

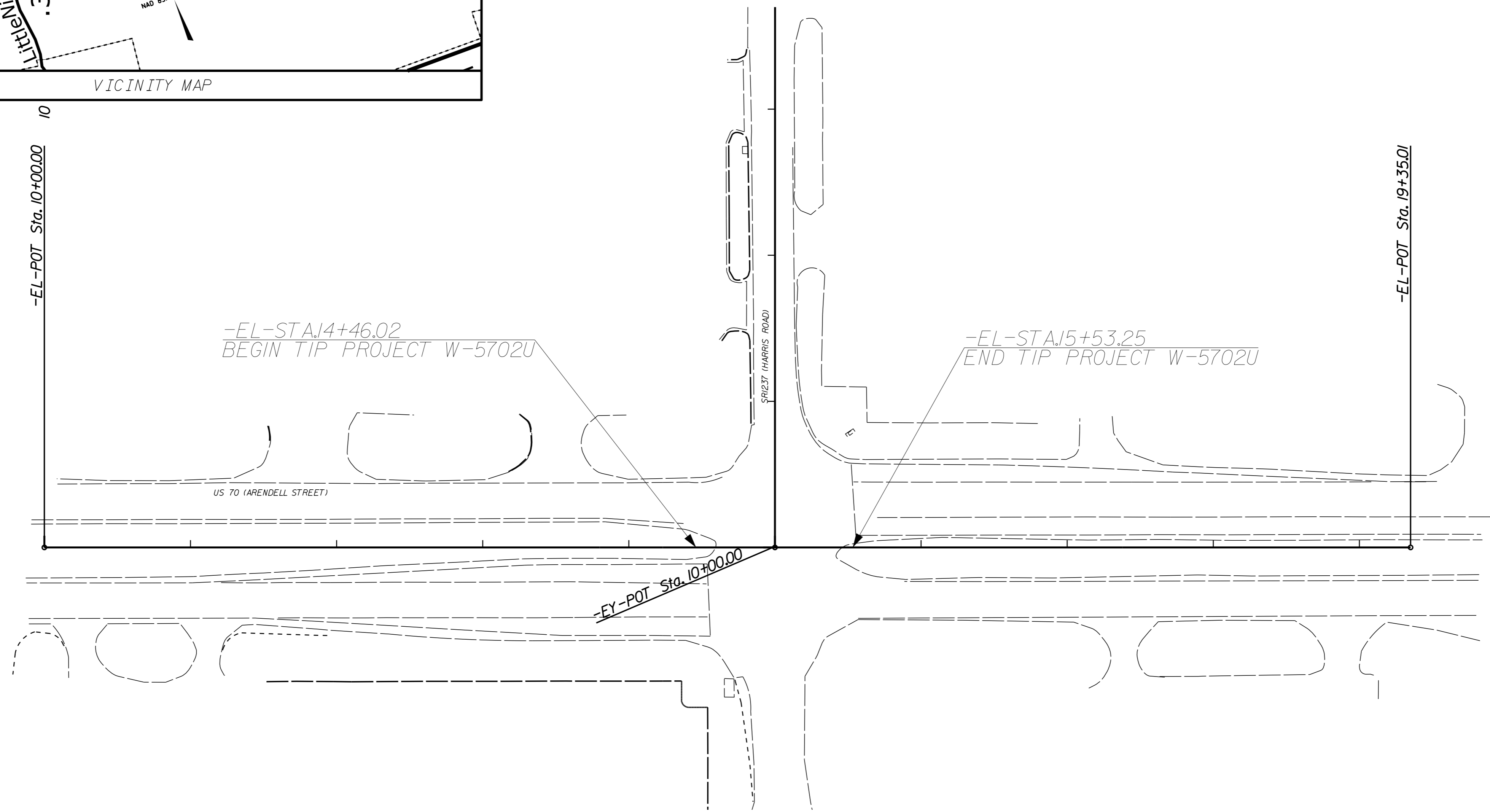
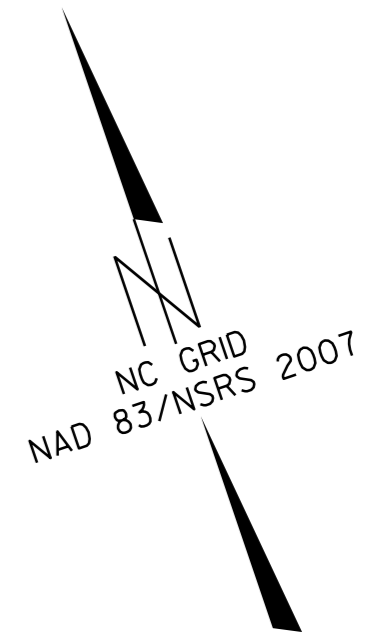
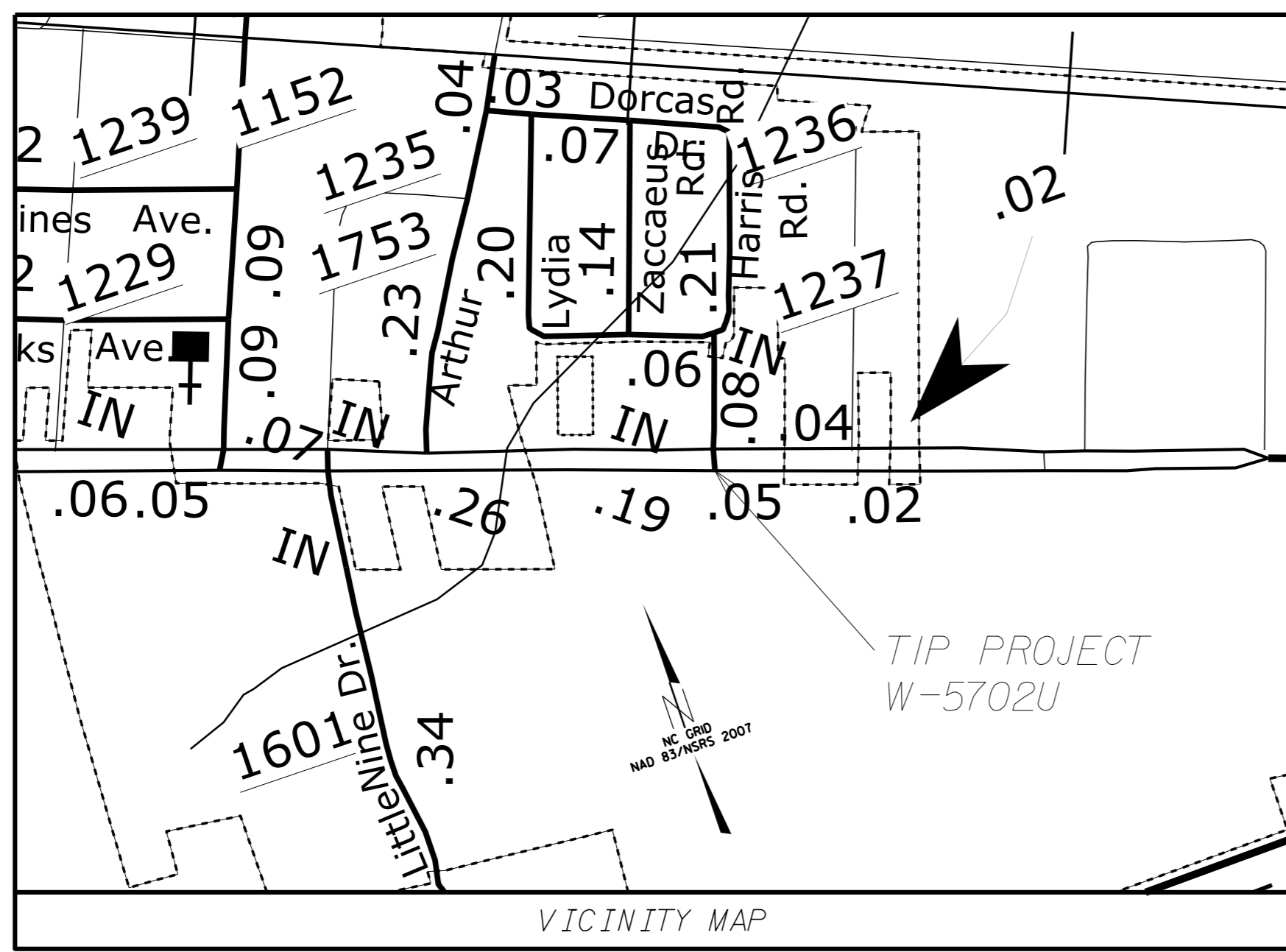
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	W-5702U	1	15
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
44848.1.21	0070234	PE	
44848.2.21	0070234	R/W-UTILITY	
44848.3.21	0070234	CONST	

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CARTERET COUNTY

LOCATION: US 70 (ARENDELL STREET) AT
SR 1237 (HARRIS ROAD)

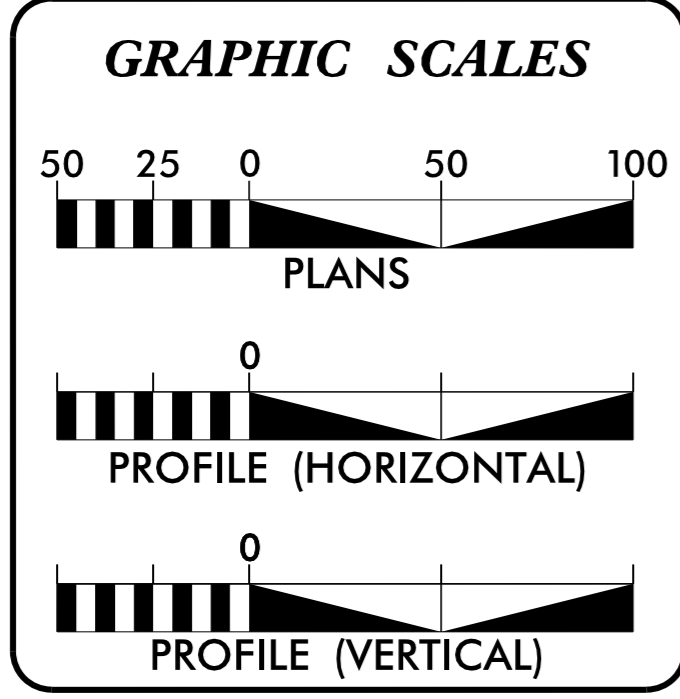
TYPE OF WORK: NEW MAST ARM POLES SIGNAL INSTALLATION



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

TIP PROJECT: W-5702U

CONTRACT: DB00537



DESIGN DATA
ADT 2018 = 37,000

FUNC CLASS =
ARTERIAL

PROJECT LENGTH

PROJECT LENGTH TIP W-5702U = 0.020 MI

Prepared in the Office of:
DIVISION OF HIGHWAYS
1037 WH SMITH BLVD., GREENVILLE, NC 27835

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: JUNE 2021

LETTING DATE: JUNE 2022

JEFFREY D. CABANISS, PE
PROJECT ENGINEER

RICH GODLEY
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

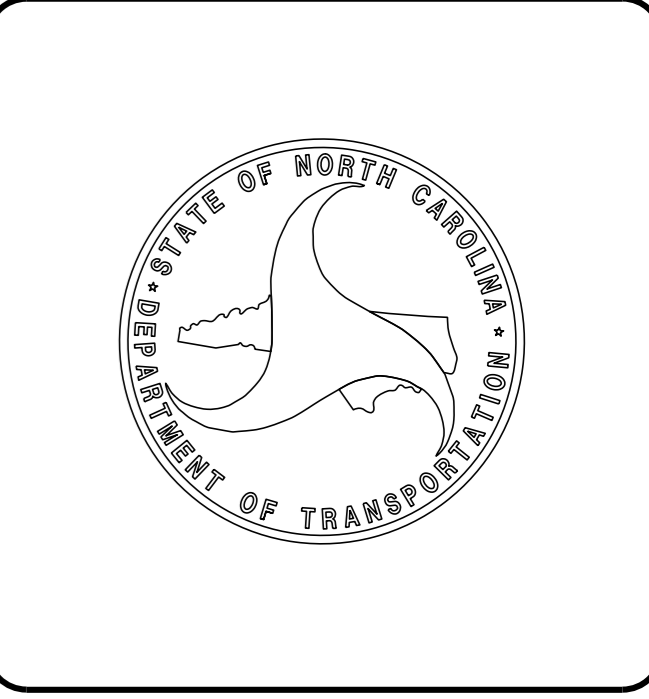
DocuSigned by:
Jeff Cabaniss
SIGNATURE: 03/31/2022

Professional Engineer Seal for Jeffrey D. Cabaniss, Seal No. 034398.

ROADWAY DESIGN ENGINEER

DocuSigned by:
Jeff Cabaniss
SIGNATURE: 03/31/2022

Professional Engineer Seal for Jeffrey D. Cabaniss, Seal No. 034398.



24-FEB-2022 14:18 G:\PROJECTS\CARTERET\W-5702U\#2_US70_HARRIS ROAD\w-5702u#2_psh_l.dgn \$\$\$USERNAME\$\$\$

SHEET NUMBER	INDEX OF SHEETS SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
RW02C-1 THRU RW04	SURVEY CONTROL SHEETS
3	SUMMARY OF QUANTITIES
4	PLAN SHEET
EC-1 THRU EC-2	EROSION CONTROL PLANS
SIG-1.0 THRU SIG-1.3	SIGNAL PLANS

GENERAL NOTES: 2018 SPECIFICATIONS
 EFFECTIVE: 01-16-2018
 REVISED:

GRADE LINE:
 GRADING AND SURFACING:
 THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. GRADE LINES MAY BE ADJUSTED AT THEIR BEGINNING AND ENDING AND AT STRUCTURES AS DIRECTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

CLEARING:
 CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

SUBSURFACE PLANS:
 NO SUBSURFACE PLANS ARE AVAILABLE ON THIS PROJECT. THE CONTRACTOR SHOULD MAKE HIS OWN INVESTIGATION AS TO THE SUBSURFACE CONDITIONS.

UTILITIES:
 UTILITY OWNERS ON THIS PROJECT ARE
 DUKE ENERGY
 CENTURYLINK
 CAROLINA WATER SERVICE INC OF NC
 NCDOT
 TOWN OF MOREHEAD CITY
 PIEDMONT NATURAL GAS COMPANY
 SEGRA
 SCOUT COMMUNICATIONS
 CROWN CASTLE
 TIME WARNER CABLE

2018 ROADWAY ENGLISH STANDARD DRAWINGS
 EFF. 01-16-2018
 REV.
 The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated January, 2018 are applicable to this project and by reference hereby are considered a part of these plans:
 STD.NO. TITLE
 DIVISION 2 - EARTHWORK
 200.02 Method of Clearing - Method II

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○
Computed Property Corner	→
Property Monument	EDM
Parcel/Sequence Number	(23)
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	MLB
Proposed Wetland Boundary	MLB
Existing Endangered Animal Boundary	EAB
Existing Endangered Plant Boundary	EPB
Existing Historic Property Boundary	HPB
Known Contamination Area: Soil	⊗-S-⊗-S-
Potential Contamination Area: Soil	⊗-S-⊗-S-
Known Contamination Area: Water	⊗-W-⊗-W-
Potential Contamination Area: Water	⊗-W-⊗-W-
Contaminated Site: Known or Potential	☠ ?

