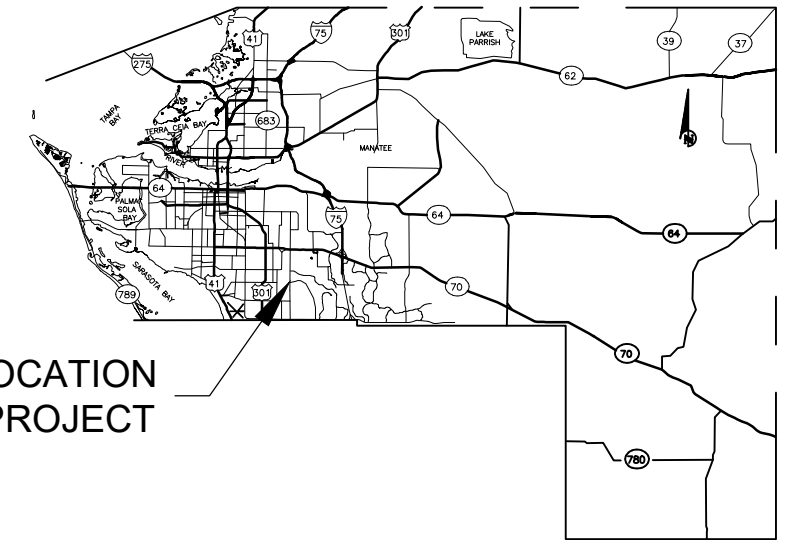


STATE OF FLORIDA COUNTY OF MANATEE

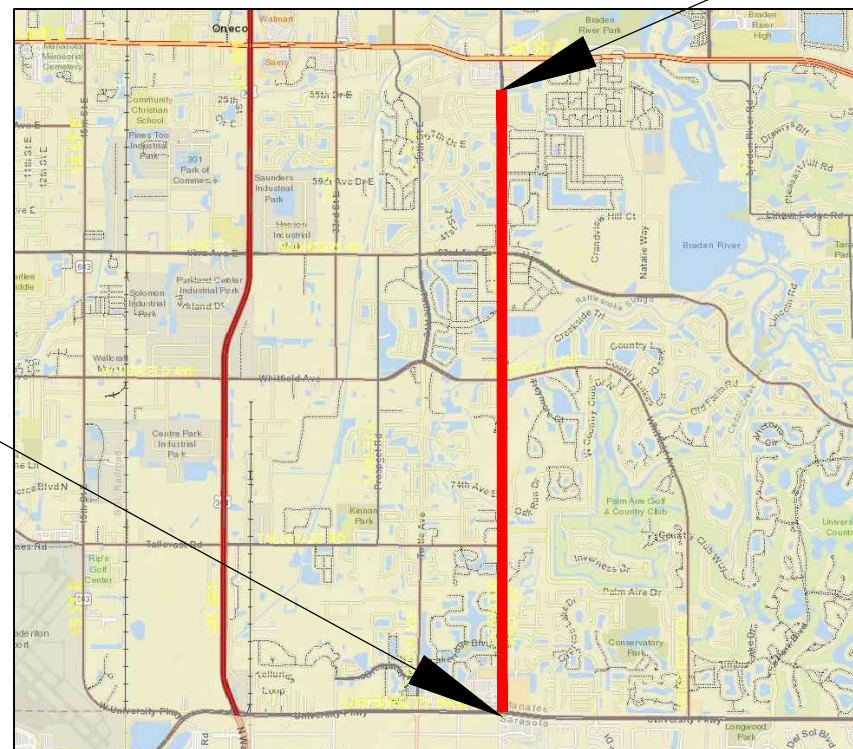
TRAFFIC SIGNAL PLANS LOCKWOOD RIDGE ROAD REBASE UNIVERSITY PKWY TO 56TH AVE TER E BRADENTON, FLORIDA

MANATEE COUNTY PROJECT No: 858-6107960



LOCATION OF PROJECT

END PROJECT
STA. 198+35.23



BEGIN PROJECT
STA.0+57.77



100% PLANS



ATTENTION IS DIRECTED TO THE FACT THAT THESE PLANS MAY HAVE BEEN ENLARGED IN SIZE BY REPRODUCTION. THIS MUST BE CONSIDERED WHEN OBTAINING SCALED DATA.



Know what's below
Call before you dig

GOVERNING DESIGN STANDARDS:

FLORIDA DEPARTMENT OF TRANSPORTATION, FY 2020-21 DESIGN STANDARDS eBOOK (DSeB) AND APPLICABLE DESIGN STANDARDS REVISIONS (DSRs) AT THE FOLLOWING WEBSITE:

<https://www.fdot.gov/design/standardplans/current/default.shtm>

GOVERNING STANDARD SPECIFICATIONS:

FLORIDA DEPARTMENT OF TRANSPORTATION, JULY 2020 STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AT THE FOLLOWING WEBSITE:

<http://www.fdot.gov/programmanagement/Implemented/SpecBooks>

PROJECT LENGTH IS BASED ON B/L OF CONSTRUCTION

LENGTH OF PROJECT		
	LINEAR FEET	MILES
ROADWAY	19777.46	3.75
EXCEPTIONS	0.00	0.00
GROSS LENGTH OF PROJECT	19777.46	3.75

TRAFFIC SIGNAL PLANS

PROFESSIONAL OF RECORD: NEIL BYRNE, P.E.

FLORIDA P.E. # 86905

MANATEE COUNTY PUBLIC WORKS
1022 26th AVENUE EAST
BRADENTON, FL 34208

CONSTRUCTION CONTRACT NO.	FISCAL YEAR	SHEET NO.
T0000	21	T-1

\\boc\dfs\PWD_Traffic_Share\Traffic_Engineering_Share\Plan Review\Project Folder\Lockwood Ridge - Rebase and Resurfacing-56th Ave Ter E - University Pkwy\Design\Cadd\Lockwood-TS.dwg [4/19/2022 4:12 PM]

TABULATION OF QUANTITIES

PAY ITEM NO.	ITEM DESCRIPTION	Unit Measure	Sheet Number					TOTAL
			T-5	T-6	T-7	T-8	T-9/T-10	
0630 2 11	CONDUIT, FURNISH & INSTALL, OPEN TRENCH (2" HDPE)	LF		1,210	2,420	3,630	645	7,905
0630 2 12	CONDUIT, FURNISH & INSTALL, DIRECTIONAL BORE (2" HDPE)	LF	475	450	550	600	120	2,195
0630 2 14	CONDUIT, FURNISH & INSTALL, ABOVEGROUND (2" RISER)	LF		10	20	30	10	70
0632 7 2	SIGNAL CABLE- REPAIR/REPLACE/OTHER, FURNISH & INSTALL	LF						0
0633 8 1	MULTI-CONDUCTOR COMMUNICATION CABLE, FURNISH & INSTALL	LF	2,400	3,550	5,400	6,850	805	19,005
0635 2 11	PULL & SPLICE BOX, F&I, 13" x 24" COVER SIZE (SEE PAY ITEM NOTES)	EA	5	7	9	11	6	38
0641 2 13	PRESTRESSED CONCRETE POLE, F&I, TYPE P-III	EA		1	2	3	1	7
0660 3 11	VEHICLE DETECTION SYSTEM- MICROWAVE, FURNISH & INSTALL CABINET EQUIPMENT	EA	2	2	2	2		8
0660 3 12	VEHICLE DETECTION SYSTEM- MICROWAVE, FURNISH & INSTALL, ABOVE GROUND EQUIPMENT	EA	6	8	10	11	1	36
0660 4 60	VEHICLE DETECTION SYSTEM- VIDEO, REMOVE	EA	1			1		2
0670 5111	TRAFFIC CONTROLLER ASSEMBLY, F&I, NEMA, 1 PREEMPTION	AS						0
0670 5400	TRAFFIC CONTROLLER ASSEMBLY, MODIFY	AS	1	1	1	1		4
0676 3 10	SMALL EQUIPMENT ENCLOSURE, FURNISH AND INSTALL, LESS THAN 10"W X 13"H X 11" D	EA		1	2	3	1	7
0682 1113	ITS CCTV CAMERA, F&I, DOME PTZ ENCLOSURE - PRESSURIZED, IP, HIGH DEFINITION	EA	1	1	1	1		4
0684 1 1	MANAGED FIELD ETHERNET SWITCH, FURNISH & INSTALL	EA	1	1	1	1		4
0685 1 12	UNINTERRUPTIBLE POWER SUPPLY, FURNISH AND INSTALL, ONLINE/DOUBLE CONVERSION	EA	1	1	1	1		4
0685 2 1	REMOTE POWER MANAGEMENT UNIT- RPMU, FURNISH AND INSTALL	EA	1	1	1	1		4
0700 2 12	MULTI- POST SIGN, F&I GROUND MOUNT, 12-20 SF	AS		3	4	4		11

NUMBER	DESCRIPTION	DATE	PROJECT #	858-6107960	SURVEYED	----	_/_/__
			SURVEY #		DESIGNED	----	_/_/__
			SEC./TWN./RGE		DRAWN	DM	3/23/22
			SCALE	AS SHOWN	CHECKED	NB	3/25/22

NEIL BYRNE, P.E.
FLORIDA P.E. # 86905

Signature & Date



PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East, Bradenton, FL 34208

*LOCKWOOD RIDGE ROAD REBASE
TRAFFIC SIGNAL PLANS*

TABULATION OF QUANTITIES

SHEET NO.
T-2

\\bocdfs\p\p\Traffic_Share\Traffic_Engineering_Share\Plan_Review\Project_Folder\Lockwood_Ridge - Rebase and Resurfacing - 56th Ave Ter E - University Pkwy\Design\Cadd\Lockwood-TS.dwg [4/19/2022 4:12 PM]

General Notes

1. The Contractor shall contact the Manatee County Traffic Engineering Division before starting work.
2. The Contractor shall coordinate with the Engineer, in conjunction with Manatee County's Traffic Engineering Division, at least two weeks before any cabinet modifications are to be performed. The Engineer, in conjunction with Manatee County's Traffic Engineering Division personnel will review, assist and provide technical support relevant to any field modifications that are necessary.
3. At least five (5) business days prior to beginning the traffic signal installation, the Contractor shall notify the following departments to inform them of construction operations:
MANATEE COUNTY TRAFFIC OPERATIONS DIVISION
 Mr. Aaron Burkett
 2904 12th Street Court East
 Bradenton, Florida 34208
 Phone #: (941) 708-7450, Ext. 7509

