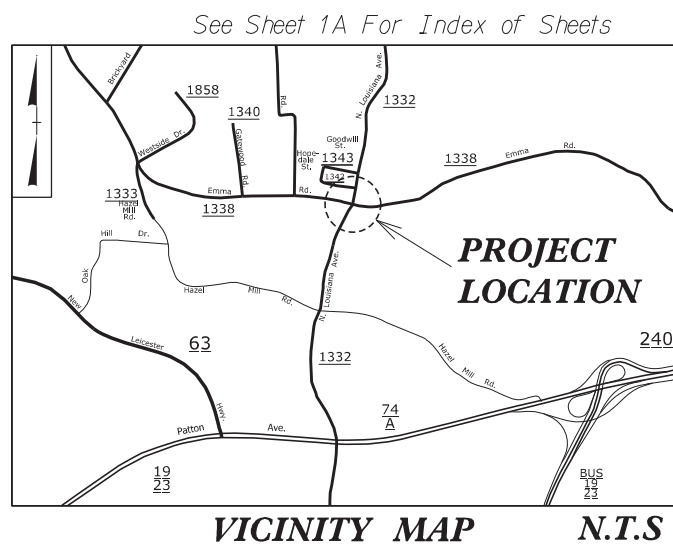


TIP PROJECT: W-5813C

CONTRACT: DM00397



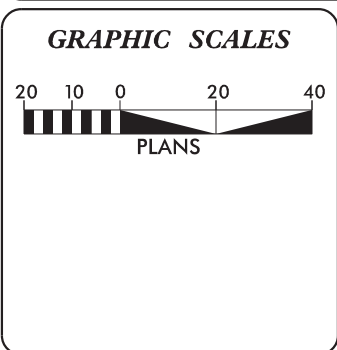
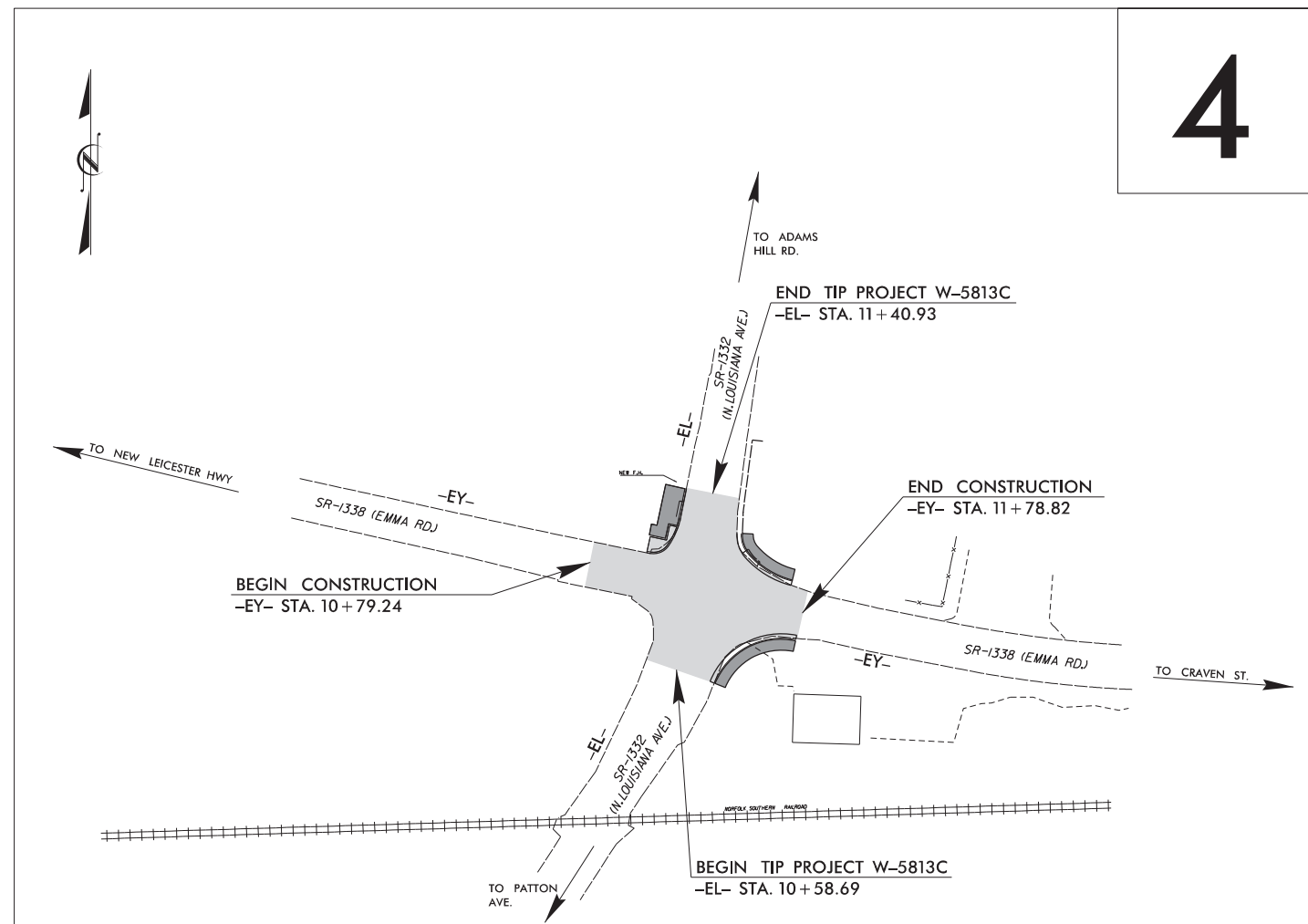
STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

BUNCOMBE COUNTY

**LOCATION: SR 1332 (N. LOUISIANA AVE.) AT
 SR 1338 (EMMA RD.)**

**TYPE OF WORK: INSTALLATION OF PEDESTRIAN SIGNALS,
 SIDEWALKS, CURB RAMPS, AND PAVEMENT MARKINGS**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	W-5813C	1	
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
48958.1.4	1332005	P.E.	
48958.2.3		R/W	
48958.3.4	1332005	CONST.	



Prepared in the Office of:
DIVISION OF HIGHWAYS
 1000 Birch Ridge Dr., Raleigh NC, 27610

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
 AUGUST 11, 2022

LETTING DATE:
 JUNE 21, 2023

EDDIE DOUGLAS
 PROJECT ENGINEER

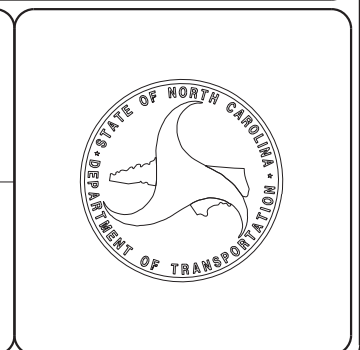
WILLIAM CHASE CARVER, PE
 PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.



24-AUG-2022 14:42
 S:\DUG\Projects\Engineering\Emma Road & North Lousene Ave\Roadway\Proj\Emma_Rdy_sheet_1A.dgn
 USER:MM

PROJECT REFERENCE NO.	SHEET NO.
W-5813C	1-A
ROADWAY DESIGN ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

SHEET NUMBER	INDEX OF SHEETS SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
2	PAVEMENT SCHEDULE AND TYPICAL SECTION
2A THRU 2G	ROADWAY DETAILS
4	PLAN SHEET
RW-01 THRU RW-04	SURVEY CONTROL, EXISTING CENTERLINES, RIGHT OF WAY SHEETS, EASEMENT AND PROPERTY TIE
SIG 1.0 THRU SIG 1.2	SIGNAL PLANS

GENERAL NOTES:

2018 SPECIFICATIONS
EFFECTIVE: 01-16-2018
REVISED:

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 TO SECURE A PROPER TIE-IN

CLEARING:

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

SUPERELEVATION:

ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. 225.04 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.

SHOULDER CONSTRUCTION:

ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. 560.01 AND 560.02 PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.

GUARDRAIL:

THE GUARDRAIL LOCATIONS SHOWN ON THE PLANS MAY BE ADJUSTED DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHOULD CONSULT WITH THE ENGINEER PRIOR TO ORDERING GUARDRAIL MATERIAL.

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
ASHEVILLE WATER DEPARTMENT
METROPOLITAN SEWER DISTRICT

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

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 6 - ASPHALT PAVEMENTS	
654.01	Pavement Repairs - For Superpave Mix Types
DIVISION 8 - INCIDENTALS	
846.01	Concrete Curb, Gutter and Curb & Gutter
848.01	Concrete Sidewalk
848.05	Curb Ramp - Proposed Curb and Gutter
848.06	Curb Ramp - Existing Curb and Gutter
DIVISION 12 - PAVEMENT MARKINGS, MAKERS, AND DELINEATION	
1205.01	Pavement Markings - Line Types and Offsets
1205.02	Pavement Markings - Divided and Undivided Roadways
1205.04	Pavement Markings - Intersections
1205.07	Pavement Markings - Pedestrian Crosswalks

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

12/2/2016

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EP
Computed Property Corner	-----
Property Monument	□ ECM
Parcel/Sequence Number	①23
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	---WLB---
Proposed Wetland Boundary	WLB
Existing Endangered Animal Boundary	---EAB---
Existing Endangered Plant Boundary	---EPB---
Existing Historic Property Boundary	---HPB---
Known Contamination Area: Soil	☠-S-☠
Potential Contamination Area: Soil	☠-S-☠
Known Contamination Area: Water	☠-W-☠
Potential Contamination Area: Water	☠-W-☠
Contaminated Site: Known or Potential	☠?

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	○ S
Well	○ W
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	-----
False Sump	▽

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○ MILEPOST 35
Switch	□ SWITCH
RR Abandoned	-----
RR Dismantled	-----

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	○ RW
New Right of Way Line with Pin and Cap	○ RW ▲
New Right of Way Line with Concrete or Granite RW Marker	▲ RW
New Control of Access Line with Concrete C/A Marker	△ C/A
Existing Control of Access	△ C/A
New Control of Access	△ C/A
Existing Easement Line	---E---
New Temporary Construction Easement	---E---
New Temporary Drainage Easement	---TDE---
New Permanent Drainage Easement	---PDE---
New Permanent Drainage / Utility Easement	---DUE---
New Permanent Utility Easement	---PUE---
New Temporary Utility Easement	---TUE---
New Aerial Utility Easement	---AUE---

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	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊕
Pavement Removal	⊗

VEGETATION:

Single Tree	☼
Single Shrub	☼

Note: Not to Scale *S.U.E. = *Subsurface Utility Engineering*

Hedge	-----
Woods Line	-----
Orchard	☼ ☼ ☼ ☼
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	○ S
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.*)	---P---
U/G Power Line LOS C (S.U.E.*)	---P---
U/G Power Line LOS D (S.U.E.*)	---P---

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.*)	---T---
U/G Telephone Cable LOS C (S.U.E.*)	---T---
U/G Telephone Cable LOS D (S.U.E.*)	---T---
U/G Telephone Conduit LOS B (S.U.E.*)	---TC---
U/G Telephone Conduit LOS C (S.U.E.*)	---TC---
U/G Telephone Conduit LOS D (S.U.E.*)	---TC---
U/G Fiber Optics Cable LOS B (S.U.E.*)	---T FO---
U/G Fiber Optics Cable LOS C (S.U.E.*)	---T FO---
U/G Fiber Optics Cable LOS D (S.U.E.*)	---T FO---

WATER:

Water Manhole	⊕
Water Meter	○
Water Valve	⊗
Water Hydrant	⊕
U/G Water Line LOS B (S.U.E.*)	---W---
U/G Water Line LOS C (S.U.E.*)	---W---
U/G Water Line LOS D (S.U.E.*)	---W---
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.*)	---TV---
U/G TV Cable LOS C (S.U.E.*)	---TV---
U/G TV Cable LOS D (S.U.E.*)	---TV---
U/G Fiber Optic Cable LOS B (S.U.E.*)	---TV FO---
U/G Fiber Optic Cable LOS C (S.U.E.*)	---TV FO---
U/G Fiber Optic Cable LOS D (S.U.E.*)	---TV FO---

GAS:

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

SANITARY SEWER:

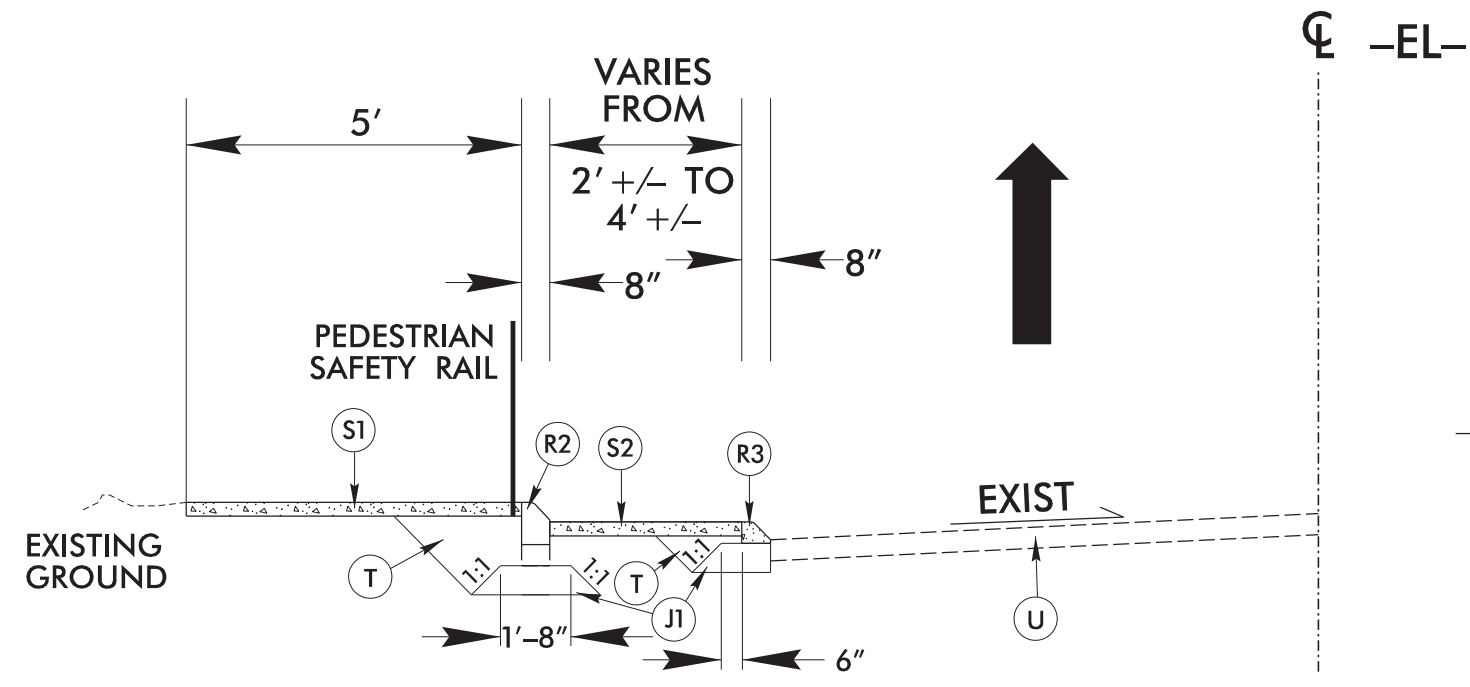
Sanitary Sewer Manhole	⊕
Sanitary Sewer Cleanout	⊕
U/G Sanitary Sewer Line	---SS---
Above Ground Sanitary Sewer	---A/G Sanitary Sewer---
SS Forced Main Line LOS B (S.U.E.*)	---FSS---
SS Forced Main Line LOS C (S.U.E.*)	---FSS---
SS Forced Main Line LOS D (S.U.E.*)	---FSS---

MISCELLANEOUS:

Utility Pole	●
Utility Pole with Base	⊠
Utility Located Object	○
Utility Traffic Signal Box	⊠
Utility Unknown U/G Line LOS B (S.U.E.*)	---TUTL---
U/G Tank; Water, Gas, Oil	□
Underground Storage Tank, Approx. Loc.	⊠
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.