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	○
Well	○
Small Mine	⊗
Foundation	□
Area Outline	□
Cemetery	+
Building	□
School	□
Church	□
Dam	▬

HYDROLOGY:

Stream or Body of Water	-----
Hydro, Pool or Reservoir	▭
Jurisdictional Stream	JS
Buffer Zone 1	BZ 1
Buffer Zone 2	BZ 2
Flow Arrow	←
Disappearing Stream	→
Spring	○
Wetland	↓
Proposed Lateral, Tail, Head Ditch	← FLOW
False Sump	▽

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	CSX TRANSPORTATION MILEPOST 35
Switch	SWITCH
RR Abandoned	-----
RR Dismantled	-----

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

RIGHT OF WAY & PROJECT CONTROL:

Secondary Horiz and Vert Control Point	◆
Primary Horiz Control Point	○
Primary Horiz and Vert Control Point	●
Exist Permanent Easement Pin and Cap	◇
New Permanent Easement Pin and Cap	◆
Vertical Benchmark	⊠
Existing Right of Way Marker	△
Existing Right of Way Line	-----
New Right of Way Line	-----
New Right of Way Line with Pin and Cap	-----
New Right of Way Line with Concrete or Granite RW Marker	-----
New Control of Access Line with Concrete C/A Marker	-----
Existing Control of Access	-----
New Control of Access	-----
Existing Easement Line	-----
New Temporary Construction Easement	-----
New Temporary Drainage Easement	-----
New Permanent Drainage Easement	-----
New Permanent Drainage / Utility Easement	-----
New Permanent Utility Easement	-----
New Temporary Utility Easement	-----
New Aerial Utility Easement	-----

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	C
Proposed Slope Stakes Fill	F
Proposed Curb Ramp	CR
Existing Metal Guardrail	T T T
Proposed Guardrail	T T T
Existing Cable Guiderail	□ □ □
Proposed Cable Guiderail	□ □ □
Equality Symbol	⊕
Pavement Removal	⊗

VEGETATION:

Single Tree	☼
Single Shrub	☼

Hedge	-----
Woods Line	-----
Orchard	☼ ☼ ☼
Vineyard	Vineyard

EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	CONC
Bridge Wing Wall, Head Wall and End Wall	CONC WW
MINOR:	
Head and End Wall	CONC HW
Pipe Culvert	-----
Footbridge	-----
Drainage Box: Catch Basin, DI or JB	CB
Paved Ditch Gutter	-----
Storm Sewer Manhole	⊕
Storm Sewer	S

UTILITIES:

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	⊕
Power Line Tower	⊠
Power Transformer	⊠
U/G Power Cable Hand Hole	-----
H-Frame Pole	●
U/G Power Line LOS B (S.U.E.*)	-----
U/G Power Line LOS C (S.U.E.*)	-----
U/G Power Line LOS D (S.U.E.*)	-----

TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	⊕
Telephone Pedestal	⊠
Telephone Cell Tower	⊠
U/G Telephone Cable Hand Hole	-----
U/G Telephone Cable LOS B (S.U.E.*)	-----
U/G Telephone Cable LOS C (S.U.E.*)	-----
U/G Telephone Cable LOS D (S.U.E.*)	-----
U/G Telephone Conduit LOS B (S.U.E.*)	-----
U/G Telephone Conduit LOS C (S.U.E.*)	-----
U/G Telephone Conduit LOS D (S.U.E.*)	-----
U/G Fiber Optics Cable LOS B (S.U.E.*)	-----
U/G Fiber Optics Cable LOS C (S.U.E.*)	-----
U/G Fiber Optics Cable LOS D (S.U.E.*)	-----

WATER:

Water Manhole	⊕
Water Meter	○
Water Valve	⊗
Water Hydrant	⊕
U/G Water Line LOS B (S.U.E.*)	-----
U/G Water Line LOS C (S.U.E.*)	-----
U/G Water Line LOS D (S.U.E.*)	-----
Above Ground Water Line	A/G Water

TV:

TV Pedestal	⊠
TV Tower	⊗
U/G TV Cable Hand Hole	-----
U/G TV Cable LOS B (S.U.E.*)	-----
U/G TV Cable LOS C (S.U.E.*)	-----
U/G TV Cable LOS D (S.U.E.*)	-----
U/G Fiber Optic Cable LOS B (S.U.E.*)	-----
U/G Fiber Optic Cable LOS C (S.U.E.*)	-----
U/G Fiber Optic Cable LOS D (S.U.E.*)	-----

GAS:

Gas Valve	◇
Gas Meter	⊕
U/G Gas Line LOS B (S.U.E.*)	-----
U/G Gas Line LOS C (S.U.E.*)	-----
U/G Gas Line LOS D (S.U.E.*)	-----
Above Ground Gas Line	A/G Gas

SANITARY SEWER:

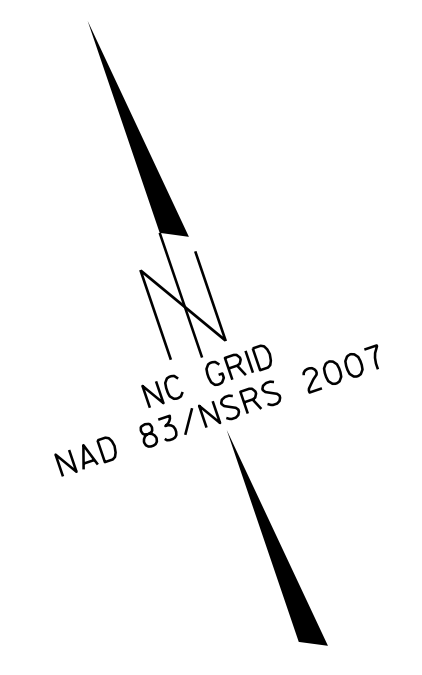
Sanitary Sewer Manhole	⊕
Sanitary Sewer Cleanout	⊕
U/G Sanitary Sewer Line	SS
Above Ground Sanitary Sewer	A/G Sanitary Sewer
SS Forced Main Line LOS B (S.U.E.*)	-----
SS Forced Main Line LOS C (S.U.E.*)	-----
SS Forced Main Line LOS D (S.U.E.*)	-----

MISCELLANEOUS:

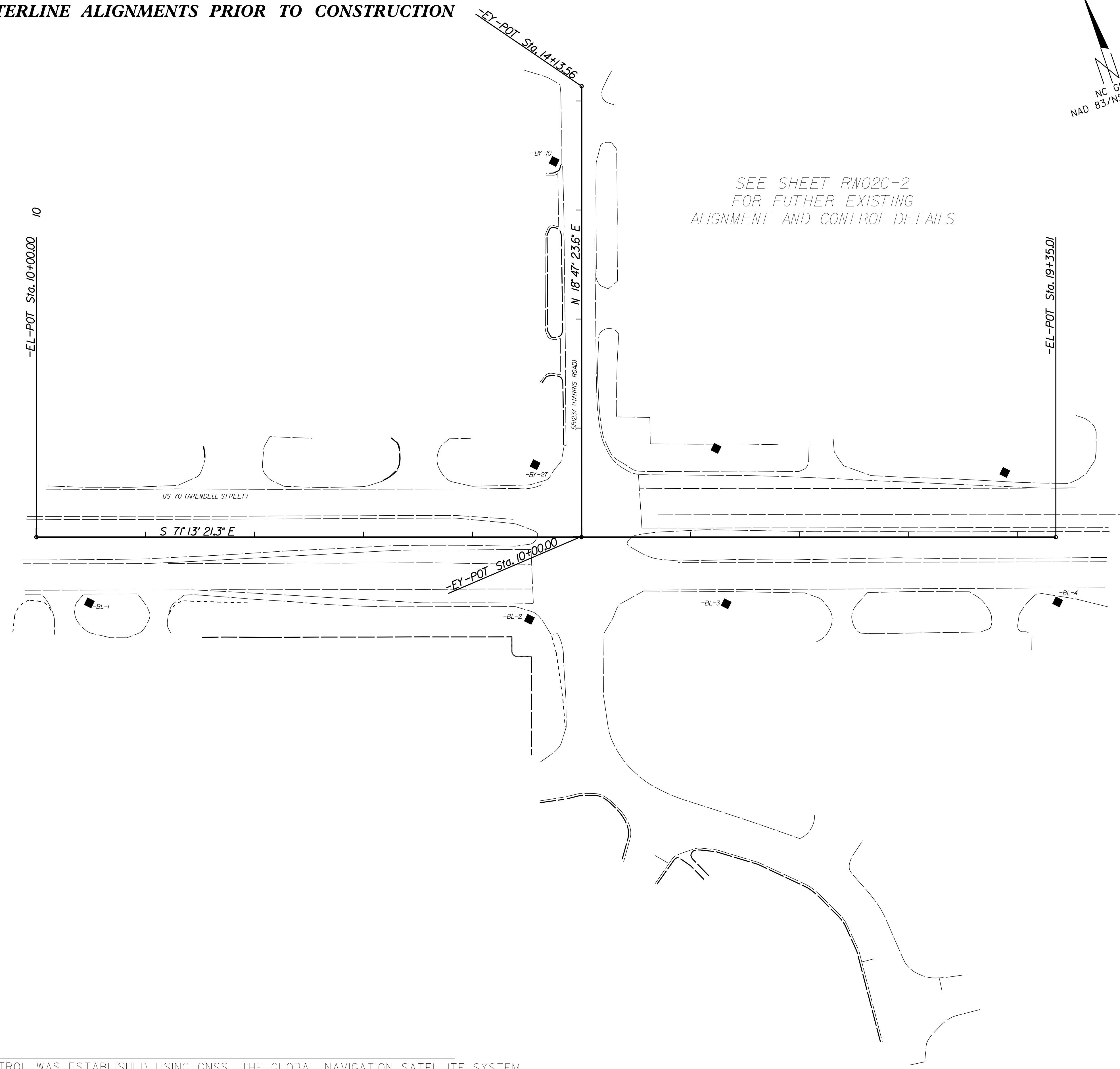
Utility Pole	●
Utility Pole with Base	⊠
Utility Located Object	○
Utility Traffic Signal Box	⊠
Utility Unknown U/G Line LOS B (S.U.E.*)	-----
U/G Tank; Water, Gas, Oil	⊠
Underground Storage Tank, Approx. Loc.	UST
A/G Tank; Water, Gas, Oil	⊠
Geoenvironmental Boring	⊕
U/G Test Hole LOS A (S.U.E.*)	⊕
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

SURVEY CONTROL SHEET

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION



SEE SHEET RW02C-2
FOR FURTHER EXISTING
ALIGNMENT AND CONTROL DETAILS



REVISIONS

24 FEB 2025 14:18:33
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 8/17/99

NOTES:
 1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.

SURVEY CONTROL SHEET

W/EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

BASELINE

BL	POINT	DESC.	NORTH	EAST	ELEVATION	BL STATION	OFFSET
1		-BL -1	367442.6760	2657025.2560	14.61	5+00.00	0.00
2		-BL -2	367298.4990	2657402.5260	14.18	9+03.88	0.00
3		-BL -3	367253.8860	2657577.9830	13.96	10+84.92	0.00
4		-BL -4	367157.6250	2657866.3880	14.90	13+88.97	0.00

BY	POINT	DESC.	NORTH	EAST	ELEVATION	BY STATION	OFFSET
27		-BY -27	367431.1240	2657453.1470	14.98	5+00.00	0.00
10		-BY -10	367688.7820	2657559.1690	14.49	7+78.62	0.00

EXISTING ALIGNMENT DESCRIPTION

EL				
POINT	N	E	BEARING	DIST
POT	367515.421	2656998.703		
LINE			S 71°13'21.3" E	935.01
POT	367214.447	2657883.951		

EY				
POINT	N	E	BEARING	DIST
POT	367354.475	2657472.091		
LINE			N 18°47'23.6" E	413.56
POT	367745.991	2657605.297		

NOTES:

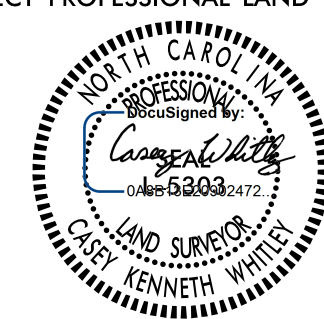
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REVISIONS

8/17/99

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RIGHT OF WAY CONTROL SHEET

PROJECT REFERENCE NO.	SHEET NO.
W-5702U	RW03E-1
PROJECT PROFESSIONAL LAND SURVEYOR	
	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

I, Casey Kenneth Whitley, a Professional Land Surveyor in the state of North Carolina hereby certify to the best of my knowledge and belief that the following work item(s) (R/W Staking) performed under my responsible charge meet NCDOT Survey Standards as directed in the NCDOT Location & Surveys guidelines and procedures.

I further certify that the right of way and permanent easement points shown herein and outlined in the tables shown hereon (localized coordinates, station/offset) have been checked and are accurate representations of the right of way and permanent easement points depicted on the corresponding highway plans. I also certify that the right of way and permanent easement points shown herein have been field monumented under my supervision from existing survey control provided by others; that the depicted property data shown herein were surveyed by others; and these monuments denote the right of way and easement boundaries at the time of staking which may be subject to change due to right of way revisions (See deeds for final determination).

Witness my original signature, registration number and seal this 9th day of February, 2022.

----- L-5303
 Professional Land Surveyor PLS # Seal

ROW MARKER IRON PIN AND CAP - E

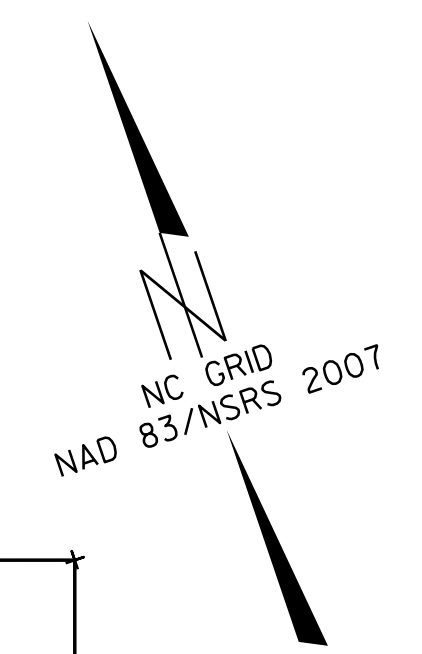
ALIGN	STATION	OFFSET	NORTH	EAST
EL	13+92.26	84.00	367309.6268	2657343.0439
EL	14+61.54	94.00	367277.8621	2657405.4218

NOTES:

- I. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.

