STATE	STATE PROJECT REFERENCE NO.	SHEET NO.
N.C.		ITS-1

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

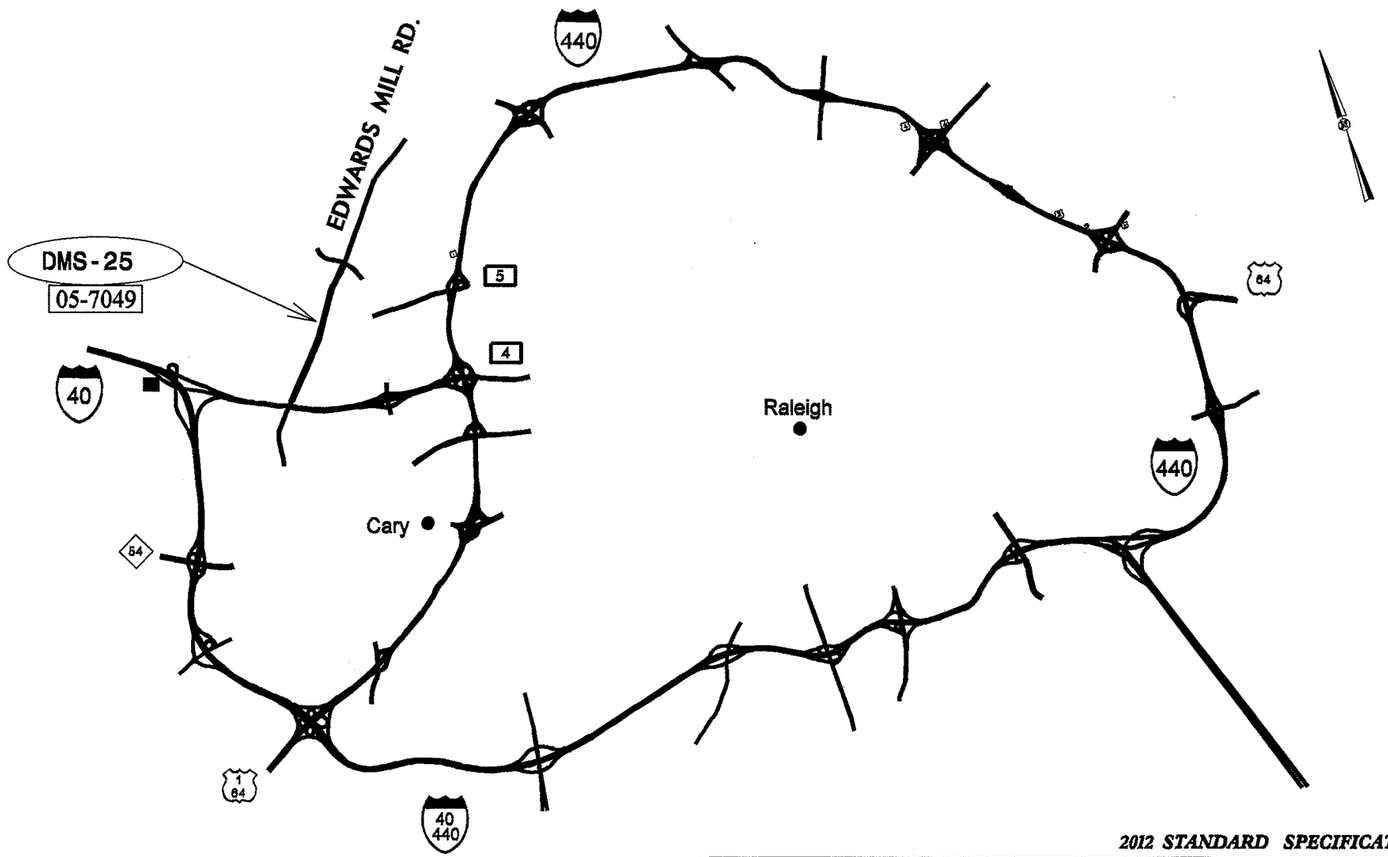
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

WAKE COUNTY

PLANS FOR PROPOSED

DYNAMIC MESSAGE SIGN INSTALLATION

THIS PROJECT CONSISTS OF INSTALLING ONE (1) DEPARTMENT FURNISHED DYNAMIC MESSAGE SIGN IN WAKE COUNTY, NORTH CAROLINA. RELATED MATERIALS CONSIST OF PEDESTAL STRUCTURE, WALKWAY, LADDER, AND ELECTRICAL SERVICE EQUIPMENT.