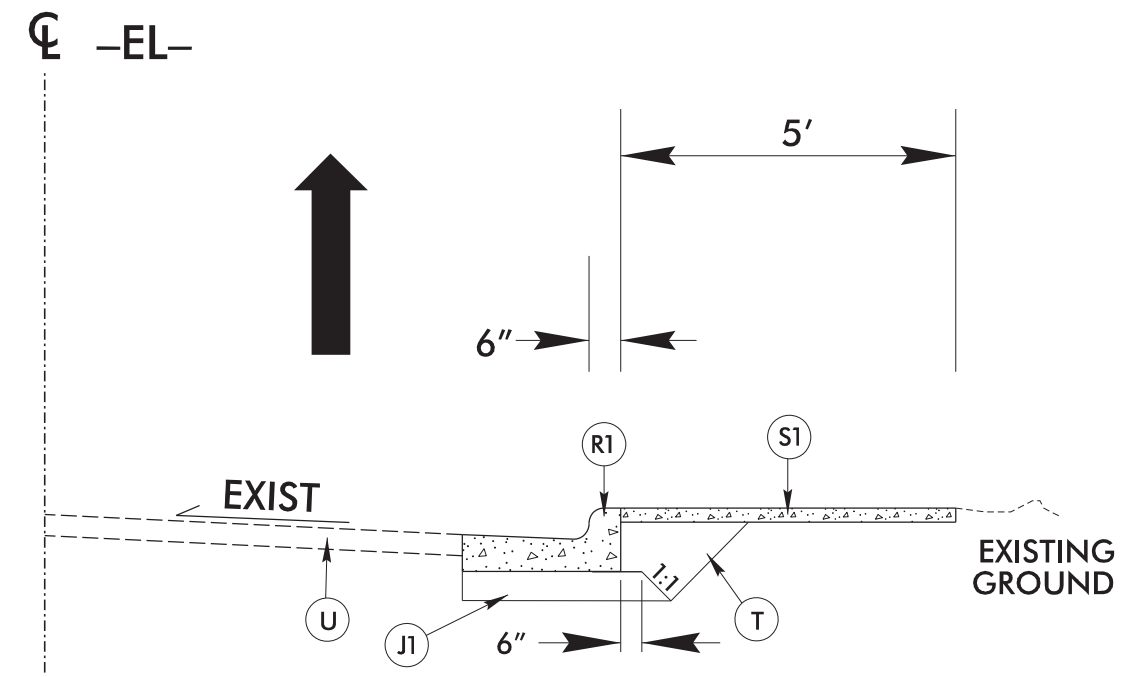
5/14/99

PROJECT REFERENCE NO.	SHEET NO.
W-5813C	2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



USE TYPICAL SECTION NO. 1
FROM -EL- STA. 11+16.46 TO
-EL- STA. 11+23.31 LT

TYPICAL SECTION NO. 1

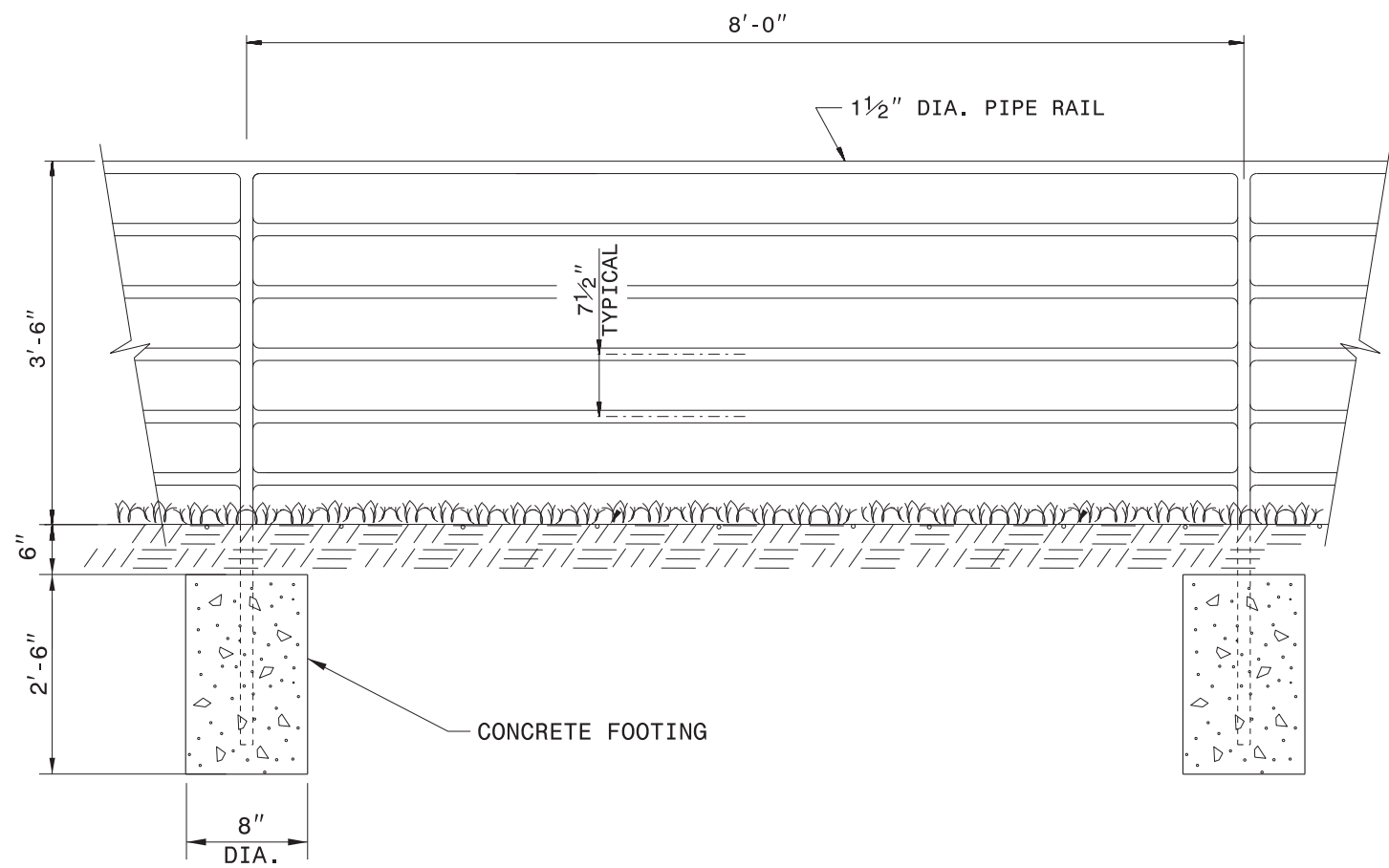


USE TYPICAL SECTION NO. 2
FROM -EL- STA. 10+58.60 TO
-EL- STA. 11+25.30 RT

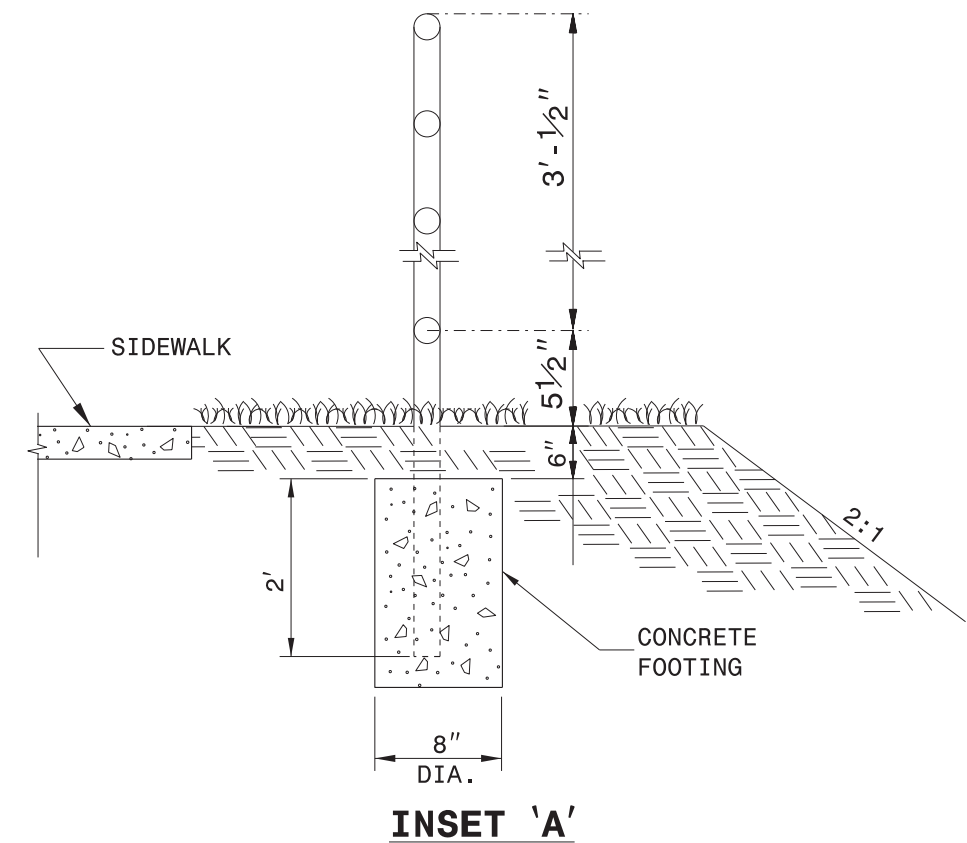
TYPICAL SECTION NO. 2

J1	PROP. 8" AGGREGATE BASE COURSE.
R1	2'-6" CONCRETE CURB.
R2	8" X 18" CONCRETE CURB.
R3	8" X 6" CONCRETE CURB.
S1	4" CONCRETE SIDEWALK.
S2	PROP. 4" CONCRETE ISLAND COVER.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.

12-Jul-2022 3:10:07 PM C:\Users\perry\OneDrive\Documents\Roadway\Proj\Emms_Rdy_tj.pgn



ELEVATION OF HANDRAIL



NOTES:

CONSTRUCT PROPOSED STEEL PIPE RAIL OF 1 1/2" DIAMETER SCHEDULE 40 PLAIN END GALVANIZED STEEL PIPE MEETING THE REQUIREMENTS OF ASTM A53.

REPAIR GALVANIZING IN ACCORDANCE WITH SECTION 1076 OF THE NCDOT STANDARD SPECIFICATIONS.

PAINT, IF REQUIRED BY THE ENGINEER, IN ACCORDANCE WITH SECTION 1080 OF THE STANDARD SPECIFICATIONS.

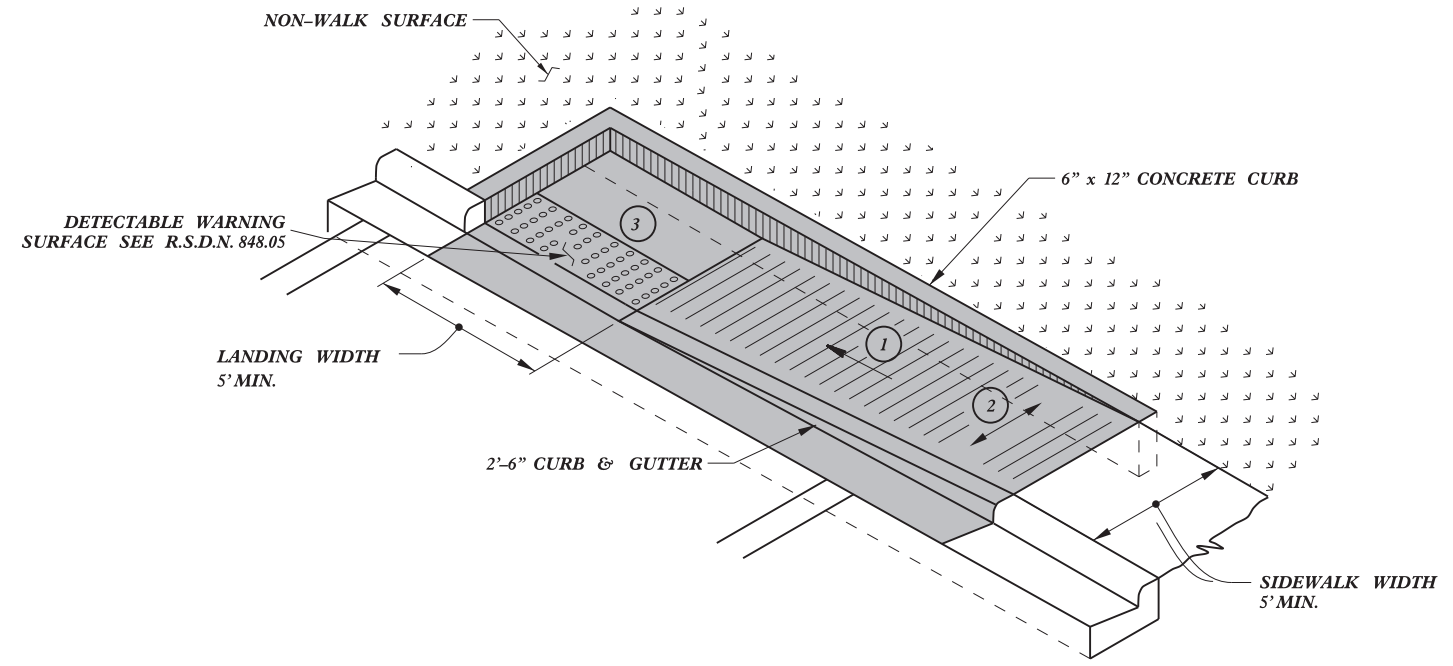
WELD IN ACCORDANCE WITH ARTICLE 1072-18 OF THE STANDARD SPECIFICATIONS.

