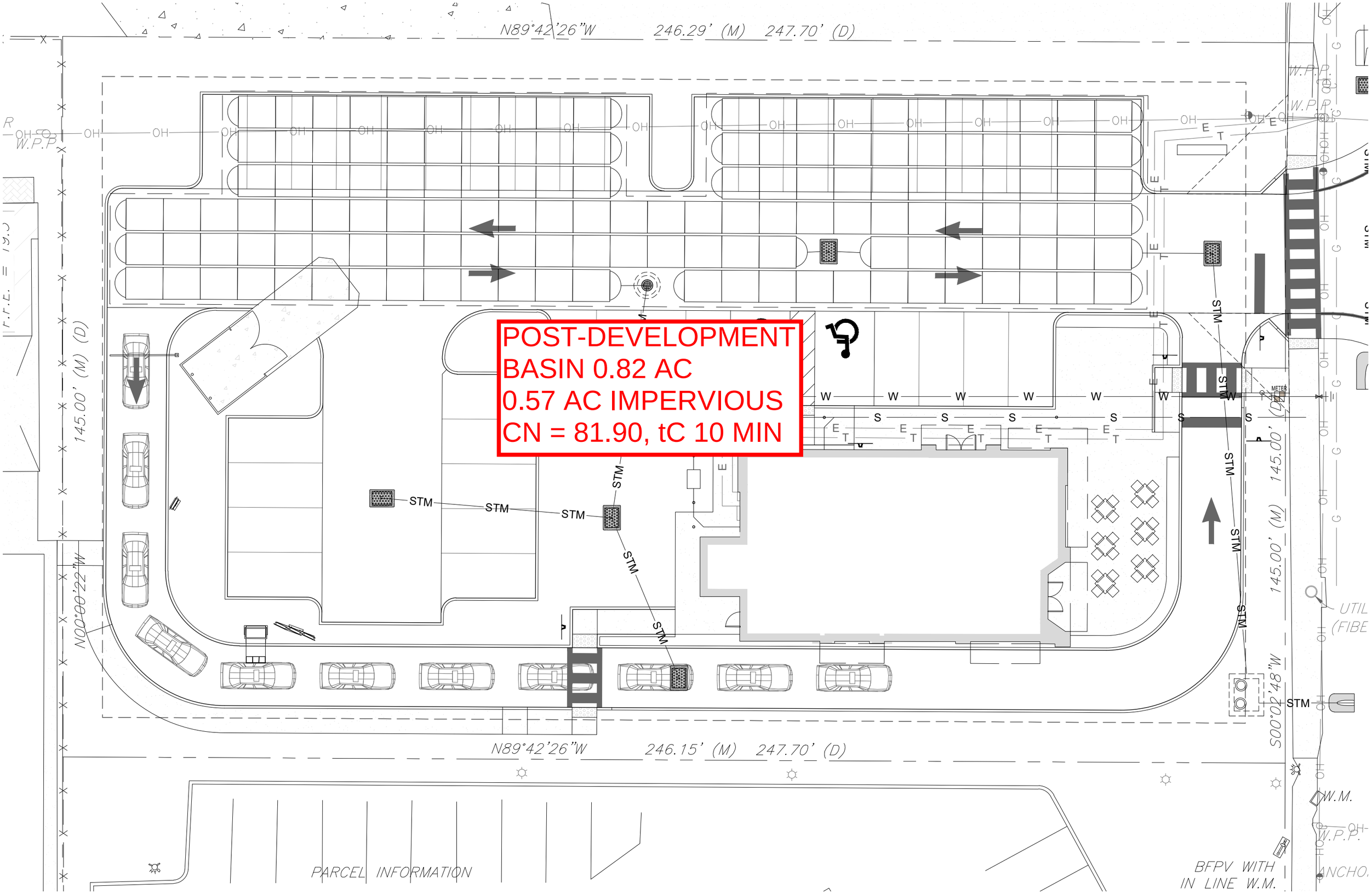
The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 9/2/2022 at 3:52 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.


N89°42'26"W 246.29' (M) 247.70' (D)
21" OAK TREE
53" OAK TREE
145.00' (M) (D)
N00°00'22"W
N89°42'26"W 246.15' (M) 247.70' (D)
PARCEL INFORMATION
BFPV WITH IN LINE W.M.
S00°02'48"W
PRE-DEVELOPMENT
BASIN 0.76 AC
IMPERVIOUS 0.00 AC
CN = 39, tC = 39.82
PRE-DEVELOPMENT
BASIN 0.06 AC
IMPERVIOUS 0.00 AC
CN = 39, tC = 10


POST-DEVELOPMENT
BASIN 0.82 AC
0.57 AC IMPERVIOUS
CN = 81.90, tC 10 MIN
N89°42'26"W 246.29' (M) 247.70' (D)
N89°42'26"W 246.15' (M) 247.70' (D)
145.00' (M) (D)
N00°00'22"W
S00°02'48"W
145.00' (M)
145.00' (D)
STM
W.P.P.
W.M.
PARCEL INFORMATION
BFPV WITH
IN LINE W.M.
UTIL
(FIBE
ANCHO

APPENDIX B
Calculations

BRCC - TARPON SPRINGS
Stormwater Management Report

Time of Concentration

Pre-Development

	SITE
Sheet Flow	
Mannings n (Woods - Dense Underbrush)	0.8
Flow Length (ft)	211
3-year 24-hour rainfall (in)	5
Slope (ft/ft)	0.00696
Travel time (min)	47.0
$T_t = 0.93(L^{0.6})(n^{0.6})/(i^{0.4}s^{0.3})$	
Shallow Concentrated Flow	
Surface Description	Unpaved
Flow Length	0
Slope	0.03930
Average velocity (ft/s)	3.20
Travel time (min)	0.0
Channel/Pipe Flow	
Flow Length	0
Average velocity (ft/s)	3
Travel time (min)	0.0
Time of Concentration (min)	**47**
Time of Concentration (hr)	**0.8**
	Use 7 min Minum.

Project: **BRCC - TARPON SPRINGS**

Chamber Model -	MC-3500	
Units -	Imperial	
Number of Chambers -	140	
Number of End Caps -	10	
Voids in the stone (porosity) -	40	%
Base of Stone Elevation -	10.00	ft
Amount of Stone Above Chambers -	12	in
Amount of Stone Below Chambers -	9	in
Amount of Stone Between Chambers -		in
Area of system -	8181	sf Min. Area - 6557 sf min. area

ADS StormTech

☑ Include Perimeter Stone in Calculations

☑ Click for Stage Area Data

Click Here for Metric

StormTech MC-3500 Cumulative Storage Volumes

Height of System (inches)	Incremental Single Chamber (cubic feet)	Incremental Single End Cap (cubic feet)	Incremental Chambers (cubic feet)	Incremental End Cap (cubic feet)	Incremental Stone (cubic feet)	Incremental Ch, EC and Stone (cubic feet)	Cumulative System (cubic feet)	Elevation (feet)
66	0.00	0.00	0.00	0.00	272.70	272.70	27323.50	15.50
65	0.00	0.00	0.00	0.00	272.70	272.70	27050.80	15.42
64	0.00	0.00	0.00	0.00	272.70	272.70	26778.10	15.33
63	0.00	0.00	0.00	0.00	272.70	272.70	26505.40	15.25
62	0.00	0.00	0.00	0.00	272.70	272.70	26232.70	15.17
61	0.00	0.00	0.00	0.00	272.70	272.70	25960.00	15.08
60	0.00	0.00	0.00	0.00	272.70	272.70	25687.30	15.00
59	0.00	0.00	0.00	0.00	272.70	272.70	25414.60	14.92
58	0.00	0.00	0.00	0.00	272.70	272.70	25141.90	14.83
57	0.00	0.00	0.00	0.00	272.70	272.70	24869.20	14.75
56	0.00	0.00	0.00	0.00	272.70	272.70	24596.50	14.67
55	0.00	0.00	0.00	0.00	272.70	272.70	24323.80	14.58
54	0.06	0.00	8.13	0.00	269.45	277.58	24051.10	14.50
53	0.19	0.02	27.17	0.24	261.73	289.15	23773.52	14.42
52	0.29	0.04	41.15	0.38	256.09	297.62	23484.37	14.33
51	0.40	0.05	56.51	0.52	249.89	306.92	23186.75	14.25
50	0.69	0.07	96.21	0.68	233.95	330.83	22879.84	14.17
49	1.03	0.09	143.96	0.88	214.76	359.61	22549.01	14.08
48	1.25	0.11	174.93	1.07	202.30	378.30	22189.40	14.00
47	1.42	0.13	199.11	1.26	192.55	392.93	21811.10	13.92
46	1.57	0.14	220.24	1.44	184.03	405.71	21418.17	13.83
45	1.71	0.16	239.00	1.63	176.45	417.08	21012.46	13.75
44	1.83	0.18	255.99	1.82	169.58	427.38	20595.39	13.67
43	1.94	0.20	271.29	2.01	163.38	436.68	20168.00	13.58
42	2.04	0.22	285.72	2.18	157.54	445.44	19731.33	13.50
41	2.13	0.23	298.86	2.35	152.22	453.42	19285.89	13.42
40	2.22	0.25	311.39	2.51	147.14	461.04	18832.46	13.33
39	2.31	0.27	322.95	2.66	142.46	468.06	18371.43	13.25
38	2.38	0.28	333.87	2.80	138.03	474.70	17903.36	13.17
37	2.46	0.29	344.27	2.94	133.81	481.03	17428.66	13.08
36	2.53	0.31	353.94	3.08	129.89	486.91	16947.64	13.00
35	2.59	0.32	363.12	3.21	126.17	492.50	16460.72	12.92
34	2.66	0.33	371.85	3.34	122.62	497.82	15968.22	12.83
33	2.72	0.35	380.11	3.47	119.27	502.85	15470.40	12.75
32	2.77	0.36	387.98	3.60	116.07	507.65	14967.55	12.67
31	2.82	0.37	395.45	3.72	113.03	512.20	14459.91	12.58
30	2.88	0.38	402.56	3.84	110.14	516.54	13947.70	12.50
29	2.92	0.40	409.38	3.96	107.36	520.70	13431.16	12.42
28	2.97	0.41	415.78	4.08	104.76	524.62	12910.45	12.33
27	3.01	0.42	421.74	4.19	102.33	528.26	12385.84	12.25
26	3.05	0.43	427.46	4.30	100.00	531.75	11857.58	12.17
25	3.09	0.44	433.20	4.40	97.66	535.26	11325.83	12.08
24	3.13	0.45	438.28	4.51	95.59	538.37	10790.57	12.00
23	3.17	0.46	443.19	4.61	93.58	541.38	10252.19	11.92
22	3.20	0.47	447.92	4.71	91.65	544.28	9710.81	11.83
21	3.23	0.48	452.36	4.80	89.84	546.99	9166.54	11.75
20	3.26	0.49	456.60	4.89	88.10	549.59	8619.54	11.67
19	3.29	0.50	460.64	4.98	86.45	552.07	8069.95	11.58
18	3.32	0.51	464.51	5.06	84.87	554.45	7517.88	11.50
17	3.34	0.51	468.18	5.14	83.37	556.69	6963.43	11.42
16	3.37	0.52	471.61	5.22	81.97	558.80	6406.74	11.33
15	3.39	0.53	474.95	5.30	80.60	560.85	5847.94	11.25
14	3.41	0.54	478.04	5.37	79.34	562.74	5287.09	11.17
13	3.44	0.54	481.18	5.43	78.05	564.67	4724.35	11.08
12	3.46	0.55	484.08	5.49	76.87	566.44	4159.68	11.00
11	3.48	0.56	487.02	5.55	75.67	568.24	3593.24	10.92
10	3.51	0.59	490.71	5.95	74.04	570.70	3025.00	10.83
9	0.00	0.00	0.00	0.00	272.70	272.70	2454.30	10.75
8	0.00	0.00	0.00	0.00	272.70	272.70	2181.60	10.67
7	0.00	0.00	0.00	0.00	272.70	272.70	1908.90	10.58
6	0.00	0.00	0.00	0.00	272.70	272.70	1636.20	10.50
5	0.00	0.00	0.00	0.00	272.70	272.70	1363.50	10.42
4	0.00	0.00	0.00	0.00	272.70	272.70	1090.80	10.33
3	0.00	0.00	0.00	0.00	272.70	272.70	818.10	10.25
2	0.00	0.00	0.00	0.00	272.70	272.70	545.40	10.17
1	0.00	0.00	0.00	0.00	272.70	272.70	272.70	10.08

