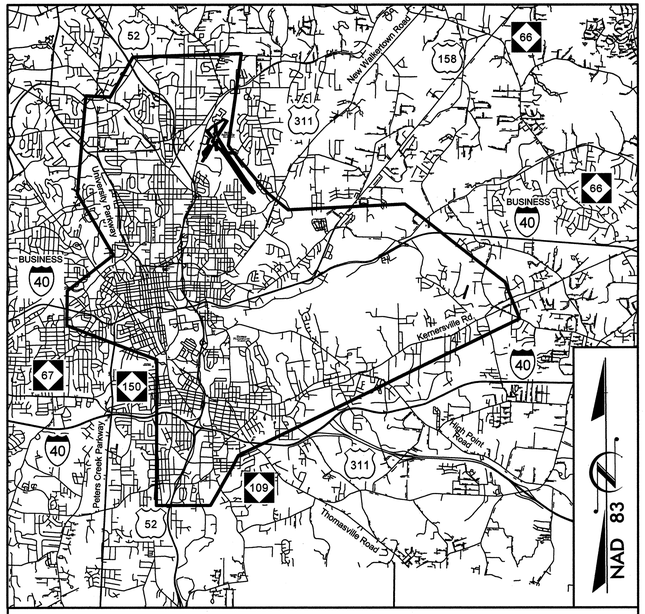
TIP PROJECT: C-5224A

CONTRACT: C203153



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	C-5224A	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
45437.1.1		PE
45437.3.1	CMS-0918(89)	CONST

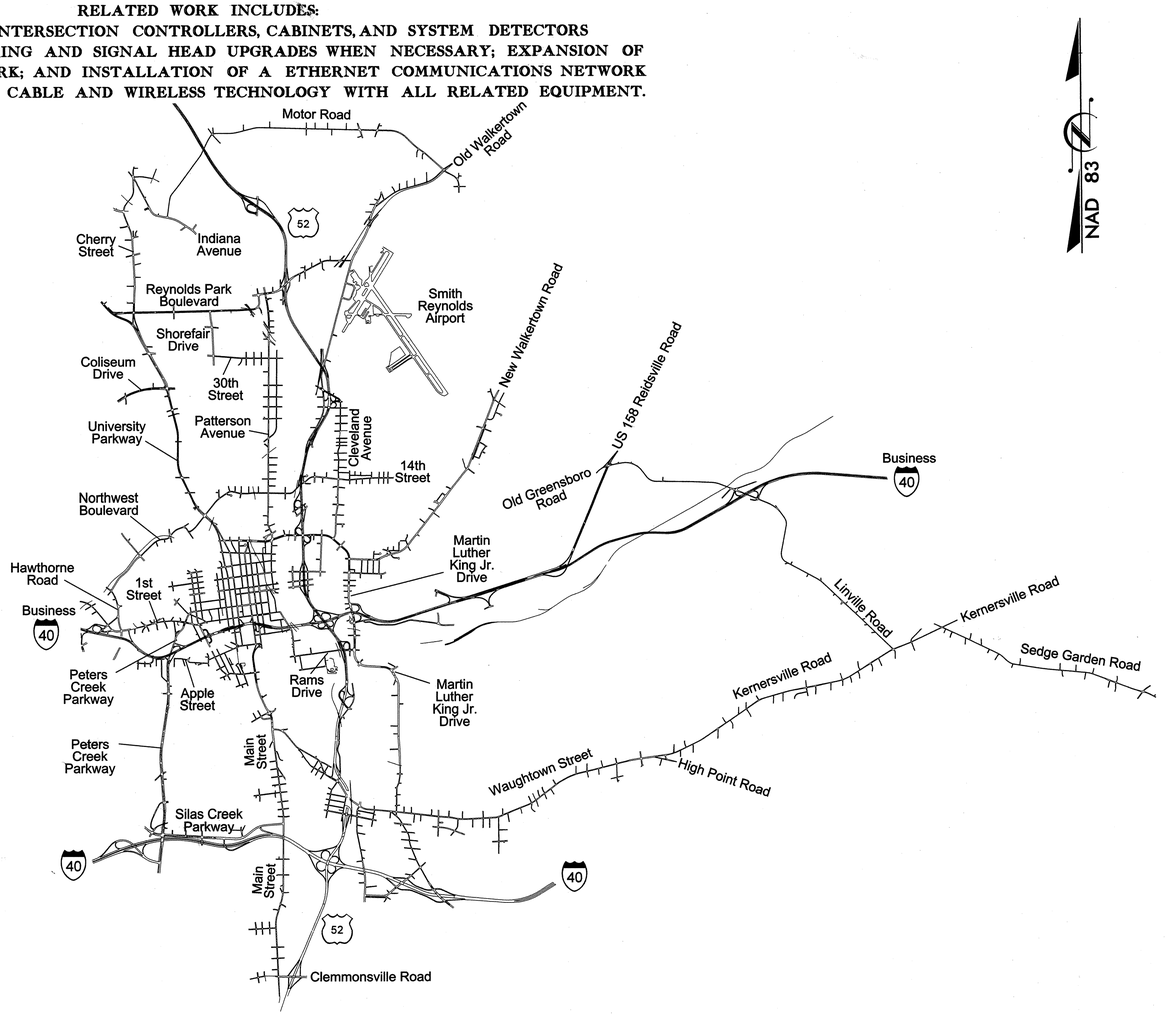
PLANS FOR PROPOSED IMPROVEMENTS

CITY OF WINSTON-SALEM

COMPUTERIZED TRAFFIC SIGNAL SYSTEM

PHASE A: EASTERN SECTION & DOWNTOWN

REPLACEMENT & EXPANSION OF THE COMPUTERIZED TRAFFIC SIGNAL SYSTEM. RELATED WORK INCLUDES: UPGRADING LOCAL INTERSECTION CONTROLLERS, CABINETS, AND SYSTEM DETECTORS WITH LIMITED SIGNAL WIRING AND SIGNAL HEAD UPGRADES WHEN NECESSARY; EXPANSION OF CCTV MONITORING NETWORK; AND INSTALLATION OF A ETHERNET COMMUNICATIONS NETWORK COMPRISED OF FIBER-OPTIC CABLE AND WIRELESS TECHNOLOGY WITH ALL RELATED EQUIPMENT.



Phase A

Volume I of III
Communications & CCTV Field Infrastructure, Building Modifications and Special Details

2012 STANDARD SPECIFICATIONS

LETTING DATE: MAY 21, 2013

PROJECT LENGTH = 45 MILES

750 Greenfield Parkway, Garner, NC 27529

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Winston-Salem

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

Lisa M. Moon 1-11-13
SIGNATURE *DATE*

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	2

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ROADWAY STANDARD DRAWINGS

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

STD. NO.	TITLE
848.01	CONCRETE SIDEWALK
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUM
1135.01	CONES
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1150.01	FLAGGING DEVICES
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1180.01	SKINNY DRUM
1205.01	PAVEMENT MARKINGS – LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS – DIVIDED AND UNDIVIDED ROADWAYS
1205.04	PAVEMENT MARKINGS – INTERSECTIONS
1205.05	PAVEMENT MARKINGS – TURN LANES
1205.07	PAVEMENT MARKINGS – PEDESTRIAN CROSSWALKS
1205.08	PAVEMENT MARKINGS – SYMBOLS AND WORD MESSAGES
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1705.01	SIGNAL HEADS – VEHICULAR SIGNAL HEADS
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1705.03	SIGNAL HEADS – WIRE COLOR CONVENTIONS
1715.01	UNDERGROUND CONDUIT – TRENCHING
1716.01	JUNCTION BOXES
1720.01	WOOD POLES
1721.01	GUY ASSEMBLIES
1725.01	INDUCTIVE DETECTION LOOPS
1730.01	FIBER-OPTIC CABLE – SPARE CABLE STORAGE
1736.01	SPREAD SPECTRUM RADIO
1743.01	PEDESTAL
1751.01	CONTROLLERS AND CABINETS – CABINET COMPONENT LAYOUT
1751.02	CONTROLLERS AND CABINETS – POWER, GROUND AND AUXILIARY

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Prepared for the Offices of:
Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Integrated Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Index of Sheets and Roadway Standard Drawings
Phase A

Division 09	Forsyth County	Winston-Salem	
PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	JAW/BKS	REVIEWED BY:	LW Moon

SCALE: NTS

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

Lisa M. Moon 1-11-13
SIGNATURE DATE

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PROJECT REFERENCE NO.	SHEET NO.
C-5224A	3 (42)

SUMMARY OF QUANTITIES

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C203153

ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION
2591000000-E	848	1,874	SY	4" CONCRETE SIDEWALK
2738100000-E	SP	50	SF	GENERIC PAVING ITEM BRICK PAVERS
4400000000-E	1110	72	SF	WORK ZONE SIGNS (STATIONARY)
4405000000-E	1110	840	SF	WORK ZONE SIGNS (PORTABLE)
4415000000-N	1115	3	EA	FLASHING ARROW BOARD
4420000000-N	1120	3	EA	PORTABLE CHANGEABLE MESSAGE SIGN
4430000000-N	1130	150	EA	DRUMS
4435000000-N	1135	150	EA	CONES
4445000000-E	1145	50	LF	BARRICADES (TYPE III)
4450000000-N	1150	400	HR	FLAGGER
4480000000-N	1165	3	EA	TMA
4510000000-N	SP	450	HR	LAW ENFORCEMENT
4516000000-N	1180	100	EA	SKINNY DRUM
7000000000-E	1705	4	EA	PEDESTRIAN SIGNAL HEAD (**", ** SECTION) (16", 1 SECTION W/ COUNTDOWN)
7060000000-E	1705	15,740	LF	SIGNAL CABLE
7132000000-E	1705	1	EA	VEHICLE SIGNAL HEAD (12", 4 SECTION)
7144000000-E	1705	4	EA	VEHICLE SIGNAL HEAD (12", 5 SECTION)
7252000000-E	1710	46,270	LF	MESSENGER CABLE (1/4")
7264000000-E	1710	140	LF	MESSENGER CABLE (3/8")
7279000000-E	1715	40,050	LF	TRACER WIRE
7301000000-E	1715	150	LF	DIRECTIONAL DRILL (**********) (1, 2")
7301000000-E	1715	1,180	LF	DIRECTIONAL DRILL (**********) (1, 4")
7301000000-E	1715	20,500	LF	DIRECTIONAL DRILL (**********) (2, 2")
7312000000-N	1716	102	EA	JUNCTION BOX (**********) (OVER-SIZED)
7312000000-N	1716	19	EA	JUNCTION BOX (**********) (SPECIAL-SIZE)
7324000000-N	1716	6	EA	JUNCTION BOX (STANDARD SIZE)
7360000000-N	1720	3	EA	WOOD POLE
7372000000-N	1721	209	EA	GUY ASSEMBLY
7384000000-E	1722	25	EA	**** RISER WITH ********** (1", HEAT SHRINK TUBING)
7396000000-E	1722	1	EA	1/2" RISER WITH WEATHERHEAD
7408000000-E	1722	151	EA	1" RISER WITH WEATHERHEAD
7420000000-E	1722	142	EA	2" RISER WITH WEATHERHEAD
7432000000-E	1722	156	EA	2" RISER WITH HEAT SHRINK TUBING
7444000000-E	1725	460	LF	INDUCTIVE LOOP SAWCUT
7516000000-E	1730	113,120	LF	COMMUNICATIONS CABLE (**FIBER) (24)
7516000000-E	1730	92,390	LF	COMMUNICATIONS CABLE (**FIBER) (36)
7516000000-E	1730	50,783	LF	COMMUNICATIONS CABLE (**FIBER) (48)
7516000000-E	1730	8,780	LF	COMMUNICATIONS CABLE (**FIBER) (72)
7528000000-E	1730	47,030	LF	DROP CABLE
7540000000-N	1731	143	EA	SPLICE ENCLOSURE
7552000000-N	1731	163	EA	INTERCONNECT CENTER
7566000000-N	1733	68	EA	DELINEATOR MARKER
7575142200-N	SP	148	EA	NEW ELECTRICAL SERVICE
7575160000-E	1734	42,425	LF	REMOVE EXISTING COMMUNICATIONS CABLE
7575180000-N	1735	30	EA	CABLE TRANSFER
7636000000-N	1745	24	EA	SIGN FOR SIGNALS
7642200000-N	1743	2	EA	TYPE II PEDESTAL WITH FOUNDATION
7684000000-N	1750	50	EA	SIGNAL CABINET FOUNDATION
7686000000-N	1752	66	EA	CONDUIT ENTRANCE INTO EXISTING FOUNDATION
7687000000-N	1752	67	EA	MODIFY FOUNDATION FOR CONTROLLER CABINET
7696000000-N	1751	126	EA	CONTROLLER WITH CABINET (**********) (2070L, 332, BASE MOUNTED)
7696000000-N	1751	25	EA	CONTROLLER WITH CABINET (**********) (2070L, 336A, POLE MOUNTED)
7696000000-N	1751	7	EA	CONTROLLER WITH CABINET (**********) (2070L, 336S, BASE MOUNTED)
7696000000-N	1751	44	EA	CONTROLLER WITH CABINET (**********) (2070L, 336S, POLE MOUNTED)
7708000000-N	1751	603	EA	DETECTOR CARD (**********) (MODEL 222)
7901000000-N	1753	129	EA	CABINET BASE EXTENDER
7901010000-N	1753	2	EA	CABINET BASE ADAPTER
7980000000-N	SP	2	EA	GENERIC SIGNAL ITEM 4" PVC RISER SEAL
7980000000-N	SP	43	EA	GENERIC SIGNAL ITEM 4.9 GHZ ETHERNET BRIDGE
7980000000-N	SP	454	EA	GENERIC SIGNAL ITEM 5/8" x 10' GROUNDING ELECTRODE
7980000000-N	SP	5	EA	GENERIC SIGNAL ITEM 900MHZ ETHERNET RADIO
7980000000-N	SP	66	EA	GENERIC SIGNAL ITEM AUXILIARY OUTPUT FILE
7980000000-N	SP	2	EA	GENERIC SIGNAL ITEM CCTV CABINET
7980000000-N	SP	2	EA	GENERIC SIGNAL ITEM CCTV CAMERA ASSEMBLY
7980000000-N	SP	1	EA	GENERIC SIGNAL ITEM CCTV TEST CABINET
7980000000-N	SP	2	EA	GENERIC SIGNAL ITEM CCTV WOOD POLE
7980000000-N	SP	4	EA	GENERIC SIGNAL ITEM COMPUTER WORKSTATION
7980000000-N	SP	39	EA	GENERIC SIGNAL ITEM CUT & CAP EXISTING COMMUNICATIONS CABLE
7980000000-N	SP	2	EA	GENERIC SIGNAL ITEM DIGITAL HARDWARE VIDEO ENCODER
7980000000-N	SP	1	EA	GENERIC SIGNAL ITEM EQUIPMENT CABINET DISCONNECT
7980000000-N	SP	203	EA	GENERIC SIGNAL ITEM ETHERNET EDGE SWITCH
7980000000-N	SP	1	EA	GENERIC SIGNAL ITEM FIREWALL
7980000000-N	SP	10	EA	GENERIC SIGNAL ITEM FURNISH 2018 ENHANCED CONFLICT MONITOR
7980000000-N	SP	10	EA	GENERIC SIGNAL ITEM FURNISH 2070L CONTROLLER
7980000000-N	SP	6	EA	GENERIC SIGNAL ITEM FURNISH 332 CABINET
7980000000-N	SP	1	EA	GENERIC SIGNAL ITEM FURNISH 336A CABINET
7980000000-N	SP	3	EA	GENERIC SIGNAL ITEM FURNISH 336S CABINET
7980000000-N	SP	3	EA	GENERIC SIGNAL ITEM FURNISH 4.9GHZ ETHERNET BRIDGE
7980000000-N	SP	1	EA	GENERIC SIGNAL ITEM FURNISH 900MHZ ETHERNET RADIO
7980000000-N	SP	1	EA	GENERIC SIGNAL ITEM FURNISH CONFLICT MONITOR TESTER
7980000000-N	SP	10	EA	GENERIC SIGNAL ITEM FURNISH DETECTOR CARD (MODEL 222)
7980000000-N	SP	2	EA	GENERIC SIGNAL ITEM FURNISH DIGITAL HARDWARE VIDEO ENCODER
7980000000-N	SP	11	EA	GENERIC SIGNAL ITEM FURNISH ETHERNET EDGE SWITCH
7980000000-N	SP	1	EA	GENERIC SIGNAL ITEM FURNISH ETHERNET RADIO LIGHTNING ARRESTOR
7980000000-N	SP	1	EA	GENERIC SIGNAL ITEM FURNISH FIBER-OPTIC POWER METER
7980000000-N	SP	1	EA	GENERIC SIGNAL ITEM FURNISH FIBER-OPTIC RESTORATION KIT
7980000000-N	SP	1	EA	GENERIC SIGNAL ITEM FURNISH OPTICAL LIGHT GENERATOR

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Prepared for the Offices of:
Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Summary of Quantities
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	REVIEWED BY:
PREPARED BY:	REVIEWED BY:

REVISIONS	INIT.	DATE

NTS

SEAL

SIGNATURE DATE

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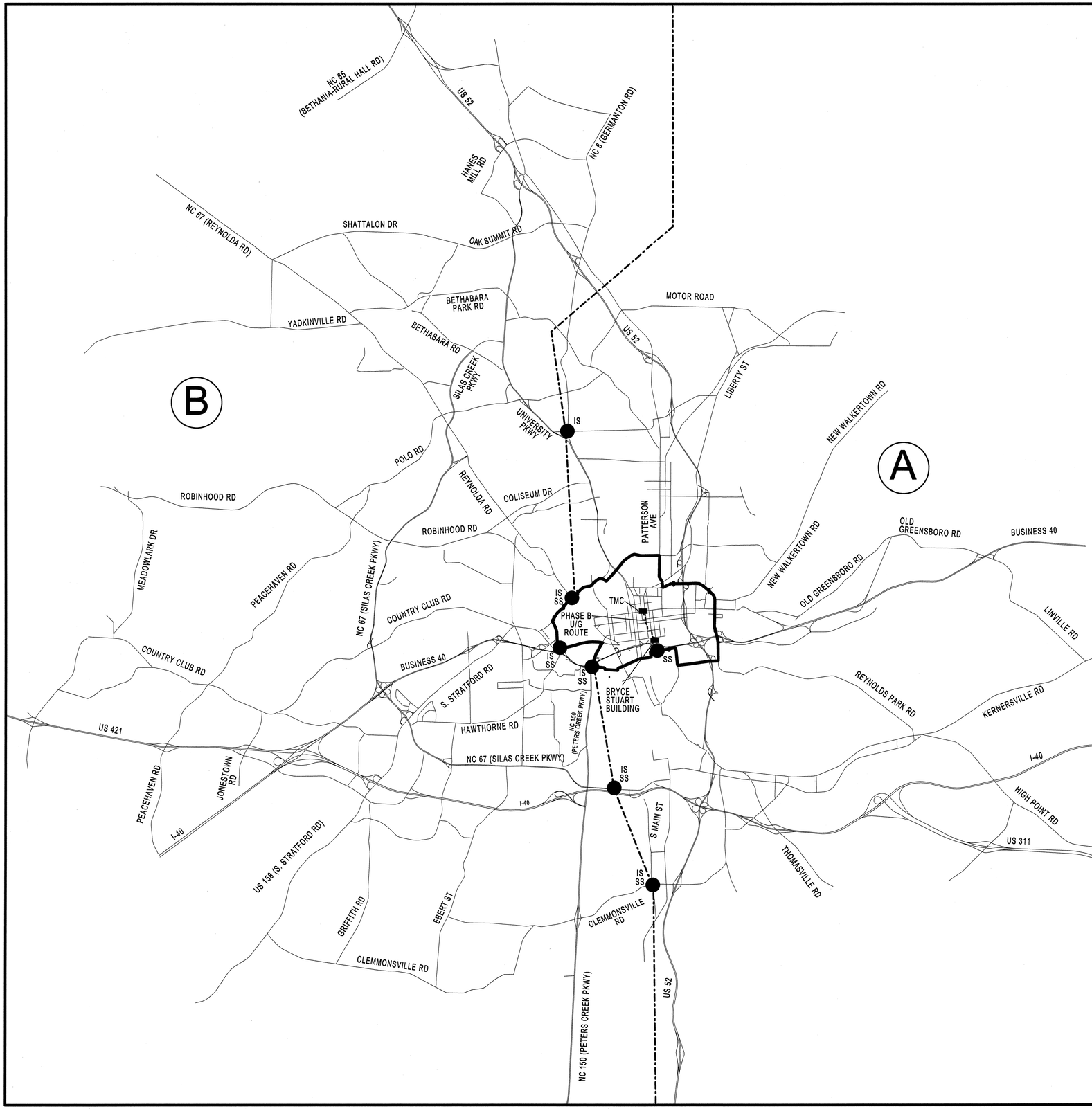
PROJECT REFERENCE No.	SHEET No.
C-5224A	3 (2 of 2)

STATE OF NORTH CAROLINA
SUMMARY OF QUANTITIES

ItemNumber	Sec #	Quantity	Unit	Description
7980000000-N	SP	1	EA	GENERIC SIGNAL ITEM FURNISH SMFO CONTACT MAPPING RECEIVER
7980000000-N	SP	1	EA	GENERIC SIGNAL ITEM FURNISH SMFO CONTACT MAPPING TRANSMITTER
7980000000-N	SP	1	EA	GENERIC SIGNAL ITEM FURNISH SPARE CABLE & CONNECT-ORS KIT
7980000000-N	SP	1	EA	GENERIC SIGNAL ITEM FURNISH VIDEO MONITOR
7980000000-N	SP	1	EA	GENERIC SIGNAL ITEM FURNISH VISUAL FAULT LOCATOR
7980000000-N	SP	16	EA	GENERIC SIGNAL ITEM GUY ASSEMBLY (AERIAL)
7980000000-N	SP	30	EA	GENERIC SIGNAL ITEM GUY ASSEMBLY (SIDEWALK)
7980000000-N	SP	32	EA	GENERIC SIGNAL ITEM HEAT SHRINK TUBING RETROFIT KIT
7980000000-N	SP	4	EA	GENERIC SIGNAL ITEM HUB CABINET
7980000000-N	SP	4	EA	GENERIC SIGNAL ITEM HUB CABINET FOUNDATION
7980000000-N	SP	1	EA	GENERIC SIGNAL ITEM HUB SPLICE CENTER (36-FIBER)
7980000000-N	SP	7	EA	GENERIC SIGNAL ITEM HUB SPLICE CENTER (48-FIBER)
7980000000-N	SP	1	EA	GENERIC SIGNAL ITEM HUB SPLICE CENTER (72-FIBER)
7980000000-N	SP	7	EA	GENERIC SIGNAL ITEM IS 2" RISER WITH HEAT SHRINK TUBING
7980000000-N	SP	2	EA	GENERIC SIGNAL ITEM IS HUB CABINET
7980000000-N	SP	2	EA	GENERIC SIGNAL ITEM IS HUB CABINET FOUNDATION
7980000000-N	SP	4	EA	GENERIC SIGNAL ITEM IS HUB SPLICE CENTER (144-FIBER)
7980000000-N	SP	2	EA	GENERIC SIGNAL ITEM IS HUB SPLICE CENTER (24-FIBER)
7980000000-N	SP	1	EA	GENERIC SIGNAL ITEM IS HUB SPLICE CENTER (96-FIBER)
7980000000-N	SP	1	EA	GENERIC SIGNAL ITEM IS JUNCTION BOX (OVER-SIZED)
7980000000-N	SP	10	EA	GENERIC SIGNAL ITEM IS JUNCTION BOX(SPECIAL-SIZED)
7980000000-N	SP	37	EA	GENERIC SIGNAL ITEM IS SPLICE ENCLOSURE
7980000000-N	SP	4	EA	GENERIC SIGNAL ITEM ITS SERVER
7980000000-N	SP	1	EA	GENERIC SIGNAL ITEM KVM SWITCH
7980000000-N	SP	1	EA	GENERIC SIGNAL ITEM LAPTOP COMPUTER
7980000000-N	SP	1	EA	GENERIC SIGNAL ITEM MANAGED ETHERNET CORE SWITCH
7980000000-N	SP	6	EA	GENERIC SIGNAL ITEM MANAGED ETHERNET SWITCH
7980000000-N	SP	2	EA	GENERIC SIGNAL ITEM MODIFY EXISTING ELECTRICAL SERVICE (CCTV/HUB)
7980000000-N	SP	15	EA	GENERIC SIGNAL ITEM MODIFY EXISTING ELECTRICAL SERVICE (TRAFFIC SIGNAL)
7980000000-N	SP	12	EA	GENERIC SIGNAL ITEM MODIFY EXISTING SPLICE
7980000000-N	SP	3	EA	GENERIC SIGNAL ITEM NETWORK INTERFACE BOX
7980000000-N	SP	1	EA	GENERIC SIGNAL ITEM NETWORK VIDEO RECORDER
7980000000-N	SP	2	EA	GENERIC SIGNAL ITEM PATCH PANEL (ETHERNET)
7980000000-N	SP	52	EA	GENERIC SIGNAL ITEM POLE GROUNDING SYSTEM
7980000000-N	SP	1	EA	GENERIC SIGNAL ITEM RELOCATE MANAGED ETHERNET CORE SWITCH
7980000000-N	SP	175	EA	GENERIC SIGNAL ITEM REMOVE SPLICE CABINET
7980000000-N	SP	1	EA	GENERIC SIGNAL ITEM SIGNAL SHOP VIDEO DISPLAY MONITOR
7980000000-N	SP	3	EA	GENERIC SIGNAL ITEM SMFO CONTACT MAPPING RECEIVER
7980000000-N	SP	3	EA	GENERIC SIGNAL ITEM SMFO CONTACT MAPPING TRANS-MITTER
7980000000-N	SP	5	EA	GENERIC SIGNAL ITEM SPECIAL COATING (BASE EXTENDER/ADAPTER)
7980000000-N	SP	5	EA	GENERIC SIGNAL ITEM SPECIAL COATING (332 CABINET)
7980000000-N	SP	9	EA	GENERIC SIGNAL ITEM SPECIAL COATING (336 CABINET)
7980000000-N	SP	32	EA	GENERIC SIGNAL ITEM TERMINAL SPLICE CABINET
7980000000-N	SP	1	EA	GENERIC SIGNAL ITEM TEST CONTROLLER WITH CABINET (2070L, 332)
7980000000-N	SP	2	EA	GENERIC SIGNAL ITEM TEST CONTROLLER WITH CABINET (2070L, 336S)
7980000000-N	SP	12	EA	GENERIC SIGNAL ITEM TMC VIDEO DISPLAY MONITOR(32")
7980000000-N	SP	2	EA	GENERIC SIGNAL ITEM TMS VIDEO DISPLAY MONITOR(47")
7980000000-N	SP	6	EA	GENERIC SIGNAL ITEM UPS
7980000000-N	SP	1	EA	GENERIC SIGNAL ITEM VIDEO MONITOR PROCESSOR UNIT
7980000000-N	SP	1	EA	GENERIC SIGNAL ITEM WALL-MOUNTED COMMUNICATIONS RACK
7985000000-N	SP	Lump Sum		GENERIC SIGNAL ITEM BRYCE STUART BUILDING MODIFI-CATIONS
7985000000-N	SP	Lump Sum		GENERIC SIGNAL ITEM MODIFY CCTV SOFTWARE
7985000000-N	SP	Lump Sum		GENERIC SIGNAL ITEM MODIFY NETWORK MANAGEMENT SOFTWARE
7985000000-N	SP	Lump Sum		GENERIC SIGNAL ITEM MODIFY REGIONAL ITS GUI SOFT-WARE
7985000000-N	SP	Lump Sum		GENERIC SIGNAL ITEM REINSTALL & MODIFY SIGNAL SYS-TEM SOFTWARE
7985000000-N	SP	Lump Sum		GENERIC SIGNAL ITEM SIGNAL SHOP MODIFICATIONS
7985000000-N	SP	Lump Sum		GENERIC SIGNAL ITEM SYSTEM SUPPORT SOFTWARE & DEVICES
7985000000-N	SP	Lump Sum		GENERIC SIGNAL ITEM TMC MODIFICATIONS
7985000000-N	SP	Lump Sum		GENERIC SIGNAL ITEM TRAINING
7990000000-E	SP	7,720	LF	GENERIC SIGNAL ITEM AERIAL CABLE PROTECTOR
7990000000-E	SP	2,918	LF	GENERIC SIGNAL ITEM ETHERNET CABLE
7990000000-E	SP	43,710	LF	GENERIC SIGNAL ITEM IS COMMUNICATIONS CABLE (144-FIBER)
7990000000-E	SP	34,060	LF	GENERIC SIGNAL ITEM IS COMMUNICATIONS CABLE (24-FIBER)
7990000000-E	SP	95,150	LF	GENERIC SIGNAL ITEM IS COMMUNICATIONS CABLE (48-FIBER)
7990000000-E	SP	11,400	LF	GENERIC SIGNAL ITEM IS COMMUNICATIONS CABLE (96-FIBER)
7990000000-E	SP	150	LF	GENERIC SIGNAL ITEM IS DIRECTIONAL DRILL (1, 2")
7990000000-E	SP	150	LF	GENERIC SIGNAL ITEM IS TRACER WIRE
7990000000-E	SP	125	LF	GENERIC SIGNAL ITEM IS UNDERGROUND CONDUIT (2, 2")
7990000000-E	SP	9,645	LF	GENERIC SIGNAL ITEM LEAD-IN CABLE
7990000000-E	SP	460	LF	GENERIC SIGNAL ITEM UNDERGROUND CONDUIT (1, 2")
7990000000-E	SP	13,765	LF	GENERIC SIGNAL ITEM UNDERGROUND CONDUIT (2, 2")