REVISIONS

8/17/99
 24 FEB 2022 14:28
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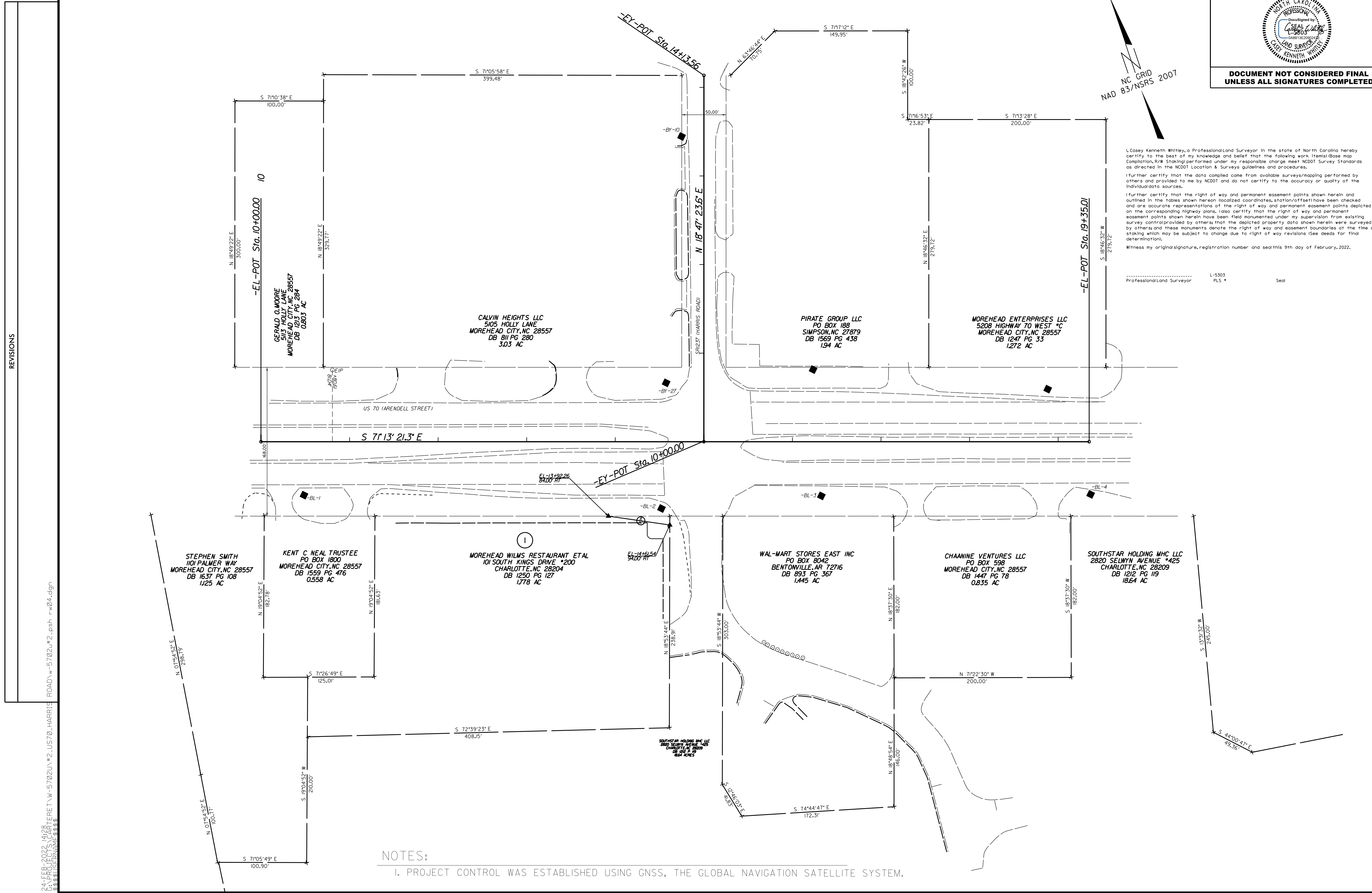
I, Casey Kenneth Whiteley, a Professional Land Surveyor in the state of North Carolina hereby certify to the best of my knowledge and belief that the following work items (Base map Compilation, R/W Staking) performed under my responsible charge meet NCDOT Survey Standards as directed in the NCDOT Location & Surveys guidelines and procedures.

I further certify that the data compiled came from available surveys/mapping performed by others and provided to me by NCDOT and do not certify to the accuracy or quality of the individual data sources.

I further certify that the right of way and permanent easement points shown herein and outlined in the tables shown hereon (localized coordinates, station/offset) have been checked and are accurate representations of the right of way and permanent easement points depicted on the corresponding highway plans. I also certify that the right of way and permanent easement points shown herein have been field monumented under my supervision from existing survey control provided by others; that the depicted property data shown herein were surveyed by others and these monuments denote the right of way and easement boundaries of the line of staking which may be subject to change due to right of way revisions (see deeds for final determination).

Witness my original signature, registration number and seal this 9th day of February, 2022.

Professional Land Surveyor L-5303 Seal
 PLS *



NOTES:
 1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.

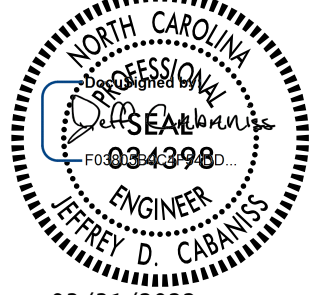

REVISIONS

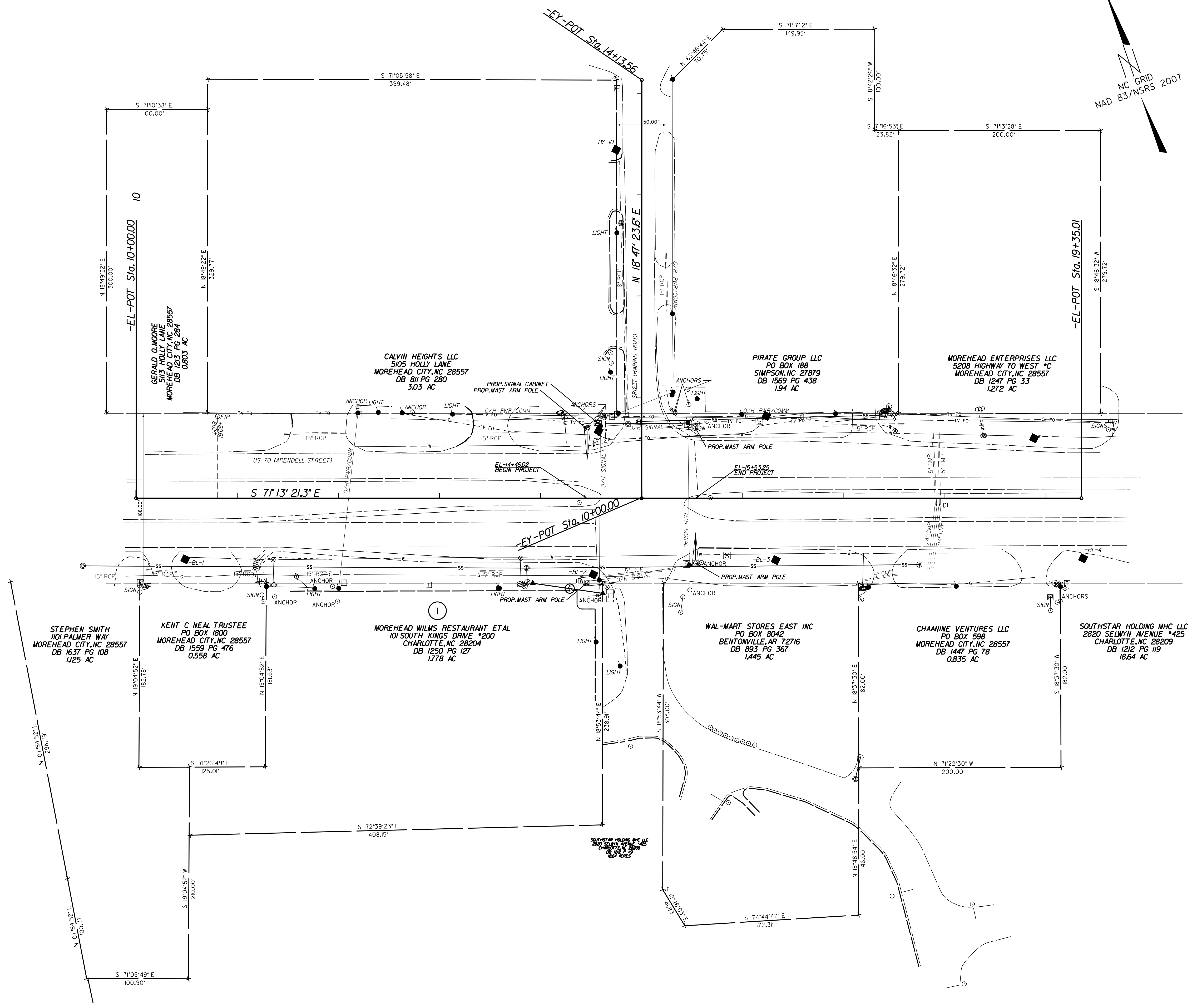
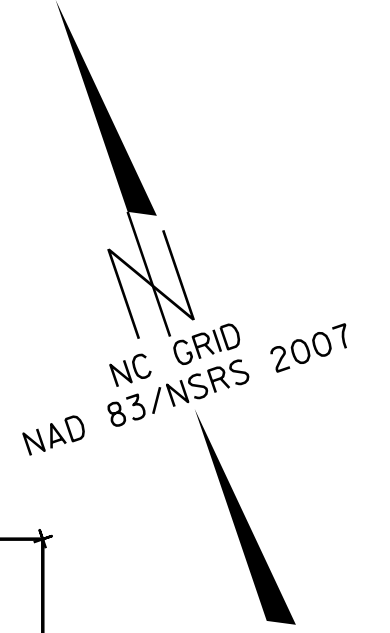
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 8/17/99

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF QUANTITIES

SECT	QUANTITY	UNIT	ITEM DESCRIPTION
800	0.4	LS	MOBILIZATION
801	0.4	LS	CONSTRUCTION SURVEYING
SP	144	SF	WORK ZONE ADVANCE/GENERAL WARNING SIGNING
SP	0.5	LS	TEMPORARY TRAFFIC CONTROL
1190	20	HR	LAW ENFORCEMENT
1605	100	LF	TEMPORARY SILT FENCE
SP	1	EA	CONCRETE WASHOUT STRUCTURE
1746	1	EA	RELOCATE EXISTING SIGN
1705	1,560	LF	SIGNAL CABLE
1705	5	EA	VEHICLE SIGNAL HEAD (12",3 SECTION)
1705	4	EA	VEHICLE SIGNAL HEAD (12",4 SECTION)
1706	1	EA	VEHICLE SIGNAL HEAD (12",5 SECTION)
1715	70	LF	UNPAVED TRENCHING (1 CONDUIT,2 INCH)
1715	30	LF	UNPAVED TRENCHING (2 CONDUITS,2 INCH)
1715	310	LF	DIRECTIONAL DRILL (1 CONDUIT,2 INCH)
1716	8	EA	JUNCTION BOX (STANDARD SIZE)
SP	4	EA	METAL POLE WITH SINGLE MAST ARM
SP	4	EA	SOIL TEST
SP	28	CY	DRILLED PIER FOUNDATION
SP	4	EA	MAST ARM WITH METAL POLE DESIGN
1745	2	EA	SIGN FOR SIGNALS
1750	1	EA	SIGNAL CABINET FOUNDATION
1751	7	EA	DETECTOR CARD (TYPE 170)
1751	1	EA	CONTROLLER WITH CABINET (TYPE 2070LX,BASE MOUNTED)
1753	1	EA	CABINET BASE EXTENDER

PROJECT REFERENCE NO. <i>W-5702U</i>	SHEET NO. <i>4</i>
RW SHEET NO. <i>RW04</i>	
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER 
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



