

# COMMERCIAL AREA SIDEWALK IMPROVEMENTS - PHASE1

# TOWN OF OAK ISLAND

NCDOT WBS# 51295

REVISIONS

## SITE/CIVIL

### FINCH & ASSOCIATES

309 NORTH BOYLAN AVENUE, RALEIGH, NC 27603-1402  
TEL. (919) 833-1212  
JOHN F. WATSON, PE - LICENSE # NC 039760

## TRAFFIC

### EXULT ENGINEERING

304-F W. MILLBROOK RD, RALEIGH, NC 27609  
TEL. (984) 500-5426  
TAYLOR A. HONEYCUTT, PE - LICENSE # NC 043814

## OWNER

TOWN of OAK ISLAND  
4601 E. OAK ISLAND DR  
OAK ISLAND, NC 28465



I CO VICINITY MAP  
SCALE: NOT TO SCALE

## LEGEND

	SYMBOL	EXISTING	PROPOSED	DESCRIPTION
	—	—	—	PROPERTY LINE
	—	—	—	STREET OR DRIVEWAY
	—	—	—	SIDEWALK
	→	—	—	SWALE
	—X—	—	—	FENCE
	□ EU	—	—	ELECTRICAL UTILITY
	△ WV	—	—	WATER VALVE
	□ FH	—	—	FIRE HYDRANT
	○ MH	—	—	SANITARY SEWER MAN HOLE
	□ SD	—	—	STORM DRAIN
	□ HB	—	—	HOT BOX

## INDEX OF DRAWINGS

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C2.1	SITE PLAN
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SIG. 1.2	SIGNAL DETAILS
PM-1	PAVEMENT MARKINGS
PM-2	PAVEMENT MARKING DETAILS

## GENERAL NOTES

- ALL WORK ASSOCIATED WITH THIS SIDEWALK PROJECT IS COVERED UNDER NCDOT ENCROACHMENT AGREEMENT EO33-O10-23-00199.
- ALIGNMENT OF PROPOSED SIDEWALK IS DESIGNED TO AVOID CONFLICT WITH UTILITIES UNLESS NOTED ON PLANS.



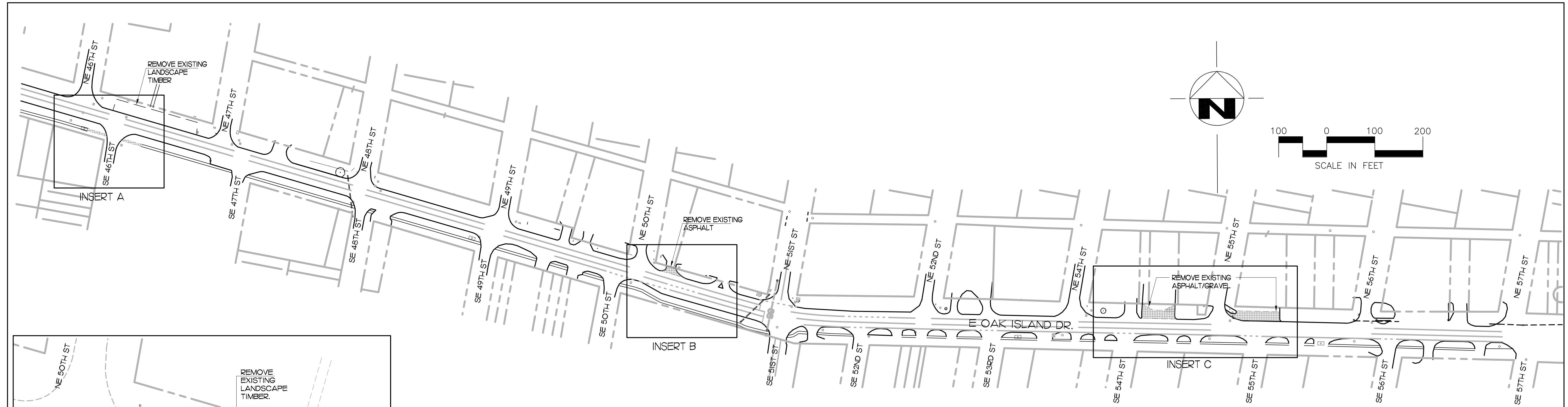
BID SET

DRAWN BY MWB  
CHECKED BY JFW  
PROJ. NO. 22066  
DATE 2/23/2024  
CO SHEET 1 OF 13

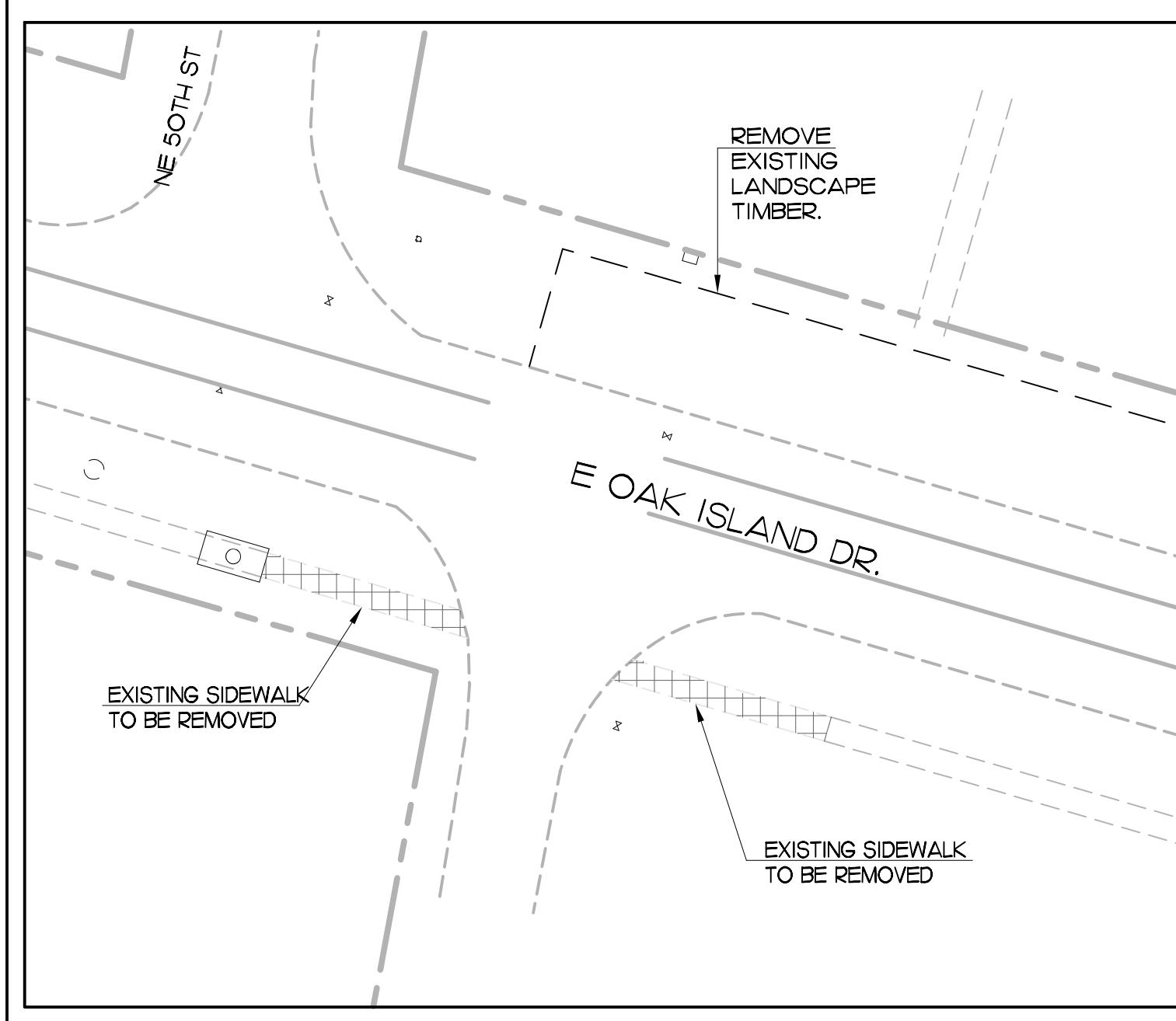
COMMERCIAL AREA SIDEWALK IMPROVEMENTS - PHASE1  
TOWN OF OAK ISLAND  
4601 E. OAK ISLAND DR.  
OAK ISLAND, NC

Finch & Associates  
309 North Boylan Avenue  
Raleigh, NC 27603-1402  
F 919 833-1212  
NBBUS Lic. No. P-1845  
NBBUL Lic. No. C-636

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EXISTING CONDITIONS PLAN  
SCALE: 1" = 100'