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	4



A — Phase Designation

Boundary between Phase A and Phase B

Red Ring

Phase B Underground Route

● Location of splice initially installed/modified in Phase A and subsequently modified in Phase B.

SS Signal System Splice Location

IS IS Splice Location

NOTES:

The intent of this overview is to illustrate the general geographic relationship between Phases A & B and general locations where the Phase A & B contractors will need to coordinate work within a common splice enclosure/center. Refer to CL sheets (Volume I), cable schematics, and Splice Details (Volume II) for specific construction details and information.

Phase A includes the Red Ring around the downtown area, the area within the Red Ring,and eastern Winston-Salem. The underground route between the TMC and Bryce Stuart Building approximatley 2200′ in length) in the downtown area will be completed under Phase B so that the existing copper system can be maintained as long as possible.

Phase B incudes western Winston-Salem and the approximately 2200′ underground route between the TMC and City Hall South in the downtown area.

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of: NCDOT Transportation Mobility and Safety Division — North Carolina Department of Transportation — Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System

Overview of Phases A & B

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	JAW/BKS	REVIEWED BY:	LW Moon

SCALE

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE Lisa M. Moon 1-11-13 DATE

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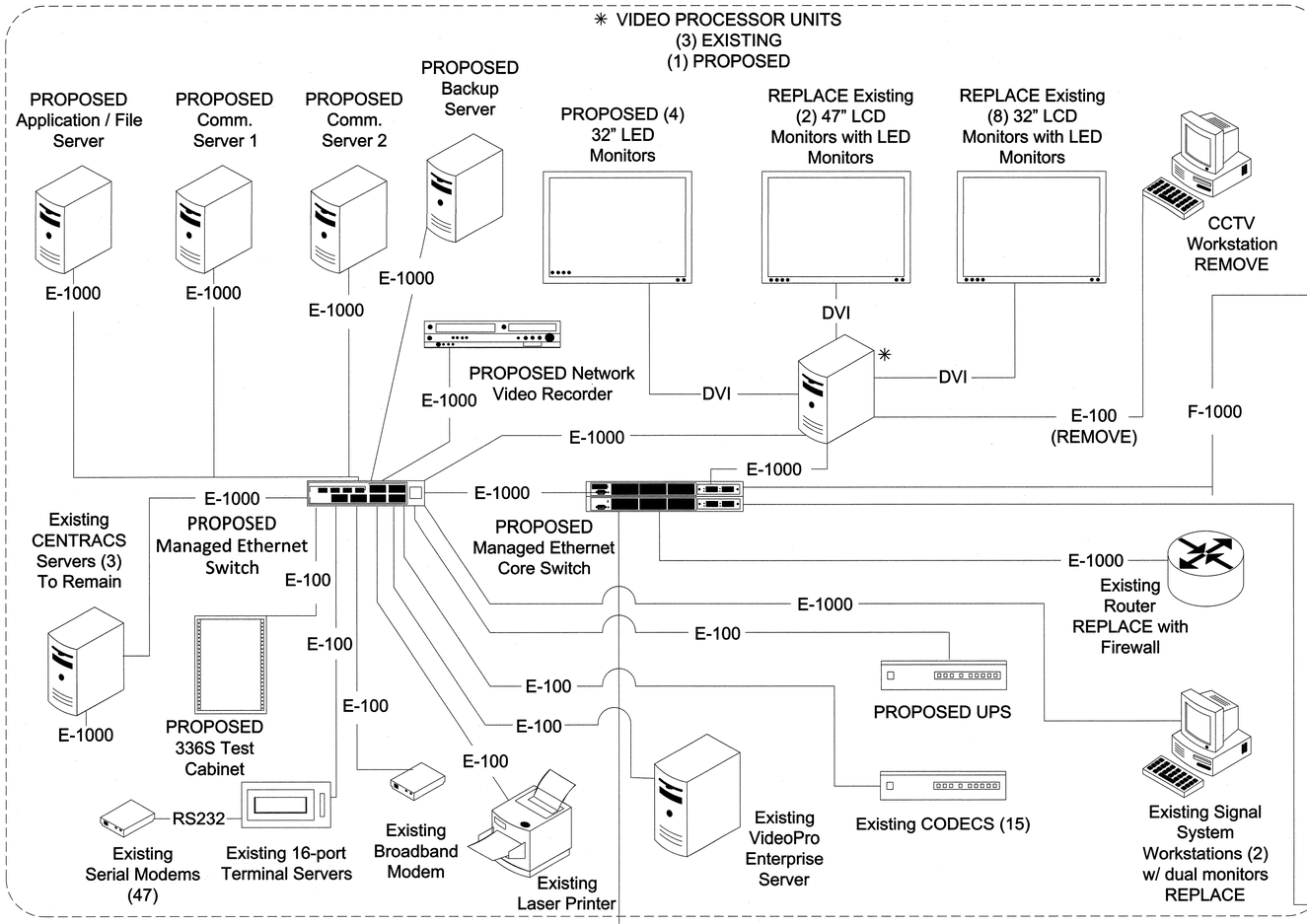
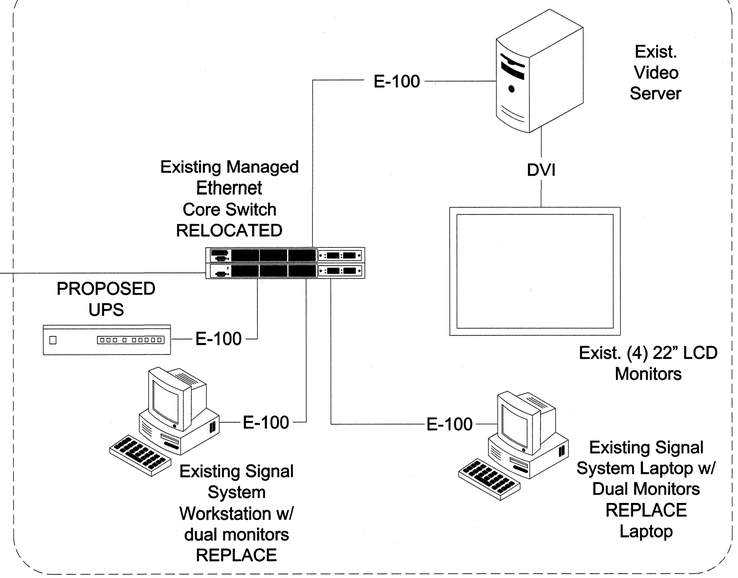
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	5

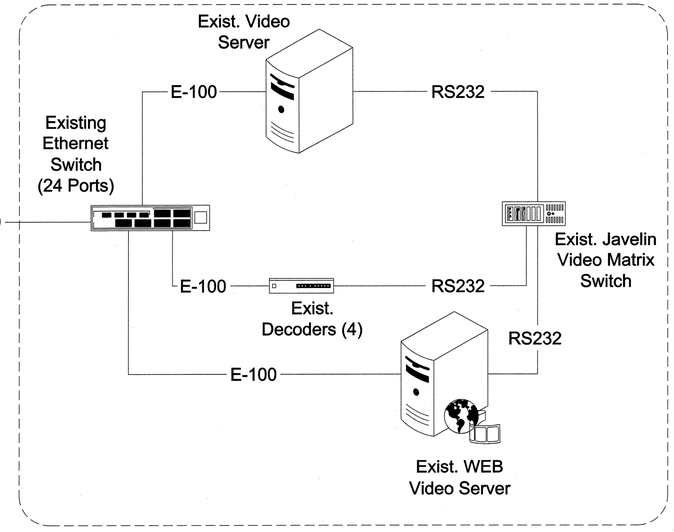
City TMC



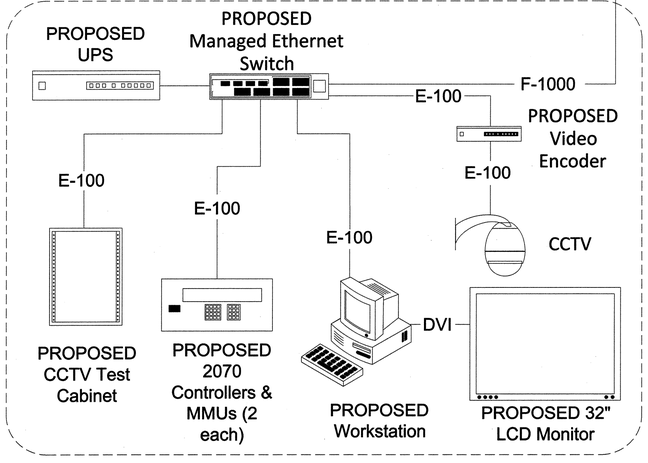
Bryce A Stuart Building



TRTMC



City Signal Shop



NOTES:

1. EXISTING TMC CORE SWITCH TO BE RELOCATED TO BRYCE STUART BUILDING.
2. EXISTING SERIAL MODEMS, TERMINAL SERVERS AND CENTRACS SERVERS TO REMAIN THROUGH MIGRATION OF PHASES A AND B.
3. REMOVE TWO EXISTING LAYER 2 ETHERNET SWITCHES IN TMC.
4. REPLACE TWO SIGNAL SYSTEM WORKSTATIONS IN TMC, ONE WORKSTATION AND ONE LAPTOP IN BRYCE STUART BUILDING.
5. REPLACE EXISTING ROUTER WITH PROPOSED FIREWALL.
6. CONFIGURE 16 SOFTWARE DECODERS IN THE NCDOT TRTMC.
7. INSTALL ONE VIDEO PROCESSOR FOR NEW CITY TMC MONITORS.

Connection Legend

E-100 — 10/100 TX Ethernet	F-100 — 10/100 FX Ethernet
E-1000 — 10/1000 TX Ethernet	F-1000 — 10/1000 FX Ethernet
RS232 — RS232 Connection	DVI — Digital Video Interface (DVI)
NTSC — NTSC Video	

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of: Transportation Mobility and Safety Division, North Carolina Department of Transportation, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System Central Block Diagram Phase A (1 of 2)

Division 09 Forsyth County Winston-Salem

PLAN DATE: January 2013 REVIEWED BY: HAB

PREPARED BY: BJS REVIEWED BY: JTB

REVISIONS	INIT.	DATE

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 19962 ENGINEER HENRY ALFRED BADGETT, III

SIGNATURE 1/11/13 DATE

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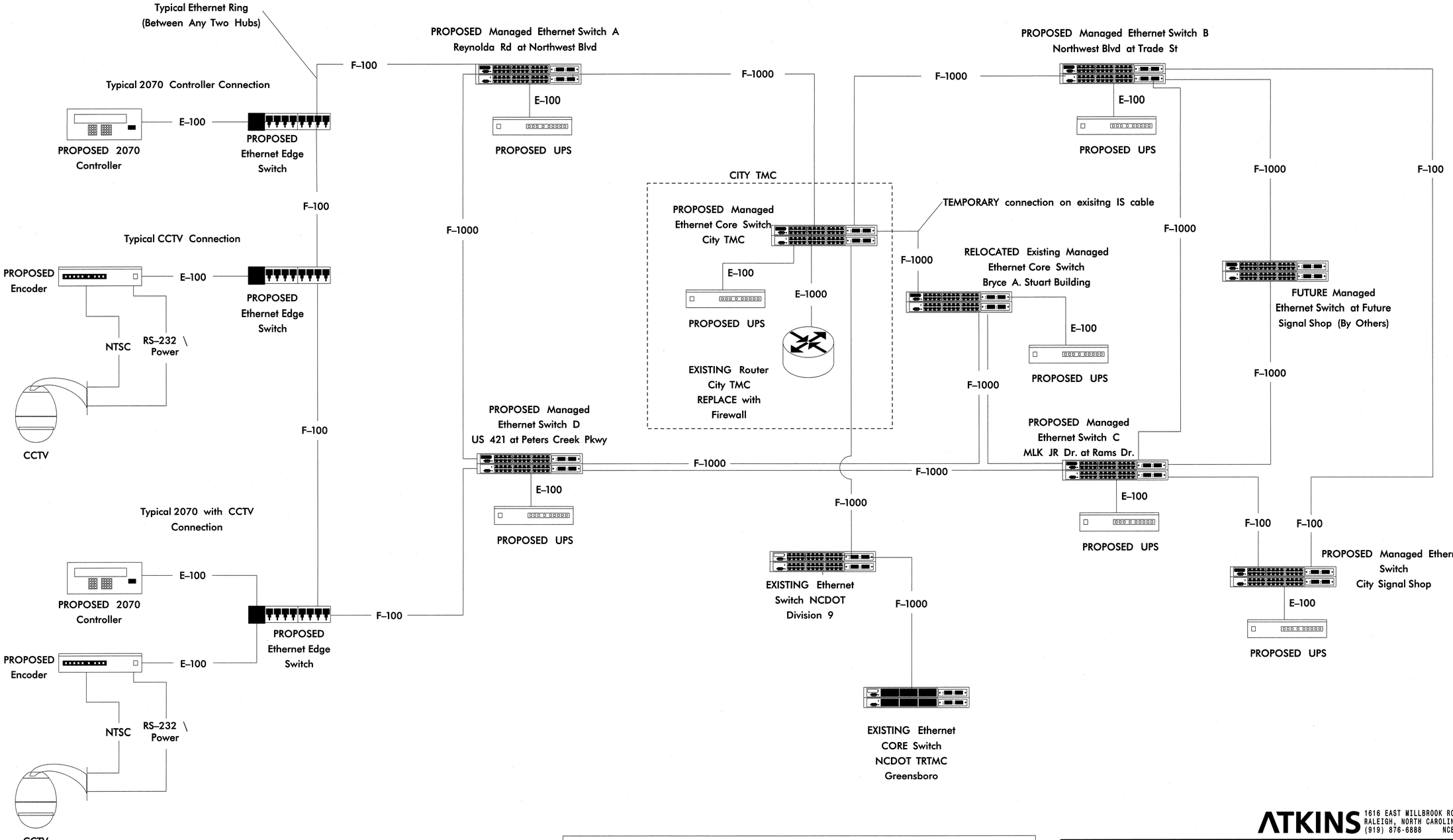
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	6



Connection Legend

E-100 — 10/100 TX Ethernet	F-100 — 10/100 FX Ethernet
E-1000 — 10/1000 TX Ethernet	F-1000 — 10/1000 FX Ethernet
RS232 — RS232 Connection	DVI — Digital Video Interface (DVI)
NTSC — NTSC Video	

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Central Block Diagram
Phase A
(2 of 2)

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	HAB
PREPARED BY:	BJS	REVIEWED BY:	JTB

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 19962 ENGINEER HENRY ALFRED BADGETT III
SIGNATURE 11/11/13 DATE

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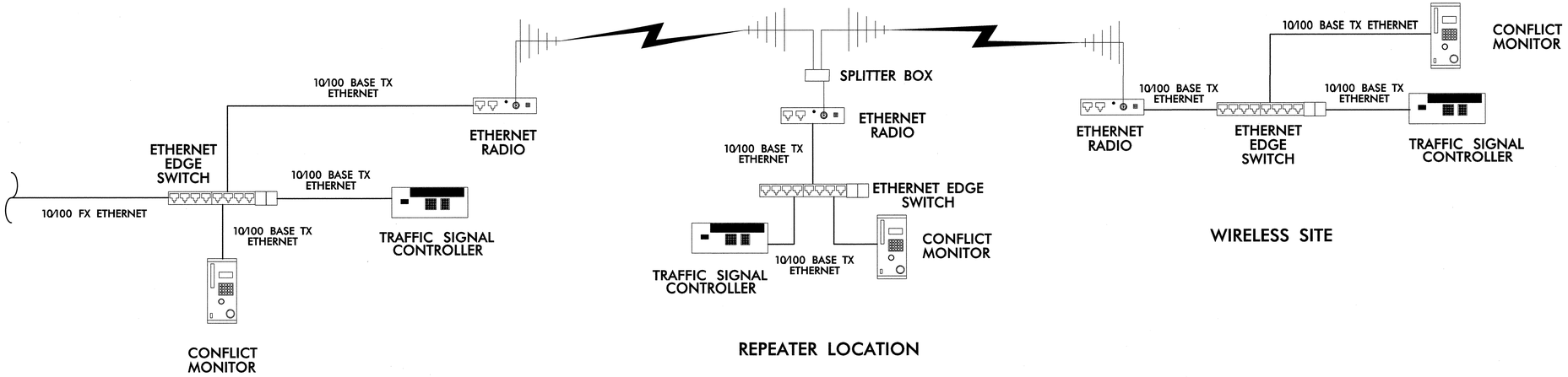
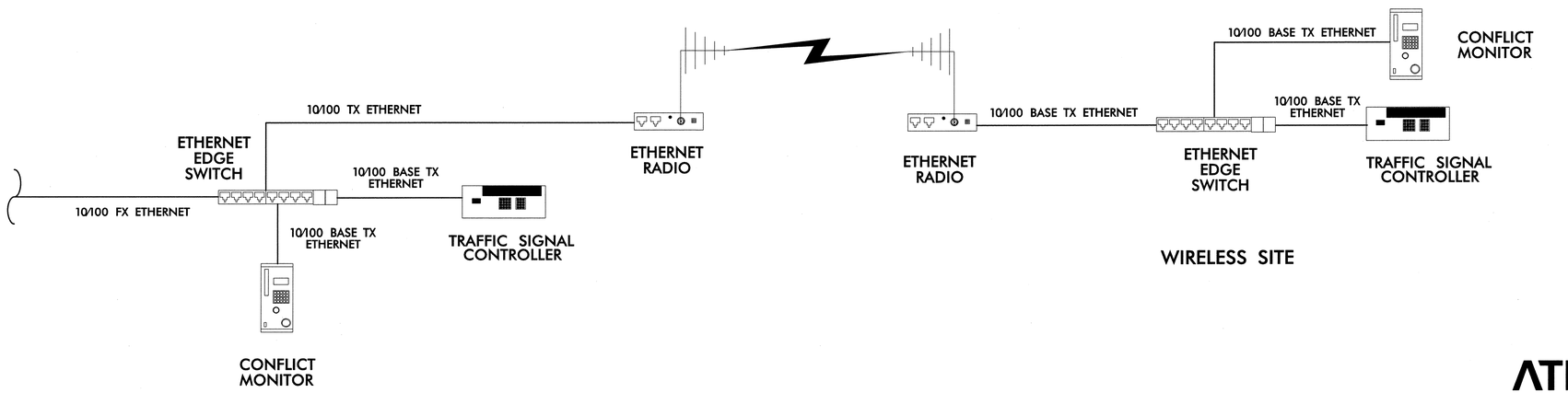
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	7

WIRELESS LINK TO TRAFFIC SIGNAL WITH REPEATER SITE



WIRELESS LINK TO TRAFFIC SIGNAL



ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Wireless Field Equipment
Block Diagram
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	HAB
PREPARED BY:	BJS	REVIEWED BY:	JTB

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 19962 ENGINEER HENRY ALFRED BADGETT, III
SIGNATURE 1/9/13 DATE
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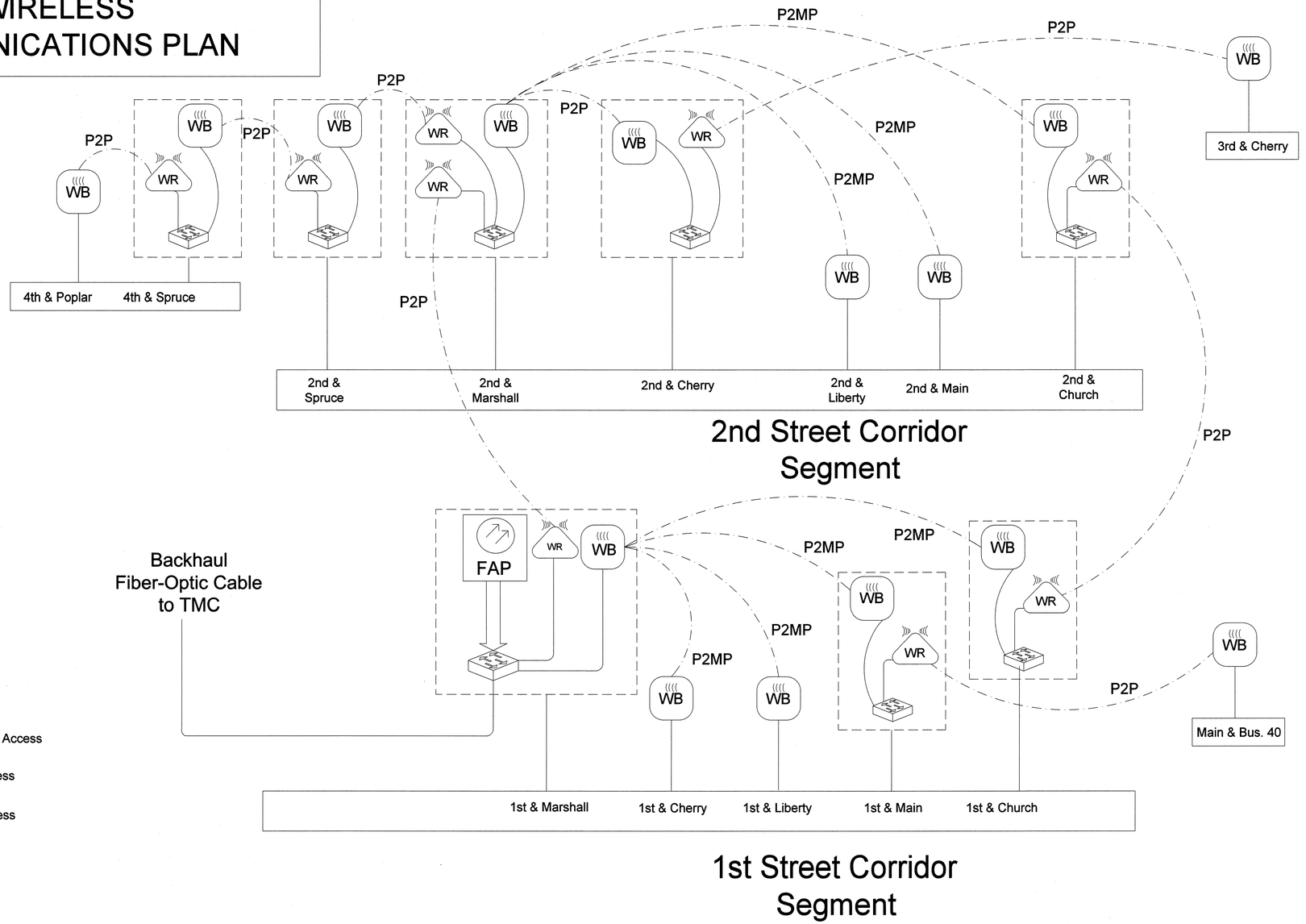
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	8

WIRELESS COMMUNICATIONS PLAN



LEGEND:

- FAP- Fiber Access Point
- WB- Wireless Bridge
- WR- Wireless Repeater
- Ethernet Switch

* ALL RADIO EQUIPMENT SHALL MEET THE REQUIREMENTS OF FCC Part 90

NOTES:

1. WIRELESS BRIDGE EQUIPMENT SHALL BE INSTALLED ON EXISTING SIGNAL POLES, MAST ARMS AND UTILITY POLES AS SHOWN ON THE PLANS.
2. THE CONTRACTOR SHALL INSTALL AND TEST THE WIRELESS BRIDGE SYSTEM AND ASSEMBLY BASED ON THE INSTALLATION TEST AND SETUP PROCEDURES. THE CONTRACTOR SHALL PERFORM ANTENNA ALIGNMENT TO PHYSICALLY ALIGN THE ANTENNAS FOR MAXIMUM SIGNAL TRANSFER.
3. THE CONTRACTOR SHALL CONFIGURE RADIOS FOR P2P, P2MP OR REPEATER MODE AS REQUIRED.
4. WIRELESS SITES SHALL BE INSTALLED TO PROVIDE OPTIMAL LINE-OF-SIGHT BETWEEN DEVICE LOCATIONS.
5. THE CONTRACTOR SHALL INSTALL THE APPROPRIATE ANTENNA TYPE BASED ON THE SITE CONFIGURATION AS LISTED IN THE PROJECT SPECIAL PROVISIONS.
6. THE CONTRACTOR SHALL ENSURE THAT ALL EQUIPMENT IS PROPERLY GROUNDED AS PER THE MANUFACTURER SPECIFICATIONS.
7. THE CONTRACTOR SHALL INSTALL SURGE PROTECTION TO PROTECT THE RADIO EQUIPMENT FROM STATIC ELECTRICITY AND LIGHTNING-INDUCED SURGES THAT TRAVEL ON TRANSMISSION LINES. AT LOCATIONS WHERE COAXIAL CABLE IS USED, THE CONTACTOR SHALL GROUND THE ARRESTOR BY USING A GROUND LUG ATTACHED TO THE ARRESTOR AND A #6 SOLID CONDUCTOR AND CONNECT THE LUG TO EARTH GROUND IN THE SIGNAL CABINET.
8. THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER PRIOR TO INSTALLING ANY WIRELESS EQUIPMENT.

ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
CBD Wireless Corridor Design
Phase A
(1 of 3)

Division 09 | Forsyth County | Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	HAB
PREPARED BY:	BJS	REVIEWED BY:	JTB

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029531 ENGINEER STEVEN G. HAYNIE
SIGNATURE 1/11/13 DATE

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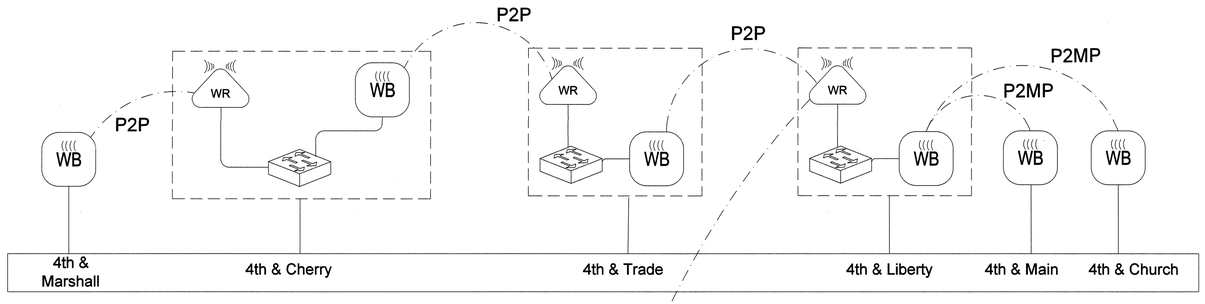
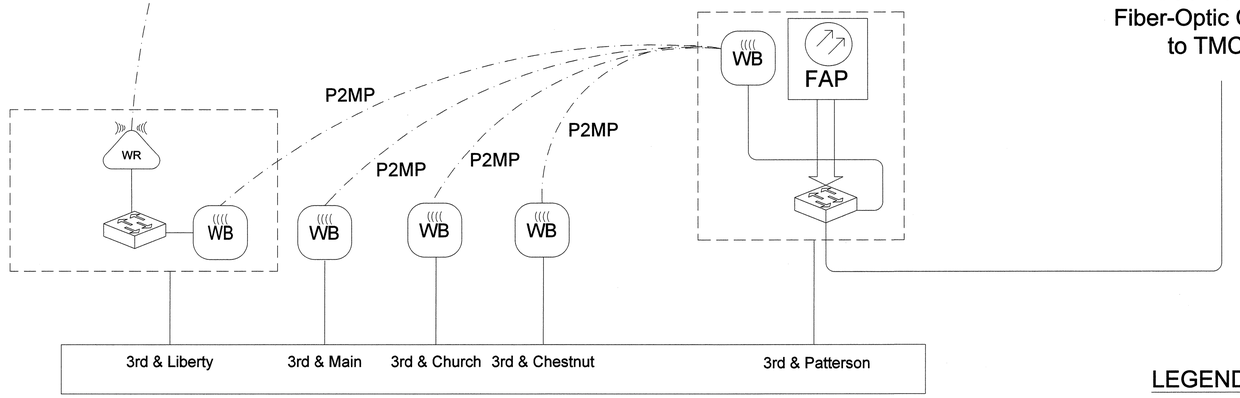
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	9

WIRELESS COMMUNICATIONS PLAN



4th Street Corridor Segment



3rd Street Corridor Segment

LEGEND:

- FAP- Fiber Access Point
- WB- Wireless Bridge
- WR- Wireless Repeater
- Ethernet Switch

* ALL RADIO EQUIPMENT SHALL MEET THE REQUIREMENTS OF FCC PART 90

NOTES:

1. WIRELESS BRIDGE EQUIPMENT SHALL BE INSTALLED ON EXISTING SIGNAL POLES, MAST ARMS AND UTILITY POLES AS SHOWN ON THE PLANS.
2. THE CONTRACTOR SHALL INSTALL AND TEST THE WIRELESS BRIDGE SYSTEM AND ASSEMBLY BASED ON THE INSTALLATION TEST AND SETUP PROCEDURES. THE CONTRACTOR SHALL PERFORM ANTENNA ALIGNMENT TO PHYSICALLY ALIGN THE ANTENNAS FOR MAXIMUM SIGNAL TRANSFER.
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8. THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER PRIOR TO INSTALLING ANY WIRELESS EQUIPMENT.

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of: NC Department of Transportation, Transportation Mobility and Safety Division, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
CBD Wireless Corridor Design
Phase A
(2 of 3)

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	HAB
PREPARED BY:	BJS	REVIEWED BY:	JTB

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029531 ENGINEER STEVEN G. HAYNIE
SIGNATURE 1/11/13 DATE

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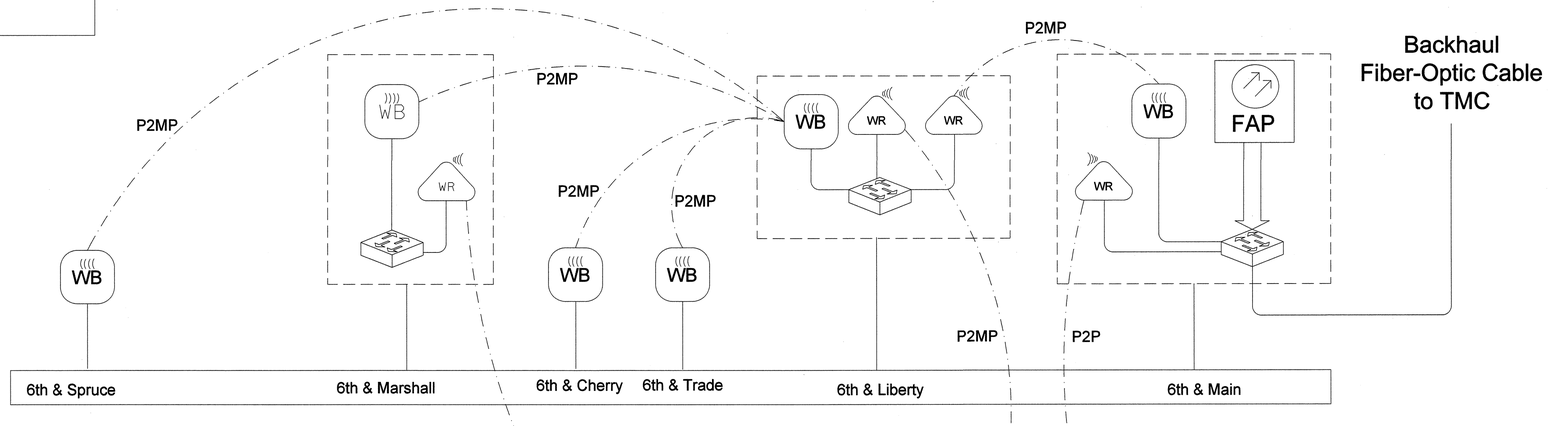
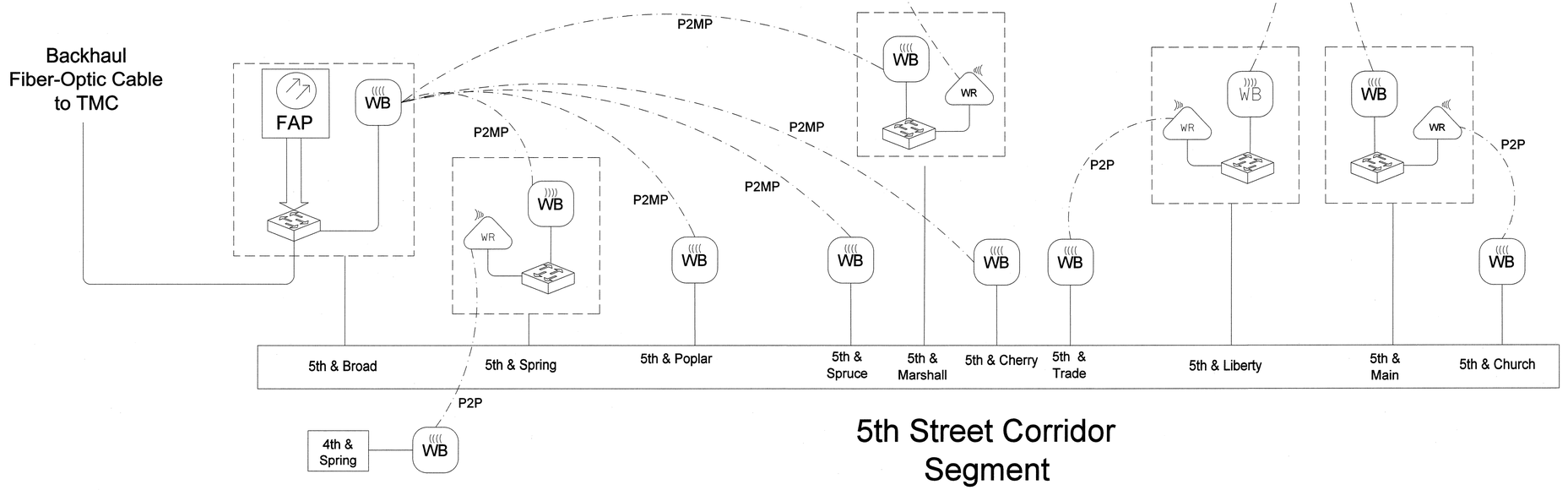
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	10

WIRELESS COMMUNICATIONS PLAN



6th Street Corridor Segment



5th Street Corridor Segment

LEGEND:

- FAP- Fiber Access Point
- WB- Wireless Bridge
- WR- Wireless Repeater
- Ethernet Switch

* ALL RADIO EQUIPMENT SHALL MEET THE REQUIREMENTS OF FCC PART 90

NOTES:
1. WIRELESS BRIDGE EQUIPMENT SHALL BE INSTALLED ON EXISTING SIGNAL POLES, MAST ARMS AND UTILITY POLES AS SHOWN ON THE PLANS.
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5. THE CONTRACTOR SHALL INSTALL THE APPROPRIATE ANTENNA TYPE BASED ON THE SITE CONFIGURATION AS LISTED IN THE PROJECT SPECIAL PROVISIONS.
6. THE CONTRACTOR SHALL ENSURE THAT ALL EQUIPMENT IS PROPERLY GROUNDED AS PER THE MANUFACTURER SPECIFICATIONS.
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8. THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER PRIOR TO INSTALLING ANY WIRELESS EQUIPMENT.

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of: Transportation Mobility and Safety Division, North Carolina Department of Transportation, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
CBD Wireless Corridor Design
Phase A
(3 of 3)

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	HAB
PREPARED BY:	BJS	REVIEWED BY:	JTB

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029531 ENGINEER STEVEN G. HAYNIE
SIGNATURE 1/11/13 DATE

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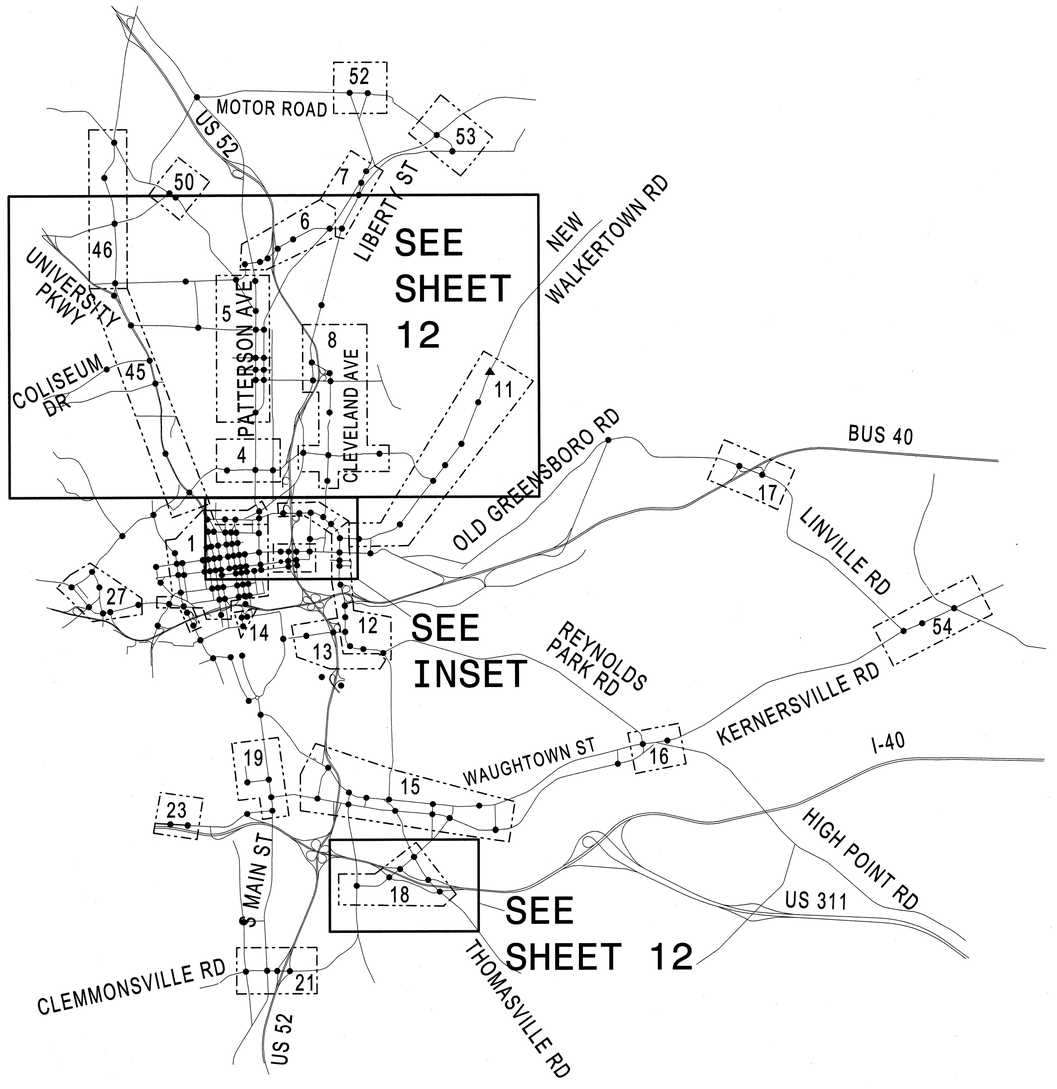
12054

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	11



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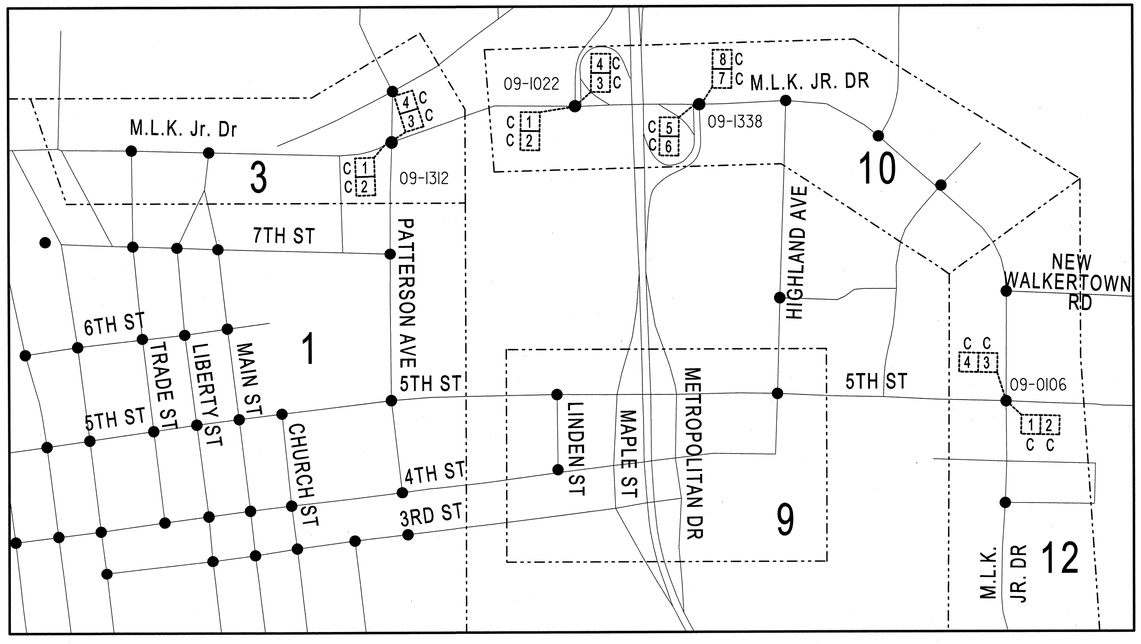

LEGEND

- TRAFFIC SIGNAL
- FUTURE SIGNAL
- CONTROL ZONE BOUNDARY

PROPOSED LOOP (4C / 3D) — 'COMBO' LOOP — DEDICATED LOOP — EXISTING LOOP (4 / 3) — SYSTEM DETECTOR I.D.

CONTROL ZONE IDENTIFICATION NUMBER — **11**

CITY INTERSECTION NUMBER — C-XXXX / 09-XXXX — NCDOT SIGNAL IDENTIFICATION NUMBER

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

750 Greenfield Parkway, Garner, NC 27529

Prepared for the Offices of: Transportation Mobility and Safety Division, North Carolina Department of Transportation, Intelligent Transportation Systems

Winston-Salem Signal System System Detectors and Control Zone Schematic Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	November 2012	REVIEWED BY:	MB Toth
PREPARED BY:	SGH	REVIEWED BY:	LM Moon

SCALE: NONE

REVISIONS	INIT.	DATE

SEAL: North Carolina Professional Seal 029931 Engineer Steven G. Haynie

SIGNATURE 11/11/13 DATE

CADD Filename: Phase A Sys Det Overview.dgn

08-JAN-2013 16:35
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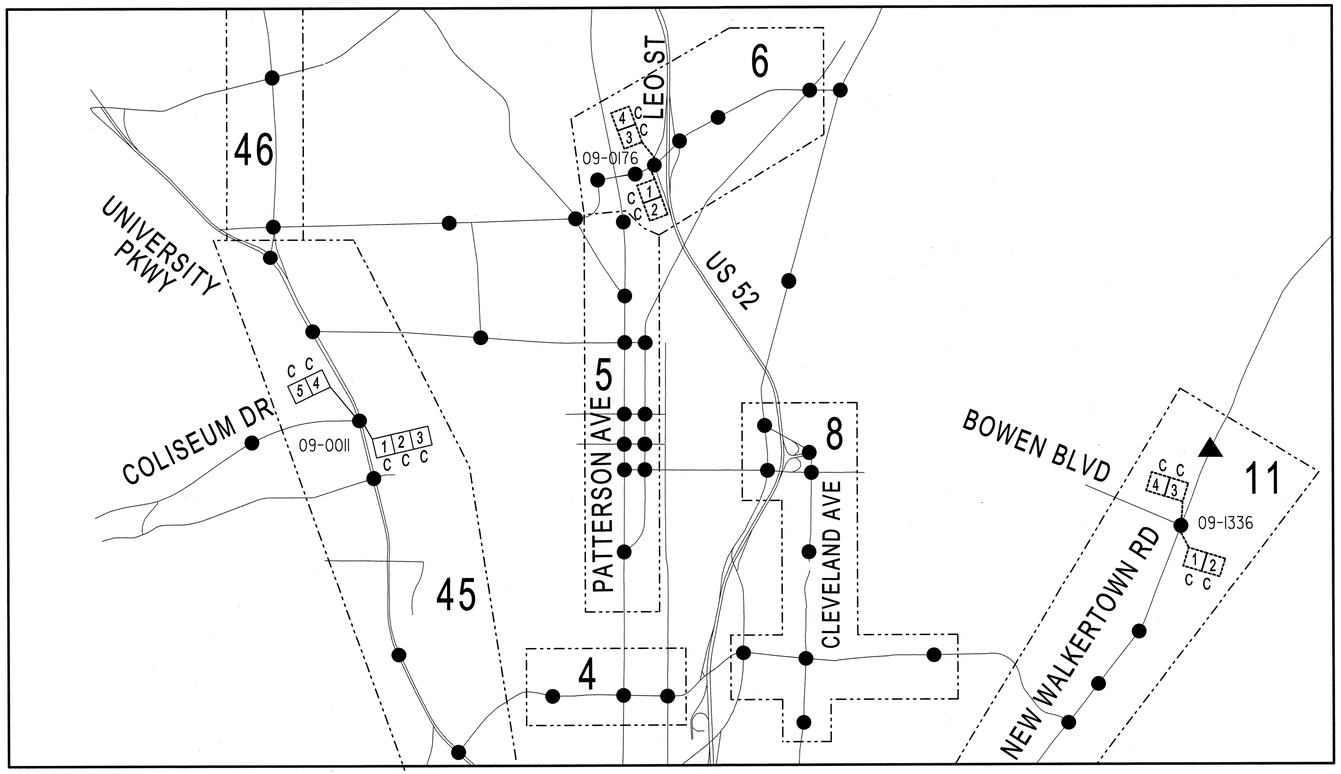
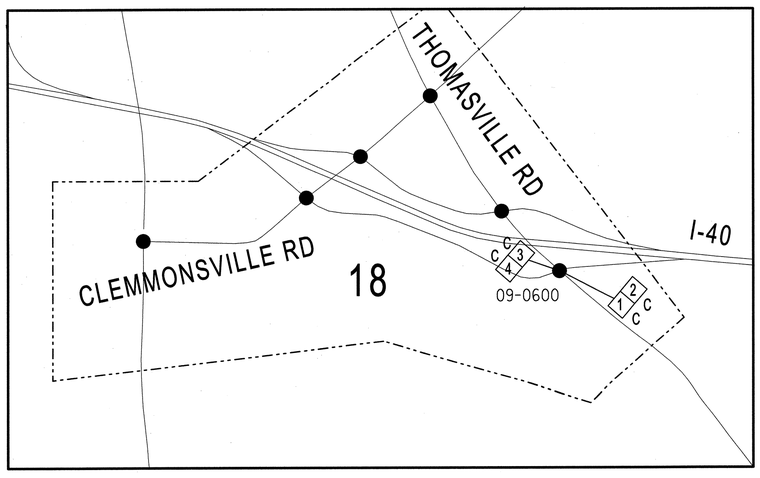
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	12





LEGEND

- TRAFFIC SIGNAL
- FUTURE SIGNAL
- CONTROL ZONE BOUNDARY
- PROPOSED LOOP — 'COMBO' LOOP — EXISTING LOOP
- DEDICATED LOOP
- SYSTEM DETECTOR I.D.
- CONTROL ZONE IDENTIFICATION NUMBER — **11**
- CITY INTERSECTION NUMBER — C-XXXX / 09-XXXX — NCDOT SIGNAL IDENTIFICATION NUMBER

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of: Department of Transportation Mobility and Safety Division, State of North Carolina, Department of Transportation, Intelligent Transportation Systems

750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System System Detectors and Control Zone Schematic Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	November 2012	REVIEWED BY:	MB Toth
PREPARED BY:	SGH	REVIEWED BY:	LW Woon

SCALE: NONE

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029531 ENGINEER STEVEN G. HAYNIE

SIGNATURE 1/11/13 DATE

CADD Filename: Phase A Sys Det Overview.dgn

08-JAN-2013 16:35
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24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	13