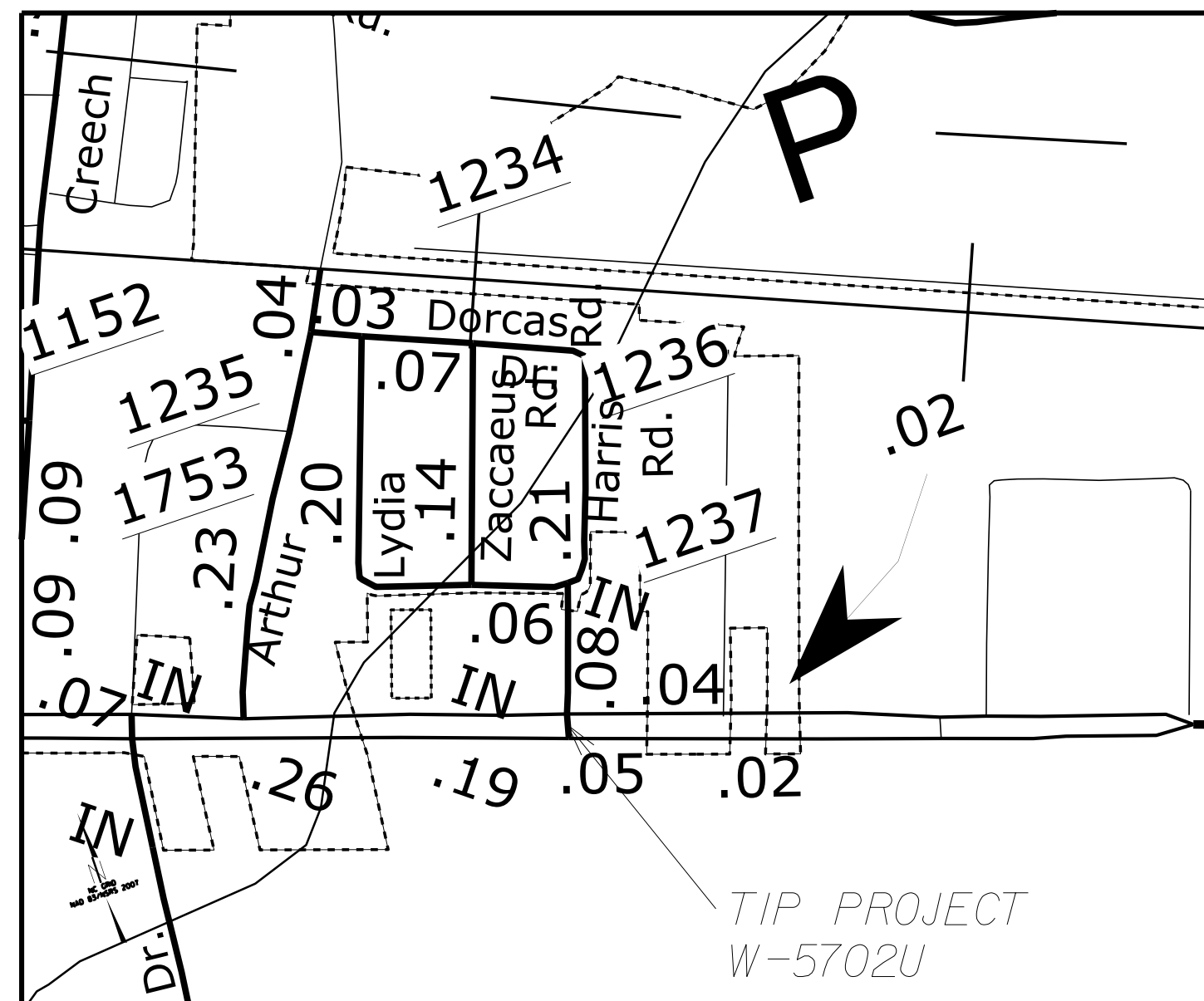
REVISIONS

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 8/17/99

N 83°49'34" W
16.00'
N 28°

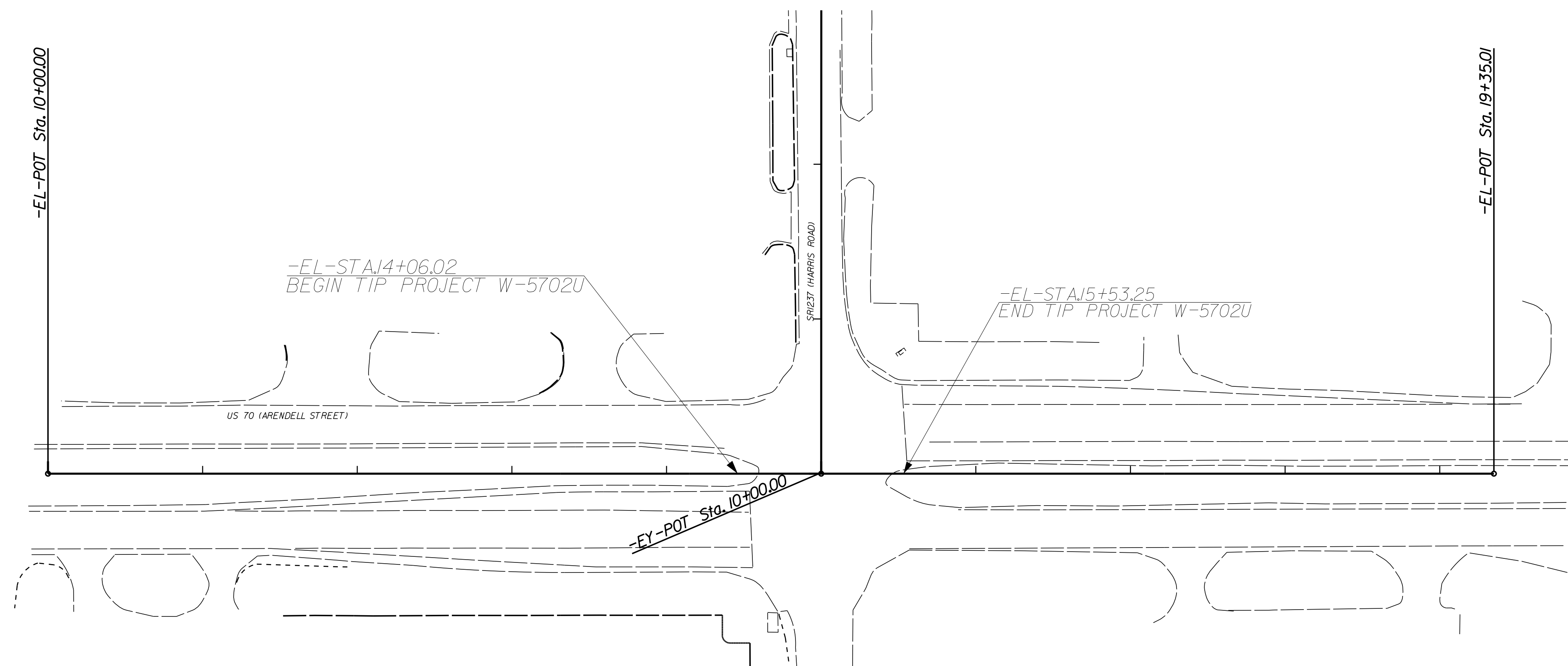
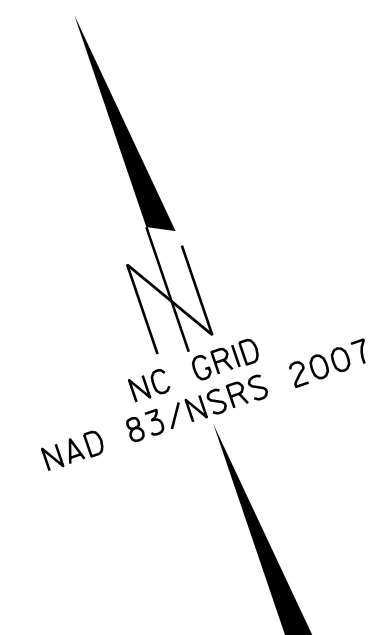
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	W-5702U	EC-1	2
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
44848.1.21	0070234	PE	
44848.2.21	0070234	RW	
44848.3.21	0070234	CONST	

TIP PROJECT: W-5702U



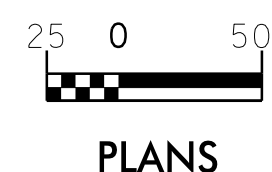
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

**LOCATION: US 70 AT SR 1237 (HARRIS ROAD)
CARTERET COUNTY**



Sid. #	Description	Symbol
1605.01	Temporary Silt Fence	--- --- --- ---
1606.01	Special Sediment Control Fence	---X---X---X---X---
1622.01	Temporary Berms and Slope Drains	---T---
1630.02	Silt Basin Type B	▨
1630.05	Temporary Silt Ditch	---
1630.05	Temporary Diversion	---
1630.06	Special Stilling Basin	---
1632.05	Rock Inlet Sediment Trap Type C	□
1633.01	Temporary Rock Silt Check Type-A	▨
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	▨
1633.02	Temporary Rock Silt Check Type-B	▶
	Wattle	⤴
	Wattle with Polyacrylamide (PAM)	⤴
1644.02	Temporary Rock Sediment Dam Type-B	⤴
1655.01	Rock Pipe Inlet Sediment Trap Type-A	⤴

GRAPHIC SCALE



PLANS

ROADSIDE ENVIRONMENTAL UNIT
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY
WITH THE REGULATIONS SET FORTH BY THE
NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE APRIL 1, 2019
ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND
NATURAL RESOURCES DIVISION OF WATER QUALITY.

2018 STANDARD SPECIFICATIONS

Prepared in the Office of:
DIVISION OF HIGHWAYS

1037 WH SMITH BLVD
GREENVILLE, NC 27835

Rich Godley
Level III
Certification #3559

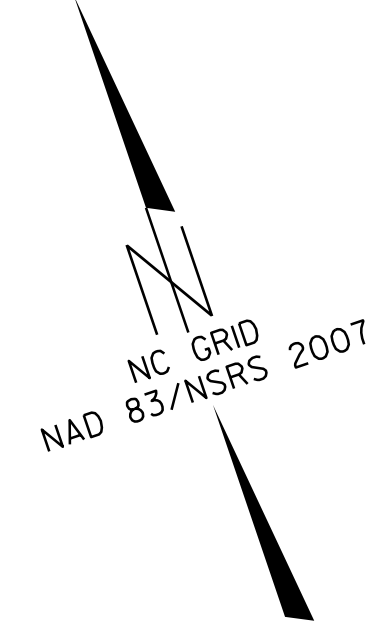
Roadway Standard Drawings

The following roadway **english** standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2018 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

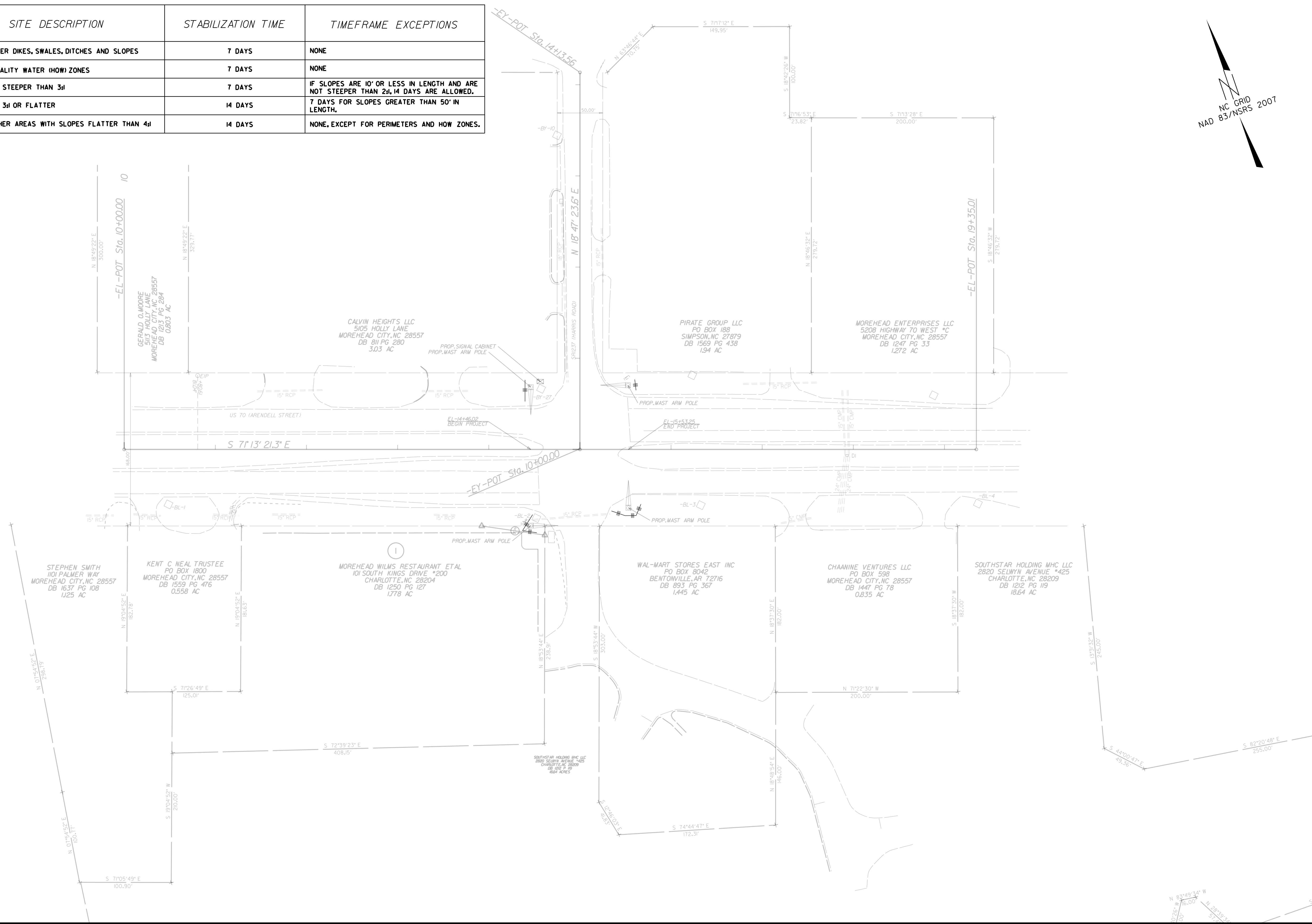
1604.01	Railroad Erosion Control Detail	1632.01	Rock Inlet Sediment Trap Type A
1605.01	Temporary Silt Fence	1632.02	Rock Inlet Sediment Trap Type J
1606.01	Special Sediment Control Fence	1632.03	Rock Inlet Sediment Trap Type C
1607.01	Gravel Construction Entrance	1633.01	Temporary Rock Silt Check Type A
1622.01	Temporary Berms and Slope Drains	1633.02	Temporary Rock Silt Check Type J
1630.01	Riser Basin	1634.01	Temporary Rock Sediment Dam Type A
1630.02	Silt Basin Type J	1634.02	Temporary Rock Sediment Dam Type J
1630.03	Temporary Silt Ditch	1635.01	Rock Pipe Inlet Sediment Trap Type A
1630.04	Stilling Basin	1635.02	Rock Pipe Inlet Sediment Trap Type J
1630.05	Temporary Diversion	1640.01	Coir Fiber Jaffle
1630.06	Special Stilling Basin	1645.01	Temporary Stream Crossing
1631.01	Matting Installation		

SOIL STABILIZATION TIMEFRAMES

SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HOW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HOW ZONES.



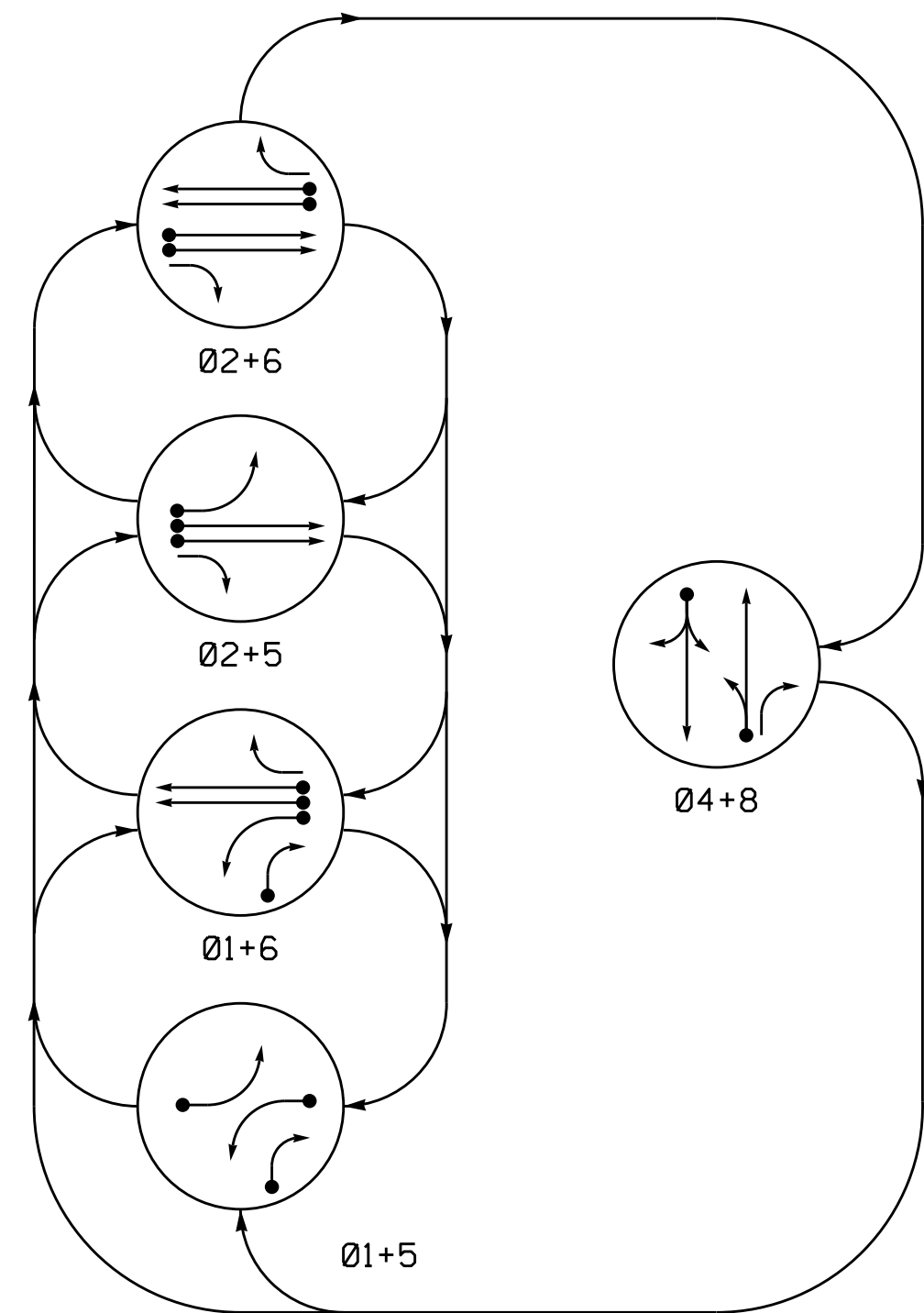
REVISIONS



8/17/99

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PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