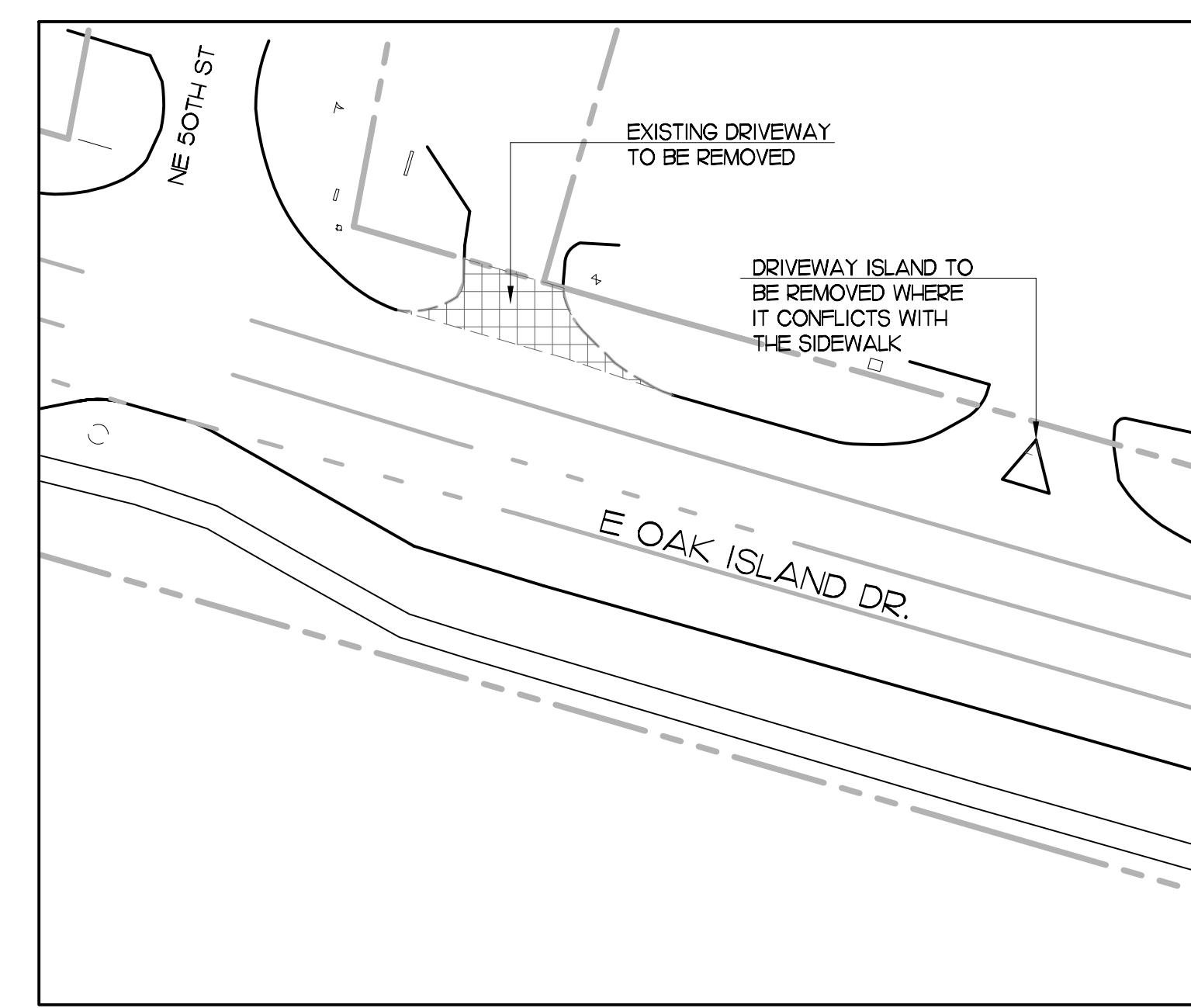
2 INSERT A  
C.I.O. SCALE 1'30'

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THE REMOVAL OR RELOCATION OF ANY UTILITIES WITH THE UTILITY OWNER.

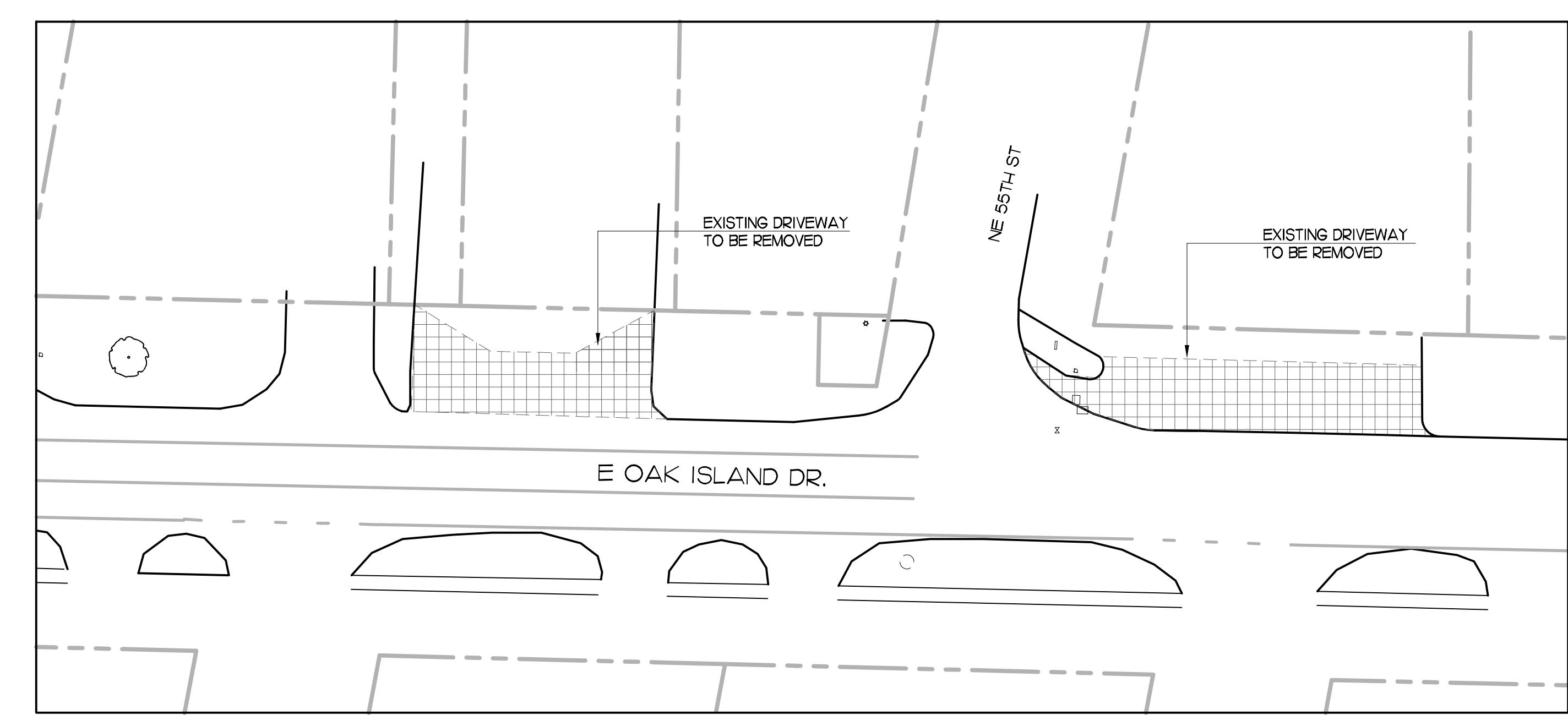
PRIOR TO ANY CONSTRUCTION ACTIVITY, UNDERGROUND UTILITY LOCATIONS SHOULD BE REQUESTED BY CALLING THE NORTH CAROLINA ONE CALL CENTER, INC. (1-800-632-4949).

#### DEMOLITION NOTES

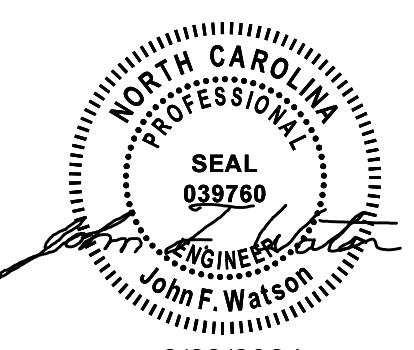
- 1) ALL APPROPRIATE SEDIMENT AND EROSION CONTROL MEASURES SHALL BE IN PLACE IN ACCORDANCE WITH NCDOT EROSION & SEDIMENT CONTROL STANDARDS.
- 2) THE CONTRACTOR SHALL REMOVE ALL TREES AND VEGETATION NECESSARY TO CONSTRUCT THE PROJECT AND NO MORE.
- 3) THE CONTRACTOR SHALL REMOVE EXISTING STRUCTURES AND PAVEMENT FROM AREAS AS SHOWN ON THIS PLAN.
- 4) THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITIES THAT ARE TO REMAIN DURING ALL DEMOLITION AND CONSTRUCTION PHASES.
- 5) ALL MATERIALS THAT ARE TO BE REMOVED SHALL BE LEGALLY DISPOSED OF OFF SITE.
- 6) THE CONTRACTOR SHALL COORDINATE WITH THE APPROPRIATE UTILITY COMPANY FOR THE REMOVAL AND/OR RELOCATION OF GAS, WATER, SEWER, ELECTRIC, TELEPHONE, AND CABLE SERVICES, ETC.
- 7) THE CONTRACTOR SHALL VISIT THE SITE AND BECOME THOROUGHLY FAMILIAR WITH THE EXISTING CONDITIONS PRIOR TO BIDDING.
- 8) THE CONTRACTOR SHALL REMOVE ALL DEBRIS FROM THE SITE. NO DEMOLITION MATERIALS ARE TO BE SOLD BY THE CONTRACTOR ON SITE.
- 9) THE CONTRACTOR SHALL FOLLOW ALL APPLICABLE LOCAL, STATE, AND FEDERAL CODES AND REQUIREMENTS WHEN REMOVING OR RELOCATING ANY UTILITY SERVICES.