Stage Area Data

Depth (feet)	Elevation (feet)	Area (ft2)	Area (acres)
0.00	10.00000	3272.40	0.0751
0.08	10.08333	3272.40	0.0751
0.17	10.16667	3272.40	0.0751
0.25	10.25000	3272.40	0.0751
0.33	10.33333	3272.40	0.0751
0.42	10.41667	3272.40	0.0751
0.50	10.50000	3272.40	0.0751
0.58	10.58333	3272.40	0.0751
0.67	10.66667	3272.40	0.0751
0.75	10.75000	3272.40	0.0751
0.83	10.83333	6848.37	0.1572
0.92	10.91667	6818.90	0.1565
1.00	11.00000	6797.33	0.1560
1.08	11.08333	6776.02	0.1556
1.17	11.16667	6752.89	0.1550
1.25	11.25000	6730.17	0.1545
1.33	11.33333	6705.56	0.1539
1.42	11.41667	6680.32	0.1534
1.50	11.50000	6653.37	0.1527
1.58	11.58333	6624.84	0.1521
1.67	11.66667	6595.12	0.1514
1.75	11.75000	6563.93	0.1507
1.83	11.83333	6531.33	0.1499
1.92	11.91667	6496.57	0.1491
2.00	12.00000	6460.46	0.1483
2.08	12.08333	6423.14	0.1475
2.17	12.16667	6381.02	0.1465
2.25	12.25000	6339.10	0.1455
2.33	12.33333	6295.39	0.1445
2.42	12.41667	6248.45	0.1434
2.50	12.50000	6198.53	0.1423
2.58	12.58333	6146.45	0.1411
2.67	12.66667	6091.78	0.1398
2.75	12.75000	6034.21	0.1385
2.83	12.83333	5973.79	0.1371
2.92	12.91667	5910.02	0.1357
3.00	13.00000	5842.96	0.1341
3.08	13.08333	5772.33	0.1325
3.17	13.16667	5696.41	0.1308
3.25	13.25000	5616.77	0.1289
3.33	13.33333	5532.45	0.1270
3.42	13.41667	5441.08	0.1249
3.50	13.50000	5345.26	0.1227
3.58	13.58333	5240.11	0.1203
3.67	13.66667	5128.61	0.1177
3.75	13.75000	5004.93	0.1149
3.83	13.83333	4868.52	0.1118
3.92	13.91667	4715.10	0.1082
4.00	14.00000	4539.64	0.1042
4.08	14.08333	4315.27	0.0991
4.17	14.16667	3969.94	0.0911
4.25	14.25000	3682.99	0.0845
4.33	14.33333	3571.42	0.0820
4.42	14.41667	3469.78	0.0797
4.50	14.50000	3330.95	0.0765
4.58	14.58333	3272.40	0.0751
4.67	14.66667	3272.40	0.0751
4.75	14.75000	3272.40	0.0751
4.83	14.83333	3272.40	0.0751
4.92	14.91667	3272.40	0.0751
5.00	15.00000	3272.40	0.0751
5.08	15.08333	3272.40	0.0751
5.17	15.16667	3272.40	0.0751
5.25	15.25000	3272.40	0.0751
5.33	15.33333	3272.40	0.0751
5.42	15.41667	3272.40	0.0751
5.50	15.50000	3272.40	0.0751

APPENDIX C
ICPR Model Data

Manual Basin: EX1

Scenario: Scenario1 - Routing
Node: EX - Outfall
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 39.8200 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 0.8279 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name	Crop Coefficient Zone	Reference ET Station
0.4740	OpenSpace	A			
0.3539	OpenSpace	B			

Comment:

Manual Basin: Prop1

Scenario: Scenario1 - Routing
Node: Prop - Chambers
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 0.8279 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name	Crop Coefficient Zone	Reference ET Station
0.1740	OpenSpace	A			
0.0820	OpenSpace	B			
0.2849	Imp	A			
0.2264	Imp	B			
0.0151	BLDG	A			
0.0455	BLDG	B			

Comment:

Node: GWT

Scenario: Scenario 2 - Drawdown
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 8.00 ft

Warning Stage: 99.00 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	8.00
0	0	0	999.0000	8.00

Comment:

Node: Prop - Chambers

Scenario: Scenario 2 - Drawdown
Type: Stage/Volume
Base Flow: 0.00 cfs
Initial Stage: 10.83 ft
Warning Stage: 15.50 ft

Stage [ft]	Volume [ac-ft]	Volume [ft3]
10.00	0.00	0
10.08	0.01	273
10.17	0.01	545
10.25	0.02	818
10.33	0.03	1091
10.42	0.03	1364
10.50	0.04	1636
10.58	0.04	1909
10.67	0.05	2182
10.75	0.06	2454
10.83	0.07	3025
10.92	0.08	3593
11.00	0.10	4160
11.08	0.11	4724
11.17	0.12	5287
11.25	0.13	5848
11.33	0.15	6407
11.42	0.16	6963
11.50	0.17	7518
11.58	0.19	8070
11.67	0.20	8620
11.75	0.21	9167
11.83	0.22	9711
11.92	0.24	10252
12.00	0.25	10791
12.08	0.26	11326
12.17	0.27	11858
12.25	0.28	12386
12.33	0.30	12910
12.42	0.31	13431

Stage [ft]	Volume [ac-ft]	Volume [ft3]
12.50	0.32	13948
12.58	0.33	14460
12.67	0.34	14968
12.75	0.36	15470
12.83	0.37	15968
12.92	0.38	16461
13.00	0.39	16948
13.08	0.40	17429
13.17	0.41	17903
13.25	0.42	18371
13.33	0.43	18832
13.42	0.44	19286
13.50	0.45	19731
13.58	0.46	20168
13.67	0.47	20595
13.75	0.48	21012
13.83	0.49	21418
13.92	0.50	21811
14.00	0.51	22189
14.08	0.52	22549
14.17	0.53	22880
14.25	0.53	23187
14.33	0.54	23484
14.42	0.55	23774
14.50	0.55	24051
14.58	0.56	24324
14.67	0.56	24596
14.75	0.57	24869
14.83	0.58	25142
14.92	0.58	25415
15.00	0.59	25687
15.08	0.60	25960
15.17	0.60	26233
15.25	0.61	26505
15.33	0.61	26778
15.42	0.62	27051
15.50	0.63	27323

Comment:

Node: EX - Outfall

Scenario: Scenario1 - Routing
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 12.90 ft
Warning Stage: 9999.00 ft

Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	12.90
0	0	0	99999.0000	12.90

Comment:

Node: Post - Outfall

Scenario: Scenario1 - Routing
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 10.00 ft
Warning Stage: 9999.00 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	10.00
0	0	0	9999.0000	10.00

Comment:

Node: Prop - Chambers

Scenario: Scenario1 - Routing
Type: Stage/Volume
Base Flow: 0.00 cfs
Initial Stage: 10.83 ft
Warning Stage: 15.50 ft

Stage [ft]	Volume [ac-ft]	Volume [ft3]
10.00	0.00	0
10.08	0.01	273
10.17	0.01	545
10.25	0.02	818
10.33	0.03	1091
10.42	0.03	1364
10.50	0.04	1636
10.58	0.04	1909
10.67	0.05	2182
10.75	0.06	2454
10.83	0.07	3025
10.92	0.08	3593
11.00	0.10	4160
11.08	0.11	4724
11.17	0.12	5287

Stage [ft]	Volume [ac-ft]	Volume [ft3]
11.25	0.13	5848
11.33	0.15	6407
11.42	0.16	6963
11.50	0.17	7518
11.58	0.19	8070
11.67	0.20	8620
11.75	0.21	9167
11.83	0.22	9711
11.92	0.24	10252
12.00	0.25	10791
12.08	0.26	11326
12.17	0.27	11858
12.25	0.28	12386
12.33	0.30	12910
12.42	0.31	13431
12.50	0.32	13948
12.58	0.33	14460
12.67	0.34	14968
12.75	0.36	15470
12.83	0.37	15968
12.92	0.38	16461
13.00	0.39	16948
13.08	0.40	17429
13.17	0.41	17903
13.25	0.42	18371
13.33	0.43	18832
13.42	0.44	19286
13.50	0.45	19731
13.58	0.46	20168
13.67	0.47	20595
13.75	0.48	21012
13.83	0.49	21418
13.92	0.50	21811
14.00	0.51	22189
14.08	0.52	22549
14.17	0.53	22880
14.25	0.53	23187
14.33	0.54	23484
14.42	0.55	23774
14.50	0.55	24051
14.58	0.56	24324
14.67	0.56	24596
14.75	0.57	24869
14.83	0.58	25142
14.92	0.58	25415
15.00	0.59	25687
15.08	0.60	25960
15.17	0.60	26233
15.25	0.61	26505

Stage [ft]	Volume [ac-ft]	Volume [ft3]
15.33	0.61	26778
15.42	0.62	27051
15.50	0.63	27323

Comment:

Percolation Link: PERC

Scenario:	Scenario 2 - Drawdown	Surface Area Option:	Vary Based on Stage/Area Table
From Node:	Prop - Chambers		
To Node:	GWT	Vertical Flow Termination:	Horizontal Flow Algorithm
Link Count:	1	Perimeter 1:	545.00 ft
Flow Direction:	Both	Perimeter 2:	904.00 ft
Aquifer Base Elevation:	0.00 ft	Perimeter 3:	2903.00 ft
Water Table Elevation:	8.00 ft	Distance P1 to P2:	50.00 ft
Annual Recharge Rate:	0 ipy	Distance P2 to P3:	250.00 ft
Horizontal Conductivity:	19.500 fpd	# of Cells P1 to P2:	5
Vertical Conductivity:	9.750 fpd	# of Cells P2 to P3:	25
Fillable Porosity:	0.200		
Layer Thickness:	0.00 ft		

Comment: Used average percolation rates for each type of soil per Web Soil Survey. A safety factor of 2.0 has been applied to the percolation rates.

Drop Structure Link: L-0020DS

		Upstream Pipe		Downstream Pipe	
Scenario:	Scenario1 - Routing	Invert:	11.00 ft	Invert:	10.75 ft
		Manning's N:	0.0130	Manning's N:	0.0130
From Node:	Prop - Chambers	Geometry: Circular		Geometry: Circular	
To Node:	Post - Outfall	Max Depth:	0.50 ft	Max Depth:	0.50 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Solution:	Combine	Op Table:		Op Table:	
Increments:	0	Ref Node:		Ref Node:	
Pipe Count:	1	Manning's N:	0.0000	Manning's N:	0.0000
Damping:	0.0000 ft	Top Clip			
Length:	17.00 ft	Default:	0.00 ft	Default:	0.00 ft
FHWA Code:	0	Op Table:		Op Table:	
Entr Loss Coef:	0.00	Ref Node:		Ref Node:	
Exit Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Loss Coef:	0.00				
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component		
Weir:	1	Bottom Clip

Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Sharp Crested Vertical
Geometry Type:	Circular
Invert:	12.00 ft
Control Elevation:	12.00 ft
Max Depth:	0.25 ft

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment:

Weir Component

Weir:	2
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Sharp Crested Vertical
Geometry Type:	Rectangular
Invert:	14.10 ft
Control Elevation:	14.10 ft
Max Depth:	1.90 ft
Max Width:	6.00 ft
Fillet:	0.00 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment:

Drop Structure Comment:

Simulation: Drawdown

Scenario:	Scenario 2 - Drawdown
Run Date/Time:	12/16/2022 2:27:40 PM
Program Version:	ICPR4 4.07.04

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	80.0000

Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]

Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		30.0000	

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Reference ET Folder:
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set: 1
Green-Ampt Set:
Vertical Layers Set:
Impervious Set: 1
Roughness Set:
Crop Coef Set:
Fillable Porosity Set:
Conductivity Set:
Leakage Set:

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0010 ft
Max dZ: 1.0000 ft
Link Optimizer Tol: 0.0001 ft

IA Recovery Time: 24.0000 hr
ET for Manual Basins: False
Smp/Man Basin Rain Opt: No Rainfall
OF Region Rain Opt: No Rainfall

Edge Length Option:	Automatic		
Dflt Damping (2D):	0.0050 ft	Dflt Damping (1D):	0.0050 ft
Min Node Srf Area (2D):	100 ft2	Min Node Srf Area (1D):	100 ft2
Energy Switch (2D):	Energy	Energy Switch (1D):	Energy

Comment:

Simulation: SWF 010YR 24 HR

Scenario:	Scenario1 - Routing
Run Date/Time:	12/16/2022 2:27:44 PM
Program Version:	ICPR4 4.07.04

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	30.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		30.0000	

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources		Lookup Tables	
Rainfall Folder:		Boundary Stage Set:	
Reference ET Folder:		Extern Hydrograph Set:	
Unit Hydrograph Folder:		Curve Number Set:	1
		Green-Ampt Set:	
		Vertical Layers Set:	
		Impervious Set:	1
		Roughness Set:	
		Crop Coef Set:	
		Fillable Porosity Set:	
		Conductivity Set:	
		Leakage Set:	

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6	ET for Manual Basins:	False
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.0000 ft	OF Region Rain Opt:	Global
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~FLMOD
		Rainfall Amount:	7.50 in
Edge Length Option:	Automatic	Storm Duration:	24.0000 hr
Dflt Damping (2D):	0.0050 ft	Dflt Damping (1D):	0.0050 ft
Min Node Srf Area (2D):	100 ft2	Min Node Srf Area (1D):	100 ft2
Energy Switch (2D):	Energy	Energy Switch (1D):	Energy

