

COMMERCIAL AREA SIDEWALK IMPROVEMENTS - PHASE1

TOWN OF OAK ISLAND

NCDOT WBS# 51295

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

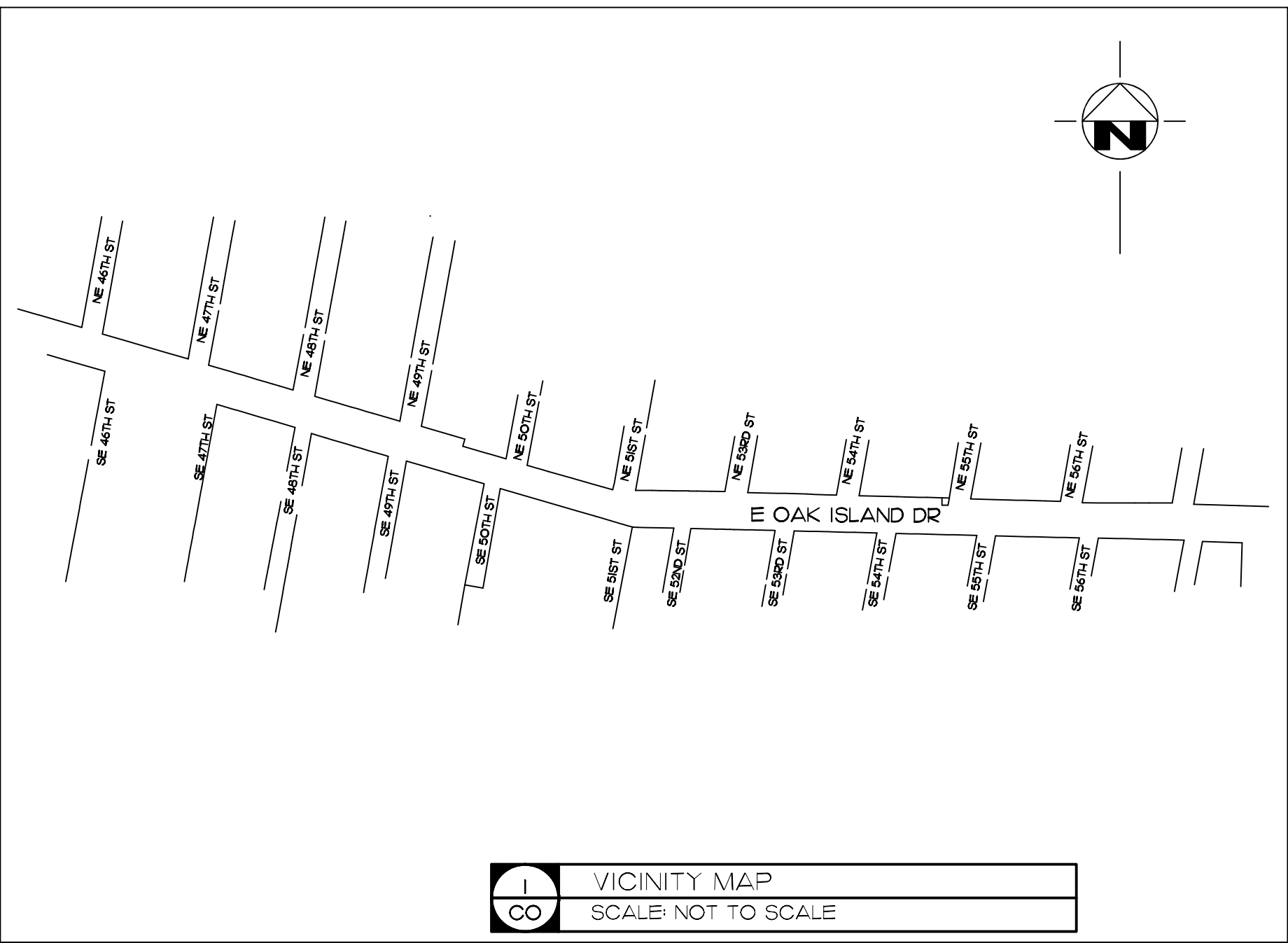
TOWN of OAK ISLAND

4601 E. OAK ISLAND DR
OAK ISLAND, NC 28465

BEGIN PROJECT
11+40



END PROJECT
38+95



LEGEND

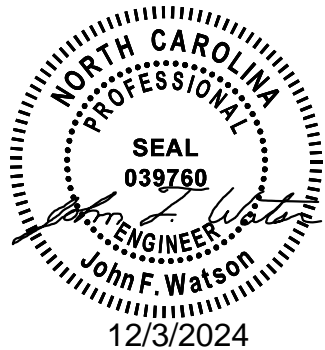
SYMBOL		DESCRIPTION
EXISTING	PROPOSED	
---	---	PROPERTY LINE
---	---	STREET OR DRIVEWAY
---	---	SIDEWALK
---	---	SWALE
---	---	FENCE
EU	EU	ELECTRICAL UTILITY
WV	WV	WATER VALVE
FH	FH	FIRE HYDRANT
MH	MH	SANITARY SEWER MAN HOLE
SD	SD	STORM DRAIN
HB	HB	HOT BOX

INDEX OF DRAWINGS

- C0.0 COVER SHEET
- C1.0 EXISTING CONDITIONS
- C2.1 SITE PLAN
- C2.2 SITE PLAN
- C3.0 DETAILS
- SIG. 1.0 SIGNAL DESIGN
- SIG. 1.1 SIGNAL DETAILS
- 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-OIO-23-OOI99.
- ALIGNMENT OF PROPOSED SIDEWALK IS DESIGNED TO AVOID CONFLICT WITH UTILITIES UNLESS NOTED ON PLANS.



REVISIONS

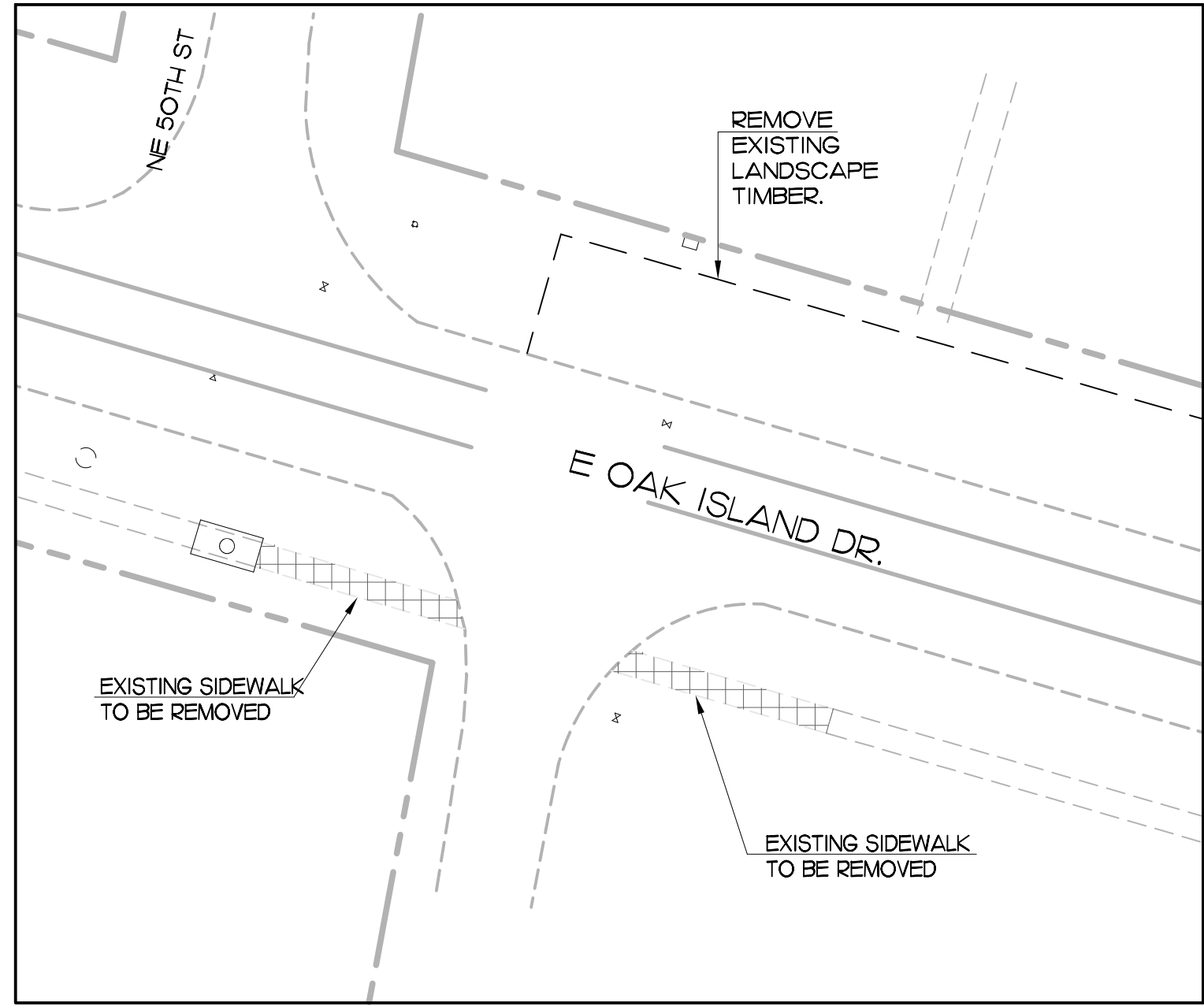
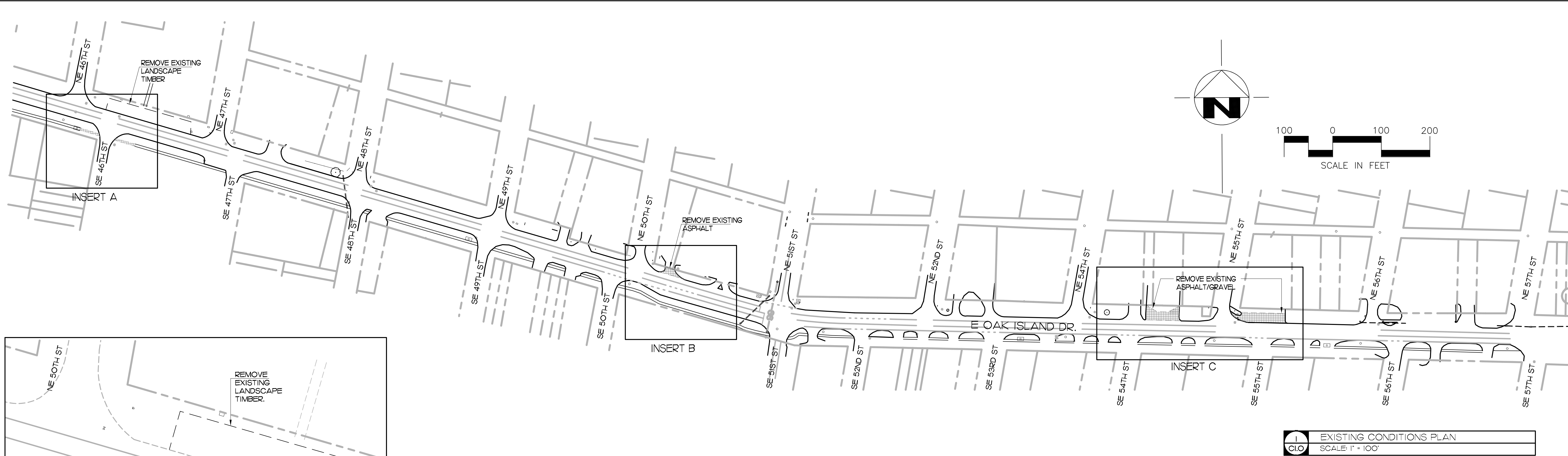
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NCBELS Lic. No. P-1845
NCSBLA Lic. No. C-656