3 INSERT B  
C.I.O. SCALE 1'30'

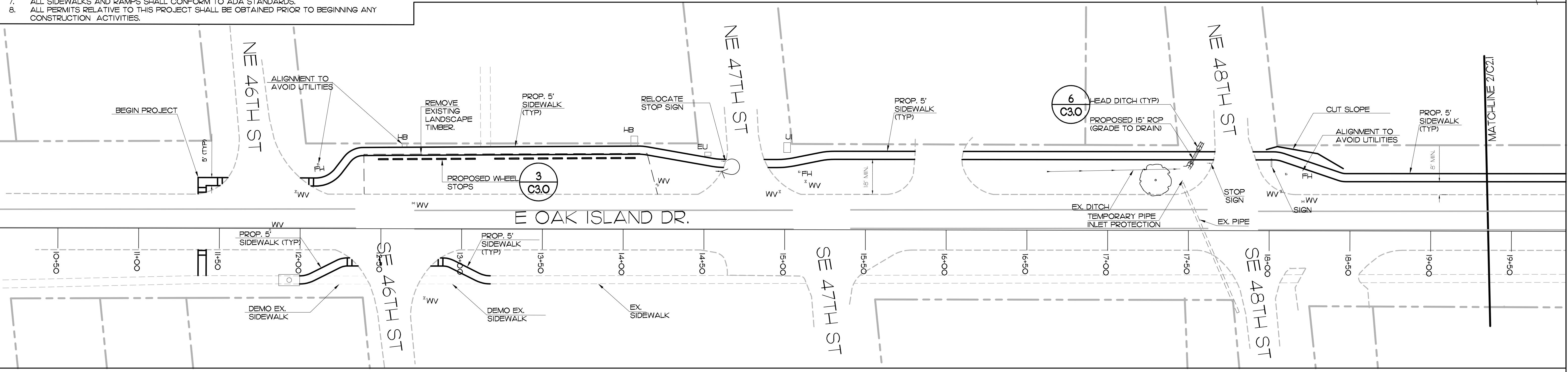


4 INSERT C  
C.I.O. SCALE 1' = 30'

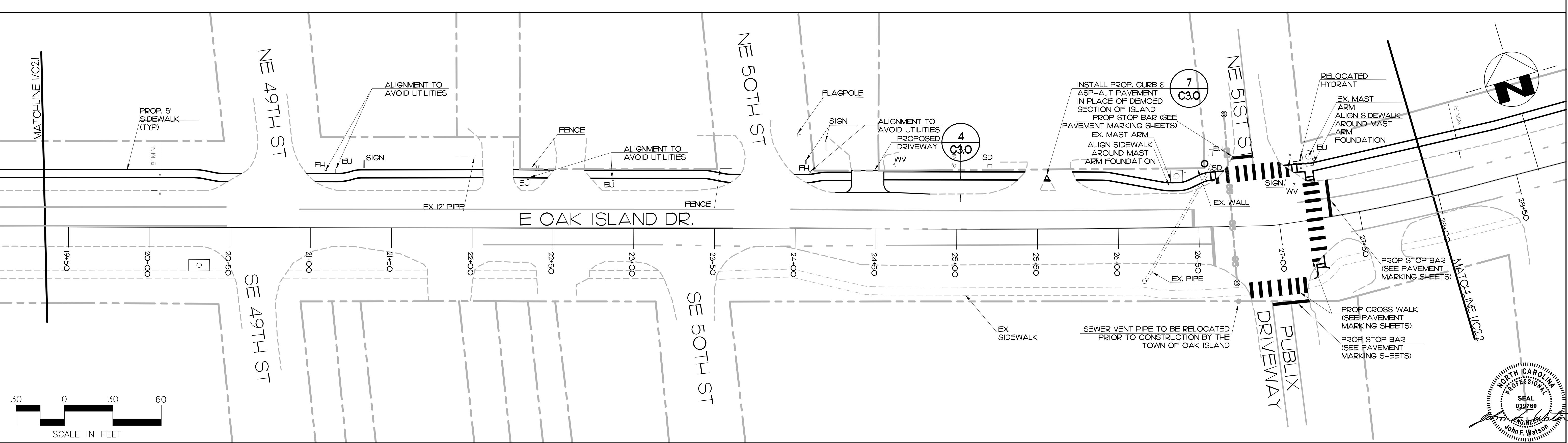


## GENERAL PROJECT NOTES

1. BOUNDARIES SHOWN HEREIN ARE TAKEN FROM PUBLICLY AVAILABLE GIS DATA, AERIAL IMAGERY & FIELD MEASUREMENTS. CONTRACTOR SHALL VERIFY EXISTING INFORMATION PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES.
2. ALL DIMENSIONS AND STAKING POINTS ARE TO BACK OF CURB UNLESS NOTED OTHERWISE.
3. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND GRADES AT THE SITE AND SHALL IMMEDIATELY REPORT ANY DISCREPANCIES TO THE ENGINEER FOR ADJUSTMENT.
4. THE CONTRACTOR SHALL VERIFY SITE SOIL CONDITIONS AND NOTIFY THE ENGINEER OF THE PRESENCE OF ANY UNSUITABLE SOILS.
5. LOCATIONS FOR EXISTING UTILITIES SHOWN ON THESE PLANS ARE APPROXIMATE ONLY. CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL UTILITIES AND SHALL BE RESPONSIBLE FOR ANY DAMAGE TO SAME. SEE GRADING NOTES ON THE DRAWINGS FOR ADDITIONAL REQUIREMENTS AND PRECAUTIONS.
6. CONTRACTOR SHALL AT ALL TIMES MAINTAIN ADEQUATE SAFETY MEASURES, ACTIVITIES, AND BARRICADES FOR THE PROTECTION OF ALL PERSONS ON OR ABOUT THE LOCATION OF THE SITE.
7. ALL SIDEWALKS AND RAMPS SHALL CONFORM TO ADA STANDARDS.
8. ALL PERMITS RELATIVE TO THIS PROJECT SHALL BE OBTAINED PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITIES.



1 C2.1 SIDEWALK IMPROVEMENTS - SECTION 1  
SCALE: 1' = 30'



2 C2.1 SIDEWALK IMPROVEMENTS - SECTION 2  
SCALE: 1' = 30'

REVISIONS

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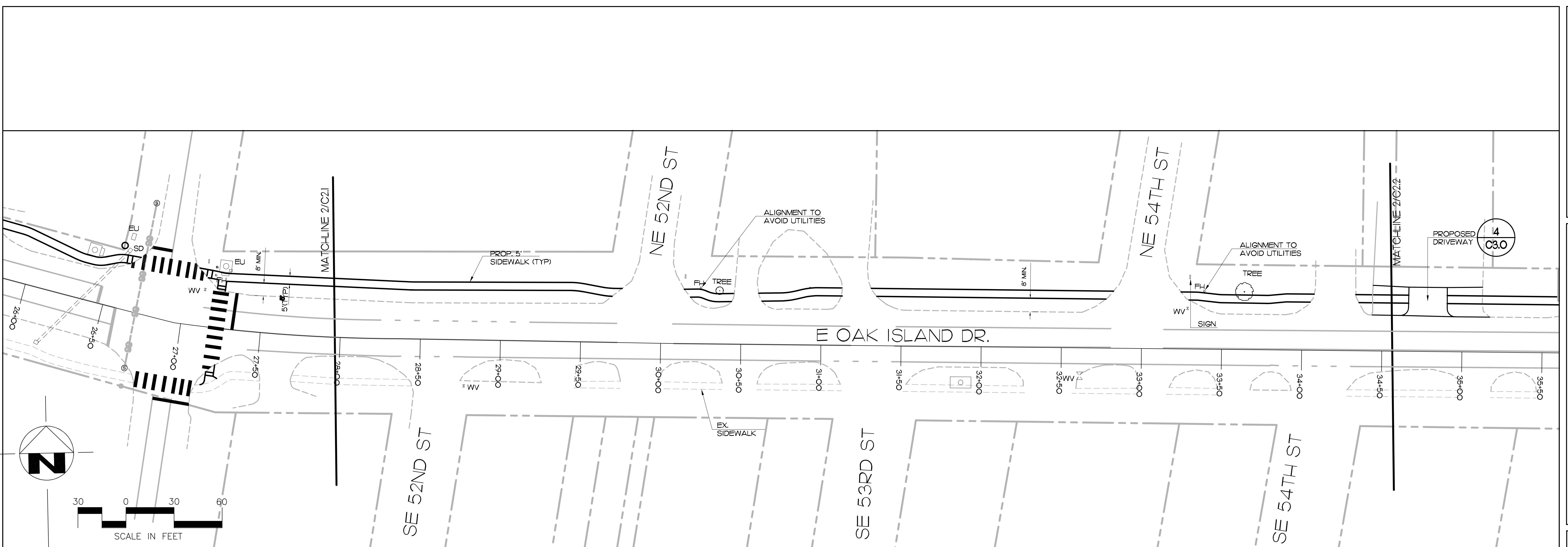
FINCH  
FINCH & ASSOCIATES