USE CLASS 'B' CONCRETE FOR HANDRAIL FOOTINGS.

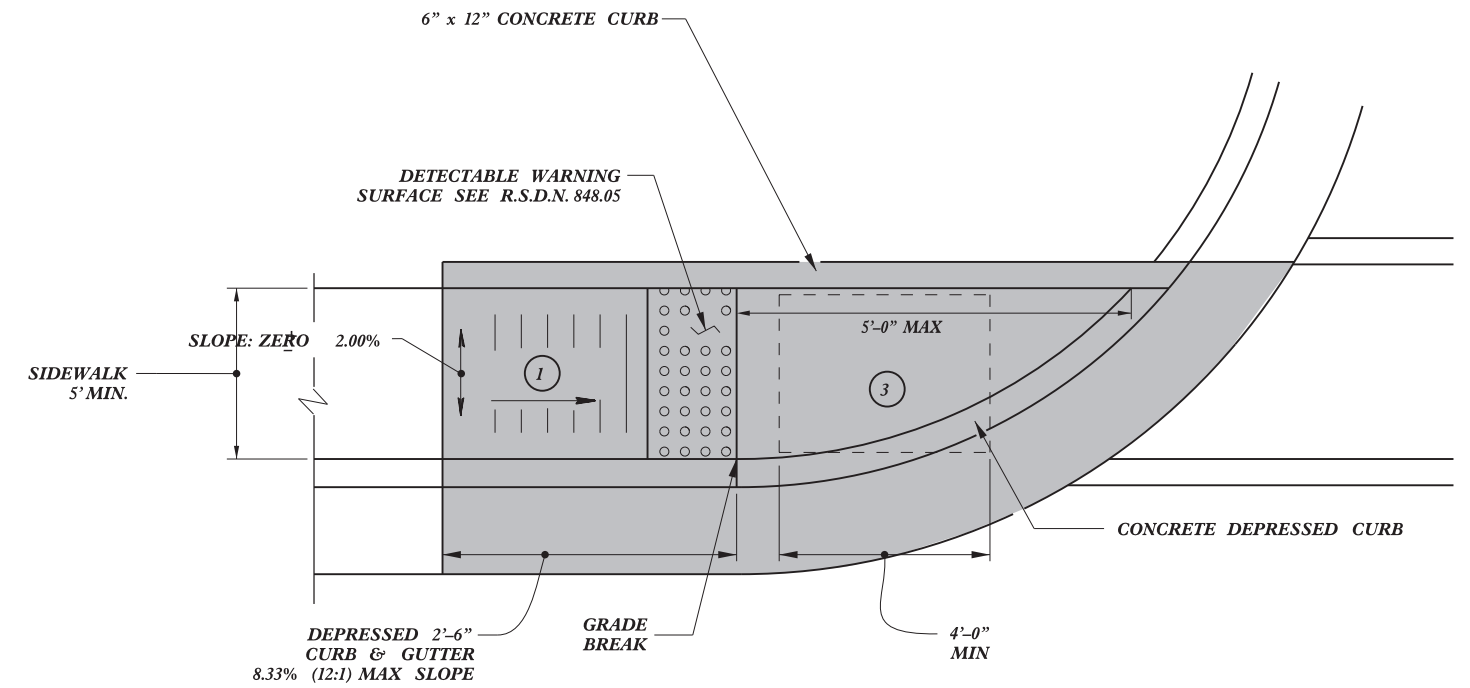
PLACEMENT OF HANDRAIL IN RELATION TO SHOULDER BREAK POINT AND SIDEWALK MAY BE MODIFIED AS DIRECTED BY THE ENGINEER.

\$\$\$\$\$SYTIME\$\$\$\$\$
\$\$\$\$\$CON\$\$\$\$\$
\$\$\$\$\$USRNAME\$\$\$\$\$
\$\$\$\$\$\$\$\$\$\$

CONTRACT STANDARDS AND DEVELOPMENT UNIT	
Office 919-707-6950 FAX 919-250-4119	
PROPOSED PEDESTRIAN SAFETY RAIL	
ORIGINAL BY: E.E. WARD	DATE: 12-99
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC.: jhowerton/handrail_on_retaining_wall.dgn	



TYPE 1A



TYPE 1

- ① 8.33% (12:1) MAX RAMP SLOPE
- ② CROSS SLOPE: 2.00%
- ③ CURB RAMPS REQUIRE A (4'-0") MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SLOPE TO DRAIN TO CURB.

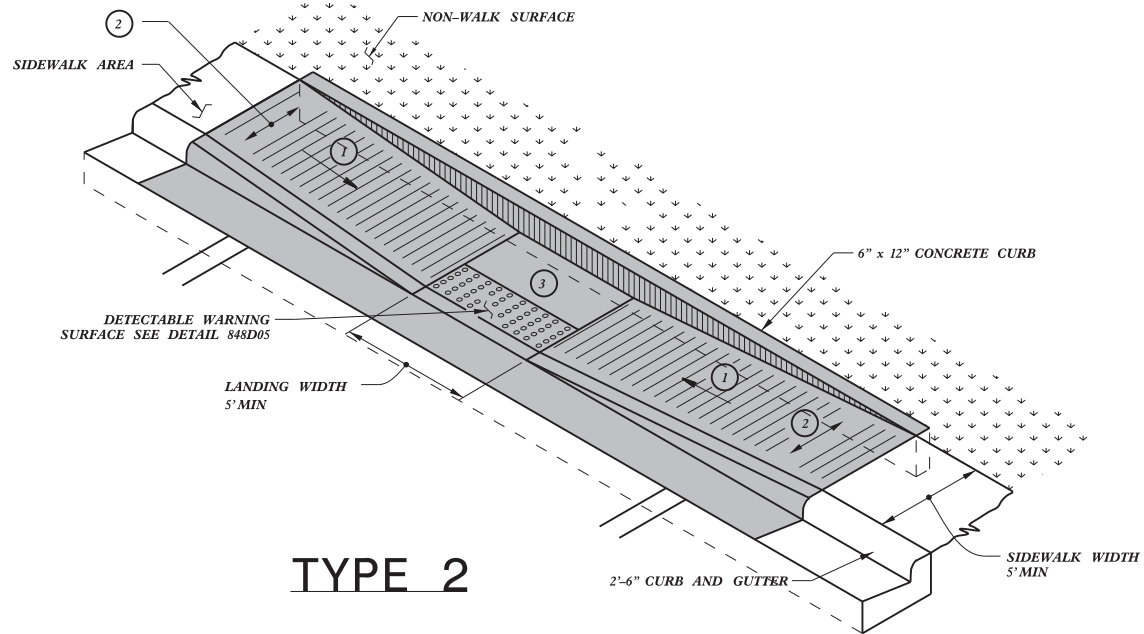
PAY LIMITS FOR CURB RAMP

CONTRACT STANDARDS AND DEVELOPMENT UNIT	
Office 919-707-6950	FAX 919-250-4119
CURB RAMPS	
Directional Ramps	
ORIGINAL BY: J.S. HOWERTON	DATE: 7/7/11
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC: sstds/2012CurbRamp/CurbRampDetails.dwg	

REFER TO ROADWAY STANDARD DRAWING NUMBER 848.05 SHEET 3 OF 3 FOR ALL RAMP NOTES

23-MAR-2012 15:05 J:\Projects\2012\Standard Drawings\2012 Standard Drawings\Curb Ramp Special Details\Curb Ramp Details.dwg J.Howerton AT 15023750

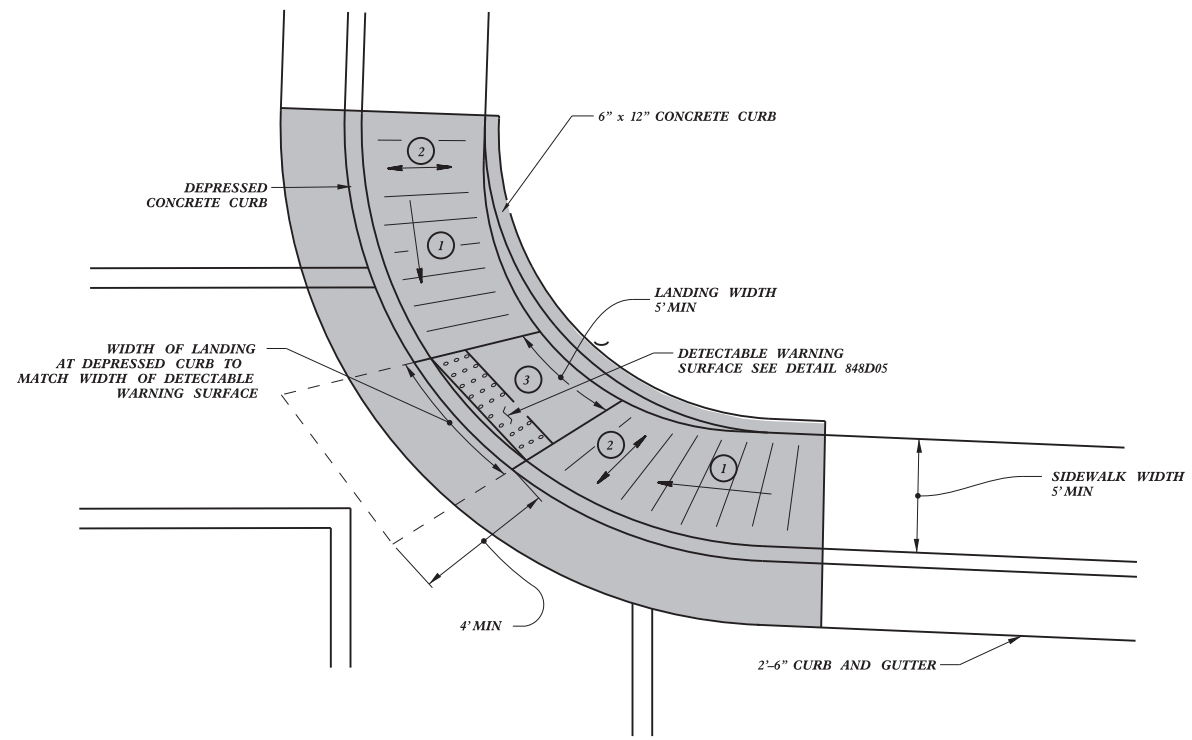
5/14/99



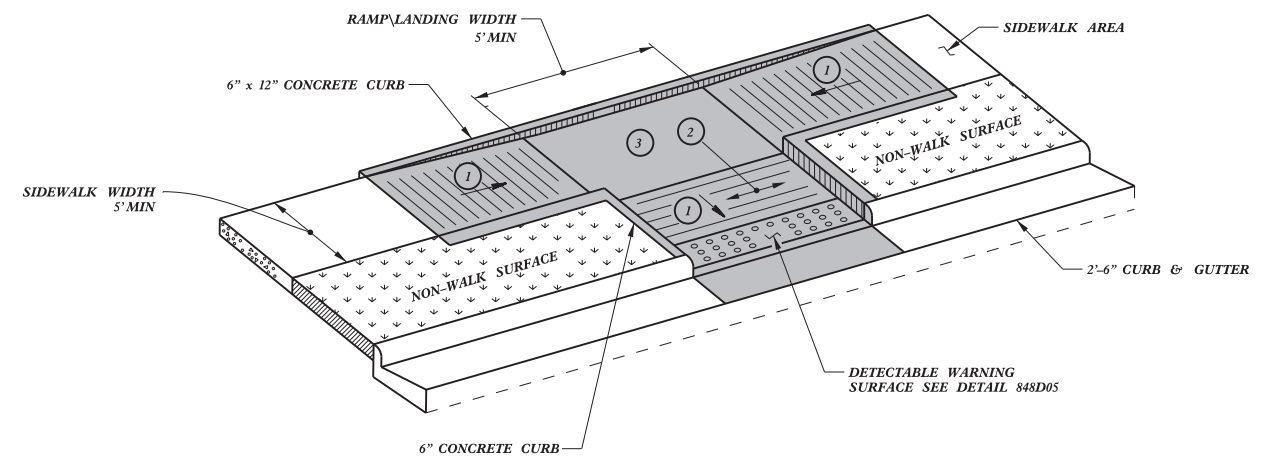
TYPE 2

 PAY LIMITS FOR CURB RAMP

- ① 8.33% (12:1) MAX RAMP SLOPE
- ② CROSS SLOPE: 2.00%
- ③ CURB RAMPS REQUIRE A (4'-0") MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SLOPE TO DRAIN TO CURB.



