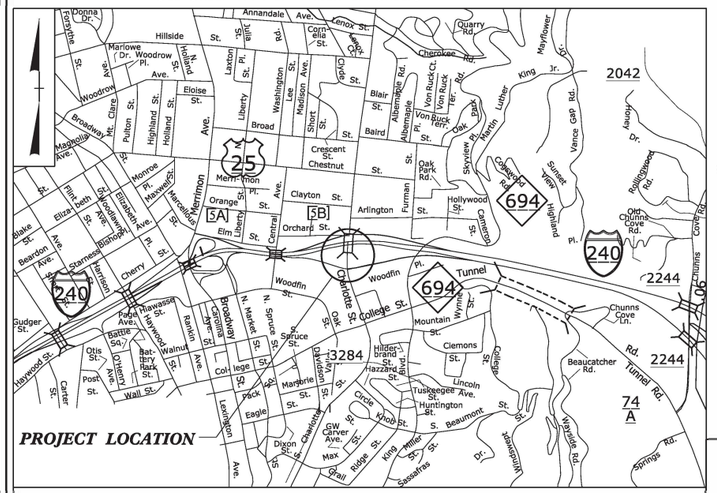
09/08/99

TIP PROJECT: HL-0012

CONTRACT: DM00382

See Sheet 1A For Index of Sheets



VICINITY MAP N.T.S

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

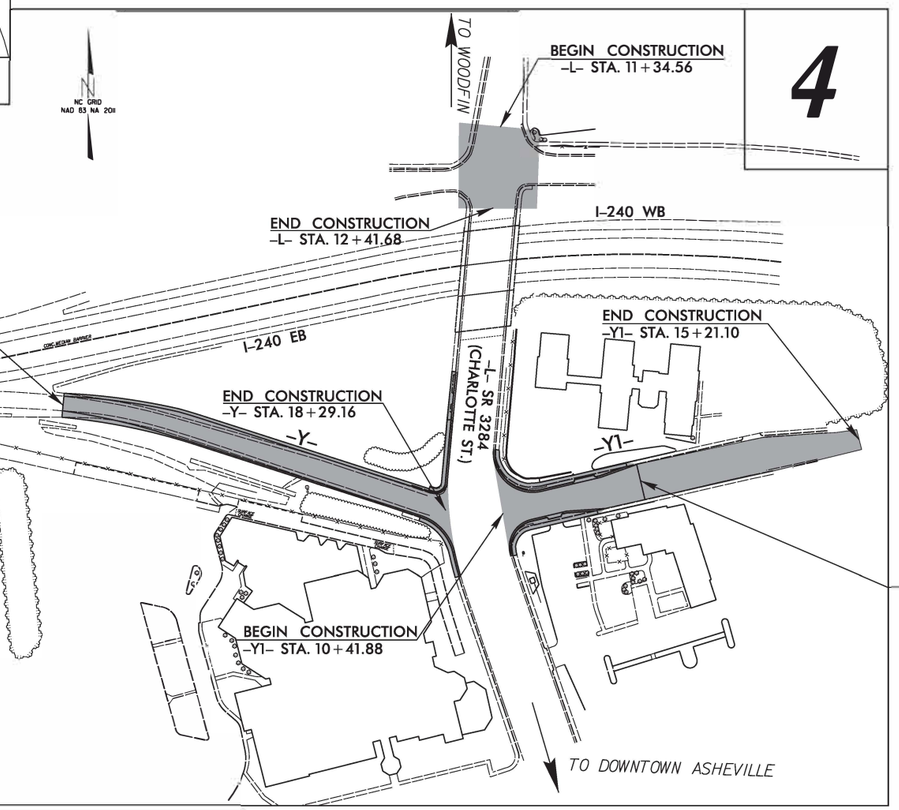
BUNCOMBE COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	HL-0012	1	

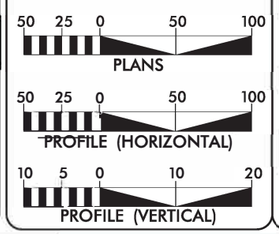
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
49468.1.1		P.E.
49468.2.1		ROW
49468.3.1	0240 (007)	CONST.

LOCATION: ***I-240 AT US70 (CHARLOTTE ST.) INTERSECTIONS***

TYPE OF WORK: ***PEDESTRIAN IMPROVEMENTS AND AN ADDITIONAL TURN LANE ON THE I-240 EASTBOUND OFF-RAMP***



GRAPHIC SCALES



PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT HL-0012 = 0.21 MILES

Prepared in the Office of:
DIVISION OF HIGHWAYS
55 Orange St., Asheville NC, 28801

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:

LETTING DATE:
APRIL 19, 2023

MICHAEL G CLARK
PROJECT ENGINEER

WILLIAM C. CARVER P.E.
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

P.E.
SIGNATURE:

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

08-DEC-2022 08:18
S:\DOT\Projects\Buncombe\HL0012\Roadway\Proj\HL-0012_ddc_tsh.dgn
$$$$USERNAME$$$$

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
HL-0012	1A

ROADWAY DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

INDEX OF SHEETS

GENERAL NOTES:

2018 SPECIFICATIONS
EFFECTIVE: 01-16-2018
REVISED:

GRADING AND SURFACING OR RESURFACING AND WIDENING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. WHERE NO GRADE LINES ARE SHOWN, THE PROFILES SHOWN DENOTE THE TOP ELEVATION OF THE EXISTING PAVEMENT ALONG THE CENTER LINE OF SURVEY ON WHICH THE PROPOSED RESURFACING WILL BE PLACED. GRADE LINES MAY BE ADJUSTED 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.

SUPERELEVATION:

ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.05 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. NO. 560.02

DRIVEWAYS:

DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. 848.02 USING 3 FOOT RADII OR RADII AS SHOWN ON THE PLANS. LOCATIONS OF DRIVES WILL BE AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

TEMPORARY SHORING:

SHORING REQUIRED FOR THE MAINTENANCE OF TRAFFIC WILL BE PAID FOR AS "EXTRA WORK" IN ACCORDANCE WITH SECTION 104-7.

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

ATT

DUKE ENERGY

DOMINION ENERGY

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

CURB RAMPS

CURB RAMPS ARE SHOWN ON THE PLANS AT APPROXIMATE LOCATIONS. CONSTRUCT ALL CURB RAMPS ACCORDANCE WITH STD 848.05 and/or 848.06.

EFF. 01-16-2018
REV.

2018 ROADWAY ENGLISH STANDARD DRAWINGS

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
225.01	Guide for Grading Subgrade - Interstate and Freeway
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
840.02	Concrete Catch Basin
840.03	Frame, Grates and Hood - for Use on Standard Catch Basin
840.25	Anchorage For Frames
840.31	Junction Box - for Use with Pipes 42" and Under
846.01	Concrete Curb, Gutter and Curb & Gutter
848.01	Concrete Sidewalk
848.02	Driveway Turnout - Radius Type
848.05	Curb Ramp - Proposed Curb & Gutter
848.06	Curb Ramp - Existing Curb & Gutter

12/2/2016

PROJECT REFERENCE NO.	SHEET NO.
HL-0012	1B

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

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

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin — EIP
- Computed Property Corner
- Property Monument — ECM
- Parcel/Sequence Number — 123
- Existing Fence Line
- 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 — FLOW
- False Sump

RAILROADS:

- Standard Gauge — CSX TRANSPORTATION
- 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 Easment 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 R/W Marker — RW
- New Control of Access Line with Concrete C/A Marker — CA
- Existing Control of Access — CA
- New Control of Access — CA
- 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
- 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 — S
- Storm Sewer — S

UTILITIES:

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole — P
- 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 — T
- Telephone Pedestal — T
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole — HH
- 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 — W
- 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 — C
- TV Tower
- U/G TV Cable Hand Hole — HH
- 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

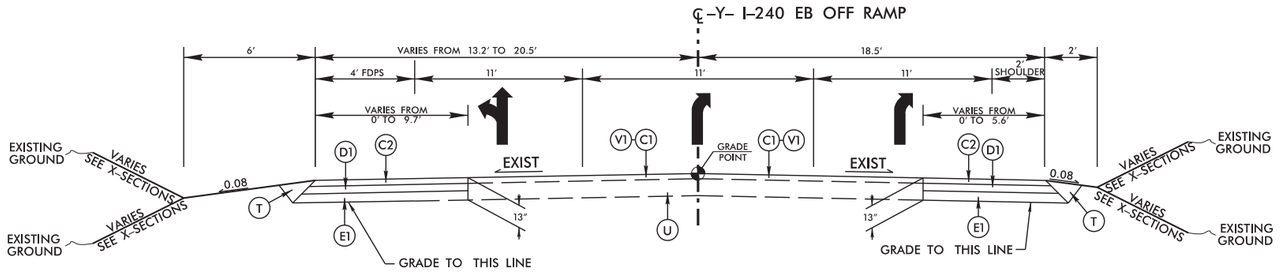
MISCELLANEOUS:

- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box — S
- Utility Unknown U/G Line LOS B (S.U.E.*) — ?UTL
- 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.

6/2/99

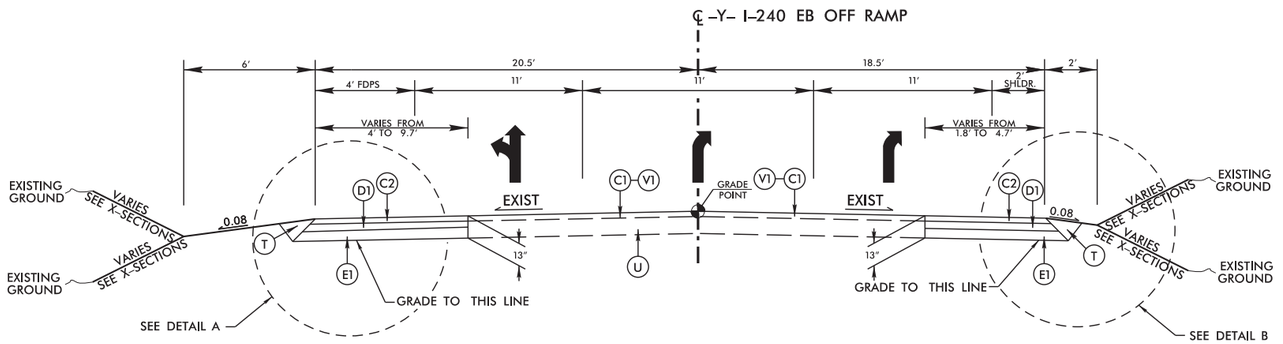
PROJECT REFERENCE NO.	SHEET NO.
HL-0012	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



TYPICAL SECTION NO. 1

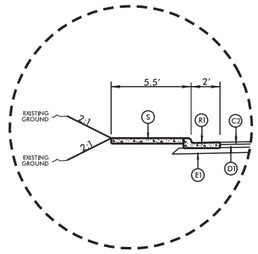
USE TYPICAL SECTION NO. 1
–Y– STA. 13+00.00 TO STA. 14+50.00



TYPICAL SECTION NO. 2

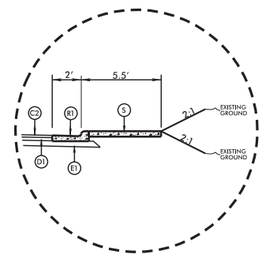
USE TYPICAL SECTION NO. 2
–Y– STA. 14+50.00 TO STA. 18+29.16

DETAIL A

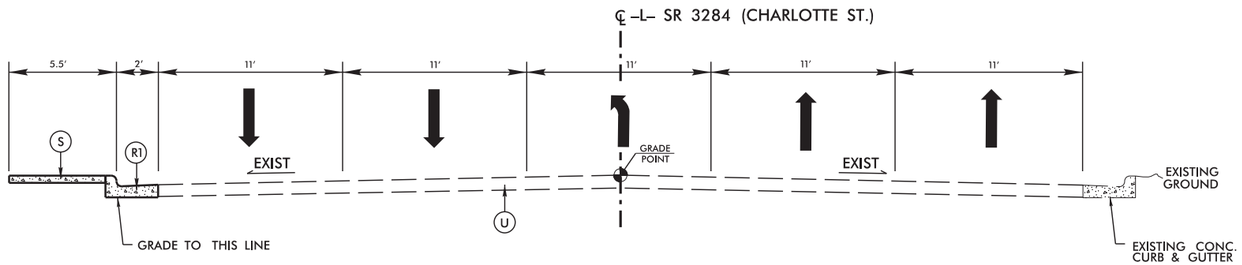


–Y– STA. 17+95.68 TO STA. 18+13.94

DETAIL B



–Y– STA. 17+95.68 TO STA. 18+53.89



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3
–L– STA. 14+61.02 TO STA. 17+20.95

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. OER SQ. YARD
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 336 LBS. PER SQ. YARD
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E1	PROP. APPROX. 6" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
J1	6" AGGREGATE BASE COARSE
R1	2'-6" CONCRETE CURB AND GUTTER
S	5' CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	1.5" MILLING

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

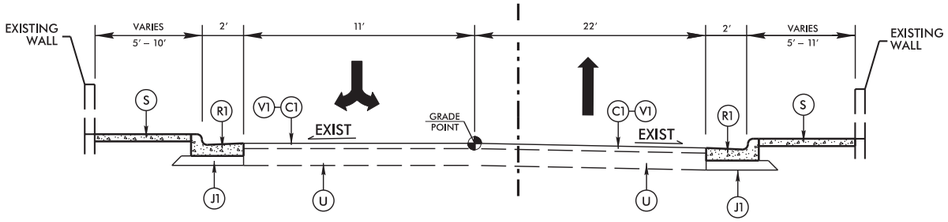
18-OCT-2022 13:59
S:\DOC\Projects\Buncombe\HL0012\Roadway\Proj\HL-0012_ddc_typ.dgn
$$$$USERNAME$$$$

6/2/99

PROJECT REFERENCE NO.	SHEET NO.
HL-0012	2A
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

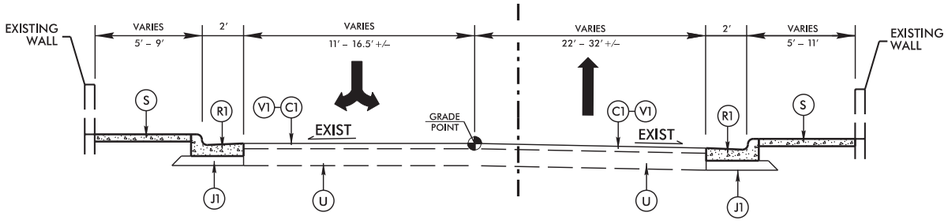
℄–Y1– I–240 EB ON RAMP



TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4
–Y1– STA. 10+41.88 TO STA. 11+23.81

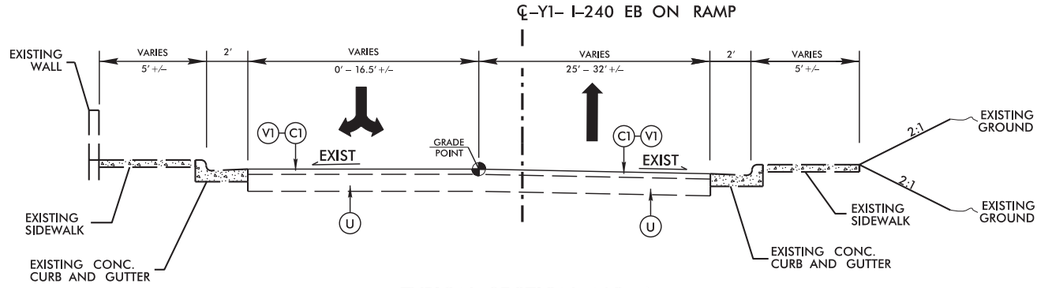
℄–Y1– I–240 EB ON RAMP



TYPICAL SECTION NO. 5

USE TYPICAL SECTION NO. 5
–Y1– STA. 11+23.81 TO STA. 12+28.16

℄–Y1– I–240 EB ON RAMP



TYPICAL SECTION NO. 6

USE TYPICAL SECTION NO. 6
–Y1– STA. 12+28.16 TO STA. 15+21.10

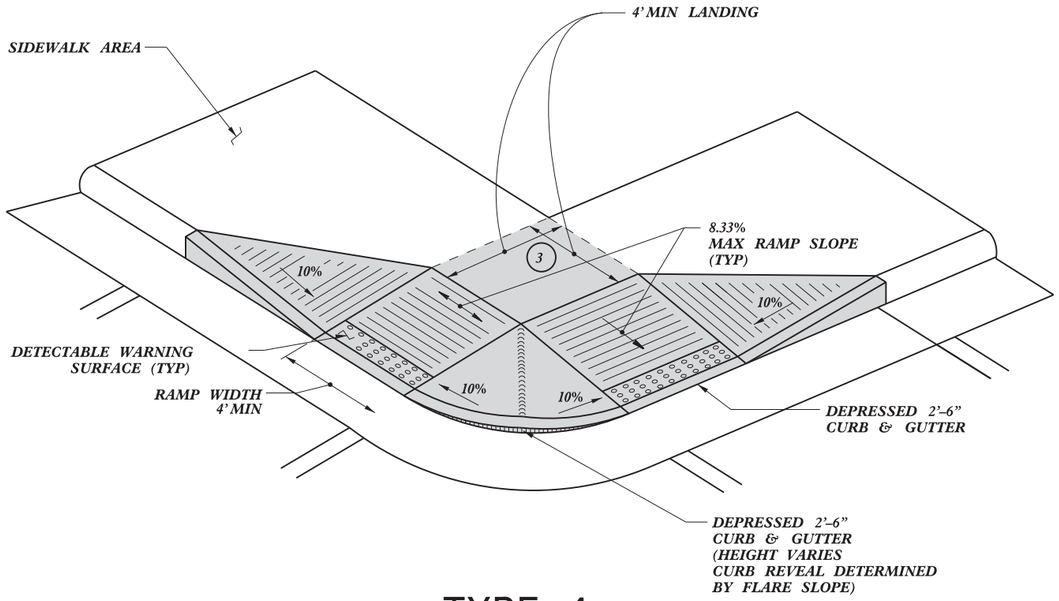
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

PAVEMENT SCHEDULE

C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. OER SQ. YARD
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 336 LBS. PER SQ. YARD
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E1	PROP. APPROX. 6" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
J1	6" AGGREGATE BASE COARSE
R1	2′–6" CONCRETE CURB AND GUTTER
S	5′ CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	1.5" MILLING

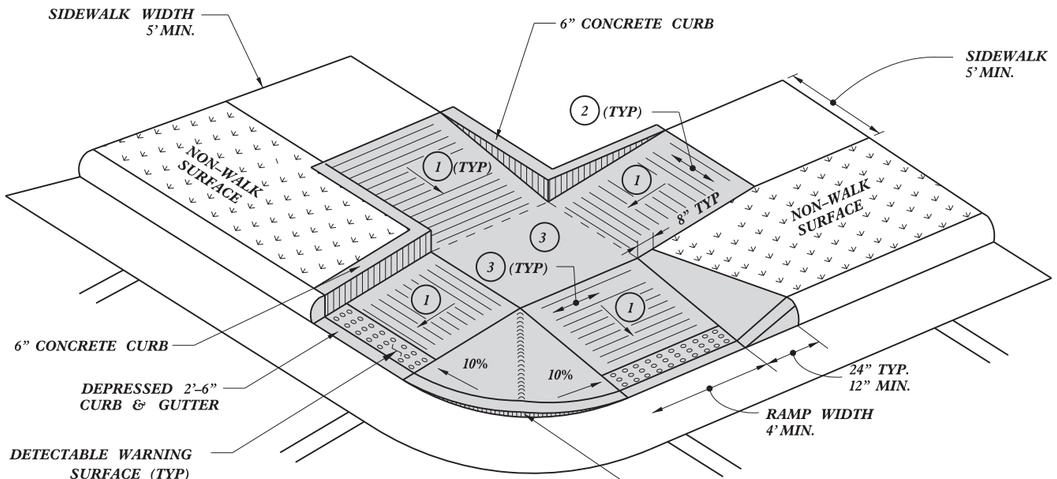
18-OCT-2022 14:00
S:\DOC\Projects\Buncombe\HL0012\Roadway\Proj\HL-0012_ddc_typ.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
HL-0012	2B

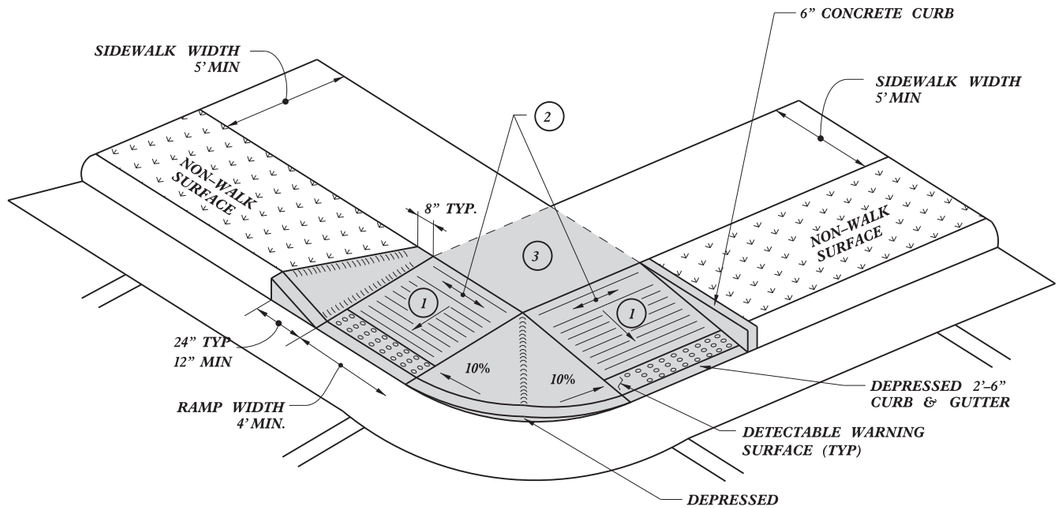


TYPE 4

PAY LIMITS FOR CURB RAMP



TYPE 5



TYPE 4A

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.*

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

CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

CURB RAMPS

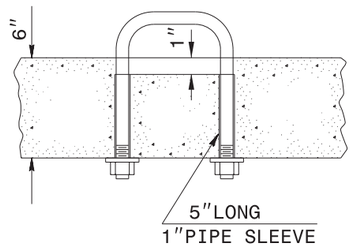
Shared Landing

ORIGINAL BY: J.S. HOWERTON DATE: 7/7/11
MODIFIED BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____
FILE SPEC.: stds/2012CurbRamp/CurbRampDetails.dgn

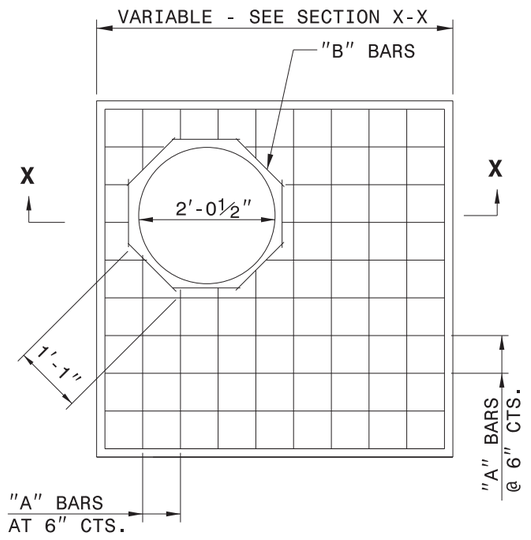
5/14/99

15-SEP-2011 15:06
S:\Contracts\Contracts\Special Details\jhowerton\Standard Drawings\2012 Standard Drawings\2012 Curb Ramp Special Details\Curb Ramp Details.dgn
jhowerton
Al CS0237501

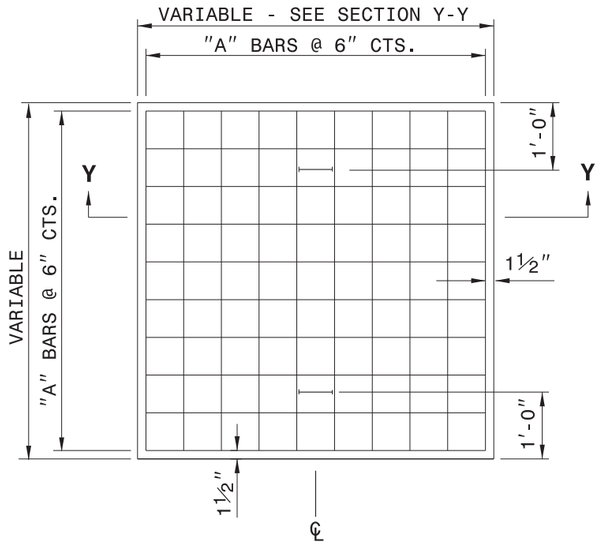
PROJECT REFERENCE NO.	SHEET NO.
HL-0012	2D-1



PARTIAL SECTION



PLAN



PLAN

GENERAL NOTES:

CONSTRUCT IN ACCORDANCE WITH SECTION 859 OF THE STANDARD SPECIFICATIONS.

THE DIMENSIONS FOR THE EXISTING BOXES ARE APPROXIMATE AND MAY VARY SLIGHTLY.

DETAIL INTENDED FOR NON-TRAFFIC BEARING DRAINAGE STRUCTURES.