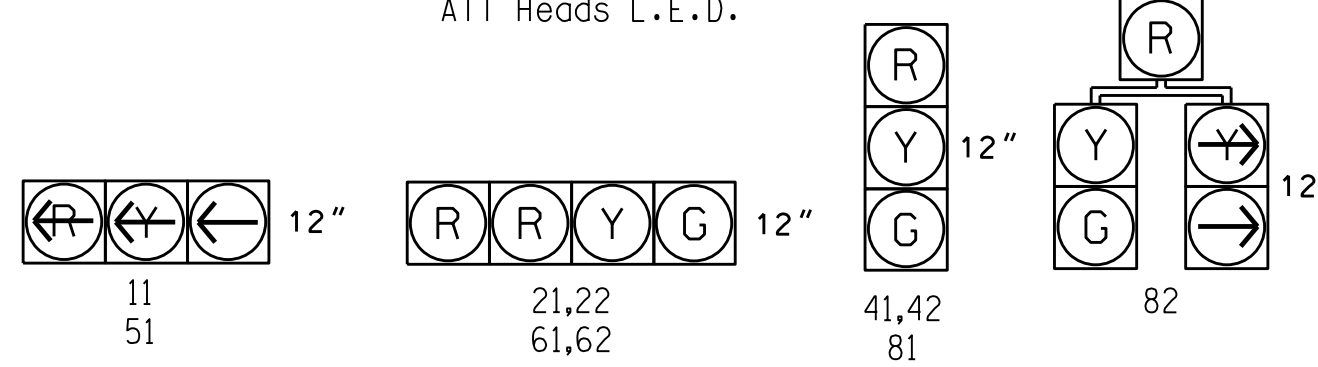
- ←●→ DETECTED MOVEMENT
- ←○→ UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- ←- - -> PEDESTRIAN MOVEMENT

TABLE OF OPERATION

SIGNAL FACE	PHASE					
	01+5	02+5	02+6	04+8	F	U
11	←	←	←	←	←	←
21,22	R	R	G	G	R	Y
41,42	R	R	R	R	G	R
51	←	←	←	←	←	←
61,62	R	G	R	G	R	Y
81	R	R	R	R	G	R
82	R	R	R	G	R	R

SIGNAL FACE I.D.

All Heads L.E.D.



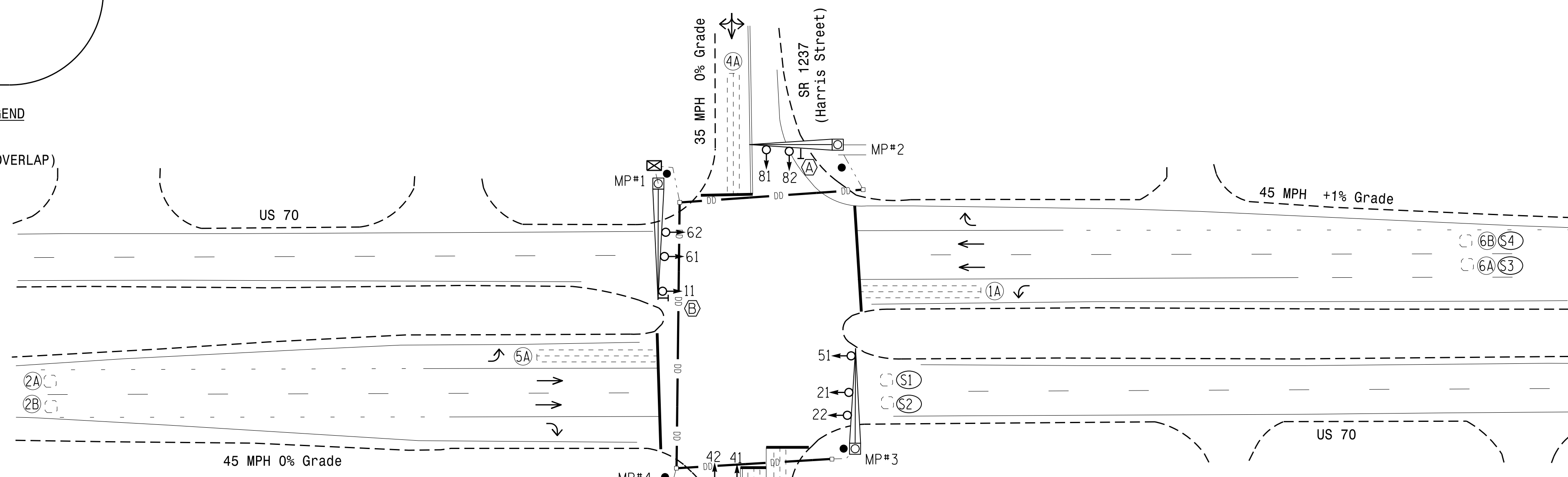
OASIS 2070 LOOP & DETECTOR INSTALLATION CHART

LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	DETECTOR PROGRAMMING								
					PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD	
1A	6X60	0	2-4-2	-	1	Y	Y	-	-	-	-	-	Y
1B	6X60	0	2-4-2	-	1	Y	Y	-	-	15	-	-	Y
2A	6X6	300	EXIST	-	2	Y	Y	-	-	-	-	-	Y
2B	6X6	300	EXIST	-	2	Y	Y	-	-	-	-	-	Y
4A	6X60	0	2-4-2	-	4	Y	Y	-	-	5	-	-	Y
5A	6X60	0	2-4-2	-	5	Y	Y	-	-	-	-	-	Y
6A/S3	6X6	300	EXIST	-	6	Y	Y	-	-	-	-	-	Y
6B/S4	6X6	300	EXIST	-	6	Y	Y	-	-	-	-	-	Y
8A	6X60	0	2-4-2	-	8	Y	Y	-	-	3	-	-	Y
S1	6X6	+110	EXIST	-	-	-	-	-	-	-	-	-	Y
S2	6X6	+110	EXIST	-	-	-	-	-	-	-	-	-	Y

5 Phase Fully Actuated US 70 Morehead City CLS 3 Signal System # D02-13

NOTES

- Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Phase 1 and/or phase 5 may be lagged.
- Set all detector units to presence mode.
- In the event of loop replacement, refer to the current ITS and Signals Design Manual and submit a Plan of Record to the Signal Design Section.
- Pavement markings are existing.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.



OASIS 2070 TIMING CHART

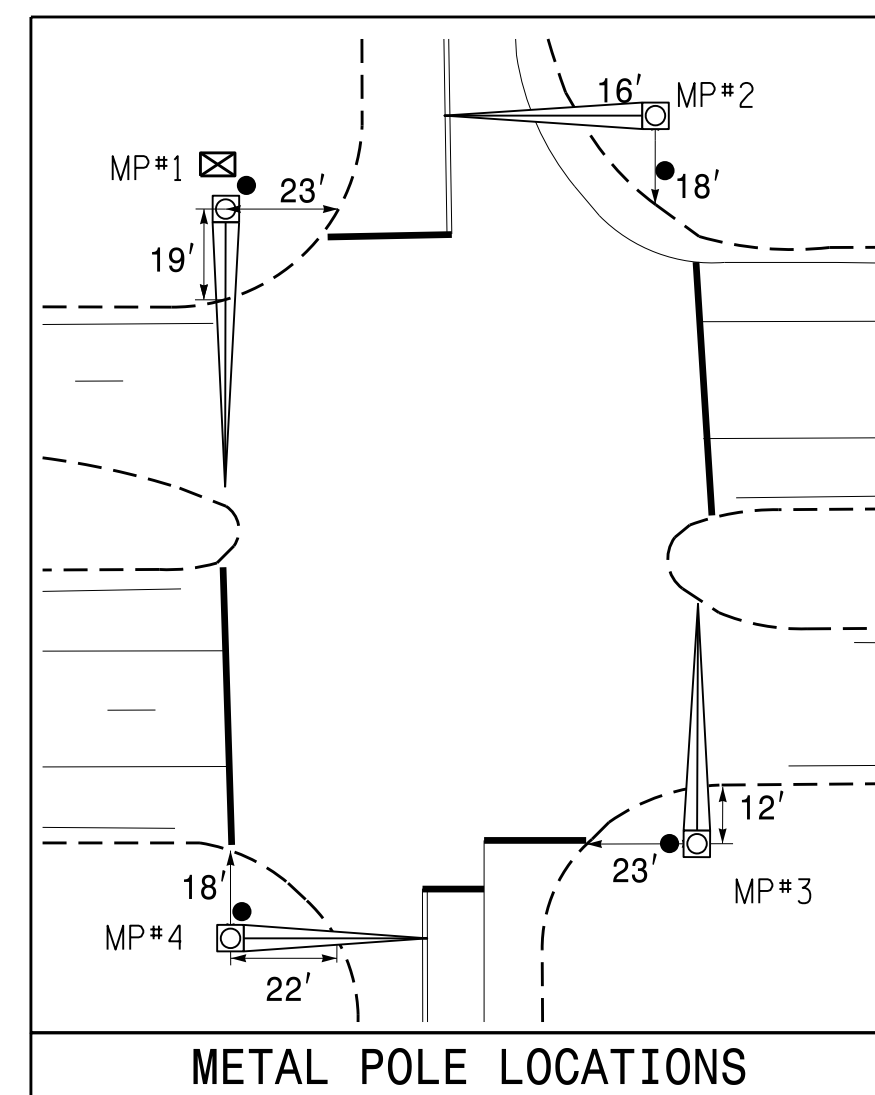
FEATURE	PHASE					
	1	2	4	5	6	8
Min Green 1 *	7	12	7	7	12	7
Extension 1 *	1.0	6.0	1.0	1.0	6.0	1.0
Max Green 1 *	15	125	25	15	125	25
Yellow Clearance	3.0	4.5	3.8	3.0	4.4	3.2
Red Clearance	3.2	1.0	2.3	3.1	1.2	3.2
Walk 1 *	-	-	-	-	-	-
Don't Walk 1	-	-	-	-	-	-
Seconds Per Actuation *	-	1.5	-	-	1.5	-
Max Variable Initial *	-	34	-	-	34	-
Time Before Reduction *	-	15	-	-	15	-
Time To Reduce *	-	60	-	-	60	-
Minimum Gap	-	3.0	-	-	3.0	-
Recall Mode	-	MIN RECALL	-	-	MIN RECALL	-
Vehicle Call Memory	-	YELLOW	-	-	YELLOW	-
Dual Entry	-	-	ON	-	-	ON
Simultaneous Gap	ON	ON	ON	ON	ON	ON

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

LEGEND

- | PROPOSED | EXISTING |
|--|------------------------------------|
| ○→ Traffic Signal Head | ●→ N/A |
| ●→ Modified Signal Head | ○→ N/A |
| ⊥ Sign | ⊥ N/A |
| ⊥ Pedestrian Signal Head With Push Button & Sign | ⊥ N/A |
| ○ Signal Pole with Guy | ● Signal Pole with Guy |
| ○ Signal Pole with Sidewalk Guy | ● Signal Pole with Sidewalk Guy |
| ⊠ Inductive Loop Detector | ⊠ Inductive Loop Detector |
| ⊠ Controller & Cabinet | ⊠ Controller & Cabinet |
| ⊠ Junction Box | ⊠ Junction Box |
| ⊠ 2-in Underground Conduit | ⊠ 2-in Underground Conduit |
| N/A Right of Way | N/A Right of Way |
| → Directional Arrow | → Directional Arrow |
| Ⓐ Right Arrow "ONLY" Sign (R3-5R) | Ⓐ Right Arrow "ONLY" Sign (R3-5R) |
| Ⓑ U-Turn "MUST YIELD" Sign (R3-27) | Ⓑ U-Turn "MUST YIELD" Sign (R3-27) |

This Plan Supersedes Plan sealed on 10/7/2020



Signal Upgrade

Prepared in the Offices of:

750 N. Greenfield Pkwy, Garner, NC 27529

US 70 at SR 1237 (Harris Street) / Lowe's Shopping Center

Division 2 Carteret County Morehead City

PLAN DATE: June 2020 REVIEWED BY: MEL

PREPARED BY: Jeff Spence REVIEWED BY:

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

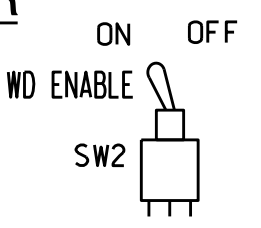
SEAL

10/28/2023

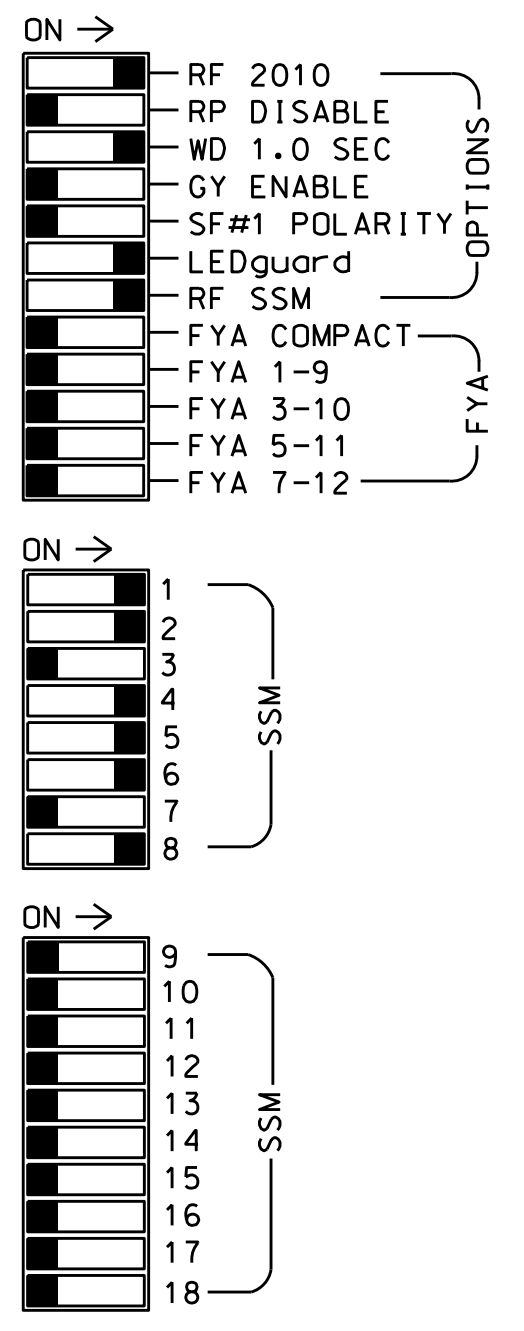
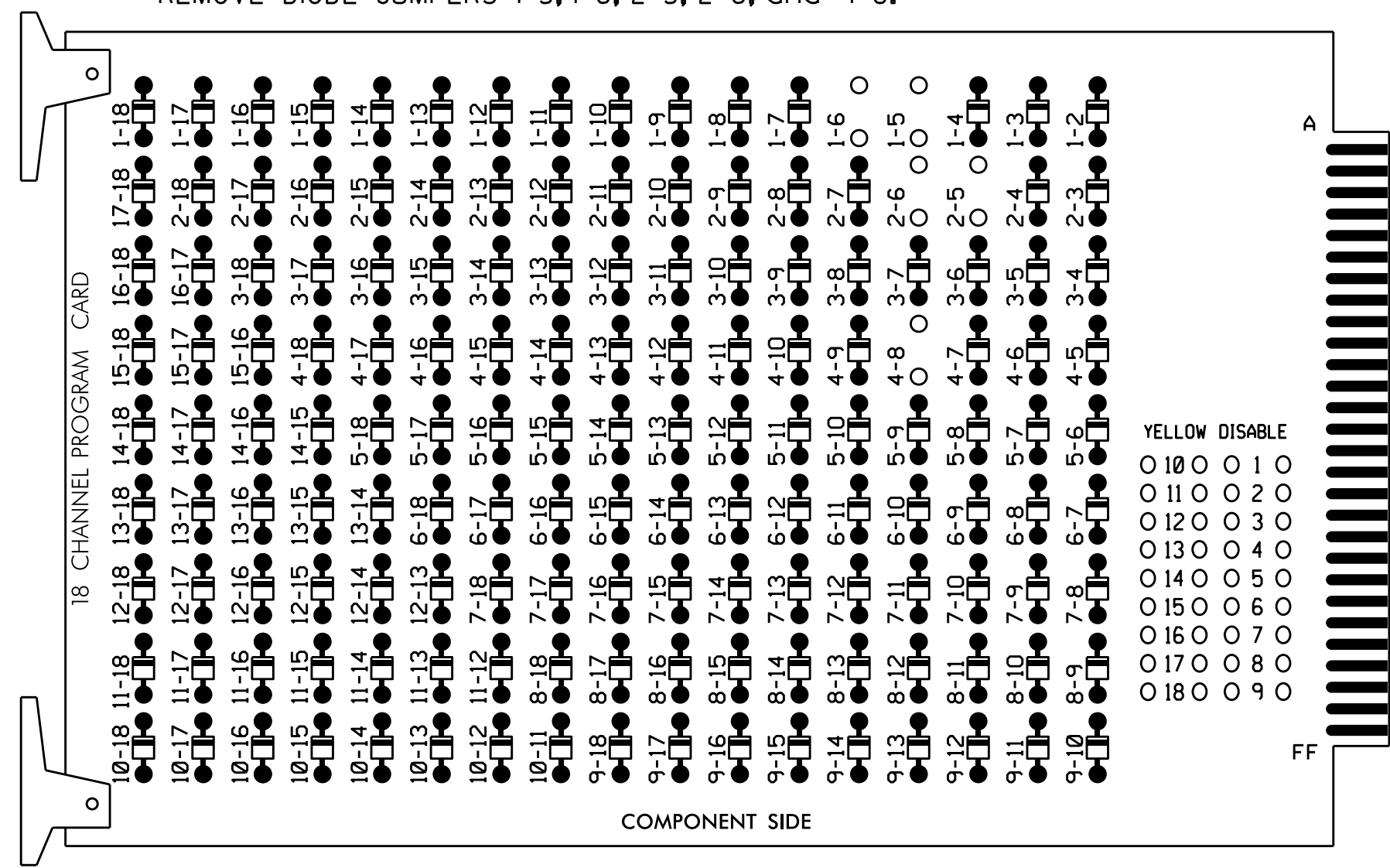
EDI MODEL 2018ECL-NC CONFLICT MONITOR

PROGRAMMING DETAIL

(remove jumpers and set switches as shown)



REMOVE DIODE JUMPERS 1-5, 1-6, 2-5, 2-6, and 4-8.



■ = DENOTES POSITION OF SWITCH

REMOVE JUMPERS AS SHOWN

NOTES:

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

NOTES

- 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 Plans.
- Program phases 4 and 8 for Dual Entry.
- Enable Simultaneous Gap-Out for all Phases.
- Program phases 2 and 6 for Variable Initial and Gap Reduction.
- Program phases 2 and 6 for Startup In Green.
- Program phases 2 and 6 for Yellow Flash.
- If this signal will be managed by an ATMS software, enable controller and detector logging for all detectors used at this location.
- The cabinet and controller are part of the US 70 Morehead City CLS #3, Signal System #D02-13.

EQUIPMENT INFORMATION

CONTROLLER.....2070
 CABINET.....332
 SOFTWARE.....ECONOLITE DASIS
 CABINET MOUNT.....BASE
 OUTPUT FILE POSITIONS...12
 LOAD SWITCHES USED.....S1,S2,S5,S7,S8,S11
 PHASES USED.....1,2,4,5,6,8
 OVERLAPS.....NONE

SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12
CMU CHANNEL NO.	1	2	13	3	4	14	5	6	15	7	8	16
PHASE	1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED
SIGNAL HEAD NO.	11	82	21,22	NU	NU	41,42	NU	51	61,62	NU	NU	81,82
RED			128			101			134			107
YELLOW			129			102			135			108
GREEN			130			103			136			109
RED ARROW	125							131				
YELLOW ARROW	126	126						132				
GREEN ARROW	127	127						133				

NU = Not Used

INPUT FILE POSITION LAYOUT

(front view)

FILE	U	1	2	3	4	5	6	7	8	9	10	11	12	13	14
"I"	U	S	∅ 1	∅ 2	S	S	∅ 4	S	S	SYS. DET. S1	S	S	S	S	FS
		1A	2A	1B	2B	NOT USED	NOT USED	SYS. DET. S2	DC ISOLATOR	ST	DC ISOLATOR				
"J"	U	∅ 5	∅ 6/SYS	∅ 7	∅ 8	∅ 9	∅ 10	∅ 11	∅ 12	∅ 13	∅ 14	∅ 15	∅ 16	∅ 17	∅ 18
		5A	6A/S3	6B/S4	8A	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED

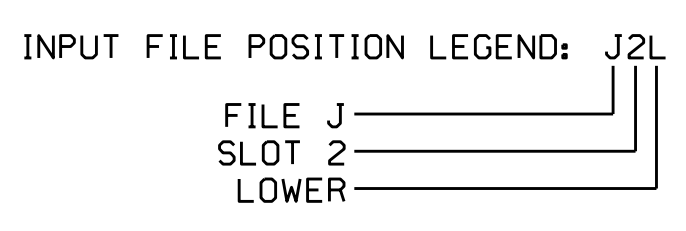
EX.: 1A, 2A, ETC. = LOOP NO.'S

FS = FLASH SENSE
 ST = STOP TIME

INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT ASSIGNMENT NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND	FULL TIME DELAY	STRETCH TIME	DELAY TIME
1A	TB2-5,6	I2U	39	1	2	1	Y	Y			
1B	TB2-7,8	I2L	43	5	12	1	Y	Y			15
2A	TB2-9,10	I3U	63	25	32	2	Y	Y			
2B	TB2-11,12	I3L	76	38	42	2	Y	Y			
4A	TB4-9,10	I6U	41	3	4	4	Y	Y			5
5A	TB3-1,2	J1U	55	17	5	5	Y	Y			
6A/S3	TB3-5,6	J2U	40	2	6	6/SYS	Y	Y			
6B/S4	TB3-7,8	J2L	44	6	16	6/SYS	Y	Y			
8A	TB5-9,10	J6U	42	4	8	8	Y	Y			3
* S1	TB6-9,10	I9U	60	22	11	SYS					
* S2	TB6-11,12	I9L	62	24	13	SYS					

* System detector only. Remove the vehicle phase assigned to this detector in the default programming.



THIS ELECTRICAL DETAIL SUPERSEDES THE DETAIL SEALED ON 10/8/2020.

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 02-0491
 DESIGNED: June 2020
 SEALED: 10/28/2021
 REVISED: N/A

Electrical Detail

Electrical and Programming Details for:

Prepared in the Offices of:

750 N. Greenfield Pkwy, Garner, NC 27529

US 70
 at
**SR 1237 (Harris Steet)/
 Lowe's Shopping Center**

Division 2 Carteret County Morehead City

PLAN DATE: September 2020 REVIEWED BY:

PREPARED BY: S. Armstrong REVIEWED BY:

REVISIONS	INIT.	DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

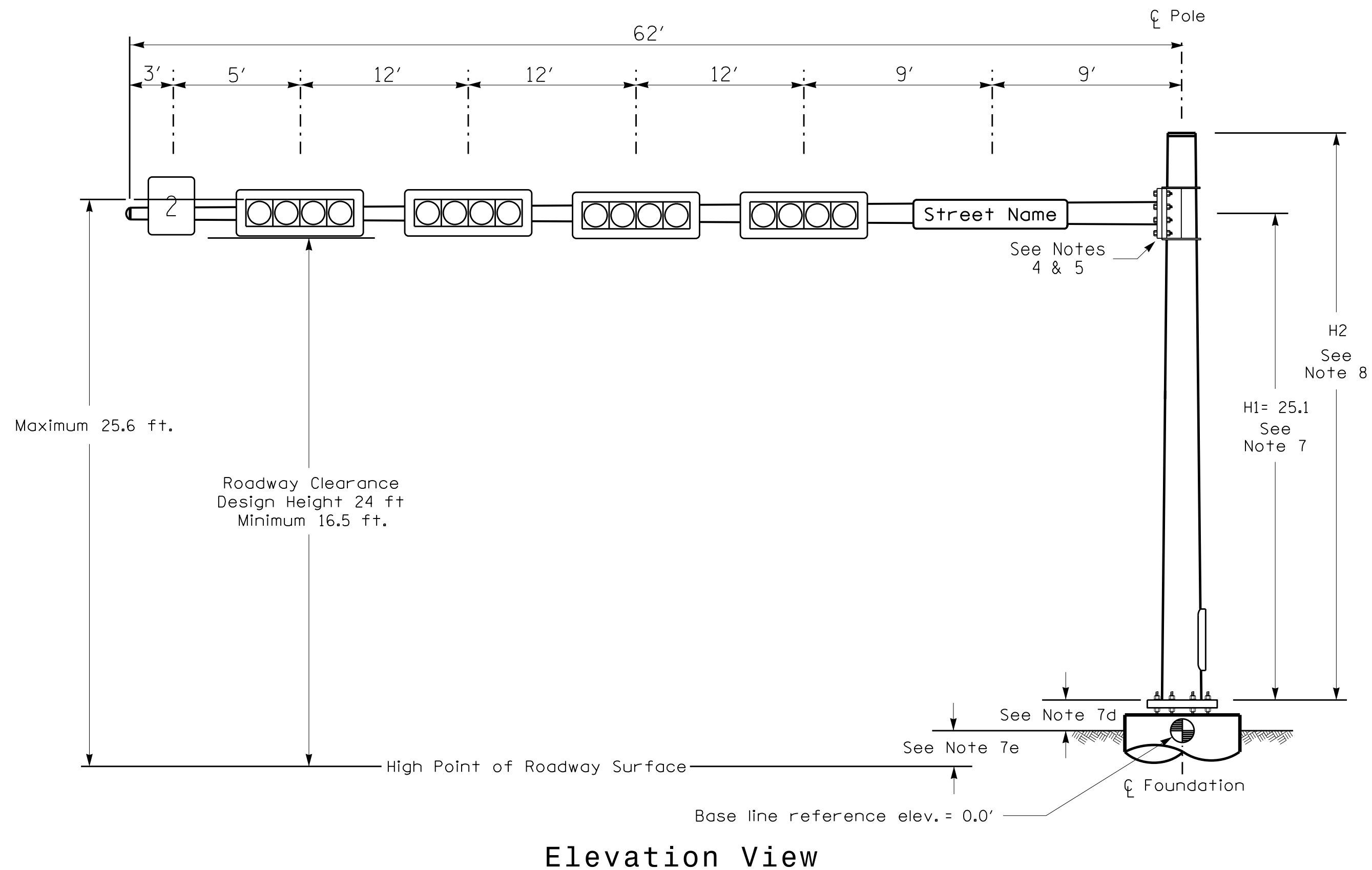
SEAL

Ryan W. Hough
 ENGINEER
 11/3/2021
 DATE

SIG. INVENTORY NO. 02-0491

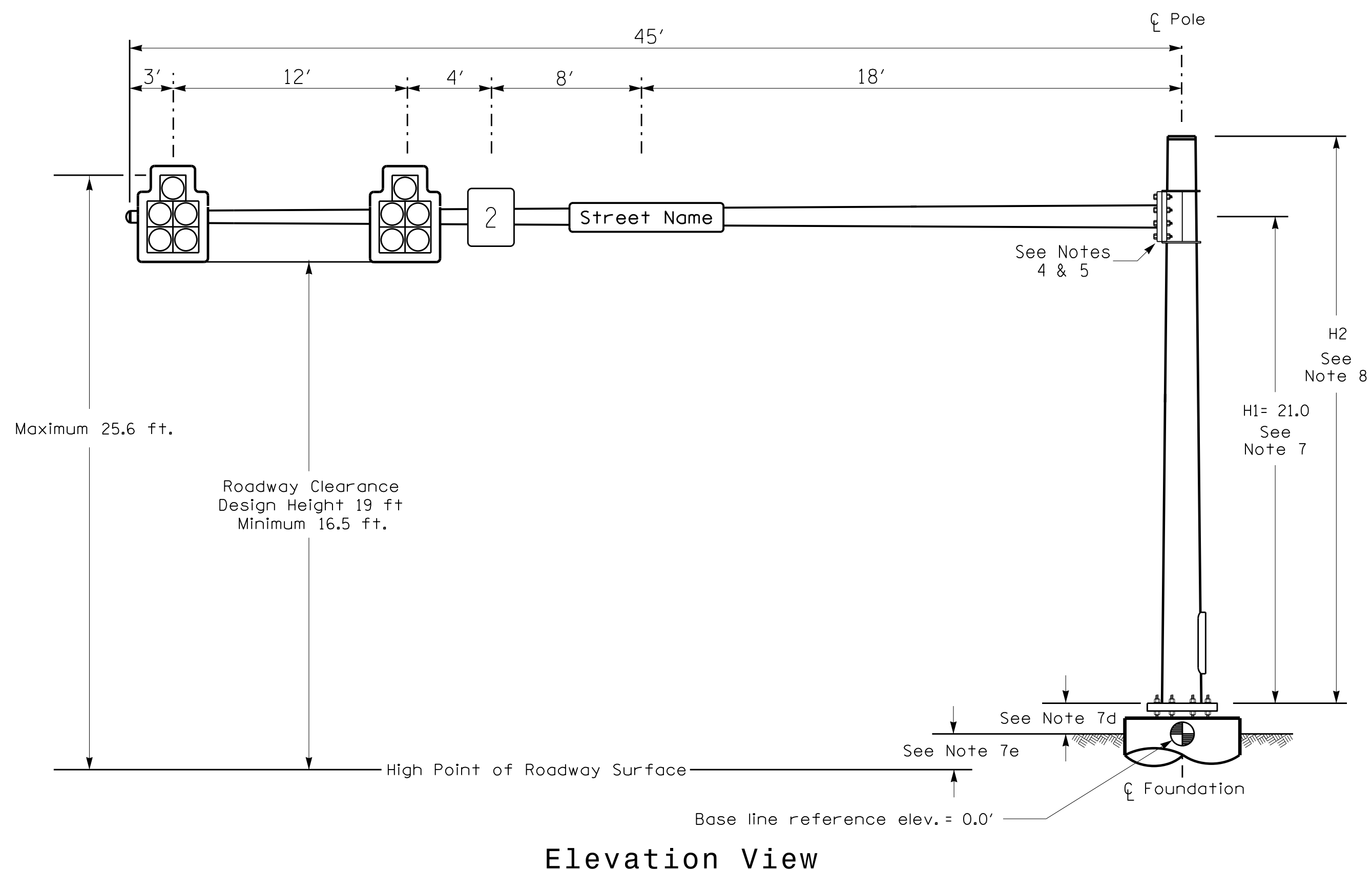
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Design Loading for METAL POLE NO. 1