TYPE 2A



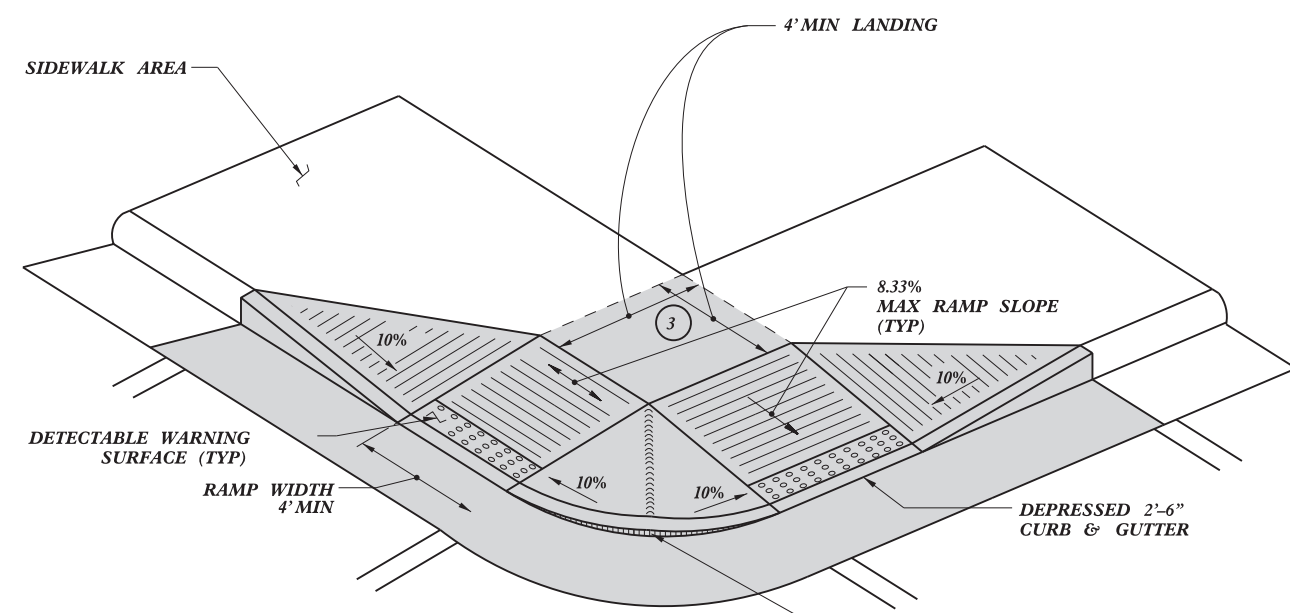
TYPE 3

CONTRACT STANDARDS AND DEVELOPMENT UNIT	
Office 919-707-6950	FAX 919-250-4119
CURB RAMPS	
Parallel Ramps	
ORIGINAL BY: J.S. HOWERTON	DATE: 7/7/11
MODIFIED BY: _____	DATE: _____
CHECKED BY: _____	DATE: _____
FILE SPEC: s:stds/2012CurbRamp/CurbRampDetails.dwg	

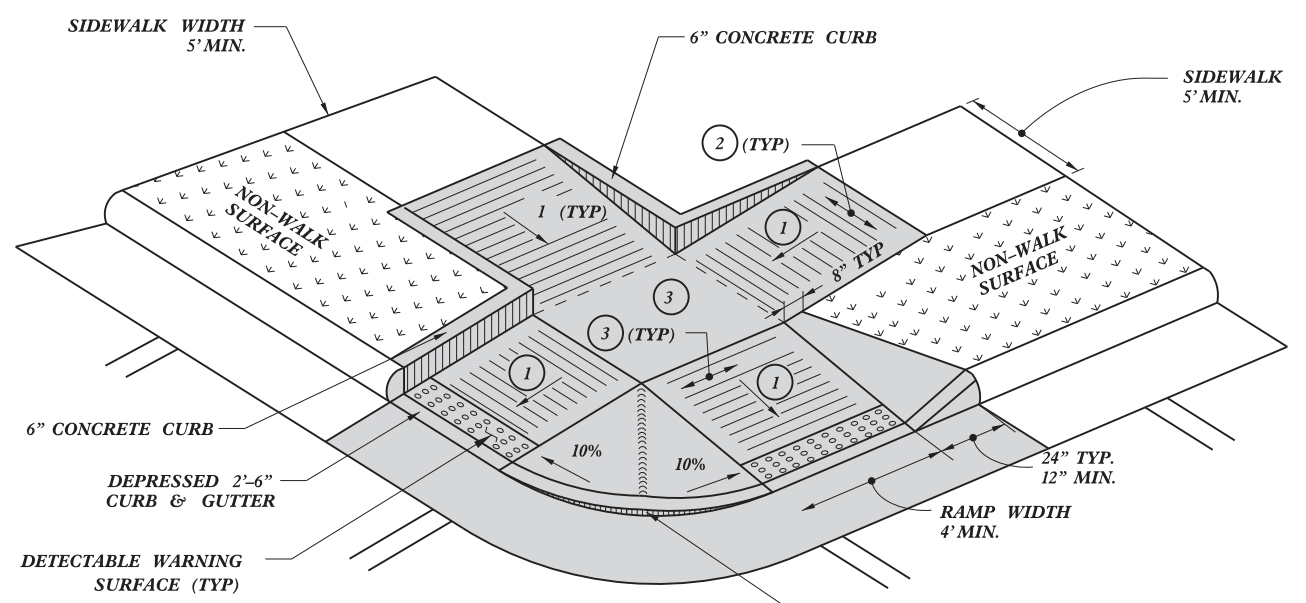
REFER TO ROADWAY STANDARD DRAWING NUMBER 848.05 SHEET 3 OF 3 FOR ALL RAMP NOTES

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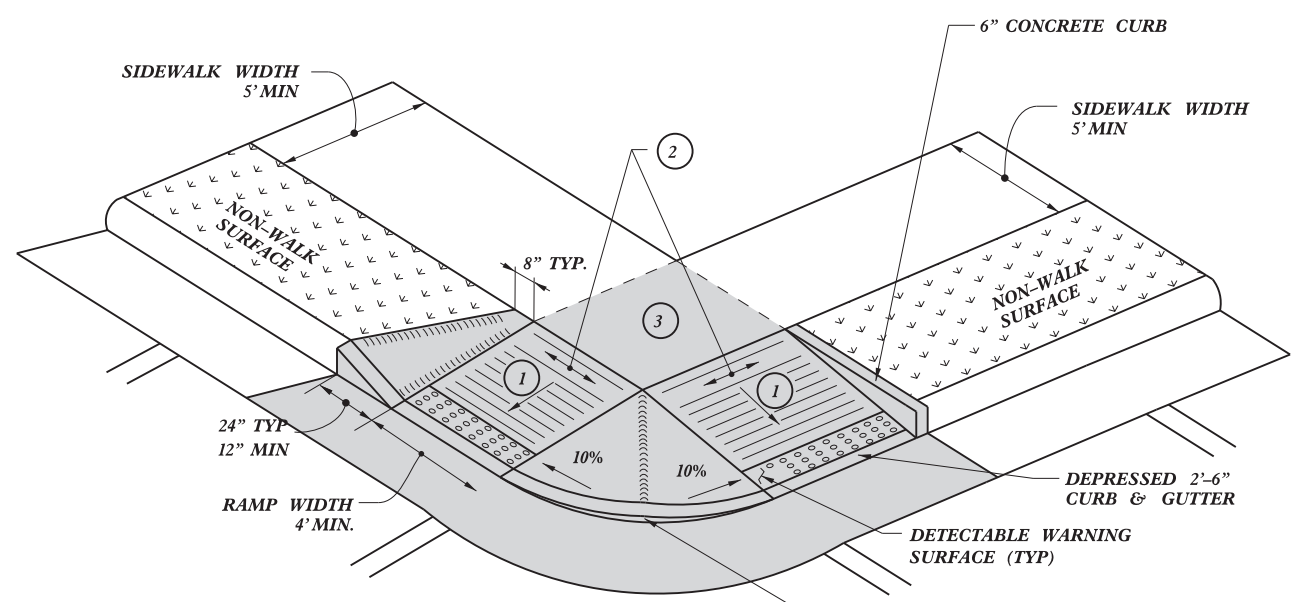
5/14/99



TYPE 4



TYPE 5



TYPE 4A

PAY LIMITS FOR CURB RAMP

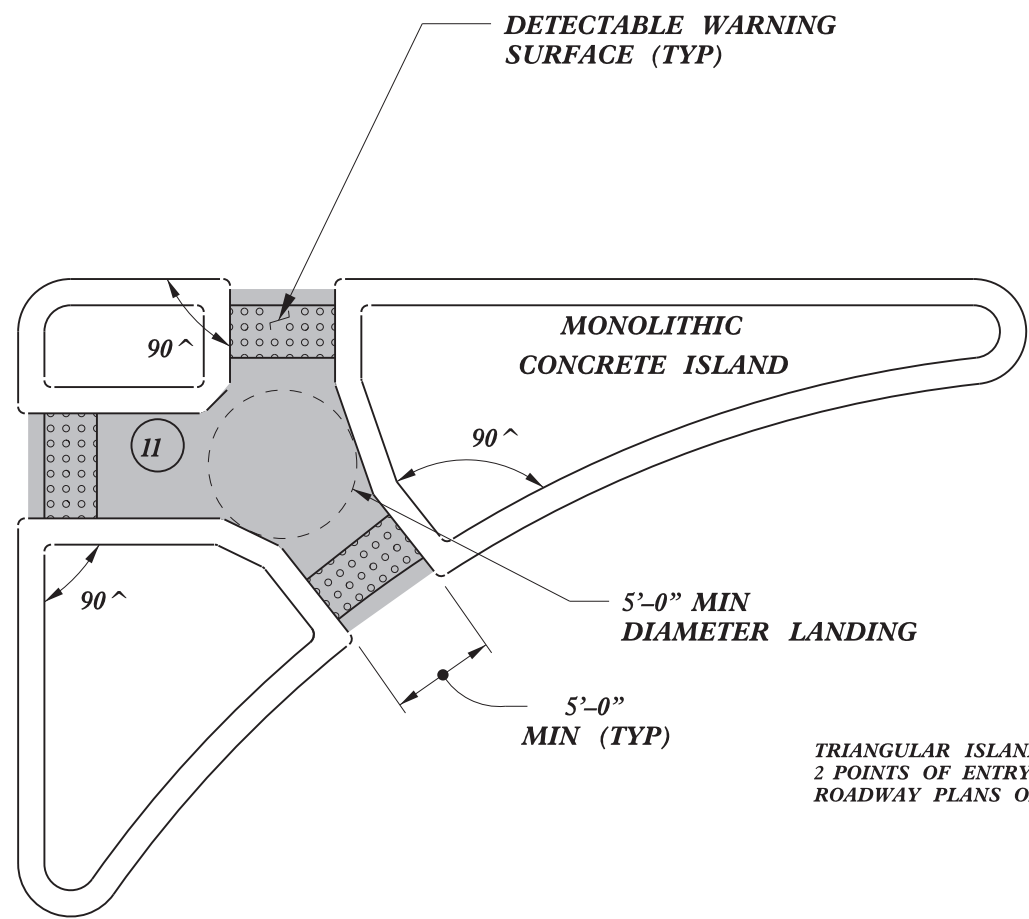
- 1 8.33% (12:1) MAX RAMP SLOPE
- 2 CROSS SLOPE: 2.00%
- 3 CURB RAMPS REQUIRE A (4'-0") MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SLOPE TO DRAIN TO CURB.

CONTRACT STANDARDS AND DEVELOPMENT UNIT	
Office 919-707-6950	FAX 919-250-4119
CURB RAMPS	
Shared Landing	
ORIGINAL BY: J.S. HOWERTON	DATE: 7/7/11
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC: sstds/2012CurbRamp/CurbRampDetails.dwg	

REFER TO ROADWAY STANDARD DRAWING NUMBER 848.05 SHEET 3 OF 3 FOR ALL RAMP NOTES

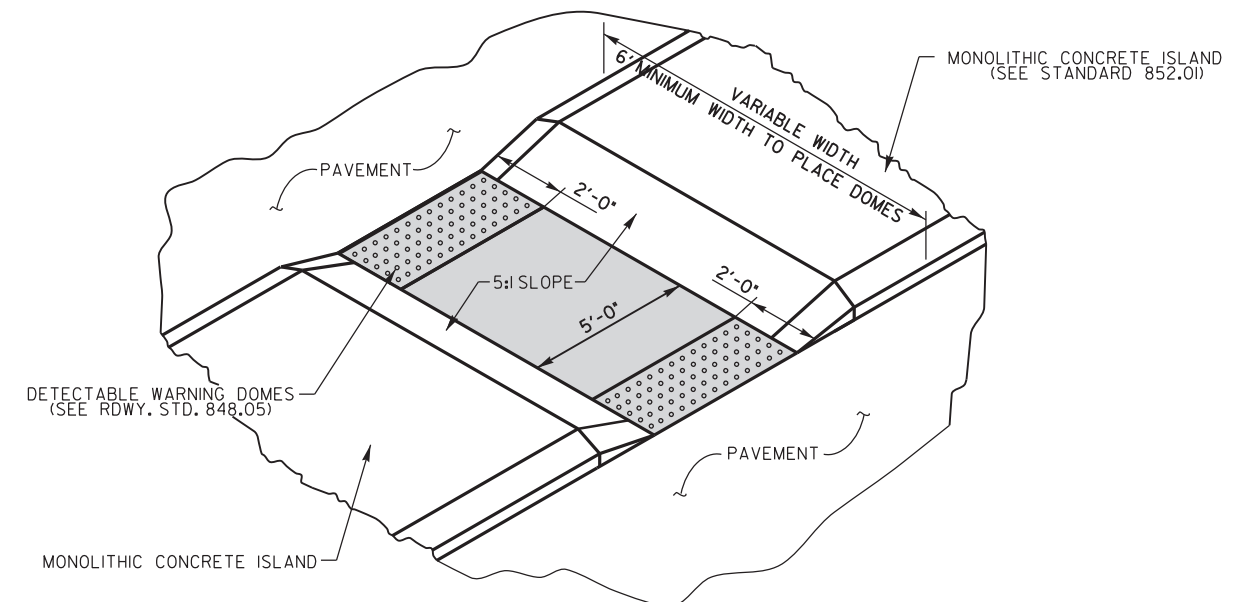
23-MAR-2012 15:08 C:\Users\jhowerton\Documents\Standard Drawings\2012 Standard Drawings\Curb Ramp Details.dwg jhowerton AT 05023750

 PAY LIMITS FOR 1 CURB RAMP

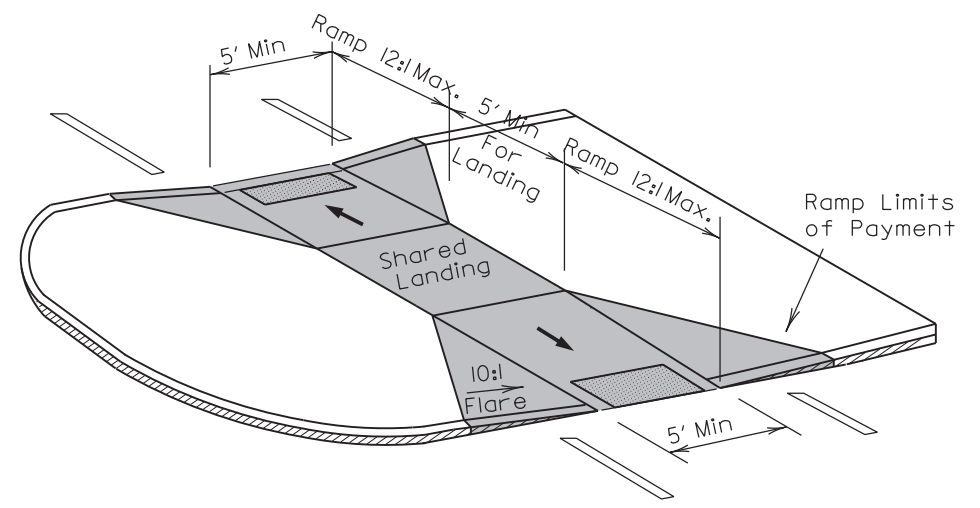


TRIANGULAR ISLANDS MAY BE CONSTRUCTED WITH ONLY 2 POINTS OF ENTRY AND EXIT AS SHOWN IN THE ROADWAY PLANS OR AS DIRECTED BY THE ENGINEER.