SUMMARY OF WORK BY CABLE LAYOUT PLANS

CABLE LAYOUT SHEET NUMBER	MESSENGER CABLE (1/4")	BOND MESSENGER CABLE	TRACER WIRE	UNDERGROUND CONDUIT (1 CONDUIT, 2 INCH)	UNDERGROUND CONDUIT (2 CONDUIT, 2 INCH)	DIRECTIONAL DRILL (1 CONDUIT, 4 INCH)	DIRECTIONAL DRILL (2 CONDUIT, 2 INCH)	JUNCTION BOX (OVER-SIZED)	JUNCTION BOX (SPECIAL -SIZED)	REMOVE EXISTING JUNCTION BOX	DELINEATOR MARKER	WOOD POLE	STANDARD GUY ASSEMBLY	AERIAL GUY ASSEMBLY	SIDEWALK GUY ASSEMBLY	1" RISER WITH WEATHERHEAD FOR ELECTRICAL	1" RISER WITH WEATHERHEAD FOR CAT 5E	2" RISER WITH WEATHERHEAD	1" RISER WITH HEAT SHRINK TUBING	2" RISER WITH HEAT SHRINK TUBING	HEAT SHRINK TUBING RETROFIT KIT
	LF	EA	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
CL A-001	-	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1	-
CL A-002	220	3	220	-	45	-	220	2	-	-	-	-	2	-	-	-	-	-	-	2	-
CL A-003	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-004	480	2	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	1	-
CL A-005	100	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
CL A-006	410	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
CL A-007	-	1	50	-	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
CL A-008	40	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
CL A-009	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
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CL A-011	-	1	690	-	40	-	110	-	-	-	-	-	-	-	-	-	-	-	-	2	-
CL A-012	180	3	400	20	-	-	380	2	-	-	2	-	1	-	-	-	-	-	-	2	1
CL A-013	-	2	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-	-
CL A-014	480	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	1	-
CL A-015	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
CL A-016	-	1	30	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
CL A-017	-	1	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	1	-
CL A-018	-	1	-	-	15	-	-	-	-	-	-	-	1	-	-	1	-	-	-	2	-
CL A-019	60	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
CL A-020	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-021	330	2	-	-	-	-	690	2	1	-	-	-	3	-	-	-	-	-	-	3	-
CL A-022	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-
CL A-023	-	2	680	-	580	-	100	3	-	-	2	-	1	-	-	-	-	-	-	1	1
CL A-024	-	1	340	-	260	-	80	2	-	-	2	-	1	-	-	-	-	-	1	1	-
CL A-025	-	1	-	-	-	-	-	-	-	-	-	-	4	-	1	-	-	-	-	-	-
CL A-026	-	2	620	-	20	-	600	2	-	1	-	-	-	-	-	-	-	-	-	-	1
CL A-027	-	2	590	-	-	-	560	1	1	-	3	-	4	-	-	-	-	-	-	3	2
CL A-028	-	2	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	2
CL A-029	-	-	160	-	-	-	160	-	-	-	-	-	-	-	-	-	-	-	-	-	1
CL A-030	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
CL A-031	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
CL A-032	390	1	150	-	-	-	150	1	1	-	1	-	1	-	-	-	-	-	-	1	-
CL A-033	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-
CL A-034	-	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1	-
CL A-035	90	2	70	-	-	-	70	1	-	-	-	-	2	-	-	-	-	-	1	2	-
CL A-036	160	2	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-	-
CL A-037	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-

- Work shown on this sheet is a summary of work for the installation of the fiber-optic cable, wireless links, and CCTV installations that are shown on the cable layout plans (i.e. CL sheets). Work to be done for traffic signals is shown separately on the signal designs and the "Summary of Work by Intersection" sheets in Volume III of III.
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ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Summary of Work by
Cable Layout Plans - Phase A
(sheet 1 of 3)

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	JAW/BKS	REVIEWED BY:	LW Moon

SCALE	REVISIONS	INIT.	DATE
NTS			

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: Phase A Summary by CL.dgn

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13633

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	14

SUMMARY OF WORK BY CABLE LAYOUT PLANS

CABLE LAYOUT SHEET NUMBER	COMMUNICATIONS CABLE (24-FIBER)	COMMUNICATIONS CABLE (36-FIBER)	COMMUNICATIONS CABLE (48-FIBER)	COMMUNICATIONS CABLE (72-FIBER)	DROP CABLE (6-FIBER)	HANDLASH & AERIAL CABLE PROTECTOR	SPLICE ENCLOSURE	MODIFY EXISTING SPLICE	INTERCONNECT CENTER	ETHERNET EDGE SWITCH	REMOVE EXISTING COMMUNICATIONS CABLE	CUT AND CAP EXISTING COMMUNICATIONS CABLE	INSTALL CCTV CAMERA ASSEMBLY	INSTALL CCTV CABINET (POLE)	CCTV WOOD POLE	DIGITAL VIDEO ENCODER	MODIFY ELEC SERVICE FOR CCTV/HUB	NEW O/H ELEC SERVICE FOR CCTV/HUB	INSTALL 5/8" x 10' GROUNDING ELECTRODE	CONTACT MAPPING TRANSMITTER	CONTACT MAPPING RECEIVER
	LF	LF	LF	LF	LF	LF	EA	EA	EA	EA	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
CL A-001	-	-	1,390	-	250	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-
CL A-002	-	-	1,590	-	80	-	2	-	1	1	170	-	-	-	-	-	-	-	-	-	-
CL A-003	-	-	1,350	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-004	-	-	1,960	-	280	-	1	-	1	1	240	-	-	-	-	-	-	-	-	-	-
CL A-005	-	530	1,590	-	200	-	2	-	2	1	100	-	-	-	-	-	-	-	-	-	-
CL A-006	-	-	1,550	-	-	-	-	-	-	-	400	-	-	-	-	-	-	-	-	-	-
CL A-007	-	-	300	1,180	80	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-
CL A-008	590	-	1,170	750	360	-	1	-	2	1	70	-	-	-	-	-	-	-	-	-	-
CL A-009	-	-	1,280	-	290	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-
CL A-010	440	-	1,580	-	230	-	2	-	2	2	400	-	-	-	-	-	-	-	-	-	-
CL A-011	480	-	1,110	-	280	-	2	1	2	2	720	-	-	-	-	-	-	-	-	-	-
CL A-012	-	740	-	-	400	-	2	-	2	2	-	-	-	-	-	-	-	-	-	-	-
CL A-013	-	-	1,410	-	280	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-
CL A-014	-	-	1,560	-	580	140	2	-	2	2	90	-	-	-	-	-	-	-	-	-	-
CL A-015	-	-	1,440	-	260	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-
CL A-016	170	-	1,220	-	200	-	1	-	1	1	120	-	-	-	-	-	-	-	-	-	-
CL A-017	-	-	1,710	-	240	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-
CL A-018	-	-	1,850	-	-	220	-	-	-	-	-	-	-	-	-	-	-	1	3	-	-
CL A-019	370	-	1,580	-	370	-	1	-	1	1	60	-	-	-	-	-	-	-	-	-	-
CL A-020	-	-	890	-	-	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-021	400	380	1,610	-	260	-	2	-	1	1	750	-	-	-	-	-	-	-	-	-	-
CL A-022	-	-	1,230	-	600	-	-	1	2	2	300	-	-	-	-	-	-	-	-	-	-
CL A-023	-	-	1,200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-024	660	-	1,450	-	240	260	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-
CL A-025	-	-	1,860	-	-	350	-	-	-	-	180	-	-	-	-	-	-	-	-	-	-
CL A-026	-	410	1,890	-	70	40	-	-	1	1	580	-	-	-	-	-	-	-	-	-	-
CL A-027	-	-	1,860	-	550	-	2	-	3	2	480	-	-	-	-	-	-	-	-	-	-
CL A-028	-	-	1,570	-	670	-	1	1	2	2	90	-	-	-	-	-	-	-	-	-	-
CL A-029	640	-	-	-	200	-	2	-	2	2	-	-	-	-	-	-	-	-	-	-	-
CL A-030	2,320	-	-	-	440	-	1	-	1	1	770	-	-	-	-	-	-	-	-	-	1
CL A-031	860	-	-	-	360	-	1	-	1	1	220	-	-	-	-	-	-	-	-	-	-
CL A-032	670	-	-	-	50	-	1	-	1	1	450	-	-	-	-	-	-	-	-	-	-
CL A-033	900	-	-	-	1,020	-	2	-	2	2	-	-	-	-	-	-	-	-	-	3	2
CL A-034	1,770	-	-	-	290	-	1	-	1	1	230	-	-	-	-	-	-	-	-	-	-
CL A-035	1,430	-	-	-	1,180	-	2	-	3	3	90	-	-	-	-	-	-	-	-	-	-
CL A-036	1,040	-	-	-	320	150	1	-	1	1	150	-	-	-	-	-	-	-	-	-	-
CL A-037	780	-	-	-	210	420	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-

- Work shown on this sheet is a summary of work for the installation of the fiber-optic cable, wireless links, and CCTV installations that are shown on the cable layout plans (i.e. CL sheets). Work to be done for traffic signals is shown separately on the signal designs and the "Summary of Work by Intersection" sheets in Volume III of III.
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ATKINS 1616 EAST WILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of: Environment, Mobility and Safety Division — North Carolina Department of Transportation — Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Summary of Work by
Cable Layout Plans - Phase A
(sheet 2 of 3)

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	JAW/BKS	REVIEWED BY:	LW Moon

SCALE	REVISIONS	INIT.	DATE
NTS			

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: Phase A Summary by CL.dgn

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13833

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	15

SUMMARY OF WORK BY CABLE LAYOUT PLANS

CABLE LAYOUT SHEET NUMBER	INSTALL FOUNDATION FOR HUB CABINET	INSTALL HUB CABINET	MANAGED ETHERNET SWITCH	REMOVE SPLICE/ HUB CABINET	UNI-DIRECTIONAL ANTENNA	900 MHz ETHERNET RADIO SYSTEM	4.9 GHz ETHERNET INTEGRATED RADIO / FLAT-PANEL ANTENNA	4.9GHZ INTEGRATED RADIO/OMNI-DIRECTIONAL ANTENNA	4.9 GHZ FLAT PANEL ANTENNA	ETHERNET CABLE (CAT 5E)	COAXIAL ANTENNA CABLE	IS INSTALL FOUNDATION FOR HUB CABINET	IS INSTALL HUB CABINET	IS UNDERGROUND CONDUIT (2 CONDUIT, 2 INCH)	IS JUNCTION BOX (SPECIAL -SIZED)	IS 2" RISER WITH HEAT SHRINK TUBING	IS COMMUNICATIONS CABLE (24-FIBER)	IS COMMUNICATIONS CABLE (48-FIBER)	IS COMMUNICATIONS CABLE (96-FIBER)	IS COMMUNICATIONS CABLE (144-FIBER)	IS SPLICE ENCLOSURE
	EA	EA	EA	EA	EA	EA	EA	EA	EA	LF	LF	EA	EA	LF	EA	EA	LF	LF	LF	LF	EA
CL A-001	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,390	-
CL A-002	1	1	1	1	-	-	-	-	-	-	-	-	-	35	-	1	-	-	-	1,600	-
CL A-003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,250	-
CL A-004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,760	-
CL A-005	-	-	-	1	-	-	-	-	-	-	-	1	1	20	-	1	450	-	600	1,520	-
CL A-006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,450	-
CL A-007	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,220	-
CL A-008	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	450	-	1,520	1
CL A-009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,280	-
CL A-010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,840	-
CL A-011	-	-	-	1	-	-	-	-	-	-	-	-	-	40	-	1	-	-	-	1,710	-
CL A-012	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	-	-	640	-	1,500	1
CL A-013	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,210	-
CL A-014	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,280	-
CL A-015	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,340	-
CL A-016	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,240	-
CL A-017	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,410	-
CL A-018	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,650	-
CL A-019	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,380	-
CL A-020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	890	-
CL A-021	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	220	-	1,590	1
CL A-022	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,700	-
CL A-023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,150	-
CL A-024	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,350	-
CL A-025	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,760	-
CL A-026	1	1	1	2	-	-	-	-	-	-	-	-	-	-	1	-	-	330	-	1,840	1
CL A-027	-	-	-	1	-	-	-	-	-	-	-	1	1	30	-	-	510	-	-	1,890	-
CL A-028	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,440	-
CL A-029	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	190	-	-	1,440	1
CL A-030	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	2,580	-	-	110	2
CL A-031	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	740	-	-	-	1
CL A-032	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-033	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	720	-	-	-	1
CL A-034	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	310	-	-	-	-
CL A-035	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-036	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1,080	-	-	-	1
CL A-037	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of: Transportation Mobility and Safety Division, North Carolina Department of Transportation, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

SCALE: NTS

Winston-Salem Signal System
Summary of Work by
Cable Layout Plans - Phase A
(sheet 3 of 3)

Division 09 Forsyth County Winston-Salem

PLAN DATE: January 2013 REVIEWED BY: MB Toth

PREPARED BY: JAW/BKS REVIEWED BY: LM Moon

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE 1-11-13 DATE

CADD Filename: Phase A Summary by CL.dgn

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PROJECT REFERENCE NO.	SHEET NO.
C-5224A	16

SUMMARY OF WORK BY CABLE LAYOUT PLANS

CABLE LAYOUT SHEET NUMBER	MESSENGER CABLE (1/4")	BOND MESSENGER CABLE	TRACER WIRE	UNDERGROUND CONDUIT (1 CONDUIT, 2 INCH)	UNDERGROUND CONDUIT (2 CONDUIT, 2 INCH)	DIRECTIONAL DRILL (1 CONDUIT, 4 INCH)	DIRECTIONAL DRILL (2 CONDUIT, 2 INCH)	JUNCTION BOX (OVER-SIZED)	JUNCTION BOX (SPECIAL -SIZED)	REMOVE EXISTING JUNCTION BOX	DELINEATOR MARKER	WOOD POLE	STANDARD GUY ASSEMBLY	AERIAL GUY ASSEMBLY	SIDEWALK GUY ASSEMBLY	1" RISER WITH WEATHERHEAD FOR ELECTRICAL	1" RISER WITH WEATHERHEAD FOR CAT 5E	2" RISER WITH WEATHERHEAD	1" RISER WITH HEAT SHRINK TUBING	2" RISER WITH HEAT SHRINK TUBING	HEAT SHRINK TUBING RETROFIT KIT
	LF	EA	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
CL A-038	730	2	140	-	-	140	-	2	-	-	2	-	5	-	-	-	-	-	-	2	-
CL A-039	260	2	180	-	180	-	-	2	-	-	-	-	1	-	-	-	-	-	1	2	0
CL A-040	420	1	710	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	3	-	-
CL A-041	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-042	60	2	80	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	2	-
CL A-043	-	-	1,220	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-044	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-045	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-046	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
CL A-047	-	-	1,140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-048	180	1	840	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	2	-
CL A-049	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
CL A-050	120	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	1	-
CL A-051	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
CL A-052	660	1	340	-	180	-	160	2	-	-	1	-	1	-	-	-	-	-	-	1	-
CL A-053	520	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-054	-	1	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	1
CL A-055	-	2	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	1
CL A-056	-	1	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-
CL A-057	-	3	330	-	330	-	-	2	-	-	2	-	2	-	-	-	-	-	-	3	-
CL A-058	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-059	-	2	440	-	-	-	440	3	-	-	3	-	-	-	-	-	-	-	-	2	-
CL A-060	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-061	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
CL A-062	500	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	
CL A-063	-	1	380	-	280	-	100	2	-	-	2	-	1	-	-	-	-	-	-	2	-
CL A-064	-	-	1,290	-	1,230	-	60	1	-	-	1	-	-	-	-	-	-	-	-	-	-
CL A-065	-	-	1,400	-	1,400	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-
CL A-066	-	1	300	-	180	-	120	1	1	-	2	-	-	-	-	-	-	-	-	1	-
CL A-067	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-068	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-069	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-070	80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-
CL A-071	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-072	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-073	-	-	760	-	760	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-074	-	-	1,400	-	670	-	730	2	1	-	1	-	-	-	-	-	-	-	-	-	-

- Work shown on this sheet is a summary of work for the installation of the fiber-optic cable, wireless links, and CCTV installations that are shown on the cable layout plans (i.e. CL sheets). Work to be done for traffic signals is shown separately on the signal designs and the "Summary of Work by Intersection" sheets in Volume III of III.
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ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
Traffic Engineering, Safety and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

SCALE: NTS

Winston-Salem Signal System
Summary of Work by
Cable Layout Plans - Phase A
(sheet 1 of 3)

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	JAW/BKS	REVIEWED BY:	LW Moon

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL
SEAL 022516
ENGINEER
LISA M. MOON

Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: Phase A Summary by CL.dgn

26-MAR-2013 13:33
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13933

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	17

SUMMARY OF WORK BY CABLE LAYOUT PLANS

CABLE LAYOUT SHEET NUMBER	COMMUNICATIONS CABLE (24-FIBER)	COMMUNICATIONS CABLE (36-FIBER)	COMMUNICATIONS CABLE (48-FIBER)	COMMUNICATIONS CABLE (72-FIBER)	DROP CABLE (6-FIBER)	HANDLASH & AERIAL CABLE PROTECTOR	SPLICE ENCLOSURE	MODIFY EXISTING SPLICE	INTERCONNECT CENTER	ETHERNET EDGE SWITCH	REMOVE EXISTING COMMUNICATIONS CABLE	CUT AND CAP EXISTING COMMUNICATIONS CABLE	INSTALL CCTV CAMERA ASSEMBLY	INSTALL CCTV CABINET (POLE)	CCTV WOOD POLE	DIGITAL VIDEO ENCODER	MODIFY ELEC SERVICE FOR CCTV/HUB	NEW O/H ELEC SERVICE FOR CCTV/HUB	INSTALL 5/8" x 10' GROUNDING ELECTRODE	CONTACT MAPPING TRANSMITTER	CONTACT MAPPING RECEIVER
	LF	LF	LF	LF	LF	LF	EA	EA	EA	EA	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
CL A-038	-	-	1,170	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-039	-	-	1,540	-	980	-	2	-	3	3	120	-	-	-	-	-	-	-	-	-	-
CL A-040	1,020	-	1,940	-	1,060	-	3	-	3	3	-	-	-	-	-	-	-	-	-	-	-
CL A-041	650	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-042	-	-	1,220	-	990	-	1	-	2	2	-	-	-	-	-	-	-	-	-	-	-
CL A-043	-	-	1,220	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-044	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-045	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-046	280	-	-	-	220	-	1	-	1	1	50	-	-	-	-	-	-	-	-	-	-
CL A-047	1,380	-	-	-	-	-	-	-	3	3	1,190	-	-	-	-	-	-	-	-	-	-
CL A-048	2,180	-	-	-	350	-	1	-	1	1	1,035	-	-	-	-	-	-	-	-	-	-
CL A-049	190	-	-	-	290	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-
CL A-050	1,380	-	-	-	290	-	1	-	1	1	440	-	-	-	-	-	-	-	-	-	-
CL A-051	1,620	-	-	-	770	250	1	-	2	2	-	-	-	-	-	-	-	-	-	-	-
CL A-052	1,130	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-053	960	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-054	900	-	-	-	270	-	1	-	1	1	600	-	-	-	-	-	-	-	-	-	-
CL A-055	1,350	-	-	-	480	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-
CL A-056	1,500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-057	1,660	-	-	-	310	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-
CL A-058	1,510	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-059	380	1,820	-	-	960	-	1	1	2	2	200	-	-	-	-	-	-	-	-	-	-
CL A-060	-	1,040	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-061	-	1,050	-	-	550	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-
CL A-062	800	1,370	-	-	560	-	1	-	2	2	370	-	1	1	1	1	1	-	-	-	-
CL A-063	-	1,390	-	-	260	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-
CL A-064	-	1,390	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-065	-	1,450	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-066	-	1,130	-	-	90	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-
CL A-067	-	1,240	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-068	-	-	-	-	-	-	-	-	-	-	1,210	-	-	-	-	-	-	-	-	-	-
CL A-069	-	-	-	-	-	-	-	-	-	-	1,620	-	-	-	-	-	-	-	-	-	-
CL A-070	-	-	-	-	-	-	-	-	-	2	1,060	-	-	-	-	-	-	-	-	-	-
CL A-071	-	-	-	-	-	-	-	-	-	-	1,450	-	-	-	-	-	-	-	-	-	-
CL A-072	-	-	-	-	-	-	-	-	-	-	1,420	-	-	-	-	-	-	-	-	-	-
CL A-073	900	-	-	-	-	-	-	1	-	-	1,200	-	-	-	-	-	-	-	-	-	-
CL A-074	1,550	-	-	-	60	-	1	-	1	1	150	-	-	-	-	-	-	-	-	-	-

- Work shown on this sheet is a summary of work for the installation of the fiber-optic cable, wireless links, and CCTV installations that are shown on the cable layout plans (i.e. CL sheets). Work to be done for traffic signals is shown separately on the signal designs and the "Summary of Work by Intersection" sheets in Volume III of III.
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ATKINS
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(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Transportation Mobility and Safety Division
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Summary of Work by
Cable Layout Plans - Phase A
(sheet 2 of 3)

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	JAW/BKS	REVIEWED BY:	LM Moon

SCALE	REVISIONS	INIT.	DATE
NTS			

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: Phase A Summary by CL.dgn

20-JAN-2013 14:36
D:\#Transportation\Traffic\Curr\#1000227\2 Winston Salem Sig Sys\Special Details\Phase A Summary by CL.dgn
13833

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	18

SUMMARY OF WORK BY CABLE LAYOUT PLANS

CABLE LAYOUT SHEET NUMBER	INSTALL FOUNDATION FOR HUB CABINET	INSTALL HUB CABINET	MANAGED ETHERNET SWITCH	REMOVE SPLICE/ HUB CABINET	UNI-DIRECTIONAL ANTENNA	900 MHz ETHERNET RADIO SYSTEM	4.9 GHz ETHERNET INTEGRATED RADIO / FLAT-PANEL ANTENNA	4.9GHZ INTEGRATED RADIO/OMNI-DIRECTIONAL ANTENNA	4.9 GHZ FLAT PANEL ANTENNA	ETHERNET CABLE (CAT 5E)	COAXIAL ANTENNA CABLE	IS INSTALL FOUNDATION FOR HUB CABINET	IS INSTALL HUB CABINET	IS UNDERGROUND CONDUIT (2 CONDUIT, 2 INCH)	IS JUNCTION BOX (SPECIAL -SIZED)	IS 2" RISER WITH HEAT SHRINK TUBING	IS COMMUNICATIONS CABLE (24-FIBER)	IS COMMUNICATIONS CABLE (48-FIBER)	IS COMMUNICATIONS CABLE (96-FIBER)	IS COMMUNICATIONS CABLE (144-FIBER)	IS SPLICE ENCLOSURE
	EA	EA	EA	EA	EA	EA	EA	EA	EA	LF	LF	EA	EA	LF	EA	EA	LF	LF	LF	LF	EA
CL A-038	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,070	-	-	-	-
CL A-039	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	1,420	-	-	-	-
CL A-040	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	1,380	-	-	-	1
CL A-041	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-042	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1,120	-	-	-	-
CL A-043	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,220	-	-	-	-
CL A-044	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-045	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-046	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-047	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-048	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-049	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-050	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-051	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-052	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-053	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-054	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-055	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-056	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-057	-	-	-	1	1	1	-		-	-	50	-	-	-	-	-	-	-	-	-	-
CL A-058	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-059	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1,120	-	1
CL A-060	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	940	-	-
CL A-061	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,050	-	-
CL A-062	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,270	-	-
CL A-063	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,290	-	-
CL A-064	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1,390	-	-
CL A-065	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,400	-	-
CL A-066	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,100	-	-
CL A-067	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,240	-	-
CL A-068	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-069	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-070	-	-	-	1	2	2	-		-	-	200	-	-	-	-	-	-	-	-	-	-
CL A-071	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-072	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-073	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-074	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of: NC Department of Transportation, Mobility and Safety Division, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Summary of Work by
Cable Layout Plans - Phase A
(sheet 3 of 3)

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	JAW/BKS	REVIEWED BY:	LW Moon

SCALE	REVISIONS	INIT.	DATE
NTS			

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE 1-11-13 DATE

CADD Filename: Phase A Summary by CL.dgn

26-MAR-2013 13:33
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13sj

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	19

SUMMARY OF WORK BY CABLE LAYOUT PLANS

CABLE LAYOUT SHEET NUMBER	MESSENGER CABLE (1/4")	BOND MESSENGER CABLE	TRACER WIRE	UNDERGROUND CONDUIT (1 CONDUIT, 2 INCH)	UNDERGROUND CONDUIT (2 CONDUIT, 2 INCH)	DIRECTIONAL DRILL (1 CONDUIT, 4 INCH)	DIRECTIONAL DRILL (2 CONDUIT, 2 INCH)	JUNCTION BOX (OVER-SIZED)	JUNCTION BOX (SPECIAL -SIZED)	REMOVE EXISTING JUNCTION BOX	DELINEATOR MARKER	WOOD POLE	STANDARD GUY ASSEMBLY	AERIAL GUY ASSEMBLY	SIDEWALK GUY ASSEMBLY	1" RISER WITH WEATHERHEAD FOR ELECTRICAL	1" RISER WITH WEATHERHEAD FOR CAT 5E	2" RISER WITH WEATHERHEAD	1" RISER WITH HEAT SHRINK TUBING	2" RISER WITH HEAT SHRINK TUBING	HEAT SHRINK TUBING RETROFIT KIT
	LF	EA	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
CL A-075	510	1	910	-	-	-	910	2	-	-	1	-	-	-	1	-	-	-	-	1	-
CL A-076	1,380	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-077	1,360	1	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
CL A-078	1,380	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-079	980	2	350	25	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-	1	1
CL A-080	-	-	1,290	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-081	-	-	1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-082	-	-	980	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-083	-	-	1,290	-	620	-	670	3	-	-	1	-	-	-	-	-	-	-	-	-	-
CL A-084	-	-	980	-	840	-	140	1	1	-	-	-	-	-	-	-	-	-	-	-	-
CL A-085	-	-	1,490	-	990	-	500	5	-	-	2	-	-	-	-	-	-	-	-	-	-
CL A-086	1,320	2	70	-	70	-	-	1	-	-	1	-	2	-	-	-	-	-	-	1	-
CL A-087	270	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
CL A-088	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-089	-	1	280	-	180	-	100	2	1	-	2	-	3	-	-	-	-	-	-	1	-
CL A-090	-	1	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
CL A-091	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-092	-	2	140	-	-	140	-	2	-	-	2	-	2	-	-	-	-	-	-	2	-
CL A-093	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
CL A-094	20	5	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	6	-
CL A-095	-	3	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	2	-	-
CL A-096	-	1	900	-	-	900	-	-	1	-	-	-	-	-	-	-	-	-	-	1	-
CL A-097	-	2	170	-	-	-	170	1	-	-	1	-	1	-	-	-	-	-	-	2	-
CL A-098	-	1	180	-	180	-	-	1	1	-	1	-	1	-	-	-	-	-	-	1	-
CL A-099	470	2	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-	1	1	-
CL A-100	50	1	30	-	30	-	-	-	-	-	-	-	2	1	-	-	-	-	-	2	-
CL A-101	-	1	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	1
CL A-102	-	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1	-
CL A-103	1,260	2	140	-	-	-	140	1	-	-	1	-	1	-	-	-	-	-	-	1	1
CL A-104	710	2	320	-	-	-	320	1	-	-	1	-	4	-	-	-	-	-	-	2	-
CL A-105	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
CL A-106	-	2	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
CL A-107	-	3	40	-	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
CL A-108	530	3	180	-	180	-	-	2	-	-	2	-	2	-	-	-	-	-	-	3	1
CL A-109	230	2	1,100	-	775	-	340	4	-	-	3	-	2	-	-	-	-	-	-	2	-
CL A-110	410	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-	-
CL A-111	1,280	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