Elevation View

Design Loading for METAL POLE NO. 2



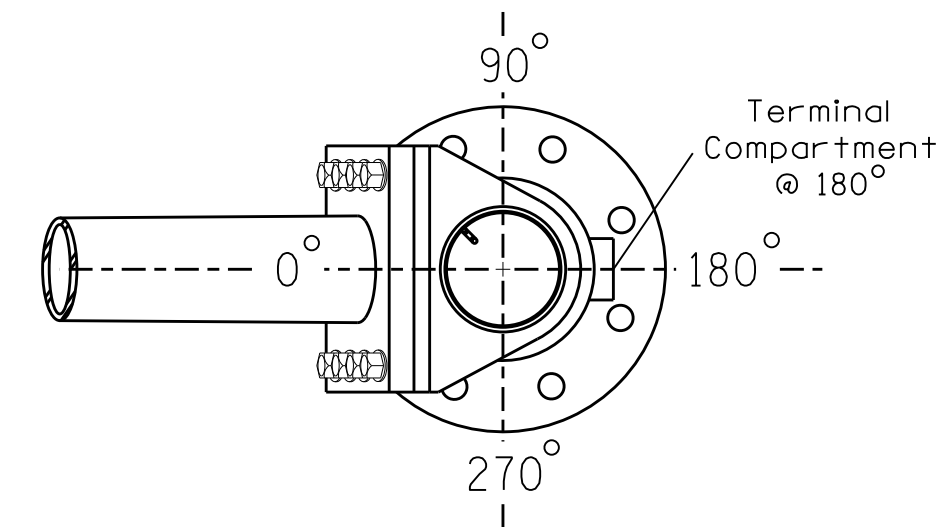
Elevation View

SPECIAL NOTE

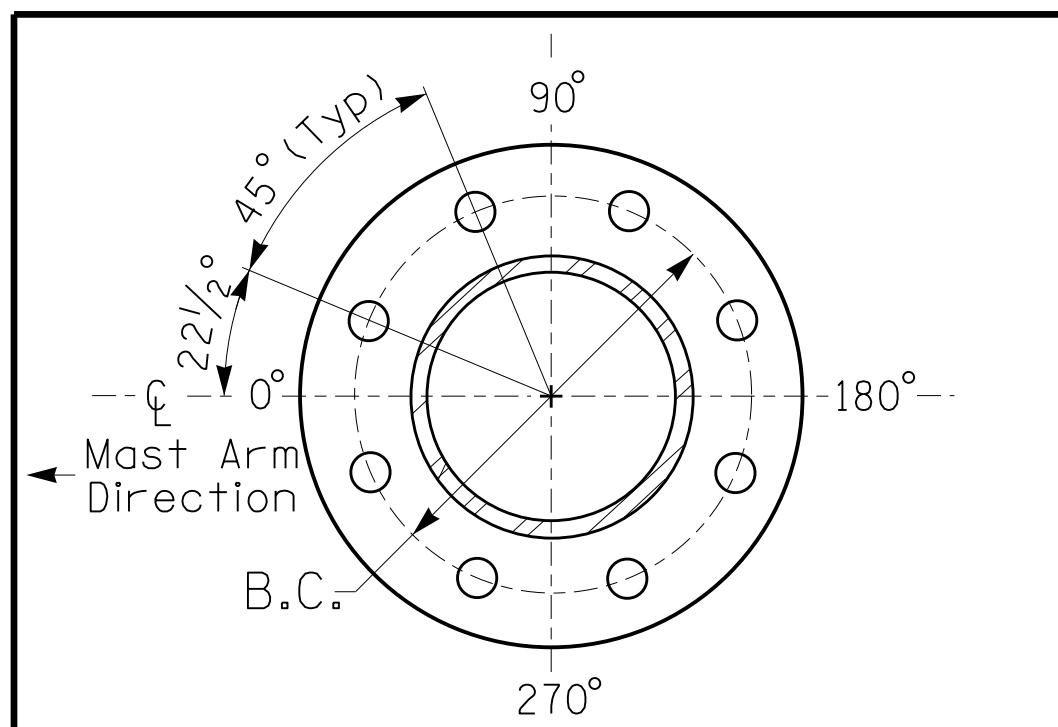
The contractor is responsible for verifying that the mast arm attachment height (H1) will provide the "Design Height" clearance from the roadway before submitting final shop drawings for approval. Verify elevation data below which was obtained by field measurement or from available project survey data.

Elevation Data for Mast Arm Attachment (H1)

Elevation Differences for:	Pole 1	Pole 2
Baseline reference point at ϕ Foundation @ ground level	0.0 ft.	0.0 ft.
Elevation difference at High point of roadway surface	+0.8 ft.	-0.1 ft.
Elevation difference at Edge of travelway or face of curb	N/A	N/A

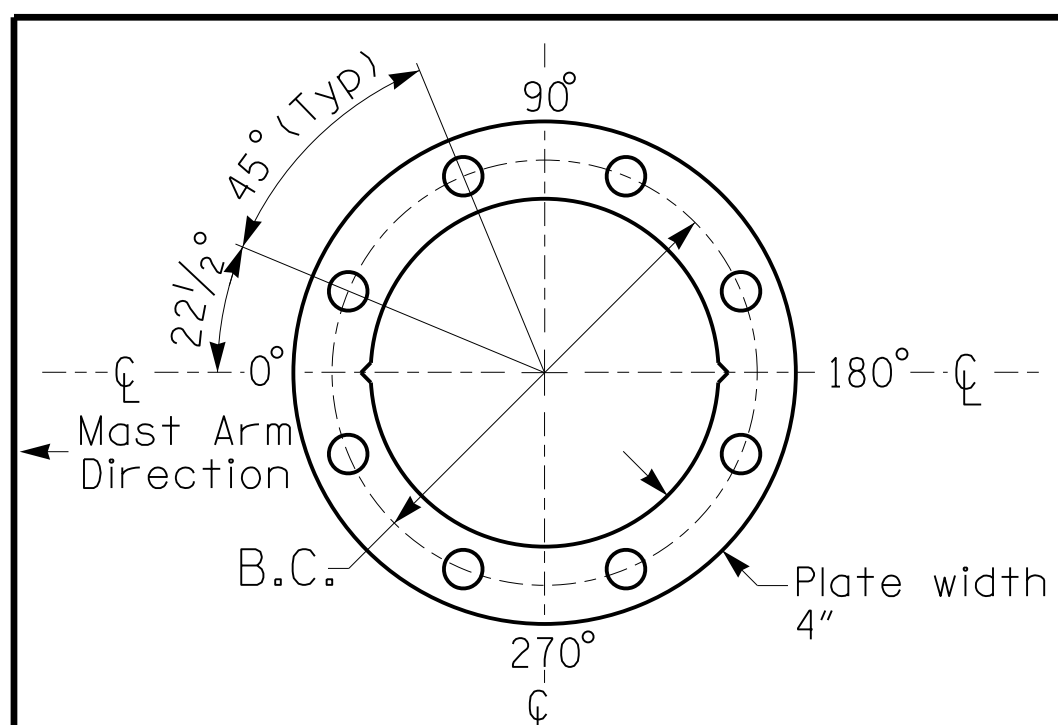


POLE RADIAL ORIENTATION



8 BOLT BASE PLATE DETAIL

See Note 6



BASE PLATE TEMPLATE & ANCHOR BOLT LOCK PLATE DETAIL For 8 Bolt Base Plate

METAL POLE No. 1 and 2

PROJECT REFERENCE NO.	SHEET NO.
W-5702U	Fig. 1.2

MAST ARM LOADING SCHEDULE

LOADING SYMBOL	DESCRIPTION	AREA	SIZE	WEIGHT
	RIGID MOUNTED SIGNAL HEAD 12"-3 SECTION-WITH BACKPLATE	9.3 S.F.	25.5" W X 52.5" L	60 LBS
	RIGID MOUNTED SIGNAL HEAD 12"-4 SECTION-WITH BACKPLATE	11.5 S.F.	25.5" W X 66.0" L	74 LBS
	SIGN RIGID MOUNTED	7.5 S.F.	30.0" W X 36.0" L	14 LBS
	STREET NAME SIGN RIGID MOUNTED	16.0 S.F.	24.0" W X 96.0" L	36 LBS
	RIGID MOUNTED SIGNAL HEAD 12"-5 SECTION-WITH BACKPLATE	16.3 S.F.	42.0" W X 56.0" L	103 LBS

NOTES

DESIGN REFERENCE MATERIAL

- Design the traffic signal structure and foundation in accordance with:
 - The 6th Edition 2013 AASHTO "Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, including all of the latest interim revisions.
 - The 2018 NCDOT "Standard Specifications for Roads and Structures." The latest addenda to the specifications can be found in the traffic signal project special provisions.
 - The 2018 NCDOT Roadway Standard Drawings.
 - The traffic signal project plans and special provisions.
 - The NCDOT "Metal Pole Standards" located at the following NCDOT website: <https://connect.ncdot.gov/resources/safety/Pages/ITS-Design-Resources.aspx>

DESIGN REQUIREMENTS

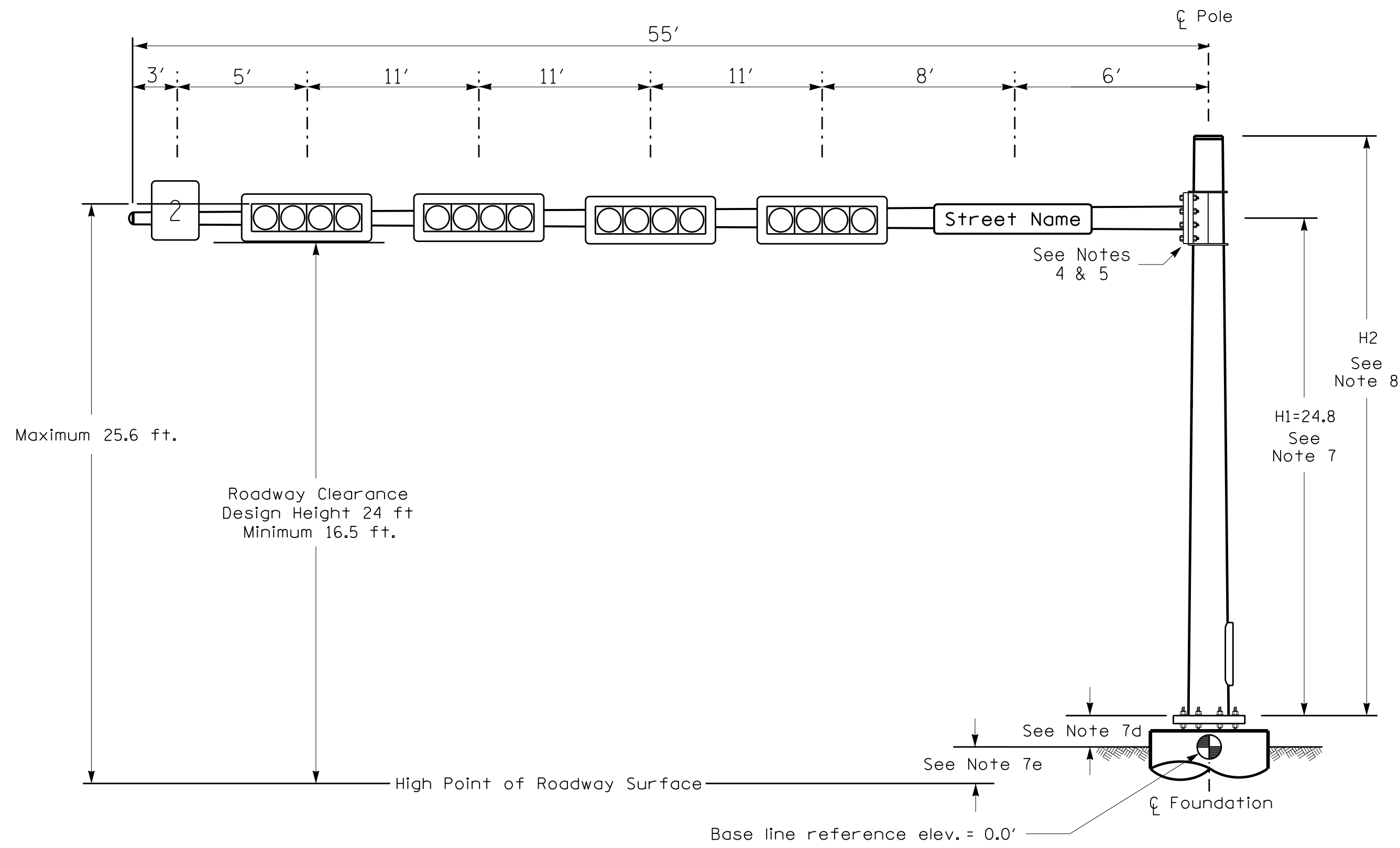
- Design the traffic signal structure using the loading conditions shown in the elevation views. These are anticipated worst case "design loads" and may not represent the actual loads that will be applied at the time of the installation. The contractor should refer to the traffic signal plans for the actual loads that will be applied at the time of the installation.
- Design all signal supports using stress ratios that do not exceed 0.9.
- The camber design for the mast arm deflection should provide an appearance of a low pitched arch where the tip or the free end of the mast arm does not deflect below horizontal when fully loaded.
- A clamp-type bolted mast arm-to-pole connection may be used instead of the welded ring stiffened box connection shown as long as the connection meets all of the design requirements.
- Design base plate with 8 anchor bolt holes. Provide 2 inch x 60 inch anchor bolts.
- The mast arm attachment height (H1) shown is based on the following design assumptions:
 - Mast arm slope and deflection are not considered in determining the arm attachment height as they are assumed to offset each other.
 - Signal heads are rigidly mounted and vertically centered on the mast arm.
 - The roadway clearance height for design is as shown in the elevation views.
 - The top of the pole base plate is 0.75 feet above the ground elevation.
 - Refer to the Elevation Data Chart for the elevation differences between the proposed foundation ground level and the high point of the roadway.
- The pole manufacturer will determine the total height (H2) of each pole using the greater of the following:
 - Mast arm attachment height (H1) plus 2 feet, or
 - H1 plus 1/2 of the total height of the mast arm attachment assembly plus 1 foot.
- If pole location adjustments are required, the contractor must gain approval from the Engineer as this may affect the mast arm lengths and arm attachment heights. The contractor may contact the Signal Design Section Senior Structural Engineer for assistance at (919) 814-5000.
- The contractor is responsible for verifying that the mast arm length shown will allow proper positioning of the signal heads over the roadway.
- The contractor is responsible for providing soil penetration testing data (SPT) to the pole manufacturer so site specific foundations can be designed.