TRIANGULAR ISLAND WITH CUT THROUGH



MEDIAN ISLAND WITH CUT THROUGH



MEDIAN ISLAND CURB RAMPS

CONTRACT STANDARDS AND DEVELOPMENT UNIT	
Office 919-707-6950	FAX 919-250-4119
CURB RAMPS	
Median or Turn Lane Islands	
ORIGINAL BY: J.S. HOWERTON	DATE: 7/7/11
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC: sstds/2012CurbRamp/CurbRampDetails.dwg	

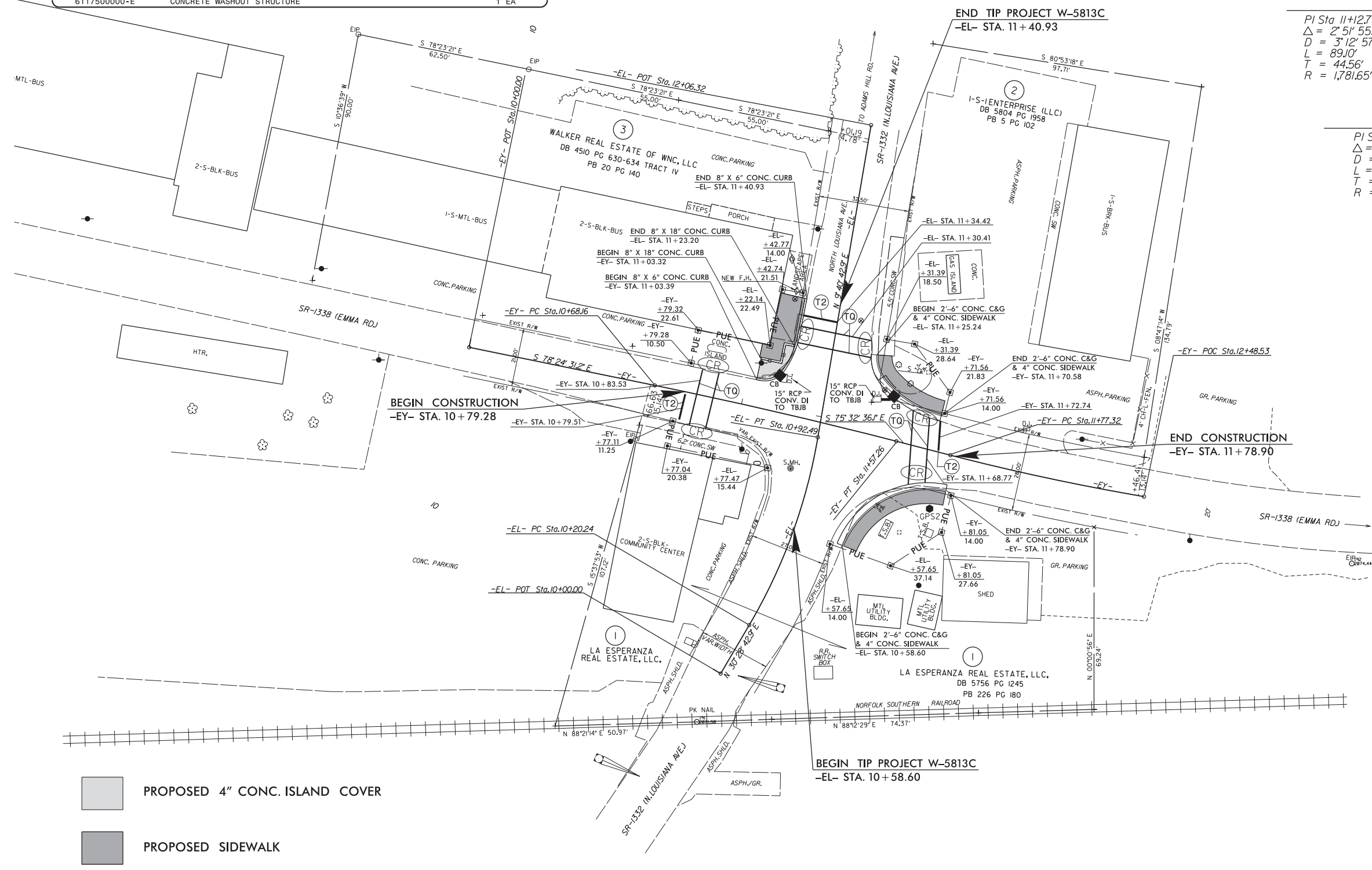
5/14/99
C:\P\2012\STDS\2012CurbRamp\CurbRampDetails.dwg

QUANTITIES		
1036600000-E	15" REINFORCED CONCRETE PIPE CULVERT	8 LF
1210000000-E	AGGREGATE BASE COURSE	25 TON
1693000000-E	ASPH PLT MIX PVMT REPAIR	3 TON
2286000000-N	MASONRY DRAINAGE STRUCTURES	2 EA
2374000000-N	FRAME WITH GRATE & HOOD, STD. 840.03, TYPE E	2 EA
2535000000-E	8" X 18" CONC CURB	20 LF
2535000000-E	8" X 6" CONC CURB	40 LF
2549000000-E	2'-6" CONC CURB & GUTTER	95 LF
2591000000-E	4" CONC SIDEWALK	65 SY
2605000000-N	CONC CURB RAMP	6 EA
2627000000-E	4" CONC ISLAND COVER	8 SY
2845000000-N	ADJ METER OR VALVE BOXES	2 EA
2910000000-N	CONVERT EXISTING TRAFFIC BEARING DROP INLET TO TRAFFIC BEARING JUNCTION BOX	2 EA
3575000000-E	GENERIC FENCING ITEM PEDESTRIAN SAFETY RAIL	20 LF
4413000000-E	WORK ZONE ADVANCE/GENERAL WARNING SIGNING	96 SF
4457000000-N	TEMPORARY TRAFFIC CONTROL	1 LS
4695000000-E	THERMOPLASTIC PAVEMENT MARKING LINES (8", 90 MILS)	150 LF
4850000000-E	LINE REMOVAL 4" WIDE	100 LF
4870000000-E	LINE REMOVAL 24" WIDE	50 LF
4890000000-E	THERMOPLASTIC PAVEMENT MARKING LINES (24", 90 MILS)	40 LF
6117500000-E	CONCRETE WASHOUT STRUCTURE	1 EA

FINAL PAVEMENT MARKING SCHEDULE			
PAVEMENT MARKINGS		PAVEMENT MARKINGS	
THERMOPLASTICS (24", 120 MILS)		THERMOPLASTIC (8", 90 MILS)	
T2	WHITE STOP	TQ	WHITE CROSSWALK LINE



PROJECT REFERENCE NO.	SHEET NO.
W-5813C	4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



-EY-

PI Sta 11+12.72 PI Sta 12+12.94
 $\Delta = 2' 5" 55.1" (RT)$ $\Delta = 4' 46" 24.9" (LT)$
 $D = 3' 12" 57.2"$ $D = 6' 42" 15.4"$
 $L = 89.10'$ $L = 71.20'$
 $T = 44.56'$ $T = 35.62'$
 $R = 1,781.65'$ $R = 854.61'$

-EL-

PI Sta 10+56.77
 $\Delta = 20' 48" 00.0" (LT)$
 $D = 28' 47" 20.2"$
 $L = 72.25'$
 $T = 36.53'$
 $R = 199.02'$

- PROPOSED 4" CONC. ISLAND COVER
- PROPOSED SIDEWALK

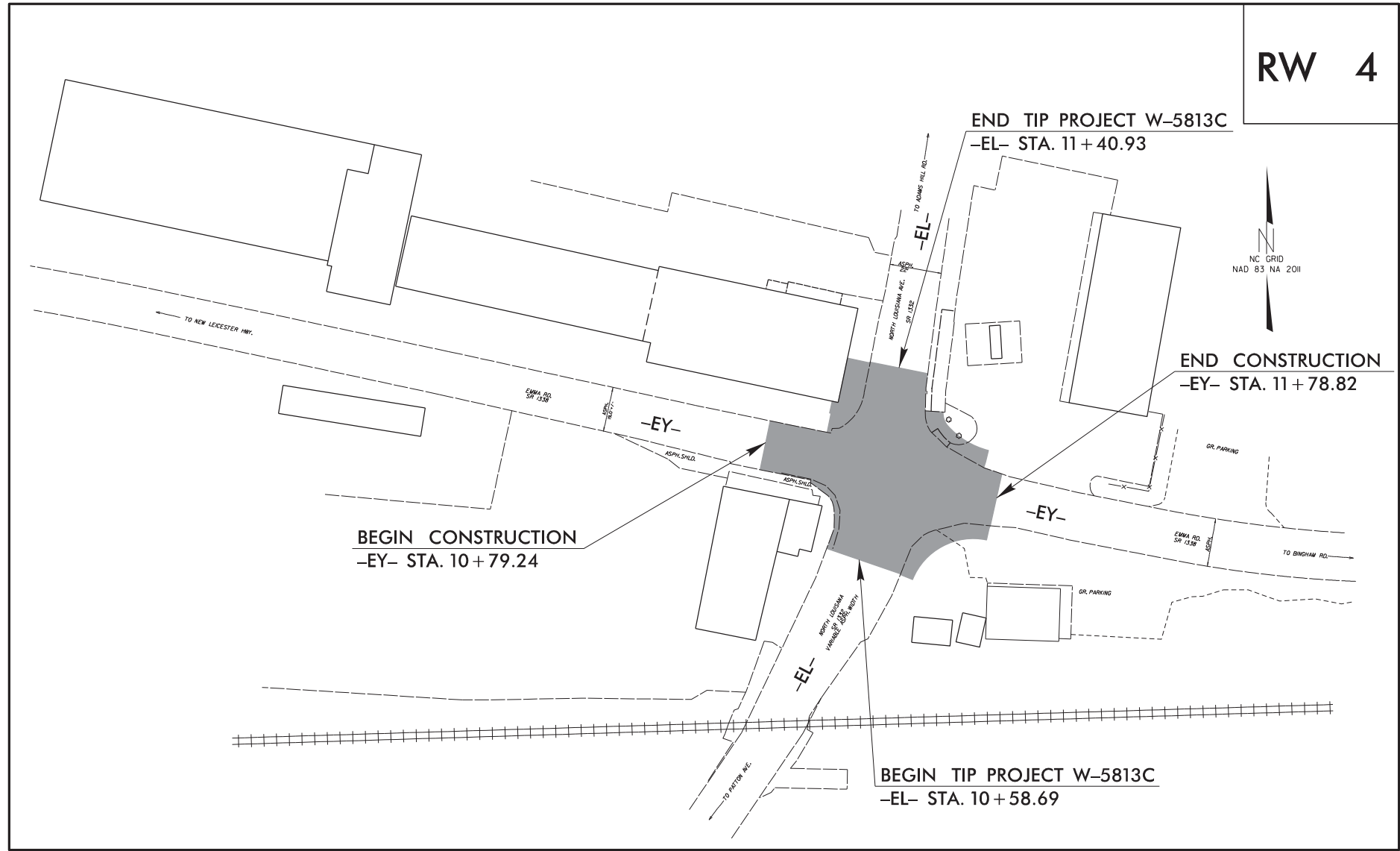
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	W-5813C	RW01	

TIP PROJECT: W-5813C

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

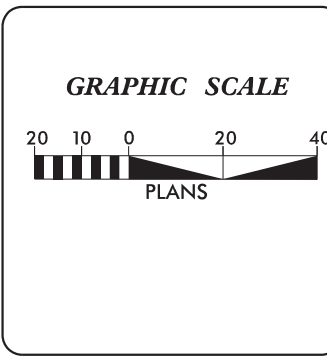
SURVEY CONTROL, EXISTING CENTERLINES,
 RIGHT OF WAY, EASEMENTS AND PROPERTY TIES

BUNCOMBE COUNTY



RW 4

19-APR-2023 14:30
 S:\DDC\Traffic\Engineering\Emma Road & North Louisiana Ave\LocationSurveys\W5813C-DDC-RW01.dgn
 \$\$\$USERNAME\$\$\$



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "GPS2" WITH NAD 83/NSRS 2011 STATE PLANE GRID COORDINATES OF NORTHING: 691018.467(ft) EASTING: 932538.876(ft) ELEVATION: 2,075.24'(ft)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99979362

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "GPS2" TO -EL- STATION 10+77.32 IS N 75-57'-23.37" W 44.60'(ft)

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

Prepared in the Office of:

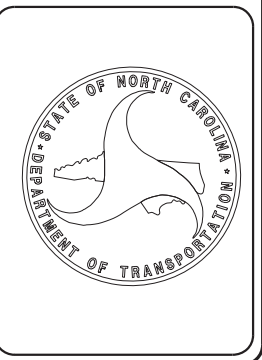
DIVISION 13 DDC UNIT
 55 Orange St., Asheville NC, 28801

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: AUGUST 11, 2022 **LETTING DATE:** JUNE 21, 2023

PROFESSIONAL LAND SURVEYOR

SIGNATURE: _____ Date: _____



SURVEY CONTROL SHEET

W/EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

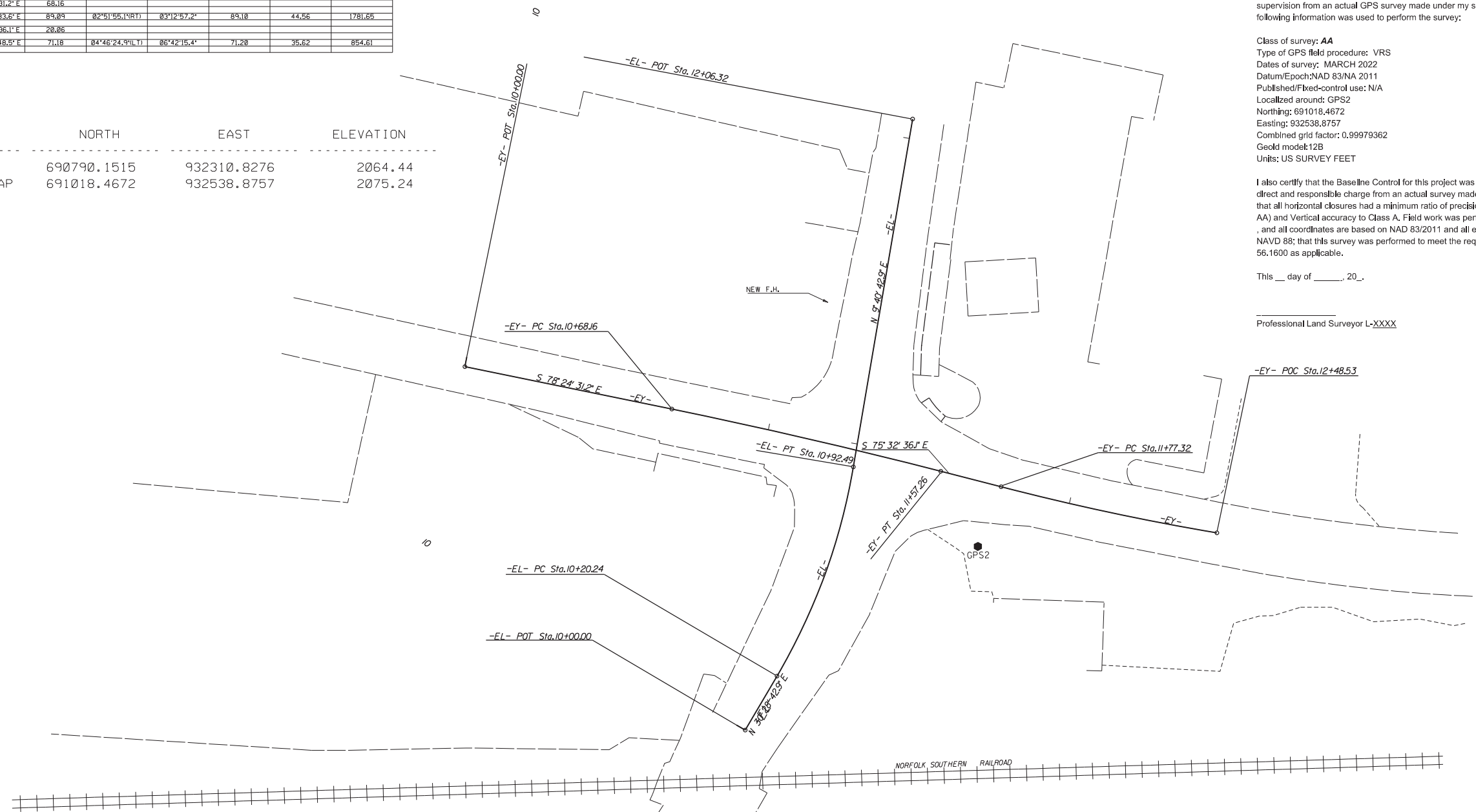
PROJECT REFERENCE NO.	SHEET NO.
W-5813C	RW02C-1
Location and Surveys	
INSERT CONSULTANT'S NAME	
PROJECT SURVEYOR	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT	690995.281	932463.796							
LINE	690976.648	932474.863	N 30°28'42.9" E	20.24					
CURVE	691044.134	932498.731	N 20°04'42.9" E	71.85	20°48'00.0(L)	28°47'28.2"	72.25	36.53	199.02
PT	691156.344	932517.868	N 09°40'42.9" E	113.83					

POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT	691076.484	932373.366							
LINE	691062.788	932440.139	S 78°24'31.2" E	68.16					
CURVE	691042.711	932526.937	S 76°58'33.6" E	89.09	02°51'55.1(R)	03°12'57.2"	89.10	44.56	1781.65
PT	691037.783	932546.363	S 75°32'36.1" E	28.06					
CURVE	691022.819	932615.971	S 77°55'48.5" E	71.18	04°46'24.9(L)	06°42'15.4"	71.20	35.62	854.61

BL	POINT	DESC.	NORTH	EAST	ELEVATION
GPS1	MAG NAIL		690790.1515	932310.8276	2064.44
GPS2	IRON PIN & CAP		691018.4672	932538.8757	2075.24



I, _____, PLS, certify that the Project Control was [performed/verified] under my supervision from an actual GPS survey made under my supervision and the following information was used to perform the survey:

Class of survey: **AA**
 Type of GPS field procedure: VRS
 Dates of survey: MARCH 2022
 Datum/Epoch: NAD 83/NA 2011
 Published/Fixed-control use: N/A
 Localized around: GPS2
 Northing: 691018.4672
 Easting: 932538.8757
 Combined grid factor: 0.99979362
 Geoid model: 12B
 Units: US SURVEY FEET

I also certify that the Baseline Control for this project was completed under my direct and responsible charge from an actual survey made under my supervision; that all horizontal closures had a minimum ratio of precision of 1:20,000 (Class AA) and Vertical accuracy to Class A. Field work was performed from _____ to _____, and all coordinates are based on NAD 83/2011 and all elevations are based on NAVD 88; that this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This ___ day of _____, 20__.

Professional Land Surveyor L-XXXX

NOTES:

1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
2. THE SURVEY CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE DDC UNIT.

REVISIONS

I8-APR-2023 16:52 S:\DDC\Prof\IC\Engineering\Emmo Road & North Louisiana Ave\LocationSurveys\W5813C.DDC.RW02C-1.dgn \$\$\$USERNAME\$\$\$

RIGHT OF WAY CONTROL SHEET

PROJECT REFERENCE NO.	SHEET NO.
W5813C	RW03E-1
Location and Surveys	
ENTER CONSULTANT'S NAME IN THIS BOX	
PROJECT SURVEYOR	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

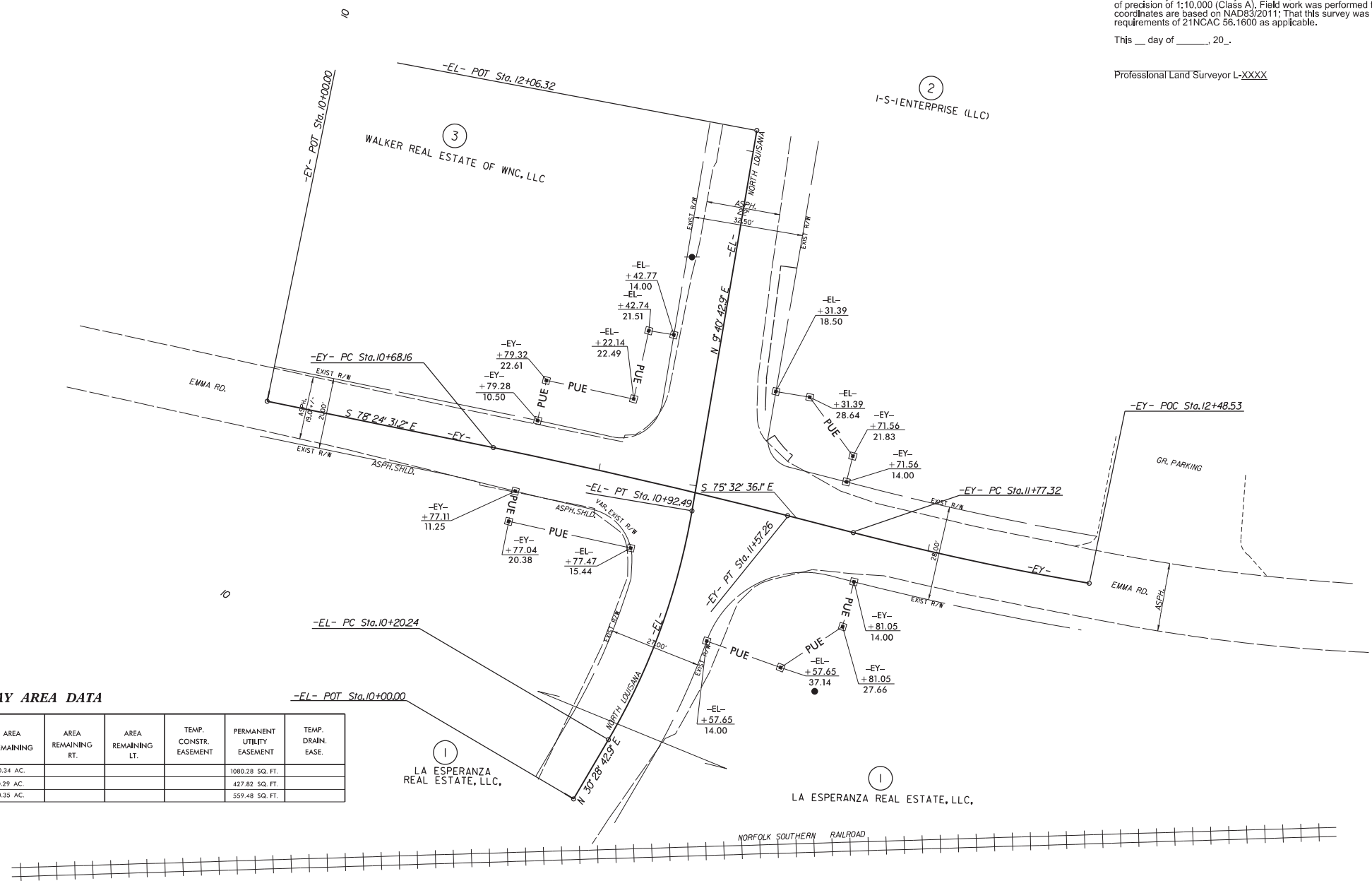
EL PUE IRON PIN & CAP & MAG NAIL				
ALIGN	STATION	OFFSET	NORTH	EAST
EL	10+57.65	14.00	691005.7513	932503.0838
EL	10+57.65	37.14	690997.9455	932524.8726
EL	10+77.47	-15.44	691033.1700	932480.6701
EL	11+22.14	-22.49	691077.1450	932481.5460
EL	11+42.74	-21.51	691097.2810	932485.9790
EL	11+42.77	-14.00	691096.0529	932493.3838
EL	11+31.39	18.50	691079.3674	932523.5074
EL	11+31.39	28.64	691077.6619	932533.5077

EY PUE IRON PIN & CAP & MAG NAIL				
ALIGN	STATION	OFFSET	NORTH	EAST
EY	10+77.04	20.38	691041.0420	932444.6360
EY	10+77.11	11.25	691049.9626	932446.5841
EY	10+79.32	-22.61	691082.6350	932455.7480
EY	10+79.28	-10.50	691070.7929	932453.1970
EY	11+71.56	-14.00	691052.6993	932544.2738
EY	11+71.56	-21.83	691060.2842	932546.2293
EY	11+81.05	14.00	691023.2096	932546.5340
EY	11+81.05	27.66	691009.9709	932543.1824

I, _____ certify that the right of way and permanent easement monumentation for this project shown herein was completed under my direct and responsible charge from an actual survey made under my supervision; that all horizontal closures had a minimum angle of precision of 1:10,000 (Class A). Field work was performed from _____ to _____, and all coordinates are based on NAD83/2011; That this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This ___ day of _____, 20__.

Professional Land Surveyor L-XXXX



RIGHT OF WAY AREA DATA

PARCEL NO.	PROPERTY OWNERS NAMES	TOTAL ACREAGE	AREA REMAINING	AREA REMAINING RT.	AREA REMAINING LT.	TEMP. CONSTR. EASEMENT	PERMANENT UTILITY EASEMENT	TEMP. DRAIN. EASE.
1	LA ESPERANZA REAL ESTATE, LLC	0.37 AC.	0.34 AC.				1080.28 SQ. FT.	
2	I-S-I ENTERPRISE (LLC)	0.30 AC.	0.29 AC.				427.82 SQ. FT.	
3	WALKER REAL ESTATE OF WNC, (LLC)	0.36 AC.	0.35 AC.				559.48 SQ. FT.	

NOTES:

1. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED PLEASE CONTACT THE DDC UNIT.
2. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
3. RIGHT OF WAY MONUMENTATION ESTABLISHED _____ TO _____.