COMMERCIAL AREA SIDEWALK IMPROVEMENTS - PHASE 1  
4601 E. OAK ISLAND DR.  
OAK ISLAND, NC

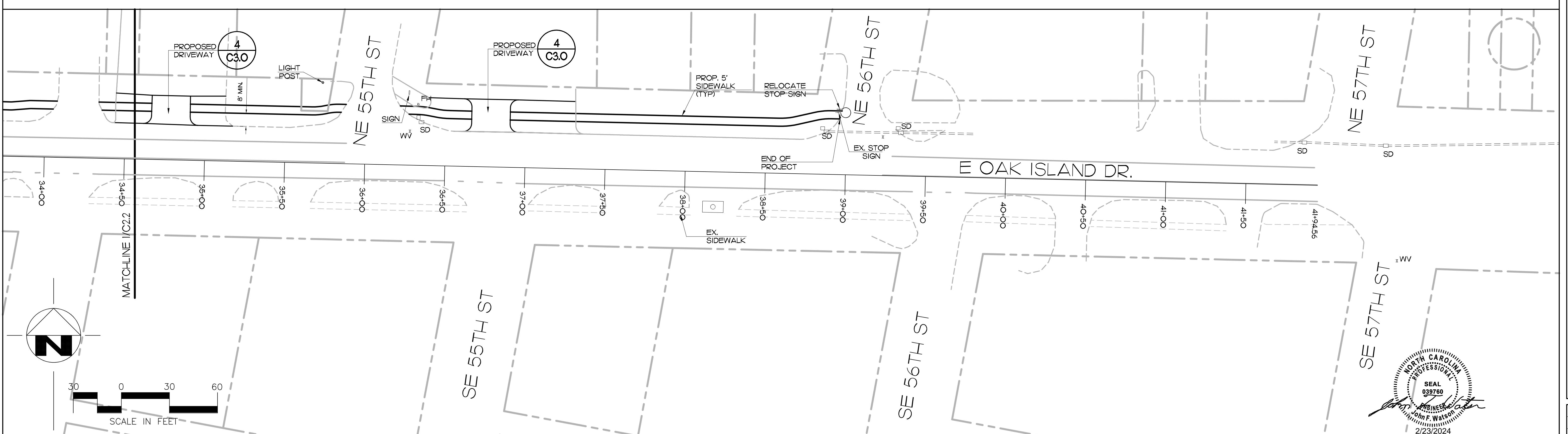
DRAWN BY: MWB  
CHECKED BY: JFW  
PROJ. NO.: 22066  
DATE: 2/23/2024

2 C2.1 SHEET 3 OF 13

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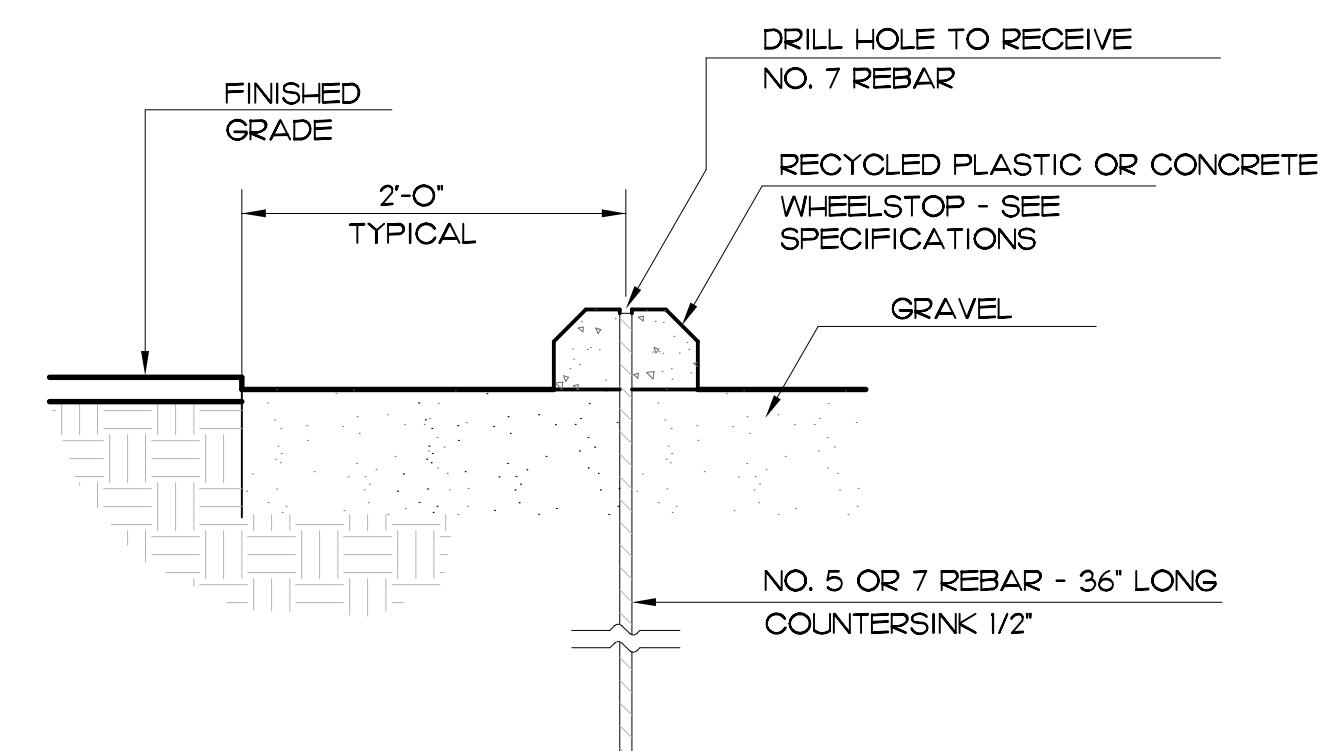
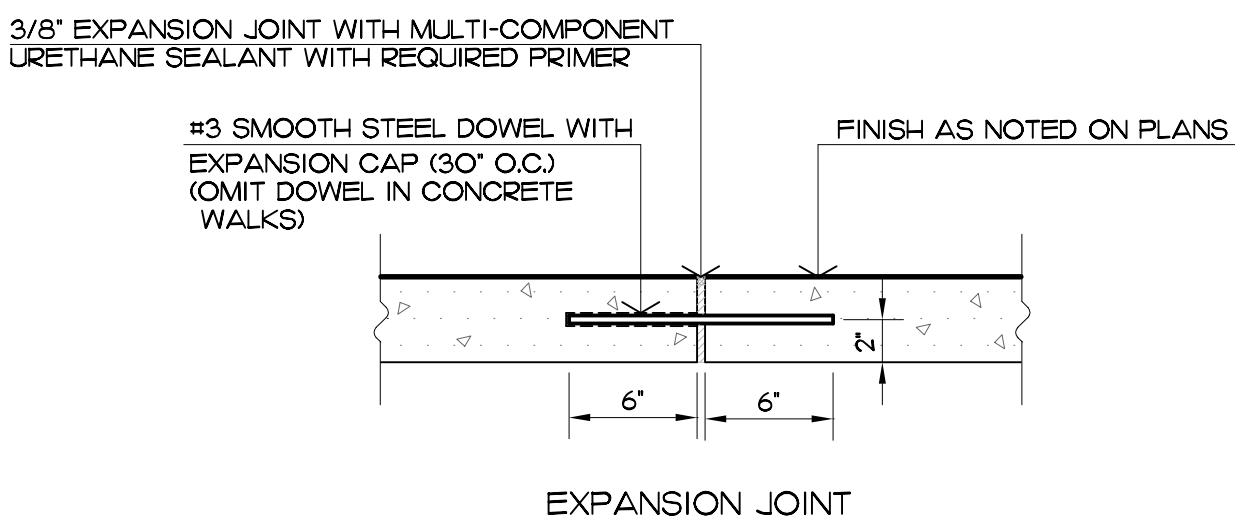
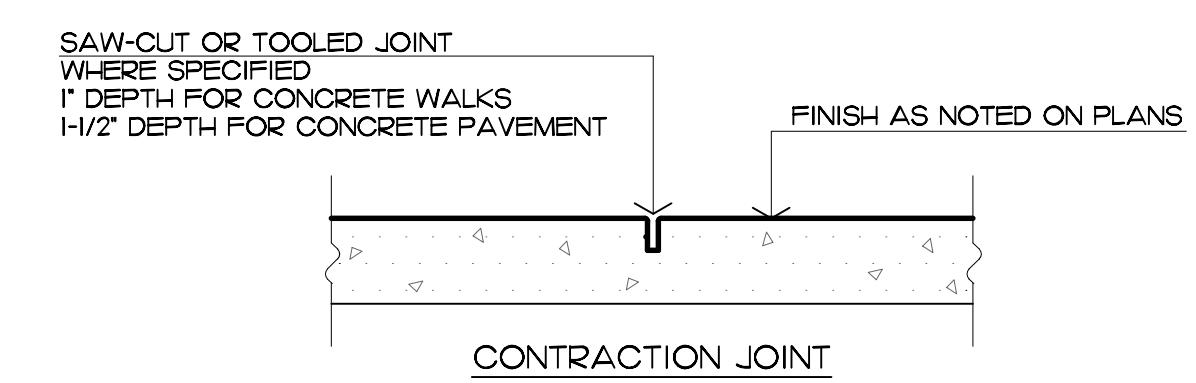
**C21** SIDEWALK IMPROVEMENTS - SECTION 3  
SCALE: 1" = 30'