- Work shown on this sheet is a summary of work for the installation of the fiber-optic cable, wireless links, and CCTV installations that are shown on the cable layout plans (i.e. CL sheets). Work to be done for traffic signals is shown separately on the signal designs and the "Summary of Work by Intersection" sheets in Volume III of III.
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ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of: Transportation Mobility and Safety Division, North Carolina Department of Transportation, Integrated Mobility Division, 750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Summary of Work by
Cable Layout Plans - Phase A
(sheet 1 of 3)

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	JAW/BKS	REVIEWED BY:	LW Moon

SCALE	REVISIONS	INIT.	DATE
NTS			

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

SIGNATURE DATE 1-11-13

CADD Filename: Phase A Summary by CL.dgn

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13833

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	20

SUMMARY OF WORK BY CABLE LAYOUT PLANS

CABLE LAYOUT SHEET NUMBER	COMMUNICATIONS CABLE (24-FIBER)	COMMUNICATIONS CABLE (36-FIBER)	COMMUNICATIONS CABLE (48-FIBER)	COMMUNICATIONS CABLE (72-FIBER)	DROP CABLE (6-FIBER)	HANDLASH & AERIAL CABLE PROTECTOR	SPLICE ENCLOSURE	MODIFY EXISTING SPLICE	INTERCONNECT CENTER	ETHERNET EDGE SWITCH	REMOVE EXISTING COMMUNICATIONS CABLE	CUT AND CAP EXISTING COMMUNICATIONS CABLE	INSTALL CCTV CAMERA ASSEMBLY	INSTALL CCTV CABINET (POLE)	CCTV WOOD POLE	DIGITAL VIDEO ENCODER	MODIFY ELEC SERVICE FOR CCTV/HUB	NEW O/H ELEC SERVICE FOR CCTV/HUB	INSTALL 5/8" x 10' GROUNDING ELECTRODE	CONTACT MAPPING TRANSMITTER	CONTACT MAPPING RECEIVER
	LF	LF	LF	LF	LF	LF	EA	EA	EA	EA	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
CL A-075	1,510	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-076	1,480	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-077	1,460	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-078	1,380	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-079	1,580	-	-	-	210	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-
CL A-080	1,290	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-081	1,100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-082	1,080	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-083	-	1,390	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-084	-	1,030	-	-	60	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-
CL A-085	-	1,660	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-086	-	1,570	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-087	-	1,510	-	-	280	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-
CL A-088	-	1,410	-	-	-	470	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-089	730	-	-	-	60	-	1	-	1	1	140	-	-	-	-	-	-	-	-	-	-
CL A-090	1,290	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-091	-	-	-	1,240	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-092	-	-	-	1,210	-	-	-	-	-	-	170	-	-	-	-	-	-	-	-	-	-
CL A-093	-	-	-	1,530	300	110	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-
CL A-094	-	-	-	1,750	2,570	690	3	-	6	6	-	-	-	-	-	-	-	-	-	-	-
CL A-095	-	730	-	1,120	1,030	980	1	-	2	2	-	-	-	-	-	-	-	-	-	-	-
CL A-096	-	1,430	-	-	60	160	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-
CL A-097	-	1,400	-	-	250	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-
CL A-098	990	-	-	-	340	-	2	-	1	1	210	-	-	-	-	-	-	-	-	-	-
CL A-099	1,050	920	-	-	540	-	1	-	2	2	600	-	-	-	-	-	-	-	-	-	-
CL A-100	1,250	330	-	-	450	-	1	1	2	2	220	-	-	-	-	-	-	-	-	-	-
CL A-101	1,590	-	-	-	380	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-
CL A-102	1,070	-	-	-	210	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-
CL A-103	-	1,580	-	-	360	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-
CL A-104	570	1,700	-	-	210	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-
CL A-105	-	1,290	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-106	-	1,490	-	-	280	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-
CL A-107	-	1,440	-	-	1,110	-	1	-	2	2	-	-	-	-	-	-	-	-	-	-	-
CL A-108	-	1,820	-	-	690	-	2	-	2	2	-	-	-	-	-	-	-	-	-	-	-
CL A-109	-	1,650	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-110	-	1,660	-	-	280	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-
CL A-111	-	1,380	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

- Work shown on this sheet is a summary of work for the installation of the fiber-optic cable, wireless links, and CCTV installations that are shown on the cable layout plans (i.e. CL sheets). Work to be done for traffic signals is shown separately on the signal designs and the "Summary of Work by Intersection" sheets in Volume III of III.
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ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of: Transportation Mobility and Safety Division, North Carolina Department of Transportation, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Summary of Work by
Cable Layout Plans - Phase A
(sheet 2 of 3)

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	JAW/BKS	REVIEWED BY:	LM Moon

SCALE	REVISIONS	INIT.	DATE
NTS			

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

SIGNATURE Lisa M. Moon 1-11-13 DATE

CADD Filename: Phase A Summary by CL.dgn

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13833

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	21

SUMMARY OF WORK BY CABLE LAYOUT PLANS

CABLE LAYOUT SHEET NUMBER	INSTALL FOUNDATION FOR HUB CABINET	INSTALL HUB CABINET	MANAGED ETHERNET SWITCH	REMOVE SPLICE/ HUB CABINET	UNI-DIRECTIONAL ANTENNA	900 MHz ETHERNET RADIO SYSTEM	4.9 GHz ETHERNET INTEGRATED RADIO / FLAT-PANEL ANTENNA	4.9GHZ INTEGRATED RADIO/OMNI-DIRECTIONAL ANTENNA	4.9 GHZ FLAT PANEL ANTENNA	ETHERNET CABLE (CAT 5E)	COAXIAL ANTENNA CABLE	IS INSTALL FOUNDATION FOR HUB CABINET	IS INSTALL HUB CABINET	IS UNDERGROUND CONDUIT (2 CONDUIT, 2 INCH)	IS JUNCTION BOX (SPECIAL -SIZED)	IS 2" RISER WITH HEAT SHRINK TUBING	IS COMMUNICATIONS CABLE (24-FIBER)	IS COMMUNICATIONS CABLE (48-FIBER)	IS COMMUNICATIONS CABLE (96-FIBER)	IS COMMUNICATIONS CABLE (144-FIBER)	IS SPLICE ENCLOSURE
	EA	EA	EA	EA	EA	EA	EA	EA	EA	LF	LF	EA	EA	LF	EA	EA	LF	LF	LF	LF	EA
CL A-075	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-076	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-077	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	840	-	-	1
CL A-078	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,380	-	-	-
CL A-079	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,380	-	-	-
CL A-080	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,390	-	-	-
CL A-081	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,100	-	-	-
CL A-082	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,080	-	-	-
CL A-083	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-084	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-085	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-086	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-087	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-088	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-089	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-090	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-091	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1,140	-	-	-
CL A-092	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,110	-	-	-
CL A-093	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1,530	-	-	-
CL A-094	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1,450	-	-	-
CL A-095	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	2,650	-	-	-
CL A-096	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1,420	-	-	-
CL A-097	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	140	1,350	-	-	1
CL A-098	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	990	-	-	1
CL A-099	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	770	620	-	-	-
CL A-100	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	1,430	-	-	-	-
CL A-101	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	1,390	-	-	-	-
CL A-102	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	970	-	-	-	-
CL A-103	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,430	-	-	-
CL A-104	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1,940	-	-	1
CL A-105	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	1,290	-	-	-
CL A-106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,390	-	-	-
CL A-107	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	1,040	-	-	-
CL A-108	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1,520	-	-	-
CL A-109	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,500	-	-	-
CL A-110	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,460	-	-	-
CL A-111	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,280	-	-	-

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Prepared for the Offices of: Transportation Mobility and Safety Division, North Carolina Department of Transportation, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Summary of Work by
Cable Layout Plans - Phase A
(sheet 3 of 3)

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	JAW/BKS	REVIEWED BY:	LW Moon

SCALE: NTS

REVISIONS	INIT.	DATE

SEAL: NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: Phase A Summary by CL.dgn

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PROJECT REFERENCE NO.	SHEET NO.
C-5224A	22

SUMMARY OF WORK BY CABLE LAYOUT PLANS

CABLE LAYOUT SHEET NUMBER	MESSENGER CABLE (1/4")	BOND MESSENGER CABLE	TRACER WIRE	UNDERGROUND CONDUIT (1 CONDUIT, 2 INCH)	UNDERGROUND CONDUIT (2 CONDUIT, 2 INCH)	DIRECTIONAL DRILL (1 CONDUIT, 4 INCH)	DIRECTIONAL DRILL (2 CONDUIT, 2 INCH)	JUNCTION BOX (OVER-SIZED)	JUNCTION BOX (SPECIAL -SIZED)	REMOVE EXISTING JUNCTION BOX	DELINEATOR MARKER	WOOD POLE	STANDARD GUY ASSEMBLY	AERIAL GUY ASSEMBLY	SIDEWALK GUY ASSEMBLY	1" RISER WITH WEATHERHEAD FOR ELECTRICAL	1" RISER WITH WEATHERHEAD FOR CAT 5E	2" RISER WITH WEATHERHEAD	1" RISER WITH HEAT SHRINK TUBING	2" RISER WITH HEAT SHRINK TUBING	HEAT SHRINK TUBING RETROFIT KIT
	LF	EA	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
CL A-112	1,190	2	330	-	-	-	330	1	-	-	1	-	5	-	-	-	-	-	-	1	-
CL A-113	-	2	1,140	-	800	-	360	4	1	-	2	-	2	-	-	-	-	-	-	2	-
CL A-114	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-115	80	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
CL A-116	130	1	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	1	-
CL A-117	-	2	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
CL A-118	-	1	440	-	60	-	-	1	-	-	-	-	3	-	1	-	-	-	-	2	-
CL A-119	50	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
CL A-120	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-121	-	1	60	-	-	-	60	1	1	-	-	-	1	-	-	-	-	-	-	1	-
CL A-122	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-123	-	1	40	-	40	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	-
CL A-124	-	1	30	-	-	-	30	1	-	-	-	-	1	-	-	-	-	-	-	1	1
CL A-125	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-126	450	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
CL A-127	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-128	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-
CL A-129	-	1	200	-	200	-	-	1	-	-	1	-	2	-	-	-	-	-	-	2	-
CL A-130	-	1	570	-	250	-	320	2	-	-	1	-	1	-	-	-	-	-	-	1	-
CL A-131	20	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
CL A-132	-	1	470	-	-	-	470	1	1	-	2	-	1	-	-	-	-	-	-	1	-
CL A-133	-	2	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	1	-	-
CL A-134	-	-	1,340	-	-	-	1,340	2	2	-	2	-	-	-	-	-	-	-	-	-	-
CL A-135	60	1	830	-	640	-	190	1	-	-	1	-	-	-	-	-	-	-	-	1	-
CL A-136	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-137	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-138	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-139	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-141	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
CL A-142	-	1	40	-	40	-	-	1	-	-	-	-	1	-	-	-	-	-	-	2	1
CL A-143	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-144	-	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
CL A-145	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-146	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-147	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-148	-	2	40	40	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	2	-

- Work shown on this sheet is a summary of work for the installation of the fiber-optic cable, wireless links, and CCTV installations that are shown on the cable layout plans (i.e. CL sheets). Work to be done for traffic signals is shown separately on the signal designs and the "Summary of Work by Intersection" sheets in Volume III of III.
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ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of: NCDOT Transportation Mobility and Safety Division, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Summary of Work by Cable Layout Plans - Phase A
(sheet 1 of 3)

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	JAW/BKS	REVIEWED BY:	LM Moon

SCALE: NTS

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022518 ENGINEER LISA M. MOON
SIGNATURE
1-11-13
DATE

CADD Filename: Phase A Summary by CL.dgn

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13833

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	23

SUMMARY OF WORK BY CABLE LAYOUT PLANS

CABLE LAYOUT SHEET NUMBER	COMMUNICATIONS CABLE (24-FIBER)	COMMUNICATIONS CABLE (36-FIBER)	COMMUNICATIONS CABLE (48-FIBER)	COMMUNICATIONS CABLE (72-FIBER)	DROP CABLE (6-FIBER)	HANDLASH & AERIAL CABLE PROTECTOR	SPLICE ENCLOSURE	MODIFY EXISTING SPLICE	INTERCONNECT CENTER	ETHERNET EDGE SWITCH	REMOVE EXISTING COMMUNICATIONS CABLE	CUT AND CAP EXISTING COMMUNICATIONS CABLE	INSTALL CCTV CAMERA ASSEMBLY	INSTALL CCTV CABINET (POLE)	CCTV WOOD POLE	DIGITAL VIDEO ENCODER	MODIFY ELEC SERVICE FOR CCTV/HUB	NEW O/H ELEC SERVICE FOR CCTV/HUB	INSTALL 5/8" x 10' GROUNDING ELECTRODE	CONTACT MAPPING TRANSMITTER	CONTACT MAPPING RECEIVER
	LF	LF	LF	LF	LF	LF	EA	EA	EA	EA	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
CL A-112	-	1,420	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-113	950	660	-	-	60	-	1	-	1	1	580	-	-	-	-	-	-	-	-	-	-
CL A-114	1,110	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-115	1,430	-	-	-	450	-	2	-	2	2	80	-	-	-	-	-	-	-	-	-	-
CL A-116	1,530	-	-	-	370	-	1	-	1	1	120	-	-	-	-	-	-	-	-	-	-
CL A-117	1,490	-	-	-	-	120	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-118	1,590	-	-	-	340	160	1	-	1	1	150	-	-	-	-	-	-	-	-	-	-
CL A-119	380	-	-	-	360	-	1	-	1	1	410	-	-	-	-	-	-	-	-	-	-
CL A-120	-	-	-	-	-	-	-	-	-	-	1,360	-	-	-	-	-	-	-	-	-	-
CL A-121	1,180	-	-	-	60	-	1	-	1	1	300	-	-	-	-	-	-	-	-	-	-
CL A-122	1,260	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-123	1,160	-	-	-	100	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-
CL A-124	960	-	-	-	230	-	1	-	1	1	530	-	-	-	-	-	-	-	-	-	-
CL A-125	1,500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-126	1,620	-	-	-	385	-	1	-	1	1	270	-	-	-	-	-	-	-	-	-	-
CL A-127	1,500	-	-	-	-	570	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-128	1,570	-	-	-	430	250	2	-	2	2	-	-	-	-	-	-	-	-	-	-	-
CL A-129	1,490	-	-	-	280	-	1	-	1	1	210	-	-	-	-	-	-	-	-	-	-
CL A-130	1,410	-	-	-	-	-	-	-	-	-	570	-	-	-	-	-	-	-	-	-	-
CL A-131	1,380	-	-	-	440	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-
CL A-132	820	-	-	-	-	-	1	-	-	-	510	-	-	-	-	-	-	-	-	-	-
CL A-133	1,050	-	-	-	260	-	1	-	1	1	490	-	-	-	-	-	-	-	-	-	-
CL A-134	-	1,520	-	-	310	-	2	-	2	2	1,480	-	-	-	-	-	-	-	-	-	-
CL A-135	-	1,140	-	-	300	-	1	-	1	1	840	-	-	-	-	-	-	-	-	-	-
CL A-136	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-137	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-138	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-139	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-140	130	130	-	-	130	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-141	1,570	-	-	-	420	-	2	-	2	2	-	-	-	-	-	-	-	-	-	-	-
CL A-142	540	-	-	-	1,300	-	-	1	2	2	-	-	-	-	-	-	-	-	-	-	-
CL A-143	1,020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-144	1,050	-	-	-	-	-	-	-	-	-	370	-	-	-	-	-	-	-	-	-	-
CL A-145	-	-	-	-	-	-	-	-	-	-	1,280	-	-	-	-	-	-	-	-	-	-
CL A-146	-	-	-	-	-	-	-	-	-	-	1,320	-	-	-	-	-	-	-	-	-	-
CL A-147	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-148	-	1,240	-	-	510	450	2	-	2	2	-	-	-	-	-	-	-	-	-	-	-

- Work shown on this sheet is a summary of work for the installation of the fiber-optic cable, wireless links, and CCTV installations that are shown on the cable layout plans (i.e. CL sheets). Work to be done for traffic signals is shown separately on the signal designs and the "Summary of Work by Intersection" sheets in Volume III of III.
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ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of: Transportation Mobility and Safety Division, North Carolina Department of Transportation, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Summary of Work by Cable Layout Plans - Phase A (sheet 2 of 3)

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	JAW/BKS	REVIEWED BY:	LM Moon

SCALE	REVISIONS	INIT.	DATE
NTS			

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE 1-11-13 DATE

CADD Filename: Phase A Summary by CL.dgn

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13833

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	24

SUMMARY OF WORK BY CABLE LAYOUT PLANS

CABLE LAYOUT SHEET NUMBER	INSTALL FOUNDATION FOR HUB CABINET	INSTALL HUB CABINET	MANAGED ETHERNET SWITCH	REMOVE SPLICE/ HUB CABINET	UNI-DIRECTIONAL ANTENNA	900 MHz ETHERNET RADIO SYSTEM	4.9 GHz ETHERNET INTEGRATED RADIO / FLAT-PANEL ANTENNA	4.9GHZ INTEGRATED RADIO/OMNI-DIRECTIONAL ANTENNA	4.9 GHZ FLAT PANEL ANTENNA	ETHERNET CABLE (CAT 5E)	COAXIAL ANTENNA CABLE	IS INSTALL FOUNDATION FOR HUB CABINET	IS INSTALL HUB CABINET	IS UNDERGROUND CONDUIT (2 CONDUIT, 2 INCH)	IS JUNCTION BOX (SPECIAL -SIZED)	IS 2" RISER WITH HEAT SHRINK TUBING	IS COMMUNICATIONS CABLE (24-FIBER)	IS COMMUNICATIONS CABLE (48-FIBER)	IS COMMUNICATIONS CABLE (96-FIBER)	IS COMMUNICATIONS CABLE (144-FIBER)	IS SPLICE ENCLOSURE
	EA	EA	EA	EA	EA	EA	EA	EA	EA	LF	LF	EA	EA	LF	EA	EA	LF	LF	LF	LF	EA
CL A-112	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,520	-	-	-
CL A-113	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	-	410	1,370	-	-	1
CL A-114	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,010	-	-	-
CL A-115	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	1,230	-	-	-
CL A-116	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1,430	-	-	-
CL A-117	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,390	-	-	-
CL A-118	-	-	-	1	1	1	-		-	-	50	-	-	-	-	-	-	1,600	-	-	-
CL A-119	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-120	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-121	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-122	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,160	-	-	-
CL A-123	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	790	-	-	1
CL A-124	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	890	-	-	-	-
CL A-125	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1,500	-	-	-	-
CL A-126	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,620	-	-	-	-
CL A-127	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,400	-	-	-	-
CL A-128	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	1,370	-	-	-	-
CL A-129	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,160	-	-	-	1
CL A-130	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-131	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-132	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-133	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-134	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	1,520	-	-	-
CL A-135	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	-	-	1,320	-	-	-
CL A-136	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	1,410	-	-	-
CL A-137	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,440	-	-	-
CL A-138	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,450	-	-	-
CL A-139	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,280	-	-	-
CL A-140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,090	-	-	-
CL A-141	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	1,390	-	-	2
CL A-142	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	840	-	-	1
CL A-143	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,020	-	-	-
CL A-144	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1,040	-	-	1
CL A-145	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-146	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-147	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-148	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	240	1,000	-	-	1

- Work shown on this sheet is a summary of work for the installation of the fiber-optic cable, wireless links, and CCTV installations that are shown on the cable layout plans (i.e. CL sheets). Work to be done for traffic signals is shown separately on the signal designs and the "Summary of Work by Intersection" sheets in Volume III of III.
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ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of: North Carolina Department of Transportation, Mobility and Safety Division, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Summary of Work by Cable Layout Plans - Phase A (sheet 3 of 3)

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	JAW/BKS	REVIEWED BY:	LW Moon

SCALE: NTS

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE 1-11-13 DATE

CADD Filename: Phase A Summary by CL.dgn

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13833

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	25

SUMMARY OF WORK BY CABLE LAYOUT PLANS

CABLE LAYOUT SHEET NUMBER	MESSENGER CABLE (1/4")	BOND MESSENGER CABLE	TRACER WIRE	UNDERGROUND CONDUIT (1 CONDUIT, 2 INCH)	UNDERGROUND CONDUIT (2 CONDUIT, 2 INCH)	DIRECTIONAL DRILL (1 CONDUIT, 4 INCH)	DIRECTIONAL DRILL (2 CONDUIT, 2 INCH)	JUNCTION BOX (OVER-SIZED)	JUNCTION BOX (SPECIAL -SIZED)	REMOVE EXISTING JUNCTION BOX	DELINEATOR MARKER	WOOD POLE	STANDARD GUY ASSEMBLY	AERIAL GUY ASSEMBLY	SIDEWALK GUY ASSEMBLY	1" RISER WITH WEATHERHEAD FOR ELECTRICAL	1" RISER WITH WEATHERHEAD FOR CAT 5E	2" RISER WITH WEATHERHEAD	1" RISER WITH HEAT SHRINK TUBING	2" RISER WITH HEAT SHRINK TUBING	HEAT SHRINK TUBING RETROFIT KIT
	LF	EA	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
CL A-149	-	1	30	-	30	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1	-
CL A-150	-	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
CL A-151	-	2	-	-	-	-	-	-	-	-	-	-	3	-	1	-	-	-	-	1	-
CL A-152	-	2	1,060	-	-	-	450	2	1	1	1	-	2	-	-	-	-	-	-	2	-
CL A-153	-	2	220	-	-	-	220	3	1	-	1	-	5	-	-	-	-	-	-	3	-
CL A-154	-	2	410	-	-	-	410	2	-	-	-	-	2	-	-	-	-	-	-	2	-
CL A-155	-	1	440	-	-	-	440	2	1	-	2	-	-	-	-	-	-	-	-	1	-
CL A-156	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
CL A-157	-	2	290	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
CL A-158	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
CL A-159	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
CL A-160	-	-	210	-	-	-	210	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-161	250	1	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	1	-
CL A-162	-	2	320	20	-	-	320	2	-	-	1	-	1	-	-	-	-	-	-	3	-
CL A-163	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-164	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-165	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-166	-	2	-	-	-	-	-	-	-	-	-	-	3	-	2	-	-	-	-	1	-
CL A-167	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
CL A-168	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
CL A-169	80	1	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	1	-
CL A-170	80	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
CL A-171	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
CL A-172	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-173	240	2	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1	-
CL A-174	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-175	-	1	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-
CL A-176	-	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
CL A-177	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-178	-	3	700	-	-	-	700	3	1	-	2	-	5	1	-	-	-	-	-	3	-
CL A-179	-	1	-	15	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-
CL A-180	1,670	2	-	15	-	-	-	-	-	-	-	-	5	1	-	-	-	-	-	1	-
CL A-181	1,420	1	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
CL A-182	1,440	1	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-
CL A-183	1,440	1	-	-	-	-	-	-	-	-	-	-	3	1	-	-	-	-	-	-	-
CL A-184	1,440	1	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-
CL A-185	1,400	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-186	1,430	1	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-

- Work shown on this sheet is a summary of work for the installation of the fiber-optic cable, wireless links, and CCTV installations that are shown on the cable layout plans (i.e. CL sheets). Work to be done for traffic signals is shown separately on the signal designs and the "Summary of Work by Intersection" sheets in Volume III of III.
- The items listed above are for informational purposes only and represent work that is necessary to complete the project and are not necessarily pay items. See Summary of Quantites and the Project Special Provisions for defined Pay Items for this contract.