2012 STANDARD SPECIFICATION

NCDOT CONTACT:
TRANSPORTATION MOBILITY AND SAFETY

G.A. FULLER, P.E
STATE ITS & SIGNALS ENGINEER

Prepared in the Offices of:
Transportation Mobility and Safety Division
North Carolina Department of Transportation
750 N. Greenfield Pkwy., Garner, NC 27529

ENGLISH

ALL DIMENSIONS IN THESE PLANS ARE IN FEET UNLESS OTHERWISE NOTED

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023919 ENGINEER GREGORY A. FULLER
Gregory A. Fuller 6/5/12
SIGNATURE DATE

PROJECT: 34601.3.19

PROJECT REFERENCE NO.	SHEET NO.
34601.3.19	ITS-2

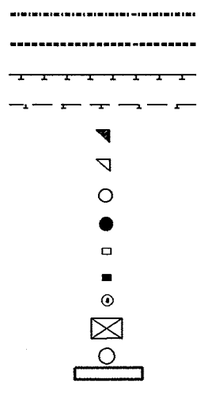
INDEX OF SHEETS

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS". ROADWAY DESIGN UNIT – N.C. DEPARTMENT OF TRANSPORTATION – RALEIGH, N.C., DATED JULY 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1700.01	ELECTRICAL SERVICE OPTIONS
1700.02	ELECTRICAL SERVICE GROUNDING
1715.01	UNDERGROUND CONDUIT
1716.01	JUNCTION BOXES
1720.01	WOOD POLES

LEGEND



NEW CONDUIT
EXISTING CONDUIT
NEW GUARDRAIL
EXISTING GUARDRAIL
EXISTING ELECTRICAL SERVICE
NEW ELECTRICAL SERVICE
NEW WOOD POLE
EXISTING WOOD POLE
NEW JUNCTION BOX
EXISTING JUNCTION BOX
NEW SPLICE ENCLOSURE
NEW EQUIPMENT CABINET
NEW SHOULDER MOUNT DMS PEDESTAL STRUCTURE

Prepared in the Office of:
NCDOT Traffic Engineering Branch
750 N. Greenfield Pkwy., Garner, NC 27529

DMS REPLACEMENT
INDEX OF SHEETS, ROADWAY STANDARD DRAWINGS, AND LEGEND

DIVISION 05 WAKE CO.

PLAN DATE:	JUNE 2012	REVIEWED BY:	YOW/ASLANI
PREPARED BY:	GREEN	REVIEWED BY:	PARKER

REVISIONS	INIT.	DATE

SCALE 0 N/A

CADD Filename:

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023919 ENGINEER GREGORY A. FULLER

Gregory A. Fuller 6/5/12
SIGNATURE DATE

PROJECT REFERENCE NO.	SHEET NO.
34601.3.19	ITS-3

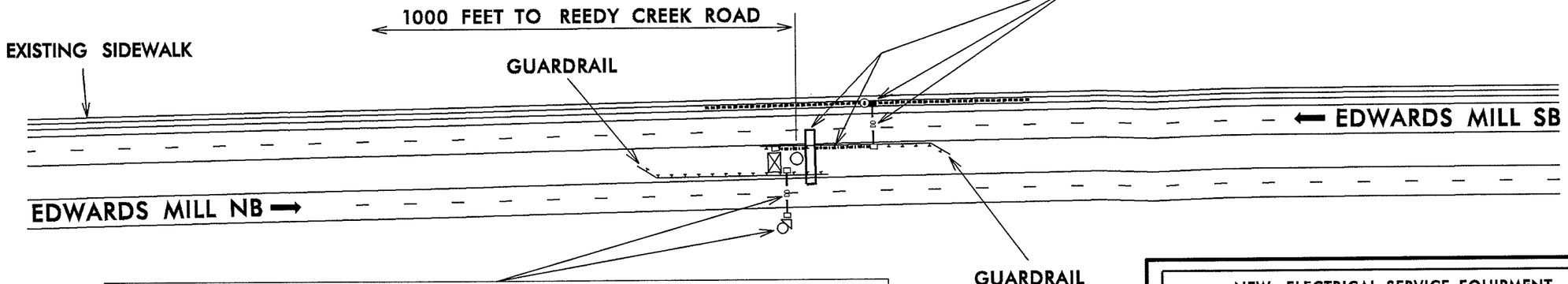
NEW DMS-25 (05-7049) GPS COORDINATES

35° 49.045 N
78° 42.785 W

** NOTIFY THE REGIONAL ITS ENGINEER AT (919) 233-9331 A MINIMUM OF 7 DAYS BEFORE PERFORMING ANY WORK AT THE DMS LOCATION.