### SEEDING FOR EROSION CONTROL AND PERMANENT SEEDING

- 1) CONTRACTOR SHALL ABIDE BY NCDOT STANDARDS FOR SEDIMENTATION AND EROSION CONTROL AND ESTABLISH MEASURES TO PREVENT SEDIMENT FROM LEAVING THE SITE.
- 2) ALL DISTURBED AREAS SHALL BE STABILIZED IN ACCORDANCE WITH NCDOT SOIL STABILIZATION TIMEFRAMES.
- 3) PERMANENT SEEDING SHALL UTILIZE NCDOT'S SPECIFIED SEED MIX FOR BRUNSWICK COUNTY.

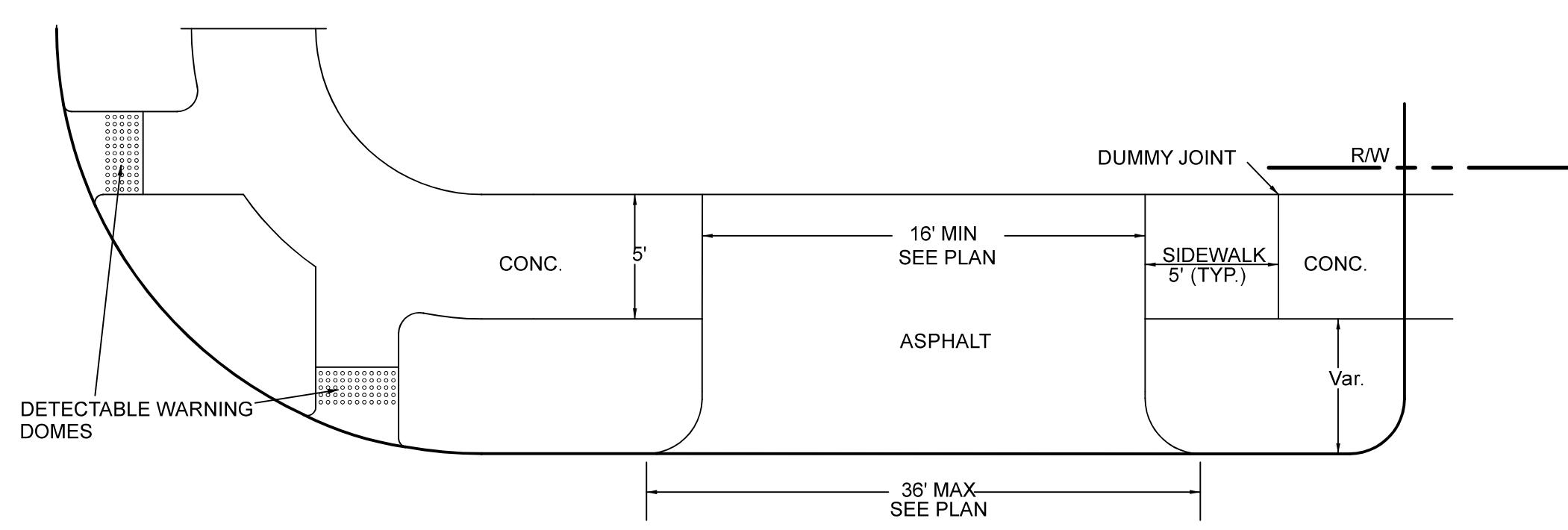
REVISIONS



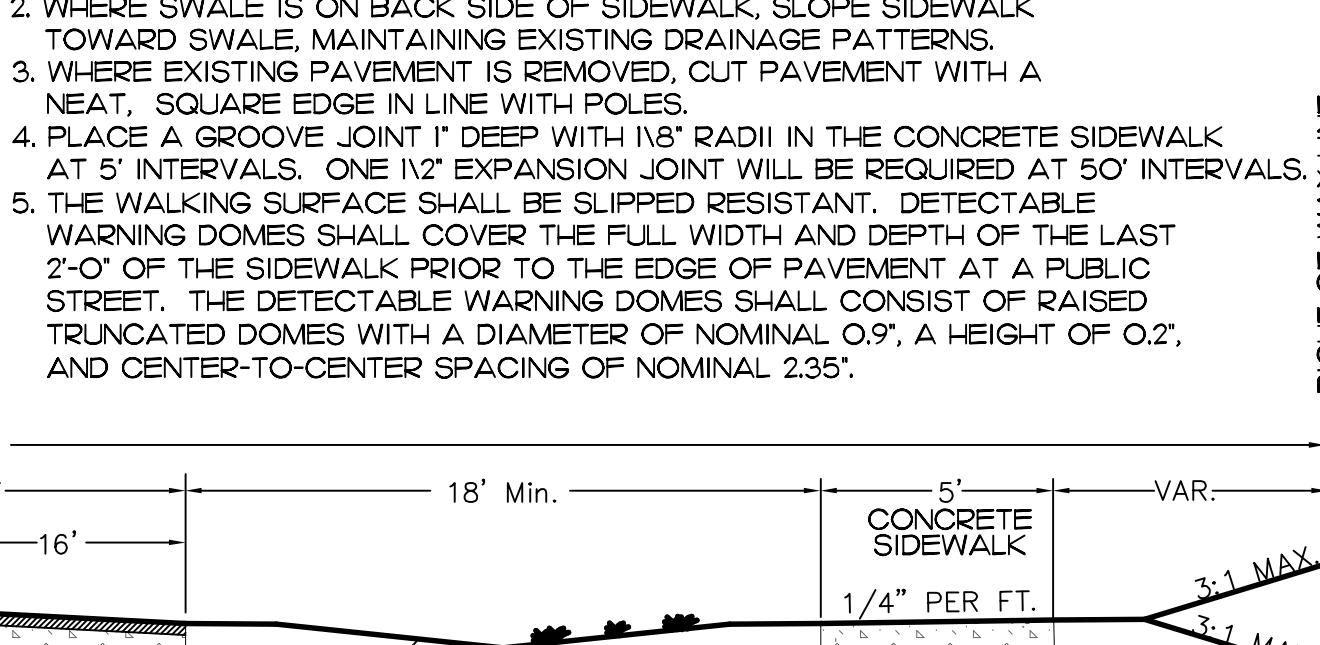
Eric & Associates  
309 North Boykin Avenue  
Raleigh, NC 27605-4102  
T 919-833-3123  
F 919-834-3203  
NOBELS Lic. No. P-1845  
NCOLA Lic. No. C-656