MANATEE COUNTY TRAFFIC ENGINEERING DIVISION
 Mr. Vishal Kakkad, P.E. PTOE
 2101 47th Terrace East
 Bradenton, Florida 34208
 Phone #: (941) 749-3500 Ext. 7812
4. Forty-eight (48) hours prior to contract start date, the Contractor shall notify the following agencies in writing giving the location, start date and emergency numbers for afterhours repairs:
FLORIDA HIGHWAY PATROL
 Post Office BOX 20009
 Bradenton, Florida 34203
 Phone #: (941) 751-7646

MANATEE SHERIFF'S OFFICE
 515 11TH Street West
 Bradenton, Florida 34205
 Phone #: (941) 747-3011
5. The Contractor shall have an IMSA Certified Level II (electronics or electrical technician) on the job site at all times while work is being performed. All signal installation technicians shall have a minimum of IMSA Level I certification.
6. Deliver three (3) sets of As-built plans to Mr. Mukunda Gopalakrishna, Sr. Project Engineer in Traffic Engineering Division at 2101 47th Terrace East, Bradenton, Florida 34208.
SR. PROJECT ENGINEER IN TRAFFIC ENGINEERING DIVISION
 Mr. Mukunda Gopalakrishna, P.E. PTOE
 2101 47th Terrace East
 Bradenton, Florida 34208
 Phone #: (941) 749-3500 Ext. 7813

 Deliver three (3) sets of Record Drawings, two (2) sets of IMSA Inspection Forms and one (1) Compact Disc of Record Drawings to Mr. Aaron Burkett, the Manatee County Traffic Operations Division manager at 2904 12th St Ct E, Bradenton, Florida 34208. Record Drawings must be delivered five (5) business days prior to scheduling the final inspection.
7. Prior to ordering materials, the Contractor shall contact the Traffic Operations Division and verify the current color codes to be used for signal and interconnect cable.
8. Upon passing the final inspection, the Contractor shall send a written request to the Manatee County Traffic Operations Division to transfer maintenance from the Contractor to Manatee County. Manatee County will respond within five (5) working days to establish a time table for the transfer of maintenance responsibility.
9. Manatee County will not furnish the installation of an emergency generator. The contractor shall furnish and install the housing foundation / pad. All costs for the housing foundation / pad are included in the cost for emergency installation pay item 639-4-6. The contractor shall coordinate with Manatee County to obtain the desired housing dimensions.
10. The Contractor shall be responsible for contacting the local power company providing electrical power to determine if a service processing fee is required. Any fee shall be included as part of payment for the electrical power service assembly. The Contractor shall be responsible for obtaining all permits and inspections of the electrical service. The Contractor shall coordinate the construction, inspection and energizing of the new power service in a timely manner in order to promote project completion within contract time.
11. The location of utilities shown on the plans are approximate only. The exact locations shall be determined by the Contractor, via Sunshine State One Call of Florida, Inc. at 1-800-432-4770, in coordination with underground and overhead Utility owners. The Contractor shall notify Utility owners/agencies listed within or impacted by these plans, not less than two (2) full business days in advance of beginning construction.

12. The Contractor shall notify the appropriate utility companies at least 72 hours in advance of pole setting operations where conflict with overhead electrical conductors is expected and, in all cases, where joint use poles are called for.

 The Contractor shall contact the local power company for their assistance in performing all necessary work under power lines at signal poles, such as the installation of signal cable, fiberglass insulators, and signal poles.

 All locations where the required vertical clearance to the power line cannot be maintained, a qualified representative from the power company shall be present during all work under power lines. Any cost associated with this shall be included in the related pay items.
13. The Contractor shall hand dig the first 48 inches of the hole for the pole foundation or conduit run where utilities are in close proximity.
14. The Contractor is to de-water the pole foundation excavation if the elevation of water is higher than the elevation of the foundation base.
15. All materials, equipment, and other Contractor supplied items shall be installed and maintained according to the manufacturers' recommendations, unless specifically directed otherwise by the Engineer.
16. #14 XHHW pull wire shall be installed in all conduits. At least 2 feet of pull wire shall be accessible at each conduit termination and secured in the pull box or place of termination.
17. All electrical wiring shall comply with all applicable provisions of the latest edition of the National Electrical Code published by the National Fire Protection Association.
18. Grounding: All costs for grounding shall be included in the cost of the item being grounded. All ground rod assemblies for poles, services, cabinets, and other related equipment shall be bonded together to form an integrated grounding system using #6 AWG THHN copper wire. The upper end of all ground rods shall be 18 inches below ground elevation. Mark ground rod location with permanent marker such as an epoxied sticker located on the nearest curb and provide As-Built drawings with the location of ground rods marked. Grounding conductor must be #6 or larger insulated copper.

 Connecting devices shall be non-corrosive split bolt, clamps, pressure connectors, or other approved means to ensure a positive connection.

 Ground resistance tester, or other approved means shall be used to acquire the ground rod resistance. The Engineer, or a representative of the Engineer from the Traffic Operations Division staff be present during the test.
19. It should be noted that no test borings were made where conduit runs are to be installed by Jacking or Boring.
20. Contractor shall supply all material submittals to the Engineer, prior to construction, for approval.
21. The type of equipment used in the installation of mast arms/foundations shall meet the following requirement:
 a) Overhead lines shall stay in place both vertically and horizontally; and
 b) Contractor shall meet all applicable OSHA requirements. Any cost associated with the type of equipment required for this installation shall be included in the related pay items.
22. Contractor shall utilize the FDOT Standard Plans Index 102 series for Traffic Control through Work Zones, as applicable, during maintenance of traffic operations.
23. Existing speed limits are as follow:
 40 mph on Lockwood Ridge Road
 Varies mph on Side Street
24. Under County's supervision, the Contractor shall perform an initial operation test to ensure the CCTV assembly has been installed correctly as a complete and functionally acceptable installation.
25. The Signal Contractor shall be available to respond to trouble calls twenty-four (24) a day, seven days a week for the duration of the project. The Prime Contractor shall provide contact numbers for the Signal Contractor to the Traffic Operations Division at commencement of the project. Furthermore, within two (2) hours of notification or documented attempted notifications, the Signal Contractor shall be on site making needed repairs or modifications. Failure to meet the time requirements shall give the County, at its discretion, the right to request assistance from the Manatee County Sheriff's department to control traffic for the period of time until the Contractor responds and makes the needed repairs. The cost for Manatee County Sheriff's office shall be the responsibility of the Prime Contractor.

26. Shop drawings shall be submitted for review for all equipment and materials furnished and installed. The Contractor shall furnish copies of all drawings, schedules and complete descriptive and technical data on all items to the Mr. Aaron Burkett, the Manatee County Traffic Operations Division manager at 2904 12th St Ct E, Bradenton, Florida 34208.
27. The acceptance of any submitted data for materials, equipment, apparatus, devices, arrangements and/or layouts shall not relieve the Contractor from the responsibility of placing same and proper dimensions, capacities, sizes, quantity and installations details to efficiently perform the requirements and intent of the Contract. Such acceptance shall not relieve the Contractor from responsibility for errors of any sort on the submittal data.
28. Contactor to contact Traffic Engineering Division: Mr. Mukunda Gopalakrishna (941-749-3500 Ext. 7813) to obtain IP addresses for field devices and Ethernet Switch configuration information.
29. When a Contractor is working on a signal in an intersection (installing conduit in the street, removing existing signal equipment, loops, home runs or turning on of a new signal) where a lane is closed, the Engineer may require an off-duty law enforcement officer to direct traffic. The hourly rate for an off-duty law enforcement officer to direct, can be obtained from the local law enforcement office. The cost of the officer shall be the responsibility of the Contractor and included in Pay Item 102-1 (Maintenance of Traffic) .
30. Contractor shall coordinate pavement markings and signage work with scheduling of signal activation. The signal shall not be fully activated until all proposed stop bars, crosswalks, ramps and pavement removal work is complete. The existing Stop Signs shall be removed upon full signal activation.


Pay Item Notes

1. 635-2-11:
Standard pull box dimensions shall be 17" x 30" x 12" and the lid shall be stamped "Manatee County Traffic Signal" on the cover. The Contractor shall contact the Manatee County Traffic Engineering Division before starting work.
2. 660-1-11 and 660-3-12:
Shall include all necessary Wavetronix Clicks Units for a complete and operational setup. Shall include Wavetronix SmartSensor HD Matrix, HD Advance and Smartsensor HD (Sidefire). This pay item will include all necessary mounting brackets and clamping equipment.
3. 682-1-113:
The CCTV Camera unit shall be Bosch ITS 7000 Starlite Series 1080P 30x40.
4. 684-1-1:
The ethernet switch shall be a Ruggedcom Switch Model Number RSG920P, Part Number 6GK6092-OPS23-0BA0-ZA05+B05+C02+D02.
5. 685-1-12:
Shall include an uninterruptible power supply unit (UPS) Model No. Alpha FXM 1100 equipped with an ethernet port. All uninterruptible power supplies shall support SNMP (Protocol) for remote monitoring and management. The UPS shall be sized to accommodate the maximum connected load. The battery bank shall be sized to provide a minimum 8 hours run time under full load.