Comment:

Simulation: SWF 025YR 24 HR

Scenario:	Scenario1 - Routing
Run Date/Time:	12/16/2022 2:27:45 PM
Program Version:	ICPR4 4.07.04

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	30.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		30.0000	

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Reference ET Folder:
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set: 1
Green-Ampt Set:
Vertical Layers Set:
Impervious Set: 1
Roughness Set:
Crop Coef Set:
Fillable Porosity Set:
Conductivity Set:
Leakage Set:

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0010 ft
Max dZ: 1.0000 ft

IA Recovery Time: 24.0000 hr
ET for Manual Basins: False
Smp/Man Basin Rain Opt: Global
OF Region Rain Opt: Global

Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~FLMOD
		Rainfall Amount:	9.00 in
Edge Length Option:	Automatic	Storm Duration:	24.0000 hr
Dflt Damping (2D):	0.0050 ft	Dflt Damping (1D):	0.0050 ft
Min Node Srf Area (2D):	100 ft2	Min Node Srf Area (1D):	100 ft2
Energy Switch (2D):	Energy	Energy Switch (1D):	Energy

Comment:

Simulation: SWF 100YR 24 HR

Scenario: Scenario1 - Routing
Run Date/Time: 12/16/2022 2:27:48 PM
Program Version: ICPR4 4.07.04

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	30.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		30.0000	

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:	
Reference ET Folder:	
Unit Hydrograph Folder:	

Lookup Tables

Boundary Stage Set:	
Extern Hydrograph Set:	
Curve Number Set:	1
Green-Ampt Set:	
Vertical Layers Set:	
Impervious Set:	1
Roughness Set:	
Crop Coef Set:	
Fillable Porosity Set:	
Conductivity Set:	
Leakage Set:	

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6	ET for Manual Basins:	False
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.0000 ft	OF Region Rain Opt:	Global
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~FLMOD
		Rainfall Amount:	12.00 in
Edge Length Option:	Automatic	Storm Duration:	24.0000 hr
Dflt Damping (2D):	0.0050 ft	Dflt Damping (1D):	0.0050 ft
Min Node Srf Area (2D):	100 ft2	Min Node Srf Area (1D):	100 ft2
Energy Switch (2D):	Energy	Energy Switch (1D):	Energy

Comment:

Manual Basin Runoff Summary [Scenario1 - Routing]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
Prop1	SWF 010YR 24 HR	2.80	12.0500	7.50	5.68	0.8279	84.6	69.07	69.07
Prop1	SWF 025YR 24 HR	3.47	12.0500	9.00	6.96	0.8279	83.3	69.07	69.07
Prop1	SWF 100YR 24 HR	4.85	12.0500	12.00	9.62	0.8279	81.4	69.07	69.07

Node Max Conditions [Scenario1 - Routing]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
Prop - Chambers	SWF 010YR 24 HR	15.50	12.71	0.0010	2.80	0.18	7069
Prop - Chambers	SWF 025YR 24 HR	15.50	13.14	0.0010	3.47	0.24	7069
Prop - Chambers	SWF 100YR 24 HR	15.50	14.14	0.0010	4.85	0.48	7069

Link Min/Max Conditions [Scenario1 - Routing]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
L-0020DS - Pipe	SWF 010YR 24 HR	0.18	0.00	0.00	0.00	0.00	0.00
L-0020DS - Weir: 1	SWF 010YR 24 HR	0.18	0.00	0.00	0.00	0.00	0.00
L-0020DS - Weir: 2	SWF 010YR 24 HR	0.00	0.00	0.00	0.00	0.00	0.00
L-0020DS - Pipe	SWF 025YR 24 HR	0.24	0.00	0.00	0.00	0.00	0.00
L-0020DS - Weir: 1	SWF 025YR 24 HR	0.24	0.00	0.00	0.00	0.00	0.00
L-0020DS - Weir: 2	SWF 025YR 24 HR	0.00	0.00	0.00	0.00	0.00	0.00
L-0020DS - Pipe	SWF 100YR 24 HR	0.48	0.00	0.00	0.00	0.00	0.00
L-0020DS - Weir: 1	SWF 100YR 24 HR	0.34	0.00	0.00	0.00	0.00	0.00
L-0020DS - Weir: 2	SWF 100YR 24 HR	0.14	0.00	0.00	0.00	0.00	0.00

APPENDIX D
Recovery ICPR Model Data

Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	0.0000	10.83
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	0.2513	10.73
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	0.5016	10.63
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	0.7503	10.53
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	1.0003	10.43
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	1.2518	10.35
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	1.5005	10.28
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	1.7529	10.22
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	2.0050	10.17
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	2.2507	10.13
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	2.5010	10.09
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	2.7543	10.05
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	3.0076	10.02
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	3.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	3.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	3.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	4.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	4.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	4.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	4.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	5.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	5.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	5.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	5.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	6.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	6.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	6.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	6.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	7.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	7.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	7.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	7.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	8.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	8.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	8.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	8.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	9.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	9.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	9.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	9.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	10.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	10.2572	10.00

Water Quality Volume Recovers in 3.25 hours

Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	10.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	10.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	11.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	11.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	11.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	11.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	12.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	12.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	12.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	12.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	13.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	13.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	13.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	13.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	14.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	14.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	14.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	14.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	15.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	15.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	15.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	15.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	16.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	16.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	16.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	16.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	17.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	17.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	17.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	17.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	18.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	18.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	18.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	18.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	19.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	19.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	19.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	19.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	20.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	20.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	20.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	20.7572	10.00

Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	21.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	21.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	21.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	21.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	22.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	22.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	22.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	22.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	23.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	23.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	23.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	23.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	24.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	24.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	24.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	24.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	25.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	25.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	25.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	25.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	26.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	26.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	26.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	26.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	27.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	27.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	27.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	27.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	28.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	28.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	28.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	28.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	29.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	29.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	29.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	29.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	30.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	30.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	30.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	30.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	31.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	31.2572	10.00

Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	31.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	31.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	32.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	32.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	32.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	32.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	33.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	33.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	33.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	33.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	34.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	34.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	34.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	34.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	35.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	35.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	35.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	35.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	36.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	36.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	36.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	36.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	37.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	37.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	37.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	37.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	38.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	38.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	38.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	38.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	39.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	39.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	39.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	39.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	40.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	40.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	40.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	40.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	41.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	41.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	41.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	41.7572	10.00

Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	42.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	42.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	42.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	42.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	43.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	43.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	43.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	43.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	44.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	44.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	44.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	44.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	45.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	45.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	45.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	45.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	46.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	46.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	46.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	46.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	47.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	47.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	47.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	47.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	48.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	48.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	48.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	48.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	49.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	49.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	49.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	49.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	50.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	50.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	50.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	50.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	51.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	51.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	51.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	51.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	52.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	52.2572	10.00

Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	52.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	52.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	53.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	53.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	53.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	53.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	54.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	54.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	54.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	54.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	55.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	55.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	55.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	55.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	56.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	56.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	56.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	56.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	57.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	57.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	57.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	57.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	58.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	58.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	58.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	58.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	59.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	59.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	59.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	59.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	60.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	60.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	60.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	60.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	61.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	61.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	61.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	61.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	62.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	62.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	62.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	62.7572	10.00

Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	63.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	63.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	63.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	63.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	64.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	64.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	64.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	64.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	65.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	65.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	65.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	65.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	66.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	66.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	66.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	66.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	67.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	67.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	67.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	67.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	68.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	68.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	68.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	68.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	69.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	69.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	69.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	69.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	70.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	70.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	70.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	70.7572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	71.0072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	71.2572	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	71.5072	10.00
Scenario 2 - Drawdown	Drawdown	Prop - Chambers	71.7572	10.00

APPENDIX E
Storm Tabs

STORM DRAIN TABULATION

PROJECT - BRCC TARPON SPRINGS **PREPARED BY: ALC** **DATE:11/29/2022**

SYSTEM #1 **CHECKED BY: ALC** **DATE:11/29/2022**

ZONE: 6 FREQ: 10 (YEAR)
FREQ. FACTOR: 1.00
MIN. HGL COVER = 0.50
MIN. PIPE COVER = 1.50

STRUCTURE NUMBER UPPER / LOWER	TYPE OF STRUCTURE / LINE	LENGTH (FT)	DRAINAGE AREA (AC) C = 0.95, C = 0.30, C = 0.25 INCR.	DRAINAGE AREA (AC) TOTAL	SUB TOTAL C * A	INLET PIPE TIME OF CONC. (MIN)	TIME OF FLOW IN SECTION (MIN)	INTENSITY (IN/HR)	TOTAL C * A	INCR. TOTAL INFLOW (CFS)	TOTAL RUNOFF (CFS)	INLET OR GUTTER ELEV. (FT)	HYD. GRADE LINE CROWN FLOWLINE UPPER END ELEV. (FT)	HYD. GRADE LINE CROWN FLOWLINE LOWER END ELEV. (FT)	HYD. GRADE LINE CROWN FLOWLINE FALL (FT)	TOTAL MINOR FRICT. HEAD LOSS (FT)	MINOR FRICT. LOSS COEFF.	DIAMETER (IN)	HYD. GRAD. PHYSICAL MIN. PHYS. SLOPE (%)	VELOCITY (FPS)	REMARKS
			0.07	0.07	0.06								14.40	14.40	0.00	0.00			0.00	0.3	
D-1	TYPE F	46.4	0.01	0.01	0.00	10.00	0.12	7.47	0.06	0.00	0.48	17.91	13.19	12.72		0.00	0.0	18	1.01	6.5	
D-3			0.00	0.00	0.00	10.00				0.00			11.69	11.22	0.47	0.00	0.012		0.15	2.5	
			0.15	0.15	0.14								14.41	14.40	0.01	0.01			0.01	0.6	
D-2	TYPE F	35.0	0.02	0.02	0.00	10.00	0.09	7.47	0.14	0.00	1.08	16.09	13.07	12.72		0.00	0.8	18	1.00	6.5	
D-3			0.00	0.00	0.00	10.00				0.00			11.57	11.22	0.35	0.00	0.012		0.15	2.5	
			0.01	0.22	0.21								14.40	13.60	0.80	0.80			0.02	1.0	
D-3	TYPE F	47.3	0.02	0.05	0.01	10.00	0.12	7.44	0.23	0.00	1.69	16.80	12.72	12.25		0.00	0.0	18	0.99	6.4	
D-4			0.00	0.00	0.00	10.12				0.00			11.22	10.75	0.47	0.01	0.012		0.15	2.5	

STORM DRAIN TABULATION

PROJECT - BRCC TARPON SPRINGS **PREPARED BY: ALC** **DATE:11/29/2022**

SYSTEM #2 **CHECKED BY: ALC** **DATE:11/29/2022**

STRUCTURE NUMBER UPPER / LOWER	TYPE OF STRUCTURE / LINE	LENGTH (FT)	DRAINAGE AREA (AC) C = 0.95 / C = 0.30 / C = 0.25 INCR.	TOTAL	SUB TOTAL C * A	INLET PIPE TIME OF CONC. (MIN)	TIME OF FLOW IN SECTION (MIN)	INTENSITY (IN/HR)	TOTAL C * A	INCR. TOTAL INFLOW (CFS)	TOTAL RUNOFF (CFS)	INLET OR GUTTER ELEV. (FT)	HYD. GRADE LINE CROWN FLOWLINE UPPER END ELEV. (FT)	LOWER END ELEV. (FT)	FALL (FT)	TOTAL MINOR FRICT. HEAD LOSS (FT)	MINOR FRICT. LOSS COEFF.	DIAMETER (IN)	HYD. GRAD. PHYSICAL MIN. PHYS. SLOPE (%)	VELOCITY (FPS)	ZONE: 6 / FREQ: 10 (YEAR) / FREQ. FACTOR: 1.00 / MIN. HGL COVER = 0.50 / MIN. PIPE COVER = 1.50 REMARKS
			0.20	0.20	0.19								13.61	13.60	0.01	0.01			0.02	0.8	
D-5	TYPE F	84.9	0.02	0.02	0.00	10.00	1.74	7.47	0.19	0.00	1.44	16.15	12.00	12.00		0.00	0.0	18	0.00	0.0	
CHAMBER			0.00	0.00	0.00	10.00				0.00			10.50	10.50	0.00	0.01	0.012		0.15	2.5	