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

BID SET

DRAWN BY MWB
CHECKED BY JFW
PROJ. NO. 22O66
DATE 2/23/2024
SHEET 1 OF 13



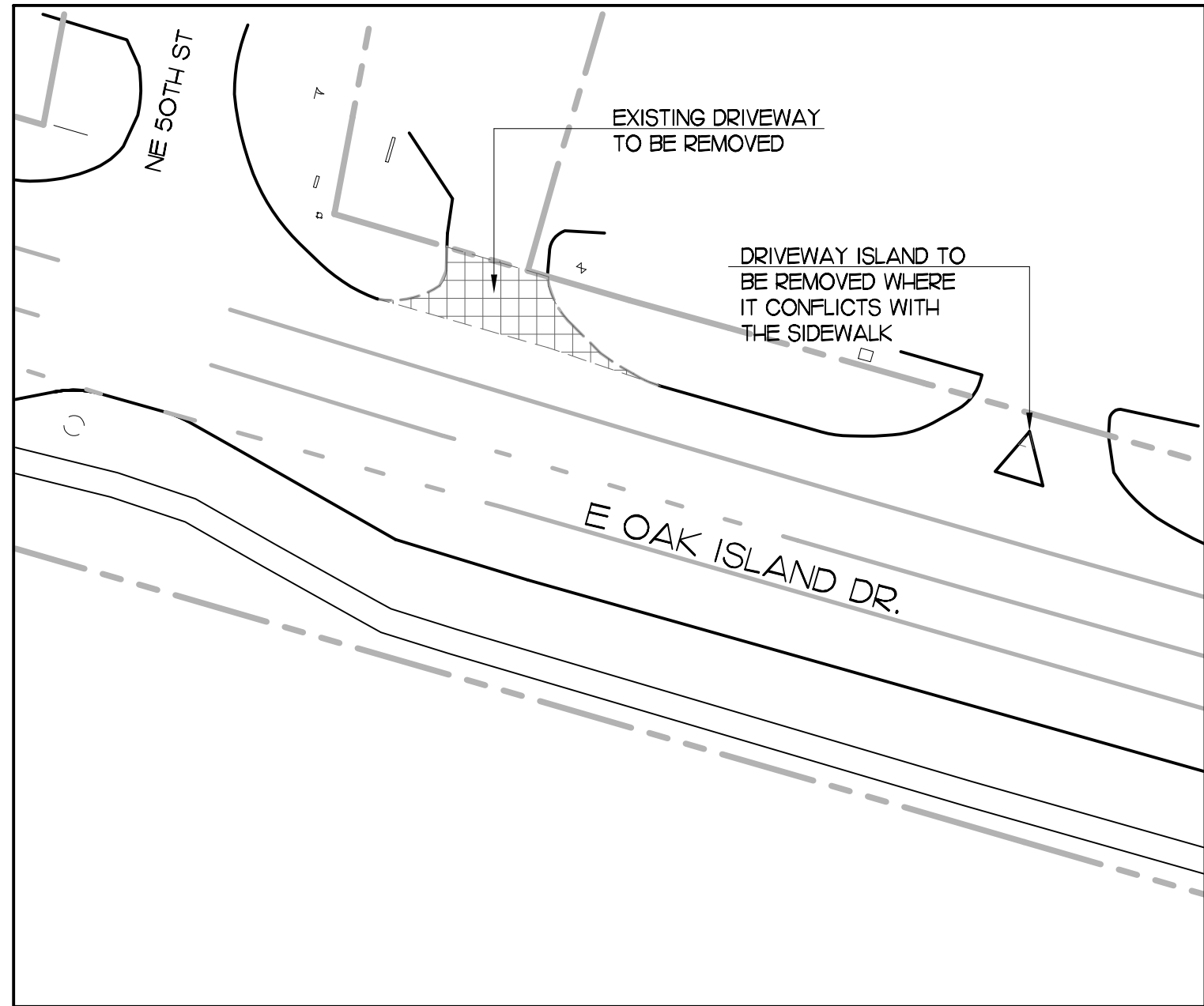
2 INSERT A
C.I.O. SCALE: 1" = 30'

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

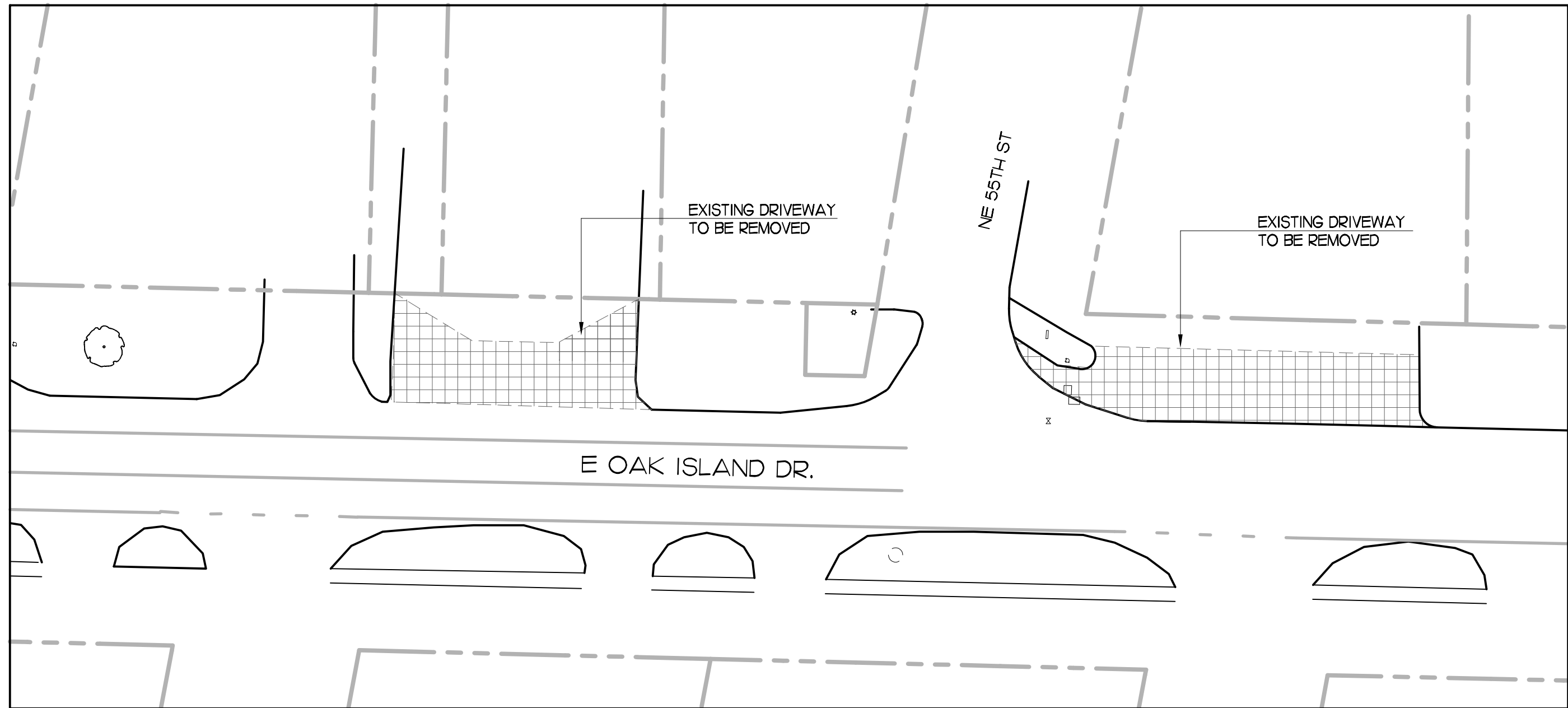
PRIOR TO ANY CONSTRUCTION ACTIVITY, UNDERGROUND UTILITY LOCATIONS SHOULD BE REQUESTED BY CALLING THE NORTH CAROLINA ONE CALL CENTER, INC. (1-800-632-4949).

DEMOLITION NOTES

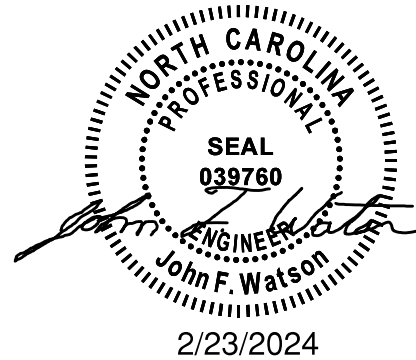
- 1) ALL APPROPRIATE SEDIMENT AND EROSION CONTROL MEASURES SHALL BE IN PLACE IN ACCORDANCE WITH NCDOT EROSION & SEDIMENT CONTROL STANDARDS.
- 2) THE CONTRACTOR SHALL REMOVE ALL TREES AND VEGETATION NECESSARY TO CONSTRUCT THE PROJECT AND NO MORE.
- 3) THE CONTRACTOR SHALL REMOVE EXISTING STRUCTURES AND PAVEMENT FROM AREAS AS SHOWN ON THIS PLAN.
- 5) THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITIES THAT ARE TO REMAIN DURING ALL DEMOLITION AND CONSTRUCTION PHASES.
- 6) ALL MATERIALS THAT ARE TO BE REMOVED SHALL BE LEGALLY DISPOSED OF OFF SITE.
- 7) 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.
- 8) THE CONTRACTOR SHALL VISIT THE SITE AND BECOME THOROUGHLY FAMILIAR WITH THE EXISTING CONDITIONS PRIOR TO BIDDING.
- 10) THE CONTRACTOR SHALL REMOVE ALL DEBRIS FROM THE SITE. NO DEMOLITION MATERIALS ARE TO BE SOLD BY THE CONTRACTOR ON SITE.
- 11) THE CONTRACTOR SHALL FOLLOW ALL APPLICABLE LOCAL, STATE, AND FEDERAL CODES AND 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'