NUMBER	DESCRIPTION	DATE	PROJECT #	858-6107960	SURVEYED	-----	---/---/---
			SURVEY #		DESIGNED	-----	---/---/---
			SEC./TWN./RGE		DRAWN	DM	3/23/22
			SCALE	AS SHOWN	CHECKED	NB	3/25/22

NEIL BYRNE, P.E.
FLORIDA P.E. # 86905

Signature & Date



**PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES**
1022 26th Avenue East, Bradenton, FL 34208

*LOCKWOOD RIDGE ROAD REBASE
TRAFFIC SIGNAL PLANS
GENERAL NOTES (1)*

SHEET NO.
T-3

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Detection

- 26. Stop bar vehicle detection shall be Radar Detection using Wavetronix Matrix Sensor.
- 27. The system installer shall leave a minimum of 30 inches of spare cable at each bracket. The slack shall be neatly formed into a loop and secured to the sensor.
- 28. A minimum of 10 feet of sensor cable slack shall be neatly stored at each pull box location with a conduit run.
- 29. In addition to stop bar presence detection, Advance Vehicle Detection shall be provided for all major street approaches to enable data collection to support Purdue/Utah Automated Signal Performance Measures (SPMs). The Wavetronix SmartSensor Advance shall be used for advance vehicle detection, unless otherwise approved by Traffic Engineering Division.
- 30. Verify the Manatee County Traffic Infrastructure Design Guide for detection zones settings.
- 31. It should be noted that no test borings were made where conduit runs are to be installed by Jacking or Boring.
- 32. All actuated phases shall be maintained during the project with the use of video or microwave detectors. The Contractor shall maintain temporary vehicle detection on all approaches throughout construction until Manatee County accepts the project.

Any damage to the existing detection must be restored within twenty-four (24) hours at no additional cost to the County. Manatee County Traffic Operations Division will assist as needed whenever possible.

Conduit Notes

- 1. All HDPE conduit connections shall be joined with a fusion coupler or fusion splice.
- 2. The Contractor shall adjust the conduit runs, device poles, bores and service pole placement to avoid any utility conflicts identified by the locates. Any significant change shall be approved by the engineer.
- 3. The conduits to be installed are to be placed so as to totally avoid any conflicts with existing utilities along the route. It is the Contractor's responsibility to obtain the necessary information required to plan the work ahead for the installation of the required conduits within design or specified parameters and his time frame. The Contractor shall adjust conduit vertically or horizontally to avoid conflict with underground utilities. The Contractor shall use hand excavation methods when excavating near existing utilities, no separate payment shall be made for this work. Extreme caution shall be used by the Contractor when excavating, installing, back filling and compacting around existing utilities. The Contractor shall be responsible for any damage to any utility.
- 4. It shall be the Contractor's responsibility to field locate all aboveground and underground conflicts in advance of the placement of any conduit or other facilities. The Contractor shall field mark the proposed alignment for review and concurrence by the Engineer prior to trenching and/or placement. No pull boxes shall be located in drainage swales or paved shoulders.
- 5. When trenching for installation, the Contractor may run communications and power service in the same trench. The power service shall have separate pull boxes for access. The Contractor shall not install communications and power service in the same conduit, pull box or manhole.
- 6. The Contractor shall place all conduits in a manner that minimizes deflection both horizontally and vertically. Thus, minimizes stress on cables during cable installation. Conduit for fiber optic cable in tranches shall not deflect more than 1 inch per foot vertically or horizontally. Bends shall not be permitted except as specified on the plans.
- 7. The conduit details given are meant to be schematic in nature. Due to actual field conditions and/or needs, deviations may be necessary. Dimensional distances for conduit locations are provided to assist the Contractor with conduit placement. The Contractor shall take this into account when placing conduit. The Contractor is responsible for field locating conduit around existing utilities and obstructions.
- 8. All conduit trenches shall be backfilled completely to provide safe crossing by the end of the working day or whenever the work zone becomes inactive. Do not open any area that cannot be backfilled in the same day/night operation.

Brackets and spacers which are required to offset the rigid metal conduit from the mounting, shall be of similar materials to prevent cathodic reaction.

- 9. All new conduit shall be placed at a minimum depth of 30 inches unless placed in an area of new fill, in which case the conduit shall be 48 inches. Directionally bored conduit shall be at a minimum depth of 48 inches.

NUMBER	DESCRIPTION	DATE	PROJECT #	858-6107960	SURVEYED	----	_/ _/ _
			SURVEY #		DESIGNED	----	_/ _/ _
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			SCALE	AS SHOWN	CHECKED	NB	3/25/22

NEIL BYRNE, P.E.
FLORIDA P.E. # 86905

Signature & Date

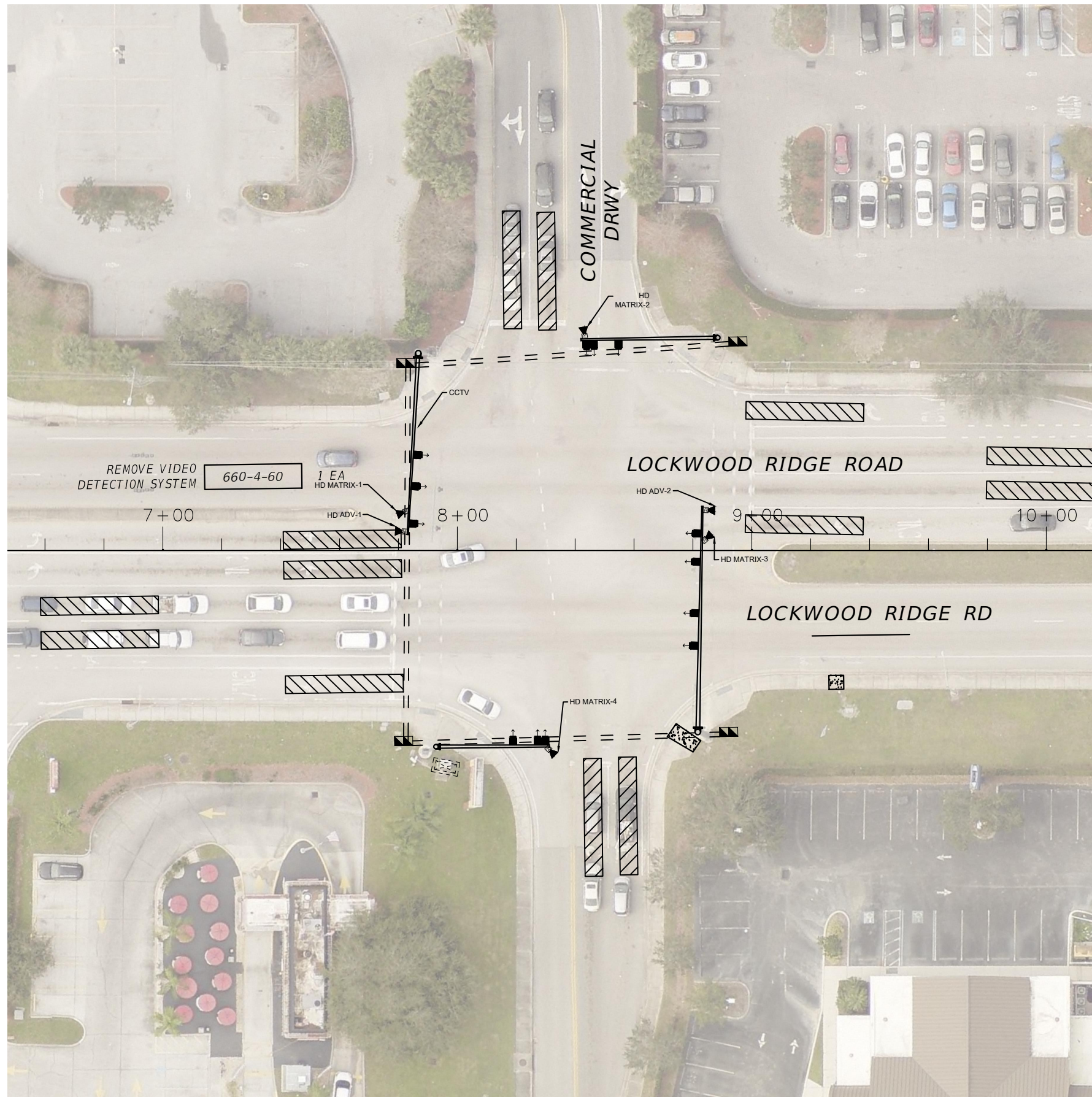
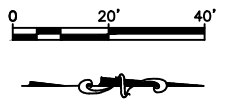


PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East, Bradenton, FL 34208

LOCKWOOD RIDGE ROAD REBASE
TRAFFIC SIGNAL PLANS
GENERAL NOTES (2)

SHEET NO.
T-4

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MICROWAVE VEHICLE DETECTION ASSIGNMENTS		
MICROWAVE DETECTION	DETECTION ZONE	DELAY TIME (SEC)
HD MATRIX 1	DZ-1 NBL	2
	DZ-6 NB	
HD MATRIX 2	DZ-3 EBL	3
	DZ-8 EB	8
HD MATRIX 3	DZ-2 SB	
	DZ-5 SBL	2
HD MATRIX 4	DZ-4 WB	8
	DZ-7 WBL	3
HD ADV 1	DZ-6 NBA	
HD ADV 2	DZ-2 SBA	

- NOTES:
- MICROWAVE DETECTION SENSOR PLACEMENT IS TO BE REVIEWED BY TECHNICAL STAFF FROM THE VENDOR PRIOR TO FIELD PLACEMENT. SENSOR PLACEMENT MAY NEED ADJUSTMENTS DUE TO FIELD CONDITIONS.
 - DESIGN SPEED FOR LOCKWOOD RIDGE ROAD (MAJOR STREET) IS 40 MPH AND COMMERCIAL DRIVEWAYS (MINOR STREET) IS 20 MPH.