13.6 10 YEAR - 24 HOUR DHW

STORM DRAIN TABULATION

PROJECT - BRCC TARPON SPRINGS **PREPARED BY: ALC** **DATE:11/29/2022**

SYSTEM #3 **CHECKED BY: ALC** **DATE:11/29/2022**

STRUCTURE NUMBER (UPPER / LOWER)	TYPE OF STRUCTURE / LINE	LENGTH (FT)	DRAINAGE AREA (AC) C = 0.95 / C = 0.30 / C = 0.25 INCR.	TOTAL	SUB TOTAL C * A	INLET / PIPE TIME OF CONC. (MIN)	TIME OF FLOW IN SECTION (MIN)	INTENSITY (IN/HR)	TOTAL C * A	INCR. / TOTAL INFLOW (CFS)	TOTAL RUNOFF (CFS)	INLET OR GUTTER ELEV. (FT)	HYD. GRADE LINE CROWN / FLOWLINE UPPER END ELEV. (FT)	LOWER END ELEV. (FT)	FALL (FT)	TOTAL MINOR FRICT. HEAD LOSS (FT)	MINOR FRICT. LOSS COEFF.	DIAMETER (IN)	HYD. GRAD. PHYSICAL MIN. PHYS. SLOPE (%)	VELOCITY (FPS)	ZONE: 6 / FREQ: 10 (YEAR) / FREQ. FACTOR: 1.00 / MIN. HGL COVER = 0.50 / MIN. PIPE COVER = 1.50 / REMARKS
			0.16	0.16	0.15								13.60	13.60	0.00	0.00			0.01	0.6	
D-6	TYPE F	5.0	0.00	0.00	0.00	10.00	0.13	7.47	0.15	0.00	1.13	14.85	12.00	12.00		0.00	0.0	18	0.00	0.0	
CHAMBER			0.00	0.00	0.00	10.00				0.00			10.50	10.50	0.00	0.00	0.012		0.15	2.5	

13.6 10 YEAR - 24 HOUR DHW

ECS Florida, LLC

Geotechnical Engineering Report

Black Rifle Coffee

40390 US Hwy 19 N.
Tarpon Springs, Pinellas County, Florida

ECS Project No. 41:3483

April 29, 2022

April 29, 2022

Mrs. Maleia Storum
Bowman Consulting Group, Ltd.
4450 W. Eau Gallie Blvd.
Suite 144
Melbourne, FL 32934

ECS Project No. 41:3483

Reference: Geotechnical Engineering Report
Black Rifle Coffee
40390 US Hwy 19 N.
Tarpon Springs, Pinellas County, Florida

Dear Mrs. Storum:

ECS Florida, LLC (ECS) has completed the subsurface exploration, laboratory testing, and geotechnical engineering analyses for the above-referenced project. Our services were performed in general accordance with our agreed to scope of work. This report presents our understanding of the geotechnical aspects of the project along with the results of the field exploration and laboratory testing conducted, and our foundation design and earthwork construction recommendations.

It has been our pleasure to be of service to Bowman Consulting Group, Ltd. during the design phase of this project. We would appreciate the opportunity to remain involved during the continuation of the design phase, and we would like to provide our services during construction phase operations as well to verify subsurface conditions assumed for this report. Should you have any questions concerning the information contained in this report, or if we can be of further assistance to you, please contact us.

Respectfully submitted,

ECS Florida, LLC

Stephen M. Forest, E.I.
Group Manager
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N. Oweis

Nemer (Nick) Oweis, P.E.
Senior Principal
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- Boring Location Diagram
- Subsurface Soil Profiles A-A'

Appendix B – Field Operations

- Reference Notes for Boring Logs
- Subsurface Exploration Procedure: Standard Penetration Testing (SPT)
- Boring Logs B-01 through B-03
- Hand Auger Logs HA-01 through HA-06

Appendix C – Laboratory Testing

- Laboratory Testing Summary

EXECUTIVE SUMMARY

The following summarizes the main findings of the exploration, particularly those that may have a cost impact on the planned development. Further, our principal foundation recommendations are summarized. Information gleaned from the Executive Summary should not be utilized in lieu of reading the entire geotechnical report.

- In preparation of this report, we have been provided with Conceptual Design Plan, one (1) page, undated, provided by Bowman Consulting Group, Ltd., and understand that the proposed construction will consist of a coffee shop with an approximate footprint of ±2,630 S.F. with associated paved areas. We anticipate the type of construction predominately consist of concrete masonry unit (CMU) or wood framed.

- Structural loading for the proposed construction was not provided at the time this report was prepared; however, based on the estimated construction and building type, we estimate maximum column and wall loads will not exceed 50 kips and 3 kips per linear foot (klf), respectively.

- Based on the results of our SPT soil borings and assumed structural loads, the proposed building can be supported on conventional shallow foundations consisting of column or strip footings bearing on natural soils or approved structural fill with an allowable net bearing capacity of 2,500 psf.

- In general, the encountered soils are capable of supporting flexible-asphalt and rigid-concrete pavement for standard and heavy-duty sections, as described in Section 4.4.

1.0 INTRODUCTION

The purpose of this study was to provide geotechnical information for the design and construction of the proposed development for Bowman Consulting Group, Ltd.. The project will include one (1) coffee shop building and associated paved driveway and parking areas. The recommendations developed for this report are based on project information supplied by Bowman Consulting Group, Ltd.

Our services were provided in accordance with the Work Order to Master Sub-Consultant Agreement dated May 20th, 2020, and our Proposal No. 41:5301, dated February 25, 2022, as authorized on March 10, 2022. Bowman Project # 011046-01-o11, Task # 00007.

This report contains the procedures and results of our subsurface exploration and laboratory testing programs, review of existing site conditions, engineering analyses, and recommendations for the foundation design and earthwork construction of the project.

The report includes the following items.

- A review of surface topographical features, surface drainage, site conditions, geologic information, and special site features.
- A brief review and description of our field and laboratory test procedures and the results of testing conducted.
- Final soil exploration test boring logs per the standard practice of geotechnical engineers.
- Subsurface Cross-Sections with available topographic information, including sampling, testing data, and groundwater levels.
- Measured groundwater elevations and recommendations for the estimated seasonal high groundwater levels at the site.
- Recommended foundation support parameters.
- General recommendations for flexible and rigid pavement design for both standard and heavy-duty usage.
- Recommendations for site preparation and construction of compacted fills, including an evaluation of on-site soils for use as compacted fills and identification of potentially unsuitable soils and/or soils exhibiting excessive moisture at the time of sampling.
- Recommendations for additional testing and/or consultation that might be required to complete the geotechnical assessment and related engineering for this project.

2.0 PROJECT INFORMATION

2.1 PROJECT LOCATION/CURRENT SITE USE/PAST SITE USE

The site is located at 40390 US Hwy 19 N., Tarpon Springs, Pinellas County, Florida as shown below in Figure 2.1.1. and on the Site Location Diagram (SLD) in Appendix A.

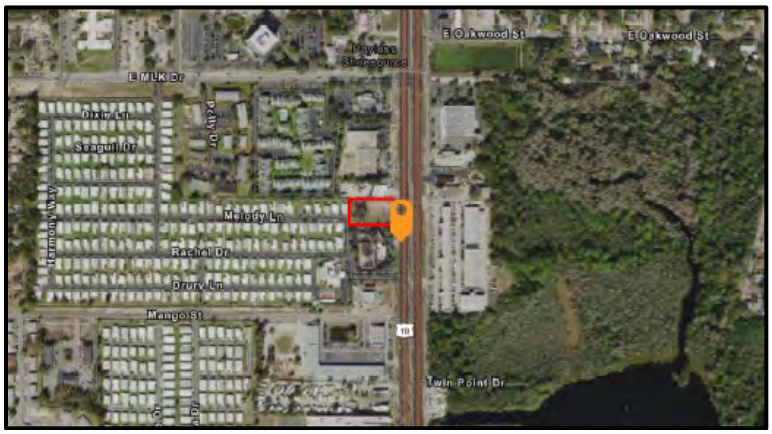


Figure 2.1.1. Site Location

The site is currently cleared with some trees within the west portion of the parcel. Site specific topography noted in our report was estimated from Google Earth and based on our review the site appears to be flat with an elevation of approximately EL. +15 feet. Please note, Google Earth elevations are not very accurate, but useful when site specific topography is not available. **Our estimated elevations should not be used for project design.**

Our visual review of the historical aerial photographs obtained from Google Earth detail the site has generally remained the same to its current site conditions since at least 1994. No significant changes were visually observed during our review.

2.2 PROPOSED CONSTRUCTION

The following information explains our understanding of the planned development including proposed buildings and related infrastructure.

SUBJECT	DESIGN INFORMATION / ASSUMPTIONS
Building Footprint	Approximately ±2,630 square feet in plan view
# of Stories	One story
Usage	Restaurant
Framing	CMU or Wood-Framed
Column Loads*	50 kips (Full Dead and Factored Live) maximum - Estimated
Wall Loads*	Three (3) kips per linear foot (klf) maximum - Estimated
Lowest Finish Floor Elevation	Within one to two feet of present site grade

*If estimated loads differ from final design loads, this report needs to be revised to update our foundation recommendations, bearing capacity, and settlement calculations.

3.0 FIELD EXPLORATION AND GROUNDWATER OBSERVATIONS

Our exploration procedures are explained in greater detail in Appendix B including Subsurface Exploration Procedures for Standard Penetration Testing (SPT). Our scope of work included drilling three (3) Standard Penetration Test (SPT) soil borings drilled to depths of approximatively 10 and 25 feet and six (6) hand auger borings to 6 feet below site grade at locations selected by ECS. Our borings were located with a GPS unit and their approximate locations are shown on the Boring Location Diagram (BLD) in Appendix A.

3.1 SUBSURFACE CHARACTERIZATION

The subsurface conditions encountered were generally consistent with published geological mapping. The following sections provide generalized characterizations of the soil strata. Please refer to the boring logs in Appendix B.

Western Central Florida geologic conditions can generally be described in term of three basic sedimentary layers. The near-surface layer is primarily composed of sands containing varying amounts of silt and clay fines. These sands are underlain by a layer of clay, clayey sand, phosphate, and limestone which are locally referred to as the "Hawthorn Group." The third layer underlies the "Hawthorn Group" and is composed of limestone. The thickness of these three strata varies throughout Central Florida. In general, the surficial sands typically extend to depths of 40 to 70 feet while the "Hawthorn Group" ranges from nearly absent in some locations to thicknesses greater than 100 feet. The limestone formation may be several thousand feet thick.

Approximate Depth (ft)	Elevation (1) (ft)	Stratum	Description	Ranges of SPT(2) N-values (bpf)
0 - 25	EL. + 15 to EL. - 10	I	Loose to Medium dense Fine SAND (SP)	5 to 16

Notes:
(1) Please note that the ground surface elevations were not surveyed by a licensed surveyor; these elevations are approximate based on Google-Earth© therefore should not be used for final design.
(2) Standard Penetration Testing

A graphical presentation of the subsurface conditions is shown on the Subsurface Soil Profile included in Appendix A.

The hand auger borings generally encountered Fine Sand (SP) from ground surface to the termination depth of the auger borings at 6 feet below existing ground surface.

3.2 GROUNDWATER OBSERVATIONS

Groundwater levels were not encountered within the upper 10 feet of the soil borings; to advance the soil boring beyond 10 feet, drilling mud is introduced into the borehole making the interpretation of groundwater more difficult. Variations in the long-term water table may occur because of changes in precipitation, evaporation, surface water runoff, construction activities, and other factors. Based upon our interpretation of the subsurface data and collected soil samples, it appears the normal seasonal high groundwater table is not within the upper 8 feet of the site.

3.3 LABORATORY TESTING

Each sample was visually classified based on texture and plasticity in accordance with ASTM D2488 Standard Practice for Description and Identification of Soils (Visual-Manual Procedures) and including USCS classification symbols, and ASTM D2487 Standard Practice for Classification for Engineering Purposes (Unified Soil Classification System (USCS)). After classification, the samples were grouped in the major zones noted on the boring logs in Appendix B. The group symbols for each soil type are indicated in parentheses along with the soil descriptions. The stratification lines between strata on the logs are approximate; in situ, the transitions may be gradual.

The laboratory testing consisted of selected tests performed on samples obtained during our field exploration operations. Classification and index property tests were performed on representative soil samples. Laboratory tests performed on selected samples included percent fine (ASTM D1140) and moisture content tests (ASTM D2216).

4.0 DESIGN RECOMMENDATIONS

4.1 FOUNDATIONS

Provided subgrades and Structural Fills are prepared as recommended in this report, the proposed structure can be supported by shallow foundations including column footings and continuous wall footings. We recommend the foundation design use the following parameters:

Design Parameter	Column Footing	Wall Footing
Net Allowable Soil Bearing Pressure (1)	2,500 psf	2,500 psf
Acceptable Bearing Soil Material	Stratum I or fill	Stratum I or fill
Minimum Width	24 inches	18 inches
Minimum Footing Embedment Depth (below slab or finished grade) (2)	18 inches	18 inches
Estimated Total Settlement (3)	Less than 1- inch	Less than 1- inch
Estimated Differential Settlement (4)	Less than ½ inches between columns	Less than ½ inches

Notes:

(1) Net allowable bearing pressure is the applied pressure in excess of the surrounding overburden soils above the base of the foundation.
(2) For bearing considerations
(3) Based on assumed structural loads. If final loads are different, ECS must be contacted to update foundation recommendations and settlement calculations.

Our settlement analysis assumes the soils from the bottom of the footing elevation to depths of two feet below the bottom of the footing have been compacted in accordance with the Fill Placement recommendations included within this report.