REVISIONS

I:\ASB-2023\1455-Engineering\Emma Road & North Louisiana Ave\LocationSurveys\W5813C-dds-RW03E-1.dgn
 6/2/2019 14:55
 I:\ASB-2023\1455-Engineering\Emma Road & North Louisiana Ave\LocationSurveys\W5813C-dds-RW03E-1.dgn

Location and Surveys

INSERT CONSULTANT'S NAME

PROJECT SURVEYOR

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



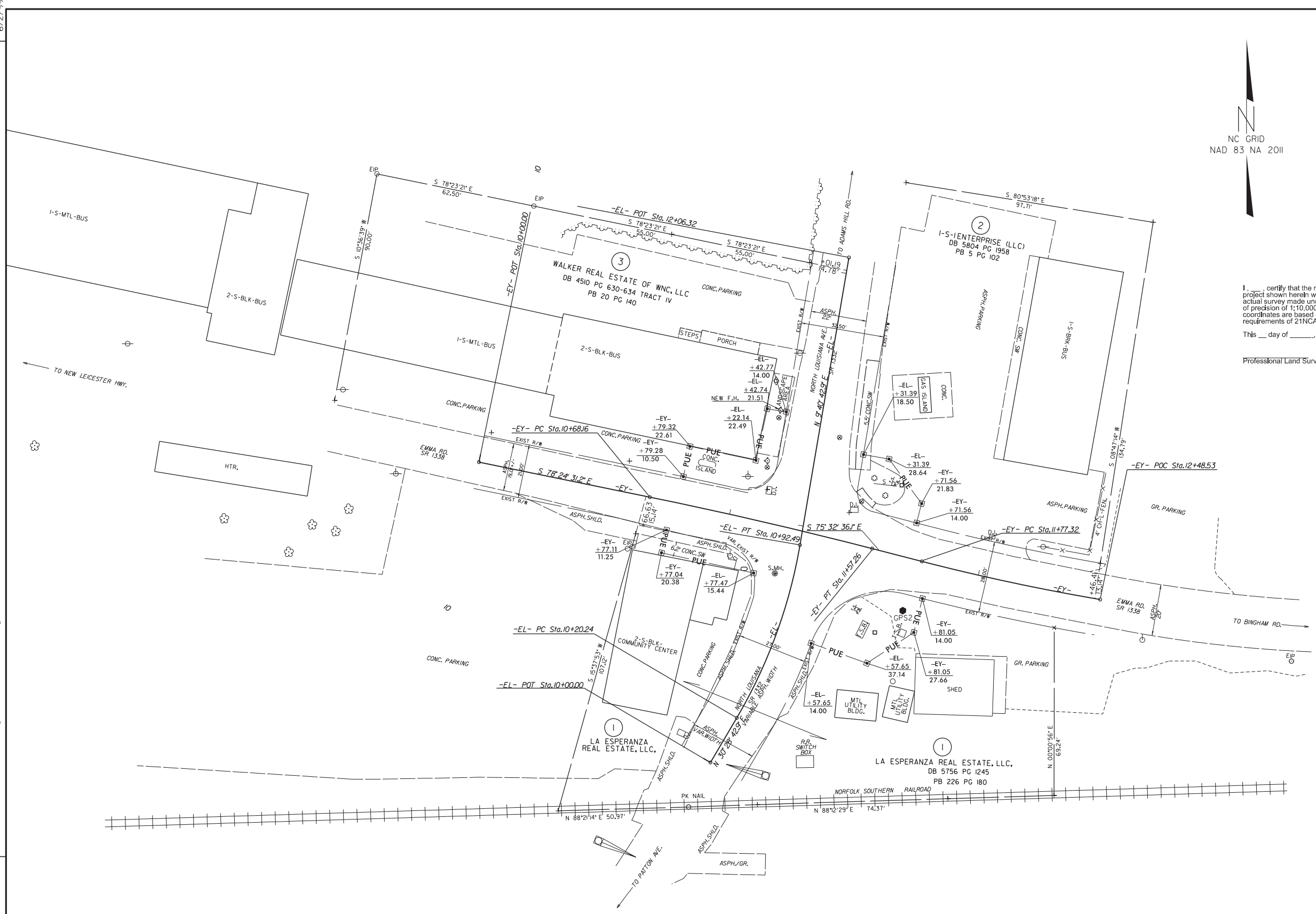
I, _____ certify that the right of way and permanent easement monumentation for this project shown herein was completed under my direct and responsible charge from an actual survey made under my supervision; that all horizontal closures had a minimum ratio of precision of 1:10,000 (Class A). Field work was performed from _____ to _____, and all coordinates are based on NAD83/2011; That this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This ___ day of _____, 20__.

Professional Land Surveyor L-XXXX

REVISIONS

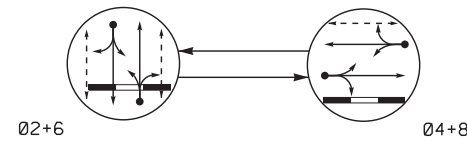
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 USER:ASR



NOTES:

1. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
2. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
3. RIGHT OF WAY MONUMENTATION ESTABLISHED _____ TO _____.

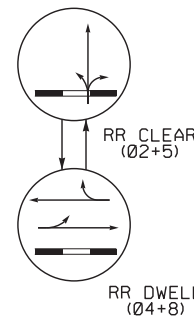
PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

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

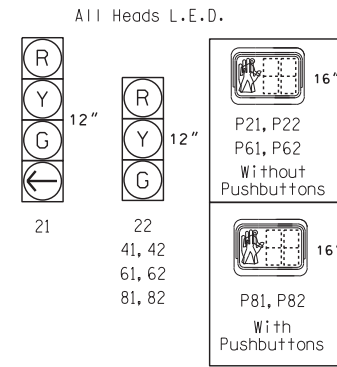
EV PREEMPT PHASES (High Priority)



SIGNAL FACE	PHASE							
	02+6	04+8	RR CLEAR	RR DWELL	C	R	Y	F L
21	G	R	G	R	Y			
22	G	R	G	R	Y			
41,42	R	G	R	G	Y			
61,62	G	R	G	R	Y			
81,82	R	G	R	G	Y			
P21,P22	W	DW	DW	DW	DRK			
P61,P62	W	DW	DW	DW	DRK			
P81,P82	DW	W	DW	DW	DRK			
* (A), (B)	OFF	OFF	ON	ON	OFF			

* See note 6

SIGNAL FACE I.D.



OASIS 2070 LOOP & DETECTOR INSTALLATION CHART

LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	DETECTOR PROGRAMMING								
				NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
2A	6X40	+1	2-4-2	-	2	Y	Y	-	-	-	-	-
4A	6X40	+5	2-4-2	-	4	Y	Y	-	-	3	-	-
6A	6X40	+10	2-4-2	-	6	Y	Y	-	-	-	-	-
8A	6X40	+4	2-4-2	-	8	Y	Y	-	-	3	-	-

2 Phase Fully Actuated w/ RR Preemption Asheville Signal System

NOTES

- Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
- This location contains railroad preemption phasing. Do not program signal for late night flashing operation.
- Set all detector units to presence mode.
- Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls for phase 8 peds.
- Program pedestrian heads to countdown the flashing "Don't Walk" time only.
- Ensure flashing operation does not alter operation of blankout signs.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
- Enable Rest in walk on phases 2 and 6.

OASIS 2070 RR PREEMPT

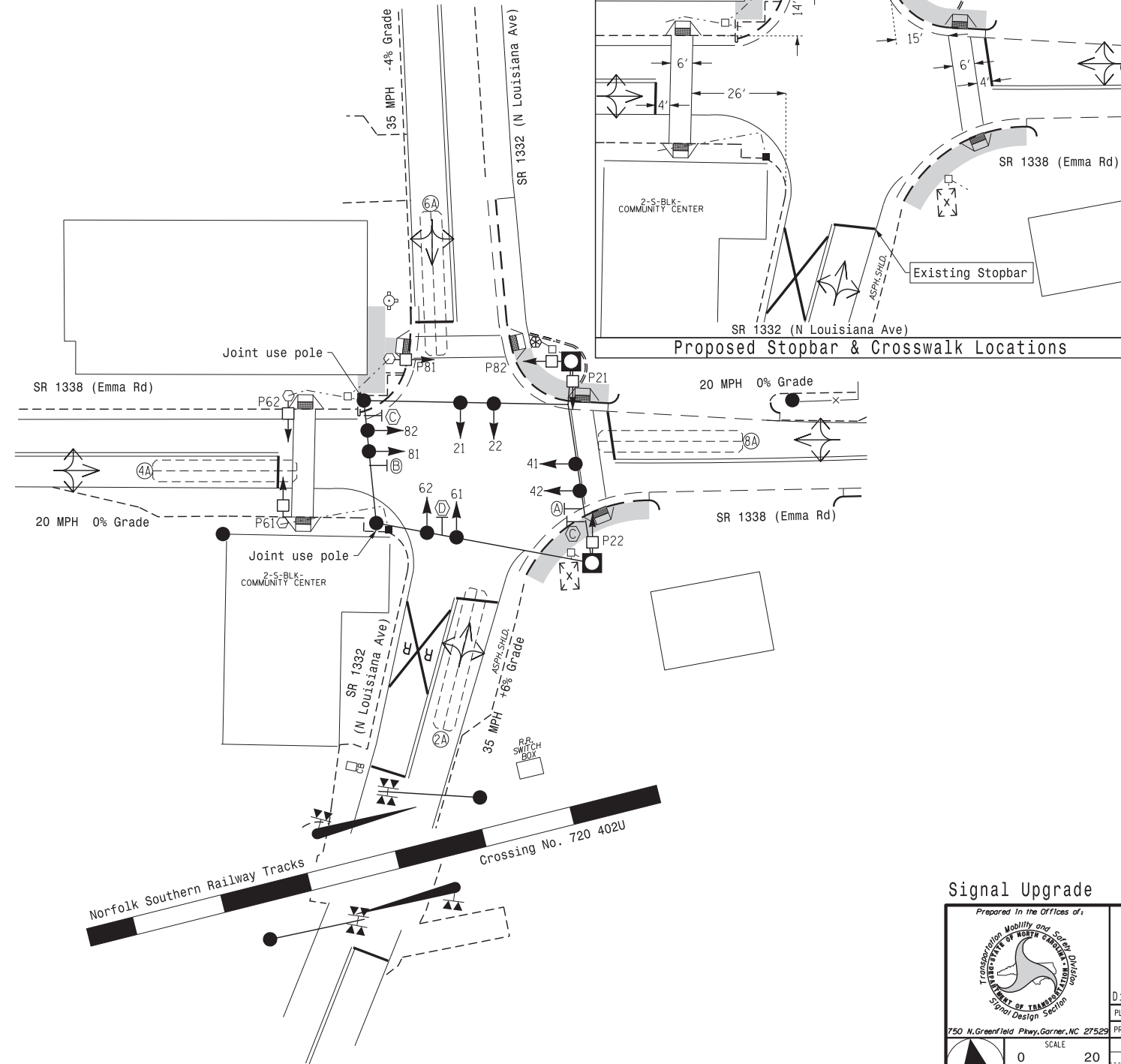
FUNCTION	PRE 1
Interval 1 - Track Clearance Green	15
Interval 1 - Track Clearance Yellow	3.5
Interval 1 - Track Clearance Red	2.8
Interval 2 - Dwell Green	255
Interval 2 - Dwell Yellow	0.0*
Interval 2 - Dwell Red	0.0*
Interval 5 - Exit Green	1
Interval 5 - Yellow	0.0
Interval 5 - Red	0.0
Exit Phase(s)	2,6
Priority	HIGH
Delay Time	0.0
Min Green Before Pre	1
Ped Clear Before Pre	4
Yellow Clear Before Pre	0.0*
Red Clear Before Pre	0.0*
Dwell Min Time	7
Enable Backup Protection	N
Ped Clear Through Yellow	Y
Omit Overlaps	-

* Time defaults to time used for phase during normal operation

OASIS 2070 TIMING CHART

FEATURE	PHASE			
	2	4	6	8
Min Green 1 *	10	7	10	7
Extension 1 *	3.0	2.0	3.0	2.0
Max Green 1 *	50	25	50	25
Yellow Clearance	4.1	3.0	4.1	3.0
Red Clearance	2.8	3.0	2.8	3.0
Red Revert	2.0	2.0	2.0	2.0
Walk 1 *	7	-	7	7
Don't Walk 1	5	-	5	5
Seconds Per Actuation *	-	-	-	-
Max Variable Initial *	-	-	-	-
Time Before Reduction *	-	-	-	-
Time To Reduce *	-	-	-	-
Minimum Gap	-	-	-	-
Recall Mode	MIN/PED RECALL	-	MIN/PED RECALL	-
Vehicle Call Memory	YELLOW	-	YELLOW	-
Dual Entry	-	ON	-	ON
Simultaneous Gap	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 |
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- (A) "NO RIGHT TURN - TRAIN" Internally Illuminated Blankout Sygn
- (B) "NO LEFT TURN - TRAIN" Internally Illuminated Blankout Sign
- (C) "NO TURN ON RED" Sign (R10-11)
- (D) "ONCOMING TRAFFIC MAY HAVE EXTENDED GREEN" Sign (W25-2)

Signal Upgrade

Prepared in the Offices of:
 Transportation Mobility and Safety Solutions
 UNIVERSITY OF NORTH CAROLINA
 STATE OF CAROLINA
 Signal Design Section

750 N. Greenfield Pkwy, Garner, NC 27529

SR 1332 (Louisiana Avenue) at SR 1338 (Emma Road)

Division 13 Buncombe County Asheville

PLAN DATE: December 2021 REVIEWED BY: T.J. Williams

PREPARED BY: EM Minshew REVIEWED BY:

SCALE: 1"=20'