NUMBER	DESCRIPTION	DATE	PROJECT #	858-6107960	SURVEYED	---	---
			SURVEY #		DESIGNED	---	---
			SEC./TWN./RGE		DRAWN	DM	3/23/22
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NEIL BYRNE, P.E.
FLORIDA P.E. # 86905

Signature & Date

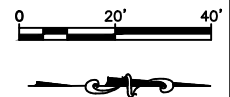


PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East, Bradenton, FL 34208

LOCKWOOD RIDGE ROAD REBASE
TRAFFIC SIGNAL PLANS
LOCKWOOD RIDGE RD * COMMERCIAL DRWYS

SHEET NO.
T-5

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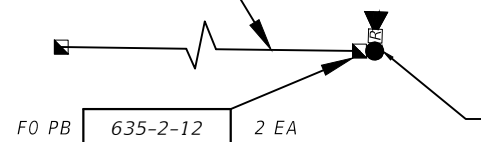
**Lockwood
Ridge Rd
NEXT SIGNAL**

INSTALL SIGN 2
915 FEET
WEST OF STOP BAR IN MEDIAN

INSTALL SIGN 4
925 FEET
NORTH OF STOP BAR

**Tallevast Rd
NEXT SIGNAL**

1 COND. (2" HDPE) 630-2-11 1200 LF
MULTI-CONDUCTOR CABLE 633-8-1 1200 LF



PROPOSED MVDS	
1 COND. (2" HDPE)	630-2-11 10 LF
1 COND. (2" HDPE) ABOVE GROUND (2" RISER)	630-2-14 10 FT
MULTI-CONDUCTOR CABLE	633-8-1 50 LF
TYPE P-III CONC POLE	641-2-13 1 EA
	660-3-11 1 EA
	676-3-10 1 EA

MVDS DATA COLLECTION SITE: 1 EA

- TALLEVAST RD (1200 FEET WEST OF LOCKWOOD RIDGE RD)
FINAL LOCATION TO BE FIELD VERIFIED WITH MANATEE COUNTY TRAFFIC ENGINEERING STAFF PRIOR TO CONSTRUCTION
FINAL LOCATION OF NEXT SIGNAL SIGNS TO BE FIELD VERIFIED WITH MANATEE COUNTY TRAFFIC ENGINEERING STAFF PRIOR TO CONSTRUCTION

NOTE:
FINAL LOCATION OF NEXT SIGNAL SIGNS TO BE FIELD VERIFIED WITH MANATEE COUNTY TRAFFIC ENGINEERING STAFF PRIOR TO CONSTRUCTION

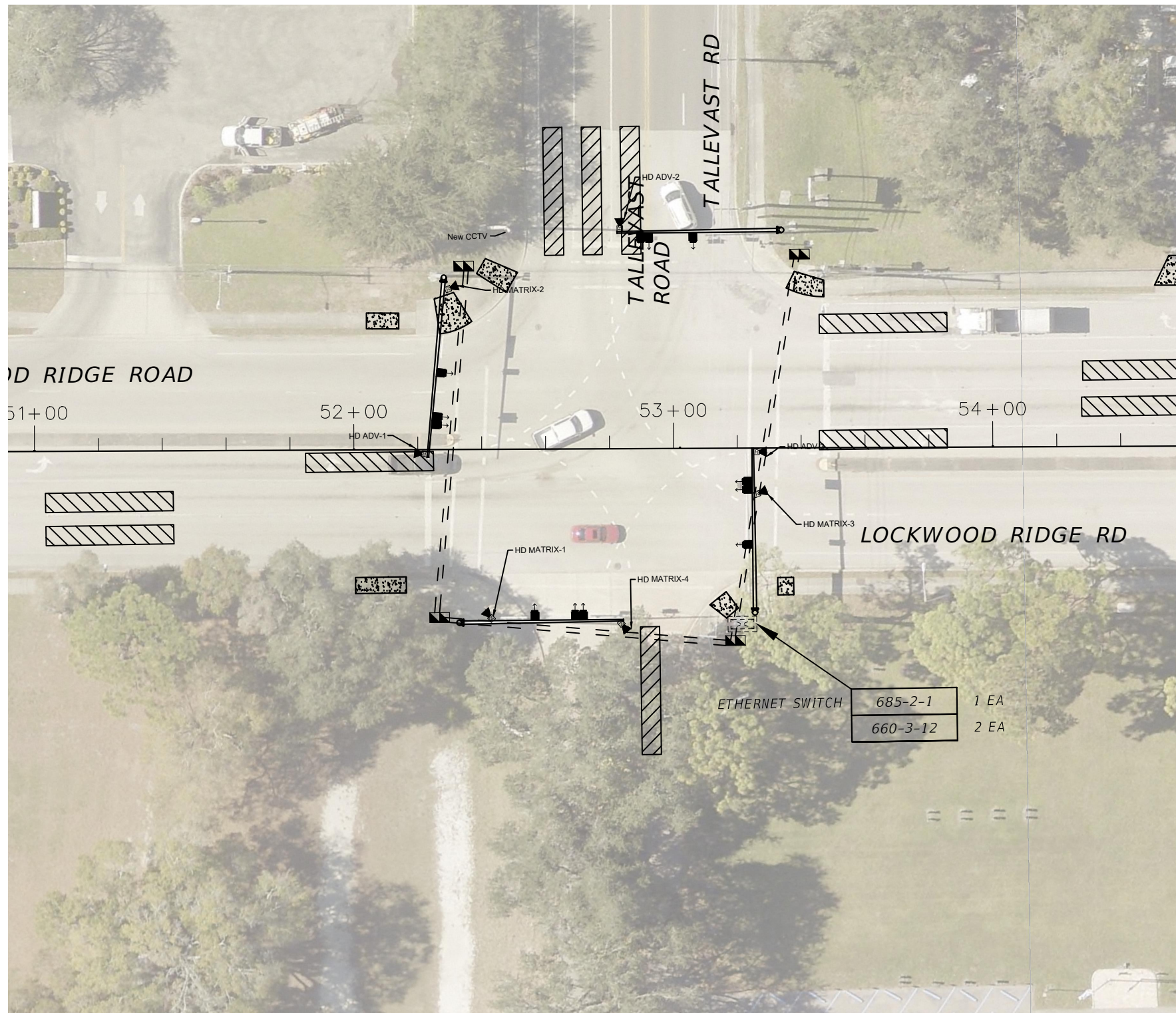
MICROWAVE VEHICLE DETECTION ASSIGNMENTS

MICROWAVE DETECTION	DETECTION ZONE	DELAY TIME (SEC)
HD MATRIX 1	DZ-1 NBL	2
	DZ-6 NB	
HD MATRIX 2	DZ-8 EBL	8
	DZ-8 EBL-T	8
	DZ-8 EBR	8
HD MATRIX 3	DZ-2 SB	
	DZ-5 SBL	2
HD MATRIX 4	DZ-4 WB	8
HD ADV 1	DZ-6 NBA	
HD ADV 2	DZ-2 SBA	

- NOTES:
- MICROWAVE DETECTION SENSOR PLACEMENT IS TO BE REVIEWED BY TECHNICAL STAFF FROM THE VENDOR PRIOR TO FIELD PLACEMENT. SENSOR PLACEMENT MAY NEED ADJUSTMENTS DUE TO FIELD CONDITIONS.
 - DESIGN SPEED FOR LOCKWOOD RIDGE ROAD (MAJOR STREET) IS 40 MPH AND COMMERCIAL DRIVEWAYS (MINOR STREET) IS 20 MPH.

INSTALL SIGN 4
950 FEET SOUTH OF STOP BAR

**Tallevast Rd
NEXT SIGNAL**



NUMBER	DESCRIPTION	DATE	PROJECT #	858-6107960	SURVEYED	---	---
			SURVEY #		DESIGNED	---	---
			SEC./TWN./RGE		DRAWN	DM	3/23/22
			SCALE	AS SHOWN	CHECKED	NB	3/25/22

NEIL BYRNE, P.E.
FLORIDA P.E. # 86905

Signature & Date



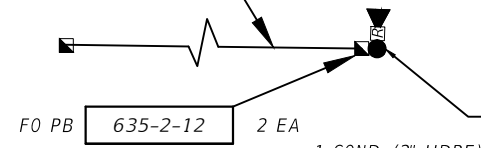
PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East, Bradenton, FL 34208

**LOCKWOOD RIDGE ROAD REBASE
TRAFFIC SIGNAL PLANS**
LOCKWOOD RIDGE RD * TALLEVAST RD

SHEET NO.
T-6

\\boc\dfs\p\wd_traffic\Traffic_Share\Plan_Review\Project_Folder\Lockwood Ridge - Rebase and Resurfacing - 56th Ave Ter E - University Pkwy\Design\Cadd\Lockwood-TS.dwg [4/19/2022 4:12 PM]

1 COND. (2" HDPE) 630-2-11 1200 LF
 MULTI-CONDUCTOR CABLE 633-8-1 1200 LF



DESCRIPTION	QUANTITY	ITEM #	LENGTH
1 COND. (2" HDPE)	10 LF	630-2-11	
1 COND. (2" HDPE) ABOVE GROUND (2" RISER)	10 FT	630-2-14	
MULTI-CONDUCTOR CABLE	50 LF	633-8-1	
TYPE P-III CONC POLE	1 EA	641-2-13	
	1 EA	660-3-11	
	1 EA	676-3-10	

MVDS DATA COLLECTION SITE: 2 EA

- WHITFIELD AVE (1200 FEET EAST OF LOCKWOOD RIDGE RD)
- WHITFIELD AVE (1200 FEET WEST OF LOCKWOOD RIDGE RD)

FINAL LOCATIONS TO BE FIELD VERIFIED WITH MANATEE COUNTY TRAFFIC ENGINEERING STAFF PRIOR TO CONSTRUCTION

NOTE:

FINAL LOCATION OF NEXT SIGNAL SIGNS TO BE FIELD VERIFIED WITH MANATEE COUNTY TRAFFIC ENGINEERING STAFF PRIOR TO CONSTRUCTION