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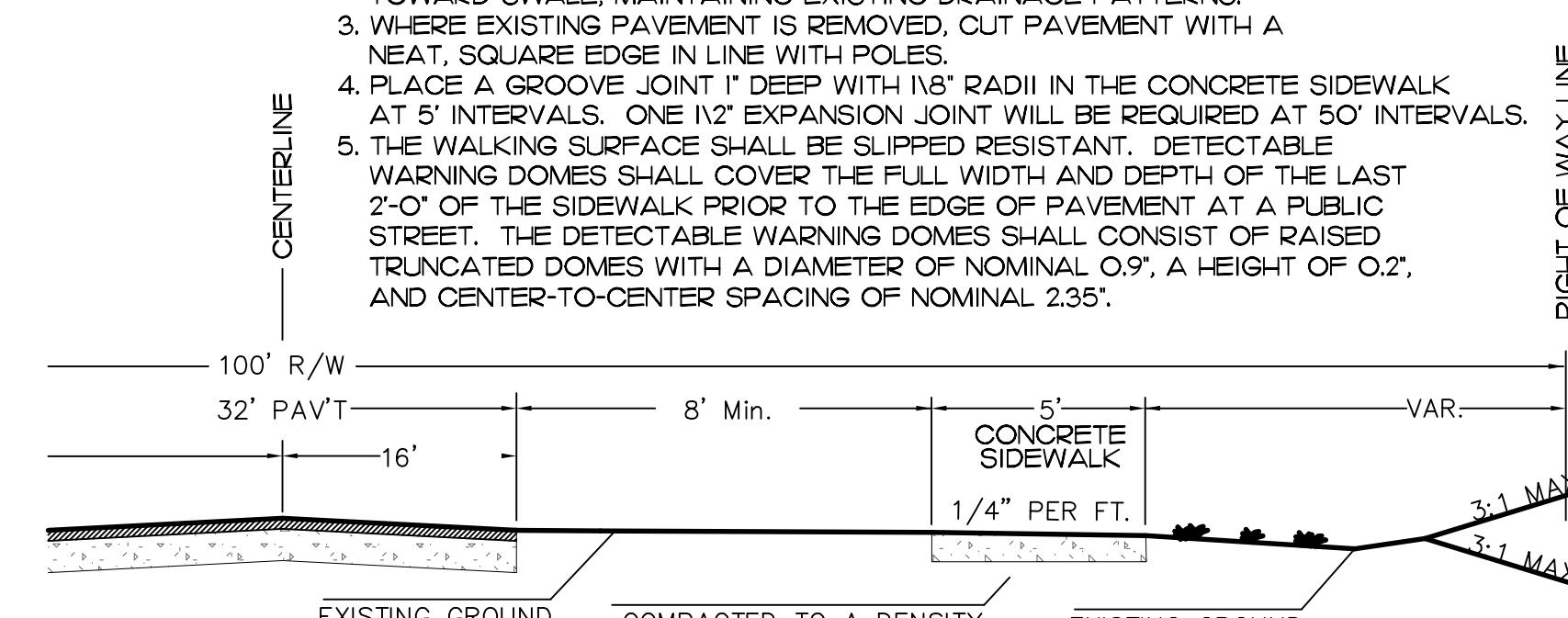
COMMERCIAL AREA SIDEWALK IMPROVEMENTS - PHASE I  
TOWN OFF OAK ISLAND  
4601 E. OAK ISLAND DR.  
OAK ISLAND, NC



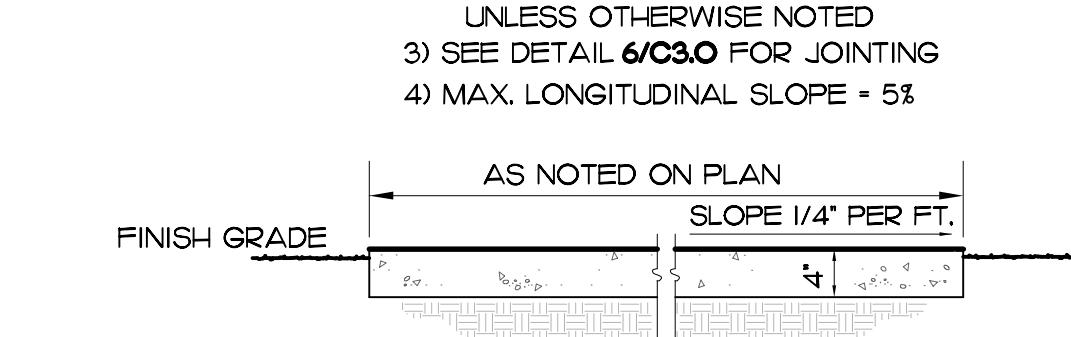
PLAN VIEW



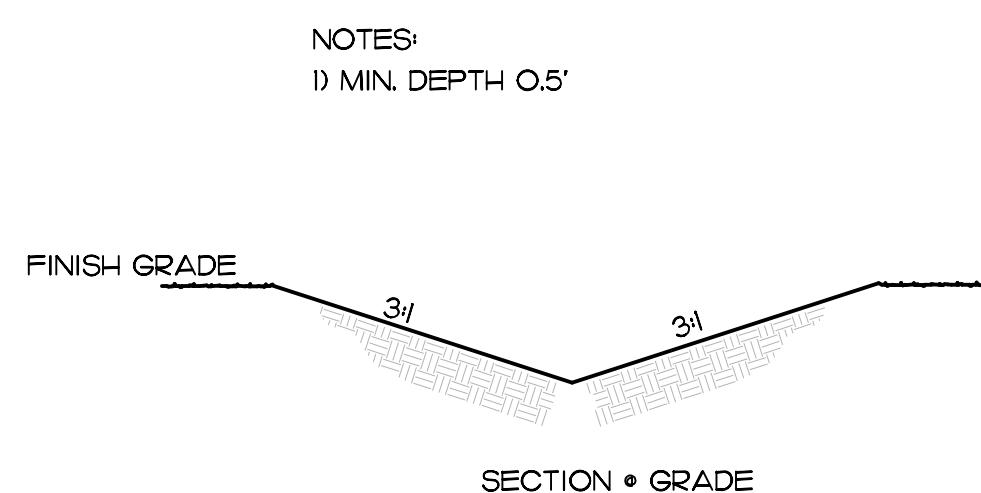
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C3.O SCALE: NOT TO SCALE



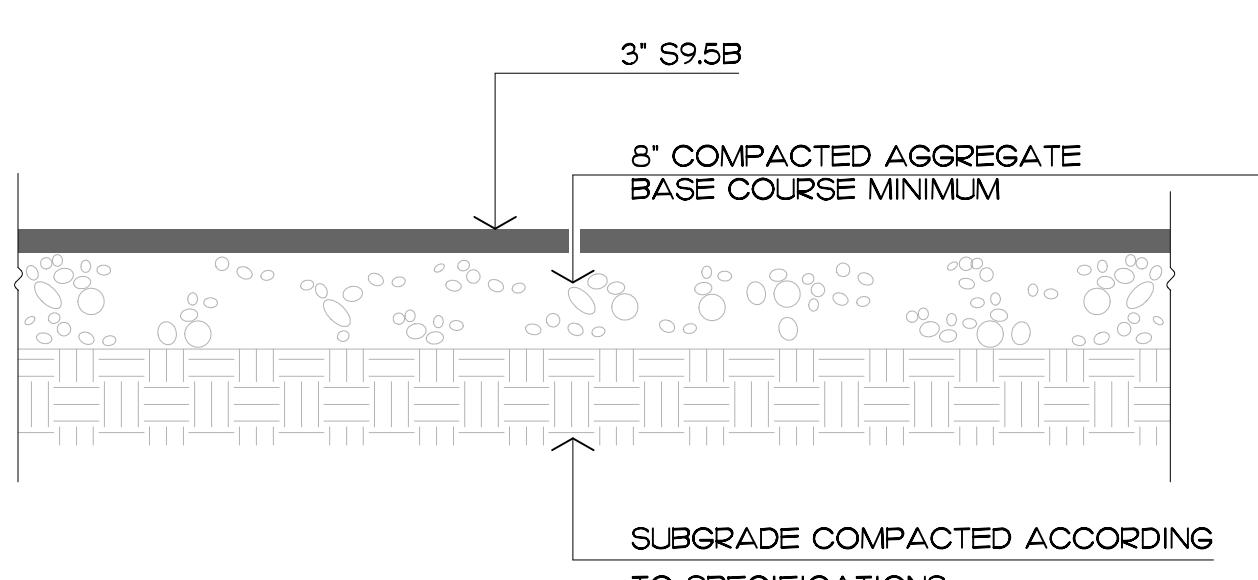
2 CROSS SECTION TYPE B  
C3.O SCALE: NOT TO SCALE



5 CONCRETE WALK  
C3.O SCALE: 3/4" = 1'-0"



6 HEAD DITCH  
C3.O SCALE: 3/4" = 1'-0"

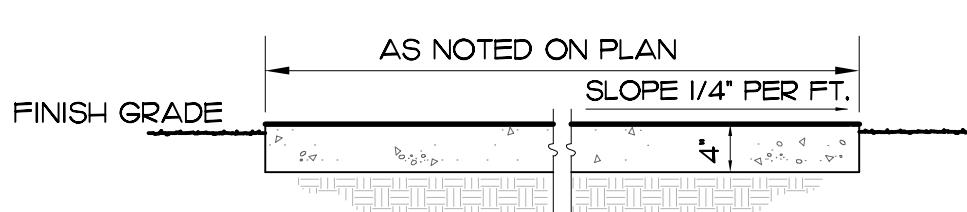


7 ASPHALT PAVEMENT SECTION  
C3.O SCALE: 3/4" = 1'-0"

NOTES:  
1. ON CONCRETE WALKS, CONTRACTION JOINTS SHALL BE SPACED AT AN INTERVAL EQUAL TO THE WIDTH OF THE WALK, BUT SHALL NOT EXCEED 6' O.C.  
2. ON CONCRETE WALKS, EXPANSION JOINTS SHALL BE PLACED AT A MAXIMUM OF 30' O.C.  
3. CONTRACTOR SHALL PREPARE AND PROVIDE JOINTING DIAGRAM TO LANDSCAPE ARCHITECT FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.