REVISIONS

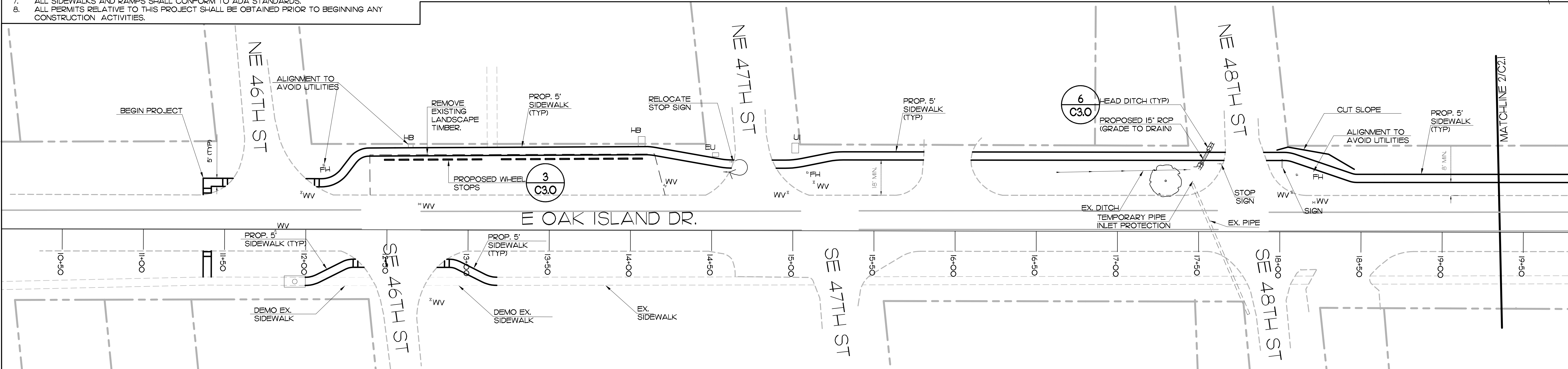
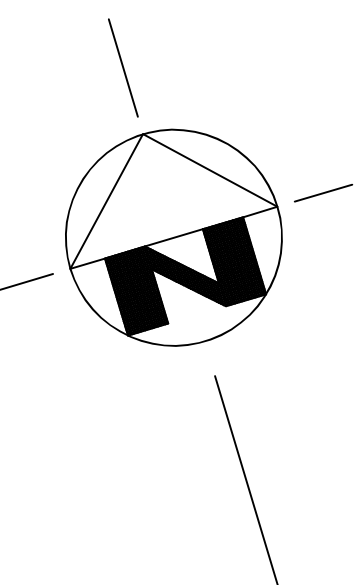
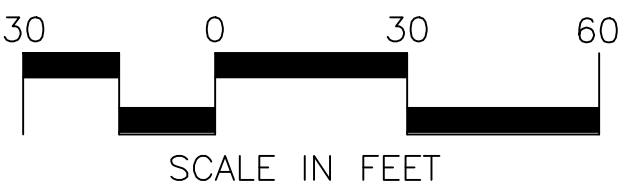
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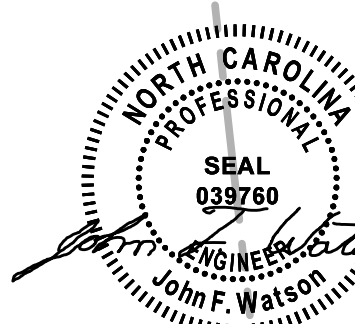
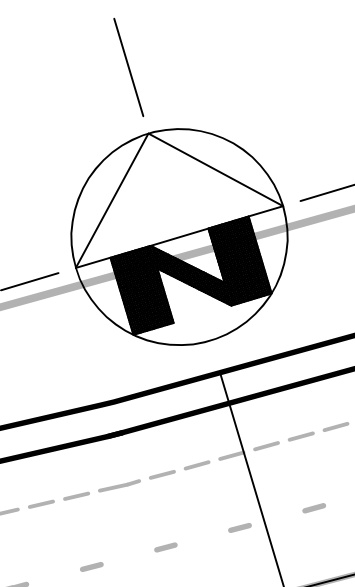
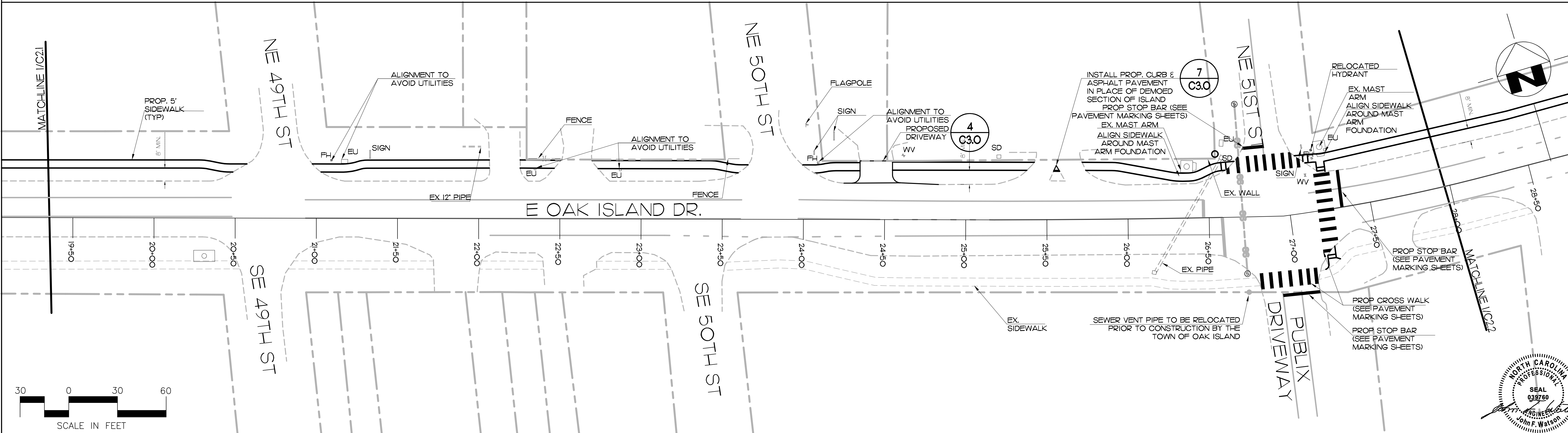
COMMERCIAL AREA SIDEWALK IMPROVEMENTS - PHASE I
TOWN OF OAK ISLAND
4601 E. OAK ISLAND DR.
OAK ISLAND, NC

GENERAL PROJECT NOTES

- BOUNDARIES SHOWN HEREIN ARE TAKEN FROM PUBLICLY AVAILABLE GIS DATA, AERIAL IMAGERY & FIELD MEASUREMENTS. CONTRACTOR SHALL VERIFY EXISTING INFORMATION PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES.
- ALL DIMENSIONS AND STAKING POINTS ARE TO BACK OF CURB UNLESS NOTED OTHERWISE. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND GRADES AT THE SITE AND SHALL IMMEDIATELY REPORT ANY DISCREPANCIES TO THE ENGINEER FOR ADJUSTMENT.
- THE CONTRACTOR SHALL VERIFY SITE SOIL CONDITIONS AND NOTIFY THE ENGINEER OF THE PRESENCE OF ANY UNSUITABLE SOILS.
- 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.
- 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.
- ALL SIDEWALKS AND RAMPS SHALL CONFORM TO ADA STANDARDS.
- ALL PERMITS RELATIVE TO THIS PROJECT SHALL BE OBTAINED PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITIES.



1 SIDEWALK IMPROVEMENTS - SECTION 1
SCALE: 1" = 30'



2 SIDEWALK IMPROVEMENTS - SECTION 2
SCALE: 1" = 30'

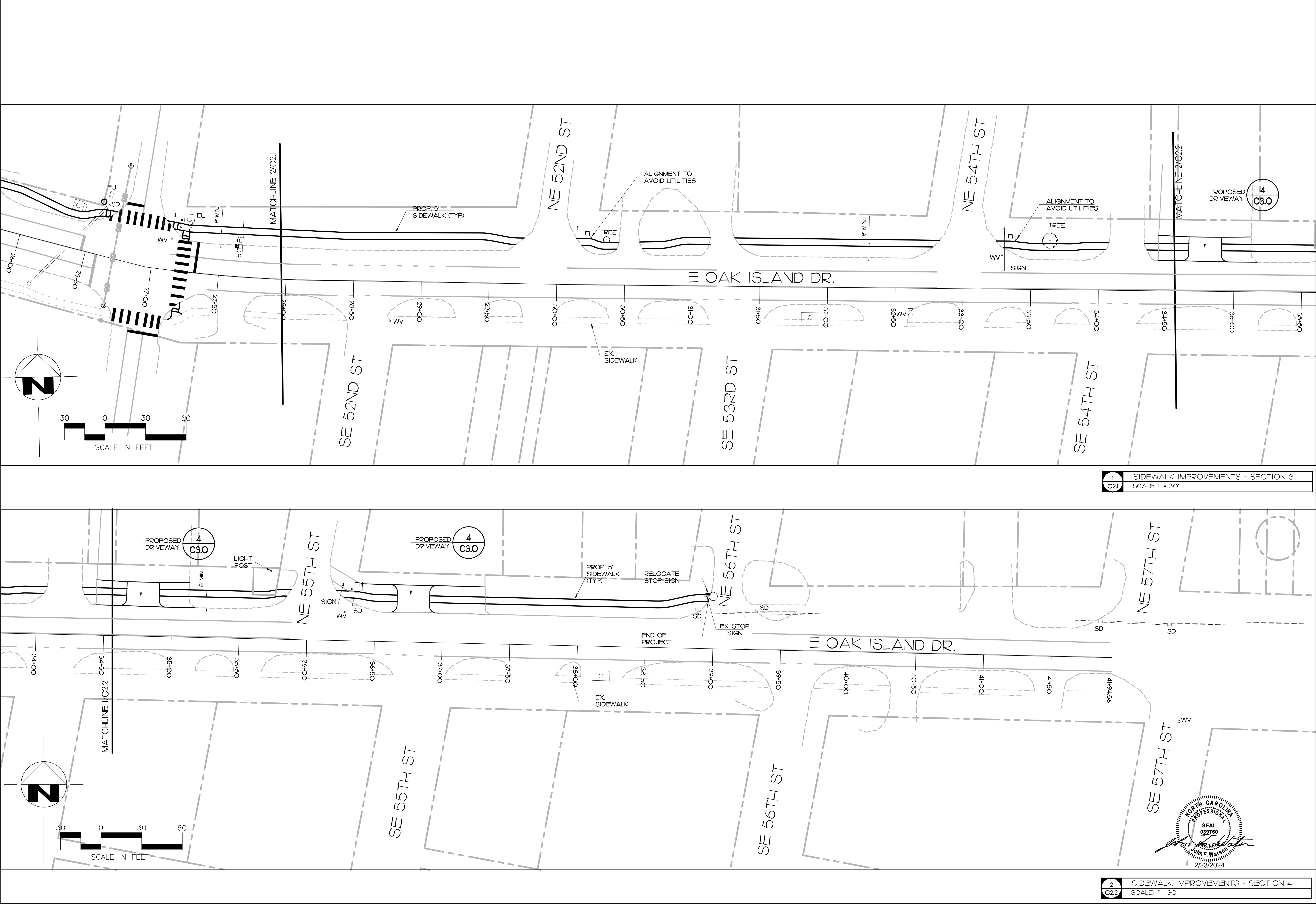
REVISIONS

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

DRAWN BY: M/WB
CHECKED BY: JFW
PROJ. NO.: 22066
DATE: 2/23/2024
SHEET 3 OF 13



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

2 C22 SIDEWALK IMPROVEMENTS - SECTION 4
SCALE: 1" = 30'



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

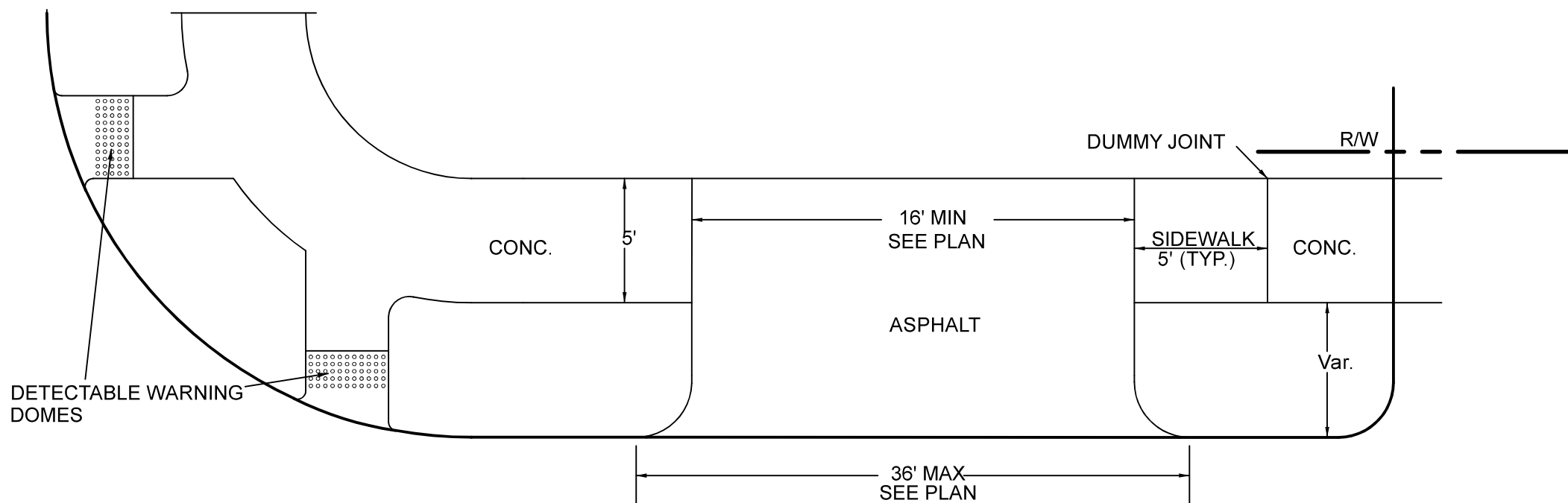
DRAWN BY: M/WB
CHECKED BY: JFW
PROJ. NO. 22066
DATE 2/23/2024