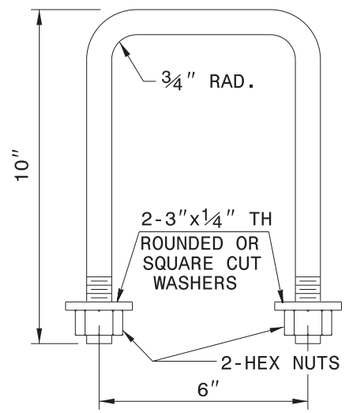
BILL OF MATERIALS

REINFORCING STEEL

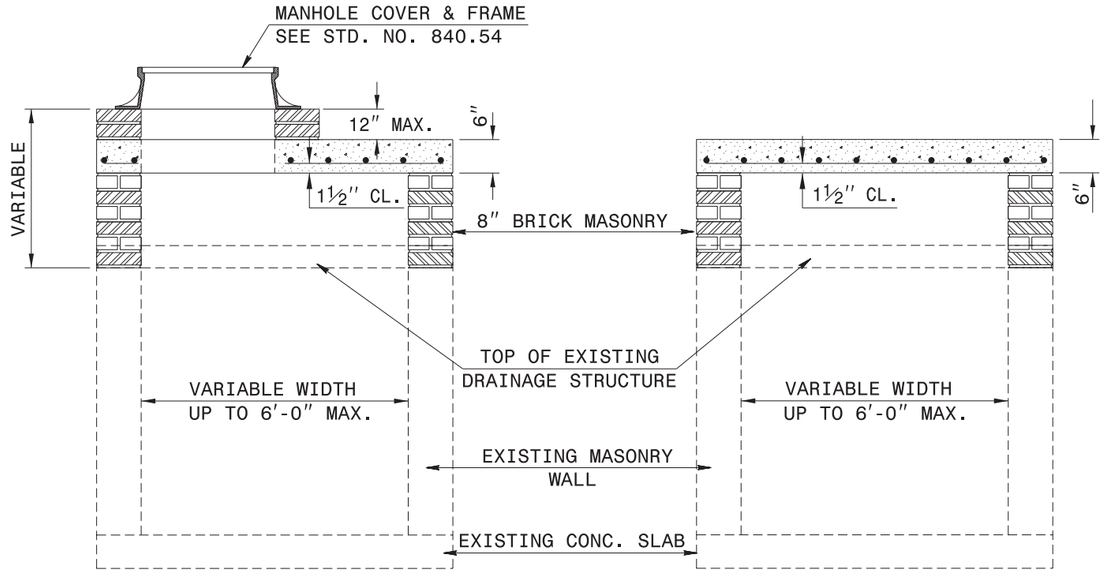
CODE	SIZE	QTY.	LENGTH	REINF. STEEL LBS.
A	#4	20	4′-6″	60.12
B	#4	8	1′-1″	5.79
TOTAL				65.91 *

MASONRY	CU YDS
TOP SLAB CONCRETE CLASS "B"	.4326 *
BRICK MASONRY PER FT HT (MIN)	.4111

✱ NOTE:
QUANTITIES BASED ON 3′-6″ X 3′-6″ DRAINAGE STRUCTURE. ADJUST QUANTITIES FOR LARGER STRUCTURES AND MANHOLE CONSTRUCTION.



DETAIL OF HANDLE



SECTION X-X

SECTION Y-Y

NORTH CAROLINA PROFESSIONAL SEAL 33144 ENGINEER NICOLE M HICKLER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

DETAIL TO CONVERT EXISTING DI, CB, OTCB or GI TO JUNCTION BOX (MANHOLE OPTIONAL)

ORIGINAL BY: T.S.S. DATE: NOV.1997
MODIFIED BY: T.S.S. DATE: FEB.2000
CHECKED BY: DATE:
FILE SPEC.: ds174:/usr/details/stand/boxtojbe.dgn

$$$$USERNAME$$$$
$$$$USERNAME$$$$
$$$$SYSTIME$$$$
$$$$SYSTIME$$$$
$$$$CONS$$$$$$$$$$$$$$$$$$$$$$

COMPUTED BY: H. FLETCHER DATE: 6/14/2022
CHECKED BY: _____ DATE: _____

PROJECT NO.	SHEET NO.
HL-0012	3B-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF EARTHWORK

Station	Station	Uncl. Excav.	Embank. +15%	Borrow	Waste
-Y- 10+00	-Y- 18+25	378	53		325
-Y1- 10+50	-Y1- 12+00	64	38		26
SUBTOTALS:		442	91	0	351
		442	91	0	351
PROJECT TOTALS:					
PROJECT TOTALS:		442	91	0	351
GRAND TOTALS:		442			
SAY:		**445**		**0**	

CONTINGENCY ITEMS:
INCIDENTAL STONE = 25 TONS
SHALLOW UNDERCUT = 50 CY
SELECT GRANULAR MATERIAL = 25 TONS
GEOTEXTILE FOR SOIL STABILIZATION = 100 CY
CLASS IV SUBGRADE STABILIZATION = 50 TONS

Note: Approximate quantities only. Unclassified Excavation, Borrow Excavation, Shoulder Borrow, Fine Grading, Clearing and Grubbing, Breaking of Existing Pavement, and Removal of Existing Pavement will be paid for at the contract lump sum price for grading.

CURB AND GUTTER SUMMARY

LINE	Station	Station	LENGTH
(-Y-)	17+95.68 LT	14+61.02 RT (L)	175.1
(-Y-)	17+95.68 RT	17+20.95 RT (L)	98.5
(-Y1-)	15+58.62 LT (-Y1-)	12+28.95 LT (-Y1-)	196.2
(-Y1-)	17+14.11 LT (-Y1-)	11+73.81 RT (-Y1-)	134.4
		TOTAL:	604.2
		SAY:	605

SUMMARY OF AGGREGATE SUBGRADE/STABILIZATION

LINE	Station	Station	Aggregate Type ASU/AST	Aggregate Thickness INCHES	Shallow Undercut CY	Class IV Subgrade Stabilization TONS	Geotextile for Soil Stabilization SY	Stabilizer Aggregate TONS	Class IV Aggregate Stabilization TONS
CONTINGENCY			ASU	12	100	100	200		
			TOTAL CY/TONS/SY:		100	100	200*	0	0

ASU = Aggregate Subgrade, AST = Aggregate Stabilization
***Total square yards of Geotextile for Soil Stabilization is only the estimated quantity for ASU/AST and may only represent a portion of the geotextile quantity shown in the Item Sheets of the Proposal.**

PROJECT REFERENCE NO.	SHEET NO.
HL-0012	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS 8/17/99

-L-
PI Sta 16+57.01
△ = 24° 08' 36.0" (LT)
D = 14° 00' 00.0"
L = 172.45'
T = 87.53'
R = 409.26'

-Y-
PI Sta 13+59.69
△ = 17° 01' 54.0" (RT)
D = 6° 51' 51.1"
L = 248.12'
T = 124.98'
R = 834.70'

NC GRID
NAD 83 NA 2011

-Y- POT Sta. 10+00.00

BEGIN TIP PROJECT HL-0012
-Y- STA. 13+00.00

I-240 W.
CONC. MEDIAN BARRIER
I-240 E.
4' CONC. EXPRESSWAY GUTTER
S 89°13'44.0" E
150' TAPER
±50.00
450' STORAGE
-Y-
-L- PC Sta. 15+69.48
S 72°48'50.0" E
-Y- PC Sta. 12+34.71
-Y- PT Sta. 14+82.83
S 23°52'17" W 18.95
18" RCP
CONC. DITCH
EIP
LANDSCAPE AREA
GR. PARKING
EXIST R/W
CONC. HW
CONC. ASPH. DITCH
ASPHALT PARKING
FIRST BAPTIST OF ASHEVILLE
DB 695 PG 312
DB 1791 PG 476
PB 38 PG 145
PB 39 PG 03
PB 98 PG 137
PB 98 PG 95
NCDOT
GR.
BEGIN 2'-6" C+G
-L- STA. 14+61.02
BEGIN 4" CONC. SIDEWALK
-L- STA. 14+61.02
-L- PC Sta. 15+69.48
END 4" CONC. SIDEWALK
-Y- STA. 17+95.68
END 2'-6" C+G
-Y- STA. 17+95.68
HEDGE
GPS2
LIGHT POLE
CR
CONC. CURB
GUTTER
SURFACE CHANGE
BRICK WALL
GRAVEL DRWY.
6' CONC. CURB
4' C-L-FEN. MON.
BEGIN 2'-6" CONC. C+G
-Y- STA. 17+95.68
BEGIN 4" CONC. SIDEWALK
-Y- STA. 17+95.68
COURTYARD
END CONSTRUCTION
-Y- STA. 18+29.16
-Y- POT Sta. 18+61.50 EQ. =
-L- POC Sta. 16+52.75
END 4" CONC. SIDEWALK
-L- STA. 17+20.95
END 2'-6" CONC. C+G
-L- STA. 17+20.95
CONC. SW
2-S-BRK-CH.
BRICK WALL
EXIST R/W
S 19°03'30.0" E
CHARLOTTE ST.
SR 3264
-L- POT Sta. 10+00.00
BEGIN CONSTRUCTION
-L- STA. 11+34.56
CHARLOTTE ST.
ORCHARD ST.
-Y3-
WB ON RAMP
-Y2- WB OFF RAMP
END CONSTRUCTION
-L- STA. 12+41.68
S 5°05'06.0" W
-L-
-Y1- POT Sta. 10+00.00 EQ. =
-L- POC Sta. 16+55.09
PARKPLACE ASSOCIATES L.L.C.
DB 1953 PG 721
R/W MON.
EXIST R/W
BEGIN 2'-6" CONC. C+G
-L- STA. 15+58.62
END 4" CONC. SIDEWALK
-Y1- STA. 12+14.95
END CONSTRUCTION
-Y1- STA. 15+21.10
-Y1- POT Sta. 15+21.10
END 2'-6" CONC. C+G
-Y1- STA. 12+28.95
BEGIN 4" CONC. SIDEWALK
-L- STA. 15+58.62
BEGIN CONSTRUCTION
-Y1- STA. 10+41.88
CONVERT DI TO JB
50' TYP.
6' BRK. TAPER
N 76°43'18.6" E
-Y1-
WOODFIN PL.
EB ON RAMP
END TIP PROJECT HL-0012
-Y1- STA. 12+28.16
END CONC. 2'-6" C+G
-Y1- STA. 11+73.81
END 4" CONC. SIDEWALK
-Y1- STA. 11+63.49
15" RCP CB TO JB
3-S-BRK-B
BEGIN 4" CONC. SIDEWALK
-L- STA. 17+14.11
BEGIN 2'-6" CONC. C+G
-L- STA. 17+14.11
8' WD. FEN.
ASPH. PARKG.
THE COUNTY OF BUNCOMBE
DB 3508 PG 716
-L- PT Sta. 17+41.93
S 18°37'55" E
251.77'
S 70°45'06" W
253.58'
20
NOTES:
-DO NOT DISTURB BRICK, CONC. AND ROCK WALLS ON -Y1-
-MATCH EXISTING INVERTS ON MASONRY DRAINAGE STRUCTURE 1 AND 2

SEE SHEET 5 FOR PROFILE

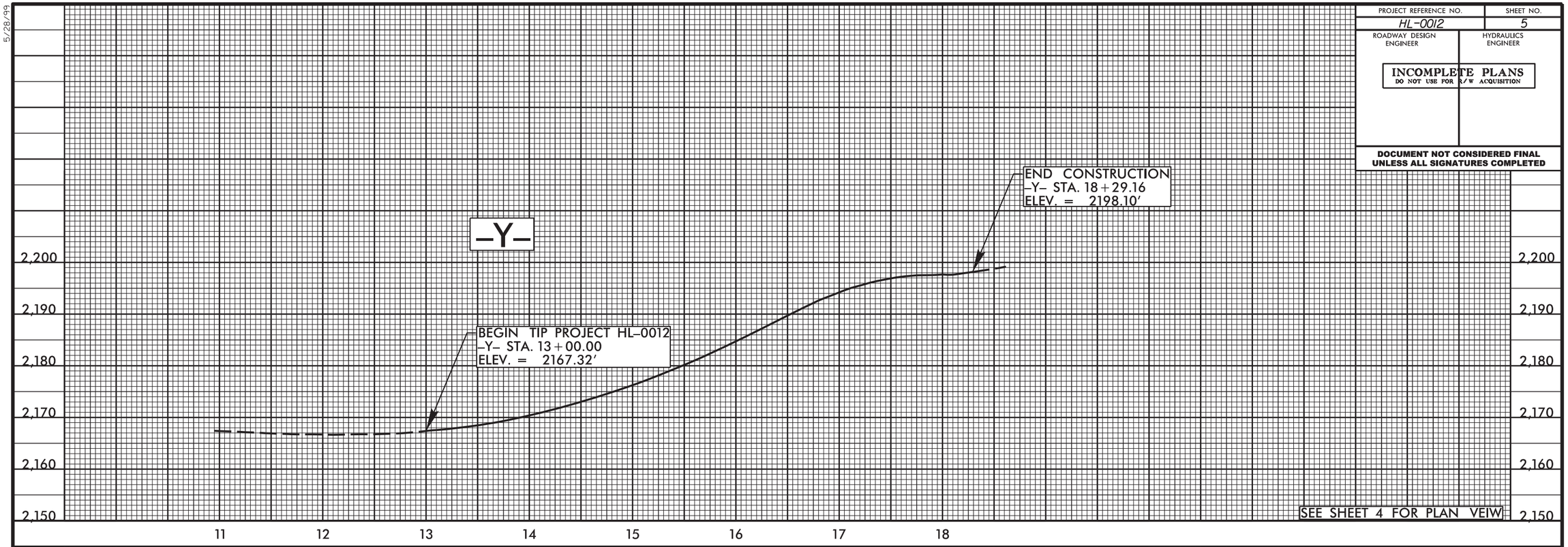
05-DEC-2022 13:06
I:\DOC Projects\Buncombe\HL0012\Roadway\Pro\HL0012_dde_psh_4.dgn
$$$$USERNAME$$$$

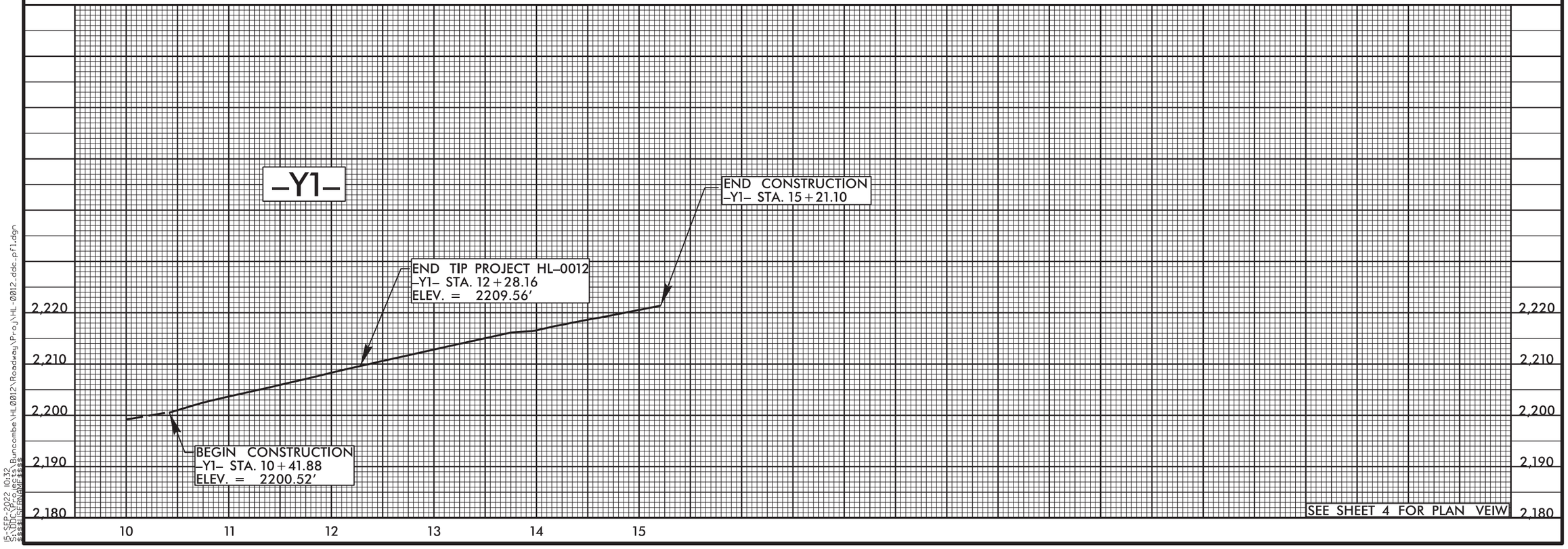
5/28/99

PROJECT REFERENCE NO.	SHEET NO.
HL-0012	5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED





15-SEP-2022 10:32
S:\UDC\Projects\Buncombe\HL0012\Roadway\Proj\HL-0012_ddc_pf1.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
HL-0012	RW01

SURVEY CONTROL SHEET

WITH CENTERLINE ALIGNMENTS

L

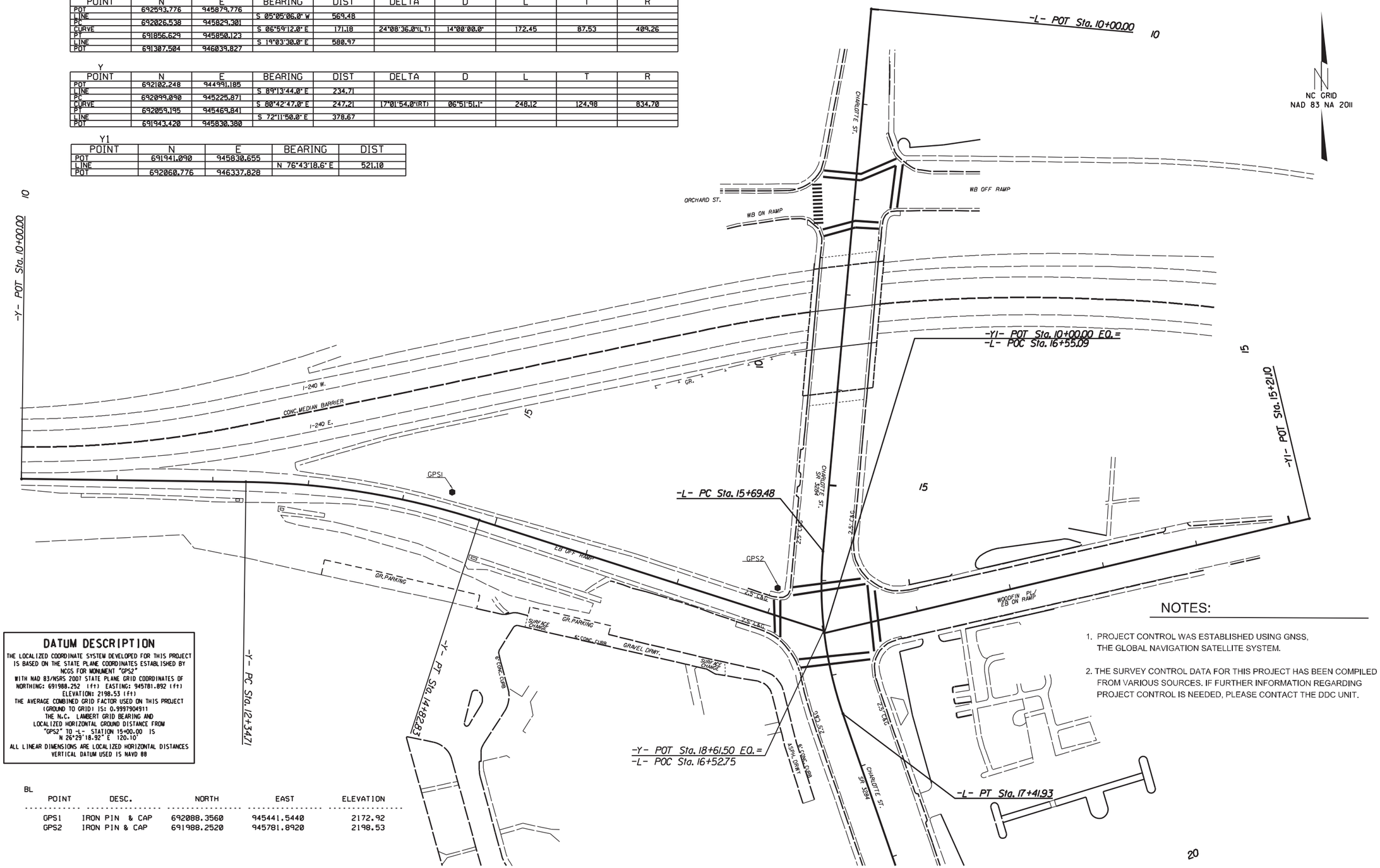
POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT	692593.776	945879.776							
LINE			S 05°05'06.0" W	569.48					
PC	692026.538	945829.301							
CURVE			S 06°59'12.0" E	171.18	24°08'36.0"(LT)	14°00'00.0"	172.45	87.53	409.26
PT	691856.629	945850.123							
LINE			S 19°03'30.0" E	580.97					
POT	691307.504	946039.827							

Y

POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT	692102.248	944991.185							
LINE			S 89°13'44.0" E	234.71					
PC	692099.090	945225.871							
CURVE			S 80°42'47.0" E	247.21	17°01'54.0"(RT)	06°51'51.1"	248.12	124.98	834.70
PT	692059.195	945469.841							
LINE			S 72°11'50.0" E	378.67					
POT	691943.420	945830.380							

Y1

POINT	N	E	BEARING	DIST
POT	691941.090	945830.655		
LINE			N 76°43'18.6" E	521.10
POT	692060.776	946337.828		



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 2007 STATE PLANE GRID COORDINATES OF NORTHING: 691988.252 (ft) EASTING: 945781.892 (ft)
ELEVATION: 2198.53 (ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999790911
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "GPS2" TO -L- STATION 15+00.00 IS N 26°29'18.92" E 120.10'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

BL

POINT	DESC.	NORTH	EAST	ELEVATION
GPS1	IRON PIN & CAP	692088.3560	945441.5440	2172.92
GPS2	IRON PIN & CAP	691988.2520	945781.8920	2198.53

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.

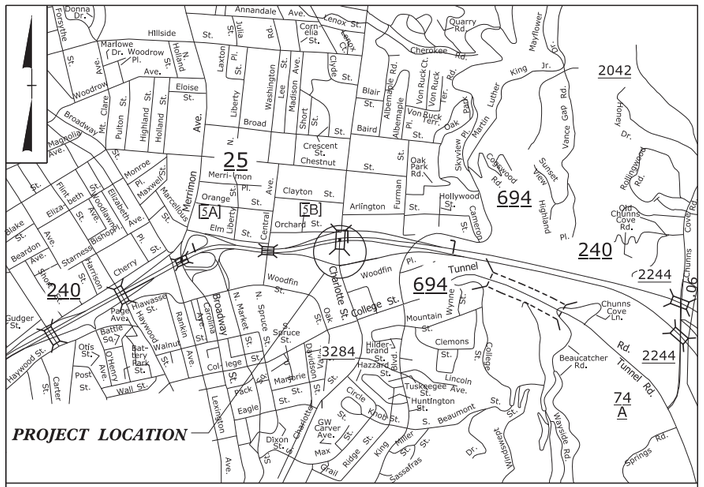
REVISIONS

09-SEP-2022 08:44
$$$$USERNAME$$$$
c:\DOT\CFG\projects\Buncombe\HL-0012\LocationSurveys\HL-0012_ddc_RW01.dgn

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

BUNCOMBE COUNTY



VICINITY MAP ***N.T.S***

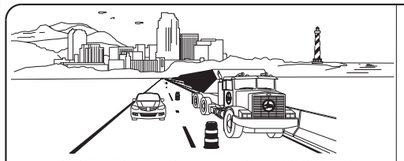
INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	TITLE SHEET, VICINITY MAP, AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, AND LEGEND
TMP-1B	TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT STRATEGIES, GENERAL NOTES, AND LOCAL NOTES)
TMP-2	TEMPORARY TRAFFIC CONTROL PHASING
TMP-3	TEMPORARY TRAFFIC CONTROL PHASE I DETAIL
TMP-4	TEMPORARY TRAFFIC CONTROL PHASE II DETAIL
TMP-5	TEMPORARY TRAFFIC CONTROL PHASE III DETAIL
TMP-6	TEMPORARY TRAFFIC CONTROL PHASE III DETAIL
TMP-7	TEMPORARY TRAFFIC CONTROL PEDESTRIAN DETOUR FOR PHASE I AND PHASE II

SHEET NO.
TMP-1

HL-0012

TIP PROJECT:



WORK ZONE SAFETY & MOBILITY
"from the MOUNTAINS to the COAST"

PLANS PREPARED BY:

DIVISION 13 DDC

55 ORANGE STREET ASHEVILLE, NC 28801

NCDOT CONTACTS:

WILLIAM C. CARVER, P.E.
PROJECT ENGINEER

HAMPTON FLETCHER
PROJECT DESIGN ENGINEER

DIVISION OF HIGHWAYS * STATE OF NORTH CAROLINA * DEPARTMENT OF TRANSPORTATION * WORK ZONE TRAFFIC CONTROL

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

APPROVED: _____

DATE: _____

SEAL

06-OCT-2022 12:07
S:\DOC\Projects\Buncombe\HL0012\Traffic\TrafficControl\TCP\HL0012_ddc_TC_TMP_TMP1.dgn
$$$$USERNAME$$$$

PROJ. REFERENCE NO.	SHEET NO.
HL-0012	TMP-1A

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - 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
1101.01	WORK ZONE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES
1160.01	TEMPORARY CRASH CUSHION
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.
- TEMP. SHORING (LOCATION PURPOSES ONLY)
- WORK AREA
- REMOVAL
- TEMPORARY PAVEMENT

SIGNALS

EXISTING PROPOSED TEMPORARY (TEMP)

PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

TRAFFIC CONTROL DEVICES

- BARRICADE (TYPE III)
- CONE
- DRUM SKINNY DRUM TUBULAR MARKER
- TEMPORARY CRASH CUSHION
- FLASHING ARROW BOARD
- FLAGGER
- LAW ENFORCEMENT
- TRUCK MOUNTED ATTENUATOR (TMA)
- CHANGEABLE MESSAGE SIGN
- WATER FILLED BARRIER

TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

PAVEMENT MARKERS

- CRYSTAL/CRYSTAL
- CRYSTAL/RED
- YELLOW/YELLOW

PAVEMENT MARKING SYMBOLS

PAVEMENT MARKING SYMBOLS

TEMPORARY PAVEMENT MARKING

P2	4" WHITE SOLID LANE LINE
P13	4" YELLOW DOUBLE CENTER
P46	8" WHITE CROSSWALK LINE

APPROVED: _____

DATE: _____

SEAL

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DIVISION OF HIGHWAYS • STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION • WORK ZONE TRAFFIC CONTROL

ROADWAY STANDARD DRAWINGS & LEGEND

06-OCT-2022 12:06
S:\DOC\Projects\Buncombe\HL0012\Traffic\TrafficControl\TCP\HL0012_ddc_TC_TMP_TMP1A.dgn
$$$$USERNAME$$$$

PROJ. REFERENCE NO.	SHEET NO.
HL-0012	TMP-1B__

GENERAL NOTES

COORDINATE SCHEDULES WITH 13B.101133 AND I-5889B TO AVOID CONFLICTS OR OVERLAPPING TRAFFIC CONTROL.