Potential Undercuts: Most of the soils at the foundation bearing elevation are anticipated to be suitable for support of the proposed structure. If soft or unsuitable soils are observed at the footing bearing elevations, the unsuitable soils should be undercut and removed. Any undercut should be backfilled with

lean concrete ($f'_c \geq 1{,}000$ psi at 28 days) or No. 57 stone, as applicable, up to the original design bottom of footing elevation; the original footing shall be constructed on top of the hardened lean concrete.

4.2 SLABS ON GRADE

Provided subgrades and structural fills are prepared as discussed herein, the proposed floor slabs can be constructed as Ground Supported Slabs (or Slab-On-Grade). It appears that the slabs will bear on Stratum I or compacted fill soils. The following graphic depicts our soil-supported slab recommendations:

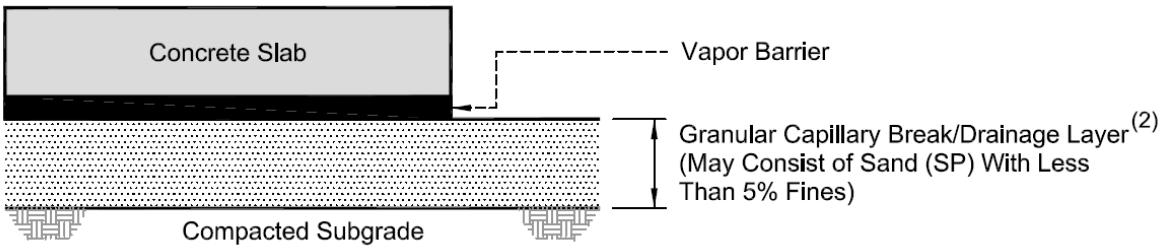


Figure 4.2.1

1. Drainage Layer Thickness: 4 inches
2. Drainage Layer Material: GRAVEL (GP, GW), SAND (SP, SW)

Soft or yielding soils may be encountered in some areas. Those soils should be removed and replaced with compacted Structural Fill in accordance with the recommendations included in this report.

Vapor Barrier: Before the placement of concrete, a vapor barrier may be placed on top of the granular drainage layer to provide additional protection against moisture penetration through the floor slab. When a vapor barrier is used, special attention should be given to surface curing of the slab to reduce the potential for uneven drying, curling and/or cracking of the slab. Depending on proposed flooring material types, the structural engineer and/or the architect may choose to eliminate the vapor barrier.

Slab Isolation: Soil-supported slabs should be isolated from the foundations and foundation-supported elements of the structure so that differential movement between the foundations and slab will not induce excessive shear and bending stresses in the floor slab. Where the structural configuration prevents the use of a free-floating slab such as in a drop-down footing/monolithic slab configuration, the slab should be designed with suitable reinforcement and load transfer devices to preclude overstressing of the slab.

4.3 PAVEMENTS

The subsurface conditions are suitable for flexible and rigid pavement support. It is our professional opinion that groundwater conditions will not impact the construction of the proposed development.

General Recommendations: Our scope of services did not include extensive sampling and Limerock Bearing Ratio (LBR) testing of existing subgrade or potential sources of imported fill for the specific purpose of a detailed pavement analysis. The recommended pavement thicknesses presented in this report section are considered typical and minimum for the provided parameters in the general site area. We understand that budgetary considerations sometimes warrant thinner pavement sections than those presented. However, the client, the owner, and the project designers should be aware that thinner

pavement sections may result in increased maintenance costs and lower than anticipated pavement life. We recommend the following pavement section designs included in the table below:

	Asphalt		Concrete	
Component	**Standard**	**Heavy**	**Standard**	**Heavy**
Stabilized Subgrade (LBR>40)	12”	12”	12”	12”
Base Course (Crushed Concrete/Limerock)	6”	8”	N/A	N/A
Surface Course	1½”	2”	5”	6”
Maximum Joint Control Spacing	-	-	10’ x 10’	12’ x 12’
Recommended Saw-cut Depth	-	-	1 ¼”	1 ½”

All pavement subgrades should be prepared in accordance with the recommendations presented in the section entitled Earthwork Operations.

In areas where Portland cement concrete pavement is planned, the concrete should be placed upon a minimum of 12 inches of compacted, free draining material and compacted to 98 percent of the Modified Proctor maximum dry density (ASTM D-1557). Dumpster pads should be constructed with Portland cement slabs that extend to the front of the enclosure where wheel loads are high.

In areas where asphaltic concrete pavements are used, we suggest stabilizing the subgrade materials to a minimum LBR of 40 percent. All stabilized subgrade materials should be compacted to 98 percent of the Modified Proctor (ASTM D-1557) maximum dry density and meet specification requirements for Type B or Type C Stabilized Subgrade by the Florida Department of Transportation (FDOT). The stabilized subgrade may consist of imported material or a blend of on-site soils and imported materials. If a blend is proposed, we recommend that the contractor performs a mix design to find the optimum mix proportions.

Base Course: Based on the groundwater conditions encountered at the subject property, it is our professional opinion that crushed concrete or limerock is likely to be economical and feasible base course options for this project.

Base course material should follow the FDOT specification for material qualifications and placement. Place base material in maximum six-inch lifts and compact to a minimum density of 98 percent of the Modified Proctor (ASTM D-1557) maximum dry density according to their specification. Perform compliance testing for the base course to a depth of one foot at a frequency of one test per 5,000 square feet, or at a minimum of two test locations, whichever is greater.

Landscape Drains and Curbing: If needed, where landscaped sections are located adjacent to parking lots or driveways, we recommend that edge/strip drains be installed around these landscaped sections to protect the asphalt pavement from excess rainfall and over irrigation. Migration of irrigation water from the landscape areas to the interface between the asphalt and the base usually occurs unless landscape drains are installed. This migration often causes separation of the wearing surface from the base and subsequent rippling and pavement deterioration. The edge/strip drains should be routed to a positive outfall at the pavement area catch basins.

It is recommended that curbing around landscaped sections adjacent to parking lots and driveways be constructed with full-depth curb sections. Using extended curb sections which lie directly on top of the final asphalt level, or eliminating curbing entirely, can allow migration of irrigation water from the landscaped areas to the interface between the asphalt and the base. This migration often causes separation of the wearing surface from the base and subsequent rippling and pavement deterioration

5.0 SITE CONSTRUCTION RECOMMENDATIONS

5.1 SUBGRADE PREPARATION

5.1.1 Stripping and Grubbing

Stripping all vegetation, rootmat, topsoil, and any soft or unsuitable materials should be removed from the 5-foot expanded building and 3-foot expanded pavement limits, and 3 feet beyond the toe of Structural Fills. Additionally, any underground utilities or underground tanks that will not be part of the new construction should be properly capped and abandoned or removed. ECS should be retained to verify that topsoil and unsuitable surficial materials have been removed prior to the placement of structural fill or construction of structures.

5.1.2 Proofrolling

Prior to fill placement or other construction on subgrades, the subgrades should be evaluated by an ECS field technician. The exposed subgrade should be thoroughly proofrolled with construction equipment having a minimum axle load of 20 tons [e.g., fully loaded tandem-axle dump truck]. Proofrolling should be traversed in two perpendicular directions with overlapping passes of the vehicle under the observation of an ECS technician. This procedure is intended to assist in identifying any localized yielding materials.

Where proofrolling identifies areas that are unstable or “pumping” subgrade those areas should be repaired prior to the placement of any subsequent Structural Fill or other construction materials. Methods of stabilization include undercutting and moisture conditioning. The situation should be discussed with ECS to determine the appropriate procedure. Test pits may be excavated to explore the shallow subsurface materials to help in determining the cause of the observed unstable materials, and to assist in the evaluation of appropriate remedial actions to stabilize the subgrade.

5.1.3 Subgrade Compaction

Upon completion of subgrade documentation, the exposed subgrade within the 5-foot expanded building and 3-foot expanded pavement limits should be moisture conditioned to within -one and +three % of the soil’s optimum moisture content and be compacted with suitable equipment (minimum 20-ton roller) to a depth of 12 inches. Subgrade compaction within the expanded building and pavement limits should be to a dry density of at least 95 percent of the Modified Proctor maximum dry density (ASTM D1557). ECS should be called on to document that proper subgrade compaction has been achieved.

5.2 EARTHWORK OPERATIONS

5.2.1 Structural Fill

Prior to placement of Structural Fill, representative bulk samples (about 50 pounds) of on-site and/or off-site borrow should be submitted to ECS for laboratory testing, which will typically include Atterberg limits, natural moisture content, grain-size distribution, and moisture-density relationships (i.e., Proctors) for compaction. Import materials should be tested prior to being hauled to the site to determine if they meet project specifications. Alternatively, Proctor data from other accredited laboratories can be submitted if the test results are within the last 90 days.

Satisfactory Structural Fill Materials: Materials satisfactory for use as Structural Fill should consist of inorganic soils with the following engineering properties and compaction requirements.

STRUCTURAL FILL INDEX PROPERTIES	
Subject	**Property**
Building and Pavement Areas	PI<6
Max. Particle Size	4 inches
Fines Content (Passing the No. 200 sieve)	Max. 20 %
Max. organic content	5% by dry weight

STRUCTURAL FILL COMPACTION REQUIREMENTS	
Subject	**Requirement**
Compaction Standard	Modified Proctor, ASTM D1557
Required Compaction	95% of Max. Dry Density
Moisture Content	-2 to +3 % points of the soil's optimum value
Loose Thickness	12 inches prior to compaction

On-Site Borrow Suitability: Deposits of soils (that meet the definition of satisfactory structural fill) are present on the site. Fine SAND (SP) was generally encountered in the shallow subsurface stratum on the site. The on-site soils can be reused as structural fill but may require moisture conditions:

Fill Placement: Fill materials should not be placed on excessively wet soils. Excessively wet soils or aggregates should be scarified, aerated, and moisture conditioned.

It is recommended that materials to be used for engineered fill be analyzed and approved by the Geotechnical Engineer prior to their use on the site. Subgrade soils disturbed by contractor operations should be re-compacted to the specifications of this report. Subgrade soils which are excessively wet but otherwise suitable by soil classification (inorganic soil material meeting the specifications above) are not considered unsuitable by definition and should be moisture conditioned and re-compacted.

5.3 FOUNDATION AND SLAB OBSERVATIONS

Protection of Foundation Excavations: Exposure to the environment may weaken the soils at the footing bearing level if the foundation excavations remain open for too long a time. Therefore, foundation

concrete should be placed the same day that excavations are made. If the bearing soils are softened by surface water intrusion or exposure, the softened soils must be removed from the foundation excavation bottom immediately prior to placement of concrete. If the excavation must remain open overnight, or if rainfall becomes imminent while the bearing soils are exposed, a 1 to 3-inch thick "mud mat" of "lean" concrete should be placed on the bearing soils before the placement of reinforcing steel.

Footing Subgrade Observations: Most of the soils at the foundation bearing elevation are anticipated to be suitable for support of the proposed structure. It is important to have ECS observe the foundation subgrade prior to placing foundation concrete, to confirm the bearing soils are what was anticipated.

Slab Subgrade Verification: Prior to placement of a drainage layer, the subgrade should be prepared in accordance with the recommendations found in **Section 5.1.2 Proofrolling and Section 5.1.3 Subgrade Compaction.**

5.4 UTILITY INSTALLATIONS

Utility Subgrades: The soils encountered in our exploration are expected to be generally suitable for support of utility pipes. The pipe subgrades should be observed and probed for stability by ECS. Any loose or unsuitable materials encountered should be removed and replaced with suitable compacted Structural Fill, or pipe stone bedding material. Dewatering may be necessary for the installation of utilities. Dewatering methods should be determined by the contractor. Regardless of the dewatering method used, we recommend the dewatering system remain in place a minimum of 2 feet below the level of backfill.

Utility Backfilling: The granular bedding material (often AASHTO #57 stone) should be at least 4 inches thick, but not less than that specified by the civil engineer's project drawings and specifications. We recommend that the bedding materials be placed up to the springline of the pipe. Fill placed for support of the utilities, as well as backfill over the utilities, should satisfy the requirements for Structural Fill and Fill Placement.

Excavation Safety: All excavations and slopes should be constructed and maintained in accordance with OSHA excavation safety standards. The contractor is solely responsible for designing, constructing, and maintaining stable temporary excavations and slopes. The contractor's responsible person, as defined in 29 CFR Part 1926, should evaluate the soil exposed in the excavations as part of the contractor's safety procedures. In no case should slope height, slope inclination, or excavation depth, including utility trench excavation depth, exceed those specified in local, state, and federal safety regulations. ECS is providing this information solely as a service to our client. ECS is not assuming responsibility for construction site safety or the contractor's activities; such responsibility is not being implied and should not be inferred.

6.0 CLOSING

ECS has prepared this report to guide the geotechnical-related design and construction aspects of the project. We performed these services in accordance with the standard of care expected of professionals in the industry performing similar services on projects of like size and complexity at this time in the region. No other representation expressed or implied, and no warranty or guarantee is included or intended in this report.