C22

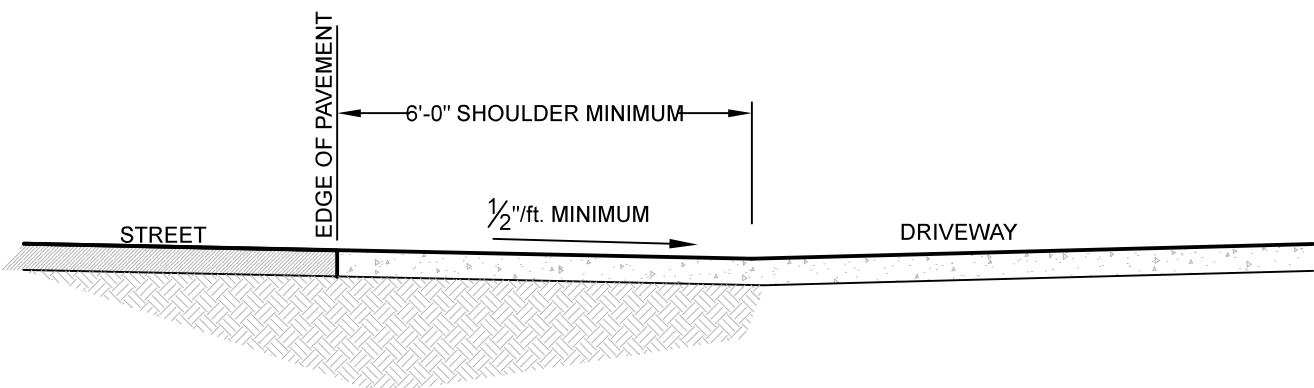
SHEET 4 OF 13

SEEDING FOR EROSION CONTROL AND PERMANENT SEEDING

- 1) CONTRACTOR SHALL ABIDE BY NCDOT STANDARDS FOR SEDEMENTATION 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.

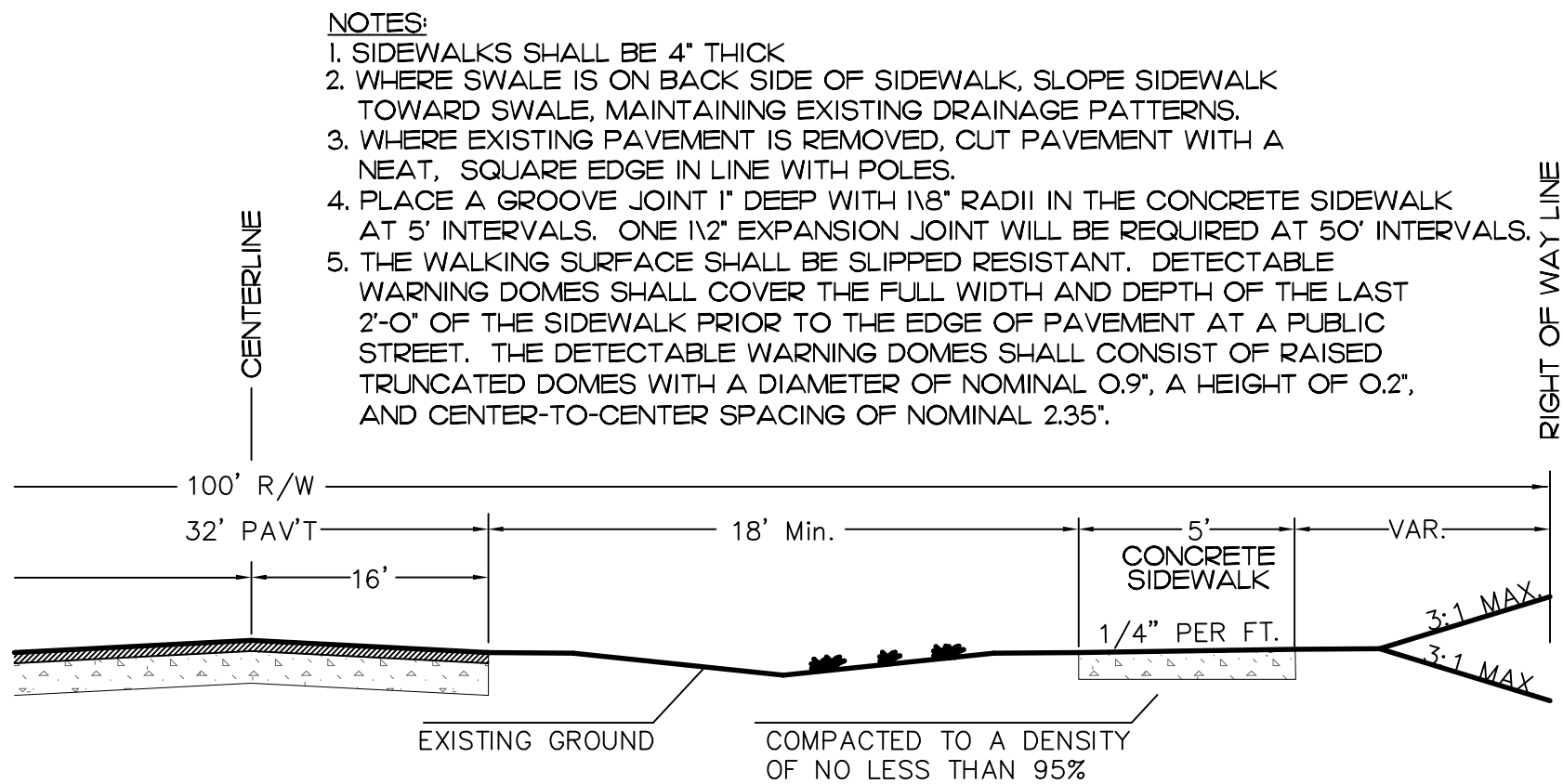


PLAN VIEW

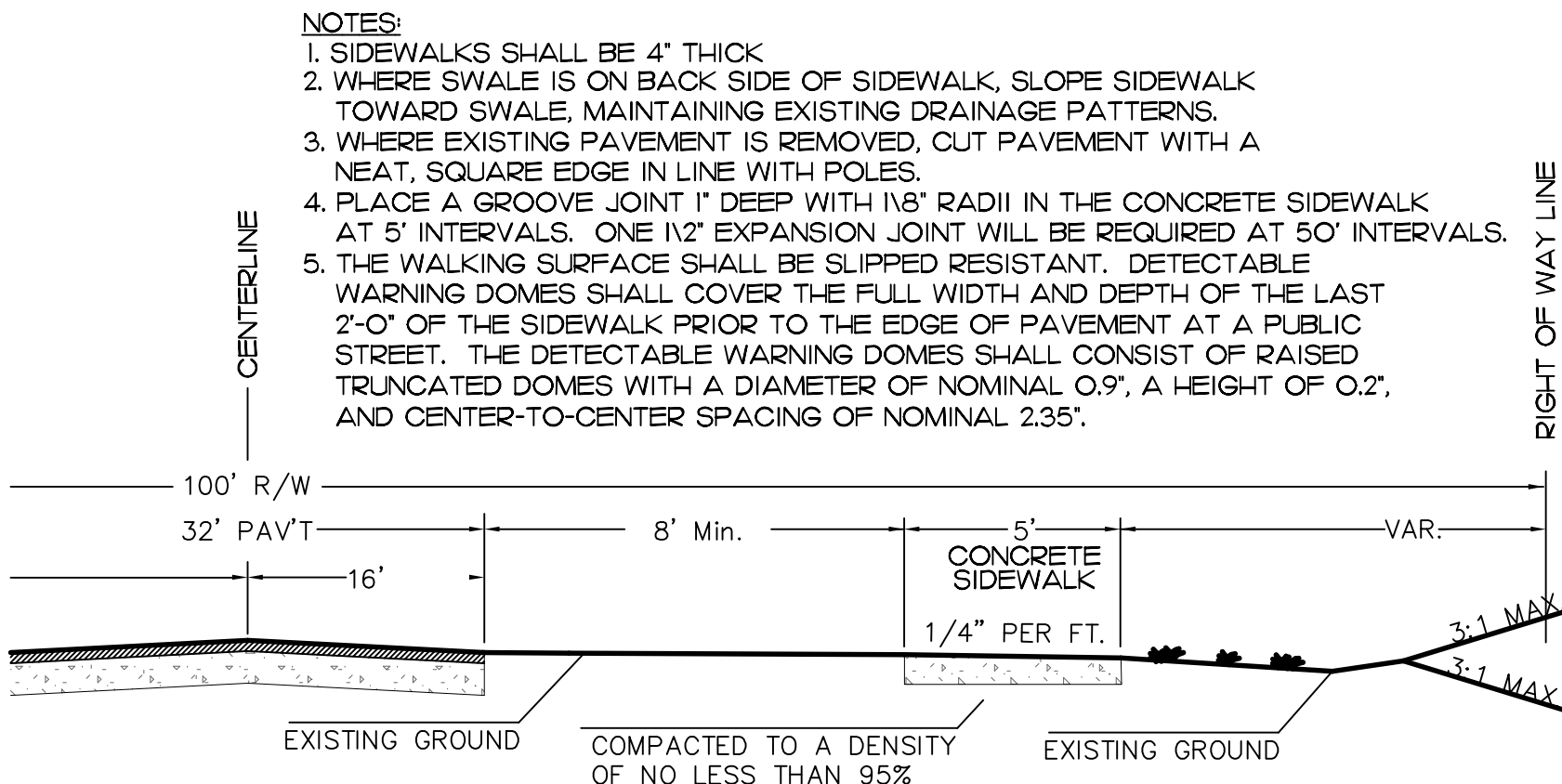


PROFILE VIEW

4	DRIVEWAY AND WALKS
C3.0	SCALE: NOT TO SCALE



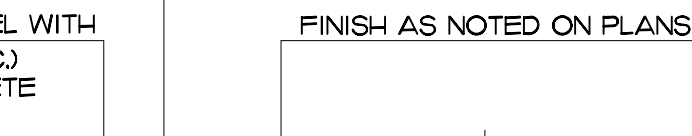
1	CROSS SECTION TYPE A
C3.0	SCALE: NOT TO SCALE