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS, AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS OR RESULT IN DUPLICATE OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE ENGINEER.

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT EXCEPT WHEN OTHERWISE NOTED IN THE PLAN OR DIRECTED BY THE ENGINEER.

TIME RESTRICTIONS

A) DO NOT CLOSE OR NARROW TRAVEL LANES AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS
I-240 EB EXIT RAMP (-Y-)	6AM - 7PM SUN - SAT
I-240 EB ON RAMP (-Y1-)	6AM - 7PM SUN - SAT
CHARLOTTE STREET	6AM - 7PM SUN - SAT

B) DO NOT CLOSE OR NARROW TRAVEL LANES DURING HOLIDAYS AND SPECIAL EVENTS AS FOLLOWS:

HOLIDAY

1. FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.
2. FOR NEW YEAR'S, BETWEEN THE HOURS OF 6:00 A.M. DECEMBER 31st TO 7:00 P.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 7:00 P.M. THE FOLLOWING TUESDAY.
3. FOR EASTER, BETWEEN THEHOURS OF 6:00 A.M. THURSDAY AND 7:00 P.M. MONDAY.
4. FOR MEMORIAL DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY TO 7:00 P.M. TUESDAY.
5. FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 6:00 A.M. THE DAY BEFORE INDEPENDENCE DAY AND 7:00 P.M. THE DAY AFTER INDEPENDENCE DAY. IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY THEN BETWEEN THE HOURS OF 6:00 A.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 7:00 P.M. THE TUESDAY AFTER INDEPENDENCE DAY.
6. FOR LABOR DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY AND 7:00 P.M. TUESDAY.
7. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 6:00 A.M. TUESDAY TO 7:00 P.M. MONDAY.
8. FOR CHRISTMAS, BETWEEN THE HOURS OF 6:00 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 7:00 P.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.

LANE AND SHOULDER CLOSURE REQUIREMENTS

C) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.

D) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO.1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.

E) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO A DIVIDED FACILITY AND WITHIN 10 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO.1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

F) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS, OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.

G) DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP, OR LOOP WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.

PAVEMENT EDGE DROP OFF REQUIREMENTS

H) BACKFILL AT A 6:1 SLOPE UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT IN AREAS ADJACENT TO AN OPENED TRAVEL LANE THAT HAS AN EDGE OF PAVEMENT DROP-OFF AS FOLLOWS:

BACKFILL DROP-OFFS THAT EXCEED 2 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS OF 45 MPH OR GREATER.

BACKFILL DROP-OFFS THAT EXCEED 3 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS LESS THAN 45 MPH.

BACKFILL WITH SUITABLE COMPACTED MATERIAL, AS APPROVED BY THE ENGINEER, AT NO EXPENSE TO THE DEPARTMENT.

I) DO NOT EXCEED A DIFFERENCE OF 2 INCHES IN ELEVATION BETWEEN OPEN LANES OF TRAFFIC FOR NOMINAL LIFTS OF 1.5 INCHES. INSTALL ADVANCE WARNING "UNEVEN LANES" SIGNS (W8-11) 350 FT IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

TRAFFIC PATTERN ALTERATIONS

J) NOTIFY THE ENGINEER THIRTY (30) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING

K) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

L) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRAFFIC CONTROL PLANS.

M) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

N) INSTALL BLACK ON ORANGE "DIP" SIGNS (W8-2) AND/OR "BUMP" SIGNS (W8-1) 350 FT IN ADVANCE OF THE UNEVEN AREA, OR AS DIRECTED BY THE ENGINEER.

TRAFFIC CONTROL DEVICES

O) WHEN LANE CLOSURES ARE NOT IN EFFECT SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH) EXCEPT, 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY. REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS), 1135 (CONES) AND 1180 (SKINNY DRUMS) FOR ADDITIONAL REQUIREMENTS.

P) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY

PAVEMENT MARKINGS AND MARKERS

Q) INSTALL TEMPORARY PAVEMENT MARKINGS AND TEMPORARY PAVEMENT MARKERS ON INTERIM LAYERS OF PAVEMENT AS FOLLOWS:

ROAD NAME	MARKING	MARKER
I-240 EB EXIT RAMP (-Y-)	PAINT	NONE
I-240 EB ON RAMP (-Y1-)	PAINT	NONE
CHARLOTTE STREET	PAINT	NONE

R) PLACE ONE APPLICATION OF PAINT FOR TEMPORARY TRAFFIC PATTERNS. PLACE A SECOND APPLICATION OF PAINT SIX (6) MONTHS AFTER THE INITIAL APPLICATION AND EVERY SIX MONTHS AS DIRECTED BY THE ENGINEER.

S) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

MISCELLANEOUS

T) LAW ENFORCEMENT MAY BE USED TO MAINTAIN TRAFFIC THROUGH THE WORK AREA AND/OR INTERSECTIONS AS DIRECTED BY THE ENGINEER.

U) ALL CURB RAMP LOCATIONS SHALL BE DERIVED FROM STATIONING SHOWN ON PAVEMENT MARKING PLANS OR AS DIRECTED BY THE ENGINEER IN COORDINATION WITH THE SIGNING AND DELINEATION UNIT.

V) CONTRACTOR SHALL MAINTAIN SIDEWALK ACCESS AT ALL TIMES AS STATED IN THE PHASING. CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE TEMPORARY SIDEWALKS (CONCRETE, ASPHALT, OR OTHER SUITABLE MATERIAL AS APPROVED BY THE ENGINEER) AT ALL LOCATIONS WHERE THE OPEN PEDESTRIAN TRAVELWAY HAS BEEN REMOVED FOR CONSTRUCTION OPERATIONS (UTILITIES, DRAINAGE, ETC.).

LOCAL NOTES:

1) EMERGENCY VEHICLE ACCESS MUST BE MAINTAINED AT ALL TIMES.
2) DRIVEWAYS MUST MAINTAIN ACCESS AT ALL TIMES.

APPROVED: _____

DATE: _____

SEAL

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WORK ZONE TRAFFIC CONTROL

TRANSPORTATION OPERATIONS PLAN

06-OCT-2022 12:05
S:\DOT\Projects\Buncombe\HL0012\Traffic\TrafficControl\TCP\HL0012_ddc_TC_TMP_TMPIB.dgn
$$$$USERNAME$$$$

PROJ. REFERENCE NO.	SHEET NO.
HL-0012	TMP-2

PROJECT PHASING

PHASE I

STEP 1

ERECT WORK ZONE ADVANCE WARNING SIGNS ON -L- SR 3284 (CHARLOTTE ST), -Y- I-240 EB OFF RAMP, -Y1- I-240 ON RAMP, -Y2- I-240 WB OFF RAMP, AND -Y3- I-240 EB ON RAMP. SEE RDWY STD. 1101.01 (SHEET 2).

STEP 2

USING TMP-7 INSTALL PHASE I DETOUR FOR PEDESTRIANS.

INSTALL WATER FILLED BARRIER AND PEDESTRIAN DETOUR SIGNS AND BARRICADES AT INTERSECTION OF -L- SR 3284 (CHARLOTTE ST) AND -Y2- (I-240 WB OFF RAMP). SEE TMP-3.

CONSTRUCT CURB RAMPS AT -Y2- (I-240 WB OFF RAMP) AND -L- (CHARLOTTE ST). SEE TMP-3.

STEP 3

USING RDWY STD 1101.02 (SHEET 1 OF 14) AND FLAGGERS AS NECESSARY, INSTALL TEMPORARY PAVEMENT MARKINGS ON -Y1-.

USING RDWY STD 1101.04, AND FLAGGERS AS NECESSARY, CONSTRUCT PROPOSED -Y- AND -Y1- UP TO, BUT NOT INCLUDING THE FINAL LAYER OF SURFACE AS FOLLOWS:
SEE SHEET TMP-3

-Y- STA. 13+00 +/- LT TO -Y- STA. 17+95 +/- LT

-Y1- STA. 10+40 +/- RT TO -Y1- STA. 11+75 +/- RT

PROPOSED C+G, SIDEWALK, CURB RAMPS, DRIVEWAY APRON, DRAINAGE STRUCTURE 2, AND DRAINAGE PIPE.

PHASE II

STEP 1

USING RDWY STD 1101.02 (SHEET 3 OF 14) REMOVING EXISTING PAVEMENT MARKING LINES AND INSTALL TEMPORARY PAVEMENT MARKINGS ALONG -L- SR 3284 (CHARLOTTE ST),-Y- I-240 EB OFF RAMP AND -Y1- I-240 EB ON RAMP. SEE TMP-4.

USING TMP-7 INSTALL PHASE II DETOUR FOR PEDESTRIANS.

INSTALL WATER FILLED BARRIER AND PEDESTRIAN DETOUR SIGNS AND BARRICADES AT INTERSECTION OF -L- SR 3284 (CHARLOTTE ST) AND -Y3- LT (I-240 WB ON RAMP). SEE TMP-4.

CONSTRUCT CURB RAMPS AT -Y3- LT (I-240 WB ON RAMP) AND -L- SR 3284 (CHARLOTTE ST). SEE TMP-4.

STEP 2

USING RDWY STD. 1101.04, AND FLAGGERS AS NECESSARY, CONSTRUCT -Y- AND -Y1- UP TO, BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE AS FOLLOWS.

SEE TMP-4

-Y- STA. 13+00 +/- RT TO STA. 17+95 +/- RT

-Y1- STA. 10+40 +/- LT TO -Y1- STA. 12+28 +/- LT

PROPOSED C+G, SIDEWALK, CURB RAMPS, DRIVEWAY APRON, DRAINAGE STRUCTURE 1, AND DRAINAGE PIPE.

PHASE III

STEP 1

ERECT WORK ZONE ADVANCE WARNING SIGNS ON -L- SR 3284 (CHARLOTTE ST.), ARLINGTON ST., CLAYTON ST., AND CHESTNUT ST. SEE TMP 5 AND 6.

USING RDWY STD. 1101.02 (SHEET 3 OF 14), AND FLAGGERS AS NECESSARY, CONSTRUCT PROPOSED -L- SR 3284 (CHARLOTTE STREET) AND -Y3- I-240 WB ON RT UP TO, BUT NOT LIMITED TO THE FINAL LAYER OF SURFACE AS FOLLOWS.
SEE TMP-5

-L- STA. 14+60 +/- RT TO STA. 17+20 +/- RT

PROPOSED CURB AND GUTTER, SIDEWALK, AND CURB RAMPS

-Y3- I-240 WB ON RAMP RT
PROPOSED CURB RAMPS

STEP 2

USING RDWY STD. 1101.02 (SHEET 3 AND 10 OF 14), AND FLAGGERS AS NECESSARY, PERFORM THE FOLLOWING ON -Y- (I-240 EB OFF RAMP) AND -Y1- (I-240 EB ON RAMP).

-CONSTRUCT TIE-INS

-PLACE FINAL LAYER OF SURFACE COURSE

-PLACE FINAL PAVEMENT MARKINGS AND MARKERS (SEE PAVEMENT MARKING PLANS)

-REMOVE ALL WORK ZONE TRAFFIC CONTROL DEVICES AND SIGNAGE FROM PROJECT

-OPEN ALL LANES TO TRAFFIC

APPROVED: _____

DATE: _____

SEAL

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

TRANSPORTATION OPERATIONS PLAN

06-OCT-2022 12:04
S:\DOT\Projects\Buncombe\HL0012\Traffic\TrafficControl\TCP\HL0012_ddc_TC_TMP_TMP2.dgn
$$$$USERNAME$$$$

PROJ. REFERENCE NO.	SHEET NO.
HL-0012	TMP-3

SECTION A–A

℄ –Y– I–240 EB OFF RAMP

3′ 12′ 12′

STA. 17+00
N.T.S.

SECTION B–B

℄ –Y1– I–240 EB ON RAMP

16.5′ 12′ 12′ 3′

EAST CONC. WALL

STA. 11+00
N.T.S.

SECTION C–C

℄ –Y2– I–240 WB OFF RAMP

3′ 12′ 12′ 3′

+100′
N.T.S.

SECTION D–D

℄ –L– CHARLOTTE STREET

12′+/– 12′+/– 12′+/– 12′+/– 12′+/– 2′ 2′ 6′

WATER FILLED BARRIER

STA. 17+00
N.T.S.

SECTION E–E

℄ –L– CHARLOTTE STREET

9′+/– 11′+/– 16′+/– 1′ 16′+/– 2′ 2′ 6′ 2′

WATER FILLED BARRIER

STA. 11+50
N.T.S.

ROAD WORK AHEAD
W20–1
48″ X 48″
STA. 6+20

END ROAD WORK
G20–2 A
48″ X 24″
STA. 6+20

10

* SIDEWALK CLOSED SEE TMP–7 FOR DETOUR

ROAD WORK AHEAD
W20–1
48″ X 48″

R9–11a 24″ X 12″ SIDEWALK CLOSED CROSS HERE
R9–9 24″ X 12″ SIDEWALK CLOSED
PEDESTRIAN BARRICADE *MUST BE ADA-COMPLIANT* 2″ MAX

CHARLOTTE ST. SR 3284
MC WALL
LIGHT POLE
5′ CONC. SW
4′ C/A CHL–FEN.
50′ TYP
350′ TAPER
500′
WB OFF RAMP
–Y2–
ORCHARD ST.
–Y3–
WB ON RAMP
CR
C
E
A
B
D

END ROAD WORK
G20–2 A
48″ X 24″
500′
I–240 W.
CONC. MEDIAN BARRIER
I–240 E.
–Y– STA. 13+00 +/–
GPSI
–Y–
50′ TYP
–Y– STA. 17+95 +/–
EB OFF RAMP
75′ T&L

R9–9b 30″ X 24″ DETOUR
PEDESTRIAN BARRICADE
LIGHT POLE
CONC. WALL
VARIABLE HEIGHT
ASPH. PARKING
3-S-BRK-B
15
SIDEWALK CLOSED AHEAD CROSS HERE R9–11 24″ X 12″
SIDEWALK CLOSED
W11–2 48″ X 48″
W16–7p 24″ X 12″
CONC. SW
BRK. WALL
P46
TEMPORARY CROSSWALK
–Y1–
WOODFIN PL/ EB ON RAMP
35′ TYP
ROCK WALL
100′ TAPER
–Y1– STA. 11+75 +/–
END ROAD WORK
G20–2 A
48″ X 24″
STA. 20+20
–Y1– STA. 10+40 +/–
5′ WD. FEN
ASPH. PARKING
CHARLOTTE ST. SR 3284
SEE "INSET A"
CLOSE RIGHT TURN LANE STARTING AT INTERSECTION OF COLLEGE STREET SEE "INSET A"
20

200′
4′ CONC. EXPRESSWAY GUTTER
18″ CMP
D.I.
CONC. DITCH
LANDSCAPE AREA
GR. PARKING
CONC./ASPH. DITCH
A RIVER ROCK DRAINAGE DITCH
ASPH. DITCH
CONC. HW
SURFACE CHANGE
4′ C/L–FEN.
6′ CONC. CURB
BRICK WALL
GRAVEL DRWY.
ASPHALT PARKING
COURTYARD
8′ CONC. SW
GATE
2-S-BRK-CH.
392-52
3′ CONC. SW
6′ CONC. CURB
ASPH. DRWY.
HEDGE
CP22
P.U.E.
BRICK WALL

ROAD WORK AHEAD
W20–1
48″ X 48″
STA. 8+00

"INSET A"
RIGHT LANE CLOSED W20–5 R 48″ X 48″
RIGHT LANE CLOSED AHEAD W20–5 R 48″ X 48″
ROAD WORK AHEAD W20–1 48″ X 48″
200′
200′
200′
CHARLOTTE ST.
COLLEGE ST.
* SEE NCDOT STD. RDY DRAWING 1101.01 SHEET 1 OF 3 FOR ADVANCED WARNING SIGN PLACEMENT OR AS DIRECTED BY THE ENGINEER.

NOTE: MAINTAIN DRIVEWAY ACCESS AT ALL TIMES
MAINTAIN BUS STOP ACCESS AT ALL TIMES

= WORK AREA

END ROAD WORK
G20–2 A
48″ X 24″
STA. 22+25

NC GRID
NAD 83 NA 2011

APPROVED: _____
DATE: _____
SEAL
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WORK ZONE TRAFFIC CONTROL

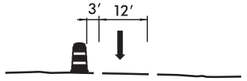
PHASE I DETAIL

17-OCT-2022 10:39
S:\DOT_Projects\Buncombe\HL0012\Traffic\TrafficControl\TCP\HL0012_ddc_TC_TMP_TMP3.dgn
$$$$USERNAME$$$$

PROJ. REFERENCE NO.	SHEET NO.
HL-0012	TMP-4

SECTION F–F

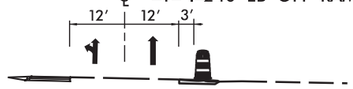
–Y3– I–240 WB ON RAMP



+60′

SECTION G–G

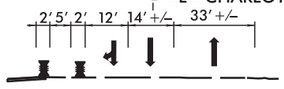
℄ –Y– I–240 EB OFF RAMP



STA. 17+00
N.T.S.

SECTION I–I

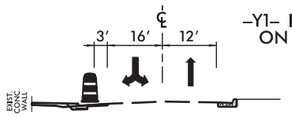
℄ –L– CHARLOTTE STREET



STA. 11+50
N.T.S.

SECTION H–H

℄ –Y1– I–240 EB ON RAMP



STA. 11+00
N.T.S.

ROAD WORK AHEAD W20–1 48″ X 48″ — STA. 3+45

RIGHT LANE CLOSED AHEAD W20–5 R 48″ X 48″ — STA. 5+45

W4–2R 48″ X 48″ — STA. 7+45

RIGHT LANE CLOSED W20–5 R 48″ X 48″ — STA. 9+45

END ROAD WORK G20–2 A 48″ X 24″ — STA. 6+20

ROAD WORK AHEAD W20–1 48″ X 48″ — 925′

SIDEWALK CLOSED AHEAD CROSS HERE R9–11 24″ X 12″ — STA. 11+95

–L– STA. 11+11 +/–

–L– STA. 11+69 +/–

100′ TAPER L1/RT

20′ TYP

–Y3– WB ON RAMP

–Y2– WB OFF RAMP

SIDEWALK CLOSED CROSS HERE R9–11a 24″ X 12″ — PEDESTRIAN BARRICADE *MUST BE ADA-COMPLIANT* 2″ MAX

SIDEWALK CLOSED R9–9 24″ X 12″ — PEDESTRIAN BARRICADE *MUST BE ADA-COMPLIANT* 2″ MAX

END ROAD WORK G20–2 A 48″ X 24″ — STA. 11+00

500′

I–240 W.

CONC. MEDIAN BARRIER

I–240 E.

–Y– STA. 14+72 +/–

–Y– STA. 17+95 +/–

–Y– STA. 13+00 +/–

–Y– STA. 17+95 +/–

–Y1– STA. 12+28 +/–

–Y1– STA. 10+40 +/–

–Y1– STA. 10+75 +/–

–Y1– STA. 12+79 +/–

–Y1– STA. 12+44 +/–

GPS1 GPS2 GPS3

4′ CONC. EXPRESSWAY GUTTER

18″ CMP

18″ RCP D.I.

CONC. DITCH

LANDSCAPE AREA

GR. PARKING

50′ TYP

EB OFF RAMP

D.I.

CONC. & ASPH. DITCH

4′ RIVER ROCK DRAINAGE DITCH

ASPH. DITCH

CONC. HW

GATE

SURFACE CHANGE

6′ CONC. CURB

BRICK WALL

GRAVEL DRWY.

4′ C-L-FEN.

ASPHALT PARKING

COURTYARD

CONC. SW

2-S-BRK-CH.

CHARLOTTE ST. SR 3284

ASPH. DRWY.

6′ CONC. CURB

4′ CONC. SW

4′ BRICK PEDESTRIAN CROSSWALK

18″ RCP

25′ TYP

3-S-BRK-B

5′ WD. FEN

ROCK WALL

2′ BRK. WALL

TEMPORARY CROSSWALK

WOODFIN PL. EB ON RAMP

P2 P13 P46

LIGHT POLE

ROAD WORK AHEAD W20–1 48″ X 48″ — STA. 8+00

W11–2 48″ X 48″ — W16–7p 24″ X 12″ — STA. 12+73

DETOUR M4–9B 30″ X 24″

END ROAD WORK G20–2 A 48″ X 24″ — STA. 20+20

ROAD WORK AHEAD W20–1 48″ X 48″

END ROAD WORK G20–2 A 48″ X 24″ — STA. 22+25

SEE TMP–3

NC GRID NAD 83 NA 2011

NOTE: MAINTAIN DRIVEWAY ACCESS AT ALL TIMES
MAINTAIN BUS STOP ACCESS AT ALL TIMES

= WORK AREA

APPROVED: _____

DATE: _____

SEAL

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

PHASE II DETAIL

17-OCT-2022 12:50
S:\DOC_Projects\Buncombe\HL0012\Traffic\TrafficControl\TCP\HL0012_ddc_TC_TMP_TMP4.dgn
$$$$USERNAME$$$$

PROJ. REFERENCE NO.	SHEET NO.
HL-0012	TMP-5

SECTION J–J

℄ –L– CHARLOTTE STREET

3′ 12′ 12′ 14′ 23.5′

STA. 16+00
N.T.S.

SECTION J–J

℄ –L– CHARLOTTE STREET

3′ 12′ 12′ 14′ 21.84′

STA. 17+00
N.T.S.

END ROAD WORK G20-2 A 48" X 24"
STA. 0+20

SEE TMP-6 FOR ADVANCE WARNING WORK ZONE SIGNS LOCATIONS FOR LANE CLOSURE

ROAD WORK AHEAD W20-1 48" X 48"

925′

50′ SHOULDER TAPER

200′ TAPER

SIDEWALK CLOSED CROSS HERE R9-11a 24" X 12"

SIDEWALK CLOSED R9-9 24" X 12"

PEDESTRIAN BARRICADE *MUST BE ADA-COMPLIANT* 2" MAX

ORCHARD ST. –Y3– WB ON RAMP

50′ TYP

–Y2– WB OFF RAMP

CHARLOTTE ST. SR 3284

5′ CONC. SW 4" C/A CHAIN-LINK FEN.

LIGHT POLE

CR

NC GRID NAD 83 NA 2011

END ROAD WORK G20-2 A 48" X 24"
STA. 8+00

500′

I-240 W.

CONC. MEDIAN BARRIER

I-240 E.

4′ CONC. EXPRESSWAY GUTTER

18" CMP

D.I.

CONC. DITCH

GPS1

–Y–

–L– STA. 14+60 +/–

LANDSCAPE AREA

50′ TYP

GR. PARKING

4" RIVER ROCK DRAINAGE DITCH

CONC. & ASPH. DITCH

ASPH. DITCH

CONC. HW

GATE

SURFACE CHARGE

6" CONC. CURB

BRICK WALL

GRAVEL DRWY.

4′ C-L-FEN.

ASPHALT PARKING

COURTYARD –L– STA. 17+20 +/–

CONC. CURB

CONC. SW

2-S-BRK-CH.

200′ TAPER

6" CONC. CURB

ASPH. DRWY.

2.5′ CONC.