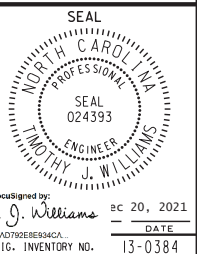
REVISIONS: _____

INIT. DATE

Documented by: J. Williams ec 20, 2021

SIG. INVENTORY NO. 13-0384

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

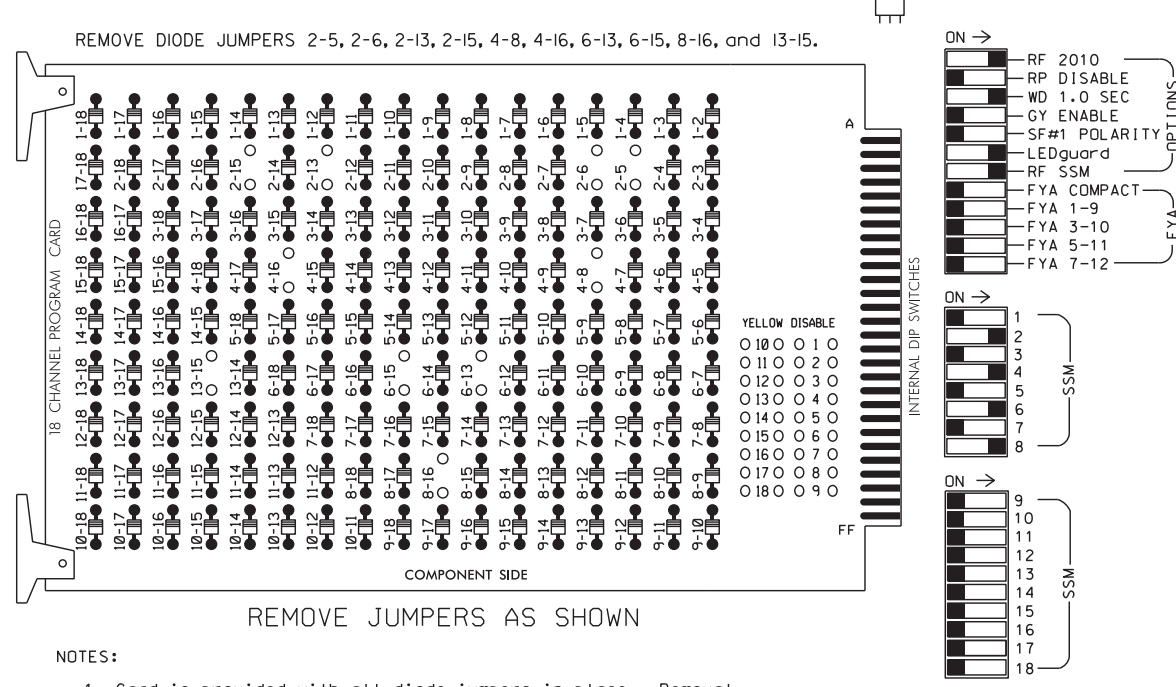


22-DEC-2021 11:21 S:\IT\5813C\13-0384\Signal Design Section\0401\13-0384\2021-11-11\13-0384_13-0384_2021.mxd.dgn emminshew

EDI MODEL 2018ECLip-NC CONFLICT MONITOR

PROGRAMMING DETAIL

(remove jumpers and set switches as shown)



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 Rest In Walk.
- Program phases 2 and 6 for Start Up In Green.
- Program phase 8 for Startup Ped Call.
- Program phases 2 and 6 for Yellow Flash.
- The cabinet and controller are part of the Asheville Signal System.

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	OLA	OLB	SPARE	OLC	OLD	SPARE
SIGNAL HEAD NO.	NU	21,22	P21, P22	NU	41,42	NU	21	61,62	P61, P62	NU	81,82	P81, P82	NU	NU	NU	NU	NU	NU
RED		128			101			134			107							
YELLOW		129			102		*	135			108							
GREEN		130			103			136			109							
RED ARROW																		
YELLOW ARROW																		
GREEN ARROW								133										
Hand					113					119		110						
Person					115					121		112						

NU = Not Used
 * Denotes install load resistor. See load resistor installation detail this sheet.

EQUIPMENT INFORMATION

CONTROLLER.....2070E
 CABINET.....332 W/ AUX
 SOFTWARE.....ECONOLITE OASIS 3.03.61E OR LATEST APPROVED VERSION
 CABINET MOUNT.....BASE
 OUTPUT FILE POSITIONS...18 WITH AUX. OUTPUT FILE LOAD SWITCHES USED.....S2,S3,S5,S7,S8,S9,S11,S12
 PHASES USED.....2,2PED,4,5*,6,6PED,8,8PED
 OVERLAPS.....NONE
 * Phase used only during preemption.

INPUT FILE POSITION LAYOUT

(front view)

FILE	1	2	3	4	5	6	7	8	9	10	11	12	13	14
U	S	∅ 2	S	S	S	∅ 4	S	S	S	S	S	S	NOT USED	FS DC ISOLATOR
L	2A	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	∅ 8 PED	ST DC ISOLATOR
U	S	∅ 6	S	S	S	∅ 8	S	S	S	S	S	S	S	PRE1 AC ISOLATOR
L	6A	NOT USED	NOT USED	NOT USED	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
 PRE1 = RAILROAD PREEMPT

INPUT FILE CONNECTION & PROGRAMMING CHART

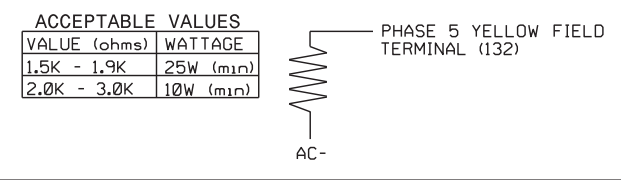
LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT ASSIGNMENT NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND	FULL TIME DELAY	STRETCH TIME	DELAY TIME
2A	TB2-5,6	I2U	39	1	2	2	Y	Y			
4A	TB4-9,10	I6U	41	3	4	4	Y	Y			3
6A	TB3-5,6	J2U	40	2	6	6	Y	Y			
8A	TB5-9,10	J6U	42	4	8	8	Y	Y			3
PED PUSH BUTTONS											
P81,P82	TB8-8,9	I13L	70	32	PED 8	8 PED					

NOTE: INSTALL DC ISOLATOR IN INPUT FILE SLOT 113.

PREEMPT ONLY PHASE OMIT NOTE

(program controller as shown below)
 From Main Menu press '2' (Phase Control). Then '1' (Phase Control Functions). Program Phase 5 for 'Omit Phase' and Phases 2, 4, 6 and 8 for 'Startup Calls'. This is to prevent Phase 5 from being served when not in Preempt.

LOAD RESISTOR INSTALLATION DETAIL



Electrical Detail - Sheet 1 of 2

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared in the Offices of:

750 N. Greenfield Pkwy, Garner, NC 27529

SR 1332 (Louisiana Avenue)
 at
 SR 1338 (Emma Road)

Division 13 Buncombe County Asheville

PLAN DATE: December 2021 REVIEWED BY:

PREPARED BY: S. Armstrong REVIEWED BY:

REVISIONS	INIT.	DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL

DocuSigned by: Ryan W. Hough
 Dec 20, 2021

SIG. INVENTORY NO. 13-0384

20-DEC-2021 11:54 S:\IT\S&M\13-0384.dwg Mon@Projects From Signal Design\Active Projects\13-0384.dwg Project#130384.sm.e.20161103.dgn

RAILROAD PREEMPTION PROGRAMMING DETAIL

(program controller as shown below)

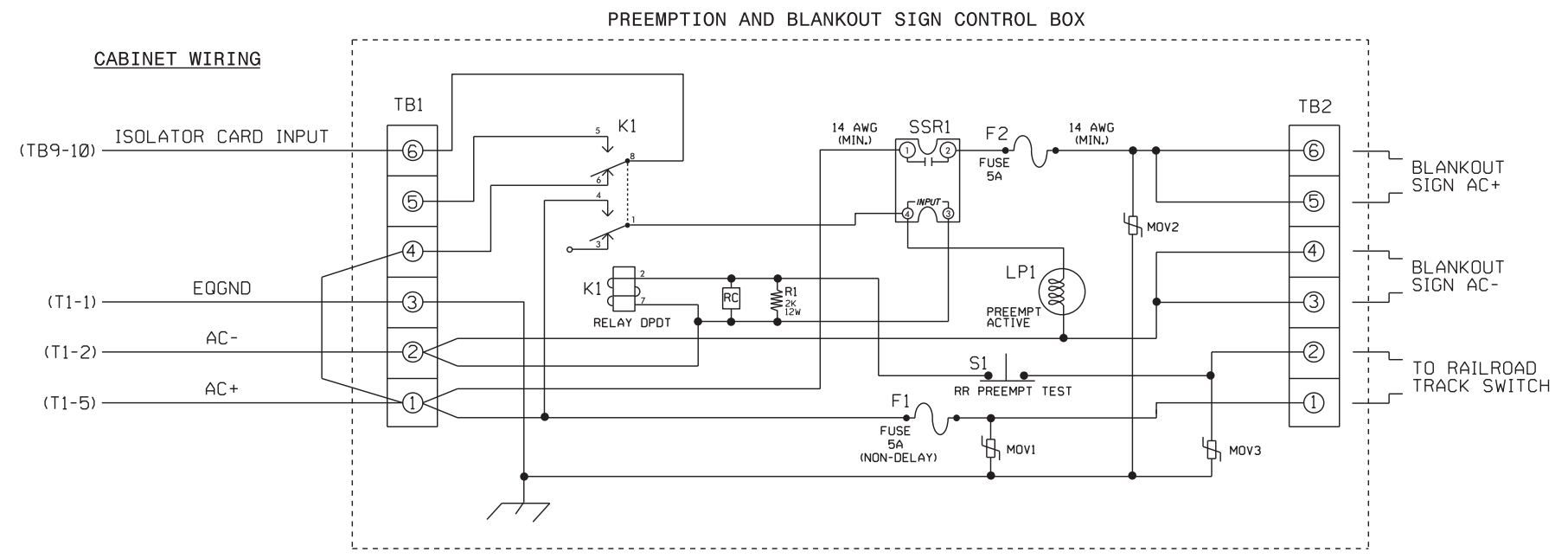
From Main Menu press 'A' (Preemption), then '1' (Standard Preemptions).

PREEMPTION #1	SETTINGS (NEXT:1-10)	CLEAR/DWELL PHASES											
INTERVAL/TIMING	GRN	YEL	RED	1	2	3	4	5	6	7	8	9	10
1	15	3.5	2.8	X	X								
2	255	0.0	0.0	X	X								
3	0	0.0	0.0										
4	0	0.0	0.0										
5	1	0.0	0.0	X	X								

EXIT CALLS	OPTIONS
PRIORITY (Y/N TO SELECT)	.....HIGH
DELAY TIMER (0-255 SEC)	.....0
MIN GREEN BEFORE PRE (0= DEFAULT)	...1
PED CLEAR BEFORE PRE (0= DEFAULT)	...4
YELLOW CLEAR BEFORE PRE (0= DEFAULT)	...0.0
RED CLEAR BEFORE PRE (0= DEFAULT)	...0.0
DWELL MIN TIMER (0-255 SEC)	.....7
DWELL MAX TIMER (0=OFF,1-255MIN)	....0
DWELL HOLD-OVER TIMER (0-255)	.....0
LATCH CALL?	.....N
LINK TO NEXT PREEMPT?	.....N
ENABLE BACKUP PROTECTION?	.....N
HOLD CLEAR 1 PHASES DURING DELAY?	...N
FAST GREEN FLASH DWELL PHASES?	.....N
PED CLEARANCE THROUGH YELLOW?	....Y
INHIBIT OVERLAP GREEN EXTENSION?	....N
SERVICE DURING SOFTWARE FLASH?	.....N
REST IN RED DURING DWELL INTERVAL?	..N
FLASH DWELL INTERVAL?	.....N
ALLOW PEDS IN DWELL INTERVAL?	.....N
RE-TIME DWELL INTERVAL?	.....N
OVERLAPS:	.....ABCDEFGHIJKLMN
DWELL INT FLASH YELLOW	.....
OMIT OVERLAPS:	.....

RAILROAD PREEMPTION WIRING DETAIL

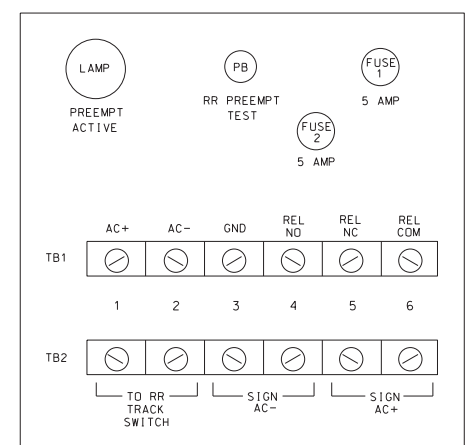
(wire as shown below)



NOTES

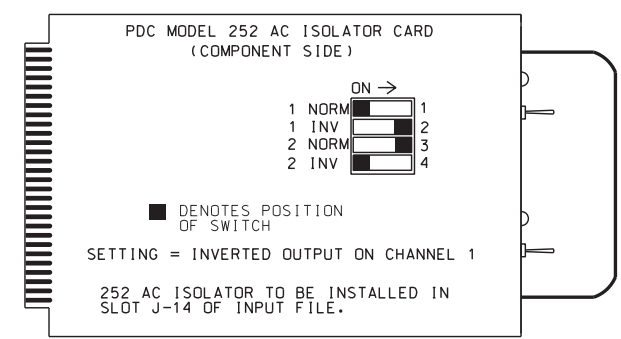
- Relay K1 is shown in the energized (Preempt not active) normal operation state.
- Relay K1 is a DPDT with 120VAC coil with octal base.
- Relay SSR1 is a SPST (normally open) Solid State Relay with AC input and AC (25 amp) output.
- AC Isolator Card shall activate preemption upon removal of AC+ from the input (as shown above). To accomplish this set invert dip switch on AC Isolator Card.
- IMPORTANT!!** A jumper must be added between input file terminals J14-E and J14-K if not already present. Also, terminal TB9-12 (on input panel) shall be connected to AC neutral (jumper may have to be added).

FRONT VIEW



PREEMPT 1 AC ISOLATOR (MODEL 252) OUTPUT PROGRAMMING DETAIL

(set DIP switches as shown below)



NOTE: IF ANOTHER MANUFACTURER TYPE OF AC ISOLATOR IS USED, OUTPUT PROGRAMMING IS LIKELY NOT TO EQUATE TO THAT SHOWN ABOVE.

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 13-0384
 DESIGNED: December 2021
 SEALED: 12/20/2021
 REVISED: N/A

Electrical Detail - Sheet 2 of 2

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared in the Offices of:

750 N. Greenfield Pkwy, Garner, NC 27529

SR 1332 (Louisiana Avenue) at SR 1338 (Emma Road)

Division 13 Buncombe County Asheville

PLAN DATE: December 2021 REVIEWED BY:

PREPARED BY: S. Armstrong REVIEWED BY:

REVISIONS	INIT.	DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL

SEAL 036833

ENGINEER RYAN W. HOUGH

DocuSigned by: Ryan W. Hough Dec 20, 2021

430320FAA2854C3 DATE

SIG. INVENTORY NO. 13-0384

20-DEC-2021 11:55
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 sarmstrong