2	CROSS SECTION TYPE B
C3.0	SCALE: NOT TO SCALE



CONTRACTION JOINT



EXPANSION JOINT

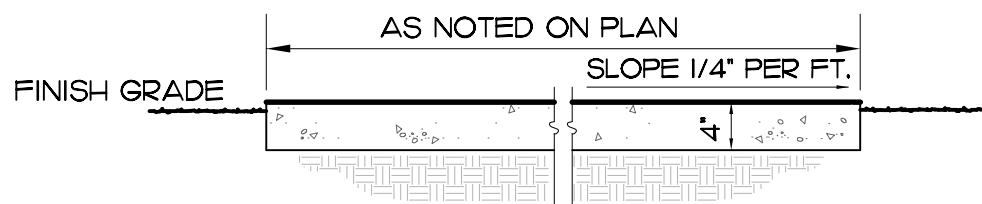
NOTES

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
C3.0	SCALE: 1 1/2\"/>

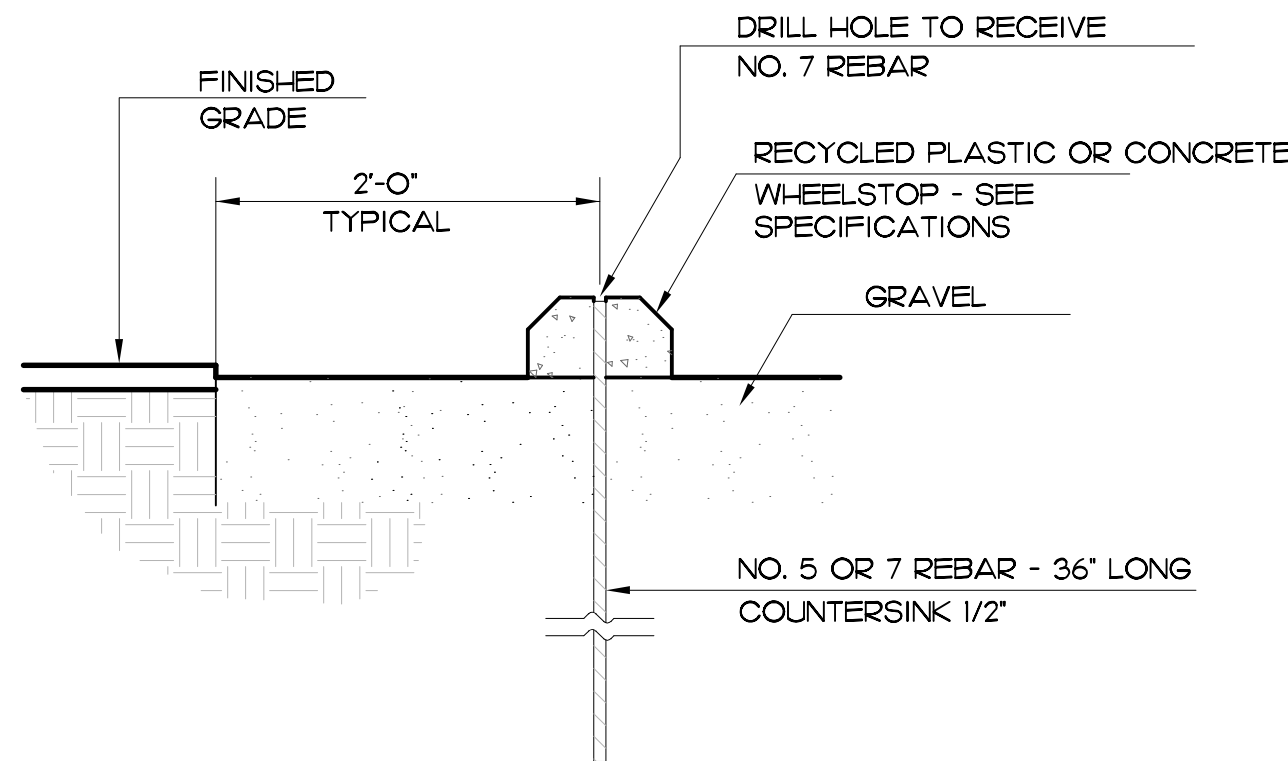
NOTES:

- 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/C3.0 FOR JOINTING
- 4) MAX. LONGITUDINAL SLOPE = 5%



SECTION • GRADE

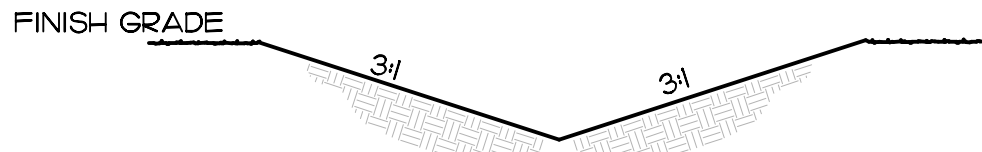
5	CONCRETE WALK
C3.0	SCALE: 3/4\"/>



3	WHEELSTOP
C3.0	SCALE: 1\"/>

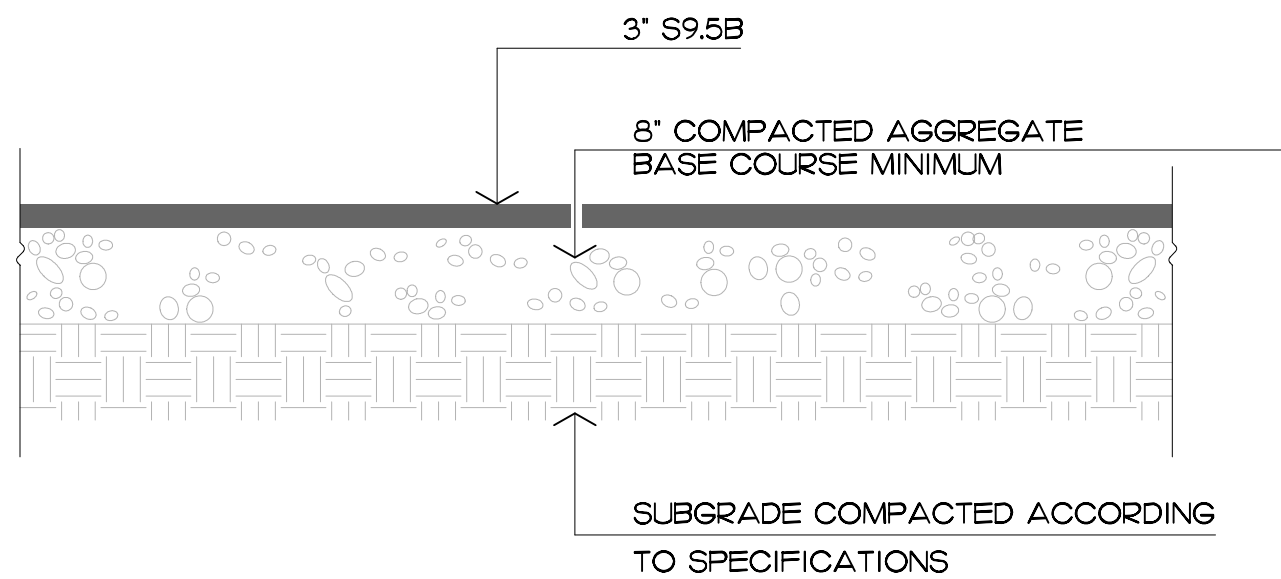
NOTES:

- 1) MIN. DEPTH 0.5'



SECTION • GRADE

6	HEAD DITCH
C3.0	SCALE: 3/4\"/>



7	ASPHALT PAVEMENT SECTION
C3.0	SCALE: 3/4\"/>

REVISIONS

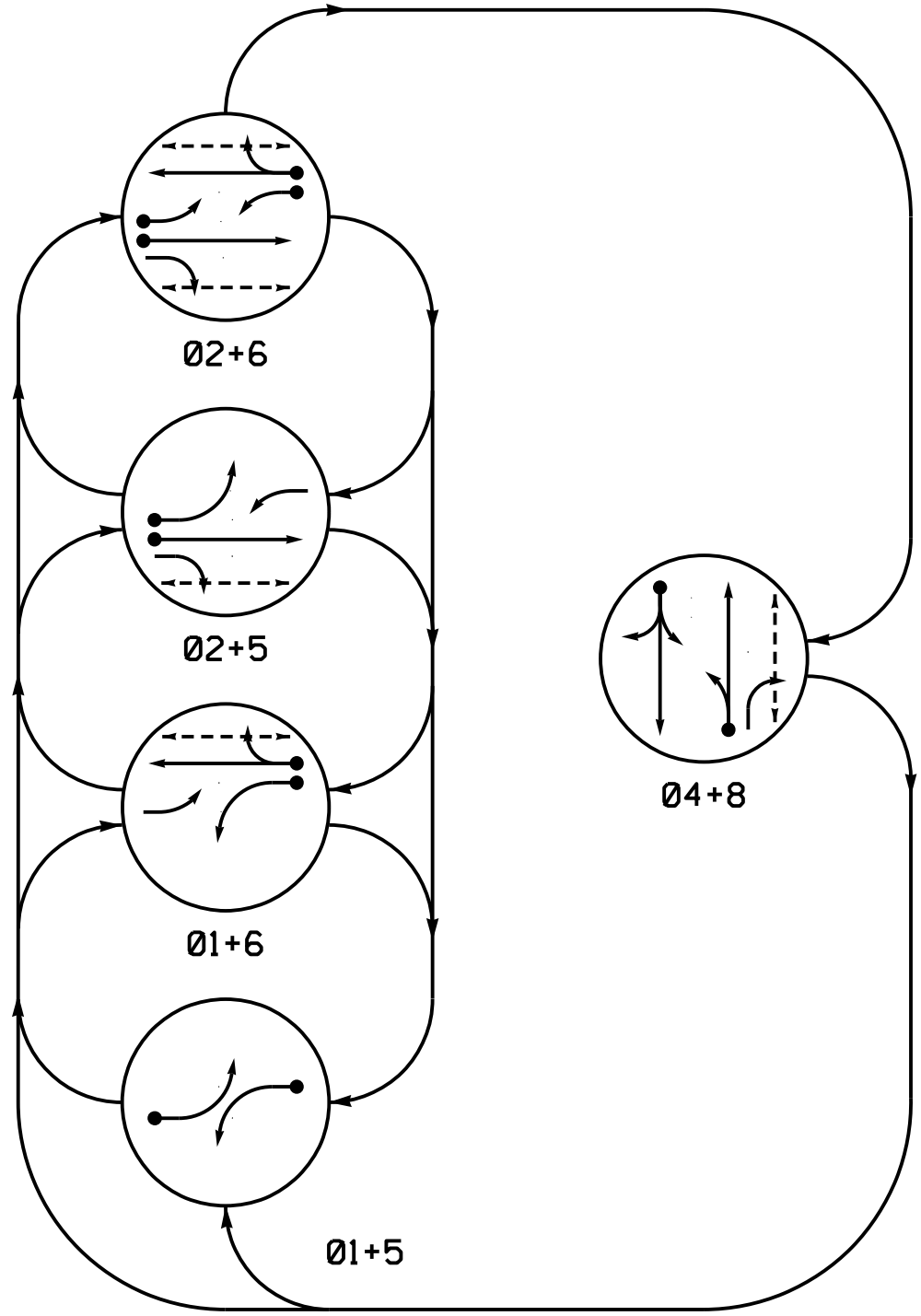
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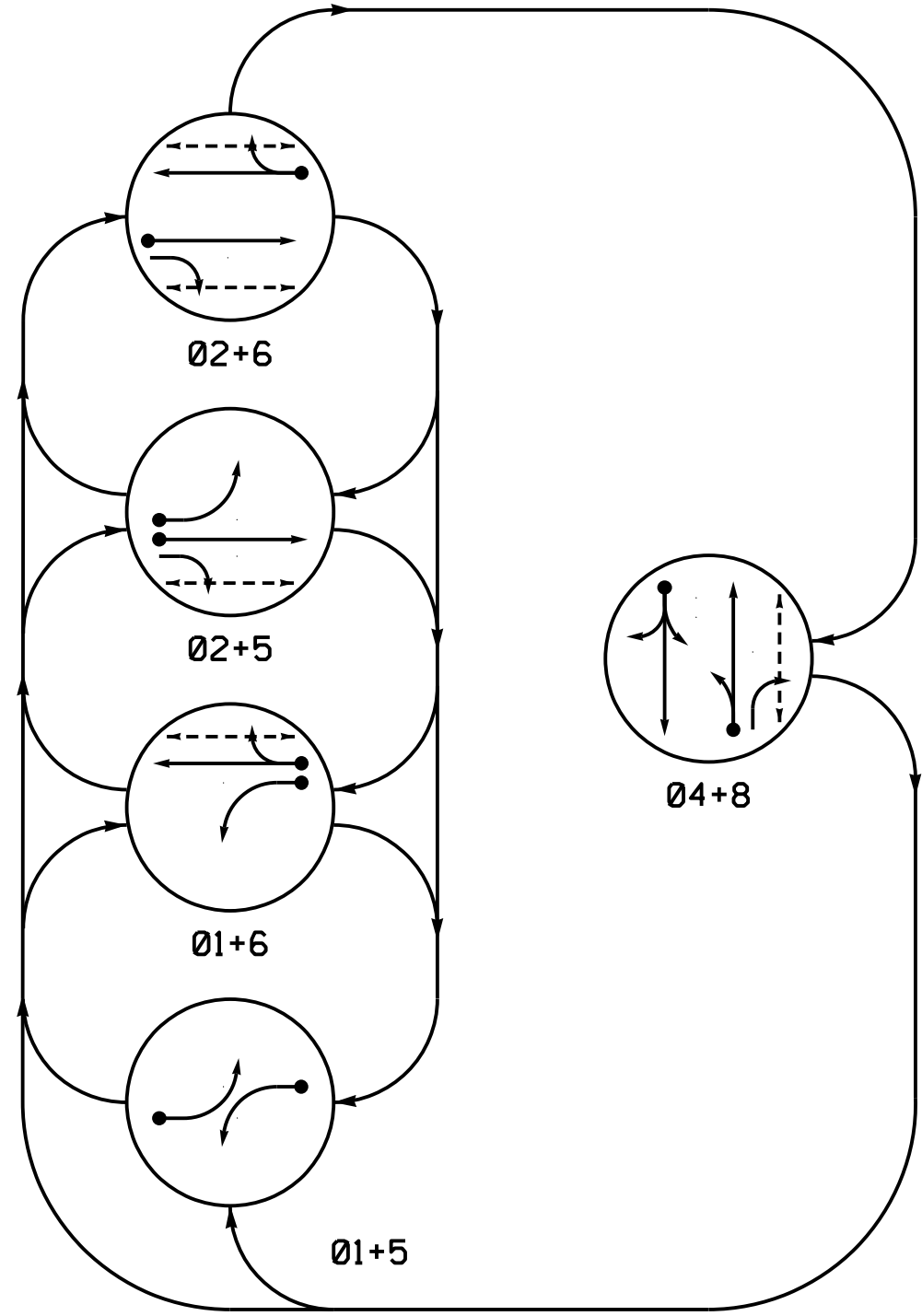
COMMERCIAL AREA SIDEWALK IMPROVEMENTS - PHASE I
TOWN OF OAK ISLAND
4601 E. OAK ISLAND DR.
OAK ISLAND, NC