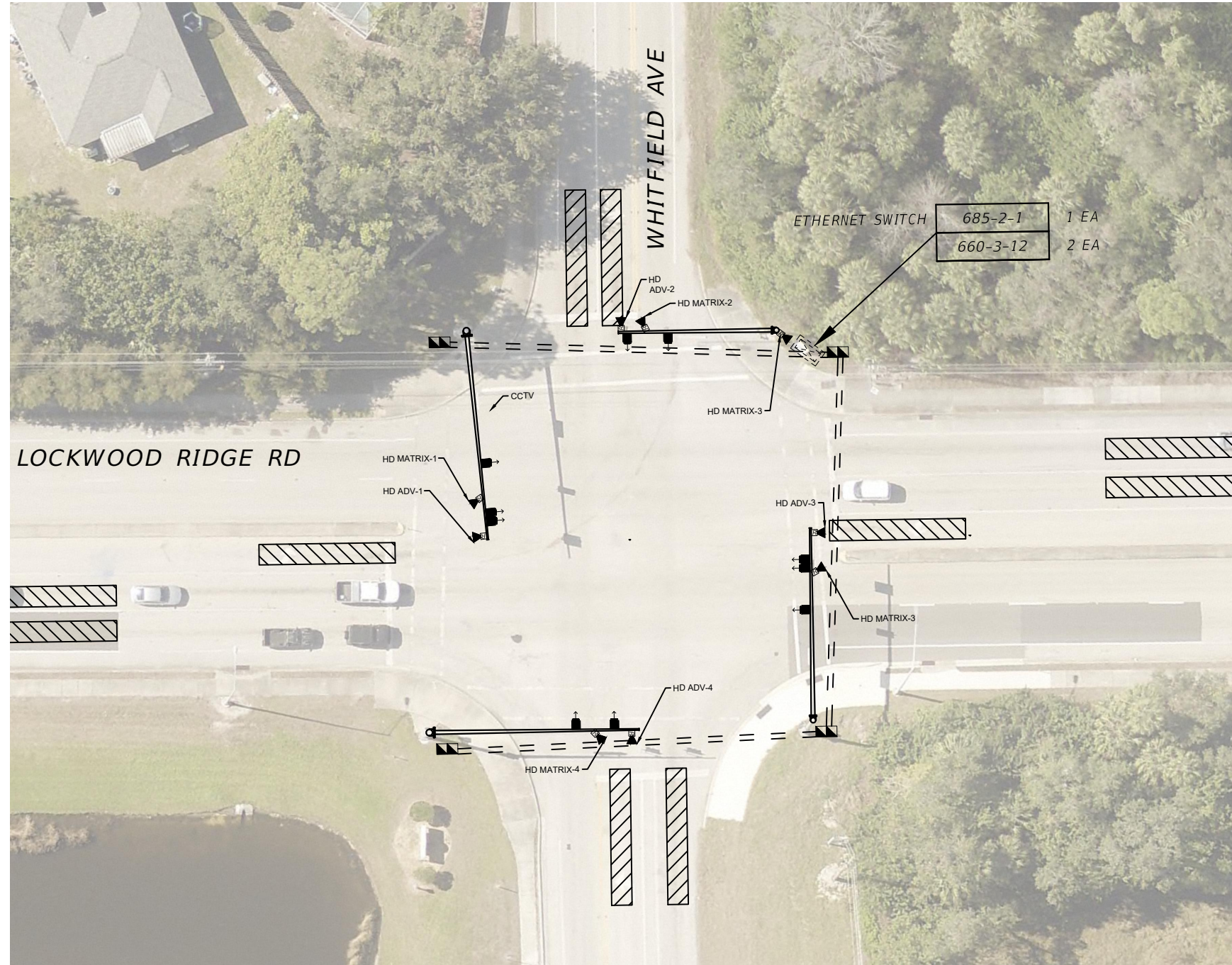
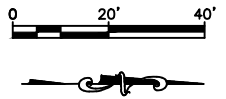
MICROWAVE VEHICLE DETECTION ASSIGNMENTS		
MICROWAVE DETECTION	DETECTION ZONE	DELAY TIME (SEC)
HD MATRIX 1	DZ-1 NBL	2
	DZ-6 NB	
HD MATRIX 2	DZ-8 EBL	8
	DZ-8 EB	8
HD MATRIX 3	DZ-2 SB	
	DZ-5 SBL	2
HD MATRIX 4	DZ-4 WBL	8
	DZ-4 WB	8
HD ADV 1	DZ-6 NBA	
HD ADV 2	DZ-8 EBA	
HD ADV 3	DZ-2 SBA	
HD ADV 4	DZ-4 WBA	

NOTES:

- MICROWAVE DETECTION SENSOR PLACEMENT IS TO BE REVIEWED BY TECHNICAL STAFF FROM THE VENDOR PRIOR TO FIELD PLACEMENT. SENSOR PLACEMENT MAY NEED ADJUSTMENTS DUE TO FIELD CONDITIONS.
- DESIGN SPEED FOR LOCKWOOD RIDGE ROAD (MAJOR STREET) IS 40 MPH AND COMMERCIAL DRIVEWAYS (MINOR STREET) IS 20 MPH.

**Lockwood Ridge Rd
NEXT SIGNAL**

INSTALL SIGN 2
1625 FEET
WEST OF STOP BAR



**Whitfield Ave
NEXT SIGNAL**

INSTALL SIGN 7
995 FEET
NORTH OF STOP BAR

**Whitfield Ave
NEXT SIGNAL**

INSTALL SIGN 7
950 FEET
SOUTH OF STOP BAR

**Lockwood Ridge Rd
NEXT SIGNAL**

INSTALL SIGN 1
1075 FEET
EAT OF STOP BAR

NUMBER	DESCRIPTION	DATE	PROJECT #	858-6107960	SURVEYED	DESIGNED	DRAWN	CHECKED

NEIL BYRNE, P.E.
FLORIDA P.E. # 86905

Signature & Date

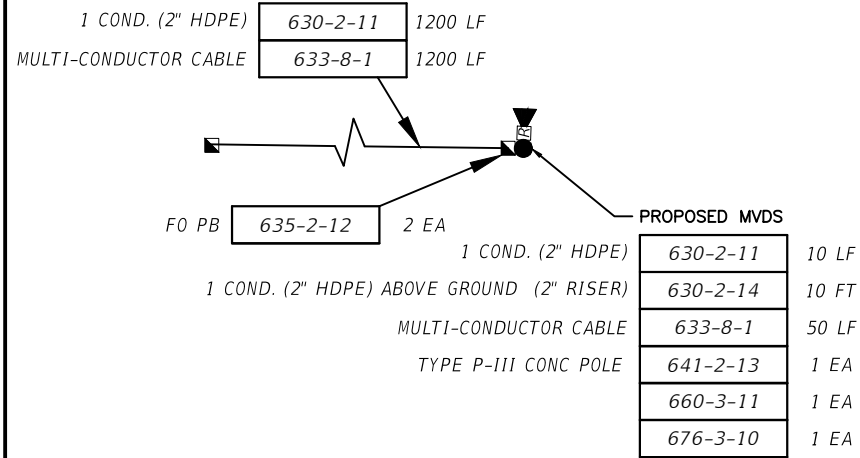


PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East, Bradenton, FL 34208

LOCKWOOD RIDGE ROAD REBASE
TRAFFIC SIGNAL PLANS
LOCKWOOD RIDGE RD @ WHITFIELD AVE

SHEET NO.
T-7

\\boc\dfs\p\wd_traffic\Share\Traffic_Engineering_Share\Plan_Review\Project\Folder\Lockwood Ridge - Rebase and Resurfacing - 56th Ave Ter E - University Pkwy\Design\Cadd\Lockwood-TS.dwg [4/19/2022 4:12 PM]



MVDS DATA COLLECTION SITE: 3 EA

- HONORE AVE (1200 FEET EAST OF LOCKWOOD RIDGE RD)
- 63RD AVE E (1200 FEET WEST OF LOCKWOOD RIDGE RD)
- LOCKWOOD RIDGE RD (1200 FEET NORTH OF HONORE AVE)

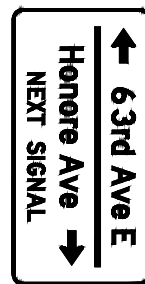
FINAL LOCATIONS TO BE FIELD VERIFIED WITH MANATEE COUNTY TRAFFIC ENGINEERING STAFF PRIOR TO CONSTRUCTION

NOTE:

FINAL LOCATION OF NEXT SIGNAL SIGNS TO BE FIELD VERIFIED WITH MANATEE COUNTY TRAFFIC ENGINEERING STAFF PRIOR TO CONSTRUCTION

MICROWAVE VEHICLE DETECTION ASSIGNMENTS		
MICROWAVE DETECTION	DETECTION ZONE	DELAY TIME (SEC)
HD MATRIX 1	DZ-1 NBL	2
	DZ-6 NB	
HD MATRIX 2	DZ-3 EBL	3
	DZ-8 EB	8
HD MATRIX 3	DZ-2 SB	
	DZ-5 SBL	2
HD MATRIX 4	DZ-4 WB	8
	DZ-7 WBL	3
HD ADV 1	DZ-6 NBA	
HD ADV 2	DZ-8 EBA	
HD ADV 3	DZ-2 SBA	
HD ADV 4	DZ-4 WBA	

INSTALL SIGN 6
1020 FEET
EAST OF STOP BAR

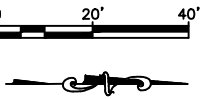


NOTES:

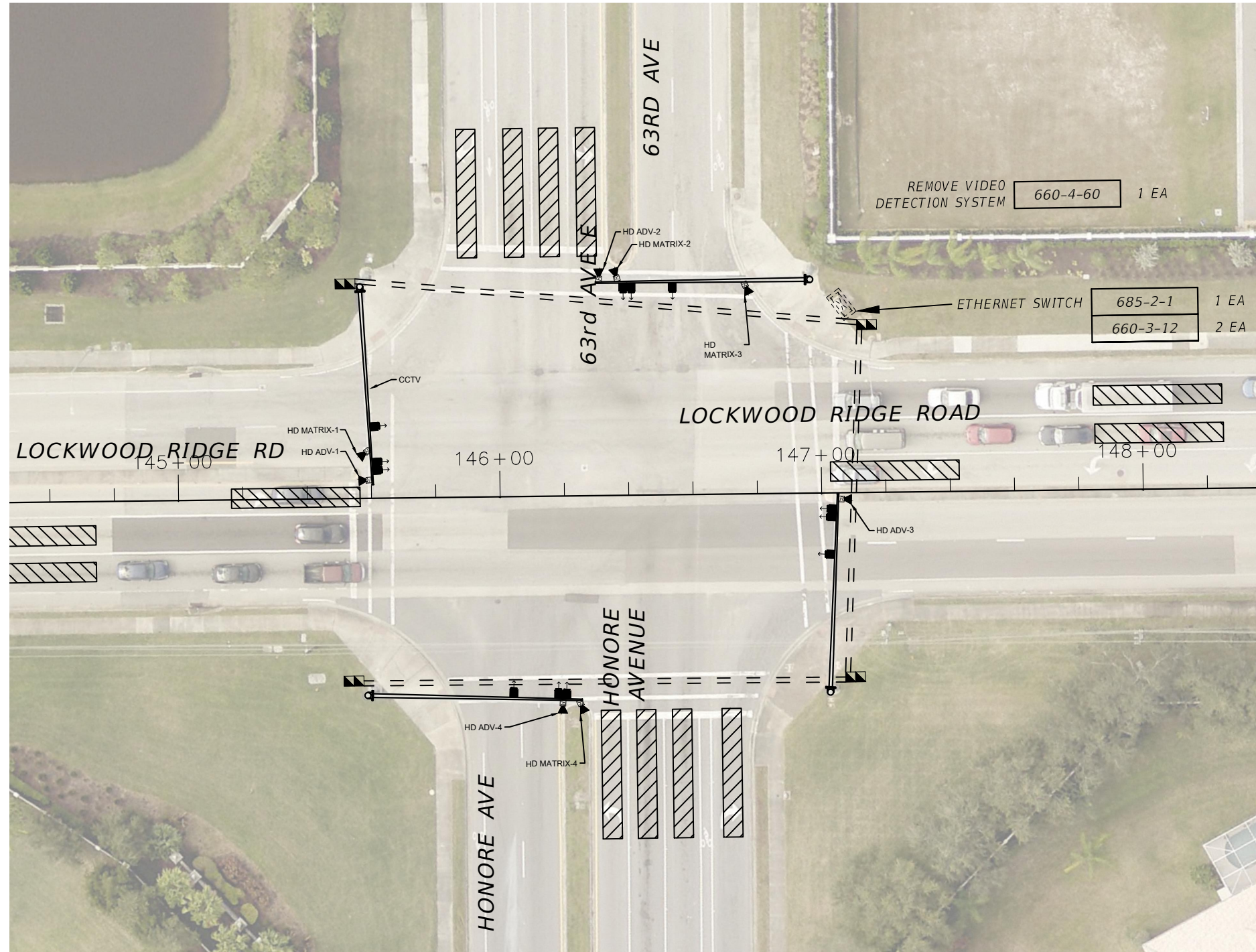
- MICROWAVE DETECTION SENSOR PLACEMENT IS TO BE REVIEWED BY TECHNICAL STAFF FROM THE VENDOR PRIOR TO FIELD PLACEMENT. SENSOR PLACEMENT MAY NEED ADJUSTMENTS DUE TO FIELD CONDITIONS.
- DESIGN SPEED FOR LOCKWOOD RIDGE ROAD (MAJOR STREET) IS 40 MPH AND COMMERCIAL DRIVEWAYS (MINOR STREET) IS 20 MPH.



INSTALL SIGN 2
1150 FEET
WEST OF STOP BAR
IN MEDIAN



INSTALL SIGN 5
950 FEET
NORTH OF STOP BAR



INSTALL SIGN 1
1100 FEET
EAST OF STOP BAR

NUMBER	DESCRIPTION	DATE	PROJECT #	858-6107960	SURVEYED	DESIGNED	DRAWN	CHECKED

NEIL BYRNE, P.E.
FLORIDA P.E. # 86905

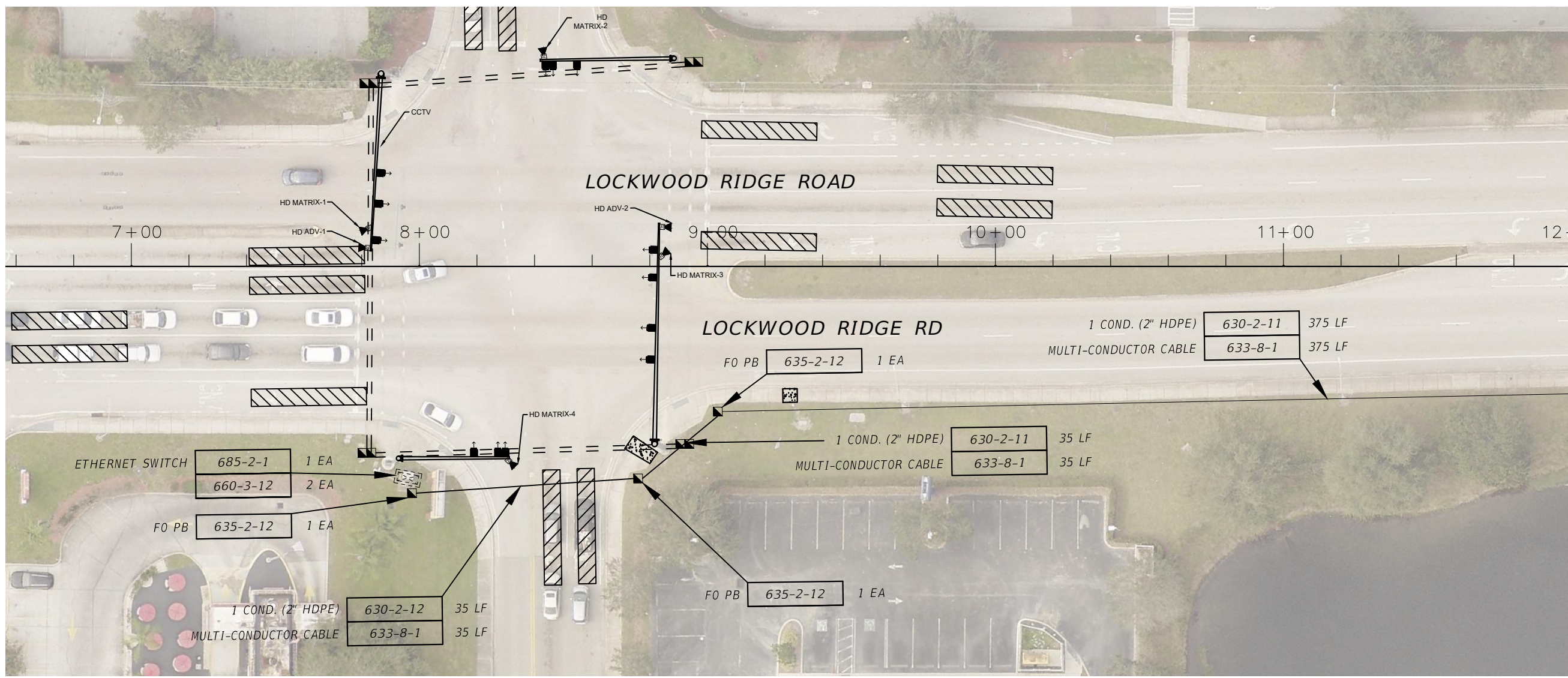
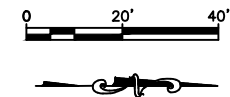
Signature & Date



PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East, Bradenton, FL 34208

LOCKWOOD RIDGE ROAD REBASE
TRAFFIC SIGNAL PLANS
LOCKWOOD RIDGE RD * HONORE AVE

SHEET NO.
T-8



MATCH LINE STA. 12+00

\\boc\dfs\p\wd_traffic\Share\Traffic_Engineering_Share\Plan Review\Project Folder\Lockwood Ridge - Rebase and Resurfacing - 56th Ave Ter E - University Pkwy\Design\Cadd\Lockwood-TS.dwg [4/19/2022 4:12 PM]

NUMBER	DESCRIPTION	DATE	PROJECT #	858-6107960	SURVEYED	---	---
			SURVEY #		DESIGNED	---	---
			SEC./TWN./RGE		DRAWN	DM	3/23/22
			SCALE	AS SHOWN	CHECKED	NB	3/25/22

NEIL BYRNE, P.E.
FLORIDA P.E. # 86905

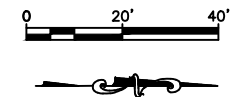
Signature & Date



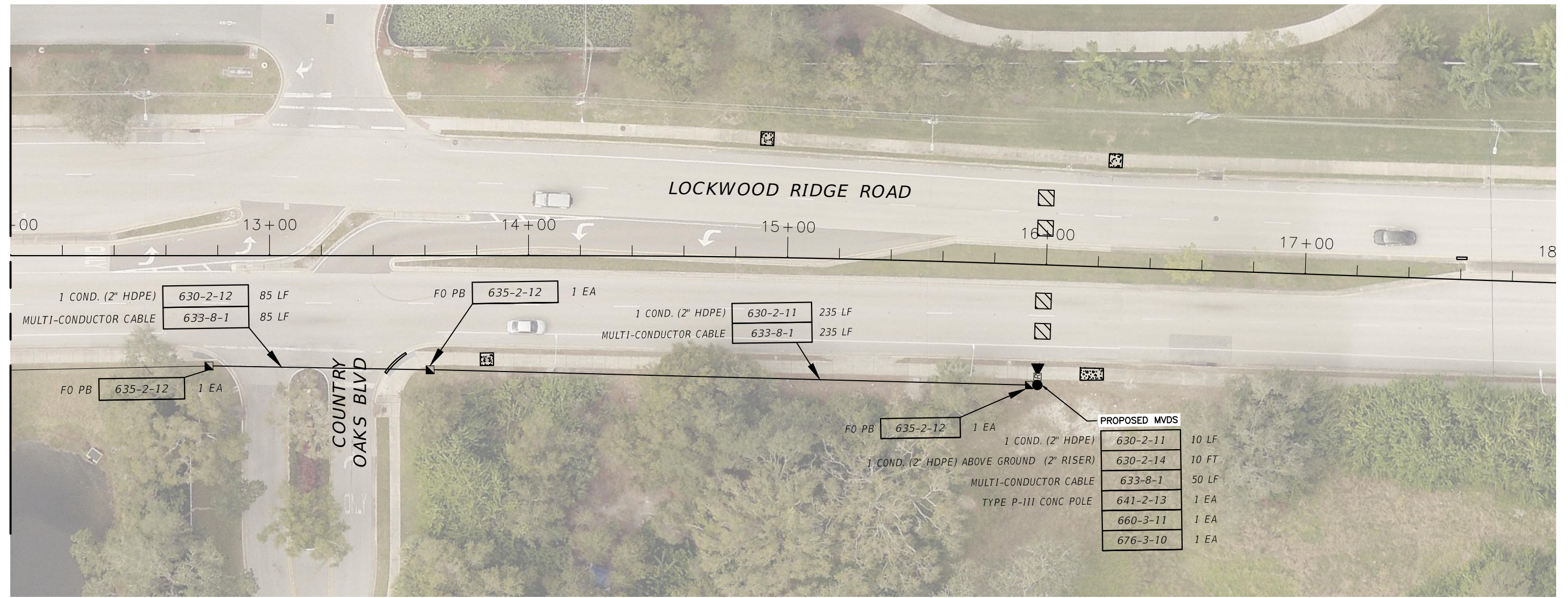
PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East, Bradenton, FL 34208