4" CONC. SW

SIG. BOX

4" BRK. ELEC. BOX

3-S-BRK-B

5′ WD. FEN

ASPH. PARKING

LT

ROCK WALL

BRK. WALL

2" BRK. WALL

2.5′ C&G

3′ CONC. SW

CONC. WALL

VARIABLE HEIGHT

3′ CONC. SW

HEDGE

GPS2

–Y1–

END ROAD WORK G20-2 A 48" X 24"
STA. 20+20

ROAD WORK AHEAD W20-1 48" X 48"

20 SEE TMP-3

END ROAD WORK G20-2 A 48" X 24"
STA. 22+25

NOTE: MAINTAIN DRIVEWAY ACCESS AT ALL TIMES
MAINTAIN BUS STOP ACCESS AT ALL TIMES

= WORK AREA

APPROVED: _____

DATE: _____

SEAL

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

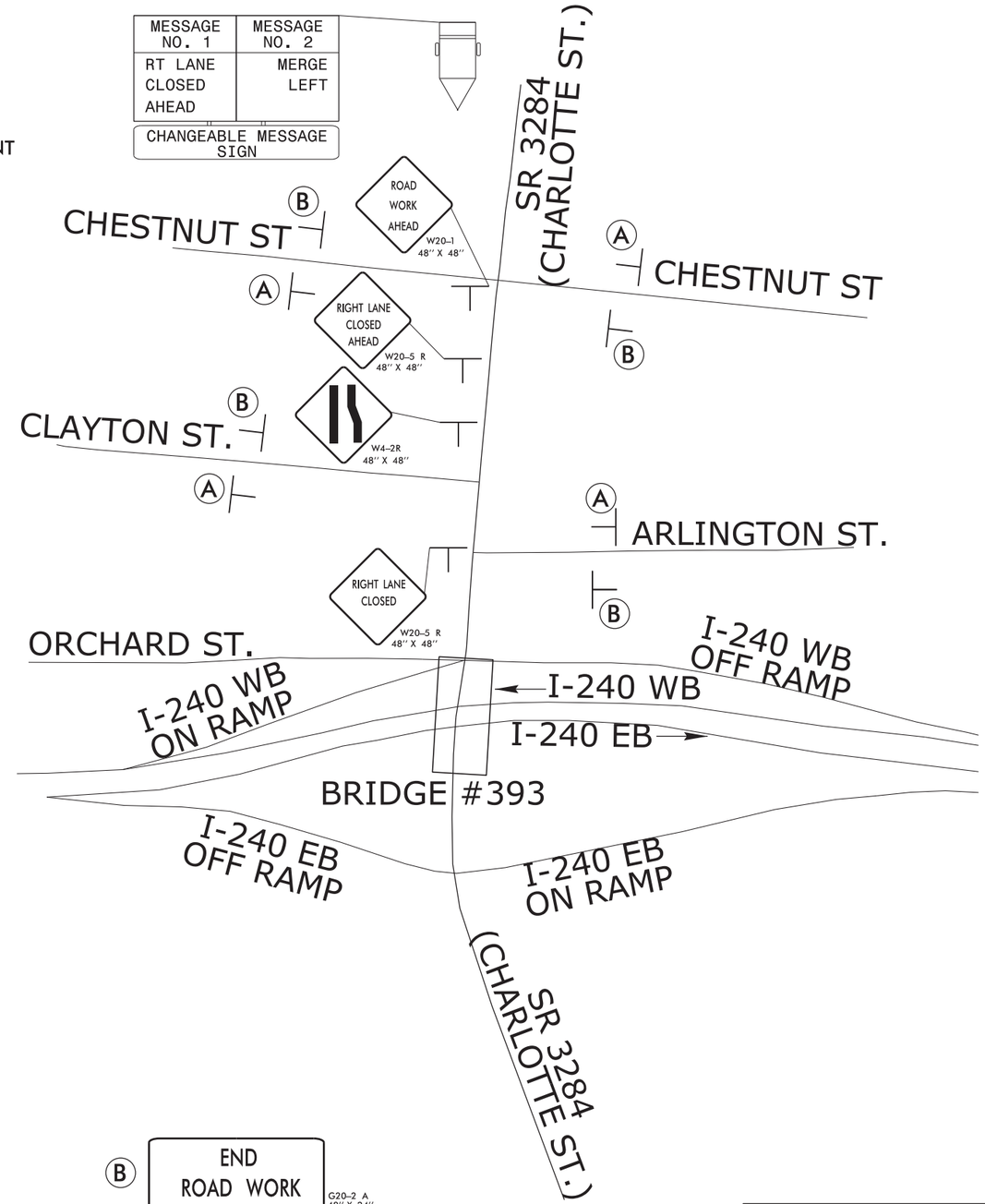
PHASE III DETAIL

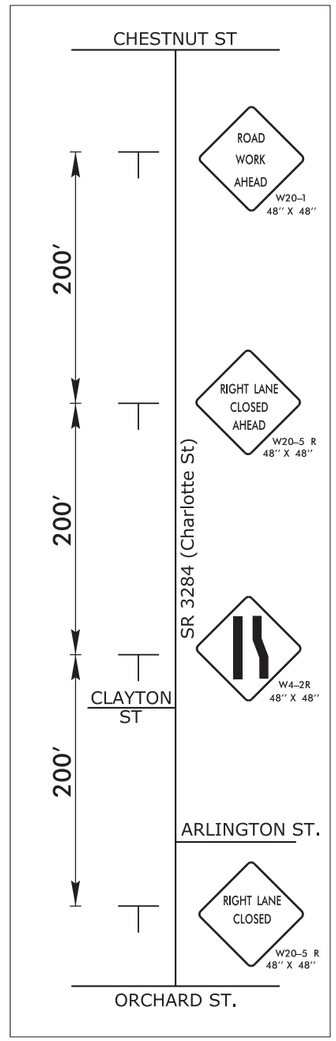
17-OCT-2022 12:48
S:\DOC_Projects\Buncombe\HL0012\Traffic\TrafficControl\TCP\HL0012_dgn_TC_TMP_TMP5.dgn
$$$$USERNAME$$$$

PROJ. REFERENCE NO.	SHEET NO.
HL-0012	TMP-6

NOTES:
1) SEE NCDOT STD. RDY DRAWING 1101.01 FOR ADVANCED WARNING SIGN PLACEMENT AND SPACING OR AS DIRECTED BY THE ENGINEER.

2) PLACE CHANGEABLE MESSAGE BOARD $\frac{1}{2}$ MILE FROM START OF CONSTRUCTION OR AS DIRECTED BY THE ENGINEER.





NC GRID
NAD 83 NA 2011

(A) ROAD WORK AHEAD W20-1 48" X 48"

(B) END ROAD WORK G20-2 A 48" X 24"

NOT TO SCALE

APPROVED: _____

DATE: _____

SEAL

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

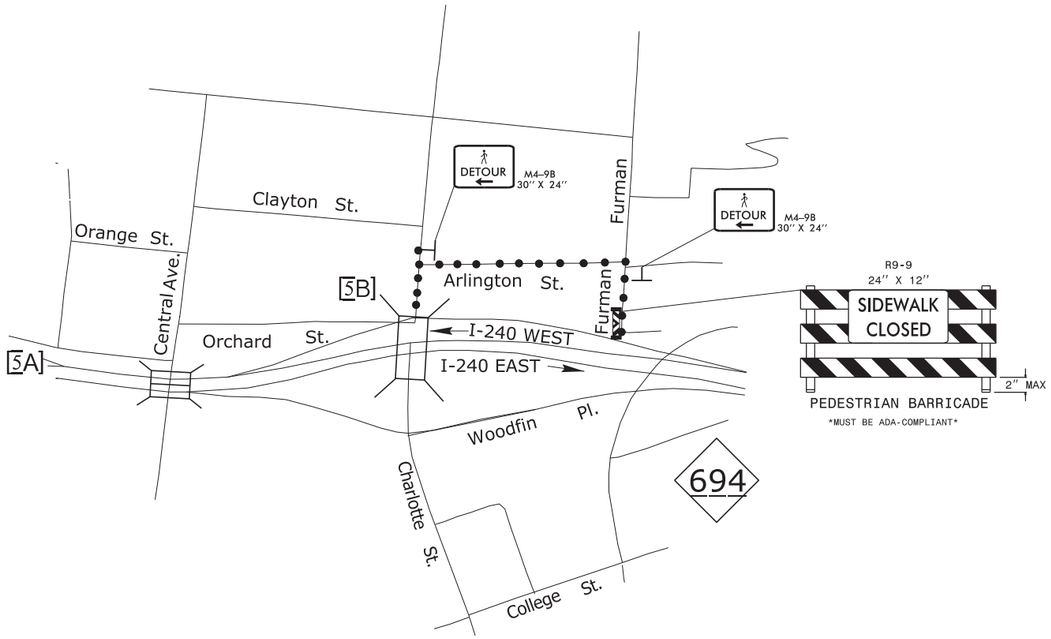
DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

PHASE III DETAIL

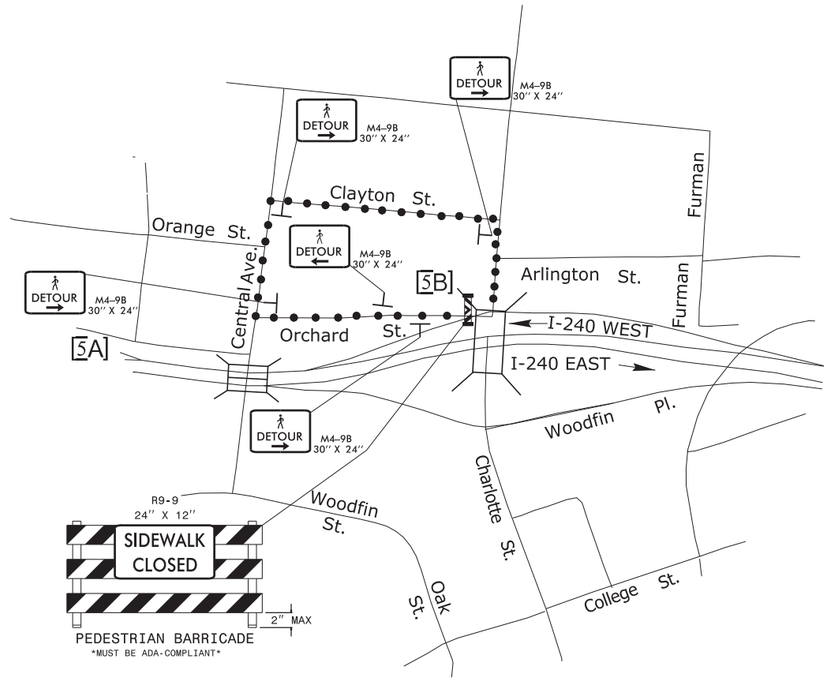
06-OCT-2022 11:56
S:\DOC\Projects\Buncombe\HL0012\Traffic\TrafficControl\TCP\HL0012_ddc_TC_TMP_TMP6.dgn
$$$$USERNAME$$$$

PROJ. REFERENCE NO.	SHEET NO.
HL-0012	TMP-7

PHASE I DETOUR



PHASE II DETOUR



NC GRID
NAD 83 NA 2011

NOT TO SCALE

APPROVED: _____

DATE: _____

SEAL

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WORK ZONE TRAFFIC CONTROL

PEDESTRIAN DETOUR FOR PHASE I AND PHASE II

06-OCT-2022 11:56
S:\DOC\Projects\Buncombe\HL0012\Traffic\TrafficControl\TCP\HL0012_ddc_TC_TMP_TMP7.dgn
$$$$USERNAME$$$$

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TIP NO.	SHEET NO.
HL-0012	PMP-1

APPROVED: _____

DATE: _____

SEAL

PAVEMENT MARKING AND SIGNING PLAN BUNCOMBE COUNTY

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATE JANUARY 2018 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTILANE ROADS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1253.01	RAISED PAVEMENT MARKERS - SNOWPLOWABLE

INDEX

GENERAL NOTES

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT, EXCEPT WHEN OTHERWISE NOTED IN THE PLAN, OR DIRECTED BY THE ENGINEER.

A) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:

ROAD NAME	MARKING	MARKER
CHARLOTTE STREET (-L-)	THERMO	SNOWPLOWABLE RAISED
I-240 EB EXIT RAMP (-Y-)	THERMO	SNOWPLOWABLE RAISED
I-240 EB ON RAMP (-Y1-)	THERMO	SNOWPLOWABLE RAISED

USE THEROMPLASTICS FOR STOP BARS, SYMBOLS, CHARACTERS, AND DIAGONALS ALL ROADS.

B) TIE PROPOSED PAVEMENT MARKINGS LINES TO EXISTING PAVEMENT MARKING LINES.

C) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS.

D) STOP BAR LOCATION AT NON-SIGNALIZED INTERSECTIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER.

E) REMOVE ALL RESIDUE AND SURFACE LAITANCE BY ACCEPTABLE METHODS ON CONCRETE BRIDGE DECKS PRIOR TO PLACING PAVEMENT MARKING MATERIAL. IN ACCORDANCE WITH APPROVED METHODS AND THE 2012 STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES, THE CONTRACTOR SHALL REMOVE CURING COMPOUND FROM ALL OTHER CONCRETE SURFACES PRIOR TO PLACING FINAL PAVEMENT MARKING MATERIAL.

F) UNLESS OTHERWISE SPECIFIED, HEATED-IN-PLACE THERMOPLASTIC MAY BE USED IN LIEU OF EXTRUDED THERMOPLASTIC FOR STOP BARS, SYMBOLS, CHARACTERS, AND DIAGONALS. IF HEATED-IN-PLACED IS USED, IT SHALL BE PAID FOR USING THE EXTRUDED THERMOPLASTIC PAY ITEM.

FINAL PAVEMENT MARKING SCHEDULE

PAVEMENT MARKINGS

THERMOPLASTICS (24", 90 MILS)

T61	WHITE STOP

THERMO (4", 90MILS)

T1	WHITE EDGELINE
T2	WHITE SOLID LANE LINE
T10	YELLOW EDGELINE
T4	3FT. - 9FT/SP WHITE MINISKIP
T5	2FT. - 6FT/SP WHTIE MINISKIP
T13	YELLOW DOUBLE CENTER

THERMOPLASTIC (12", 90 MILS)

T62	WHITE CROSSWALK LINE

PAVEMENT MARKINGS

THERMOPLASTIC PAVEMENT MARKING SYMBOLS (90 MILS)

T71	RIGHT TURN ARROW
T75	LEFT/RIGHT TURN ARROW
T73	LEFT STRAIGHT ARROW
T80	WRONG WAY RAMP ARROW

SNOWPLOWABLE RAISED PAVEMENT MARKERS

ME	YELLOW & YELLOW
MF	CRYSTAL & RED

8/17/99

TIP NO.	SHEET NO.
HL-0012	PMP-2

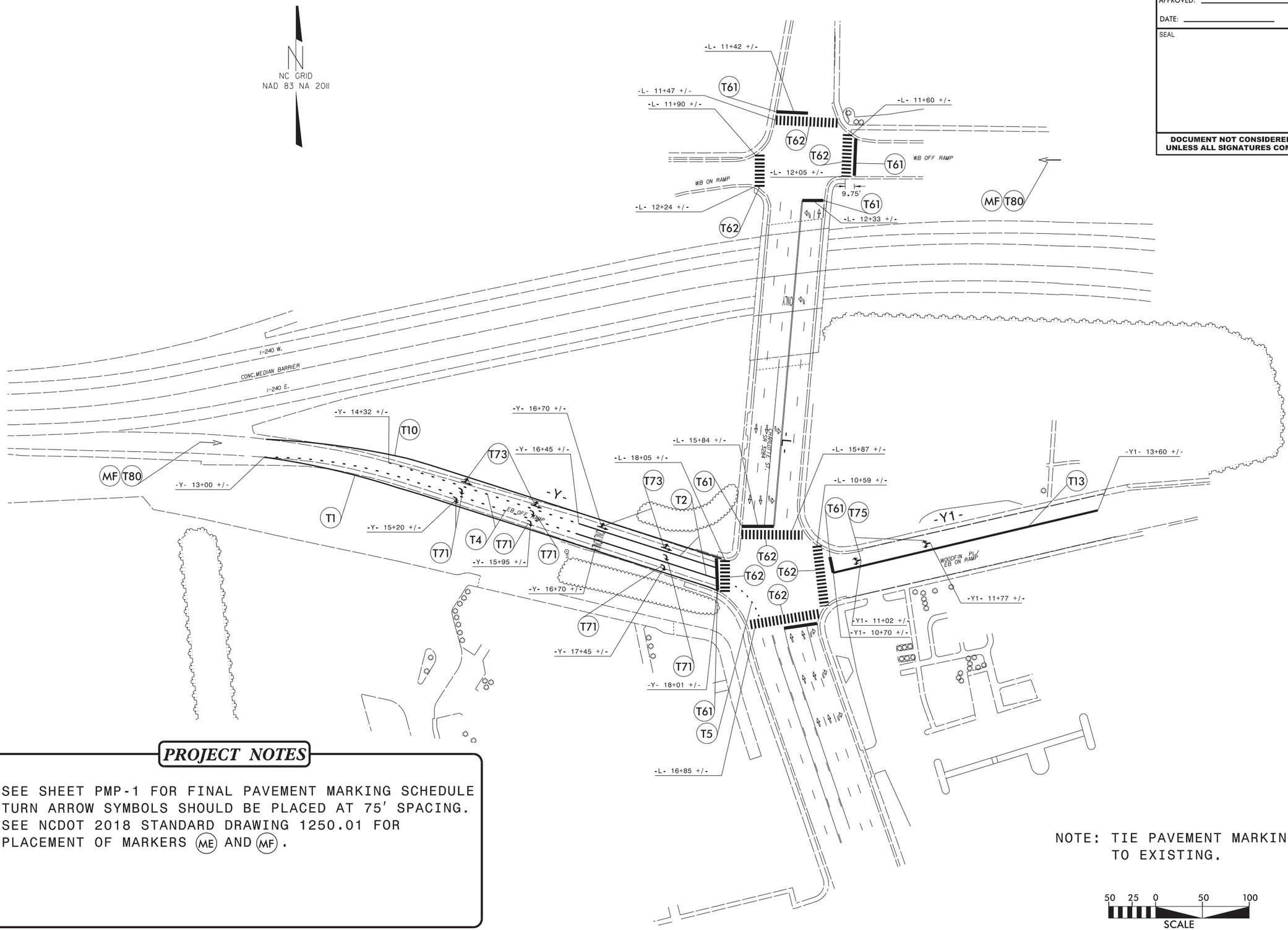
APPROVED: _____

DATE: _____

SEAL

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NC GRID
NAD 83 NA 2011

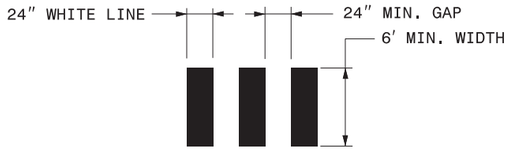


PROJECT NOTES

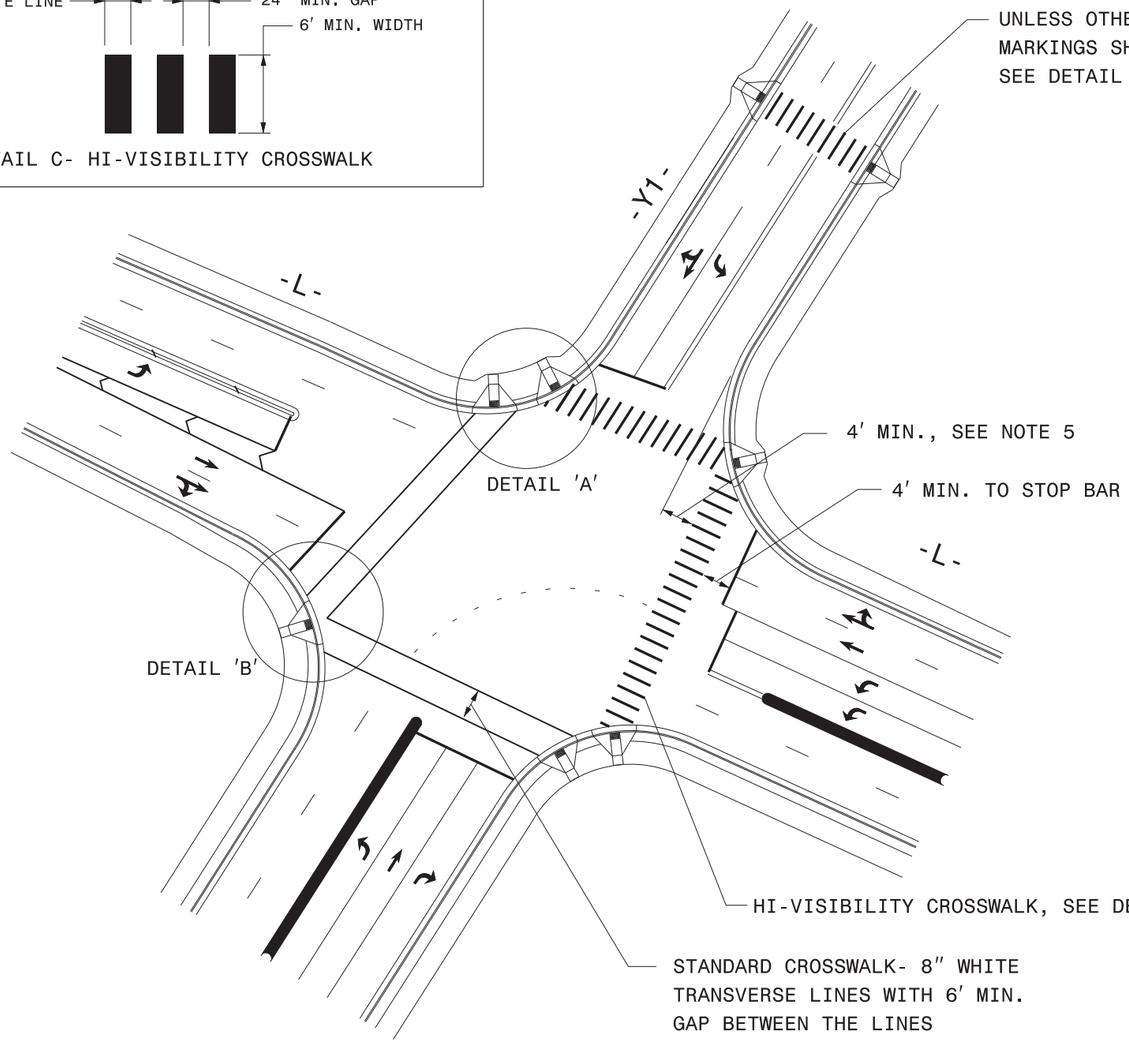
-SEE SHEET PMP-1 FOR FINAL PAVEMENT MARKING SCHEDULE
-TURN ARROW SYMBOLS SHOULD BE PLACED AT 75′ SPACING.
-SEE NCDOT 2018 STANDARD DRAWING 1250.01 FOR PLACEMENT OF MARKERS (ME) AND (MF).

NOTE: TIE PAVEMENT MARKINGS TO EXISTING.

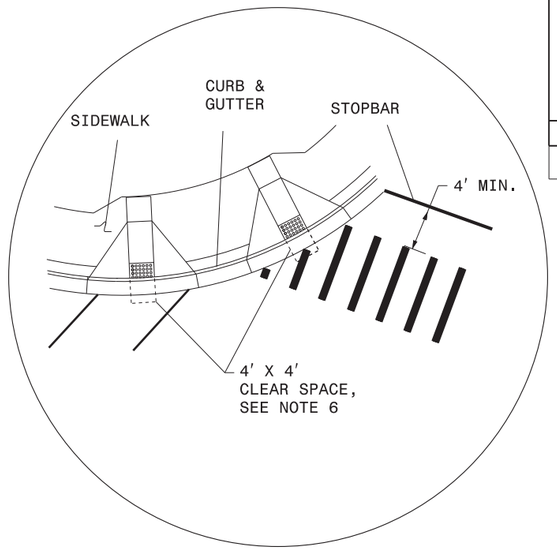
05-DEC-2022 14:42
C:\DOT Projects\Buncombe\HL0012\Traffic\HL0012_dds_pmp2.dgn
$$$$USERNAME$$$$



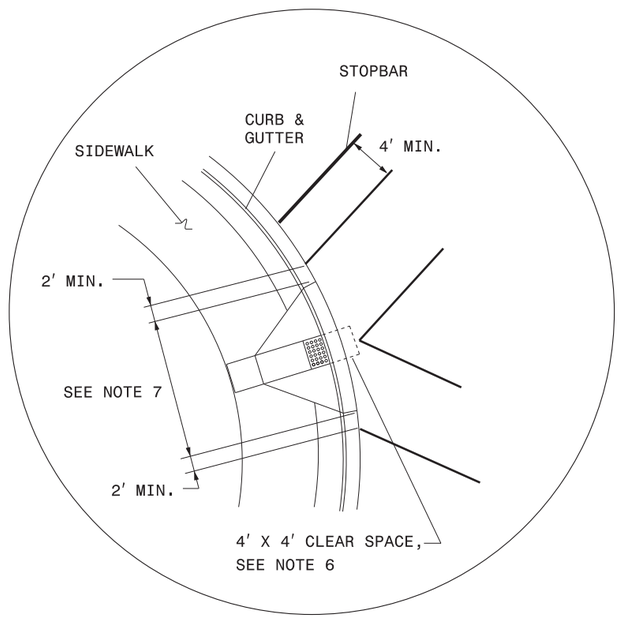
DETAIL C- HI-VISIBILITY CROSSWALK



UNLESS OTHERWISE SPECIFIED, HI-VISIBILITY CROSSWALK MARKINGS SHOULD BE USED AT MID-BLOCK CROSSINGS, SEE DETAIL 'C'



DETAIL 'A'- DUAL CURB RAMPS



DETAIL 'B'- SINGLE DIAGONAL CURB RAMP

NOTES:

1. USE THE DETAILS ABOVE AND THE FOLLOWING NOTES FOR GUIDANCE IN PLACING CROSSWALK MARKINGS. REFER TO NCDOT ROADWAY STANDARD DRAWINGS, MUTCD AND ADA STANDARDS FOR ADDITIONAL GUIDANCE.
2. THE LOCATION AND TYPE OF CROSSWALK MARKINGS SHOWN ON THE ABOVE DETAILS ARE FOR REFERENCE ONLY. LOCATE CROSSWALK MARKINGS AS SHOWN ON THE PROJECT DETAIL SHEETS OR AS DIRECTED BY THE ENGINEER. THE CROSSWALK MARKING TYPE, STANDARD OR HI-VISIBILITY, SHALL BE INSTALLED AS SPECIFIED ON THE PROJECT DETAIL SHEETS OR AS DIRECTED BY THE ENGINEER.
3. THE STANDARD CROSSWALK IS TWO WHITE 8″ TRANSVERSE LINES WITH A 6′ MINIMUM GAP BETWEEN THE LINES. THE HI-VISIBILITY CROSSWALK IS WHITE 24″ WIDE LONGITUDAL LINES WITH 24″ MINIMUM GAPS BETWEEN LINES, SEE DETAIL 'C'. HI-VISIBILITY CROSSWALKS SHOULD BE A MINIMUM OF 6′ WIDE.
4. STOP BARS SHOULD BE PLACED A MINIMUM OF 4′ IN ADVANCE OF NEAREST CROSSWALK LINE.
5. SET BACK DISTANCE FROM INSIDE CROSSWALK MARKING TO NEAREST EDGE OF TRAVEL IS 4′ MIN.
6. BEYOND THE BOTTOM GRADE BREAK, A CLEAR SPACE OF 4′ X 4′ MINIMUM SHALL BE PROVIDED WITHIN THE MARKINGS.
7. SINGLE DIAGONAL CURB RAMPS WITH FLARED SIDES SHALL HAVE A SEGMENT OF CURB 2 FEET LONG MINIMUM LOCATED ON EACH SIDE OF THE CURB RAMP AND WITHIN THE MARKED CROSSING, SEE DETAIL 'B'.
8. CURB RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE TO THE LATEST NCDOT ROADWAY STANDARD DRAWINGS.