The description of the proposed project is based on information provided to ECS by the Client. If any of this information is inaccurate or changes, either because of our interpretation of the documents provided or site or design changes that may occur later, ECS should be contacted so we can review our recommendations and provide additional or alternate recommendations that reflect the proposed construction.

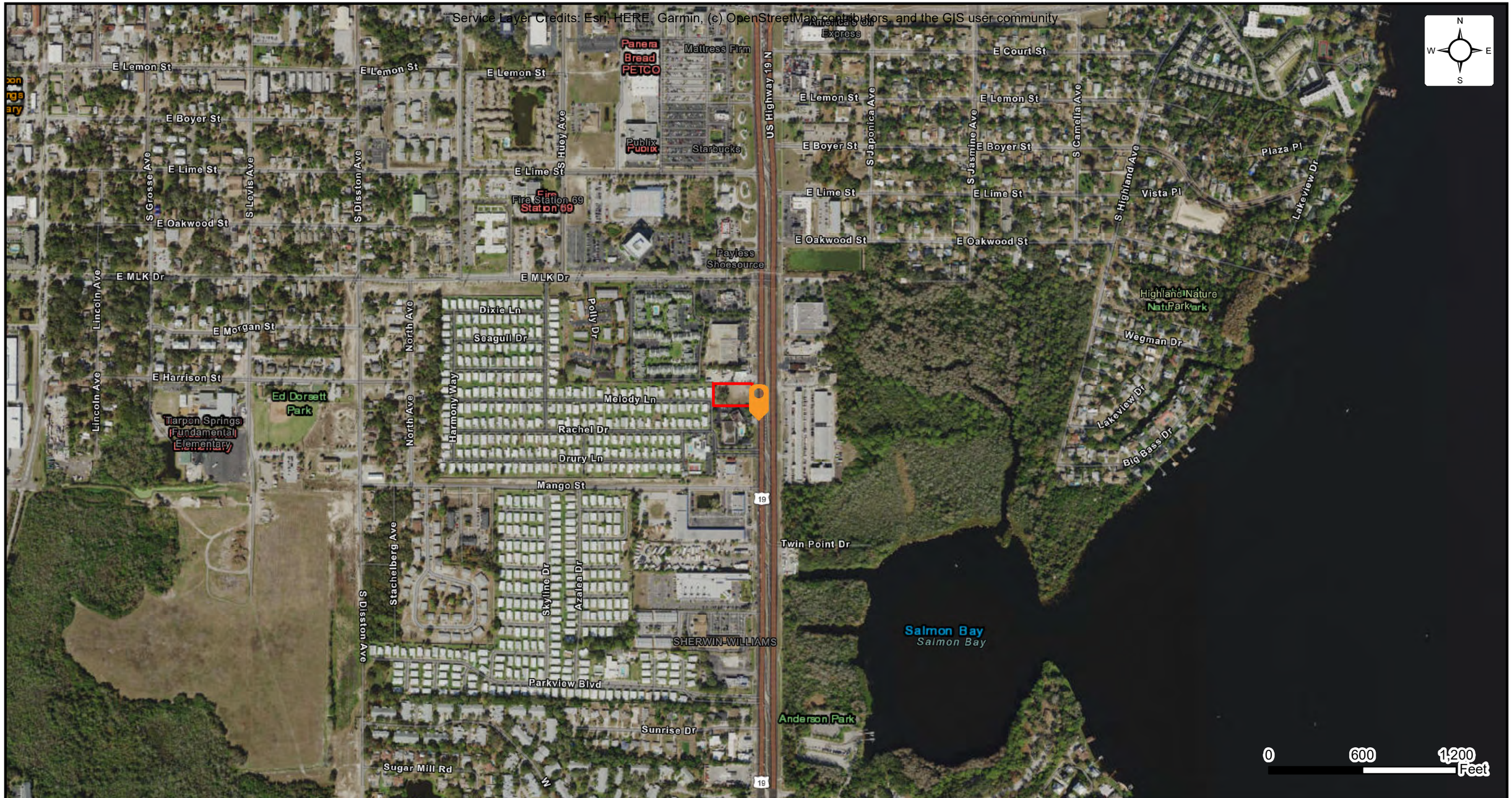
We recommend that ECS review the project plans and specifications so we can confirm that those plans/specifications are in accordance with the recommendations of this geotechnical report.

Field observations, and quality assurance testing during earthwork and foundation installation are an extension of, and integral to, the geotechnical design. We recommend that ECS be retained to apply our expertise throughout the geotechnical phases of construction, and to provide consultation and recommendation should issues arise.

ECS is not responsible for the conclusions, opinions, or recommendations of others based on the data in this report.

APPENDIX A – Diagrams & Reports

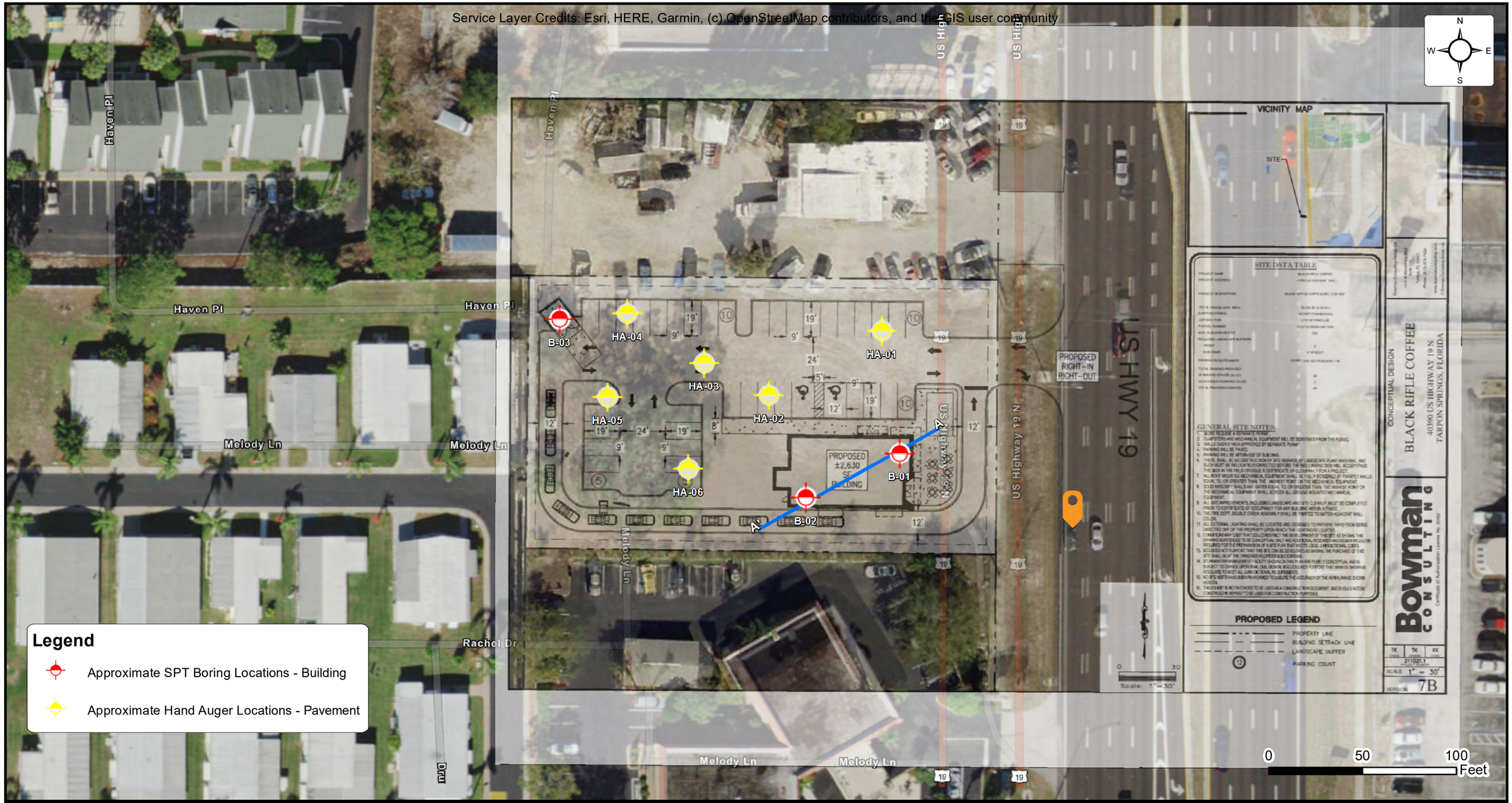
Site Location Diagram (Figure 2.1.1)
Boring Location Diagram
Subsurface Soil Profile A-A’



SITE LOCATION DIAGRAM
BLACK RIFLE COFFEE

BOWMAN CONSULTING GROUP, LTD.
40390 US HWY 19 N., TARPON SPRINGS, FLORIDA

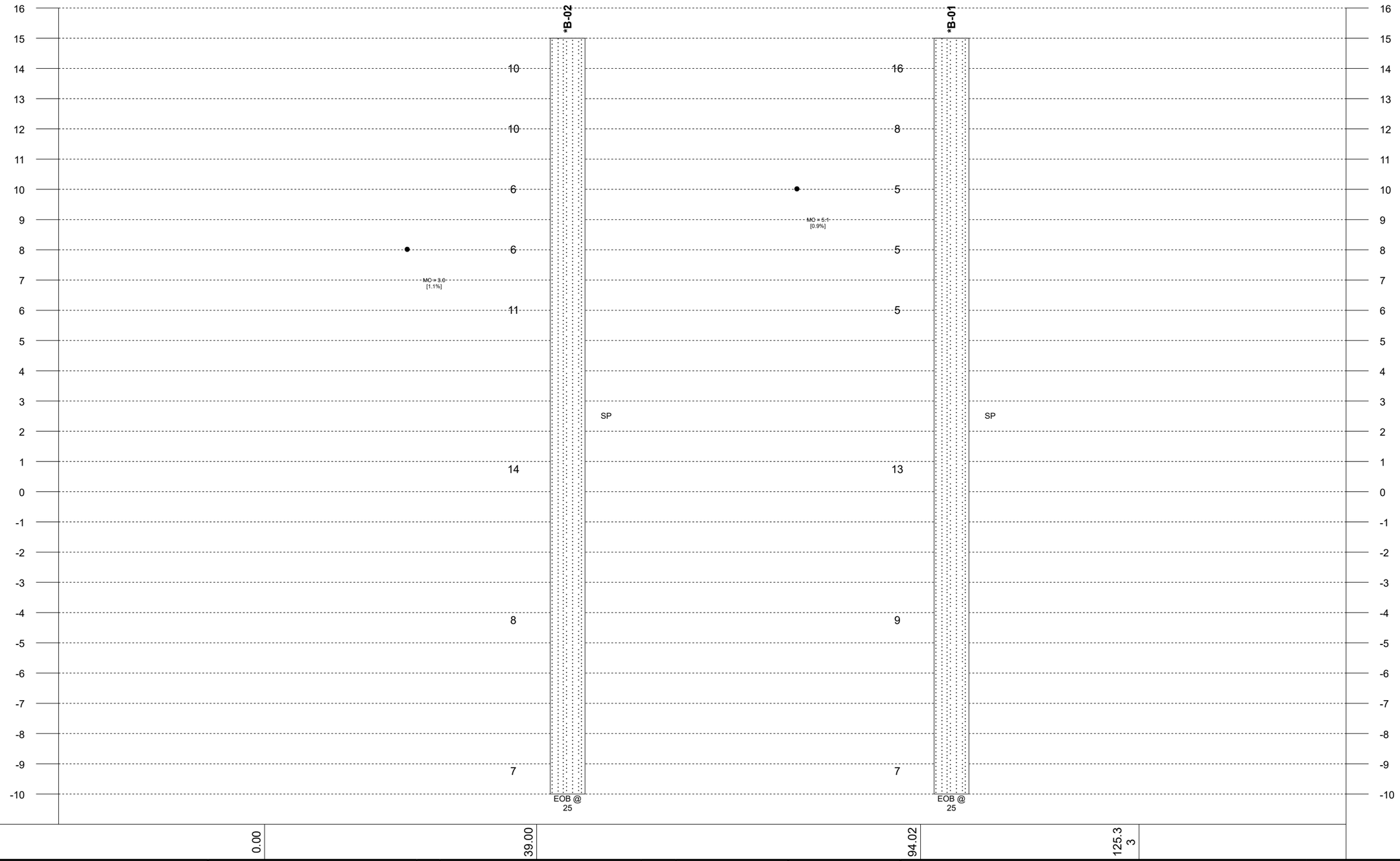
ENGINEER	JC
SCALE	AS NOTED
PROJECT NO.	41:3483
SHEET	1 OF 2
DATE	3/30/2022



BORING LOCATION DIAGRAM
BLACK RIFLE COFFEE

BOWMAN CONSULTING GROUP, LTD.
40390 US HWY 19 N., TARPON SPRINGS, FLORIDA

ENGINEER	JC
SCALE	AS NOTED
PROJECT NO.	41:3483
SHEET	2 OF 2
DATE	3/30/2022



Notes:

1- EOB: END OF BORING AR: AUGER REFUSAL SR: SAMPLER REFUSAL.
2- THE NUMBER BELOW THE STRIPS IS THE DISTANCE ALONG THE BASELINE.
3- SEE INDIVIDUAL BORING LOG AND GEOTECHNICAL INFORMATION.
4- STANDARD PENETRATION TEST RESISTANCE (LEFT OF BORING) IN BLOWS PER FOOT (ASTM D1586).