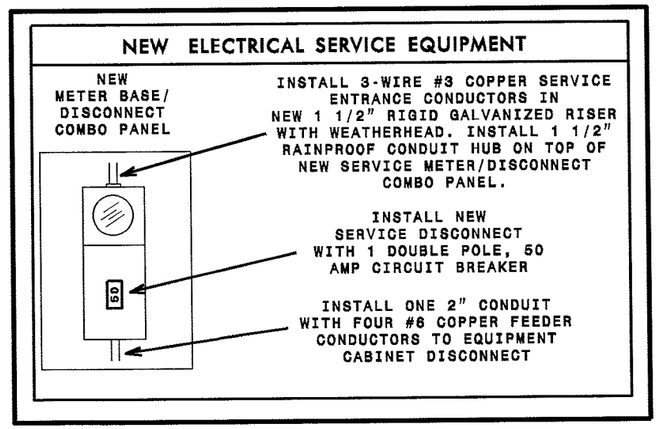
INSTALL THE FOLLOWING

QUANTITY	DESCRIPTION
1	DEPARTMENT FURNISHED DMS AND EQUIPMENT CABINET
1	DMS-25 STRUCTURE
1	FOUNDATION
1	LADDER
1	WALKWAY
1	EQUIPMENT CABINET DISCONNECT (ON STRUCTURE)
80'	UNPAVED TRENCHING (2)(2")
40'	DIRECTIONAL DRILL (2)(2")
240'	12-FIBER DROP CABLE
120'	TRACER WIRE
2	OVERSIZED JUNCTION BOX
1	SPLICE ENCLOSURE
1	5/8" x 10' COPPER GROUNDING ELECTRODE
10'	#4 AWG SOLID BARE COPPER GROUNDING CONDUCTOR



INSTALL THE FOLLOWING

QUANTITY	DESCRIPTION
1	40' WOOD POLE
1	METER BASE/DISCONNECT COMBINATION PANEL
20'	1 1/2" RISER WITH WEATHERHEAD
25'	3-WIRE COPPER SERVICE ENTRANCE CONDUCTORS
65'	DIRECTIONAL DRILL (1)(2")
2	STANDARD SIZE JUNCTION BOX
75'	4-WIRE COPPER FEEDER CONDUCTORS
3	5/8" x 10' COPPER CLAD GROUNDING ELECTRODE
30'	#4 AWG SOLID BARE COPPER GROUNDING CONDUCTOR



NOTES

1. INSTALL DEPARTMENT FURNISHED DMS ON NEW DMS STRUCTURE.
2. INSTALL NEW WALKWAY AND LADDER ON NEW DMS STRUCTURE.
3. INSTALL DEPARTMENT FURNISHED CABINET WITH EXISTING EQUIPMENT ON NEW STRUCTURE.
4. USE SEPERATE CONDUITS AND JUNCTION BOXES FOR POWER AND FIBER.
5. INSTALL NEW SPLICE ENCLOSURE IN EXISTING OVERSIZED JUNCTION BOX AND ROUTE NEW 12-FIBER DROP CABLE THROUGH NEW CONDUIT TO CABINET. SPLICE DROP CABLE INTO FIBER TRUNK AS SHOWN ON ITS-5.
6. STORE 30' OF 12-FIBER DROP CABLE IN EACH JUNCTION BOX AND IN THE EQUIPMENT CABINET.
7. INSTALL NEW GROUNDING SYSTEM AS SHOWN ON SHEET ITS-6 AND AS DESCRIBED IN THE PROJECT SPECIAL PROVISIONS.

EDWARDS MILL RD.
NORTH OF REEDY CREEK RD.