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of: North Carolina Department of Transportation, Mobility and Safety Division, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Summary of Work by Cable Layout Plans - Phase A (sheet 1 of 3)

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	JAW/BKS	REVIEWED BY:	LW Moon

SCALE	REVISIONS	INIT.	DATE
NTS			

SEAL NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: Phase A Summary by CL.dgn

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SUMMARY OF WORK BY CABLE LAYOUT PLANS

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	26

CABLE LAYOUT SHEET NUMBER	COMMUNICATIONS CABLE (24-FIBER)	COMMUNICATIONS CABLE (36-FIBER)	COMMUNICATIONS CABLE (48-FIBER)	COMMUNICATIONS CABLE (72-FIBER)	DROP CABLE (6-FIBER)	HANDLASH & AERIAL CABLE PROTECTOR	SPLICE ENCLOSURE	MODIFY EXISTING SPLICE	INTERCONNECT CENTER	ETHERNET EDGE SWITCH	REMOVE EXISTING COMMUNICATIONS CABLE	CUT AND CAP EXISTING COMMUNICATIONS CABLE	INSTALL CCTV CAMERA ASSEMBLY	INSTALL CCTV CABINET (POLE)	CCTV WOOD POLE	DIGITAL VIDEO ENCODER	MODIFY ELEC SERVICE FOR CCTV/HUB	NEW O/H ELEC SERVICE FOR CCTV/HUB	INSTALL 5/8" x 10' GROUNDING ELECTRODE	CONTACT MAPPING TRANSMITTER	CONTACT MAPPING RECEIVER
	LF	LF	LF	LF	LF	LF	EA	EA	EA	EA	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
CL A-149	350	1,570	-	-	200	400	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-
CL A-150	-	1,540	-	-	-	120	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-151	-	1,580	-	-	380	-	1	-	1	1	220	-	-	-	-	-	-	-	-	-	-
CL A-152	-	1,590	-	-	550	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-153	190	1,530	-	-	110	350	1	-	1	1	160	-	-	-	-	-	-	-	-	-	-
CL A-154	-	880	-	-	-	40	-	-	-	-	430	-	-	-	-	-	-	-	-	-	-
CL A-155	910	-	-	-	60	-	1	-	1	1	460	-	-	-	-	-	-	-	-	-	-
CL A-156	-	1,570	-	-	240	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-
CL A-157	-	1,390	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-158	-	2,620	-	-	610	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-
CL A-159	730	-	-	-	300	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-
CL A-160	-	-	-	-	260	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-
CL A-161	1,290	-	-	-	220	-	1	-	1	1	250	-	-	-	-	-	-	-	-	-	-
CL A-162	1,100	-	-	-	210	-	1	-	1	1	1,490	-	-	-	-	-	-	-	-	-	-
CL A-163	-	-	-	-	-	-	-	-	-	-	1,205	-	-	-	-	-	-	-	-	-	-
CL A-164	-	-	-	-	-	-	-	-	-	-	1,405	-	-	-	-	-	-	-	-	-	-
CL A-165	-	-	-	-	-	-	-	-	-	-	1,000	-	-	-	-	-	-	-	-	-	-
CL A-166	1,230	-	-	-	490	-	1	-	1	1	100	-	-	-	-	-	-	-	-	-	-
CL A-167	1,720	-	-	-	260	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-
CL A-168	1,830	-	-	-	390	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-
CL A-169	1,020	-	-	-	380	280	1	-	1	1	120	-	-	-	-	-	-	-	-	-	-
CL A-170	880	1,370	-	-	460	-	-	-	1	1	170	-	-	-	-	-	-	-	-	-	-
CL A-171	430	1,470	-	-	280	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-
CL A-172	-	1,470	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-173	560	1,560	-	-	220	-	2	-	1	1	880	-	-	-	-	-	-	-	-	-	-
CL A-174	-	1,340	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-175	-	1,450	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-176	-	1,520	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-177	-	1,410	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-178	320	1,640	-	-	-	-	1	-	-	-	790	-	-	-	-	-	-	-	-	-	-
CL A-179	-	1,480	-	-	520	-	2	-	1	1	-	-	1	1	1	1	1	-	-	-	-
CL A-180	-	1,770	-	-	130	140	-	-	1	1	140	-	-	-	-	-	-	-	-	-	-
CL A-181	-	1,420	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-182	-	1,540	-	-	-	190	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-183	-	1,540	-	-	-	130	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-184	-	1,540	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-185	-	1,500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-186	-	1,530	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

- Work shown on this sheet is a summary of work for the installation of the fiber-optic cable, wireless links, and CCTV installations that are shown on the cable layout plans (i.e. CL sheets). Work to be done for traffic signals is shown separately on the signal designs and the "Summary of Work by Intersection" sheets in Volume III of III.
- The items listed above are for informational purposes only and represent work that is necessary to complete the project and are not necessarily pay items. See Summary of Quantites and the Project Special Provisions for defined Pay Items for this contract.

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of: Transportation Mobility and Safety Division, North Carolina Department of Transportation, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Summary of Work by
Cable Layout Plans - Phase A
(sheet 2 of 3)

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	JAW/BKS	REVIEWED BY:	LM Moon

SCALE: NTS

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE 1-11-13 DATE

CADD Filename: Phase A Summary by CL.dgn

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13833

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	27

SUMMARY OF WORK BY CABLE LAYOUT PLANS

CABLE LAYOUT SHEET NUMBER	INSTALL FOUNDATION FOR HUB CABINET	INSTALL HUB CABINET	MANAGED ETHERNET SWITCH	REMOVE SPLICE/ HUB CABINET	UNI-DIRECTIONAL ANTENNA	900 MHz ETHERNET RADIO SYSTEM	4.9 GHz ETHERNET INTEGRATED RADIO / FLAT-PANEL ANTENNA	4.9GHZ INTEGRATED RADIO/OMNI-DIRECTIONAL ANTENNA	4.9 GHZ FLAT PANEL ANTENNA	ETHERNET CABLE (CAT 5E)	COAXIAL ANTENNA CABLE	IS INSTALL FOUNDATION FOR HUB CABINET	IS INSTALL HUB CABINET	IS UNDERGROUND CONDUIT (2 CONDUIT, 2 INCH)	IS JUNCTION BOX (SPECIAL -SIZED)	IS 2" RISER WITH HEAT SHRINK TUBING	IS COMMUNICATIONS CABLE (24-FIBER)	IS COMMUNICATIONS CABLE (48-FIBER)	IS COMMUNICATIONS CABLE (96-FIBER)	IS COMMUNICATIONS CABLE (144-FIBER)	IS SPLICE ENCLOSURE
	EA	EA	EA	EA	EA	EA	EA	EA	EA	LF	LF	EA	EA	LF	EA	EA	LF	LF	LF	LF	EA
CL A-149	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1,470	-	-	-
CL A-150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,440	-	-	-
CL A-151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,580	-	-	-
CL A-152	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	2,160	-	-	1
CL A-153	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,430	-	-	-
CL A-154	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	780	-	-	-
CL A-155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-156	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1,250	-	-	-	1
CL A-157	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,390	-	-	-	-
CL A-158	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1,160	-	-	-	-
CL A-159	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-160	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	260	-	-	1
CL A-161	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-162	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-163	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-164	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-165	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-166	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1,090	-	-	1
CL A-167	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1,520	-	-	-
CL A-168	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	1,220	-	-	-
CL A-169	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	920	-	-	-
CL A-170	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,850	-	-	1
CL A-171	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1,840	-	-	1
CL A-172	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,370	-	-	-
CL A-173	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1,950	-	-	1
CL A-174	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,240	-	-	-
CL A-175	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1,350	-	-	-
CL A-176	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1,420	-	-	-
CL A-177	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,410	-	-	-
CL A-178	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	340	-	-	-
CL A-179	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-180	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-181	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-182	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-183	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-184	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-185	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-186	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Prepared for the Offices of: Transportation Mobility and Safety Division, North Carolina Department of Transportation, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Summary of Work by Cable Layout Plans - Phase A
(sheet 3 of 3)

Division 09 Forsyth County Winston-Salem

PLAN DATE: January 2013 REVIEWED BY: MB Toth
PREPARED BY: JAW/BKS REVIEWED BY: LW Moon

SCALE: NTS

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE Lisa M. Moon DATE 1-11-13

CADD Filename: Phase A Summary by CL.dgn

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PROJECT REFERENCE NO.	SHEET NO.
C-5224A	28

SUMMARY OF WORK BY CABLE LAYOUT PLANS

CABLE LAYOUT SHEET NUMBER	MESSENGER CABLE (1/4")	BOND MESSENGER CABLE	TRACER WIRE	UNDERGROUND CONDUIT (1 CONDUIT, 2 INCH)	UNDERGROUND CONDUIT (2 CONDUIT, 2 INCH)	DIRECTIONAL DRILL (1 CONDUIT, 4 INCH)	DIRECTIONAL DRILL (2 CONDUIT, 2 INCH)	JUNCTION BOX (OVER-SIZED)	JUNCTION BOX (SPECIAL -SIZED)	REMOVE EXISTING JUNCTION BOX	DELINEATOR MARKER	WOOD POLE	STANDARD GUY ASSEMBLY	AERIAL GUY ASSEMBLY	SIDEWALK GUY ASSEMBLY	1" RISER WITH WEATHERHEAD FOR ELECTRICAL	1" RISER WITH WEATHERHEAD FOR CAT 5E	2" RISER WITH WEATHERHEAD	1" RISER WITH HEAT SHRINK TUBING	2" RISER WITH HEAT SHRINK TUBING	HEAT SHRINK TUBING RETROFIT KIT
	LF	EA	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
CL A-187	1,380	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-188	1,480	2	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	1	-	-
CL A-189	1,480	2	-	-	-	-	-	-	-	-	-	-	3	-	1	-	-	-	-	-	1
CL A-190	780	1	210	-	-	-	210	1	-	-	1	-	-	-	-	-	-	-	1	1	-
CL A-191	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
CL A-192	470	2	540	-	540	-	-	1	-	-	1	-	1	-	-	-	-	-	-	2	-
CL A-193	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-194	-	2	550	30	80	-	470	-	-	-	-	-	3	-	-	-	-	-	-	2	-
CL A-195	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
CL A-196	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
CL A-197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
CL A-198	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
CL A-199	-	2	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	1	-
CL A-200	-	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1	-
CL A-201	-	1	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	1	-	-
CL A-202	900	2	460	-	-	-	460	1	-	-	1	-	1	-	-	-	-	-	-	1	-
CL A-203	1,400	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-204	350	2	1,050	-	510	-	540	3	-	-	2	-	3	-	-	-	-	-	-	2	-
CL A-205	1,410	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-206	1,340	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-207	1,140	1	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-
CL A-208	1,130	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-209	220	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-210	-	2	360	-	290	-	70	2	-	-	1	-	-	-	-	-	-	-	-	3	-
CL A-211	-	1	360	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1	-
CL A-212	-	2	-	-	-	-	-	-	-	-	-	-	2	1	1	-	-	-	-	-	-
CL A-213	360	2	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-
CL A-214	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-215	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-
CL A-216	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	-	-	-
CL A-217	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	-	-	-
CL A-218	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	-	-	-
CL A-219	-	-	40	-	-	-	40	2	-	2	-	-	-	-	-	-	4	-	-	-	-
CL A-220	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	-	-	-	-
CL A-221	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-
CL A-222	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
CL A-223	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTALS	46,270	253	40,050	195	13,605	1,180	16,080	102	19	4	68	1	189	16	17	1	38	2	25	156	32

- Work shown on this sheet is a summary of work for the installation of the fiber-optic cable, wireless links, and CCTV installations that are shown on the cable layout plans (i.e. CL sheets). Work to be done for traffic signals is shown separately on the signal designs and the "Summary of Work by Intersection" sheets in Volume III of III.
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ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of: Transportation Mobility and Safety Division, North Carolina Department of Transportation, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

SCALE: NTS

Winston-Salem Signal System
Summary of Work by
Cable Layout Plans - Phase A
(sheet 1 of 3)

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	JAW/BKS	REVIEWED BY:	LW Moon

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE Lisa M. Moon DATE 1-11-13

CADD Filename: Phase A Summary by CL.dgn

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lsmith

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	29

SUMMARY OF WORK BY CABLE LAYOUT PLANS

CABLE LAYOUT SHEET NUMBER	COMMUNICATIONS CABLE (24-FIBER)	COMMUNICATIONS CABLE (36-FIBER)	COMMUNICATIONS CABLE (48-FIBER)	COMMUNICATIONS CABLE (72-FIBER)	DROP CABLE (6-FIBER)	HANDLASH & AERIAL CABLE PROTECTOR	SPLICE ENCLOSURE	MODIFY EXISTING SPLICE	INTERCONNECT CENTER	ETHERNET EDGE SWITCH	REMOVE EXISTING COMMUNICATIONS CABLE	CUT AND CAP EXISTING COMMUNICATIONS CABLE	INSTALL CCTV CAMERA ASSEMBLY	INSTALL CCTV CABINET (POLE)	CCTV WOOD POLE	DIGITAL VIDEO ENCODER	MODIFY ELEC SERVICE FOR CCTV/HUB	NEW O/H ELEC SERVICE FOR CCTV/HUB	INSTALL 5/8" x 10' GROUNDING ELECTRODE	CONTACT MAPPING TRANSMITTER	CONTACT MAPPING RECEIVER
	LF	LF	LF	LF	LF	LF	EA	EA	EA	EA	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
CL A-187	-	1,480	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-188	-	1,490	-	-	340	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-
CL A-189	-	1,520	-	-	290	30	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-
CL A-190	510	640	-	-	380	210	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-
CL A-191	470	-	-	-	200	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-
CL A-192	1,240	-	-	-	210	-	1	1	1	1	290	-	-	-	-	-	-	-	-	-	-
CL A-193	-	-	-	-	-	-	-	-	-	-	1,400	-	-	-	-	-	-	-	-	-	-
CL A-194	-	-	-	-	945	-	1	-	2	2	680	-	-	-	-	-	-	-	-	-	-
CL A-195	-	-	-	-	270	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-
CL A-196	-	-	-	-	350	-	1	-	1	1	250	-	-	-	-	-	-	-	-	-	-
CL A-197	-	-	-	-	220	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-
CL A-198	-	-	-	-	170	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-
CL A-199	1,130	-	-	-	450	-	2	-	2	2	-	-	-	-	-	-	-	-	-	-	-
CL A-200	860	-	-	-	290	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-
CL A-201	470	-	-	-	240	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-
CL A-202	1,440	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-203	1,500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-204	1,560	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-205	1,410	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-206	1,440	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-207	1,240	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-208	1,230	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-209	450	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-210	1,640	-	-	-	670	-	2	1	2	2	-	-	-	-	-	-	-	-	-	-	-
CL A-211	-	-	1,430	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-212	-	-	1,500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-213	-	-	1,470	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-214	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-215	-	-	-	-	-	-	-	-	-	4	-	4	-	-	-	-	-	-	-	-	-
CL A-216	-	-	-	-	-	-	-	-	-	6	-	6	-	-	-	-	-	-	-	-	-
CL A-217	-	-	-	-	-	-	-	-	-	6	-	6	-	-	-	-	-	-	-	-	-
CL A-218	-	-	-	-	-	-	-	-	-	7	-	7	-	-	-	-	-	-	-	-	-
CL A-219	-	-	-	-	-	-	-	-	-	7	-	7	-	-	-	-	-	-	-	-	-
CL A-220	-	-	-	-	-	-	-	-	-	6	-	6	-	-	-	-	-	-	-	-	-
CL A-221	-	-	-	-	-	-	-	-	-	3	-	3	-	-	-	-	-	-	-	-	-
CL A-222	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
CL A-223	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
TOTALS	113,120	92,390	50,690	8,780	47,030	7,720	143	12	163	203	42,425	39	2	2	2	2	2	1	3	3	3

- Work shown on this sheet is a summary of work for the installation of the fiber-optic cable, wireless links, and CCTV installations that are shown on the cable layout plans (i.e. CL sheets). Work to be done for traffic signals is shown separately on the signal designs and the "Summary of Work by Intersection" sheets in Volume III of III.
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Prepared for the Offices of: Transportation Mobility and Safety Division, State of North Carolina, Department of Transportation, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

SCALE: NTS

Winston-Salem Signal System
Summary of Work by Cable Layout Plans - Phase A
(sheet 2 of 3)
Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	JAW/BKS	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
Lisa M. Moon 1-11-13
SIGNATURE DATE

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13833

SUMMARY OF WORK BY CABLE LAYOUT PLANS

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	30

CABLE LAYOUT SHEET NUMBER	INSTALL FOUNDATION FOR HUB CABINET	INSTALL HUB CABINET	MANAGED ETHERNET SWITCH	REMOVE SPLICE/ HUB CABINET	UNI-DIRECTIONAL ANTENNA	900 MHz ETHERNET RADIO SYSTEM	4.9 GHz ETHERNET INTEGRATED RADIO / FLAT-PANEL ANTENNA	4.9GHZ INTEGRATED RADIO/OMNI-DIRECTIONAL ANTENNA	4.9 GHZ FLAT PANEL ANTENNA	ETHERNET CABLE (CAT 5E)	COAXIAL ANTENNA CABLE	IS INSTALL FOUNDATION FOR HUB CABINET	IS INSTALL HUB CABINET	IS UNDERGROUND CONDUIT (2 CONDUIT, 2 INCH)	IS JUNCTION BOX (SPECIAL -SIZED)	IS 2" RISER WITH HEAT SHRINK TUBING	IS COMMUNICATIONS CABLE (24-FIBER)	IS COMMUNICATIONS CABLE (48-FIBER)	IS COMMUNICATIONS CABLE (96-FIBER)	IS COMMUNICATIONS CABLE (144-FIBER)	IS SPLICE ENCLOSURE
	EA	EA	EA	EA	EA	EA	EA	EA	EA	LF	LF	EA	EA	LF	EA	EA	LF	LF	LF	LF	EA
CL A-187	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-188	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-189	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-190	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-191	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-192	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-193	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-194	-	-	-	2	-	-	-	-	-	-	-	-	-	-	2	-	-	570	-	-	2
CL A-195	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,500	-	-	-
CL A-196	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1,460	-	-	-
CL A-197	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1,310	-	-	-
CL A-198	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	780	-	-	1
CL A-199	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	910	-	-	1
CL A-200	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	760	-	-	1
CL A-201	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-202	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-203	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-204	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-205	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-206	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-207	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-209	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-210	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-211	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,450	-	-	-	-
CL A-212	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,510	-	-	-	-
CL A-213	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,220	-	-	-	1
CL A-214	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CL A-215	-	-	-	3	-	-	4	1	4	280	150	-	-	-	-	-	-	-	-	-	-
CL A-216	-	-	-	5	-	-	6	-	3	300	150	-	-	-	-	-	-	-	-	-	-
CL A-217	-	-	-	5	-	-	5	1	2	300	150	-	-	-	-	-	-	-	-	-	-
CL A-218	-	-	-	5	-	-	7	-	3	350	250	-	-	-	-	-	-	-	-	-	-
CL A-219	-	-	-	3	-	-	7	-	2	390	100	-	-	-	-	-	-	-	-	-	-
CL A-220	-	-	-	5	-	-	6	1	4	450	200	-	-	-	-	-	-	-	-	-	-
CL A-221	-	-	-	2	-	-	5	-	1	270	50	-	-	-	-	-	-	-	-	-	-
CL A-222	-	-	-	-	1	1	-		-	-	120	-	-	-	-	-	-	-	-	-	-
CL A-223	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTALS	4	4	4	175	5	5	40	3	19	2,340	1,470	2	2	125	10	7	34,060	95,150	11,400	43,710	37

- Work shown on this sheet is a summary of work for the installation of the fiber-optic cable, wireless links, and CCTV installations that are shown on the cable layout plans (i.e. CL sheets). Work to be done for traffic signals is shown separately on the signal designs and the "Summary of Work by Intersection" sheets in Volume III of III.
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ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of: Transportation Mobility and Safety Division, North Carolina Department of Transportation, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Summary of Work by
Cable Layout Plans - Phase A
(sheet 3 of 3)

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	JAW/BKS	REVIEWED BY:	LM Moon

SCALE: NTS

REVISIONS | INIT. | DATE

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PROJECT REFERENCE NO.	SHEET NO.
C-5224A	31

CCTV INSTALLATION SUMMARY

CCTV REFERENCE NUMBER	SHEET REFERENCE	LOCATION	CCTV POLE LOCATION			COMMUNICATIONS RING	POLE			CAMERA MOUNTING HEIGHT	POWER SERVICE			CABINET TYPE
			QUADRANT	FEET FROM MAIN STREET	FEET FROM SIDE STREET		TYPE	STATUS	LENGTH		TYPE	STATUS	POWER COMPANY	
17	CL A-062	UNIVERSITY PKWY @ COLISEUM DR	NE	12 FOC	100 FOC	28	WOOD	NEW	50'	35'	SHARED	NEW	DUKE	POLE
27	CL A-179	WAUGHTOWN ST @ REYNOLDS PARK RD	NE	18 FOC	15 FOC	20	WOOD	NEW	50'	35'	SHARED	NEW	DUKE	POLE

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(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
CCTV Installation Summary
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	November 2012	REVIEWED BY:	MB Toth
PREPARED BY:	SGH	REVIEWED BY:	LW Moon

NTS

REVISIONS	INIT.	DATE

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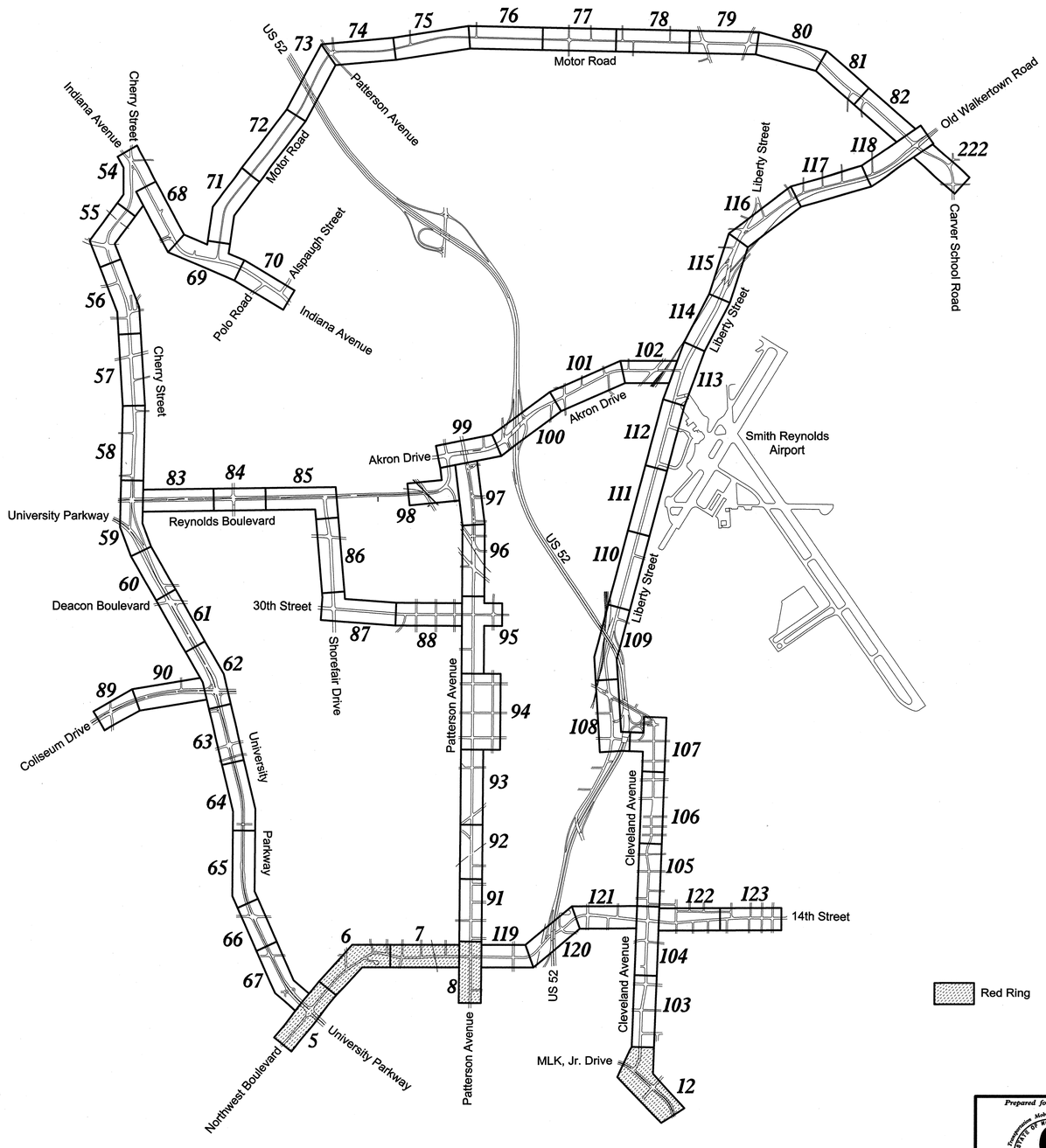
NORTH CAROLINA PROFESSIONAL SEAL 029531 ENGINEER STEVEN G. HAYNIE

SIGNATURE 1-11-13 DATE

CADD Filename: Phase A CCTV Summary.