TIP NO.	SHEET NO.
HL-0012	PMP-3

APPROVED:

DATE:

REVISIONS

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

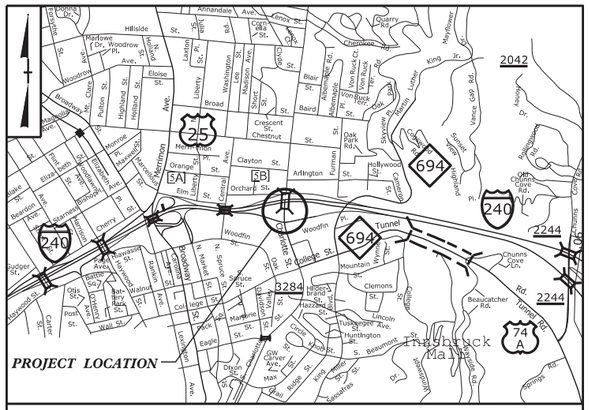
CROSSWALK PAVEMENT MARKING GUIDANCE DETAIL

3/29/2017
R:\Traffic\Delineation\5504_pmp_crosswalkdetail.dgn
User:plza

9/19/8

PROJECT: HL-0012

TIP #



VICINITY MAP N.T.S

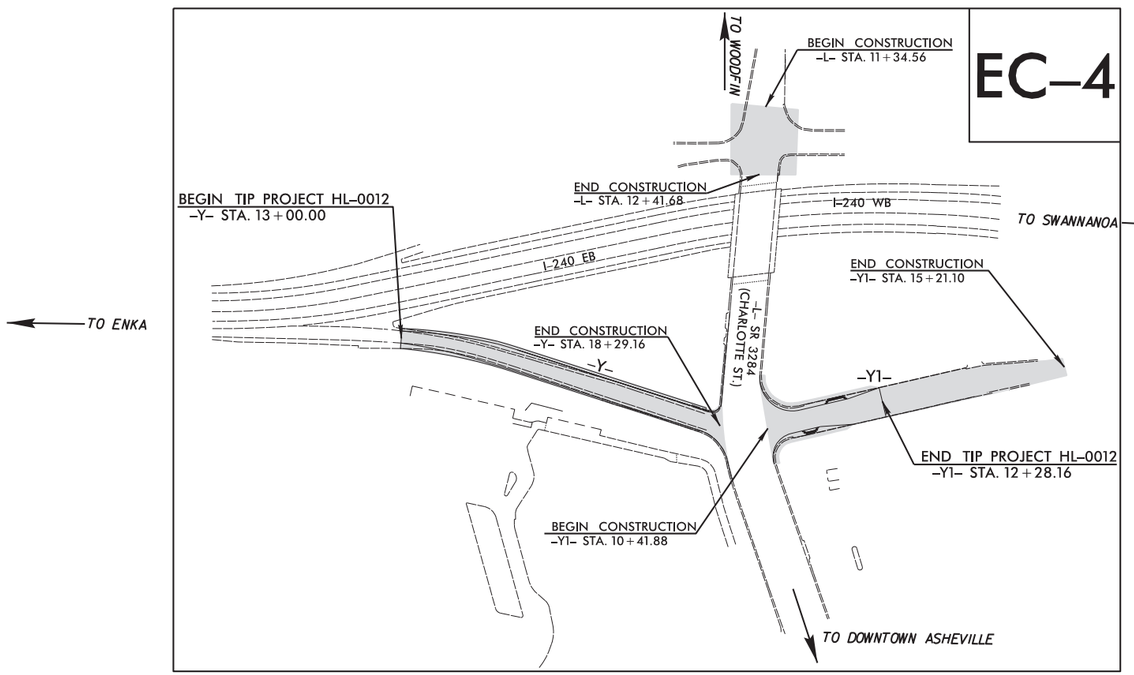
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	HL-0012	EC-1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
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 / Coir Fiber Wattle	SW CFW
	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	
1634.01	Temporary Rock Sediment Dam Type-A	
1634.02	Temporary Rock Sediment Dam Type-B	
1635.01	Rock Pipe Inlet Sediment Trap Type-A	
1635.02	Rock Pipe Inlet Sediment Trap Type-B	
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C



GRAPHIC SCALE

50 0 100
PLANS

50 0 100
PROFILE (HORIZONTAL)

10 0 20
PROFILE (VERTICAL)

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.

Prepared in the Office of:

DIVISION 13 DDC

55 Orange St.
Asheville, NC 28801

2018 STANDARD SPECIFICATIONS

Designed by:

Hampton Fletcher ***3382***

NAME *LEVEL III CERTIFICATION NO.*

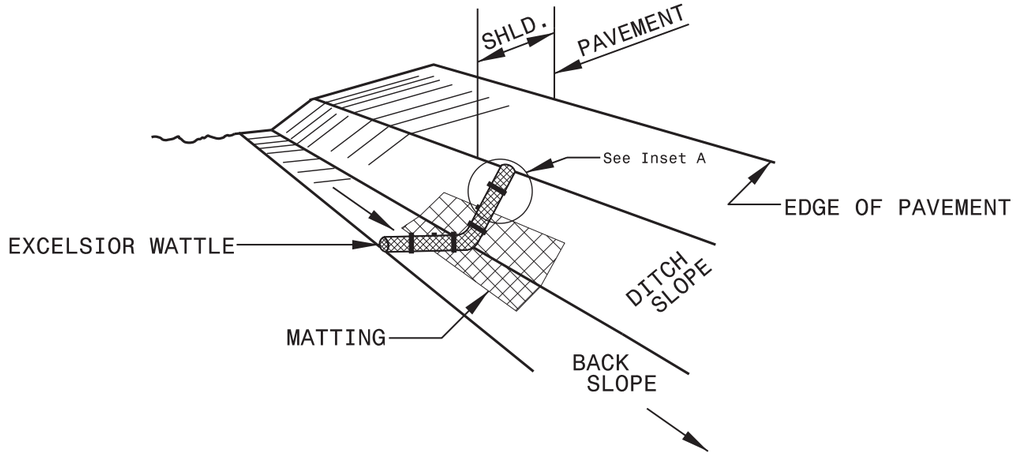
Roadway Standard Drawings

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 revison thereto are applicable to this project and by reference hereby are considered a part of these plans.

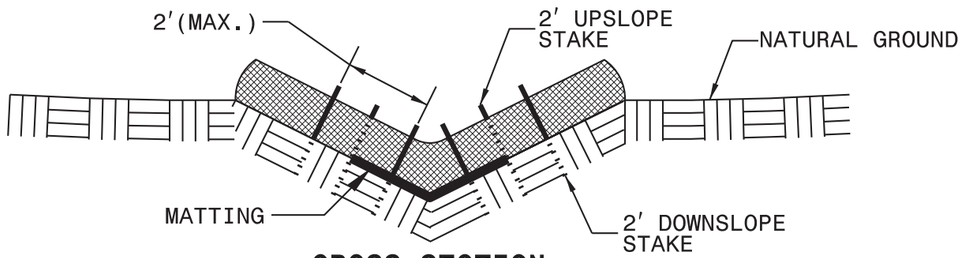
1604.01	Railroad Erosion Control Detail	1632.01	Rock Inlet Sediment Trap Type A
1605.01	Temporary Silt Fence	1632.02	Rock Inlet Sediment Trap Type B
1606.01	Special Sediment Control Fence	1632.03	Rock Inlet Sediment Trap Type C
1607.01	Gravel Construction Entrance	1633.01	Temporary Rock Silt Check Type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

PROJECT REFERENCE NO.	SHEET NO.
HL-0012	EC-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

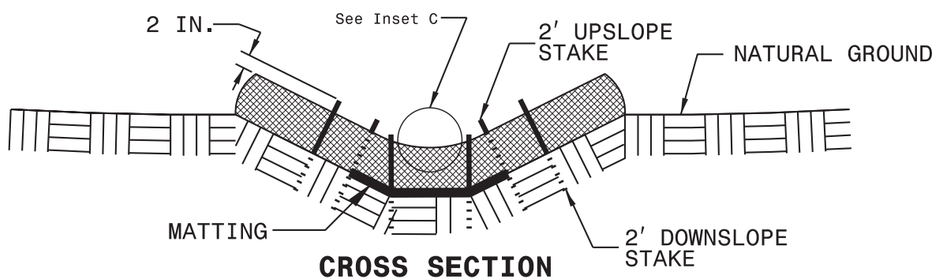
WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



ISOMETRIC VIEW



CROSS SECTION VEE DITCH



CROSS SECTION TRAPEZOIDAL DITCH

NOTES:

USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.

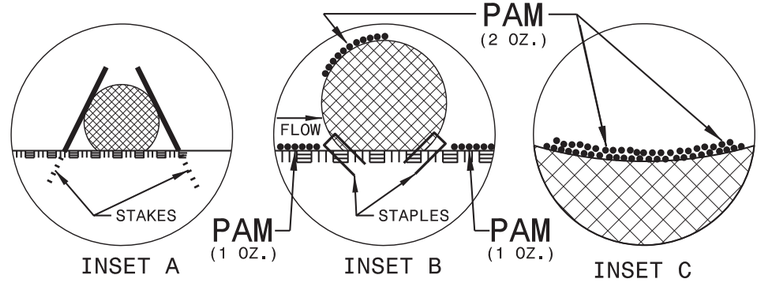
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12″ IN LENGTH.

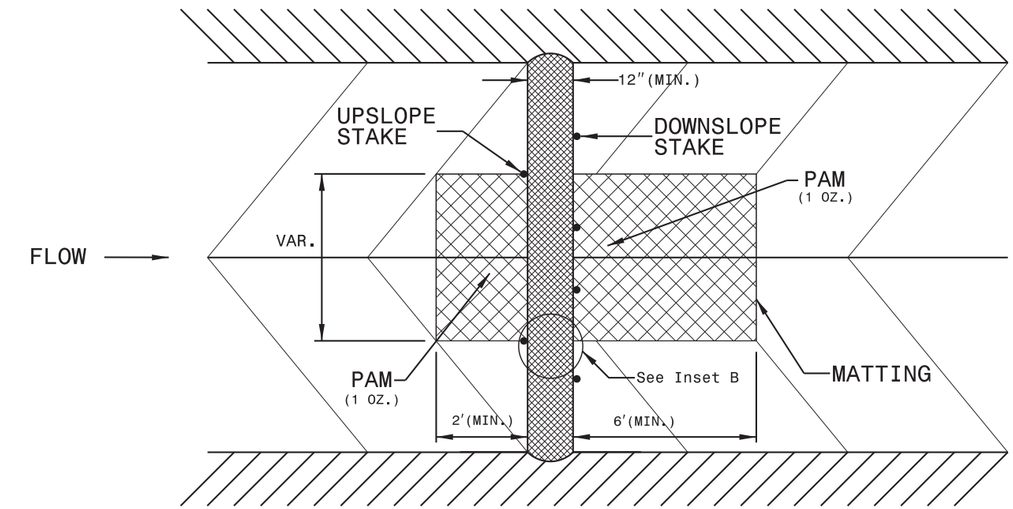
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.

PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.

INITIALLY APPLY 2 OUNCES OF ANIONIC OR NEUTRALLY CHARGED PAM OVER WATTLE WHERE WATER WILL FLOW AND 1 OUNCE OF PAM ON MATTING ON EACH SIDE OF WATTLE. REAPPLY PAM AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.





TOP VIEW

PROJECT REFERENCE NO.	SHEET NO.
HL-0012	EC-3
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) 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 HQW ZONES.

PROJECT REFERENCE NO.	SHEET NO.
HL-0012	EC-4/CONST.4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NC GRID
NAD 83 NA 2011

-Y- POT Sta. 10+00.00

BEGIN TIP PROJECT HL-0012
-Y- STA. 13+00.00

S 89°13'44.0" E

-Y-

-Y- PC Sta. 12+34.71

-Y- PT Sta. 14+82.83

-L- POT Sta. 10+00.00

BEGIN CONSTRUCTION
-L- STA. 11+34.56

-Y3-

-Y2-

ORCHARD ST.

WB ON RAMP

WB OFF RAMP

CHARLOTTE ST.

END CONSTRUCTION
-L- STA. 12+41.68

S 5°05'06.0" W

-L-

-Y1- POT Sta. 10+00.00 EQ. =
-L- POC Sta. 16+55.09

-Y1- POT Sta. 15+21.10

I-240 W.

I-240 E.

CONC. MEDIAN BARRIER

150' TAPER

450' STORAGE

BEGIN 2'-6" C+G
-L- STA. 14+61.02

BEGIN 4" CONC. SIDEWALK
-L- STA. 14+61.02

-L- PC Sta. 15+69.48

END 4" CONC. SIDEWALK
-Y- STA. 17+95.68

END 2'-6" C+G
-Y- STA. 17+95.68

HEDGE
DBS2

LIGHT POLE

4' CONC. SW

4' C/L CHAIN LINK FEN.

4' CONC. EXPRESSWAY GUTTER

18" CONC. DITCH

LANDSCAPE AREA

GR. PARKING

4' RIVER ROCK DRAINAGE DITCH

CONC. & ASPH. DITCH

S 72°45'50.0" E

CONC. HW

GATE

SURFACE CHANGE

4' C/L FEN.

6' CONC. CURB

BRICK WALL

GRAVEL DRWY.

ASPHALT PARKING

BEGIN 2'-6" CONC. C+G
-Y- STA. 17+95.68

COURTYARD

BEGIN 4" CONC. SIDEWALK
-Y- STA. 17+95.68

END CONSTRUCTION
-Y- STA. 18+29.16
-Y- POT Sta. 18+61.50 EQ. =
-L- POC Sta. 16+52.75

END 4" CONC. SIDEWALK
-L- STA. 17+20.95

2-S-BRK-CH.

END 2'-6" CONC. C+G
-L- STA. 17+20.95

BRICK WALL

CONC. SW

S 19°03'30.0" E

BEGIN 2'-6" CONC. C+G
-L- STA. 15+58.62

3-S-BRK-B

END 4" CONC. SIDEWALK
-Y1- STA. 12+14.95

END CONSTRUCTION
-Y1- STA. 15+21.10

END 2'-6" CONC. C+G
-Y1- STA. 12+28.95

BEGIN 4" CONC. SIDEWALK
-L- STA. 15+58.62

BEGIN CONSTRUCTION
-Y1- STA. 10+41.88

CONVERT DI TO JB

50' TYP.

ROCK WALL

N 76°43'18.6" E

-Y1-

END TIP PROJECT HL-0012
-Y1- STA. 12+28.16

WOODFIN PL/ EB ON RAMP

END CONC. 2'-6" C+G
-Y1- STA. 11+73.81

END 4" CONC. SIDEWALK
-Y1- STA. 11+63.49

15" RCP CB TO JB

18" RCP

BEGIN 4" CONC. SIDEWALK
-L- STA. 17+14.11

6' WD. FEN.

ASPH. PARKING

BEGIN 2'-6" CONC. C+G
-L- STA. 17+14.11

-L- PT Sta. 17+41.93

CHARLOTTE ST.
SR 3284

20

5/26/20

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

SIGNING PLAN
BUNCOMBE COUNTY

LOCATION: I-240, EXIT 5B, EB OFF RAMP

ROADWAY STANDARD DRAWING

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - 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
901.70	SIGN STRINGERS AND SUPPORT SPACING
901.80	SIGN MOUNTING DETAILS - FOR TYPE A AND TYPE B SIGNS
903.10	GROUND MOUNTED SIGN SUPPORTS
904.10	ORIENTATION OF GROUND MOUNTED SIGNS
904.30	SUPPLEMENTAL SIGN MOUNTING
904.50	MOUNTING OF TYPE `D', `E' AND `F' SIGNS ON `U' CHANNEL POSTS

GENERAL NOTES

. SIGNS FURNISHED BY STATE

. CONFIRM IN WRITING AT LEAST 4 MONTHS IN ADVANCE, THE ACTUAL DATE THE DEPARTMENT FURNISHED SIGNS WILL BE REQUIRED.

. ALL TYPE 'D' SIGNS SHALL BE MOUNTED ON TW0 U-CHANNEL POSTS UNLESS OTHERWISE INDICATED ON THE PLANS.

. WHEN NOT STATIONED OR DIMENSIONED ON PLANS, ALL 'E' AND 'F' SIGNS SHALL BE FIELD LOCATED BY THE ENGINEER

. IF REMOVAL OR RELOCATION OF SIGNS ON PRIVATE STREET (NON-STATE MAINTAINED) IS REQUIRED DUE TO CONSTRUCTION, THE CONTRACTOR SHALL INFORM THE ENGINEER. THE WORK WILL BE COMPLETED BY OTHERS.

. WHEN EXISTING SIGNS ARE REMOVED AND INSTALLED ON NEW SUPPORTS, THE RE-ERECTION SHALL IMMEDIATELY FOLLOW THE REMOVAL.

. DO NOT BEGIN FABRICATION FOR TYPES A & B SIGNS MOUNTED ON OVERHEAD STRUCTURES OR STEEL SUPPORTS UNTIL "S" DIMENSIONS HAVE BEEN FIELD VERIFIED.

. SEE ROADWAY PLANS FOR GUARD/GUIDE RAIL DETAILS.

SUMMARY OF QUANTITIES

ITEM NO.		ITEM DESCRIPTION	QUANTITY	UNIT
DESC. NO.	SECT. NO.			
4054000000	902	PLAIN CONCRETE SIGN FOUNDATION	1	C.Y.
4060000000	903	SUPPORTS, BREAKAWAY STEEL BEAM	318	LB.
4072000000	903	SUPPORTS, 3 LB STEEL U-CHANNEL	223	L.F.
4102000000	904	SIGN ERECTION, TYPE E	7	EA.
4108000000	904	SIGN ERECTION, TYPE F	2	EA.
4116100000	904	SIGN ERECTION, RELOCATE SIGN TYPE A (GROUND MOUNTED)	1	EA.
4116100000	904	SIGN ERECTION, RELOCATE SIGN TYPE B (GROUND MOUNTED)	1	EA.
4237000000	907	STOCKPILE SIGN, D, E OR F	1	EA.
4141000000	907	DISPOSAL OF SUPPORT, WOOD	1	EA.
4155000000	907	DISPOSAL OF SIGN SYSTEM, U-CHANNEL	10	EA.

INDEX

PLAN PREPARED BY: N.C.D.O.T. SIGNING AND DELINEATION UNIT

KELVIN JORDAN — SIGNING & DELINEATION REGIONAL ENGINEER

WALTER JOHNSON — SIGNING & DELINEATION PROJECT DESIGN ENGINEER

HL-0012

SIGN | 001

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

APPROVED: DocuSigned by: Renee B. Roach 3EB4360BD916451...

DATE: 11/18/2022

SEAL:

NORTH CAROLINA PROFESSIONAL SEAL 024921 ENGINEER RENEE B. ROACH

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION

T.I.P.: HL-0012

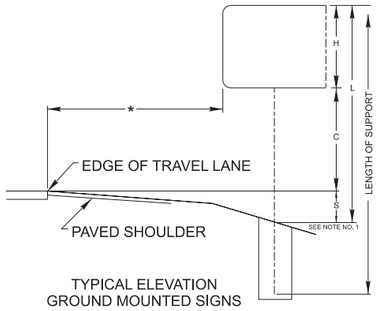
5/26/20

Version: 3.1 Posted: 6/2/2017

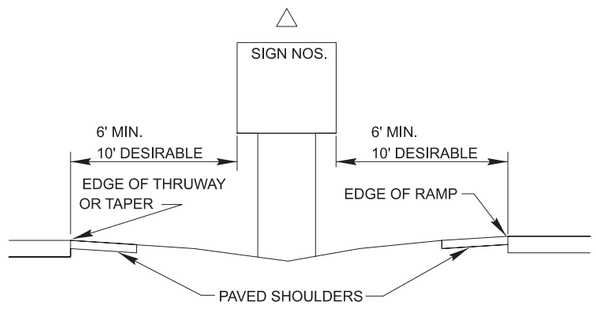
SIGN NUMBER	SIGN TYPE	SIZE (in.) w	x	h	ROADWAY STATION	NUMBER OF SUPPORTS	BEAM SECTION	SUPPORT TYPE BA or S	OMNI COUPLER	ATTACHMENT METHOD	MOUNTING METHOD	HORIZONTAL CLEARANCE* (ft.)	SUPPORT SPACING	LENGTH (ft) SNS HT "H"	LENGTH (ft) MTG HT "C"	LENGTH (ft) EMBED-MENT	LEFT SUPPORT (ft) S	LEFT SUPPORT (ft) L	LEFT SUPPORT (ft) LENGTH	CENTER SUPPORT (ft) S	CENTER SUPPORT (ft) L	CENTER SUPPORT (ft) LENGTH	RIGHT SUPPORT (ft) S	RIGHT SUPPORT (ft) L	RIGHT SUPPORT (ft) LENGTH	SUPPORT WEIGHTS B/A (lbs.)	SUPPORT WEIGHTS SIMPLE (lbs.)	FOOTINGS DIAMETER (ft.)	FOOTINGS DEPTH (ft.)	FOOTINGS REINFORCED (c.y.)	FOOTINGS PLAIN (c.y.)	FIELD VERIFIED SEE NOTE 2 (mm/dd/yy)
901A	A	90		72	_____	2	S4x7.7	BA	N/A	N/A	N/A	18.00	4.40	7.00	7.00	3.00	1.00	15.00	18.00	0.00	0.00	0.00	1.00	15.00	18.00	317.20	0	1.00	3.5	0.00	0.20	_____
901B	B	90		12						N/A	II																					
																										TOTAL 317.20	TOTAL 0.00			TOTAL 0.00	TOTAL 0.20	
																									USE:	318.00	0.00			0.00	1.00	

NOTES

1. DIMENSION "S" REPRESENTS AN INCREASE (+), OR A DECREASE (-) IN POLE LENGTH, RELATIVE TO THE ELEVATION OF THE EDGE OF TRAVEL LANE.
2. FIELD VERIFICATIONS SHALL BE REQUIRED FOR ALL SUPPORTS, SEE (*) ARTICLE 903-3. FABRICATORS SHALL BE AISC CERTIFIED IN CATEGORY 1, SEE (*) ARTICLE 1072-1. (*) = N.C.D.O.T. STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES
3. PLAN LOCATIONS FOR EXISTING UTILITIES ARE BASED ON THE BEST AVAILABLE INFORMATION AND, THEREFORE MAY NOT BE PRECISELY ACCURATE. THEREFORE, IT IS INCUMBENT UPON THE CONTRACTOR TO DETERMINE THE EXACT LOCATION OF UTILITIES BEFORE BEGINNING WORK IN A LOCATION.



TYPICAL ELEVATION
GROUND MOUNTED SIGNS



HL-0012
SIGN 002

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

APPROVE: DocuSigned by: Renee B. Roach 3EB4360BD916451...
DATE: 11/18/2022

SEAL:
NORTH CAROLINA PROFESSIONAL SEAL 024921 ENGINEER RENEE B. ROACH

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

SUPPORT CHART

5/26/20

(401) QUANTITY REQ'D 2

36″ X 36″
R5-1

ONE "U" POST PER SIGN

(402) QUANTITY REQ'D 2

42″ X 30″
R5-1a

TWO "U" POSTS PER SIGN

(403) QUANTITY REQ'D 1

54″ X 18″
R6-1

TWO "U" POSTS PER SIGN

(404) QUANTITY REQ'D 1

54″ X 18″
R6-1

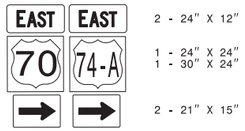
MOUNT BACK TO BACK SIGN 403
IN 1 INSTALLATION

(405) QUANTITY REQ'D 1

48″ X 30″
R3-8a

TWO "U" POSTS PER SIGN

(501)



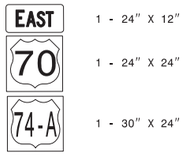
2 - 24″ X 12″

1 - 24″ X 24″
1 - 30″ X 24″

2 - 21″ X 15″

TWO "U" POSTS PER SIGN

(502)



1 - 24″ X 12″

1 - 24″ X 24″

1 - 30″ X 24″

ONE "U" POST PER SIGN

SIGN NUMBER: 301
TYPE: D
QUANTITY: 1

SIGN WIDTH: 8'-0"
HEIGHT: 2'-0"
TOTAL AREA: 16.0 Sq.Ft.

BORDER TYPE: FLUSH
RECESS: 0"
WIDTH: 1"
RADII: 3"

NO. Z BARS:
LENGTH:

BACKG COLOR: Blue
COPY COLOR: White

SYMBOL	X	Y	WID	HT
AR_Type D	82.6	9	6	9

MAT'L: 0.125" (3.2 mm) ALUMINUM

USE NOTES:

1. Legend and border(except those that are colored black) shall be direct applied Grade C sheeting.
2. Background shall be Grade C reflective sheeting.
3. Shields; A, B, and C type arrows shall be on 0.032" (0.8mm) aluminum and demountable.