NCDOT Wind Zone 2 (130 mph)

<p>Prepared In the Offices of: TRANSPORTATION MOBILITY AND SAFETY DIVISION NORTH CAROLINA DEPARTMENT OF TRANSPORTATION Signal Design Section 750 N. Greenfield Pkwy, Garner, NC 27529</p>	US 70 at SR 1237 (Harris Street) / Lowe's Shopping Center Carteret County Morehead		SEAL NATHAN E. LEBLANC ENGINEER 042608
	PLAN DATE: May 2021 PREPARED BY: Jeff Spence	REVIEWED BY: MEL REVIEWED BY:	
REVISIONS:		INIT. DATE:	SEAL 5/21/2021 DATE:
SIG. INVENTORY NO. 02-0491			

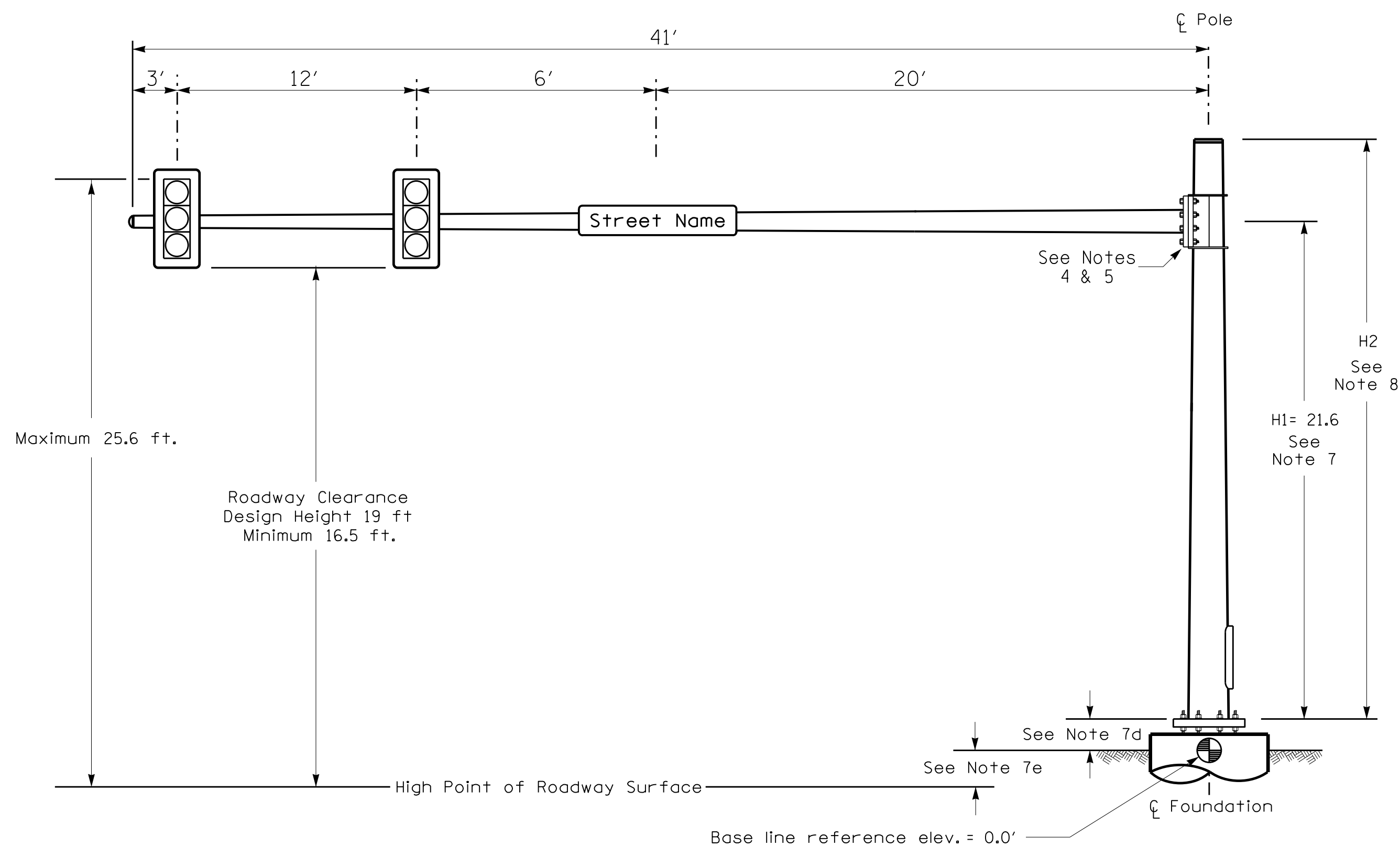
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 mel/ab/lnc

Design Loading for METAL POLE NO. 3



Elevation View

Design Loading for METAL POLE NO. 4



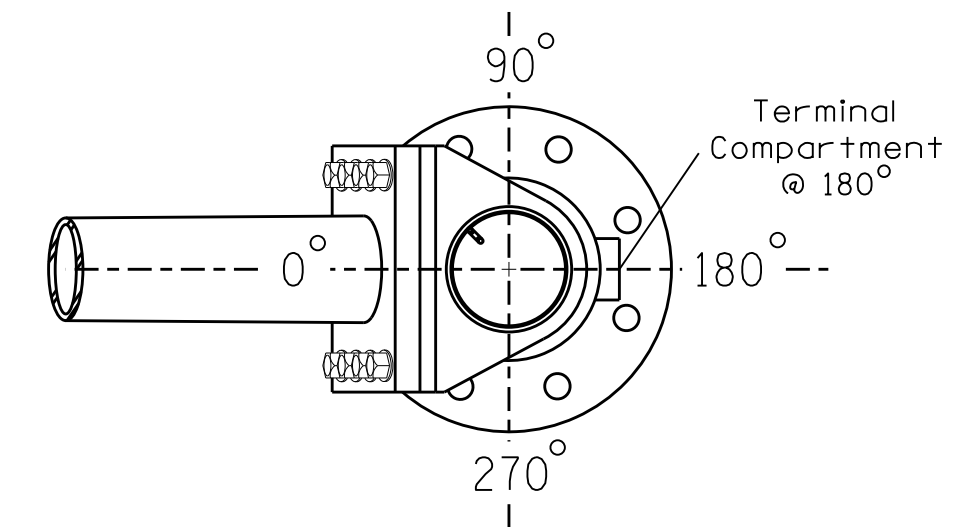
Elevation View

SPECIAL NOTE

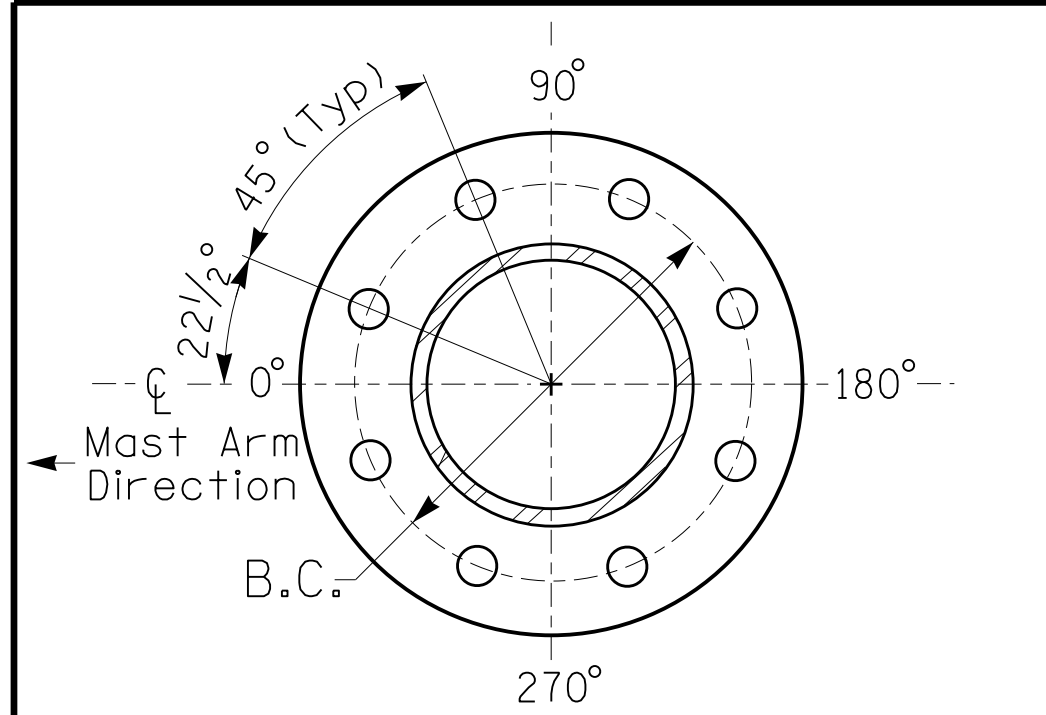
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Elevation difference at Edge of travelway or face of curb	N/A	N/A

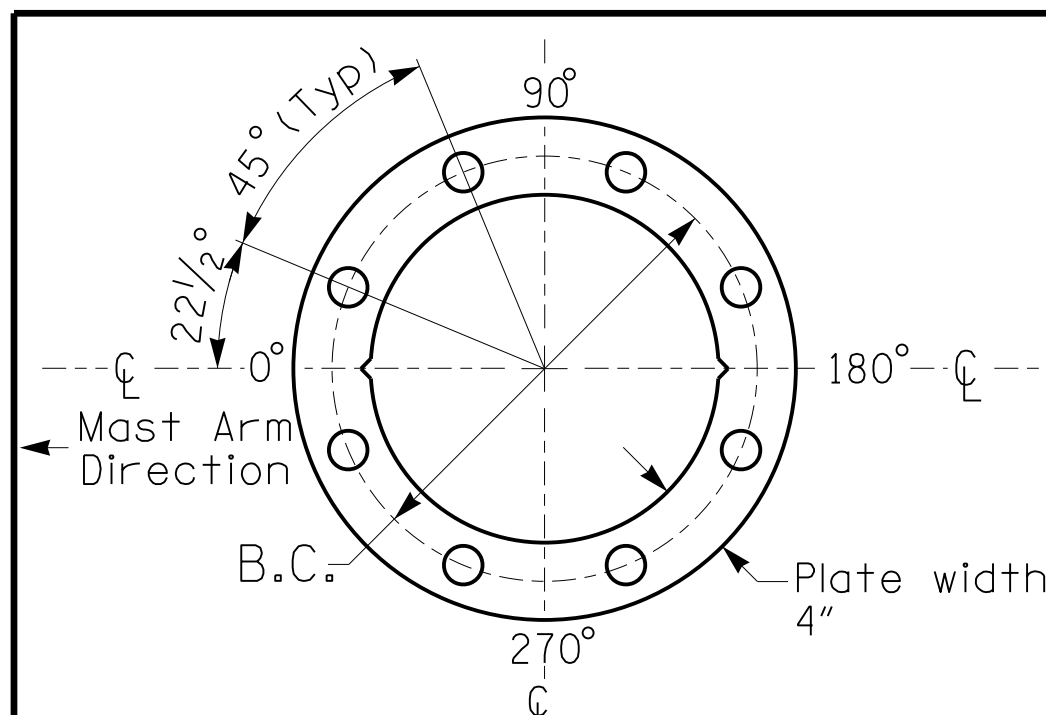


POLE RADIAL ORIENTATION



8 BOLT BASE PLATE DETAIL

See Note 6



BASE PLATE TEMPLATE & ANCHOR BOLT LOCK PLATE DETAIL For 8 Bolt Base Plate

METAL POLE No. 3 and 4

MAST ARM LOADING SCHEDULE

LOADING SYMBOL	DESCRIPTION	AREA	SIZE	WEIGHT
	RIGID MOUNTED SIGNAL HEAD 12"-4 SECTION-WITH BACKPLATE	11.5 S.F.	25.5" W X 66.0" L	74 LBS
	STREET NAME SIGN RIGID MOUNTED	16.0 S.F.	24.0" W X 96.0" L	36 LBS
	RIGID MOUNTED SIGNAL HEAD 12"-3 SECTION-WITH BACKPLATE	9.3 S.F.	25.5" W X 52.5" L	60 LBS
	SIGN RIGID MOUNTED	7.5 S.F.	30.0" W X 36.0" L	14 LBS

NOTES

DESIGN REFERENCE MATERIAL

- Design the traffic signal structure and foundation in accordance with:
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- The contractor is responsible for providing soil penetration testing data (SPT) to the pole manufacturer so site specific foundations can be designed.

NCDOT Wind Zone 2 (130 mph)

<p>Prepared in the Offices of: TRANSPORTATION MOBILITY AND SAFETY DIVISION DIVISION OF TRANSPORTATION Signal Design Section 750 N. Greenfield Pkwy, Garner, NC 27529</p>	US 70 at SR 1237 (Harris Street) / Lowe's Shopping Center Carteret County Morehead City		SEAL MECHAN E. LEBLANC ENGINEER 042608 DATE 5/21/2021	
	PLAN DATE: May 2021 PREPARED BY: Jeff Spence SCALE: 0 N/A N/A	REVIEWED BY: MEL REVISIONS INIT. DATE		DATE
	SIG. INVENTORY NO. 02-0491			