Prepared in the Offices of:
North Carolina Department of Transportation
Traffic Engineering Branch
750 N. Greenfield Pkwy., Garner, NC 27529

DMS REPLACEMENT

DIVISION 05 | WAKE CO. | RALEIGH

PLAN DATE:	JUNE 2012	REVIEWED BY:	YOW/ASLAMI
PREPARED BY:	GREEN	REVIEWED BY:	PARKER

REVISIONS	INIT.	DATE

SCALE: 0 N/A

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023919 ENGINEER GREGORY A. FULLER

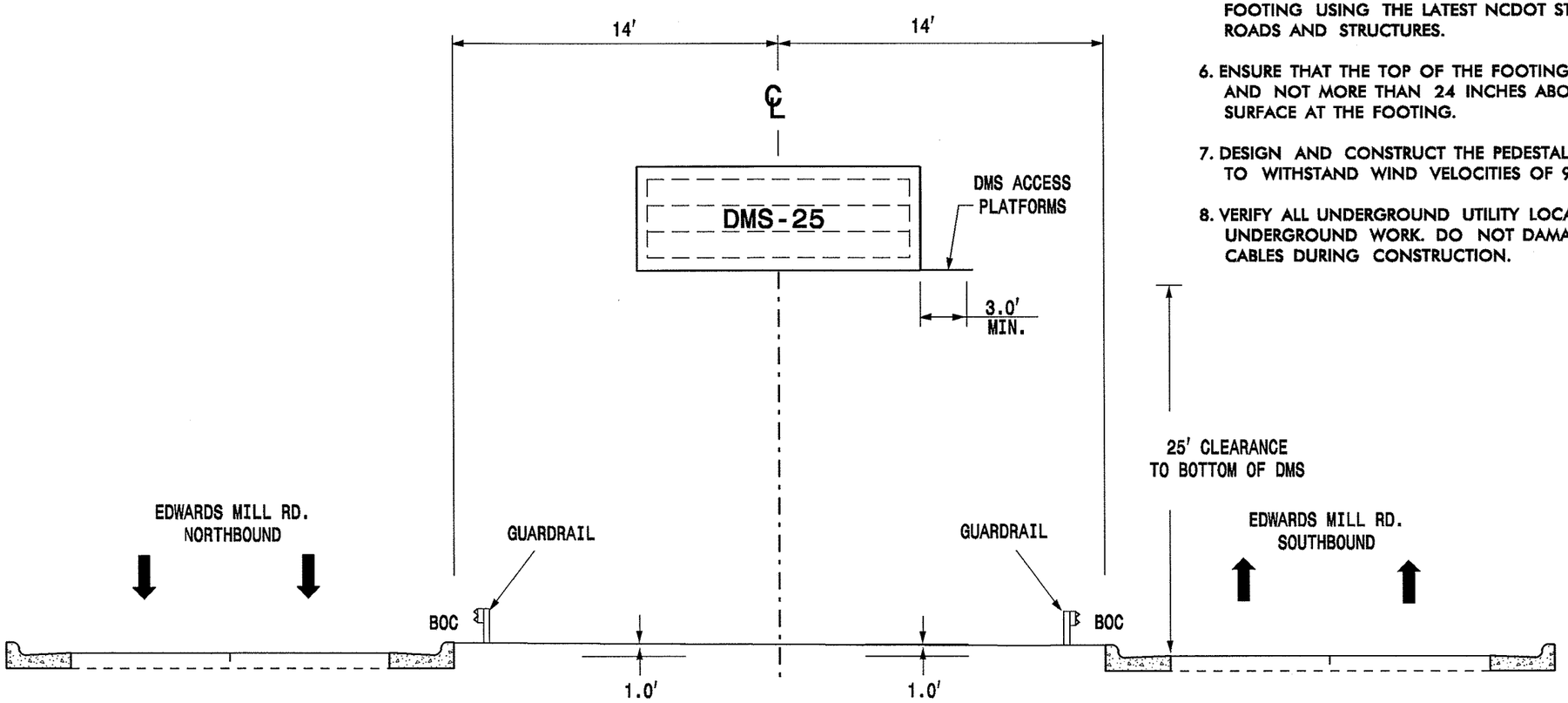
SIGNATURE: Gregory A. Fuller DATE: 6/5/12

CADD Filename:

PROJECT REFERENCE NO.	SHEET NO.
34801.3.10	ITS-4

ESTIMATED DIMENSION : 27′ X 10′

MAXIMUM DEADLOAD OF 5200 LBS



NOTES

1. PROVIDE A FIXED LADDER LEADING TO THE ACCESS PLATFORM.
2. EQUIP THE LADDER WITH A SECURITY COVER (LADDER GUARD). START THE FIRST LADDER RUNG NO MORE THAN 18 INCHES ABOVE FINISHED GROUND. DESIGN RUNGS ON 12 INCH CENTER-TO-CENTER TYPICAL SPACING.
3. ATTACH THE BOTTOM OF THE LADDER TO A CONCRETE PAD A MINIMUM OF 4 INCHES DEEP, 24 INCHES WIDE, AND 36 INCHES LONG.
4. USE ACTUAL DIMENSIONS AND WEIGHT OF THE DMS TO COMPLETE THE DESIGN OF THE DMS STRUCTURE.
5. FIELD VERIFY ALL FOOTING ELEVATIONS AND GROUND SLOPES AT THE FOOTING USING THE LATEST NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.
6. ENSURE THAT THE TOP OF THE FOOTING EXTENDS AT LEAST 6 INCHES AND NOT MORE THAN 24 INCHES ABOVE THE HIGHEST POINT OF THE GROUND SURFACE AT THE FOOTING.
7. DESIGN AND CONSTRUCT THE PEDESTAL STRUCTURE AND DMS ENCLOSURE TO WITHSTAND WIND VELOCITIES OF 90 MPH.
8. VERIFY ALL UNDERGROUND UTILITY LOCATIONS BEFORE BEGINNING ANY UNDERGROUND WORK. DO NOT DAMAGE ANY EXISTING UTILITIES OR NCDOT CABLES DURING CONSTRUCTION.

Prepared in the Office of:
North Carolina Department of Transportation
750 N. Greenfield Pkwy., Garner, NC 27529

DMS REPLACEMENT

DIVISION 05 WAKE CO. RALEIGH

PLAN DATE:	JUNE 2012	REVIEWED BY:	YON/ASLAMI
PREPARED BY:	GREEN	REVIEWED BY:	PARKER

REVISIONS	INIT.	DATE

SCALE 0 N/A

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023919 ENGINEER GREGORY A. FULLER

SIGNATURE Gregory A. Fuller DATE 6/5/12

CADD Filename:

PROJECT REFERENCE NO.	SHEET NO.
34601.3.19	ITS-5

NEW SPLICE ENCLOSURE ON EDWARDS MILL RD. NORTH OF REEDY CREEK RD.