DRAWN BY: MWB
CHECKED BY: JFW
PROJ. NO.: 22066
DATE: 2/23/2024
C3.0
SHEET 5 OF 13

DEFAULT PHASING DIAGRAM



ALTERNATE PHASING DIAGRAM

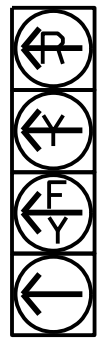


PHASING DIAGRAM DETECTION LEGEND

- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

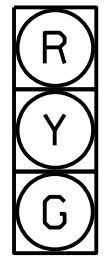
SIGNAL FACE I.D.

All Heads L.E.D.



11

51

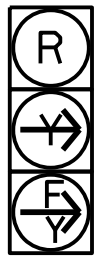


21, 22

41, 42

61, 62

81, 82



23

83

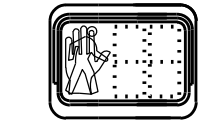


P21, P22

P61, P62

P81, P82

Accessible Pedestrian Signal



16"

MAXTIME TIMING CHART

FEATURE	PHASE					
	1	2	4	5	6	8
Walk *	-	7	-	-	7	7
Ped Clear *	-	8	-	-	9	12
Min Green *	7	10	7	7	10	7
Passage *	2.0	5.0	2.0	2.0	5.0	2.0
Max 1 *	15	45	25	15	45	25
Yellow Change	3.0	3.9	3.2	3.0	3.9	3.2
Red Clear	2.3	1.4	2.2	1.8	1.4	2.2
Added Initial *	-	2.5	-	-	2.5	-
Maximum Initial *	-	24	-	-	24	-
Time Before Reduction *	-	15	-	-	15	-
Time To Reduce *	-	45	-	-	45	-
Minimum Gap	-	3.0	-	-	3.0	-
Advance Walk	-	4	-	-	7	7
Non Lock Detector	X	-	X	X	-	X
Vehicle Recall	-	MIN RECALL	-	-	MIN RECALL	-
Dual Entry	-	-	X	-	-	X

* These values may be field adjusted. Do not adjust Min Green and Passage times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

DEFAULT PHASING TABLE OF OPERATION

SIGNAL FACE	PHASE					
	01+5	01+6	02+5	02+6	04+8	FLASH
11	-	-	F	F	R	R
21, 22	R	R	G	G	R	R
23	R	R	F	F	R	R
41, 42	R	R	R	R	G	R
51	-	F	F	R	R	R
61, 62	R	G	R	G	R	R
81, 82	R	R	R	R	G	R
83	R	R	R	R	F	R
P21, P22	DW	DW	W	W	DW	DRK
P61, P62	DW	W	DW	W	DW	DRK
P81, P82	DW	DW	DW	W	DRK	

ALTERNATE PHASING TABLE OF OPERATION

SIGNAL FACE	PHASE					
	01+5	01+6	02+5	02+6	04+8	FLASH
11	-	-	R	R	R	R
21, 22	R	R	G	G	R	R
23	R	R	F	F	R	R
41, 42	R	R	R	R	G	R
51	-	R	-	R	R	R
61, 62	R	G	R	G	R	R
81, 82	R	R	R	R	G	R
83	R	R	R	R	F	R
P21, P22	DW	DW	W	W	DW	DRK
P61, P62	DW	W	DW	W	DW	DRK
P81, P82	DW	DW	DW	W	DRK	

MAXTIME DETECTOR INSTALLATION CHART

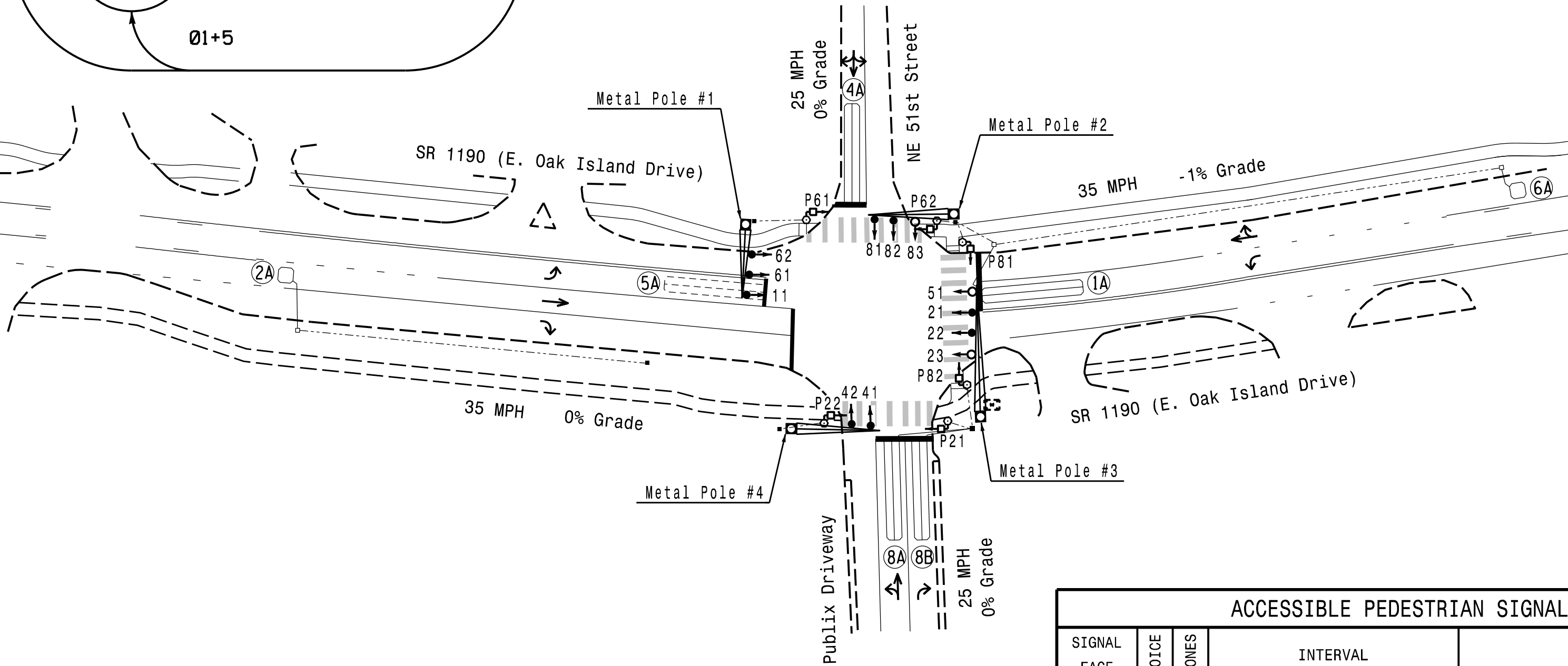
DETECTOR				PROGRAMMING						
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	URNS	NEW LOOP	CALL PHASE	DELAY TIME	EXTEND TIME	EXTEND	ADDED INITIAL	CALL
1A	6X40	0	2-4-2	X	1	15.0*	-	X	-	X
2A	6X6	200	4	X	2	-	-	X	X	X
4A	6X40	0	2-4-2	X	4	5.0	-	X	-	X
5A	6X40	0	2-4-2	-	5	15.0*	-	X	-	X
6A	6X6	200	4	X	6	-	-	X	X	X
8A	6X40	0	2-4-2	X	8	3.0	-	X	-	X
8B	6X40	0	2-4-2	X	8	15.0	-	X	-	X

* Reduce Delay to 3 seconds during Alternate Phasing operation.
Disable Phase Call for Loop(s) during Alternate Phasing operation.

5 Phase
Fully Actuated
(E. Oak Island Drive Closed Loop System)
Signal System: 10332

NOTES

- Refer to "Roadway Standard Drawings NCDOT" dated January 2024, and "Standard Specifications for Roads and Structures" dated January 2024, and all applicable sections of the latest version of the generic Project Special Provisions. The PSP can be accessed at the following website: <http://connect.ncdot.gov/resources/safety/Pages/ITS-Design-Resources.aspx>.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Phase 1 and/or phase 5 may be lagged.
- Relabel existing signal heads 22 and 23 as 21 and 22, respectively.
- Reposition existing signal heads numbered 21 and 22.
- Abandon existing loops 2A and 6A.
- Rewire existing loop 2B in cabinet as 5A.
- Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
- Program pedestrian heads to countdown the flashing "DON'T WALK" time only.
- This intersection features accessible pedestrian signals utilizing percussive tone walk indications and/or speech messages.
- Pavement markings are existing, unless otherwise noted.
- The Division (Town) Traffic Engineer will determine the hours of use for each phasing plan.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
- Closed loop system data: Signal System Asset Number 10332, Controller Asset 1144.