DESIGN BY: W. Johnson
PROJECT ID: HL-0012

CHECKED BY:KLJ
LOCATION: Ramp 5B I-240

Oct 12, 2022
DIV: 13

Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter spacings are to start of next letter

		M	I	S	S	I	O	N		H	O	S	P	I	T	A	L											Series/Size Text Length
	4.4	6.1	2	4.7	5.1	2.3	5.6	4.1	6	5.4	5.2	5.1	5	1.9	4.1	6	3.7	19.4										D 2000 72.1
		T	R	A	U	M	A		C	E	N	T	E	R														D 2000
	7.5	4.6	4.6	6	5.5	5.6	5.1	6	5.4	4.7	5	4.6	4.7	4.1	22.5													65.9

HL-0012_Sign Design

NORTH CAROLINA D.O.T. SIGN DETAIL

HL-0012
SIGN 003

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

APPROVED: DocuSigned by: Renee B. Roach 3EB4760BD916451...
DATE: 11/18/2022

SEAL

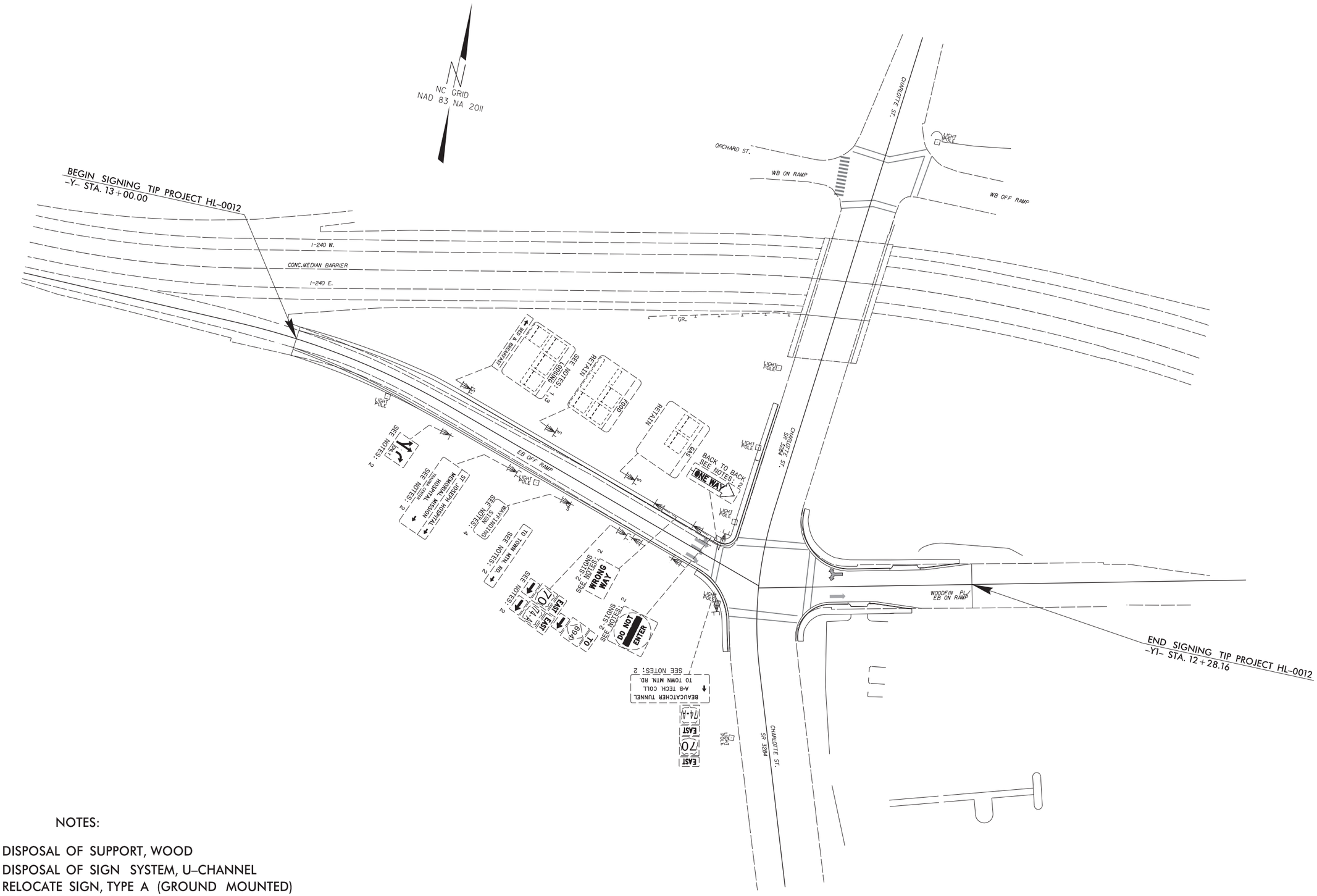
NORTH CAROLINA PROFESSIONAL SEAL 024921 ENGINEER RENEE B. ROACH

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION

D, E & F SIGNS

5/26/20



NOTES:

1 DISPOSAL OF SUPPORT, WOOD
2 DISPOSAL OF SIGN SYSTEM, U-CHANNEL
3 RELOCATE SIGN, TYPE A (GROUND MOUNTED)
4 STOCKPILE SIGN, D, E OR F

EXISTING SIGNS

HL-0012
SIGN 004

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

APPROVED: DocuSigned by: Renee B. Roach 3EB4760BD916451...
DATE: 11/18/2022

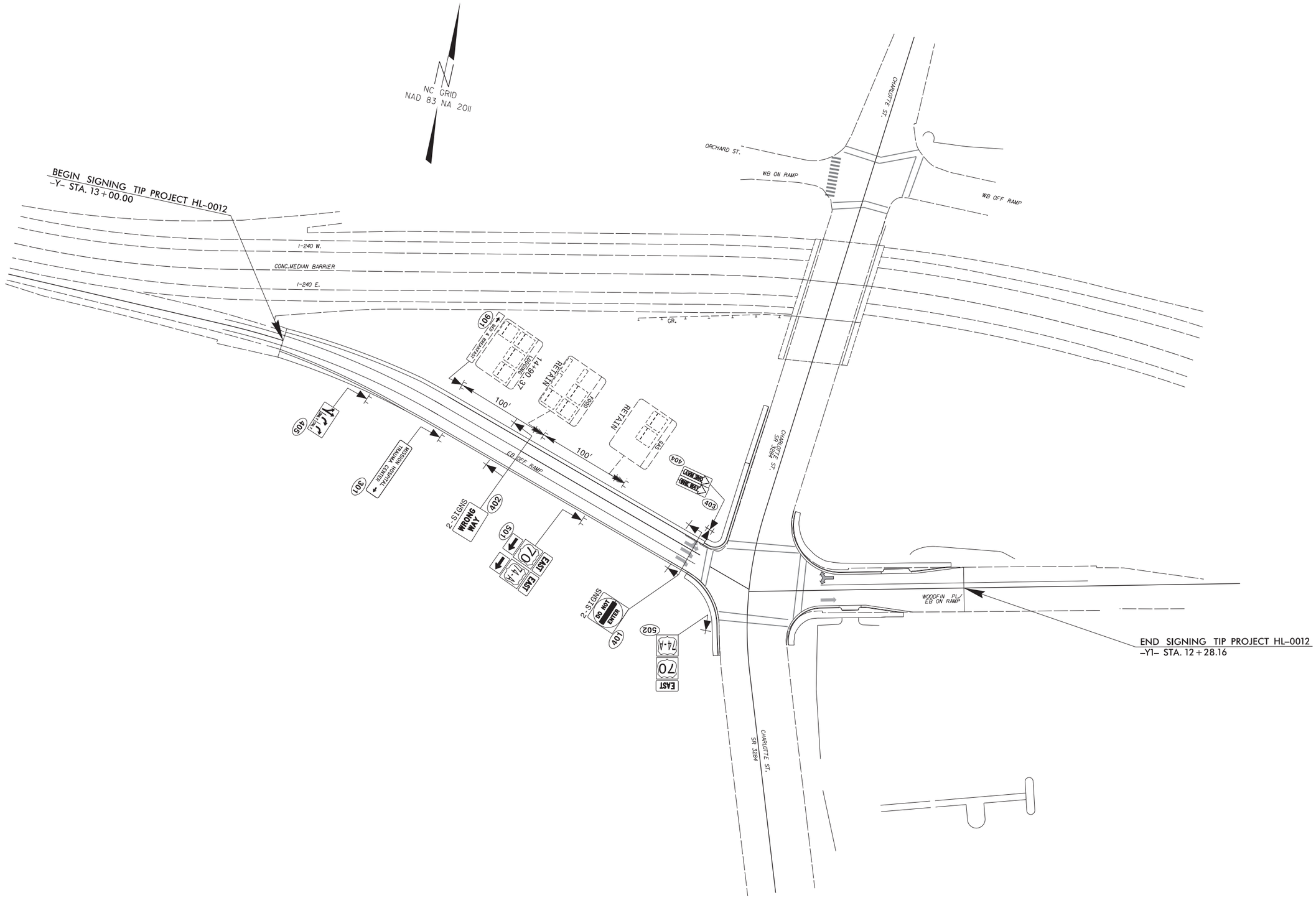
SEAL:
NORTH CAROLINA PROFESSIONAL SEAL 024921 ENGINEER RENEE B. ROACH

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION

5/26/20



HL-0012

SIGN 005

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

APPROVE: DocuSigned by: Renee B. Roach 3EB4760BD916431...

DATE: 11/18/2022

SEAL:

NORTH CAROLINA PROFESSIONAL SEAL 024921 ENGINEER RENEE B. ROACH

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

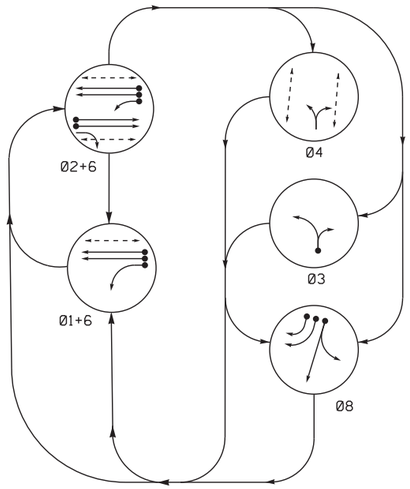
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

PROPOSED SIGNS

PROJECT REFERENCE NO.	SHEET NO.
HL-0012	Sig. 1.0

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

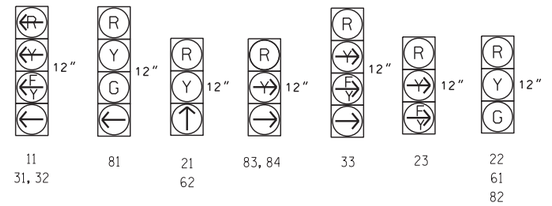
- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

TABLE OF OPERATION

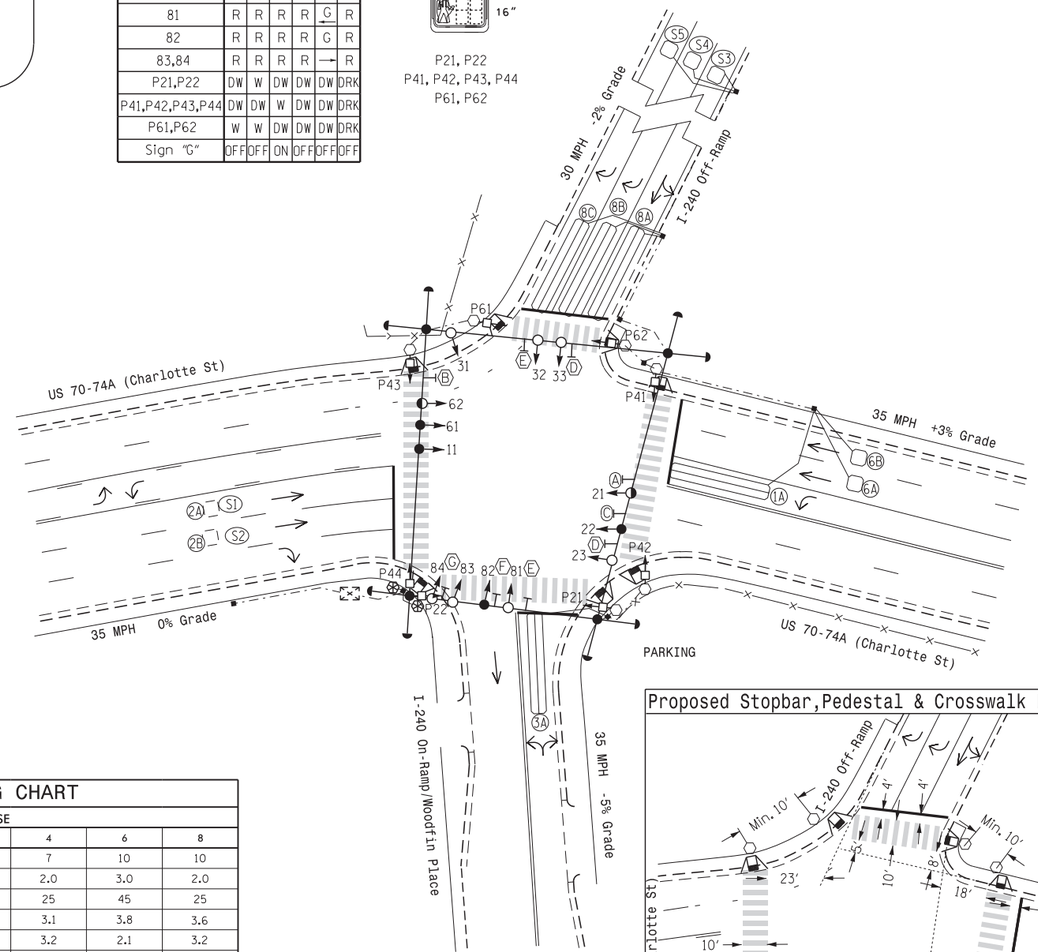
SIGNAL FACE	PHASE 0 1 + 6	0 2 + 6	0 4	0 3	0 8	FLASH
11	←	F	R	R	R	Y
21	R	↑	R	R	R	Y
22	R	G	R	R	R	Y
23	R	F	R	R	R	Y
31,32	R	R	F	←	R	R
33	R	R	F	→	R	R
61	G	G	R	R	R	Y
62	↑	↑	R	R	R	Y
81	R	R	R	R	G	R
82	R	R	R	R	G	R
83,84	R	R	R	R	→	R
P21,P22	DW	W	DW	DW	DW	DRK
P41,P42,P43,P44	DW	DW	W	DW	DW	DRK
P61,P62	W	W	DW	DW	DW	DRK
Sign "G"	OFF	OFF	ON	OFF	OFF	OFF

SIGNAL FACE I.D.

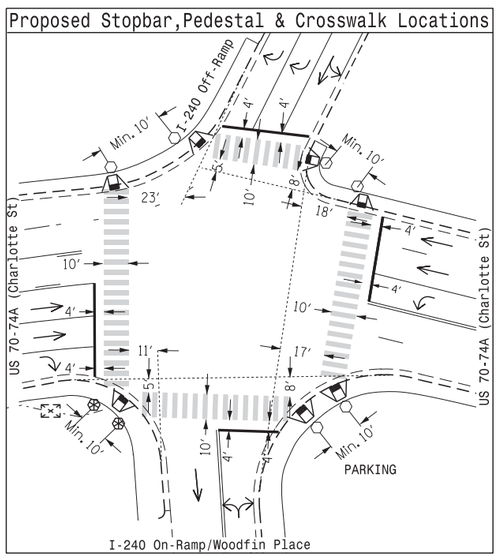
All Heads L.E.D.



P21, P22
P41, P42, P43, P44
P61, P62



Proposed Stopbar,Pedestal & Crosswalk Locations



OASIS 2070 LOOP & DETECTOR INSTALLATION CHART

INDUCTIVE LOOPS					DETECTOR PROGRAMMING							
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
1A	6X60	0	2-4-2	Y	1	Y	Y	-	-	15	-	-
					6	Y	Y	-	-	-	-	-
2A/S1	6X6	70	3	-	2	Y	Y	-	-	-	Y	-
2B/S2	6X6	70	3	-	2	Y	Y	-	-	-	Y	-
3A	6X40	0	2-4-2	Y	3	Y	Y	-	-	5	-	-
6A	6X6	70	4	Y	6	Y	Y	-	-	-	-	-
6B	6X6	70	4	Y	6	Y	Y	-	-	-	-	-
8A	6X40	0	2-4-2	Y	8	Y	Y	-	-	-	-	-
8B	6X40	0	2-4-2	Y	8	Y	Y	-	-	10	-	-
8C	6X40	0	2-4-2	Y	8	Y	Y	-	-	10	-	-
S3	6X6	150	4	Y	-	-	-	-	-	-	Y	-
S4	6X6	150	4	Y	-	-	-	-	-	-	Y	-
S5	6X6	150	4	Y	-	-	-	-	-	-	Y	-

OASIS 2070 TIMING CHART

FEATURE	PHASE 1	2	3	4	6	8
Min Green 1 *	7	10	7	7	10	10
Extension 1 *	1.0	3.0	2.0	2.0	3.0	2.0
Max Green 1 *	15	45	25	25	45	25
Yellow Clearance	3.0	3.8	3.1	3.1	3.8	3.6
Red Clearance	2.8	2.1	3.2	3.2	2.1	3.2
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0
Walk 1 *	-	7	-	7	7	-
Don't Walk 1	-	16	-	21	9	-
Seconds Per Actuation *	-	-	-	-	-	-
Max Variable Initial *	-	-	-	-	-	-
Time Before Reduction *	-	-	-	-	-	-
Time To Reduce *	-	-	-	-	-	-
Minimum Gap	-	-	-	-	-	-
Recall Mode	-	MIN RECALL	-	-	MIN RECALL	-
Vehicle Call Memory	-	YELLOW	-	-	YELLOW	-
Dual Entry	-	-	-	-	-	-
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.

5 Phase Fully Actuated Asheville Signal System

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Phase 1 may be lagged.
4. Abandon existing loop #1B.
5. Controller may serve Phase 3 or Phase 4 but not both phases each cycle.
6. Do not change the order of Phase 3 and 4. Phase 8 may be served prior to phase 4 or after phase 3.
7. Set all detector units to presence mode.
8. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
9. Program pedestrian heads to countdown the flashing "Don't Walk" time only.
10. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
11. Phases 3, 4 and 8 are not compatible. Phases 3, 4 and 8 may not run concurrently.
12. Illuminate sign "G" during the yellow interval prior to phase 4 and remain ON until the end of Phase 4 Red Clear.

LEGEND

PROPOSED		EXISTING
Ⓐ	No Left Turn Sign (R3-2)	Ⓐ
Ⓑ	No RightTurn Sign (R3-1)	Ⓑ
Ⓒ	"DO NOT BLOCK INTERSECTION" Sign	Ⓒ
Ⓓ	Right "TURNING VEHICLES YIELD TO PEDESTRIANS" Sign (R10-15R)	Ⓓ
Ⓔ	Left "TURNING VEHICLES YIELD TO PEDESTRIANS" Sign (R10-15L)	Ⓔ
Ⓕ	Combined Through and Left Arrow Sign (R3-6L)	Ⓕ
Ⓖ	LED Blankout Sign (See Figure 1)	Ⓖ

Figure 1

LEGEND

PROPOSED		EXISTING
	Traffic Signal Head	
	Modified Signal Head	N/A
	Sign	
	Pedestrian Signal Head With Push Button & Sign	
	Type II Signal Pedestal	
	Type I Pushbutton Post	
	Signal Pole with Guy	
	Signal Pole with Sidewalk Guy	
	Inductive Loop Detector	
	Controller & Cabinet	
	Junction Box	
	2-in Underground Conduit	
N/A	Right of Way	
	Directional Arrow	
N/A	Fence	
N/A	Curb Ramp	

Signal Upgrade

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

US 70-74A (Charlotte St) at I-240 On/Off Ramps/ Woodfin Place

Division 13 Buncombe County Asheville

PLAN DATE: June 2022 REVIEWED BY: T.J. Williams

PREPARED BY: EM Minshew REVIEWED BY:

SCALE 0 30 1"=30'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 024393 ENGINEER TIMOTHY J. W. WILLIAMS

DocuSigned by: T. J. Williams 97AD792EBE934CA...

10/06/2022 DATE

SIG. INVENTORY NO. 13-1288

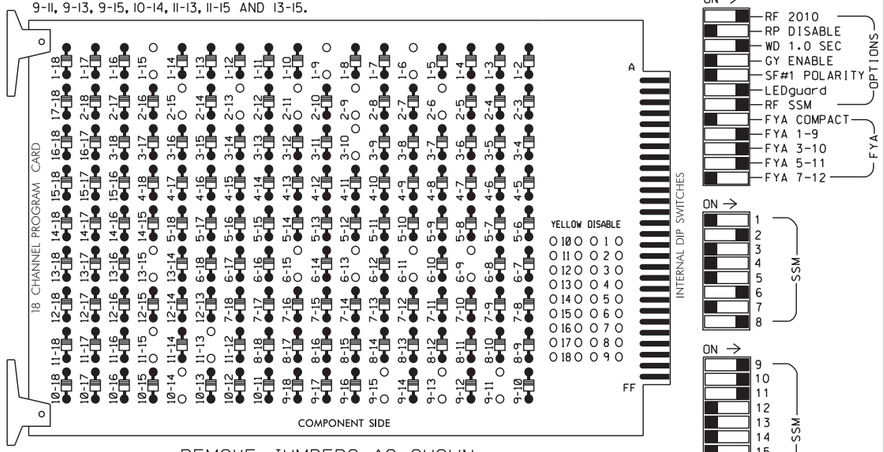
06-OCT-2022 12:10
S:\Traffic\Signals\Signal Design Section\Western Region\Div-13\CM-5713 E\m131288_sig_dsn_20220623.dgn
emminshew

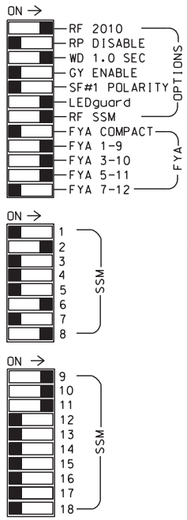
EDI MODEL 2018ECLip-NC CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)

ON OFF
WD ENABLE
SW2

REMOVE DIODE JUMPERS 1-6, 1-9, 1-15, 2-6, 2-9, 2-11, 2-13, 2-15, 3-10, 6-9, 6-11, 6-13, 6-15, 9-11, 9-13, 9-15, 10-14, 11-13, 11-15 AND 13-15.





REMOVE JUMPERS AS SHOWN

■ = DENOTES POSITION OF SWITCH

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 Red Enable is active at all times during normal operation.
4. Integrate monitor with Ethernet network in cabinet.

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 Plans.
2. Enable Simultaneous Gap-Out for all Phases.
3. Program phases 2 and 6 for Startup In Green.
4. Program phases 2, 4 and 6 for Startup Ped Call.
5. Program phases 2 and 6 for Yellow Flash, and overlaps 1 and 2 as Wag Overlaps.
6. The cabinet and controller are part of the Asheville Signal System.

EQUIPMENT INFORMATION

CONTROLLER.....2070
CABINET.....332 W/ AUX
SOFTWARE.....ECONOLITE OASIS
CABINET MOUNT.....BASE
OUTPUT FILE POSITIONS...18 WITH AUX. OUTPUT FILE
LOAD SWITCHES USED.....S1,S2,S3,S4,S6,S8,S9,S11, AUX S1,AUX S2,AUX S4
PHASES USED.....1,2,2 PED,3,*4,4 PED,6, 6 PED, 8
OVERLAP "A".....1+2
OVERLAP "B".....3+4
OVERLAP "C".....2
OVERLAP "D".....NOT USED
*PHASE 4 USE FOR TIMING PURPOSES ONLY.

PROJECT REFERENCE NO.	SHEET NO.
HL-0012	Sig. 1.1

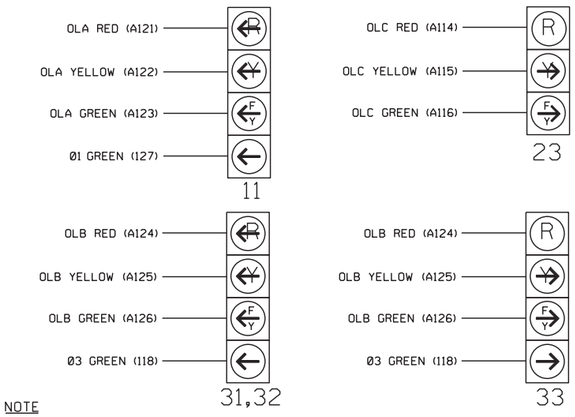
SIGNAL HEAD HOOK-UP CHART

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.	11★	21	22	P21, P22	31,32★ 33	NC	P41,P42 P43,P44	NU	61	62	P61, P62	BLANK-OUT SIGN	NU	81	82	83,84	NU	11★	31,32★	33★	NU	23★	NU	NU
RED		128	128						134	134				107	107	107				A124		A114		
YELLOW	*	129	129		*				135	135				108	108									
GREEN			130						136					109	109									
RED ARROW																		A121	A124					
YELLOW ARROW																108		A122	A125	A125		A115		
FLASHING YELLOW ARROW																		A123	A126	A126		A116		
GREEN ARROW	127	130			118					136				109		109								
✋				113			104				119													
PED YELLOW												*												
🚶				115			106				121													

NU = Not Used
NC = No Connection
* Denotes install load resistor. See load resistor installation detail this sheet.
★ See pictorial of head wiring in detail this sheet.