LOCKWOOD RIDGE ROAD REBASE
TRAFFIC SIGNAL PLANS
MVDS SITE

SHEET NO.
T-9




MATCH LINE STA. 12+00



NUMBER	DESCRIPTION	DATE	PROJECT #	858-6107960	SURVEYED	---	---
			SURVEY #		DESIGNED	---	---
			SEC./TWN./RGE		DRAWN	DM	3/23/22
			SCALE	AS SHOWN	CHECKED	NB	3/25/22

NEIL BYRNE, P.E.
FLORIDA P.E. # 86905

Signature & Date



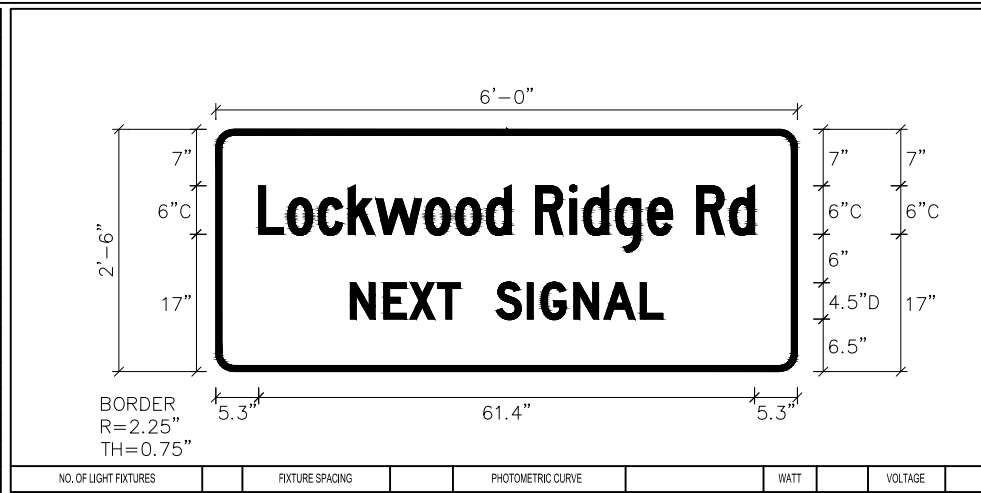
**PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES**
1022 26th Avenue East, Bradenton, FL 34208

*LOCKWOOD RIDGE ROAD REBASE
TRAFFIC SIGNAL PLANS
MVDS SITE*

SHEET NO.
T-10

\\boc\dfs\PWD_Traffic_Share\Traffic_Engineering_Share\Plan Review\Project Folder\Lockwood Ridge - Rebase and Resurfacing - 56th Ave Ter E - University Pkwy\Design\Cadd\Lockwood-TS.dwg [4/19/2022 4:12 PM]

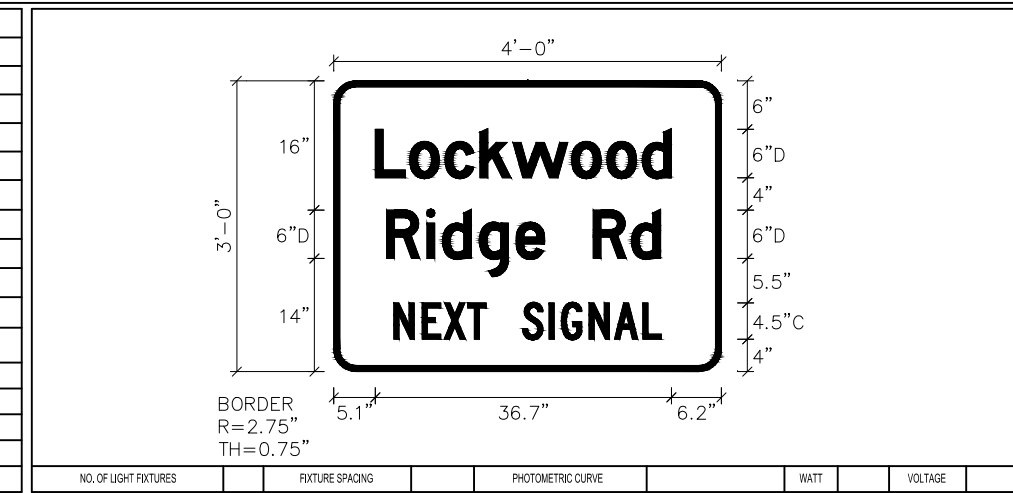
SIGN NAME	D3-2 (2 L ₁ Q ₁) 1		SIGN NUMBER	1	STATION(S)	none
PANEL	BORDER					
WIDTH	6'-0"	WIDTH	0.75"			
HEIGHT	2'-6"	RADII	2.25"			
LEGEND	White	COLOR	White			
COLOR	Green					
SYMBOL(S)	ANGLE	X	Y	WID	HT	
SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge Of Lane	COLUMN SIZE		AVERAGE LENGTH	



NO. OF LIGHT FIXTURES	FIXTURE SPACING	PHOTOMETRIC CURVE	WATT	VOLTAGE

COPY	L	o	c	k	w	o	o	d	R	i	d	g	e	R	d	L
SPACE	5.3	8.9	12.7	16.4	19.8	26	29.7	33.5	39.6	43.8	45.6	49.5	53.5	59.5	63.6	61.4
COPY	N	E	X	T	S	I	G	N	A	L	L					
SPACE	16.7	20.8	24	27.5	30.2	34.7	38.6	40.3	44.3	48.1	52.6	38.7				
COPY																
SPACE																
COPY																
SPACE																
COPY																
SPACE																

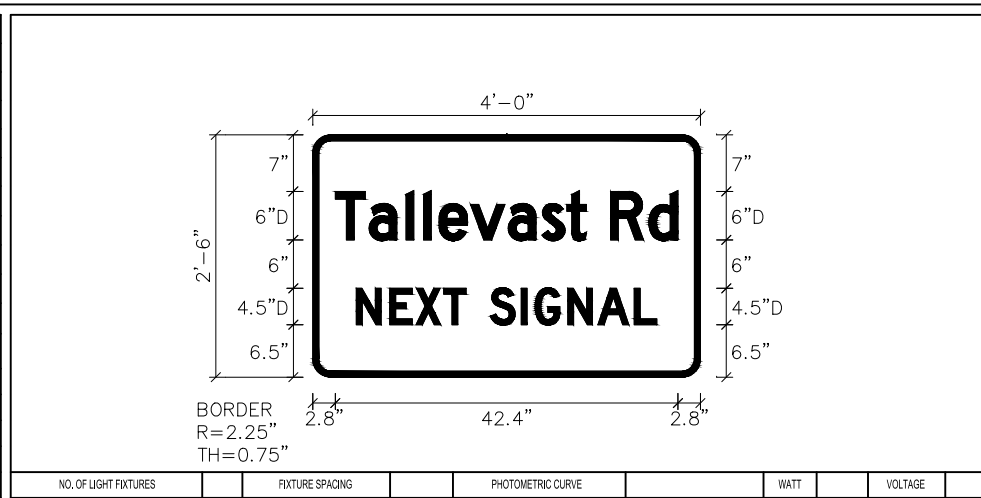
SIGN NAME	D3-2 (3 L ₁ Q ₁) 1		SIGN NUMBER	2	STATION(S)	none
PANEL	BORDER					
WIDTH	4'-0"	WIDTH	0.75"			
HEIGHT	3'-0"	RADII	2.75"			
LEGEND	White	COLOR	White			
COLOR	Green					
SYMBOL(S)	ANGLE	X	Y	WID	HT	
SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge Of Lane	COLUMN SIZE		AVERAGE LENGTH	



NO. OF LIGHT FIXTURES	FIXTURE SPACING	PHOTOMETRIC CURVE	WATT	VOLTAGE

COPY	L	o	c	k	w	o	o	d	L							
SPACE	5.1	9.4	13.8	18.1	22.2	29.4	33.8	38.2	36.7							
COPY	R	i	d	g	e	R	d	L								
SPACE	6.6	11.5	13.5	18	22.6	32.1	36.9	33.9								
COPY	N	E	X	T	S	I	G	N	A	L	L					
SPACE	7.4	10.9	13.6	16.6	18.9	23.4	26.7	28.2	31.6	34.8	38.3	33.1				
COPY																
SPACE																
COPY																
SPACE																
COPY																
SPACE																

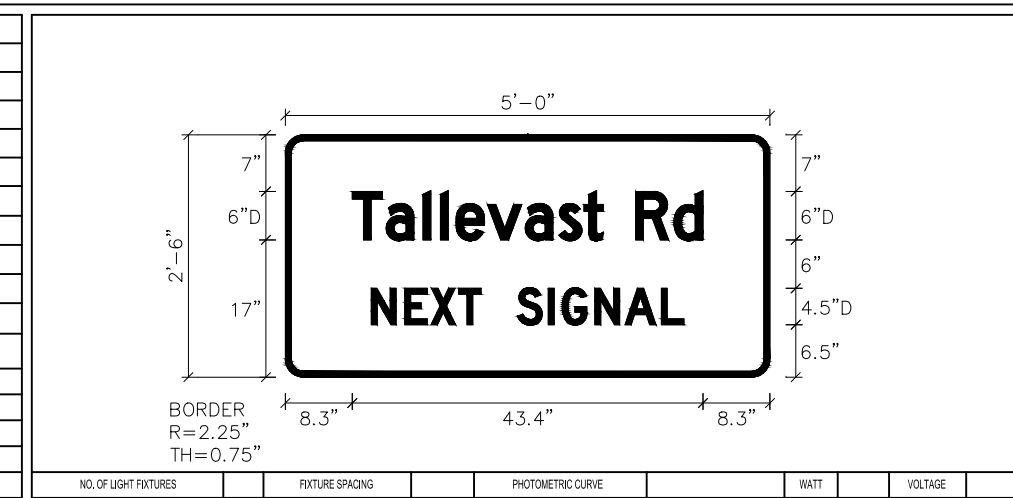
SIGN NAME	D3-2 (2 L ₁ Q ₁) 1		SIGN NUMBER	3	STATION(S)	none
PANEL	BORDER					
WIDTH	4'-0"	WIDTH	0.75"			
HEIGHT	2'-6"	RADII	2.25"			
LEGEND	White	COLOR	White			
COLOR	Green					
SYMBOL(S)	ANGLE	X	Y	WID	HT	
SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge Of Lane	COLUMN SIZE		AVERAGE LENGTH	