Plastic Limit Water Content Liquid Limit X——●——△	WL (First Encountered)		Fill
[FINES CONTENT%]	WL (Completion)		Possible Fill
BOTTOM OF CASING	WL (Seasonal High Water)		Probable Fill
LOSS OF CIRCULATION	WL (Stabilized)		Rock

GENERALIZED SUBSURFACE SOIL PROFILE A-A'

Black Rifle Coffee

Bowman Consulting Group, Ltd.

40390 US Hwy 19 N., Tarpon Springs, Florida 34689

Project No: 41:3483 Date: 04/28/2022

APPENDIX B – Field Operations

Reference Notes for Boring Logs
Subsurface Exploration Procedure: Standard Penetration Testing (SPT)
Boring Logs B-01 through B-03
Hand Auger Logs HA-01 through HA-06

SUBSURFACE EXPLORATION PROCEDURE: STANDARD PENETRATION TESTING (SPT) ASTM D 1586 Split-Barrel Sampling

Standard Penetration Testing, or **SPT**, is the most frequently used subsurface exploration test performed worldwide. This test provides samples for identification purposes, as well as a measure of penetration resistance, or N-value. The N-Value, or blow counts, when corrected and correlated, can approximate engineering properties of soils used for geotechnical design and engineering purposes.

SPT Procedure:

- Involves driving a hollow tube (split-spoon) into the ground by dropping a 140-lb hammer a height of 30-inches at desired depth
- Recording the number of hammer blows required to drive split-spoon a distance of 12 inches (in 3 or 4 Increments of 6 inches each)
- Auger is advanced* and an additional SPT is performed
- One SPT test is typically performed for every two to five feet
- Obtain 1.5-inch diameter soil sample

**Drilling Methods May Vary—* The predominant drilling methods used for SPT are open hole fluid rotary drilling and hollow-stem auger drilling.

REFERENCE NOTES FOR BORING LOGS

MATERIAL[1,2]

		ASPHALT
		CONCRETE
		GRAVEL
		TOPSOIL
		VOID
		BRICK
		AGGREGATE BASE COURSE
	GW	WELL-GRADED GRAVEL gravel-sand mixtures, little or no fines
	GP	POORLY-GRADED GRAVEL gravel-sand mixtures, little or no fines
	GM	SILTY GRAVEL gravel-sand-silt mixtures
	GC	CLAYEY GRAVEL gravel-sand-clay mixtures
	SW	WELL-GRADED SAND gravelly sand, little or no fines
	SP	POORLY-GRADED SAND gravelly sand, little or no fines
	SM	SILTY SAND sand-silt mixtures
	SC	CLAYEY SAND sand-clay mixtures
	ML	SILT non-plastic to medium plasticity
	MH	ELASTIC SILT high plasticity
	CL	LEAN CLAY low to medium plasticity
	CH	FAT CLAY high plasticity
	OL	ORGANIC SILT or CLAY non-plastic to low plasticity
	OH	ORGANIC SILT or CLAY high plasticity
	PT	PEAT highly organic soils

DRILLING SAMPLING SYMBOLS & ABBREVIATIONS

SS	Split Spoon Sampler	PM	Pressuremeter Test
ST	Shelby Tube Sampler	RD	Rock Bit Drilling
WS	Wash Sample	RC	Rock Core, NX, BX, AX
BS	Bulk Sample of Cuttings	REC	Rock Sample Recovery %
PA	Power Auger (no sample)	RQD	Rock Quality Designation %
HSA	Hollow Stem Auger		

PARTICLE SIZE IDENTIFICATION

DESIGNATION		PARTICLE SIZES
Boulders		12 inches (300 mm) or larger
Cobbles		3 inches to 12 inches (75 mm to 300 mm)
Gravel:	Coarse	¾ inch to 3 inches (19 mm to 75 mm)
	Fine	4.75 mm to 19 mm (No. 4 sieve to ¾ inch)
Sand:	Coarse	2.00 mm to 4.75 mm (No. 10 to No. 4 sieve)
	Medium	0.425 mm to 2.00 mm (No. 40 to No. 10 sieve)
	Fine	0.074 mm to 0.425 mm (No. 200 to No. 40 sieve)
Silt & Clay ("Fines")		<0.074 mm (smaller than a No. 200 sieve)

COHESIVE SILTS & CLAYS

UNCONFINED COMPRESSIVE STRENGTH, QP[4]	SPT[5] (BPF)	CONSISTENCY[7] (COHESIVE)
<0.25	<2	Very Soft
0.25 - <0.50	3 - 4	Soft
0.50 - <1.00	5 - 8	Firm
1.00 - <2.00	9 - 15	Stiff
2.00 - <4.00	16 - 30	Very Stiff
4.00 - 8.00	31 - 50	Hard
>8.00	>50	Very Hard

RELATIVE AMOUNT[7]	COARSE GRAINED (%)[8]	FINE GRAINED (%)[8]
Trace	≤5	≤5
With	10 - 20	10 - 25
Adjective *(ex: "Silty")*	25 - 45	30 - 45

GRAVELS, SANDS & NON-COHESIVE SILTS

SPT[5]	DENSITY
<5	Very Loose
5 - 10	Loose
11 - 30	Medium Dense
31 - 50	Dense
>50	Very Dense

WATER LEVELS[6]

- WL (First Encountered)
- WL (Completion)
- WL (Seasonal High Water)
- WL (Stabilized)

FILL AND ROCK

FILL | POSSIBLE FILL | PROBABLE FILL | ROCK

[1]Classifications and symbols per ASTM D 2488-17 (Visual-Manual Procedure) unless noted otherwise.

[2]To be consistent with general practice, "POORLY GRADED" has been removed from GP, GP-GM, GP-GC, SP, SP-SM, SP-SC soil types on the boring logs.

[3]Non-ASTM designations are included in soil descriptions and symbols along with ASTM symbol [Ex: (SM-FILL)].

[4]Typically estimated via pocket penetrometer or Torvane shear test and expressed in tons per square foot (tsf).

[5]Standard Penetration Test (SPT) refers to the number of hammer blows (blow count) of a 140 lb. hammer falling 30 inches on a 2 inch OD split spoon sampler required to drive the sampler 12 inches (ASTM D 1586). "N-value" is another term for "blow count" and is expressed in blows per foot (bpf). SPT correlations per 7.4.2 Method B and need to be corrected if using an auto hammer.

[6]The water levels are those levels actually measured in the borehole at the times indicated by the symbol. The measurements are relatively reliable when augering, without adding fluids, in granular soils. In clay and cohesive silts, the determination of water levels may require several days for the water level to stabilize. In such cases, additional methods of measurement are generally employed.

[7]Minor deviation from ASTM D 2488-17 Note 14.

[8]Percentages are estimated to the nearest 5% per ASTM D 2488-17.

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CLIENT:	PROJECT NO.:	BORING NO.:	SHEET:
Bowman Consulting Group, Ltd.	**41:3483**	**B-01**	**1 of 1**
PROJECT NAME: **Black Rifle Coffee**	DRILLER/CONTRACTOR: **ECS**		

SITE LOCATION: **40390 US Hwy 19 N., Tarpon Springs, Florida 34689**

LOSS OF CIRCULATION

NORTHING:	EASTING:	STATION:	SURFACE ELEVATION:
1384066.2	**417457.5**		**15.00**

BOTTOM OF CASING

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
	S-1	SS	24	24	(SP) FINE SAND, light brown, moist, medium dense to loose			7-7-9-9 (16)
	S-2	SS	24	24				7-4-4-4 (8)
5	S-3	SS	24	24			10	3-2-3-2 (5)
	S-4	SS	24	24				2-3-2-2 (5)
	S-5	SS	24	24				3-3-2-2 (5)
10							5	
	S-6	SS	18	18				9-6-7 (13)
15							0	
	S-7	SS	18	18				4-4-5 (9)
20							-5	
	S-8	SS	18	18				3-4 (7)
25					**END OF BORING AT 25 FT**		-10	
30							-15	

Plastic Limit Water Content Liquid Limit

⊗ STANDARD PENETRATION BLOWS/FT

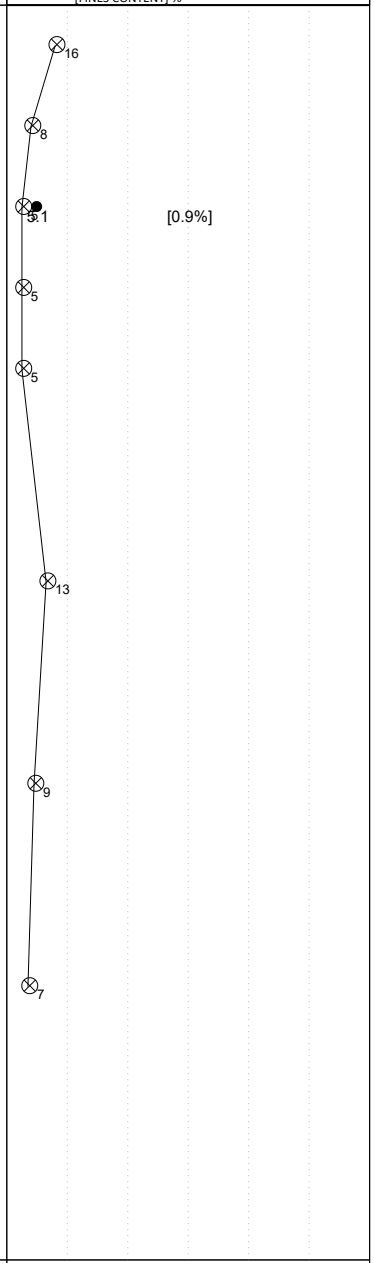
ROCK QUALITY DESIGNATION & RECOVERY

RQD

REC

○ CALIBRATED PENETROMETER TON/SF

[FINES CONTENT] %



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

▽ WL (First Encountered) **Not Encountered**	BORING STARTED: **Apr 15 2022**		CAVE IN DEPTH:
▼ WL (Completion)	BORING COMPLETED: **Apr 15 2022**		HAMMER TYPE: **Manual**
▼ WL (Seasonal High Water)	EQUIPMENT: **ATV**	LOGGED BY: **YL**	DRILLING METHOD: **Mud rotary**
▽ WL (Stabilized)			

GEOTECHNICAL BOREHOLE LOG

CLIENT:	PROJECT NO.:	BORING NO.:	SHEET:
Bowman Consulting Group, Ltd.	**41:3483**	**B-02**	**1 of 1**
PROJECT NAME: **Black Rifle Coffee**	DRILLER/CONTRACTOR: **ECS**		

SITE LOCATION: **40390 US Hwy 19 N., Tarpon Springs, Florida 34689**

LOSS OF CIRCULATION

NORTHING:	EASTING:	STATION:	SURFACE ELEVATION:
1384042.7	**417407.4**		**15.00**

BOTTOM OF CASING

Plastic Limit Water Content Liquid Limit

STANDARD PENETRATION BLOWS/FT

ROCK QUALITY DESIGNATION & RECOVERY

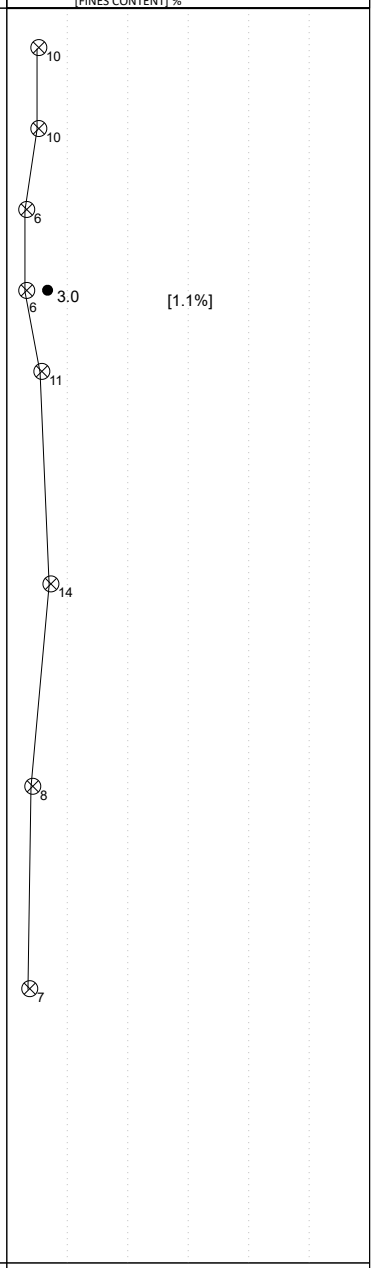
RQD

REC

CALIBRATED PENETROMETER TON/SF

[FINES CONTENT] %

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
	S-1	SS	24	24	(SP) FINE SAND, light brown, loose to medium dense			5-4-6-6 (10)
	S-2	SS	24	24				6-5-5-4 (10)
5	S-3	SS	24	24			10	3-3-3-3 (6)
	S-4	SS	24	24				2-3-3-4 (6)
	S-5	SS	24	24				5-7-4-3 (11)
10							5	
	S-6	SS	18	18				8-8-6 (14)
15							0	
	S-7	SS	18	18				5-4-4 (8)
20							-5	
	S-8	SS	18	18				3-4-3 (7)
25					**END OF BORING AT 25 FT**		-10	
30							-15	