FYA SIGNAL WIRING DETAIL

(wire signal heads as shown)



NOTE

The sequence display for signal heads 11, 31, 32 and 33 requires special logic programming. See sheet 2 for programming instructions.

INPUT FILE POSITION LAYOUT

(front view)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
FILE "I" U	Ø 1 1A	Ø2/SYS 2A/S1	SLOT EMPTY	SLOT EMPTY	Ø 3 3A	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SYS. DET. S3	SLOT EMPTY	SLOT EMPTY	Ø2 PED DC ISOLATOR	Ø6 PED DC ISOLATOR	FS DC ISOLATOR
FILE "I" L	NOT USED	Ø2/SYS 2B/S2			NOT USED				SYS. DET. S4			Ø4 PED DC ISOLATOR	NOT USED	ST DC ISOLATOR
FILE "J" U	SLOT EMPTY	Ø 6 6A	SLOT EMPTY	WAGED INPUT ⊗	SLOT EMPTY	Ø 8 8A	Ø 8 8C	SLOT EMPTY	SYS. DET. S5	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY
FILE "J" L		Ø 6 6B				Ø 8 8B	NOT USED		NOT USED					

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

FS = FLASH SENSE
ST = STOP TIME

⊗ Wired Input - Do not populate slot with detector card

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[1]	TB2-1,2	I1U	56	18	1	1	Y	Y			15
	-	J4U	48	10	26	6	Y	Y			
2A/S1	TB2-5,6	I2U	39	1	2	2/SYS	Y	Y			
2B/S2	TB2-7,8	I2L	43	5	12	2/SYS	Y	Y			
3A	TB4-5,6	I5U	58	20	3	3	Y	Y			5
* S3	TB6-9,10	I9U	60	22	11	SYS					
* S4	TB6-11,12	I9L	62	24	13	SYS					
6A	TB3-5,6	J2U	40	2	6	6	Y	Y			
6B	TB3-7,8	J2L	44	6	16	6	Y	Y			
8A	TB5-9,10	J6U	42	4	8	8	Y	Y			
8B	TB5-11,12	J6L	46	8	18	8	Y	Y			10
8C	TB7-1,2	J7U	66	28	38	8	Y	Y			10
* S5	TB7-9,10	J9U	59	21	15	SYS					
PED PUSH BUTTONS											
P21,P22	TB8-4,6	I12U	67	29	PED 2	2 PED					
P41,P42,P43,P44	TB8-5,6	I12L	69	31	PED 4	4 PED					
P61,P62	TB8-7,9	I13U	68	30	PED 6	6 PED					

NOTE:
INSTALL DC ISOLATORS IN INPUT FILE SLOTS I12 AND I13.

[1] Add jumper from I1-W to J4-W, on rear of input file.

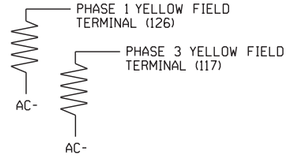
* SYSTEM DETECTOR ONLY. REMOVE THE VEHICLE PHASE ASSIGNED TO THIS DETECTOR IN THE DEFAULT PROGRAMMING.

INPUT FILE POSITION LEGEND: J2L
FILE J
SLOT 2
LOWER

LOAD RESISTOR INSTALLATION DETAIL

(install resistors as shown below)

ACCEPTABLE VALUES	
VALUE (ohms)	WATTAGE
1.5K - 1.9K	25W (min)
2.0K - 3.0K	10W (min)



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.

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 13-1288
DESIGNED: June 2022
SEALED: 10-06-22
REVISED: N/A

Electrical Detail - Sheet 1 of 2

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared in the Offices of:
NC DEPARTMENT OF TRANSPORTATION Traffic Engineering Branch Transportation Mobility and Safety Division Traffic Signal Management Section
750 N.Greenfield Pkwy.Garner,NC 27529

US 70-74A (Charlotte St)
at
I-240 On/Off Ramps/
Woodfin Place

Division 13 | Buncombe County | Asheville

PLAN DATE: October 2022 | REVIEWED BY:
PREPARED BY: James Peterson | REVIEWED BY:

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 036833 ENGINEER RYAN W. HOUGH

DocuSigned by: Ryan W. Hough 430320FAA2654C3...
10/07/2022 DATE

SIG. INVENTORY NO. 13-1288

06-OCT-2022 14:45
\\edi01\e$\Groups-TECC\TSSIU\ITS Signals\Workgroups\Sig Mgmt\Peterson\31288_sm_ele_20220629.dgn
jtpeterson

PROJECT REFERENCE NO.	SHEET NO.
HL-0012	Sig. 1.2

LOGICAL I/O PROCESSOR PROGRAMMING DETAIL
TO PRODUCE SPECIAL FYA-PPLT SIGNAL SEQUENCE

(program controller as shown below)

1. FROM MAIN MENU PRESS '2' (PHASE CONTROL), THEN '1' (PHASE CONTROL FUNCTIONS). SCROLL TO THE BOTTOM OF THE MENU AND ENABLE ACT LOGIC COMMANDS 1, 2, 3, 4, 5, 6, 7, 8, 9 AND 10.

2. FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '3' (LOGICAL I/O PROCESSOR).

```
  LOGICAL I/O COMMAND #1  (+/-COMMAND#)
IF  ACTIVE PHASE       #1  IS ON
AND RED CLEAR ON PHASE #1  IS ON

          SCROLL DOWN

 THEN:
 SET OUTPUT  ASSIGNMENT #50 ON
 SET OUTPUT  ASSIGNMENT #51 OFF
                          PRESS '+'
```

NOTE: LOGIC FOR PHASE 1 RED CLEAR WHEN TRANSITIONING FROM PHASE 1 TO PHASE 2 (HEAD 11).

```
  LOGICAL I/O COMMAND #2  (+/-COMMAND#)
IF  ACTIVE PHASE       #1  IS ON

          SCROLL DOWN

 THEN:
 SET OUTPUT  ASSIGNMENT #52 OFF
                          PRESS '+'
```

NOTE: LOGIC FOR SWITCHING FLASHING YELLOW ARROW "OFF" DURING PHASE 1 (HEAD 11).

```
  LOGICAL I/O COMMAND #3  (+/-COMMAND#)
IF  YELLOW ON PHASE    #1  IS ON

          SCROLL DOWN

 THEN:
 SET OUTPUT  ASSIGNMENT #51 ON
                          PRESS '+'
```

NOTE: LOGIC FOR YELLOW ARROW CLEARANCE FROM PHASE 1 (HEAD 11).

```
  LOGICAL I/O COMMAND #4  (+/-COMMAND#)
IF  ACTIVE PHASE       #3  IS ON
AND RED CLEAR ON PHASE #3  IS ON

          SCROLL DOWN

 THEN:
 SET OUTPUT  ASSIGNMENT #47 ON
 SET OUTPUT  ASSIGNMENT #48 OFF
                          PRESS '+'
```

NOTE: LOGIC FOR PHASE 3 RED CLEAR WHEN TRANSITIONING FROM PHASE 3 TO PHASE 4 (HEADS 31,32,33).

```
  LOGICAL I/O COMMAND #5  (+/-COMMAND#)
IF  ACTIVE PHASE       #3  IS ON

          SCROLL DOWN

 THEN:
 SET OUTPUT  ASSIGNMENT #49 OFF
                          PRESS '+'
```

NOTE: LOGIC FOR SWITCHING FLASHING YELLOW ARROW "OFF" DURING PHASE 3 (HEADS 31,32,33).

```
  LOGICAL I/O COMMAND #6  (+/-COMMAND#)
IF  YELLOW ON PHASE    #3  IS ON

          SCROLL DOWN

 THEN:
 SET OUTPUT  ASSIGNMENT #48 ON
                          PRESS '+'
```

NOTE: LOGIC FOR YELLOW ARROW CLEARANCE FROM PHASE 3 (HEADS 31,32,33).

```
  LOGICAL I/O COMMAND #7  (+/-COMMAND#)
IF  ACTIVE PHASE       #4  IS ON

          SCROLL DOWN

 THEN:
 SET INPUT  ASSIGNMENT  #20 OFF
                          PRESS '+'
```

NOTE: LOGIC FOR SERVING PHASE 4 AND NOT PHASE 3.

```
  LOGICAL I/O COMMAND #8  (+/-COMMAND#)
IF  NEXT PHASE PHASE   #4  IS ON
AND PED CALL ON PHASE  #4  IS ON

          SCROLL DOWN

 THEN:
 SET LOGIC FLAG         #1  ON
                          PRESS '+'
```

NOTE: SET LOGIC #1 ON.

```
  LOGICAL I/O COMMAND #9  (+/-COMMAND#)
IF  LOGIC FLAG         #1  IS ON

          SCROLL DOWN

 THEN:
 SET OUTPUT ASSIGNMENT  #34 ON
                          PRESS '+'
```

NOTE: IF LOGIC FLAG IS ON, TURN THE BLANKOUT SIGN ON.

```
  LOGICAL I/O COMMAND #10 (+/-COMMAND#)
IF  PED CALL ON PHASE  #4  IS OFF
AND ACTIVE PHASE       #4  IS OFF

          SCROLL DOWN

 THEN:
 SET LOGIC FLAG         #1 OFF
```

NOTE: LOGIC FOR TURNING BLANKOUT SIGN OFF AFTER PHASE 4 RED CLEAR.

LOGIC I/O PROCESSOR PROGRAMMING COMPLETE

OUTPUT REFERENCE SCHEDULE

USE TO INTERPRET LOGIC PROCESSOR

```
INPUT 20  = Detector 3
OUTOUT 34 = 6 Ped Yellow (blankout sign)
OUTPUT 47 = Overlap B Red
OUTPUT 48 = Overlap B Yellow
OUTPUT 49 = Overlap B Green
OUTPUT 50 = Overlap A Red
OUTPUT 51 = Overlap A Yellow
OUTPUT 52 = Overlap A Green
```

OVERLAP PROGRAMMING DETAIL

(program controller as shown below)

FROM MAIN MENU PRESS '8' (OVERLAPS), THEN '1' (VEHICLE OVERLAP SETTINGS).

```
 PAGE 1: VEHICLE OVERLAP 'A' SETTINGS
 PHASE:          :1234567891011121314151 6
VEH OVL PARENTS: :XX
VEH OVL NOT VEH: :
VEH OVL NOT PED: :
VEH OVL GRN EXT: :
STARTUP COLOR: _ RED  _ YELLOW  _ GREEN
FLASH COLORS:  _ RED  _ YELLOW  X GREEN
SELECT VEHICLE OVERLAP OPTIONS:   (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...Y
GREEN EXTENSION (0-255 SEC).........0
YELLOW CLEAR (0=PARENT,3-25.5 SEC)..0.0
RED CLEAR (0=PARENT,0.1-25.5 SEC)...0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....0
```

← NOTICE GREEN FLASH

PRESS '+'

```
 PAGE 1: VEHICLE OVERLAP 'B' SETTINGS
 PHASE:          :1234567891011121314151 6
VEH OVL PARENTS: :  XX
VEH OVL NOT VEH: :
VEH OVL NOT PED: :
VEH OVL GRN EXT: :
STARTUP COLOR: _ RED  _ YELLOW  _ GREEN
FLASH COLORS:  _ RED  _ YELLOW  X GREEN
SELECT VEHICLE OVERLAP OPTIONS:   (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...N
GREEN EXTENSION (0-255 SEC).........0
YELLOW CLEAR (0=PARENT,3-25.5 SEC)..0.0
RED CLEAR (0=PARENT,0.1-25.5 SEC)...0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....0
```

← NOTICE GREEN FLASH

PRESS '+'

```
 PAGE 1: VEHICLE OVERLAP 'C' SETTINGS
 PHASE:          :1234567891011121314151 6
VEH OVL PARENTS: : X
VEH OVL NOT VEH: :
VEH OVL NOT PED: :
VEH OVL GRN EXT: :
STARTUP COLOR: _ RED  _ YELLOW  _ GREEN
FLASH COLORS:  _ RED  _ YELLOW  X GREEN
SELECT VEHICLE OVERLAP OPTIONS:   (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...Y
GREEN EXTENSION (0-255 SEC).........0
YELLOW CLEAR (0=PARENT,3-25.5 SEC)..0.0
RED CLEAR (0=PARENT,0.1-25.5 SEC)...0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....0
```

← NOTICE GREEN FLASH

OVERLAP PROGRAMMING COMPLETE

PHASE SEQUENCE PROGRAMMING DETAIL

(program controller as shown below)

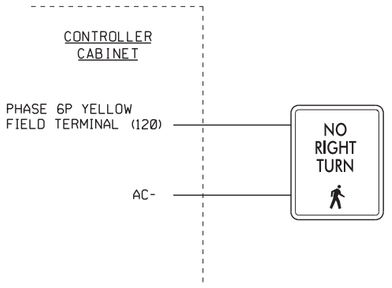
FROM OASIS LOCAL CONTROLLER MAIN MENU
SELECT: 4 PHASE SEQUENCE

PHASE SEQUENCE: PAGE 1 NEXT: PAGES) ↘

RNG	LEAD	BARRIER 1		X-LAG	LEAD	BARRIER 2		X-LAG
1	1	2	0	0	4	3	8	0
2	0	6	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0

BLANKOUT SIGN WIRING DETAIL

(wire sign as shown)



THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 13-1288
DESIGNED: June 2022
SEALED: 10-06-22
REVISED: N/A

Electrical Detail - Sheet 2 of 2

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ELECTRICAL AND PROGRAMMING DETAILS FOR:

US 70-74A (Charlotte St)
at
I-240 On/Off Ramps/
Woodfin Place

Division 13 Buncombe County Asheville

PLAN DATE: October 2022 REVIEWED BY:

PREPARED BY: James Peterson REVIEWED BY:

REVISIONS	INIT.	DATE

Prepared in the Offices of:
NC Department of Transportation Mobility and Safety Division Traffic Engineering & Signals Management Section
750 N.Greenfield Pkwy,Garner,NC 27529

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 036833 ENGINEER RYAN W. HOUGH

DocuSigned by: Ryan W. Hough E30320FAA2854C3.. 10/07/2022 DATE

SIG. INVENTORY NO. 13-1288

06-OCT-2022 14:45
w:\NCDOT\ESRGroup01\Groups-TEC*ITSASU*ITS Signals\Workgroups\Sig Mgmt\Peterson*13288_sm_ele_20220629.dgn
jtpeterson

PROJECT REFERENCE NO.	SHEET NO.
HL-0012	Sig. 2.0

3 Phase
Fully Actuated
Asheville Signal System
D13-12_Asheville

PHASING DIAGRAM

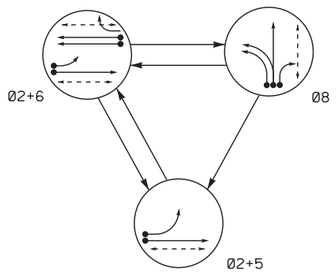
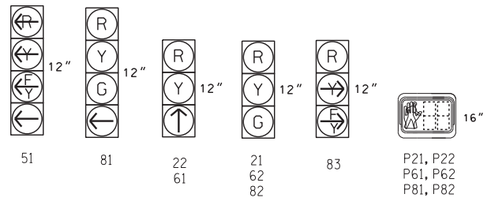


TABLE OF OPERATION

SIGNAL FACE	PHASE Ø2+5	PHASE Ø2+6	PHASE Ø8	FLASH
21	G	G	R	Y
22	↑	↑	R	Y
51	←	~~F~~	~~R~~	~~Y~~
61	R	↑	R	Y
62	R	G	R	Y
81	R	R	G	R
82	R	R	G	R
83	R	R	~~F~~	R
P21,P22	W	W	DW	DRK
P61,P62	DW	W	DW	DRK
P81,P82	DW	DW	W	DRK

SIGNAL FACE I.D.

All Heads L.E.D.



OASIS 2070 LOOP & DETECTOR INSTALLATION CHART

INDUCTIVE LOOPS					DETECTOR PROGRAMMING						
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
2A	6X70	0	*	-	2	Y	Y	-	-	-	-	-
5A	6X70	0	*	-	5	Y	Y	-	-	15	-	-
					2	Y	Y	-	-	-	-	-
6A/S1	6X6	70	3	Y	6	Y	Y	-	-	-	Y	-
6B/S2	6X6	70	3	Y	6	Y	Y	-	-	-	Y	-
8A	6X60	+3	2-4-2	-	8	Y	Y	-	-	-	-	-
8B	6X60	+3	2-4-2	-	8	Y	Y	-	-	-	-	-
8C	6X60	+3	2-4-2	-	8	Y	Y	-	-	15	-	-
S3	6X6	197	4	-	-	-	-	-	-	-	Y	-
S4	6X6	197	4	-	-	-	-	-	-	-	Y	-
S5	6X6	197	4	-	-	-	-	-	-	-	Y	-

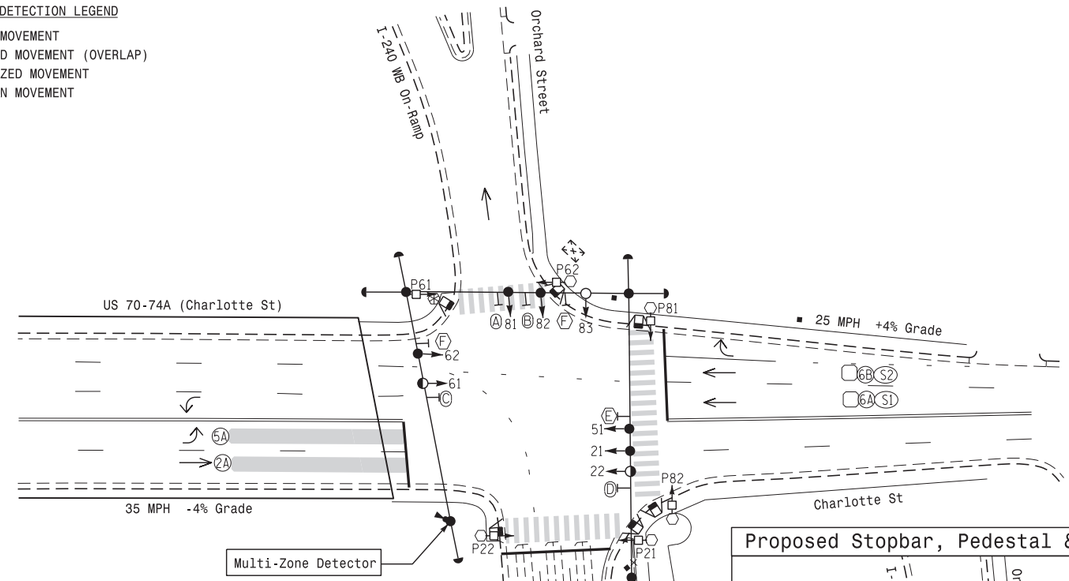
* Microwave Detection Zone

NOTES

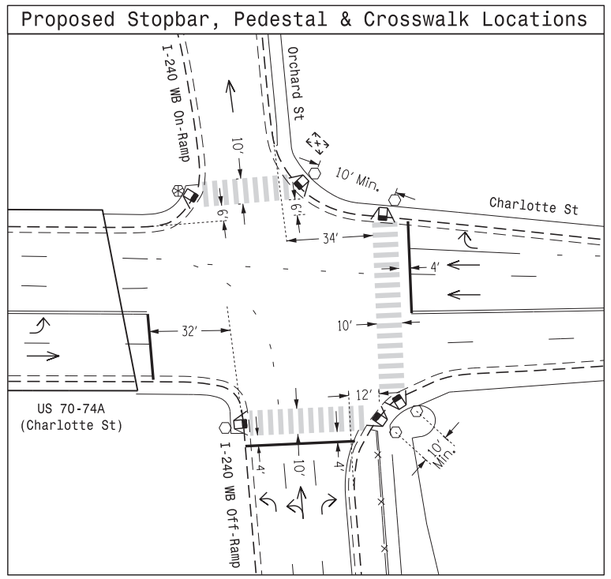
1. Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Phase 5 may be lagged.
4. Set all detector units to presence mode.
5. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
6. Program pedestrian heads to countdown the flashing "Don't Walk" time only.
7. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.

PHASING DIAGRAM DETECTION LEGEND

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



Proposed Stopbar, Pedestal & Crosswalk Locations



OASIS 2070 TIMING CHART

FEATURE	PHASE 2	PHASE 5	PHASE 6	PHASE 8
Min Green 1 *	10	7	10	7
Extension 1 *	3.0	1.0	3.0	1.0
Max Green 1 *	45	15	45	25
Yellow Clearance	4.1	3.0	4.1	3.3
Red Clearance	2.2	2.4	2.2	3.7
Red Revert	2.0	2.0	2.0	2.3
Walk 1 *	7	-	7	7
Don't Walk 1	11	-	9	18
Seconds Per Actuation *	-	-	-	-
Max Variable Initial *	-	-	-	-
Time Before Reduction *	-	-	-	-
Time To Reduce *	-	-	-	-
Minimum Gap	-	-	-	-
Recall Mode	MIN RECALL	-	MIN RECALL	-
Vehicle Call Memory	YELLOW	-	YELLOW	-
Dual Entry	-	-	-	-
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
○→	Traffic Signal Head	●→
◐→	Modified Signal Head	N/A
⊣	Sign	⊣
□↓	Pedestrian Signal Head With Push Button & Sign	■↓
⬡	Type II Signal Pedestal	⬢
⊛	Type I Pushbutton Post	⊛
○——○	Signal Pole with Guy	●——●
○⌐	Signal Pole with Sidewalk Guy	●⌐
▭	Inductive Loop Detector	▭
⊠	Controller & Cabinet	⊠
□	Junction Box	■
·-·-·	2-in Underground Conduit	·-·-·
N/A	Right of Way	———
→	Directional Arrow	→
⋈	Microwave Detector	⋈
▭	Microwave Detection Zone	▭
N/A	Curb Ramp	◢◣
N/A	Chain Link Fence	—×—
Ⓐ	Left Arrow "ONLY" Sign (R3-5L)	Ⓐ
Ⓑ	Combined Through and Left Arrow Sign (R3-6L)	Ⓑ
Ⓒ	No Left Turn Sign (R3-2)	Ⓒ
Ⓓ	No Right Turn Sign (R3-1)	Ⓓ
Ⓔ	Left "TURNING VEHICLES YIELD TO PEDESTRIANS" Sign (R10-15L)	Ⓔ
Ⓕ	Right "TURNING VEHICLES YIELD TO PEDESTRIANS" Sign (R10-15R)	Ⓕ

Signal Upgrade

Prepared in the Offices of:
Traffic Engineering Branch, Mobility and Safety Division, NCDOT, Signal Design Section
750 N.Greenfield Pkwy,Garner,NC 27529

US 70-74A (Charlotte St) at I-240 Off-Ramp

Division 13 Buncombe County Asheville

PLAN DATE: June 2022 REVIEWED BY: T.J. Williams

PREPARED BY: EM Minshew REVIEWED BY:

REVISIONS	INIT.	DATE

SCALE 0 30 1"=30'

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 024393 ENGINEER TIMOTHY J. WILLIAMS

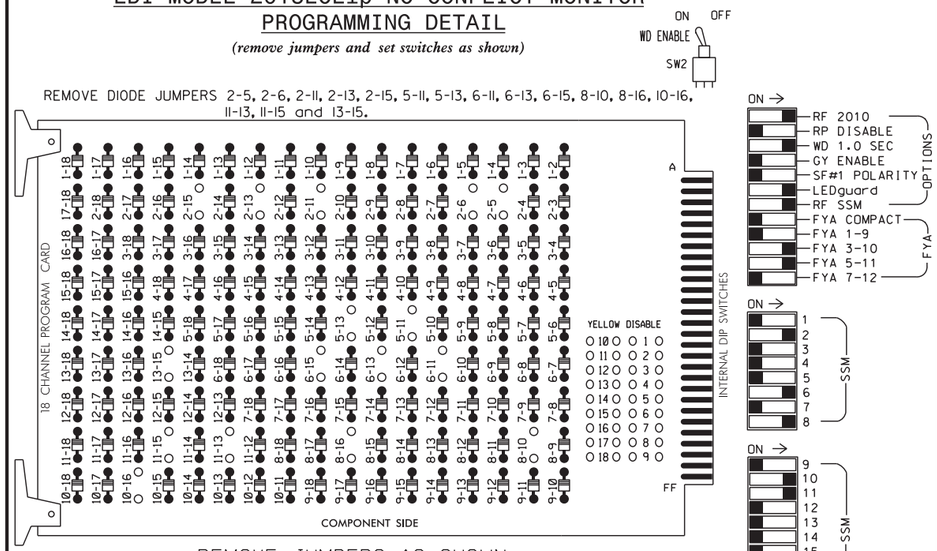
DocuSigned by: T. J. Williams 10/06/2022

SIG. INVENTORY NO. 13-0255

06-OCT-2022 12:07
SS-#TSG0041;S:\Signals\Signal Design Section\Western Region\Div-13\SW-5713 E#130255_sig_dsn_20220606.dgn
emminshew

EDI MODEL 2018ECLip-NC CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)



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 Red Enable is active at all times during normal operation.
4. Integrate monitor with Ethernet network in cabinet.

■ = DENOTES POSITION OF SWITCH

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 Plans.
2. Enable Simultaneous Gap-Out for all phases.
3. Program phases 2 and 6 for Start Up In Green.
3. Program phases 2, 6 and 8 for 'STARTUP PED CALL'.
4. Program phases 2 and 6 for Yellow Flash and overlap 2 as Wag Overlaps.
5. The cabinet and controller are part of the Asheville Signal System, D13-12_Asheville.