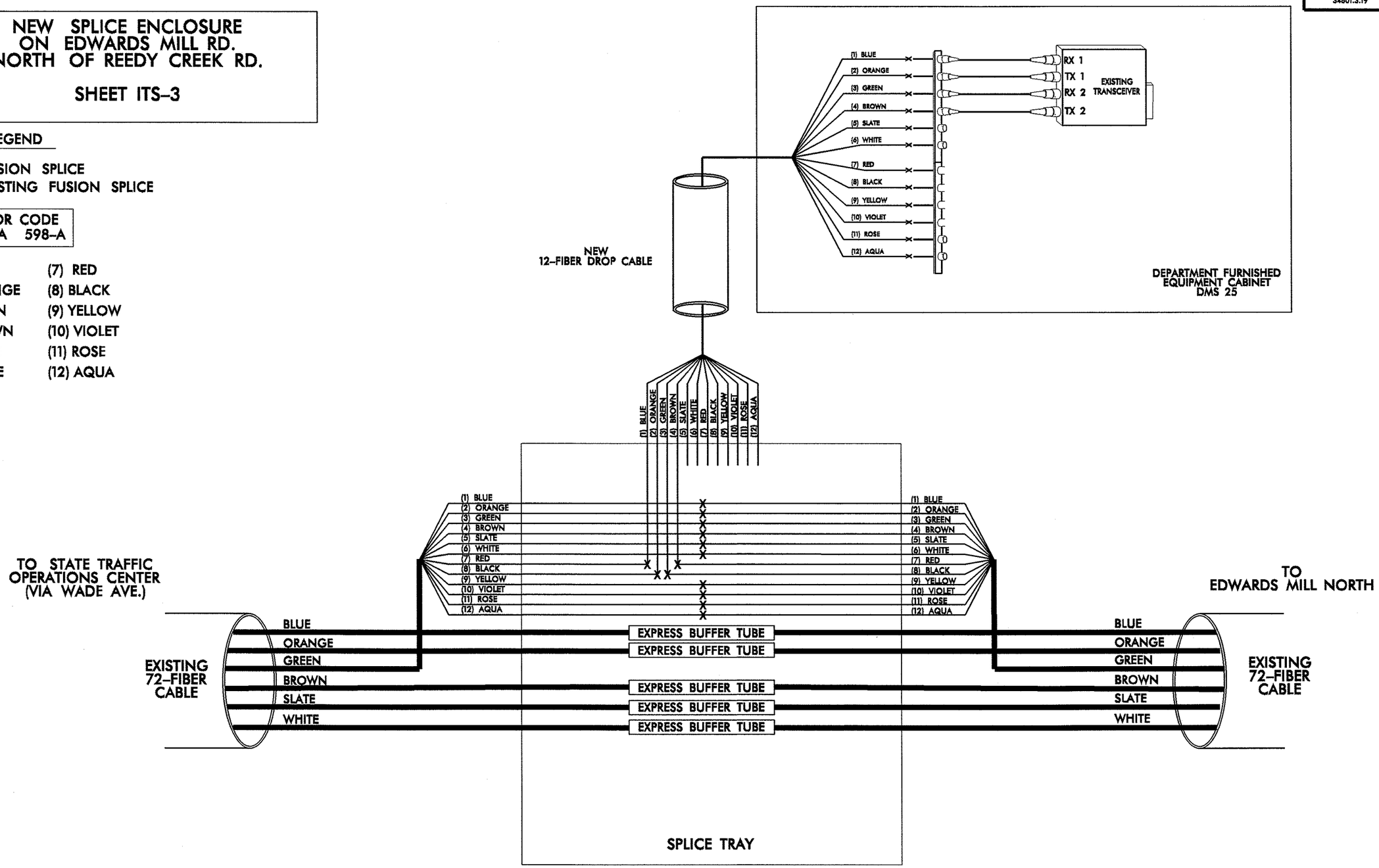
SHEET ITS-3

LEGEND

X = FUSION SPLICE
E = EXISTING FUSION SPLICE

COLOR CODE
TIA/EIA 598-A

(1) BLUE	(7) RED
(2) ORANGE	(8) BLACK
(3) GREEN	(9) YELLOW
(4) BROWN	(10) VIOLET
(5) SLATE	(11) ROSE
(6) WHITE	(12) AQUA



NOTES:
1. COIL AND STORE ALL UNUSED FIBERS IN SPLICE TRAY. CAP UNUSED BUFFER TUBES.
2. TRANSCEIVER TERMINATION CONFIGURATIONS ARE GENERIC. CONTRACTOR IS RESPONSIBLE FOR DETERMINING/ENSURING PROPER TERMINATION.

Prepared in the Office of:
NCDOT Traffic Engineering Branch
750 N. Greenfield Pkwy., Garner, NC 27529

SPLICE DETAILS

DIVISION 05 WAKE CO. RALEIGH
PLAN DATE: JUNE 2012 REVIEWED BY: YOW/ASLAMI
PREPARED BY: GREEN REVIEWED BY: PARKER

REVISIONS	INIT.	DATE

SCALE: 0 N/A

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023919 ENGINEER GREGORY A. FULLER