NC Dept of Transportation
Division of Highways
Final Drawing Date: 11/07/2024
Signed by: *Elizabeth Little*
NCDOT APPROVAL

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

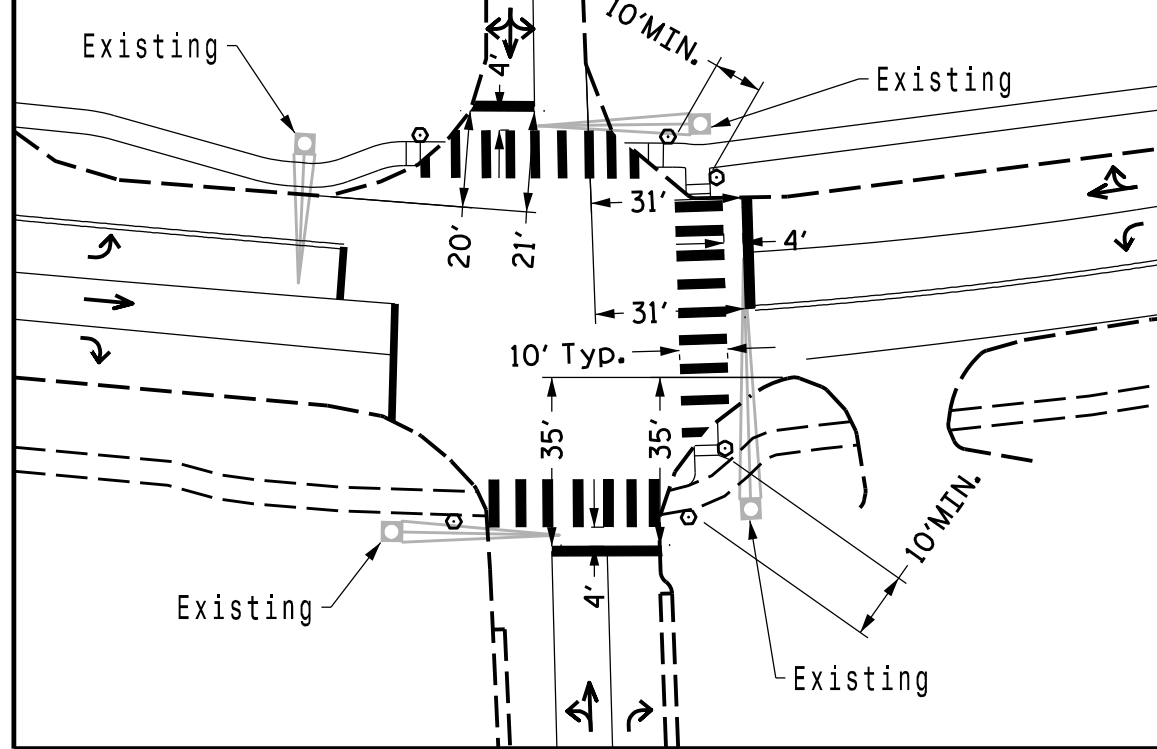
LEGEND

- | PROPOSED | EXISTING |
|----------|----------|
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ACCESSIBLE PEDESTRIAN SIGNAL OPERATION

SIGNAL FACE	VOICE	TONES	INTERVAL	SPEECH MESSAGE
P21	-	X	Walk	(Percussive Tone)
	X	-	Flashing Don't Walk / Don't Walk	Wait. Wait to cross Publix Driveway
P22	-	X	Walk	(Percussive Tone)
	X	-	Flashing Don't Walk / Don't Walk	Wait. Wait to cross Publix Driveway
P61	-	X	Walk	(Percussive Tone)
	X	-	Flashing Don't Walk / Don't Walk	Wait. Wait to cross 51st
P62	-	X	Walk	(Percussive Tone)
	X	-	Flashing Don't Walk / Don't Walk	Wait. Wait to cross 51st
P81	-	X	Walk	(Percussive Tone)
	X	-	Flashing Don't Walk / Don't Walk	Wait. Wait to cross Oak Island
P82	-	X	Walk	(Percussive Tone)
	X	-	Flashing Don't Walk / Don't Walk	Wait. Wait to cross Oak Island

STOPLINE AND POLE LOCATION DIAGRAM

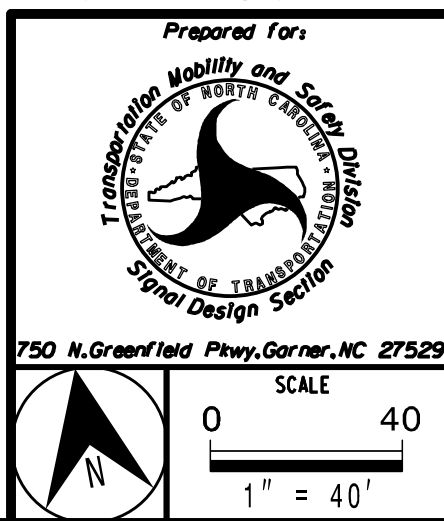


Signal Upgrade



NC License
#C-4445

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Raleigh, NC 27609
984.500.5426
www.exultengineering.com



SR 1190 (E. Oak Island Drive)
at
NE 51st Street

Division 3 Brunswick County Oak Island

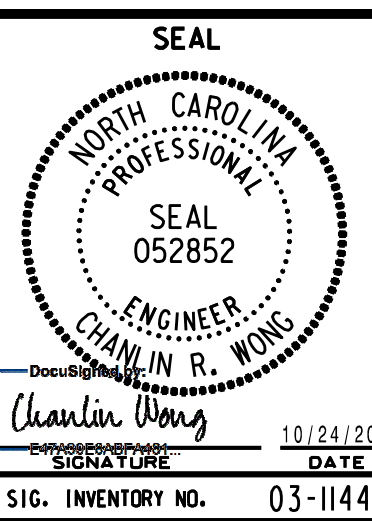
PLAN DATE: October 2024 EXULT PROJ. NO: 98001

PREPARED BY: SD Wilder REVIEWED BY: CR Wong

REVISIONS

INIT. DATE

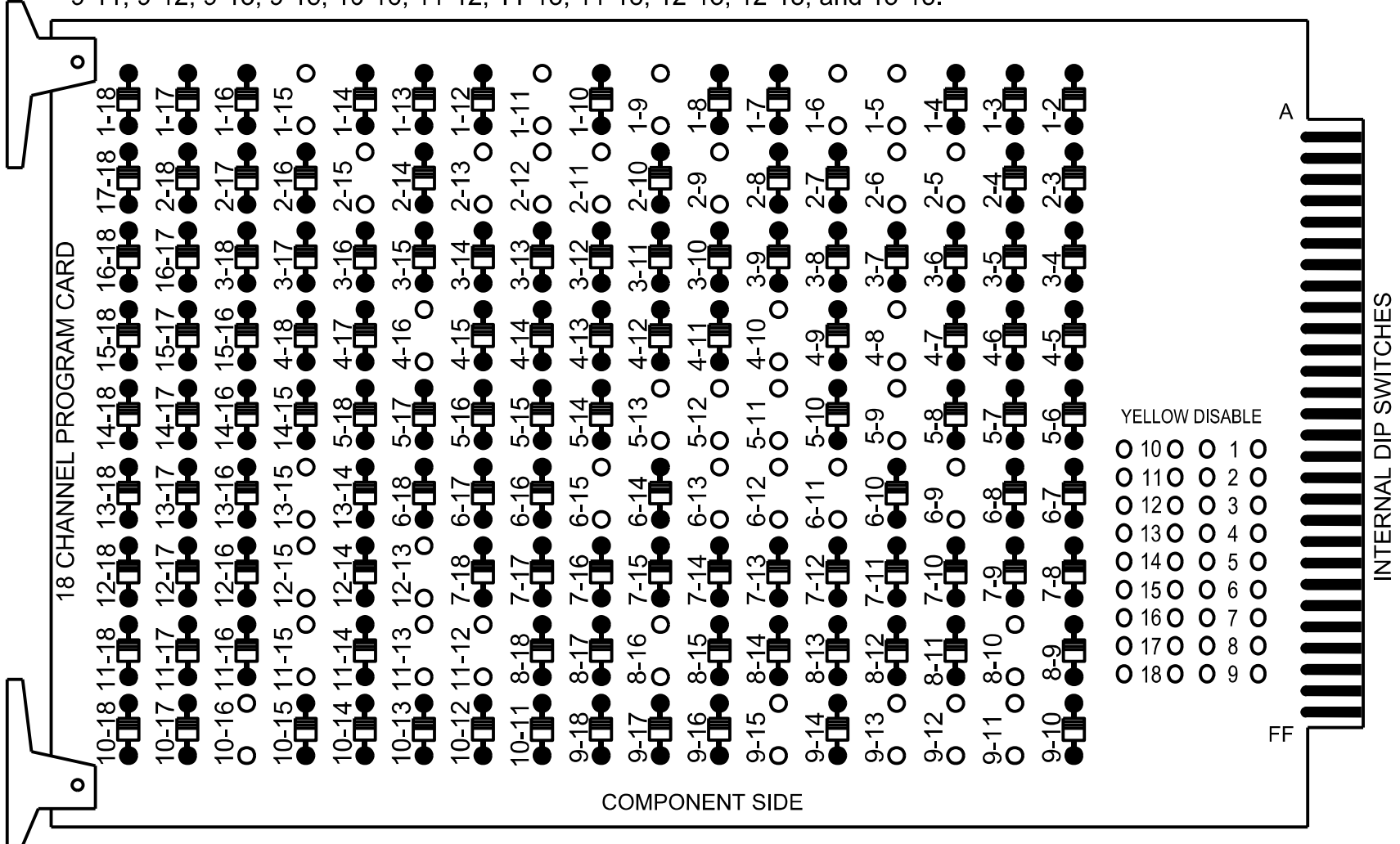
DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED



18 CHANNEL CONFLICT MONITOR
PROGRAMMING DETAIL

(remove jumpers and set switches as shown)

REMOVE DIODE JUMPERS 1-5, 1-6, 1-9, 1-11, 1-15, 2-5, 2-6, 2-9, 2-11, 2-12, 2-13, 2-15, 4-8, 4-10, 4-16, 5-9, 5-11, 5-12, 5-13, 6-9, 6-11, 6-12, 6-13, 6-15, 8-10, 8-16, 9-11, 9-12, 9-13, 9-15, 10-16, 11-12, 11-13, 11-15, 12-13, 12-15, and 13-15.



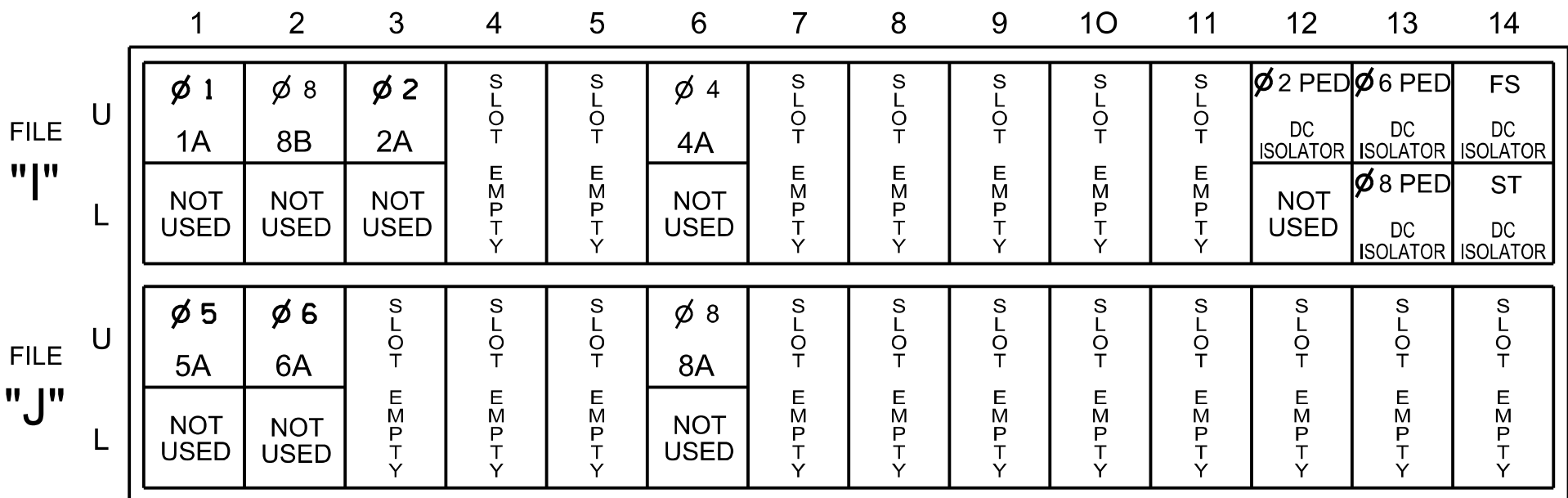
REMOVE JUMPERS AS SHOWN

NOTES:

1. Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
2. Ensure jumpers SEL2-SEL5 and SEL9 are present on the monitor board.
3. Ensure that the Red Enable is active at all times during normal operation.
4. Connect serial cable from conflict monitor to comm. port 1 of 2070 controller. Ensure conflict monitor communicates with 2070.