EQUIPMENT INFORMATION

CONTROLLER.....2070E
CABINET.....332 W/ AUX
SOFTWARE.....ECONOLITE OASIS
CABINET MOUNT.....BASE
OUTPUT FILE POSITIONS...18 WITH AUX. OUTPUT FILE
LOAD SWITCHES USED.....S2,S3,S7,S8,S9,S11,S12, AUX S2,AUX S4
PHASES USED.....2,2 PED,5,6,6 PED,8,8 PED
OVERLAP "A".....NOT USED
OVERLAP "B".....8
OVERLAP "C".....5+6
OVERLAP "D".....NOT USED

PROJECT REFERENCE NO.	SHEET NO.
HL-0012	Sig. 2.1

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	NU	NU	51★	61	62	P61, P62	NU	81	82	P81, P82	NU	83★	NU	51★	NU	NU
RED		128	128						134	134			107	107			A124				
YELLOW		129	129					✳	135	135			108	108							
GREEN		130							136				109	109							
RED ARROW																			A114		
YELLOW ARROW																	A125		A115		
FLASHING YELLOW ARROW																	A126		A116		
GREEN ARROW			130					133	136				109								
✋				113							119				110						
🚶				115							121				112						

NU = Not Used
✳ Denotes install load resistor. See load resistor installation detail this sheet.
★ See pictorial of head wiring in detail this sheet.

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.

INPUT FILE POSITION LAYOUT

(front view)

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
FILE "I"	U	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	WIRED INPUT ⊗	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SYS. DET. S3	SLOT EMPTY	SLOT EMPTY	Ø2 PED DC ISOLATOR	Ø6 PED DC ISOLATOR	FS DC ISOLATOR
	L									SYS. DET. S4			NOT USED	Ø8 PED DC ISOLATOR	ST DC ISOLATOR
FILE "J"	U	Ø5 Zone 5A	Ø2 Zone 2A	Ø6/SYS 6A/S1	SLOT EMPTY	SLOT EMPTY	Ø8 8A	Ø8 8C	SLOT EMPTY	SYS. DET. S5	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY	SLOT EMPTY
	L	NOT USED	NOT USED	Ø6/SYS 6B/S2			Ø8 8B	NOT USED		NOT USED					

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

FS = FLASH SENSE
ST = STOP TIME

⊗ Wired Input - Do not populate slot with detector card

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
ZONE 2A	★	J2U	40	2	6	2	Y	Y			
ZONE 5A[1]	★	J1U	55	17	5	5	Y	Y			15
	-	I4U	47	9	22	2	Y	Y			
6A/S1	TB3-9,10	J3U	64	26	36	6/SYS	Y	Y			
6B/S2	TB3-11,12	J3L	77	39	46	6/SYS	Y	Y			
8A	TB5-9,10	J6U	42	4	8	8	Y	Y			
8B	TB5-11,12	J6L	46	8	18	8	Y	Y			
8C	TB7-1,2	J7U	66	28	38	8	Y	Y			15
✳ S3	TB6-9,10	I9U	60	22	11	SYS					
✳ S4	TB6-11,12	I9L	62	24	13	SYS					
✳ S5	TB7-9,10	J9U	59	21	15	SYS					
PED PUSH BUTTONS											
P21,P22	TB8-4,6	I12U	67	29	PED 2	2 PED					
P61,P62	TB8-7,9	I13U	68	30	PED 6	6 PED					
P81,P82	TB8-8,9	I13L	70	32	PED 8	8 PED					

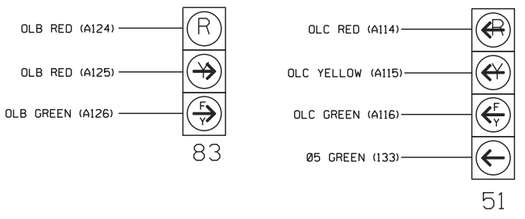
NOTE:
INSTALL DC ISOLATORS IN INPUT FILE SLOTS I12 AND I13.

[1] Add jumper from J1-W to I4-W, on rear of input file.

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

FYA SIGNAL WIRING DETAIL

(wire signal head as shown)



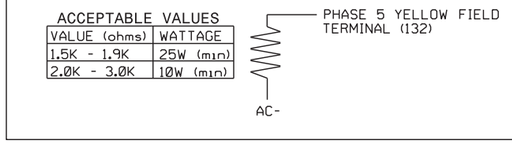
NOTE

1. The sequence display for head 51 requires special logic programming. See sheet 2 of 2 for programming instructions.

LOAD RESISTOR INSTALLATION DETAIL

(install resistor as shown below)

ACCEPTABLE VALUES	
VALUE (ohms)	WATTAGE
1.5K - 1.9K	25W (min)
2.0K - 3.0K	10W (min)



★ SPECIAL DETECTOR NOTE

For Zone 2A and Zone 5A install a multizone microwave detection system for vehicle detection. Perform installation according to manufacturer's directions and NCDOT engineer-approved mounting locations to accomplish the detection schemes shown on the Signal Design Plan.

INPUT FILE POSITION LEGEND: J2L
FILE J
SLOT 2
LOWER

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 13-0255
DESIGNED: June 2022
SEALED: 10-06-22
REVISED: N/A

Electrical Detail - Sheet 1 of 2

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ELECTRICAL AND PROGRAMMING DETAILS FOR:

US 70-74A (Charlotte St.) at I-240 Off-Ramp

Prepared in the Offices of:
Traffic Engineering Branch, Traffic Management Section, Construction, Mobility and Safety Division, NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
750 N.Greenfield Pkwy,Garner,NC 27529

Division 13 Buncombe County Asheville

PLAN DATE: October 2022 REVIEWED BY:

PREPARED BY: James Peterson REVIEWED BY:

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 036833 ENGINEER RYAN W. HOUGH

DocuSigned by: Ryan W. Hough 430020FAA2854C3...
10/07/2022 DATE

SIG. INVENTORY NO. 13-0255

06-OCT-2022 14:31
\\ncdot.ms\dfs\so\tid\Groups-IECC\ITSASU\ITS Signals\Workgroups\Sig Mgm\Peterson\130255_sm.ele.20220609.dgn
jtpeterson

PROJECT REFERENCE NO.	SHEET NO.
HL-0012	Sig. 2.2

LOGICAL I/O PROCESSOR PROGRAMMING DETAIL
TO PRODUCE SPECIAL FYA-PPLT SIGNAL SEQUENCE

(program controller as shown below)

1. FROM MAIN MENU PRESS '2' (PHASE CONTROL), THEN '1' (PHASE CONTROL FUNCTIONS). SCROLL TO THE BOTTOM OF THE MENU AND ENABLE ACT LOGIC COMMANDS 1, 2 AND 3.

2. FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '3' (LOGICAL I/O PROCESSOR).

```
  LOGICAL I/O COMMAND #1  (+/-COMMAND#)
IF  ACTIVE PHASE        #5  IS ON
AND RED CLEAR ON PHASE #5  IS ON

            SCROLL DOWN

 THEN:
 SET OUTPUT  ASSIGNMENT #42 ON
 SET OUTPUT  ASSIGNMENT #43 OFF
```

NOTE: LOGIC FOR PHASE 5 RED CLEAR WHEN TRANSITIONING FROM PHASE 5 TO PHASE 6 (HEAD 51).

PRESS '+'

```
  LOGICAL I/O COMMAND #2  (+/-COMMAND#)
IF  ACTIVE PHASE        #5  IS ON

            SCROLL DOWN

 THEN:
 SET OUTPUT  ASSIGNMENT #44 OFF
```

NOTE: LOGIC FOR SWITCHING FLASHING YELLOW ARROW "OFF" DURING PHASE 5 (HEAD 51).

PRESS '+'

```
  LOGICAL I/O COMMAND #3  (+/-COMMAND#)
IF  YELLOW ON PHASE     #5  IS ON

            SCROLL DOWN

 THEN:
 SET OUTPUT  ASSIGNMENT #43 ON
```

NOTE: LOGIC FOR YELLOW ARROW CLEARANCE FROM PHASE 5 (HEAD 51).

LOGIC I/O PROCESSOR PROGRAMMING COMPLETE

OUTPUT REFERENCE SCHEDULE

OUTPUT 42 = Overlap C Red
OUTPUT 43 = Overlap C Yellow
OUTPUT 44 = Overlap C Green

FLASHER CIRCUIT MODIFICATION DETAIL

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

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

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

OVERLAP PROGRAMMING DETAIL

(program controller as shown below)

FROM MAIN MENU PRESS '8' (OVERLAPS), THEN '1' (VEHICLE OVERLAP SETTINGS).

PRESS '+'

```
 PAGE 1: VEHICLE OVERLAP 'B' SETTINGS
 PHASE:          ¦123456789101112131415 16
VEH OVL PARENTS: ¦       X
VEH OVL NOT VEH: ¦
VEH OVL NOT PED: ¦
VEH OVL GRN EXT: ¦
STARTUP COLOR: _ RED  _ YELLOW  _ GREEN
FLASH COLORS:  _ RED  _ YELLOW  X GREEN   <- NOTICE GREEN FLASH
SELECT VEHICLE OVERLAP OPTIONS:   (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...N
GREEN EXTENSION (0-255 SEC).........0
YELLOW CLEAR (0=PARENT,3-25.5 SEC)..0.0
RED CLEAR (0=PARENT,0.1-25.5 SEC)...0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....0
```

PRESS '+'

```
 PAGE 1: VEHICLE OVERLAP 'C' SETTINGS
 PHASE:          ¦123456789101112131415 16
VEH OVL PARENTS: ¦    XX
VEH OVL NOT VEH: ¦
VEH OVL NOT PED: ¦
VEH OVL GRN EXT: ¦
STARTUP COLOR: _ RED  _ YELLOW  _ GREEN
FLASH COLORS:  _ RED  _ YELLOW  X GREEN   <- NOTICE GREEN FLASH
SELECT VEHICLE OVERLAP OPTIONS:   (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...Y
GREEN EXTENSION (0-255 SEC).........0
YELLOW CLEAR (0=PARENT,3-25.5 SEC)..0.0
RED CLEAR (0=PARENT,0.1-25.5 SEC)...0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....0
```

OVERLAP PROGRAMMING COMPLETE

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 13-0255
DESIGNED: June 2022
SEALED: 10-06-22
REVISED: N/A

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ELECTRICAL AND PROGRAMMING DETAILS FOR:

US 70-74A (Charlotte St.)
at
I-240 Off-Ramp

Division 13 | Buncombe County | Asheville

PLAN DATE: October 2022 | REVIEWED BY:

PREPARED BY: James Peterson | REVIEWED BY:

REVISIONS	INIT.	DATE

Prepared in the Offices of:
Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Signals Management Section
750 N.Greenfield Pkwy,Garner,NC 27529

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 036833 ENGINEER RYAN W. HOUGH

DocuSigned by: Ryan W. Hough 10/07/2022
43020FAA2854C3... DATE

SIG. INVENTORY NO. 13-0255

PROJECT REFERENCE NO.	SHEET NO.
HL-0012	X-A

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CROSS SECTION INDEX OF SHEETS		
	CROSS–SECTION SUMMARY	X–B
–Y–	13+00.00 TO 18+29.16	X–1 THRU X–6
–Y1–	10+00.00 TO 15+21.10	X–7 THRU X–10

5/28/99

19-SEP-2022 10:53
$\DOT\Projects\Buncombe\HL0012\Roadway\Corridor Modeling\HL0012_ddc_XSC_IA.dgn
$$$$USERNAME$$$$

PROJ. REFERENCE NO.	SHEET NO.
HL-0012	X-B

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

NOTE: EMBANKMENT COLUMN INCLUDES BACKFILL FOR UNDERCUT

CROSS-SECTION SUMMARY

Station Y	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
13+00.00	0	0
13+25.00	18	0
13+50.00	17	0
13+75.00	19	2
14+00.00	18	3
14+25.00	16	3
14+50.00	17	4
14+75.00	17	4
15+00.00	18	5
15+25.00	19	6
15+50.00	18	5
15+75.00	16	4
16+00.00	16	3
16+25.00	17	2
16+50.00	18	1
16+75.00	19	0
17+00.00	19	0
17+25.00	19	0
17+50.00	19	0
17+75.00	20	2
18+00.00	21	2
18+25.00	17	0

Station Y1	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
10+50.00	0	0
10+75.00	12	9
11+00.00	14	6
11+25.00	13	7
11+50.00	13	6
11+75.00	12	3
12+00.00	13	2

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	HL-0012	X-1

2:1

0.055 (EXIST)

0.055 (EXIST)

2168.45

13+50.00

2:1

0.046 (EXIST)

0.049 (EXIST)

6%

2167.82

13+25.00

2.3%

0.037 (EXIST)

0.043 (EXIST)

8%

2167.36

13+00.00

BEGIN TIP PROJECT HL-0012

-Y- STA. 13+00

2166.93

12+75.00

2166.75

12+50.00

-Y-

15-SEP-2022 10:46
$$$$USERNAME$$$$
S:\DOT\Projects\Buncombe\HL0012\Roadway\CorridorModeling\HL0012_ddc_xpl_YC0.dgn

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	HL-0012	X-2

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

2185 2180 2175 2170 2165

2:1

0.046 (EXIST)

0.048 (EXIST)

8%

2171.62

14+25.00

2185 2180 2175 2170 2165

2:1

0.049 (EXIST)

0.051 (EXIST)

5.3%

2170.37

14+00.00

2180 2175 2170 2165 2160

2:1

0.052 (EXIST)

0.053 (EXIST)

3.6%

2169.30

13+75.00

—Y—

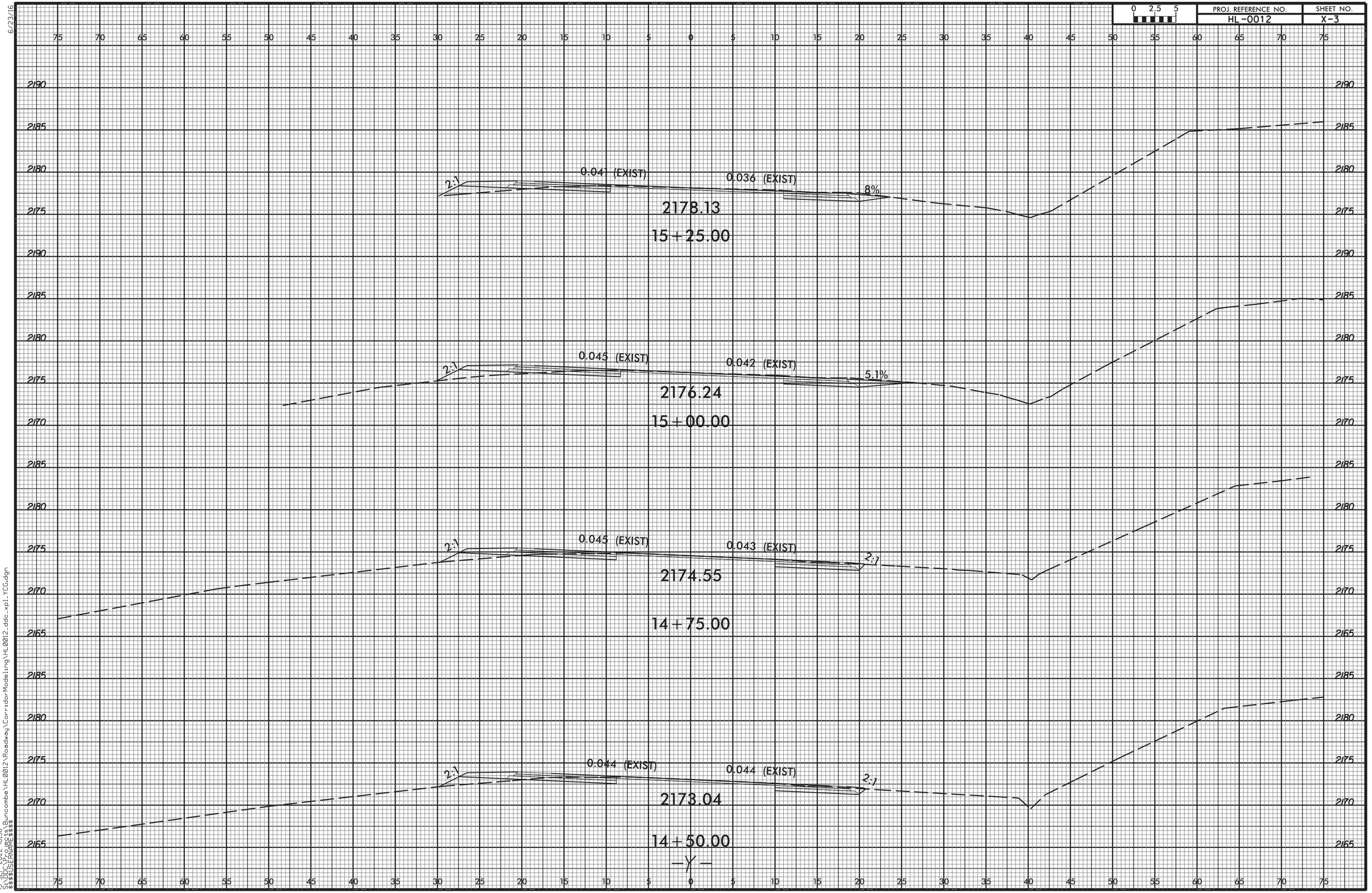
2180 2175 2170 2165 2160

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

15-SEP-2022 10:57
$$$$USERNAME$$$$
S:\DOT\Projects\Buncombe\HL0012\Roadway\CorridorModeling\HL0012_ddc_xpl_YCO.dgn

6/23/16

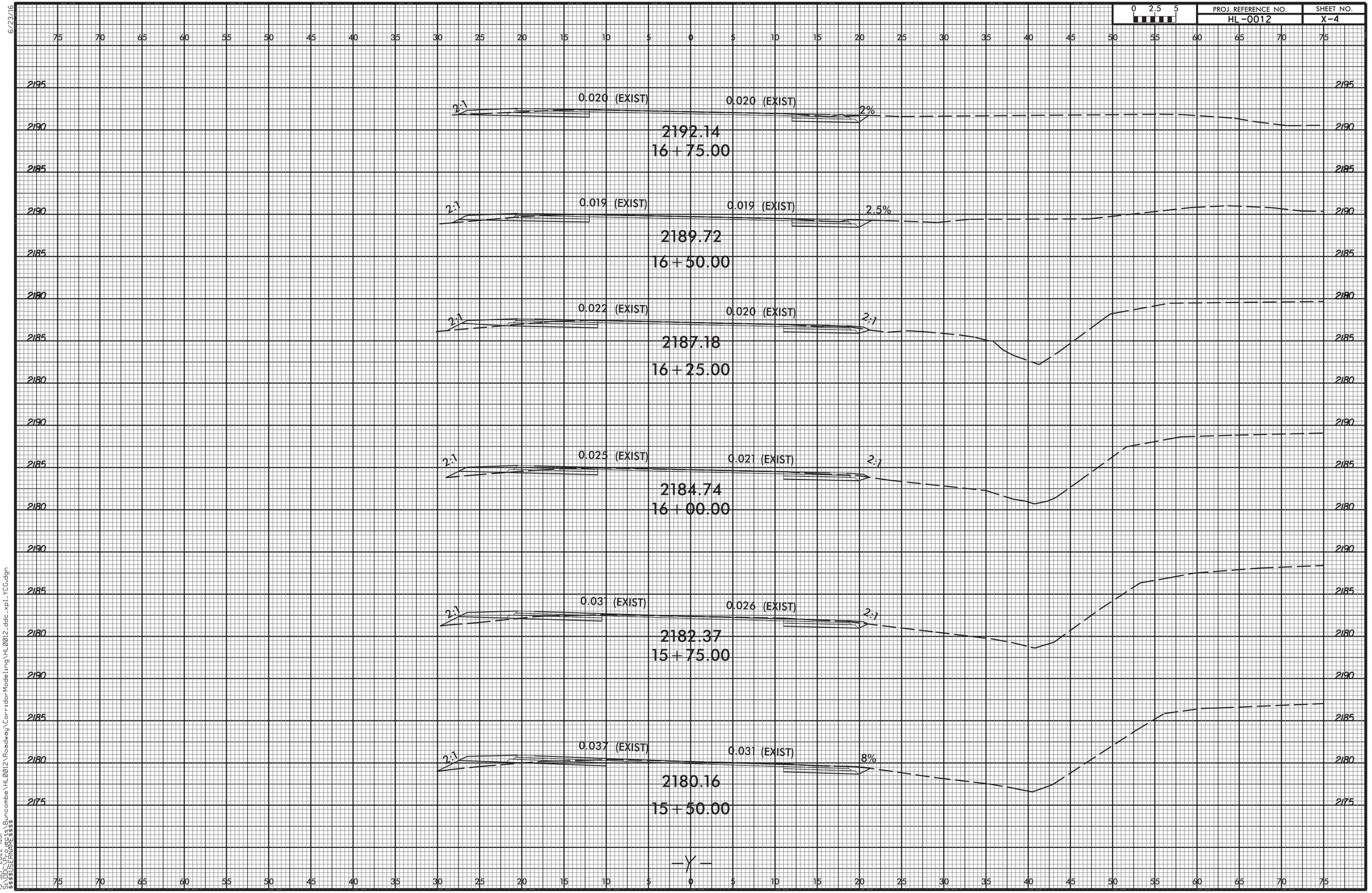
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	HL-0012	X-3



15-SEP-2022 10:58
$$$$USERNAME$$$$
S:\DOT\Projects\Buncombe\HL0012\Roadway\CorridorModeling\HL0012_ddc_xpl_YC0.dgn

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	HL-0012	X-4



15-SEP-2022 11:01
S:\DOT\Projects\Buncombe\HL0012\Roadway\CorridorModeling\HL0012_ddc_xpl_YC0.dgn
$$$$USERNAME$$$$

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	HL-0012	X-5

END CONSTRUCTION
-Y- STA. 18+29.16

2197.76

0.012 (EXIST) 0.008 (EXIST)

4:1

2198.02
18+25.00

2197.57 2197.38

0.001 (EXIST) 0.011 (EXIST)

4:1 4:1

2197.66
18+00.00

2197.54 2197.12

0.009 (EXIST) 0.014 (EXIST)

2:1 2:1

2197.49
17+75.00

0.60% 0.018 (EXIST) 0.018 (EXIST) 2:1

2196.90
17+50.00

4% 0.019 (EXIST) 0.019 (EXIST) 2:1

2195.79
17+25.00

3.94% 0.021 (EXIST) 0.021 (EXIST) 2:1

2194.19
17+00.00

-Y-

15-SEP-2022 11:02
$$$$USERNAME$$$$
S:\DOT\Projects\Buncombe\HL0012\Roadway\CorridorModeling\HL0012_ddc_xpl_YC0.dgn

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	HL-0012	X-6

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

2205
2200
2195
2190

2198.76
18+50.00

—Y—

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

2205
2200
2195
2190

15-SEP-2022 11:07
S:\DOC\Projects\Buncombe\HL0012\Roadway\CorridorModeling\HL0012_ddc_xpl_YCG.dgn
$$$$USERNAME$$$$

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	HL-0012	X-7

EXIST. CONC. WALL

2%

0.048

0.020

4%

2%

2203.67

11+00.00

EXIST. CONC. WALL

2%

2201.10

0.057

0.020

2202.03

2%

4:1

2202.48

10+75.00

TIE SLOPE TO EXIST CONC SIDEWALK

2198.46

0.049

0.017

2200.43

2%

4:1

2201.00

10+50.00

BEGIN CONSTRUCTION

-Y1- STA. 10+41.88

2199.21

10+00.00

-Y1-

15-SEP-2022 13:23
S:\DOT\Projects\Buncombe\HL0012\Roadway\CorridorModeling\HL0012_ddc_xpl_Y1.dgn
$$$$USERNAME$$$$

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	HL-0012	X-8

END TIP PROJECT HL-0012
-Y1- STA. 12+28.16

0.039 (EXIST) 0.020 0.026

2209.46
12+25.00

EXIST. CONC. WALL

2% 0.038 (EXIST) 0.018 0.028 (EXIST)

2208.29
12+00.00

EXIST. CONC. WALL

2% 0.037 (EXIST) 0.020 0.028

2207.09
11+75.00

0.040 (EXIST) 0.005 2% EXIST. CONC. WALL

2205.94
11+50.00

EXIST. CONC. WALL

2% 0.041 0.004 2204.60 2%

2204.79
11+25.00
-Y1-

15-SEP-2022 13:24
S:\DOT\Projects\Buncombe\HL0012\Roadway\CorridorModeling\HL0012_ddc_xpl_Y1.dgn
$$$$USERNAME$$$$

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	HL-0012	X-9

2220 75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 2220

2215 2215

2220 2220

2215 (EXIST) (EXIST) 2215

2218.64
14+50.00

2210 2220

2215 (EXIST) (EXIST) 2215

2217.66
14+25.00

2210 2210

2215 (EXIST) (EXIST) 2215

2216.58
14+00.00

2210 2210

2215 (EXIST) (EXIST) 2215

2216.14
13+75.00

2210 2210

2215 (EXIST) (EXIST) 2215

2215.03
13+50.00

2210 2210

2215 (EXIST) (EXIST) 2215

2213.94
13+25.00

2210 2210

2215 (EXIST) (EXIST) 2215

2212.82
13+00.00

2210 2210

2215 (EXIST) (EXIST) 2215

2211.70
12+75.00

2210 2210

2215 (EXIST) (EXIST) 2215

2210.60
12+50.00

2210 2210

2205 2205

-Y/-

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

15-SEP-2022 13:25
$$$$DOC_PROJECTS$$$$\Buncombe\HL0012\Roadway\CorridorModeling\HL0012_ddc_xpl_Y1.dgn
$$$$USERNAME$$$$

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	HL-0012	X-10

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

END CONSTRUCTION
-Y1- STA. 15+21.10

2225
2220
2215

(EXIST) (EXIST)

2219.57
14+75.00

-Y1-

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

15-SEP-2022 13:26
S:\DOC\Projects\Buncombe\HL0012\Roadway\CorridorModeling\HL0012_ddc_xpl_Y1.dgn
$$$$USERNAME$$$$