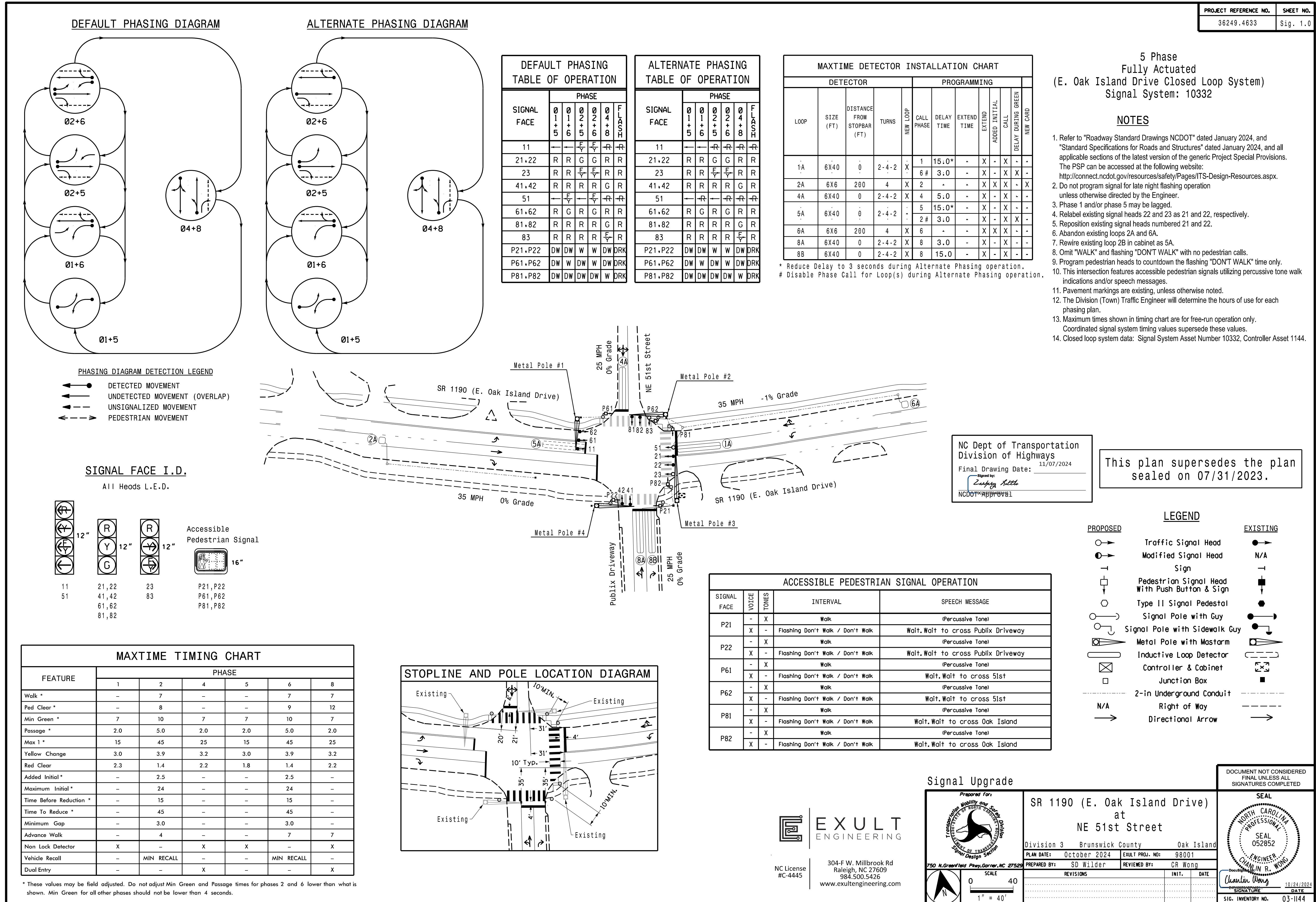
8 CONCRETE JOINTS  
C3.O SCALE: 1 1/2" = 1'-0"

NOTES:  
1) WALKS SHALL BE CONSTRUCTED OF 3000 PSI CONCRETE ON A WELL COMPACTED SUBGRADE  
2) WALKS SHALL HAVE BROOM FINISH UNLESS OTHERWISE NOTED  
3) SEE DETAIL 6 C3.O FOR JOINTING  
4) MAX. LONGITUDINAL SLOPE = 5%



SECTION • GRADE

DRAWN BY MWB  
CHECKED BY JFW  
PROJ. NO. 22066  
DATE 2/23/2024  
**C3.O** SHEET 5 OF 13





## MAXTIME OVERLAP PROGRAMMING DETAIL FOR DEFAULT PHASING

Front Panel  
Main Menu >Controller >Overlap >Overlap Parameters/Overlap Timings

Web Interface  
Home >Controller >Overlap Configuration >Overlaps

Overlap Plan 1

Overlap	1	2	3	4
Type	FYA 4 - Section			
Included Phases	2	8	6	2
Modifier Phases	1	-	5	-
Trail Green	0	0	0	0
Trail Yellow	0.0	0.0	0.0	0.0
Trail Red	0.0	0.0	0.0	0.0

## MAXTIME STARTUP AND SOFTWARE FLASH PROGRAMMING DETAIL

Front Panel  
Main Menu >Controller >Unit

Web Interface  
Home >Controller >Unit

Modify parameters as shown below and save changes.

Start Up Parameters	Unit Flash Parameters
StartUp Clearance Hold 6	All Red Flash Exit Time 6

## MAXTIME ALTERNATE PHASING ACTIVATION DETAIL

To run alternate phasing, select a Pattern that is programmed to run Overlap Plan 2 and Detector Plan 2. A Pattern can be selected through the scheduler or manually by changing the Operational Mode.

PHASING	OVERLAP PLAN	VEH DET PLAN
ACTIVE PLAN REQUIRED TO RUN DEFAULT PHASING	1	1
ACTIVE PLAN REQUIRED TO RUN ALTERNATE PHASING	2	2

### ALTERNATE PHASING CHANGE SUMMARY

THE FOLLOWING IS A SUMMARY OF WHAT TAKES PLACE WHEN OVERLAP PLAN 2 AND VEHICLE DETECTOR PLAN 2 ACTIVATE TO CALL THE "ALTERNATE PHASING":

OVERLAP PLAN 2: Modifies overlap included phases for heads 11 and 51 to run protected turns only.

VEH DET PLAN 2: Disables phase 6 call on loop 1A and reduces delay for phase 1 call on loop 1A to 3 seconds.

Disables phase 2 call on loop 5A and reduces delay for phase 5 call on loop 5A to 3 seconds.

## MAXTIME OVERLAP PROGRAMMING DETAIL FOR ALTERNATE PHASING

Front Panel  
Main Menu >Controller >Overlap >Overlap Parameters/Overlap Timings

Web Interface  
Home >Controller >Overlap Configuration >Overlaps

In the table view of the web interface, right click on "Overlap" in the top left corner of the table. Copy the entire contents of Overlap Plan 1. Paste Overlap Plan 1 into Overlap Plan 2. Modify Overlap Plan 2 as shown below and save changes.

Overlap Plan 2

Overlap	1	2	3	4
Type	FYA 4 - Section			
Included Phases	-	8	-	2
Modifier Phases	1	-	5	-
Trail Green	0	0	0	0
Trail Yellow	0.0	0.0	0.0	0.0
Trail Red	0.0	0.0	0.0	0.0

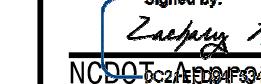
← NOTICE INCLUDED PHASE

## FLASHER CIRCUIT MODIFICATION DETAIL

IN ORDER TO INSURE THAT SIGNALS FLASH CONCURRENTLY ON THE SAME APPROACH, MAKE THE FOLLOWING FLASHER CIRCUIT CHANGES:

1. ON REAR OF PDA - REMOVE WIRE FROM TERM. T2-4 AND TERMINATE ON T2-2.
2. ON REAR OF PDA - REMOVE WIRE FROM TERM. T2-5 AND TERMINATE ON T2-3.
3. REMOVE FLASHER UNIT 2.

THE CHANGES LISTED ABOVE TIES ALL PHASES AND OVERLAPS TO FLASHER UNIT 1.

NC Dept of Transportation  
Division of Highways  
Final Drawing Date: 11/07/2024  
Signed by:   
NCDOT Approval

THIS ELECTRICAL DETAIL IS FOR  
THE SIGNAL DESIGN: 03-1144  
DESIGNED: Oct 2024  
SEALED: 10/24/2024  
REVISED: N/A

## ACCESSIBLE PEDESTRIAN SIGNAL (APS) INSTALLATION NOTES

1. Install push buttons and APS equipment per manufacturer's instructions.
2. Provide a dedicated cable to each push button per manufacturer's instructions.
3. If APS equipment is mounted in cabinet, use filtered power (i.e., Controller Receptacle) to power APS equipment. Do not use Equipment Receptacle, which is a GFCI outlet.
4. Never attempt to operate a standard contact closure push button with the APS system unless cabinet is re-wired for standard button operation or unless explicitly allowed by the manufacturer.
5. Place manufacturer's instructions in cabinet with cabinet prints, signal plans, and electrical details.
6. An APS push button station that is designed to work without the need for interfacing with a pedestrian signal head shall be installed for applications where a push button is installed in a median without a pedestrian signal head.
7. A push button with a single tactile arrow that points in both directions of travel shall be installed if the median separates two parallel crosswalks.