INPUT FILE POSITION LAYOUT

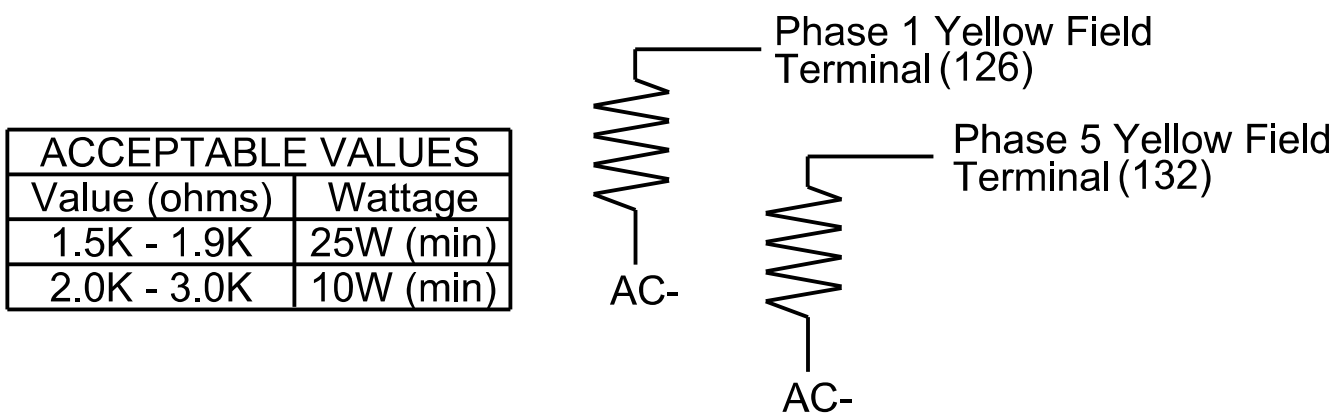
(front view)



EX. : 1A, 2A, ETC. = LOOP NO.'S
FS = FLASH SENSE
ST = STOP TIME
PRE = PREEMPT

LOAD RESISTOR INSTALLATION DETAIL

(install resistors as shown)



NOTES

1. To prevent "flash-conflict" problems, insert red flash program blocks for all unused vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the signal plan.
2. Program phases 4 and 8 for Dual Entry.
3. Program controller to start up in phase 2 Green No Walk and 6 Green No Walk.
4. If this signal will be managed by an ATMS software, enable controller and detector logging for all detectors used at this location.
5. The cabinet and controller are part of the E. Oak Island Drive Closed Loop System - Signal System: 10332.

COUNTDOWN PEDESTRIAN SIGNAL OPERATION

Countdown Ped Signals are required to display timing only during Ped Clearance Interval. Consult Ped Signal Module user's manual for instructions on selecting this feature.

EQUIPMENT INFORMATION

Controller.....2070LX
Cabinet.....332 w/ Aux
Software.....Q-Free MAXTIME
Cabinet Mount.....Base
Output File Positions.....18 With Aux. Output File
Load Switches Used.....S1,S2,S3,S5,S7,S8,S9,S11,S12
AUX S1,AUX S2,AUX S4, AUX S5
Phases Used.....1, 2, 2PED, 4, 5, 6, 6PED,
8, 8PED
Overlap "1".....*
Overlap "2".....*
Overlap "3".....*
Overlap "4".....*

*See overlap programming detail on sheet 2

INPUT FILE CONNECTION & PROGRAMMING CHART

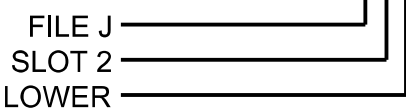
LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT POINT	DETECTOR NO.	CALL PHASE	DELAY TIME	EXTEND TIME	EXTEND	ADDED INITIAL	CALL	DELAY DURING GREEN
1A	TB2-1,2	I1U	56	18	1 ★	1	15.0		X		X	
2A	TB2-9,10	I3U	63	20	4	2	3.0		X	X	X	X
4A	TB4-9,10	I6U	41	3	8	4	5.0		X		X	
5A	TB3-1,2	J1U	55	17	15 ★	5	15.0		X		X	
6A	TB3-5,6	J2U	40	2	16	6	3.0		X	X	X	X
8A	TB5-9,10	J6U	42	4	22	8	3.0		X		X	
8B	TB2-5,6	I2U	39	1	2	8	15.0		X		X	
PED PUSH BUTTONS												
P21,P22	TB8-4,6	I12U	67	33	2	PED 2	NOTE: INSTALL DC ISOLATORS IN INPUT FILE SLOTS I12 AND I13.					
P61,P62	TB8-7,9	I13U	68	34	6	PED 6						
P81,P82	TB8-8,9	I13L	70	36	8	PED 8						

NOTE:

Remove jumper from I1-W to J4-W, on rear of input file, if present.
Remove jumper from J1-W to I4-W, on rear of input file, if present.

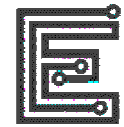
- ★ For the detectors to work as shown on the signal plan see the Detector Programming Detail for Alternate Phasing on sheet 2 of this plan.

INPUT FILE POSITION LEGEND: J2L



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

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



EXULT
ENGINEERING

NC License
#C-4445

304-F W. Millbrook Rd
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www.exultengineering.com

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

SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AUX S6
CMU CHANNEL NO.	1	2	13	3	4	14	5	6	15	7	8	16	9	10	17	11	12	18
PHASE	1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED	OL1	OL2	SPARE	OL3	OL4	SPARE
SIGNAL HEAD NO.	11	21,22	P21, P22	NU	41,42	NU	51	61,62	P61, P62	NU	81,82	P81, P82	11	83	NU	51	23	NU
RED		128			101			134			107			A124			A101	
YELLOW	★	129			102		★	135			108							
GREEN		130			103			136			109							
RED ARROW														A121			A114	
YELLOW ARROW														A122	A125		A115	A102
FLASHING YELLOW ARROW														A123	A126		A116	A103
GREEN ARROW	127						133											
Hand				113						119			110					
Ped				115						121			112					

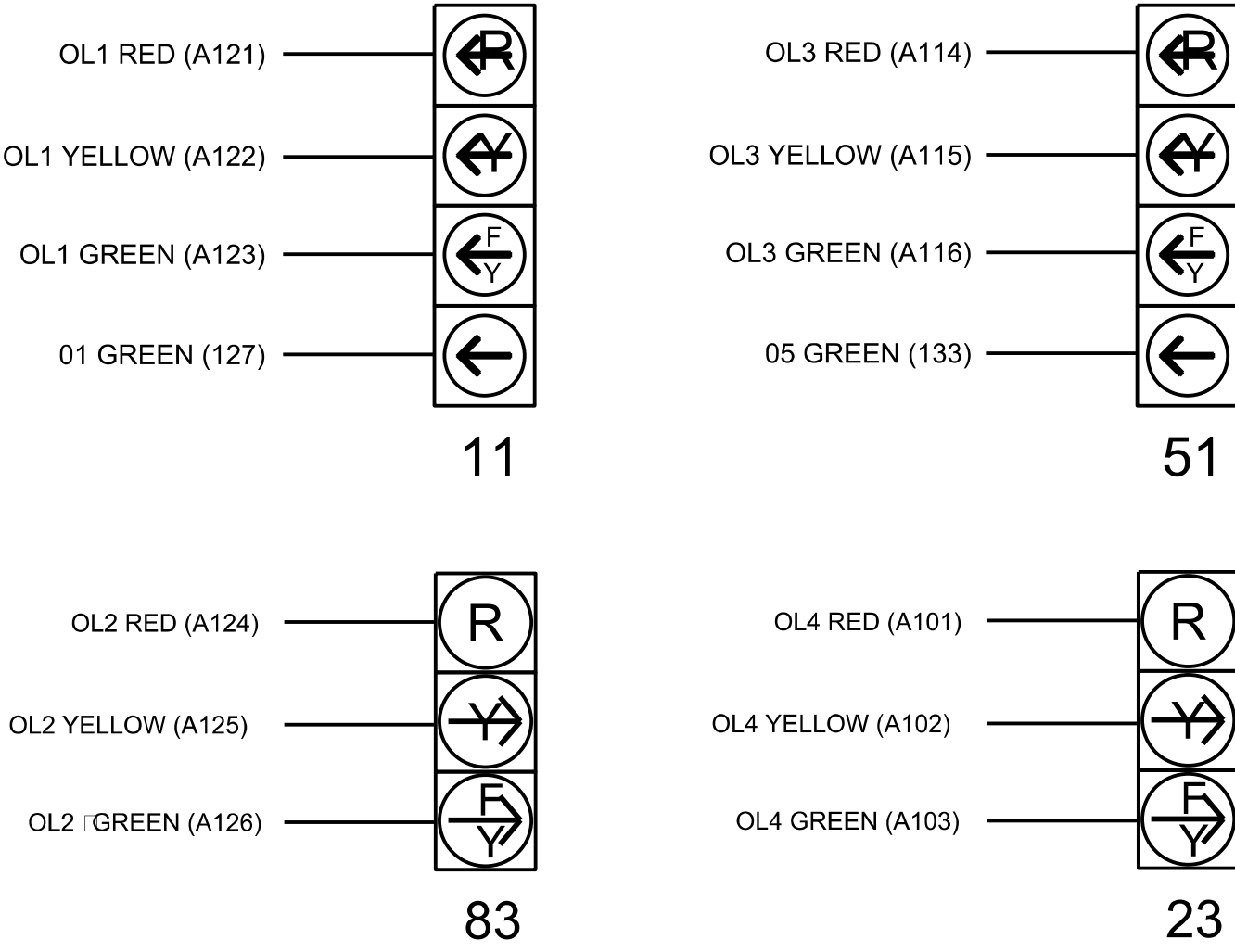
NU = Not Used

★ Denotes install load resistor. See load resistor installation detail on sheet 2.

★ See pictorial of head wiring in detail this sheet.

FYA SIGNAL WIRING DETAIL

(wire signal heads as shown)



Electrical Detail - Sheet 1 of 2



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

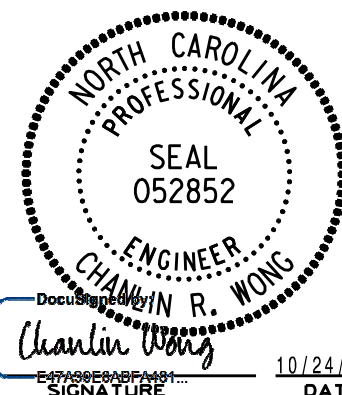
REVISIONS INIT. DATE

SIGNATURE DATE

SIG. INVENTORY NO. 03-1144

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

SEAL



SIG. INVENTORY NO. 03-1144

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	FYA 4 - Section	FYA 4 - Section	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

StartUp Clearance Hold
6

Unit Flash Parameters

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

ACTIVE PLAN REQUIRED TO RUN DEFAULT PHASING

OVERLAP PLAN

1

VEH DET PLAN

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	FYA 4 - Section	FYA 4 - Section	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:

- ON REAR OF PDA - REMOVE WIRE FROM TERM. T2-4 AND TERMINATE ON T2-2.
- ON REAR OF PDA - REMOVE WIRE FROM TERM. T2-5 AND TERMINATE ON T2-3.
- 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: *Erin R. Hitt*
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

- Install push buttons and APS equipment per manufacturer's instructions.
- Provide a dedicated cable to each push button per manufacturer's instructions.
- 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.
- 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.
- Place manufacturer's instructions in cabinet with cabinet prints, signal plans, and electrical details.
- 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.
- 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

Detector	Call Phase	Delay
15	5	3:0
31	0	3:0

MAXTIME ALTERNATE PHASING PATTERN
PROGRAMMING DETAIL

Front Panel
Main Menu >Controller >Coordination >Patterns

Web Interface
Home >Controller >Coordination >Patterns

Pattern Parameters

Pattern	Veh Det Plan	Overlap Plan
*	2	2

* The Pattern number(s) are to be determined by
the Division and/or Town Traffic Engineer.

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



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Electrical Detail - Sheet 2 of 2



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

REVISIONS	INIT.	DATE

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

SEAL



SIGNATURE: Chanler Wong
DATE: 10/24/2024

SIG. INVENTORY NO. 03-1144