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

WL (First Encountered) **Not Encountered**	BORING STARTED: **Apr 15 2022**		CAVE IN DEPTH:
WL (Completion)	BORING COMPLETED: **Apr 15 2022**		HAMMER TYPE: **Manual**
WL (Seasonal High Water)	EQUIPMENT: **ATV**	LOGGED BY: **YL**	DRILLING METHOD: **Mud rotary**
WL (Stabilized)			

GEOTECHNICAL BOREHOLE LOG

CLIENT:	PROJECT NO.:	BORING NO.:	SHEET:
Bowman Consulting Group, Ltd.	**41:3483**	**B-03**	**1 of 1**
PROJECT NAME: **Black Rifle Coffee**	DRILLER/CONTRACTOR: **ECS**		

SITE LOCATION: **40390 US Hwy 19 N., Tarpon Springs, Florida 34689**

LOSS OF CIRCULATION

NORTHING:	EASTING:	STATION:	SURFACE ELEVATION:
1384137.6	**417276.2**		**15.00**

BOTTOM OF CASING

Plastic Limit Water Content Liquid Limit

STANDARD PENETRATION BLOWS/FT

ROCK QUALITY DESIGNATION & RECOVERY

RQD

REC

CALIBRATED PENETROMETER TON/SF

[FINES CONTENT] %

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"	[FINES CONTENT] %
	S-1	SS	24	24	(SP) FINE SAND, light brown, moist, loose			6-5-5-4 (10)	10
	S-2	SS	24	24				6-4-3-3 (7)	3.27 [1.2%]
5	S-3	SS	24	24			10	2-4-3-2 (7)	7
	S-4	SS	24	24				2-2-3-3 (5)	5
	S-5	SS	24	24				4-5-5-6 (10)	10
10					**END OF BORING AT 10 FT**		5		
15							0		
20							-5		
25							-10		
30							-15		

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

WL (First Encountered) **Not Encountered**	BORING STARTED: **Apr 15 2022**		CAVE IN DEPTH:
WL (Completion)	BORING COMPLETED: **Apr 15 2022**		HAMMER TYPE: **Manual**
WL (Seasonal High Water)	EQUIPMENT: **ATV**	LOGGED BY: **YL**	DRILLING METHOD: **Mud rotary**
WL (Stabilized)			

GEOTECHNICAL BOREHOLE LOG

CLIENT:	PROJECT NO.:	SHEET:
Bowman Consulting Group, Ltd.	**41:3483**	**1 of 1**
PROJECT NAME:	HAND AUGER NO.:	SURFACE ELEVATION:
Black Rifle Coffee	**HA-01**	
SITE LOCATION:		STATION:
40390 US Hwy 19 N., Tarpon Springs, Florida 34689		
NORTHING: **1384131.4**	EASTING: **417448.0**	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	SAMPLE NUMBER	FINES CONTENT (%)	MOISTURE CONTENT (%)
			(SP) FINE SAND, light brown, moist	E		S-1		
5		11						
			END OF HAND AUGER AT 6 FT					
10		6						
15								

REMARKS:

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDRY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

EXCAVATION EFFORT: E - EASY M - MEDIUM D - DIFFICULT VD - VERY DIFFICULT

▽ WL (First Encountered)	▼ WL (Seasonal High)	ECS REP:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:
▼ WL (Completion)			**Apr 15 2022**	**English**	

HAND AUGER LOG

CLIENT:	PROJECT NO.:	SHEET:
Bowman Consulting Group, Ltd.	**41:3483**	**1 of 1**
PROJECT NAME:	HAND AUGER NO.:	SURFACE ELEVATION:
Black Rifle Coffee	**HA-02**	
SITE LOCATION:		STATION:
40390 US Hwy 19 N., Tarpon Springs, Florida 34689		
NORTHING: **1384097.2**	EASTING: **417387.9**	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	SAMPLE NUMBER	FINES CONTENT (%)	MOISTURE CONTENT (%)
			(SP) FINE SAND, light brown, moist	E		S-1		
5		11						
			END OF HAND AUGER AT 6 FT					
10		6						
15								

REMARKS:

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDRY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

EXCAVATION EFFORT: E - EASY M - MEDIUM D - DIFFICULT VD - VERY DIFFICULT

▽ WL (First Encountered)	▼ WL (Seasonal High)	ECS REP:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:
▼ WL (Completion)			**Apr 15 2022**	**English**	

HAND AUGER LOG

CLIENT:	PROJECT NO.:	SHEET:
Bowman Consulting Group, Ltd.	**41:3483**	**1 of 1**
PROJECT NAME:	HAND AUGER NO.:	SURFACE ELEVATION:
Black Rifle Coffee	**HA-03**	
SITE LOCATION:		STATION:
40390 US Hwy 19 N., Tarpon Springs, Florida 34689		
NORTHING: **1384114.6**	EASTING: **417353.2**	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	SAMPLE NUMBER	FINES CONTENT (%)	MOISTURE CONTENT (%)
			(SP) FINE SAND, light brown, moist	E		S-1		
5		11						
			END OF HAND AUGER AT 6 FT					
10		6						
15								

REMARKS:

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDRY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

EXCAVATION EFFORT: E - EASY M - MEDIUM D - DIFFICULT VD - VERY DIFFICULT

▽ WL (First Encountered)	▼ WL (Seasonal High)	ECS REP:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:
▼ WL (Completion)			**Apr 15 2022**	**English**	

HAND AUGER LOG

CLIENT:	PROJECT NO.:	SHEET:
Bowman Consulting Group, Ltd.	**41:3483**	**1 of 1**
PROJECT NAME:	HAND AUGER NO.:	SURFACE ELEVATION:
Black Rifle Coffee	**HA-04**	
SITE LOCATION:		STATION:
40390 US Hwy 19 N., Tarpon Springs, Florida 34689		
NORTHING: **1384140.7**	EASTING: **417312.3**	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	SAMPLE NUMBER	FINES CONTENT (%)	MOISTURE CONTENT (%)
			(SP) FINE SAND, light brown, moist	E		S-1		
5		11						
			END OF HAND AUGER AT 6 FT					
10		6						
15								

REMARKS:

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDRY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

EXCAVATION EFFORT: E - EASY M - MEDIUM D - DIFFICULT VD - VERY DIFFICULT

▽ WL (First Encountered)	▼ WL (Seasonal High)	ECS REP:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:
▼ WL (Completion)			**Apr 15 2022**	**English**	

HAND AUGER LOG

CLIENT:	PROJECT NO.:	SHEET:
Bowman Consulting Group, Ltd.	**41:3483**	**1 of 1**
PROJECT NAME:	HAND AUGER NO.:	SURFACE ELEVATION:
Black Rifle Coffee	**HA-05**	
SITE LOCATION:		STATION:
40390 US Hwy 19 N., Tarpon Springs, Florida 34689		
NORTHING: **1384096.2**	EASTING: **417301.6**	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	SAMPLE NUMBER	FINES CONTENT (%)	MOISTURE CONTENT (%)
			(SP) FINE SAND, light brown, moist	E		S-1		
5		11						
			END OF HAND AUGER AT 6 FT					
10		6						
15								

REMARKS:

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDRY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

EXCAVATION EFFORT: E - EASY M - MEDIUM D - DIFFICULT VD - VERY DIFFICULT

▽ WL (First Encountered)	▼ WL (Seasonal High)	ECS REP:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:
▼ WL (Completion)			**Apr 15 2022**	**English**	

HAND AUGER LOG

CLIENT:	PROJECT NO.:	SHEET:
Bowman Consulting Group, Ltd.	**41:3483**	**1 of 1**
PROJECT NAME:	HAND AUGER NO.:	SURFACE ELEVATION:
Black Rifle Coffee	**HA-06**	
SITE LOCATION:		STATION:
40390 US Hwy 19 N., Tarpon Springs, Florida 34689		
NORTHING: **1384058.1**	EASTING: **417344.8**	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	SAMPLE NUMBER	FINES CONTENT (%)	MOISTURE CONTENT (%)
			(SP) FINE SAND, light brown, moist	E		S-1		
5		11						
			END OF HAND AUGER AT 6 FT					
10		6						
15								

REMARKS:

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDRY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

EXCAVATION EFFORT: E - EASY M - MEDIUM D - DIFFICULT VD - VERY DIFFICULT

▽ WL (First Encountered)	▼ WL (Seasonal High)	ECS REP:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:
▼ WL (Completion)			**Apr 15 2022**	**English**	

HAND AUGER LOG

APPENDIX C – Laboratory Testing

Laboratory Testing Summary

Laboratory Testing Summary

Sample Source	Sample Number	Start Depth (feet)	End Depth (feet)	Sample Distance (feet)	MC[1] (%)	Soil Type[2]	Atterberg Limits[3]			Percent Passing No. 200 Sieve[4]	Moisture - Density (Corr.)[5]		CBR Value[6]	Organic Content
							LL	PL	PI		Maximum Density (pcf)	Optimum Moisture (%)		
B-01	S-3	4.0	6.0	2.0	5.1	SP				0.9				
B-02	S-4	6.0	8.0	2.0	3.0	SP				1.1				
B-03	S-2	2.0	4.0	2.0	3.2	SP				1.2				

Notes: 1. ASTM D 2216, 2. ASTM D 2487, 3. ASTM D 4318, 4. ASTM D 1140, 5. See test reports for test method, 6. See test reports for test method

Definitions: MC: Moisture Content, Soil Type: USCS (Unified Soil Classification System), LL: Liquid Limit, PL: Plastic Limit, PI: Plasticity Index, CBR: California Bearing Ration, OC: Organic Content (ASTM D 2974)

Project No. 41:3483
Project Name: Black Rifle Coffee
PM: Stephen Forest
PE: Nemer Oweis
Printed On: April 28, 2022

ECS Florida, LLC - Tampa
4524 N. 56th Street
Tampa, FL 33610
Phone: 813-302-1644
Fax:

Allie Keen

From: Renea Vincent
Sent: Wednesday, March 15, 2023 11:33 AM
To: judybunny55@gmail.com
Cc: Mark LeCouris; Caroline Lanford; Allie Keen
Subject: RE: FW: Potential Community Redevelopment Area
Attachments: 22-85_Black Rifle Coffee_PNZ Presentation.pdf

Dear Ms. Demko,

I am following up on the City Manager's email below. We would very much like to meet with you and/or your community association to discuss a potential Community Redevelopment Area and what benefit that may have for Tarpon Shores. Please contact Caroline Lanford (she is copied on this email) to further discuss setting up a meeting.

The second issue the City Manager mentioned in his email is with regards to a proposed coffee shop, with a drive through, that is proposed for a vacant parcel on US 19 (just north of the hotel) which also abuts Tarpon Shores. Please see the attached presentation. This will be reviewed by the Planning and Zoning Board on Monday March 20th here at City Hall (6:30 p.m.). You are encouraged to attend the meeting. Please note, there isn't a required public notice or mailed notice to surrounding properties, however we felt it was important for you and your community to be aware of the project and have an opportunity to speak at the public hearing if you have concerns, comments, or questions. Feel free to contact myself or Allie Keen (copied on this email) if you have questions about the project.

The full staff report and agenda back up can be reviewed at the following link: https://www.ctsfl.us/wp-content/uploads/2023/03/PNZ-Agenda-Packet-3-20-2023.pdf

Best Regards,

Renea Vincent, AICP, CPM
Planning Director
City of Tarpon Springs
727-942-5611

Mission: To protect, preserve, and enrich the heritage, traditions, and independence of the city through quality services and a commitment to excellence.

Vision: An inclusive and prosperous community guided by our history, traditions, and natural environment.

From: Mark LeCouris <mlecouris@ctsfl.us>
Sent: Tuesday, March 14, 2023 1:25 PM
To: Judy Demko <judybunny55@gmail.com>
Cc: Caroline Lanford <clanford@ctsfl.us>; Renea Vincent <rvincent@ctsfl.us>; Allie Keen <AKeen@ctsfl.us>; Kim Yothers <kyothers@ctsfl.us>
Subject: Re: FW: Potential Community Redevelopment Area

Yes, would you please call Caroline Lanford and get her the information to set up a meeting with your community. I believe this will be a positive for your community, but we need your community's input. There is also an item coming up on the Monday Planning and Zoning meeting that we want to call attention to in your community. If you could please call her this afternoon, that would be great. Mark LeCouris City Manager