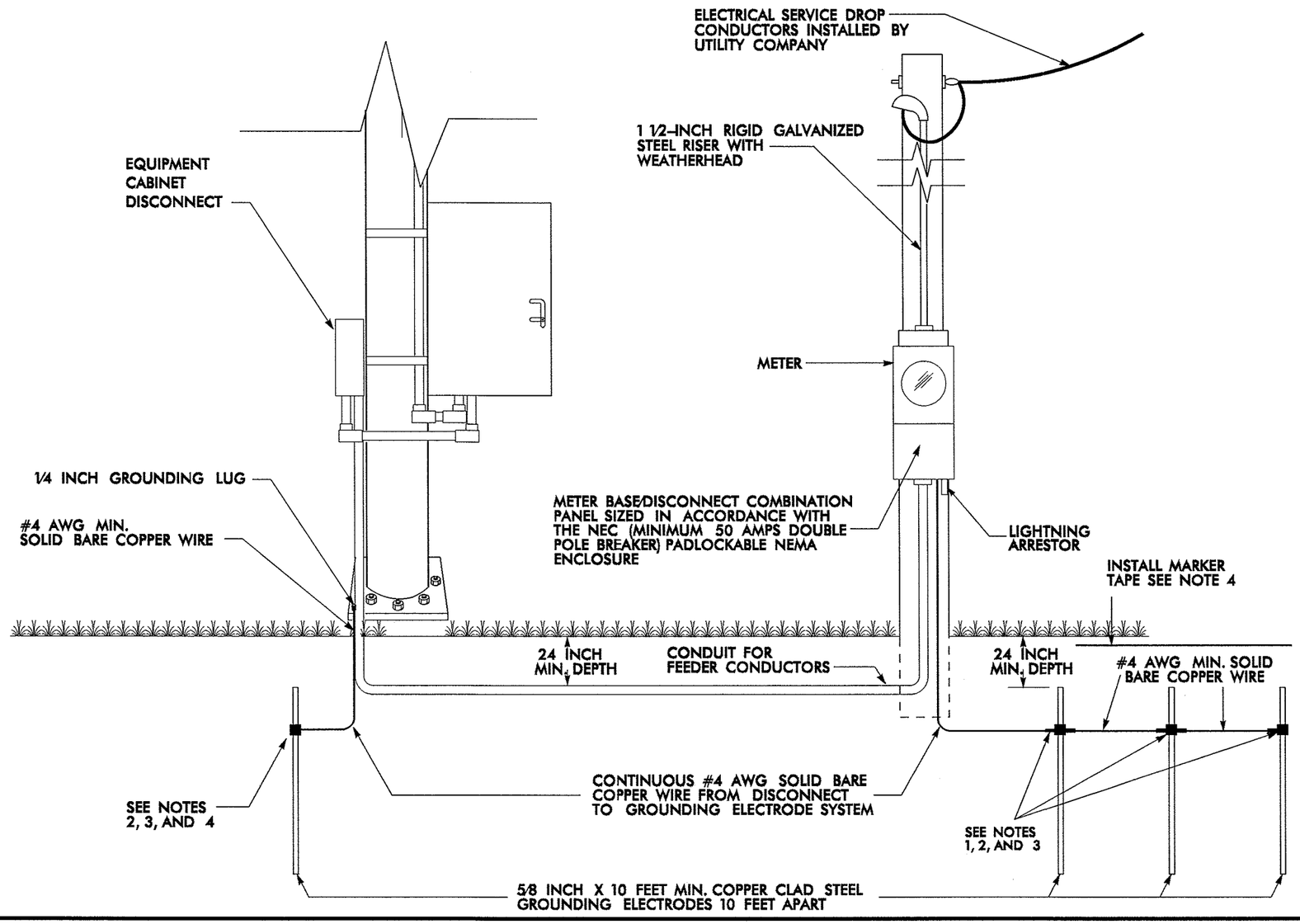
Gregory A. Fuller 6/5/12
SIGNATURE DATE

CADD Filename:

PROJECT REFERENCE NO.	SHEET NO.
34601.3.19	IT8-6

NOTES

1. INSTALL A MINIMUM OF THREE (3) GROUNDING ELECTRODES SPACED A MINIMUM OF TEN (10) FEET APART.
2. TEST GROUNDING SYSTEM USING AN APPROVED METHOD. THE GROUNDING SYSTEM SHOULD MEASURE TWENTY (20) OHMS OR LESS. ADDITIONAL GROUND RODS SHALL BE INSTALLED AS DIRECTED BY THE ENGINEER TO MEET THIS REQUIREMENT.
3. EXOTHERMICALLY WELD ALL CONNECTIONS TO GROUND RODS.
4. INSTALL MARKER TAPE DIRECTLY ABOVE ALL GROUNDING ELECTRODES AND CONDUCTORS AT A DEPTH OF TWELVE (12) INCHES.
5. EXOTHERMICALLY WELD THE SERVICE POLE GROUND WIRE TO THE GROUND ROD SYSTEM.
6. REMOVE BONDING JUMPER IN THE EQUIPMENT CABINET IF INSTALLED BETWEEN AC NEUTRAL AND EQUIPMENT GROUND.
7. BOND ALL RIGID GALVANIZED STEEL CONDUITS ENTERING THE CABINET TO THE "EQUIPMENT GROUND".
8. INSTALL RIGID GALVANIZED STEEL CONDUIT BETWEEN THE EQUIPMENT CABINET DISCONNECT AND THE POLE MOUNTED DMS CONTROLLER CABINET.
9. ENSURE EQUIPMENT GROUND IS ELECTRICALLY BONDED TO THE DMS CONTROLLER CABINET.