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-1A



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Prepared for the Offices of: NC Department of Transportation, Transportation Mobility and Safety Division, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System Cable Layout Plans Key Sheet Phase A (1 of 4)

Division 09 | Forsyth County | Winston-Salem

PLAN DATE:	November 2012	REVIEWED BY:	MB Toth
PREPARED BY:	JAW/BKS	REVIEWED BY:	LW Moon

REVISIONS	INIT.	DATE

SCALE: NTS

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NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
Lisa M Moon 1-11-13
SIGNATURE DATE

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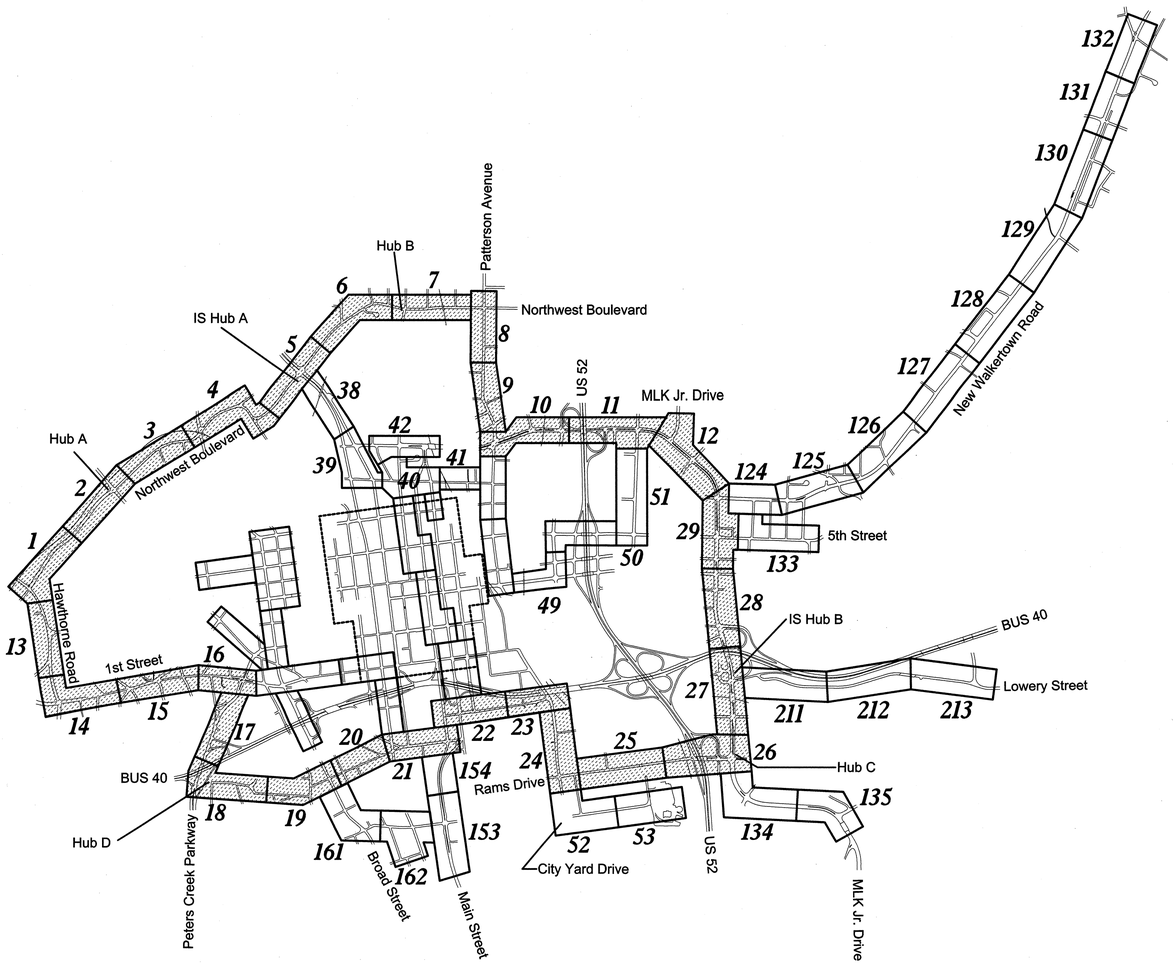
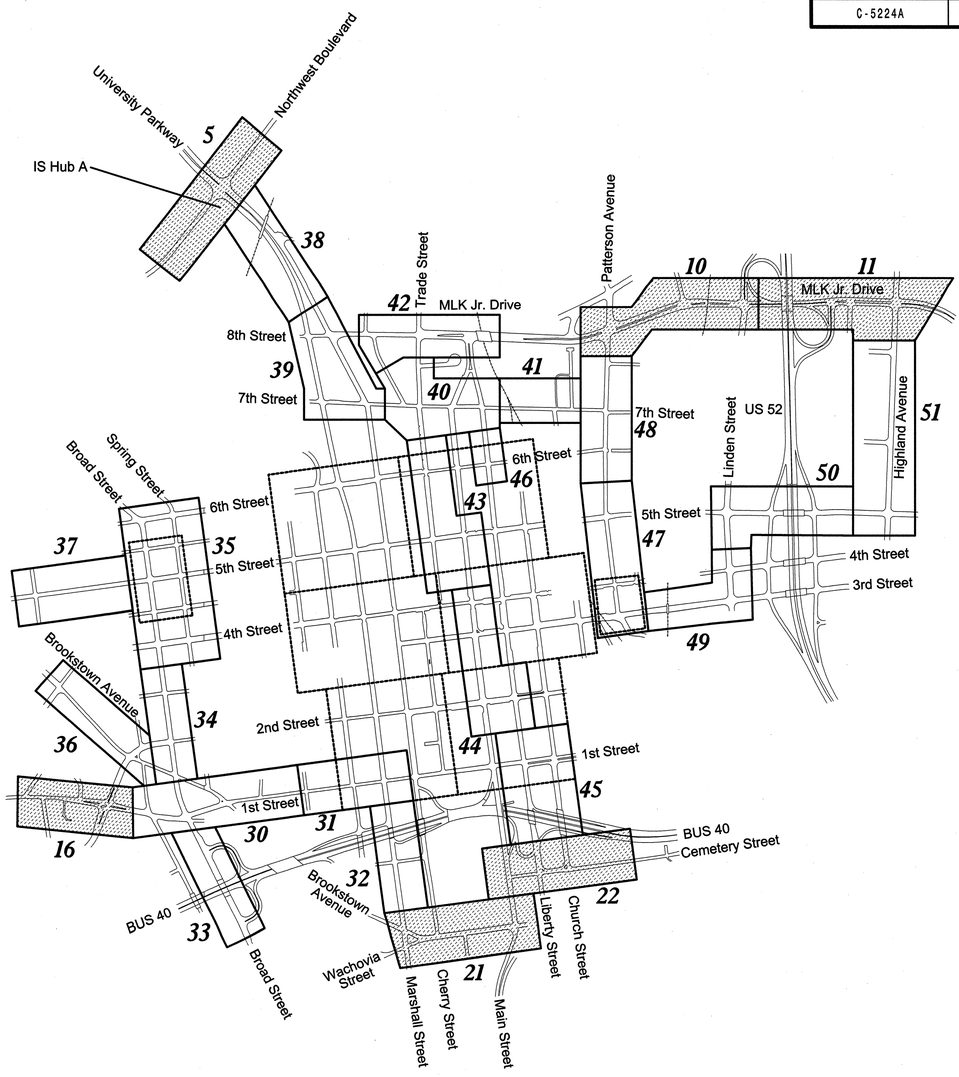
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-1B



Central



Downtown

Red Ring

Downtown Wireless Mesh Network
See Sheet CL A-1D

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RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Transportation Mobility and Safety Division
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans Key Sheet
Phase A
(2 of 4)

Division 09 | Forsyth County | Winston-Salem

PLAN DATE:	November 2012	REVIEWED BY:	MB Toth
PREPARED BY:	JAW/BKS	REVIEWED BY:	LW Moon

REVISIONS	INIT.	DATE

SCALE: NTS

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
Lisa M. Moon 1-11-13
SIGNATURE DATE

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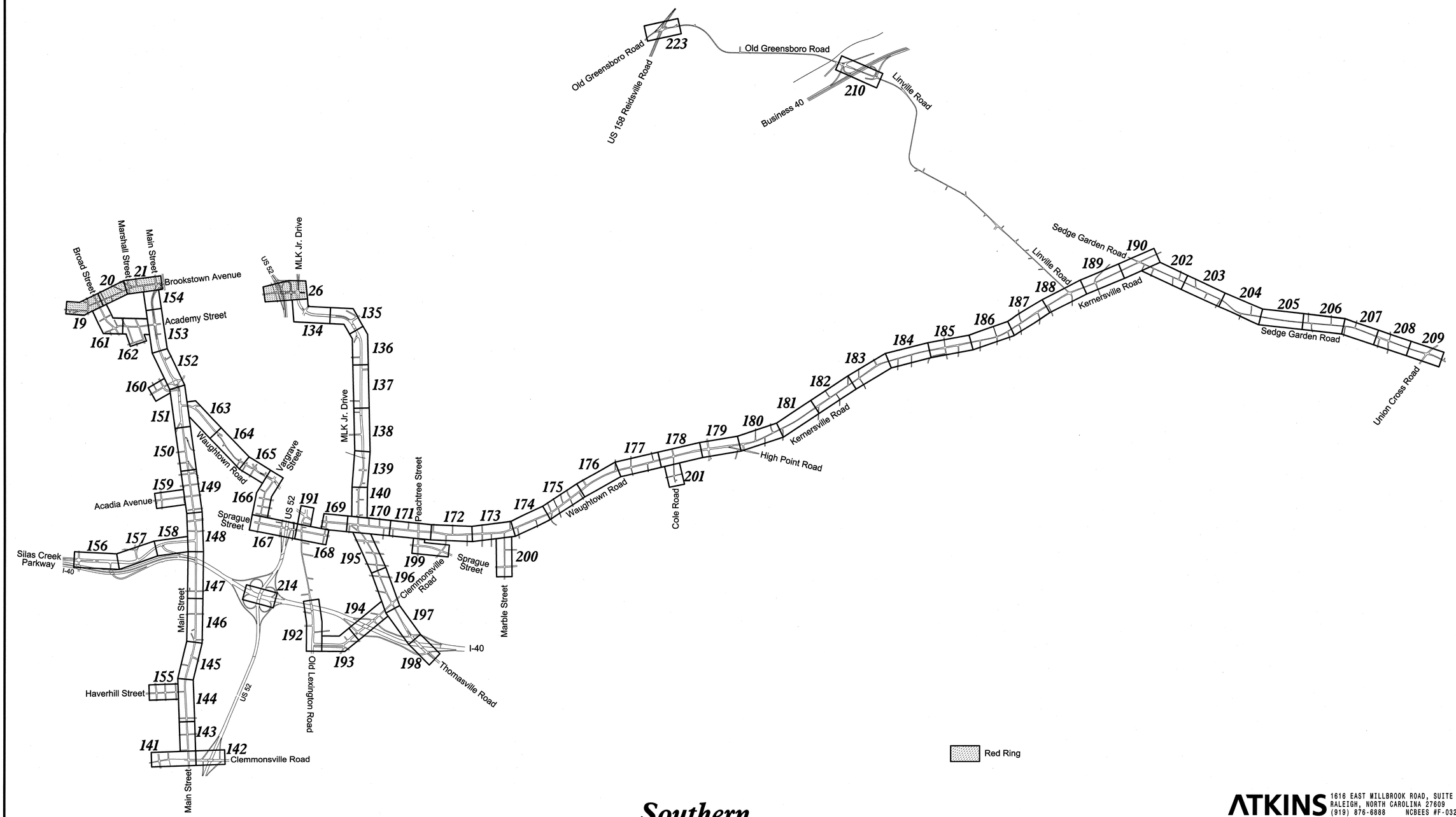
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-1C



Red Ring

Southern

ATKINS
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RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
Transportation Mobility and Safety Division
North Carolina Department of Transportation
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System Cable Layout Plans Key Sheet Phase A (3 of 4)

Division 09 Forsyth County Winston-Salem

PLAN DATE:	November 2012	REVIEWED BY:	MB Toth
PREPARED BY:	JAW/BKS	REVIEWED BY:	LM Moon

SCALE: NTS

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE 1-11-13 DATE

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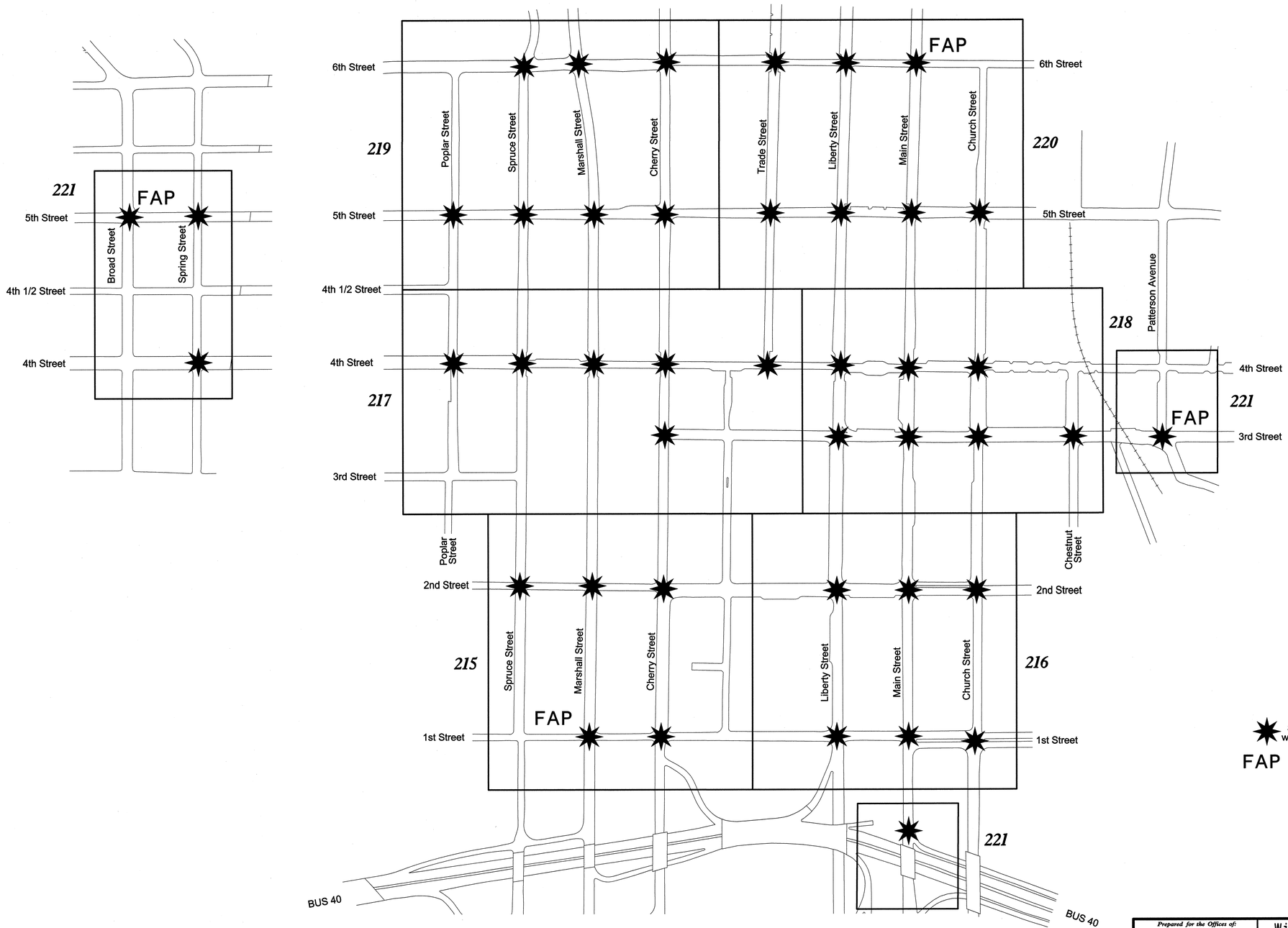
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-1D



Signalized Intersection with Wireless Connection

FAP Fiber Access Point

Downtown Wireless Mesh Network

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1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Integrated Mobility and Safety Division
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System Cable Layout Plans Key Sheet Phase A (4 of 4)

Division 09 Forsyth County Winston-Salem

PLAN DATE:	November 2012	REVIEWED BY:	MB Toth
PREPARED BY:	JAW/BKS	REVIEWED BY:	LM Moon

SCALE: NTS

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: Phase A CLA-1D-SheetKey 4.dgn

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PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-1E

LEGEND

- FO — NEW FIBER OPTIC COMMUNICATIONS CABLE
- EXI — EXISTING COMMUNICATIONS CABLE
- REM — EXISTING COMMUNICATIONS CABLE TO BE REMOVED
- NEW AND EXISTING AERIAL GUY ASSEMBLY
- NEW CONDUIT
- EXISTING CONDUIT
- DD — NEW DIRECTIONAL DRILLED CONDUIT
- B&J — NEW BORED AND JACKED CONDUIT
- RAILROAD TRACK
- NEW WOOD POLE
- EXISTING WOOD POLE
- NEW METAL POLE
- EXISTING METAL POLE
- EXISTING CONCRETE POLE
- NEW STANDARD GUY ASSEMBLY
- EXISTING STANDARD GUY ASSEMBLY
- NEW SIDEWALK GUY ASSEMBLY
- EXISTING SIDEWALK GUY ASSEMBLY
- NEW CCTV CAMERA ASSEMBLY
- EXISTING CCTV CAMERA ASSEMBLY

- NEW HUB CABINET
- NEW IS HUB CABINET
- EXISTING HUB CABINET
- EXISTING IS HUB CABINET
- NEW CONTROLLER AND CABINET
- EXISTING CONTROLLER AND CABINET
- NEW SPLICE CABINET
- EXISTING SPLICE CABINET
- NEW AERIAL SPLICE ENCLOSURE
- NEW IS AERIAL SPLICE ENCLOSURE
- EXISTING AERIAL SPLICE ENCLOSURE
- NEW UNDERGROUND SPLICE ENCLOSURE IN NEW SPECIAL–SIZED JUNCTION BOX
- NEW IS UNDERGROUND SPLICE ENCLOSURE IN NEW SPECIAL–SIZED JUNCTION BOX
- NEW UNDERGROUND SPLICE ENCLOSURE IN EXISTING SPECIAL–SIZED JUNCTION BOX
- EXISTING UNDERGROUND SPLICE ENCLOSURE IN EXISTING SPECIAL–SIZED JUNCTION BOX
- NEW CABLE STORAGE GUIDES (SNOW SHOES)
- NEW IS CABLE STORAGE GUIDES (SNOW SHOES)
- EXISTING CABLE STORAGE GUIDES (SNOW SHOES)

- NEW STANDARD JUNCTION BOX
- NEW IS STANDARD JUNCTION BOX
- EXISTING STANDARD JUNCTION BOX
- NEW OVER–SIZED OR SPECIAL–SIZED JUNCTION BOX
- NEW IS OVER–SIZED OR SPECIAL–SIZED JUNCTION BOX
- EXISTING OVER–SIZED OR SPECIAL–SIZED JUNCTION BOX
- EXISTING COMMUNICATIONS MANHOLE
- 09-XXXX — NCDOT SIGNAL INVENTORY NUMBER
- C-XXXX — CITY OF WINSTON–SALEM SIGNAL ID NUMBER
- CCTV-XX — CCTV CAMERA ID NUMBER
- EOP — EDGE OF PAVEMENT
- EOL — EDGE OF LANE
- BOC — BACK OF CURB
- FOC — FACE OF CURB
- NEW SYSTEM DETECTOR
- EXISTING SYSTEM DETECTOR
- UNI– DIRECTIONAL RADIO ANTENNA
- INTEGRATED 4.9 GHZ RADIO / OMNI–DIRECTIONAL ANTENNA
- INTEGRATED 4.9 GHZ RADIO / FLAT–PANEL ANTENNA
- 4.9 GHZ FLAT–PANEL ANTENNA

ABBREVIATIONS

AGUY	Aerial Guy
ARLT	Area Light
AT&T	AT&T
BS	Backside Attachment
CAM	Camera Bracket
CTL	CenturyLink
CITY	City of Winston–Salem
COMP	Composite Cable
DL	Drip Loop
DRP	Drop
DN	DukeNet Communications
DUKE	Duke Energy
ECC	East Coast Capital
ELEC	Electric
EXI	Existing Communications Cable
FLCAB	Flasher Cabinet
FAB	Fiber Access Point
FO	Fiber Optic
FS	Front Side Attachment
IMC	Intermediate Metallic Conduit
IS	City of Winston–Salem Information Systems
LIC	Lead–In Cable (Detector)
LV3	Level 3 Communications
MCI	MCIVerizon
MSGR	Messenger
NCDOT	North Carolina Department of Transportation
NEUT	Neutral
OH	Overhead
OSS	Overhead Sign Span
OWS	Open Wire Secondary
PWR	Power
RSR	Riser
SAME	Same Elevation/Attachment Height
SEC	Secondary Power
SGRSR	Signal Riser
SIG	Signal Span
SO	Standoff
STLT	Streetlight
SVRSR	Service Riser
TWC	Time Warner Cable
TFMR	Transformer
TOP	Top of Pole
TRI	Triplex
UNK	Unknown
WSM	Windstream
X ANY	Crossing Line, where "Any" is the abbreviation for the overhead line that is crossing exist/prop. cable route

GENERAL NOTES

1. THESE PLANS WERE PREPARED FROM INVENTORIES AND FIELD DATA COLLECTED DURING JULY 2011 THRU MAY 2012. ACTUAL CONDITIONS IN THE FIELD AT THE TIME OF CONSTRUCTION MAY BE DIFFERENT FROM THOSE SHOWN IN THE PLANS.
2. THE FIELD LOCATION OF ANY ITEM TO BE INSTALLED AS PART OF THIS PROJECT SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.
3. NEW TRAFFIC SIGNAL CONTROLLER CABINETS ARE SPECIFIED ON THE SIGNAL PLANS.
4. BURIED UTILITIES AND STRUCTURES: PIPELINES, STORM SEWERS, POWER CABLES, UTILITY CABLES, BASEMENTS, AND OTHER PUBLICLY AND PRIVATELY OWNED UNDERGROUND OBSTRUCTIONS EXIST ADJACENT TO AND WITHIN THE STREET RIGHT–OF–WAY WITHIN THE CONSTRUCTION LIMITS OF THIS PROJECT. INVESTIGATE THE LOCATION OF SUCH BURIED UTILITIES AND STRUCTURES WITH PUBLIC AND PRIVATE UTILITIES.
5. THE PLAN SHEETS HAVE BEEN DEVELOPED AS CLOSE TO SCALE AS PRACTICAL. HOWEVER, ACTUAL FIELD CONDITIONS SHALL PROVIDE THE BASIS FOR APPLYING THE WORK SHOWN.
6. THE ROADWAY STANDARD DRAWINGS AND THE DETAILS PROVIDED IN THIS PLAN SET SHALL ALL APPLY TO ALL WORK REQUIRED IN THIS PROJECT, WHETHER A PARTICULAR DETAIL IS SPECIFICALLY REFERENCED TO A WORK ITEM OR NOT. IN THE EVENT OF A CONFLICT, THE ORDER OF PRECEDENCE SHALL BE: THE PROJECT SPECIAL PROVISIONS, THE PLAN SET – INCLUDING DETAILS – SUPPLEMENTAL SPECIFICATIONS, THE STANDARD SPECIFICATIONS, AND THEN THE ROADWAY STANDARD DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR APPLYING THE PROPER DETAILS.
7. ANY OF THE CONTRACTOR'S WORK ACTIVITIES WHICH IMPACT ANY UTILITY FACILITY SHALL BE COORDINATED WITH THE OWNER OF THE AFFECTED UTILITIES. THE CONTRACTOR SHALL FOLLOW ANY AND ALL WORK PROCEDURES THE UTILITY OWNERS MAY REQUIRE.
8. ALL WORK SHOWN ON THESE PLANS SHALL BE PERFORMED BY THE CONTRACTOR UNLESS SPECIFICALLY NOTED TO BE PERFORMED BY OTHERS.
9. AREAS WITHIN THIS PROJECT HAVE BEEN DETERMINED TO CONTAIN PROPERTIES WITH DOCUMENTED HISTORICAL SIGNIFICANCE. IF IT IS NECESSARY TO DEVIATE FROM THE PLANS IN AN AREA IDENTIFIED TO CONTAIN PROPERTIES WITH HISTORIC SIGNIFICANCE, ALERT THE ENGINEER TO CONTACT PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS BRANCH – HISTORIC ARCHITECTURE GROUP OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION FOR AN EFFECTS DETERMINATION BEFORE PROCEEDING.

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Prepared for the Offices of: Transportation Mobility and Safety Division, State of North Carolina, Department of Transportation, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Legend/ General Notes/ Abbreviations
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	November 2012	REVIEWED BY:	MB Toth
PREPARED BY:	JAW/BKS	REVIEWED BY:	LW Moon

SCALE: NTS

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE 1-11-13 DATE

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PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-1F

1. INSTALL REA, PE – 22, SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE
2. INSTALL REA, PE – 38, (FIGURE – 8) SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE
3. INSTALL CATEGORY 5E CABLE
4. INSTALL SMFO CABLE
5. INSTALL COAXIAL ANTENNA CABLE
6. INSTALL FIBER–OPTIC DROP CABLE
7. INSTALL TRACER WIRE
8. INSTALL CONDUIT UNDERGROUND
9. INSTALL PVC CONDUIT
10. INSTALL RIGID, GALVANIZED STEEL CONDUIT
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12. INSTALL RIGID, GALVANIZED STEEL RISER WITH HEAT SHRINK TUBING
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16. BORE AND JACK CONDUIT
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23. INSTALL NEW RISER INTO CABINET BASE (USE EXISTING CONDUIT STUBOUTS WHEN AVAILABLE)
24. INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET
25. INSTALL NEW RISER INTO POLE MOUNTED CABINET
26. INSTALL DIGITAL VIDEO ENCODER
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32. MODIFY EXISTING SPLICE ENCLOSURE OR INTERCONNECT CENTER
33. REMOVE EXISTING SPLICE /HUB /CCTV CABINET
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35. REMOVE EXISTING CABINET FOUNDATION
36. INSTALL CCTV CAMERA ASSEMBLY
37. INSTALL CCTV WOOD POLE
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51. INSTALL CABLE STORAGE GUIDE(S) [SNOW SHOE(S)] AND STORE 100 FEET OF EACH CABLE
52. INSTALL DELINEATOR MARKER
53. STORE 50 FEET OF COMMUNICATIONS CABLE (EACH CABLE)
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63. INSTALL 900 MHZ ETHERNET RADIO
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70. INSTALL 4.9 GHZ FLAT–PANEL ANTENNA
71. INSTALL HUB CABINET
72. INSTALL MANAGED ETHERNET SWITCH

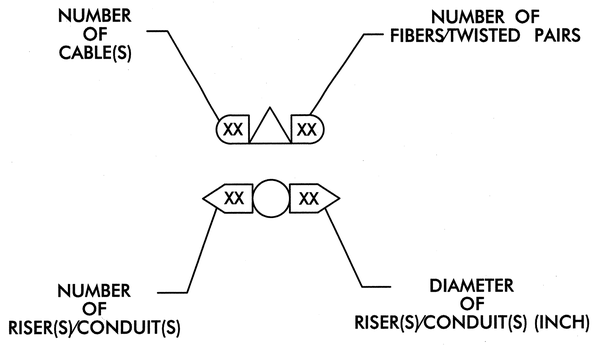
CONSTRUCTION NOTE SYMBOLOGY KEY

(XX) INDICATES NUMBER OF CABLES, LOOPS, ETC.