NO. OF LIGHT FIXTURES	FIXTURE SPACING	PHOTOMETRIC CURVE	WATT	VOLTAGE

COPY	T	a	i	i	e	v	a	s	t	R	d	L				
SPACE	2.8	7	11.6	13.7	15.6	19.5	24.2	28.4	31.5	36.9	41.6	42.4				
COPY	N	E	X	T	S	I	G	N	A	L	L					
SPACE	5.4	9.5	12.8	16.2	22	25.8	27.5	31.6	35.3	39.8	37.2					
COPY																
SPACE																
COPY																
SPACE																
COPY																
SPACE																

SIGN NAME	D3-2 (2 L ₁ Q ₁) 1		SIGN NUMBER	4	STATION(S)	none
PANEL	BORDER					
WIDTH	5'-0"	WIDTH	0.75"			
HEIGHT	2'-6"	RADII	2.25"			
LEGEND	White	COLOR	White			
COLOR	Green					
SYMBOL(S)	ANGLE	X	Y	WID	HT	
SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge Of Lane	COLUMN SIZE		AVERAGE LENGTH	



NO. OF LIGHT FIXTURES	FIXTURE SPACING	PHOTOMETRIC CURVE	WATT	VOLTAGE


COPY	T	a	i	i	e	v	a	s	t	R	d	L				
SPACE	8.3	12.5	17	19.2	21.1	25	29.7	33.9	37	43.4	48.1	43.4				
COPY	N	E	X	T	S	I	G	N	A	L	L					
SPACE	10.7	14.8	18	21.4	24.2	28.7	32.6	34.3	38.3	42.1	46.6	38.7				
COPY																
SPACE																
COPY																
SPACE																
COPY																
SPACE																

NUMBER	DESCRIPTION	DATE

PROJECT #	858-6107960	SURVEYED	---	---
SURVEY #		DESIGNED	---	---
SEC./TWN./RGE		DRAWN	DM	3/23/22
SCALE	AS SHOWN	CHECKED	NB	3/25/22

NEIL BYRNE, P.E.
FLORIDA P.E. # 86905

Signature & Date



Manatee County
FLORIDA

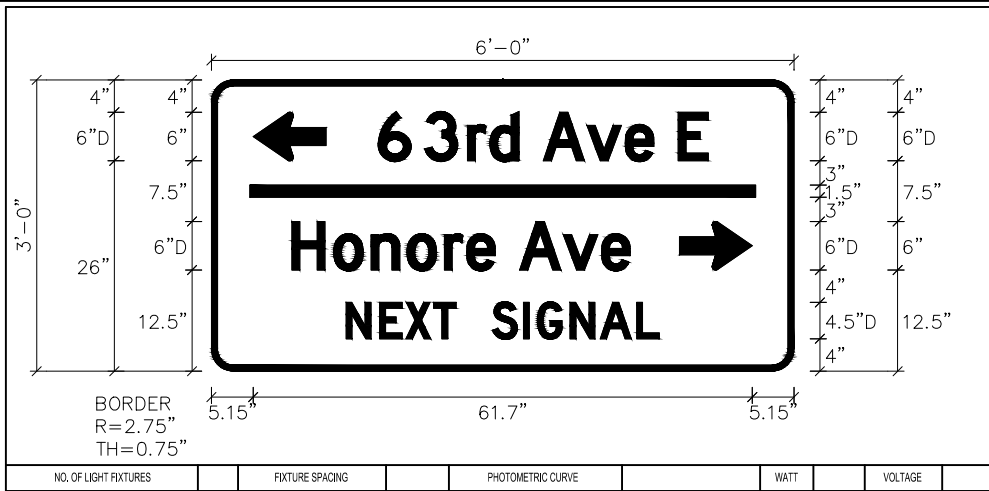
PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East, Bradenton, FL 34208

SIGN NAME	D3-2 (3 L) (2) 1		SIGN NUMBER	STATION(S)	
PANEL	BORDER		5	none	
WIDTH	6'-0"	WIDTH	0.75"		
HEIGHT	3'-0"	RADI	2.75"		
LEGEND	White	COLOR	White		
COLOR	Green				
SYMBOL(S)	ANGLE	X	Y	WID	HT
AR_Type D	90	5.2	26	6	9
AR_Type D	270	57.8	12.5	6	9
SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge of Lane	COLUMN SIZE		AVERAGE LENGTH



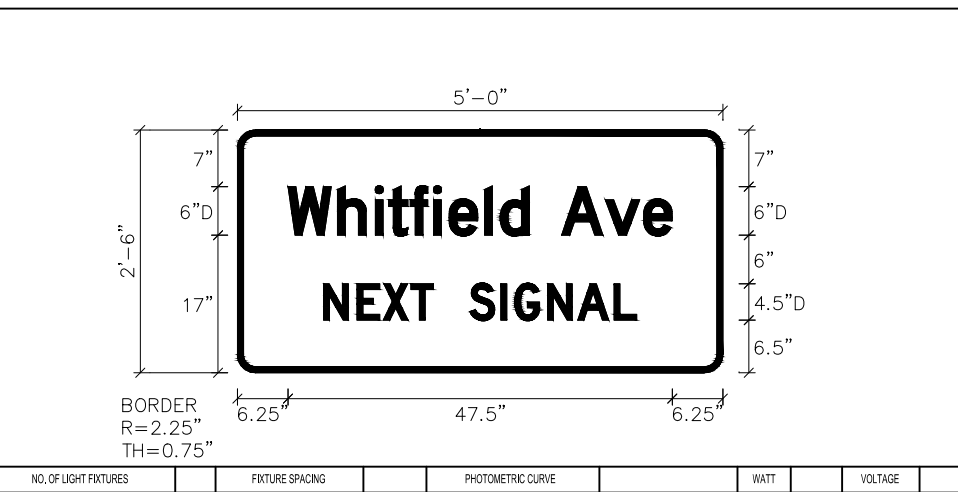
COPY	H	o	n	o	r	e	A	v	e	L		
SPACE	20.5	25.7	30.3	34.7	39.3	42.1	48.6	54	58.8	41.8		
COPY	6	3	r	d	A	v	e	E	L			
SPACE	9.6	15.3	20.6	23.4	30	35.4	40.1	46.7	40.8			
COPY	N	E	X	T	S	I	G	N	A	L	L	
SPACE	16.6	20.8	24	27.4	30.2	34.7	38.6	40.3	44.3	48.1	52.6	38.7
COPY												
SPACE												
COPY												
SPACE												
COPY												
SPACE												

SIGN NAME	D3-2 (3 L) (2) 1		SIGN NUMBER	STATION(S)	
PANEL	BORDER		6	none	
WIDTH	6'-0"	WIDTH	0.75"		
HEIGHT	3'-0"	RADI	2.75"		
LEGEND	White	COLOR	White		
COLOR	Green				
SYMBOL(S)	ANGLE	X	Y	WID	HT
AR_Type D	90	5.2	26	6	9
AR_Type D	270	57.8	12.5	6	9
SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge of Lane	COLUMN SIZE		AVERAGE LENGTH



COPY	6	3	r	d	A	v	e	E	L			
SPACE	20.6	26.4	31.6	34.4	41	46.4	51.1	57.7	40.8			
COPY	H	o	n	o	r	e	A	v	e	L		
SPACE	10	15.1	19.7	24.2	28.8	31.6	38.1	43.5	48.2	41.8		
COPY	N	E	X	T	S	I	G	N	A	L	L	
SPACE	16.6	20.8	24	27.4	30.2	34.7	38.6	40.3	44.3	48.1	52.6	38.7
COPY												
SPACE												
COPY												
SPACE												
COPY												
SPACE												

SIGN NAME	D3-2 (2 L) (2) 1		SIGN NUMBER	STATION(S)	
PANEL	BORDER		7	none	
WIDTH	5'-0"	WIDTH	0.75"		
HEIGHT	2'-6"	RADI	2.25"		
LEGEND	White	COLOR	White		
COLOR	Green				
SYMBOL(S)	ANGLE	X	Y	WID	HT
SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge of Lane	COLUMN SIZE		AVERAGE LENGTH



COPY	W	h	i	t	f	i	e	l	d	A	v	e	L
SPACE	6.3	12.4	17.1	18.7	21.4	24.2	26.2	30.5	32.5	40.1	45.5	50.2	47.5
COPY	N	E	X	T	S	I	G	N	A	L	L		
SPACE	10.6	14.8	18	21.4	24.2	28.7	32.6	34.3	38.3	42.1	46.6	38.7	
COPY													
SPACE													
COPY													
SPACE													
COPY													
SPACE													

SIGN NAME	QTY	SIGN NUMBER	STATION(S)		
PANEL	BORDER				
WIDTH	WIDTH				
HEIGHT	RADI				
LEGEND	COLOR				
COLOR					
SYMBOL(S)	ANGLE	X	Y	WID	HT
SIGN NUMBER	NUMBER OF POSTS	CLEARANCE Edge of Lane	COLUMN SIZE		AVERAGE LENGTH

COPY									
SPACE									
COPY									
SPACE									
COPY									
SPACE									
COPY									
SPACE									
COPY									
SPACE									

NUMBER	DESCRIPTION	DATE	PROJECT #	858-6107960	SURVEYED	---	---
			SURVEY #		DESIGNED	---	---
			SEC./TWN./RGE		DRAWN	DM	3/23/22
			SCALE	AS SHOWN	CHECKED	NB	3/25/22

NEIL BYRNE, P.E.
FLORIDA P.E. # 86905

Signature & Date

PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES
1022 26th Avenue East, Bradenton, FL 34208

LOCKWOOD RIDGE ROAD REBASE
TRAFFIC SIGNAL PLANS
GUIDESIGN WORKSHEETS (2)