DYNAMIC MESSAGE SIGN
NEW AERIAL ELECTRICAL SERVICE AND GROUNDING DETAIL

PLAN DATE:	JUNE 2012	REVIEWED BY:	YOW/ASLAMI
PREPARED BY:	GREEN	REVIEWED BY:	PARKER

REVISIONS	INIT.	DATE

Prepared in the Office of
NCDOT
750 N. Greenfield Pkwy., Garner, NC 27529

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023919 ENGINEER GREGORY A. FULLER

SCALE 0 N/A

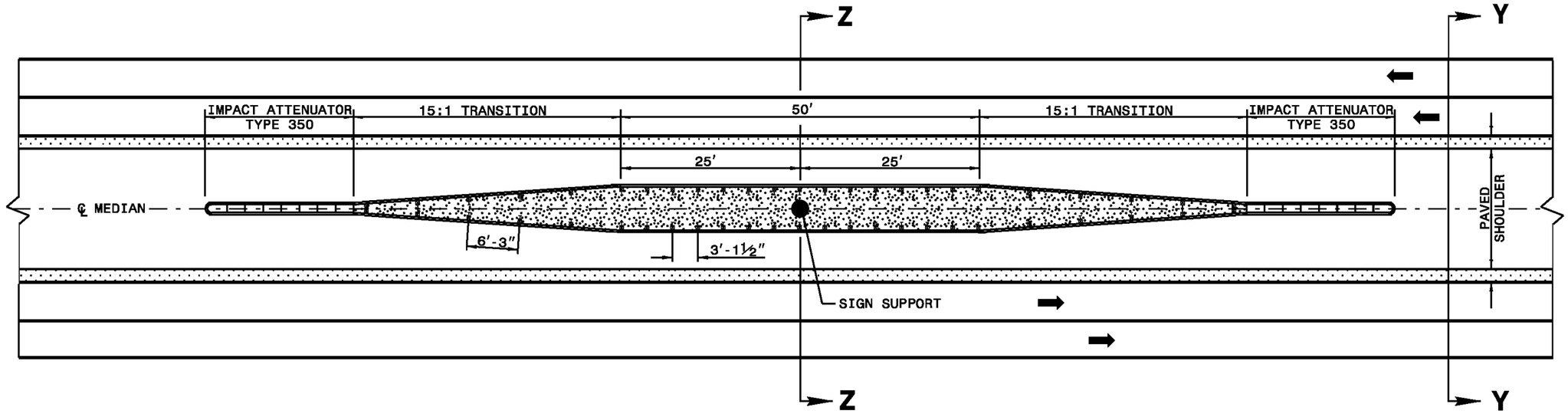
Gregory A. Fuller 6/5/12
SIGNATURE DATE

CADD Filename:

STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

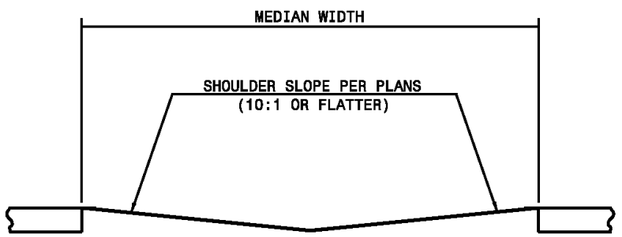
1-12

ENGLISH STANDARD DRAWING FOR
GUARDRAIL PLACEMENT

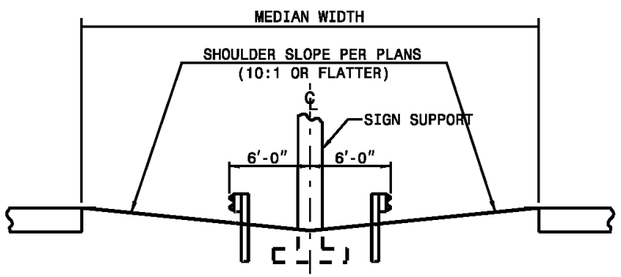


NOTE SPECIAL LAYER OF PAVEMENT ..... NOT INCLUDED IN THIS CONTRACT

USE 3'-1½" POST SPACING ON THE 50' OF GUARDRAIL PARALLEL TO LANES AND 6'-3" POST SPACING ON 15:1 TRANSITION SECTIONS.
GRADE MEDIAN IN THE VICINITY OF THE SIGN SUPPORT AS ILLUSTRATED IN THE ROADWAY STANDARD DRAWINGS (STARDARD 862.01 SHEET 1 OF 11).



SECT. YY



SECT. ZZ

DETAIL OF GUARDRAIL AT MEDIAN SIGN SUPPORT

STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-12

ENGLISH STANDARD DRAWING FOR
GUARDRAIL PLACEMENT

SHEET 2 OF 12
862.01