## MAXTIME DETECTOR PROGRAMMING DETAIL FOR ALTERNATE PHASING LOOPS 1A & 5A

Front Panel  
Main Menu >Controller >Detector >Veh Det Plans

Web Interface  
Home >Controller >Detector Configuration >Vehicle Detectors

In the table view of web interface right click on "Detector" in the top left corner of the table. Copy the entire contents of Detector Plan 1. Paste Detector Plan 1 into Detector Plan 2. Modify Detector Plan 2 as shown below and save changes.

Plan 2		
Detector	Call Phase	Delay
1	1	3.0
29	0	3.0

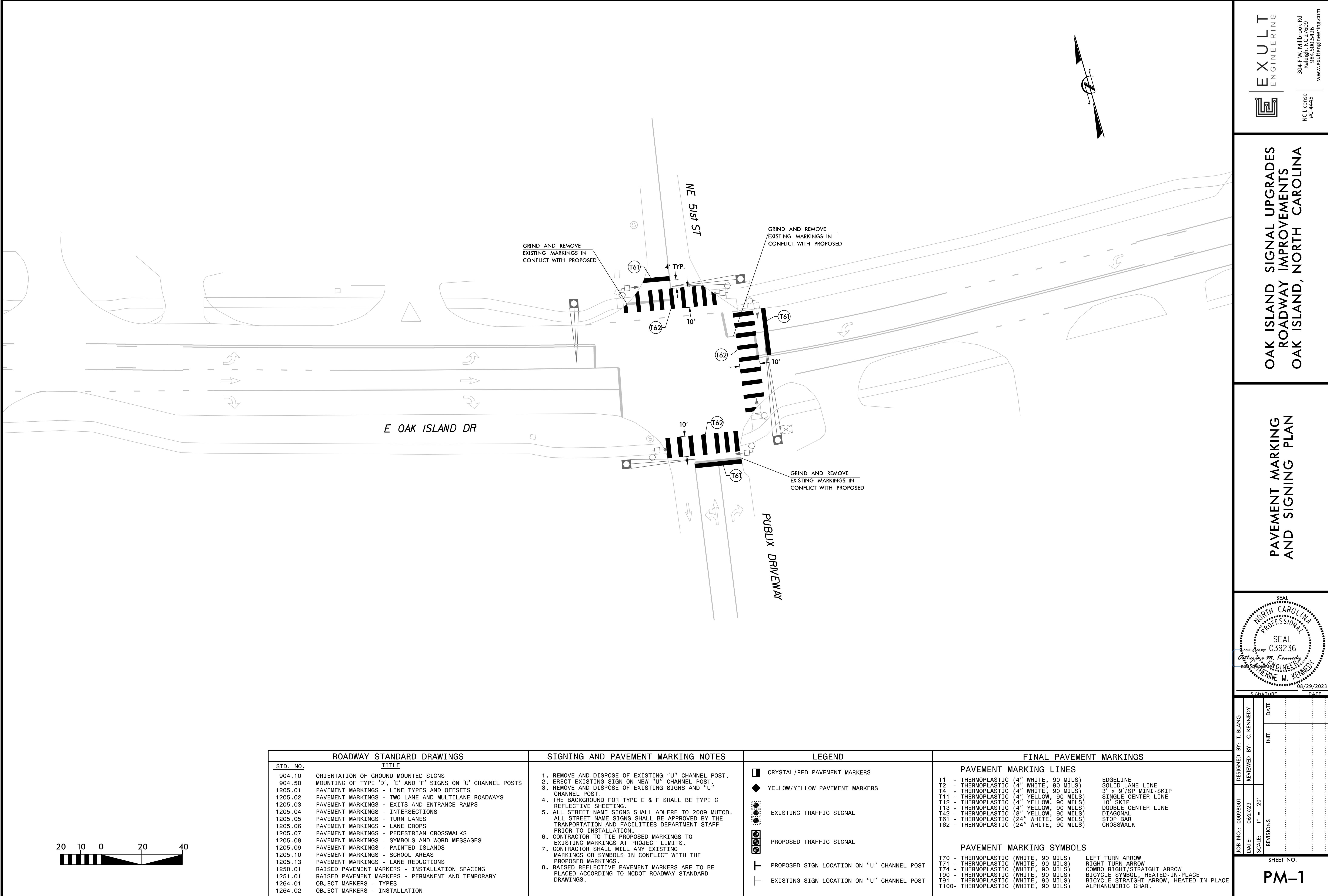
  

Plan 2		
Detector	Call Phase	Delay
15	5	3.0
31	0	3.0

This plan supersedes the plan sealed on 07/31/2023.

### Electrical Detail - Sheet 2 of 2

ELECTRICAL AND PROGRAMMING DETAILS FOR:		SR 1190 (E. Oak Island Drive) at NE 51st Street	
Division 3 Brunswick County Oak Island		PLAN DATE: October 2024	EXULT PROJ. NO: 98001
PREPARED BY: SD Wilder		REVIEWED BY: CR Wong	DATE: 10/24/2024
REVISIONS		INIT.	DATE
750 N. Greenfield Pkwy, Garner, NC 27529		750 N. Greenfield Pkwy, Garner, NC 27529	
EXULT ENGINEERING		www.exultengineering.com	
North Carolina Department of Transportation Division of Mobility and Safety Division of Highways Signal and Traffic Management Section		SEAL NORTH CAROLINA PROFESSIONAL ENGINEER ZEPHYR R. WILDER 10/24/2024 DATE Sig. Exult Eng. Inc.	
NC License #C-4445		Sig. Inventory No. 03-1144	



**2-19 STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.**

**2-19 ENGLISH TYPICAL DRAWING FOR PAVEMENT MARKINGS HI-VISIBILITY CROSSWALKS NO-TRACK MARKING GUIDANCE**

**CROSSWALK INTERSECTION DETAIL**

**CROSSWALK MARKING DETAIL**

**MID-BLOCK CROSSWALK DETAIL**

**GENERAL NOTES:**

- 1- THE GUIDANCE IN THIS DETAIL IS TO BE USED WHEN NO-TRACK SPACING OF HI-VISIBILITY MARKINGS IS REQUESTED.
- 2- USE THE GUIDANCE SHOWN ON THE ABOVE DETAILS IN CONJUNCTION WITH PAVEMENT MARKING GUIDANCE SHOWN ON ROADWAY STANDARD DRAWINGS 1205.01 AND 1205.07.
- 3- PLACE MARKINGS TO AVOID WHEELPATH OF VEHICLES. MARKINGS TYPICALLY WILL BE LOCATED CENTERED AT THE LANE LINES AND EDGE LINES WITH ONE ADDITIONAL MARKING CENTERED IN THE MIDDLE OF THE LANE. AT WIDE LANE WIDTHS DUE TO TAPERS AND LARGE RADII, LOCATE MARKINGS AT BEST SPACING TO AVOID WHEEL TRACKING. THE SPACE BETWEEN MARKINGS SHALL NOT BE LESS THAN 24 INCHES OR GREATER THAN 60 INCHES.
- 4- WHERE THE CROSSWALK IS SKEWED TO THE LANE LINES, THE MARKINGS SHOULD BE PARALLEL TO THE LANE LINES.
- 5- PLACE MARKINGS ON BOTH EDGES OF THE NOSE OF A MEDIAN. FOR NARROW MEDIANS LESS THAN 4 FEET, A SINGLE MARKING MAY BE USED. FOR WIDE MEDIANs, INSTALL ADDITIONAL MARKINGS IN THE MEDIAN AREA. THE SPACE BETWEEN THE MARKINGS SHALL NOT TO BE LESS THAN 24 INCHES OR GREATER THAN 60 INCHES.
- 6- LOCATE MARKINGS CENTERED ON BICYCLE LANE LINES. MARKINGS SHALL NOT BE LOCATED IN THE CENTER OF THE BICYCLE PATH.
- 7- INCLUDE 8" TRANSVERSE LINES WITH 24" LONGITUDINAL MARKINGS AT MID-BLOCK CROSSINGS.

**SHEET 1 OF 1**

**2-19 STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.**

**2-19 ENGLISH TYPICAL DRAWING FOR PAVEMENT MARKINGS HI-VISIBILITY CROSSWALKS NO-TRACK MARKING GUIDANCE**



# OAK ISLAND SIGNAL UPGRADES ROADWAY IMPROVEMENTS OAK ISLAND, NORTH CAROLINA

PM-2