[XX] INDICATES NUMBER OF FIBERS PER CABLE, TWISTED PAIRS PER CABLE, ETC.

<XX INDICATES NUMBER OF RISER(S) /CONDUIT(S)

XX> INDICATES DIAMETER OF RISER(S) /CONDUIT(S) (INCH)



BOLD CONSTRUCTION NOTES SHOW NEW "IS FIBER" WORK

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750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Construction Notes
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	November 2012	REVIEWED BY:	MB Toth
PREPARED BY:	JAW/BKS	REVIEWED BY:	LW Moon

SCALE: NTS

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

Lisa M. Moon 1-11-13
SIGNATURE DATE

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PROJECT REFERENCE NO.	SHEET NO.
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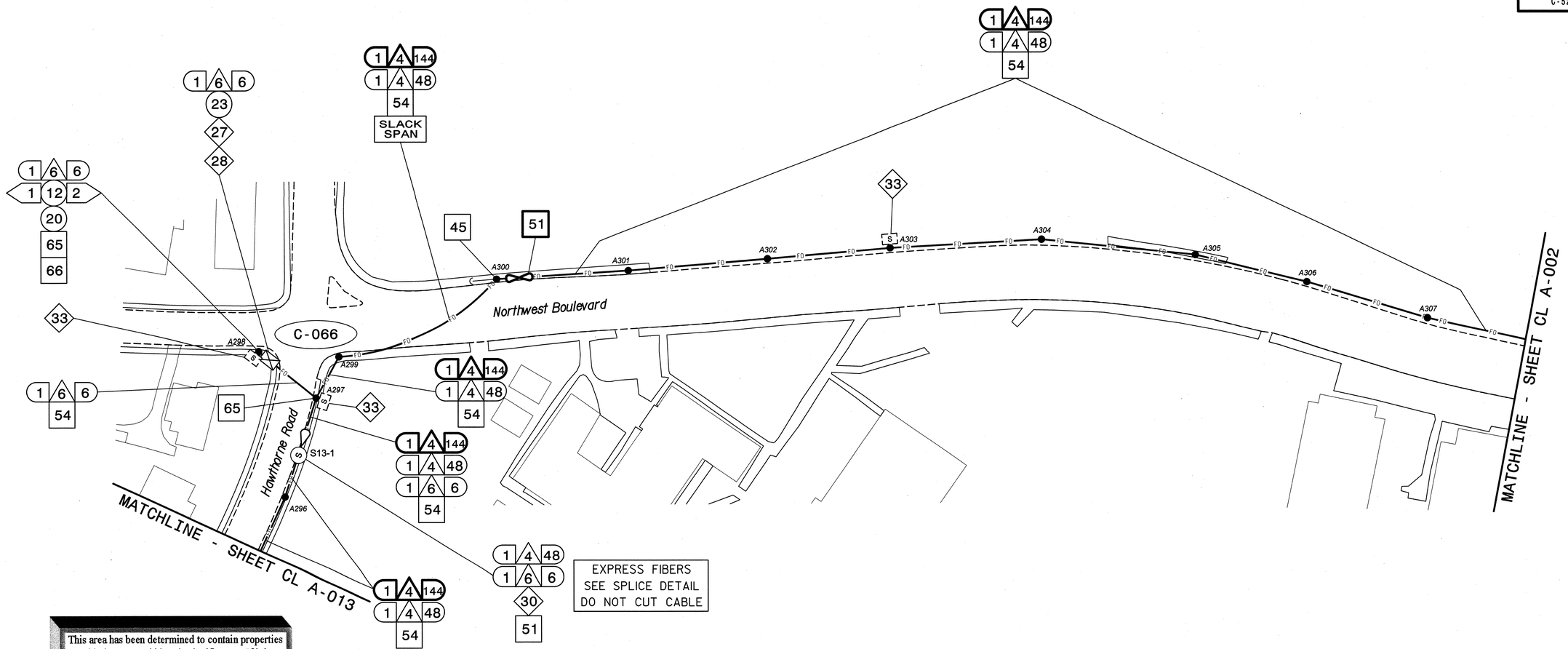

This area has been determined to contain properties with documented historic significance. If it is necessary to deviate from these plans in this area, alert the Engineer to contact Project Development and Environmental Analysis Branch – Historic Architecture Group of the North Carolina Department of Transportation for an effects determination before proceeding.

NOTES:
1. UNLESS OTHERWISE NOTED:
   – OVERLASH NEW FIBER OPTIC CABLE TO EXISTING COMMUNICATIONS CABLE.
   – ATTACH NEW MESSENGER CABLE 40" BELOW POWER.
   – ATTACH ON FRONT SIDE (FS) OF POLE.
2. SEAL ALL CONDUIT ENDS WITH DUCT AND CONDUIT SEALER, AT ALL JUNCTION BOX/CABINET ENTRANCES.

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ATTACHMENT POINT:
XXX DISTANCE ABOVE (IN) REFERENCE POINT
YYY REFERENCE POINT DISTANCE BELOW (IN)

CONSTRUCTION NOTE SYMBOLOGY KEY
NUMBER OF CABLE(S)/LOOPS, DETECTOR AMPLIFIERS, GUYS
NUMBER OF FIBERS/TWISTED PAIRS
NUMBER OF RISER(S)/ CONDUIT(S)
DIAMETER OF RISER(S)/ CONDUIT(S) (IN)

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Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem
PLAN DATE: January 2013 REVIEWED BY: WB Toth
PREPARED BY: BKS/AJD REVIEWED BY: LM Moon

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE 1-11-13 DATE

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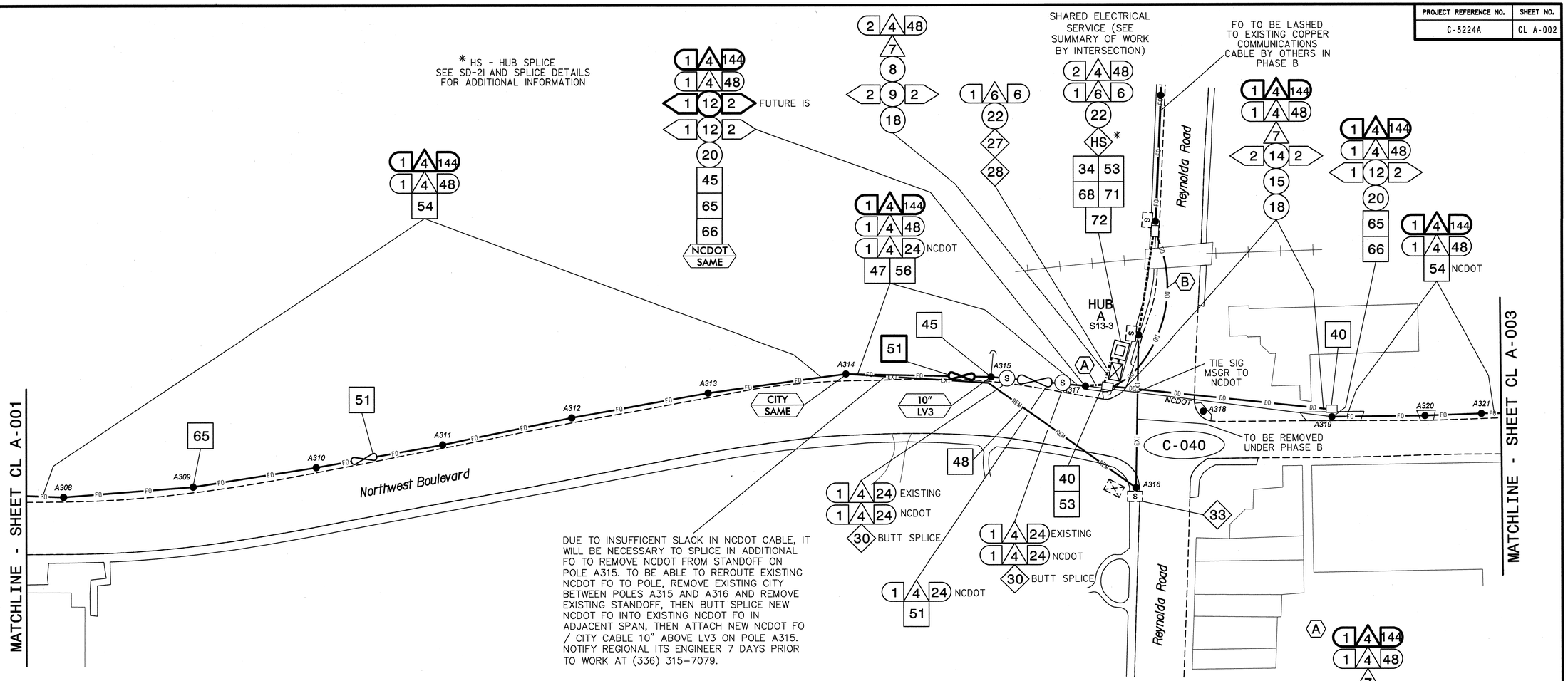
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-002



DUE TO INSUFFICENT SLACK IN NCDOT CABLE, IT WILL BE NECESSARY TO SPLICE IN ADDITIONAL FO TO REMOVE NCDOT FROM STANDOFF ON POLE A315. TO BE ABLE TO REROUTE EXISTING NCDOT FO TO POLE, REMOVE EXISTING CITY BETWEEN POLES A315 AND A316 AND REMOVE EXISTING STANDOFF, THEN BUTT SPLICE NEW NCDOT FO INTO EXISTING NCDOT FO IN ADJACENT SPAN, THEN ATTACH NEW NCDOT FO / CITY CABLE 10" ABOVE LV3 ON POLE A315. NOTIFY REGIONAL ITS ENGINEER 7 DAYS PRIOR TO WORK AT (336) 315-7079.

NOTES:
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   - OVERLASH NEW FIBER OPTIC CABLE TO EXISTING COMMUNICATIONS CABLE.
   - ATTACH NEW MESSENGER CABLE 40" BELOW POWER.
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56. LASH CABLE(S) TO NEW MESSENGER CABLE
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58. INSTALL NEW ELECTRICAL SERVICE FOR CCTV/HUB
59. INSTALL NEW POLE MOUNTED CCTV CABINET
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62. INSTALL 4.9GHZ ETHERNET INTEGRATED RADIO /OMNI-DIRECTIONAL ANTENNA
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72. INSTALL MANAGED ETHERNET SWITCH

ATTACHMENT POINT:
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YYY REFERENCE POINT
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CONSTRUCTION NOTE SYMBOLOGY KEY
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NUMBER OF FIBERS/TWISTED PAIRS
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DIAMETER OF RISER(S)/ CONDUIT(S) (IN)

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE: January 2013 REVIEWED BY: MB Toth
PREPARED BY: BKS/AJD REVIEWED BY: LW Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE 1-11-13 DATE

CADD Filename: CL A-002.dgn

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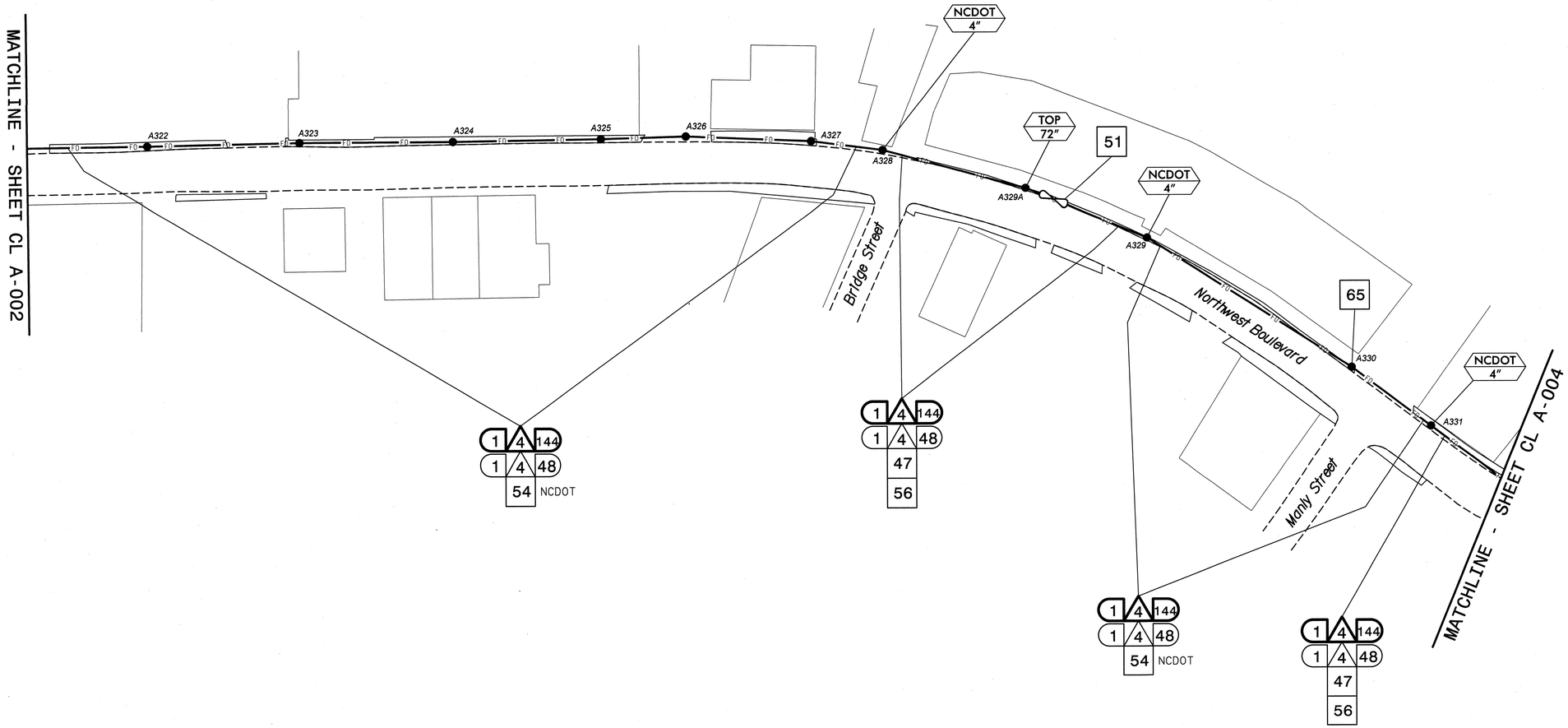
13833

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-003



NOTES:

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ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of: Transportation Mobility and Safety Division, North Carolina Department of Transportation, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

SCALE 0 50 1"=50'

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

SIGNATURE 1-11-13 DATE

CADD Filename: CL A-003.dgn

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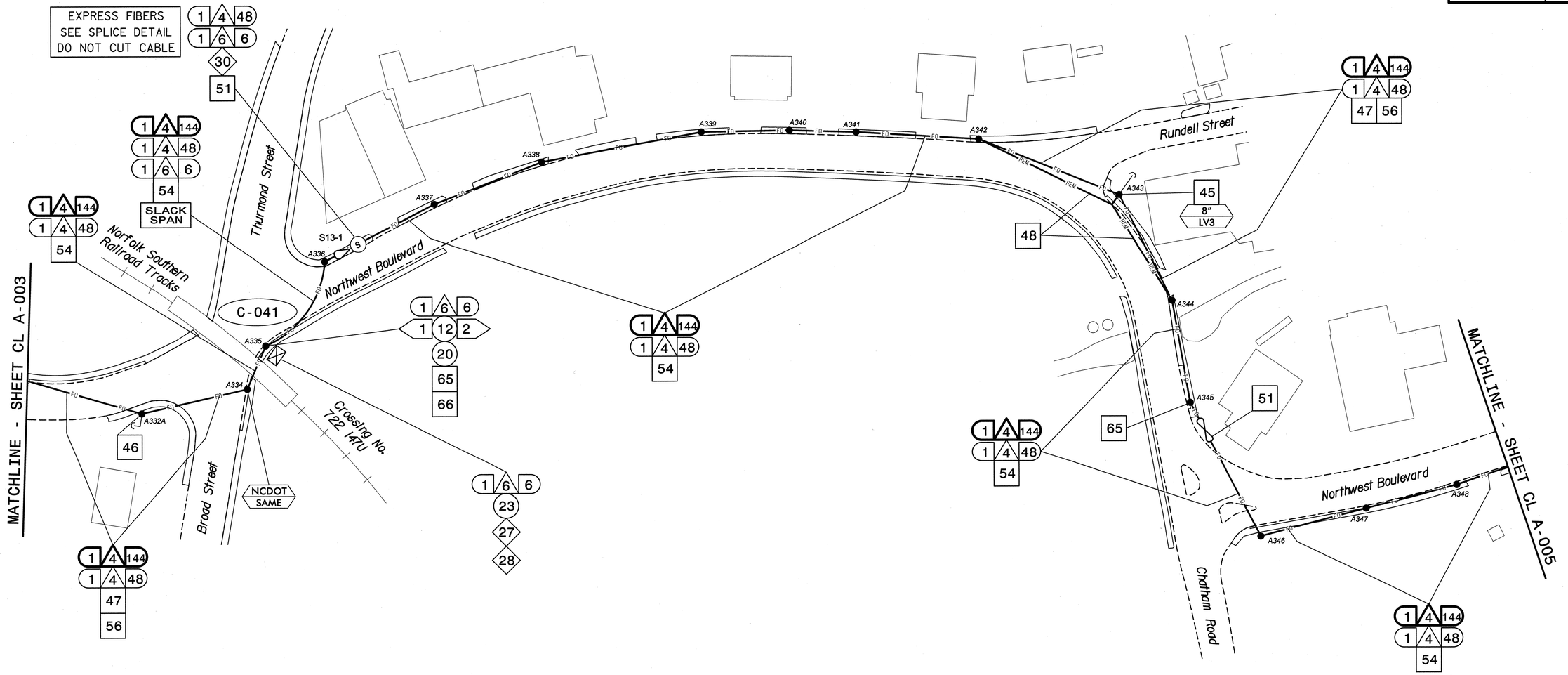
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-004



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ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of: NCDOT Transportation Mobility and Safety Division, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

SCALE 0 50 1"=50'

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE DATE 1-11-13

CADD Filename: CL A-004.dgn

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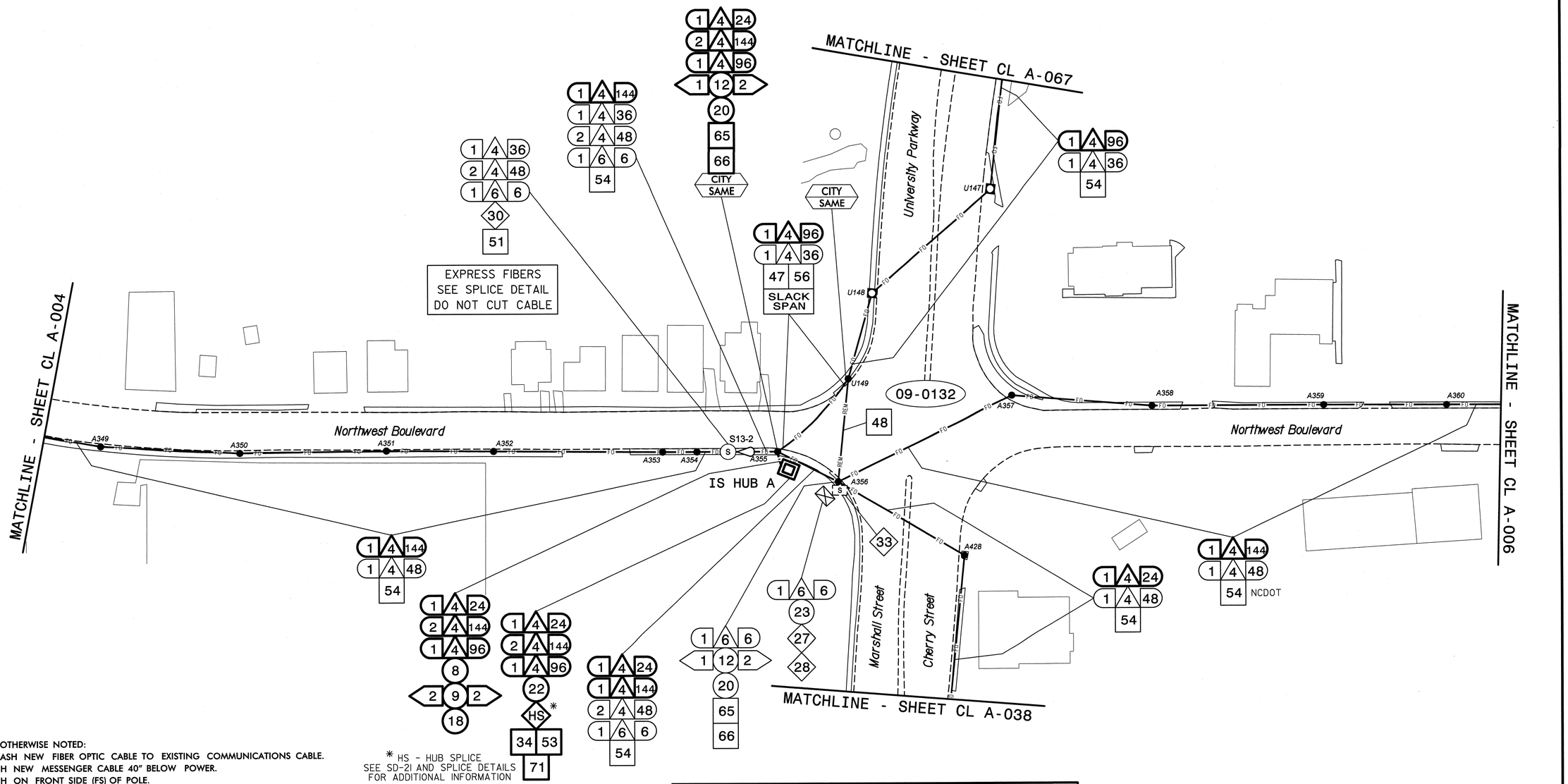
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-005



* HS - HUB SPLICE
SEE SD-2I AND SPLICE DETAILS
FOR ADDITIONAL INFORMATION

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ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
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Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE: January 2013 REVIEWED BY: MB Toth
PREPARED BY: BKS/AJD REVIEWED BY: LM Moon

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE DATE 1-11-13

CADD Filename: CL A-005.dgn

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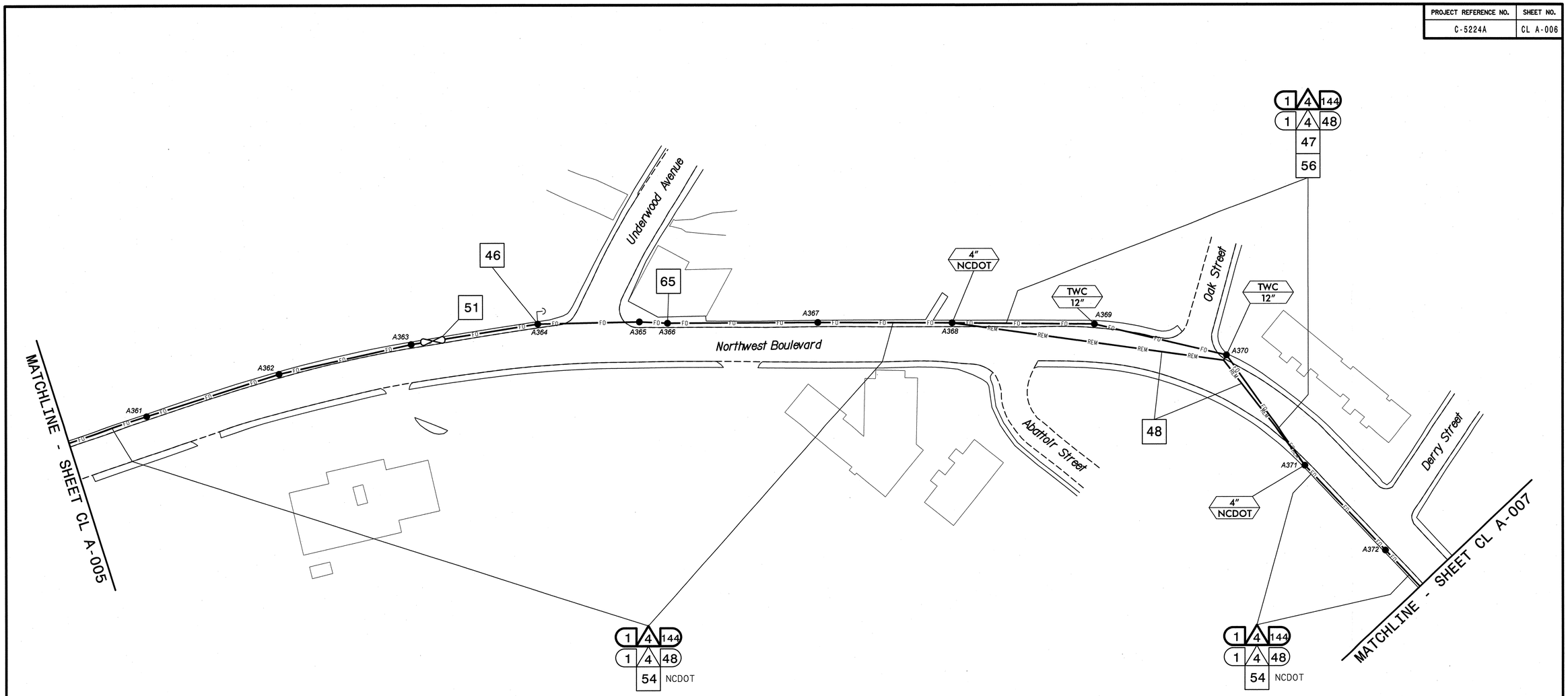
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-006



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43. REMOVE EXISTING WOOD POLE
44. INSTALL AERIAL GUY ASSEMBLY
45. INSTALL STANDARD GUY ASSEMBLY
46. INSTALL SIDEWALK GUY ASSEMBLY
47. INSTALL MESSENGER CABLE
48. REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE
49. REMOVE EXISTING COMMUNICATIONS CABLE
50. INSTALL WIRELESS DSL
51. INSTALL CABLE STORAGE GUIDE(S) [SNOW SHOE(S)] AND STORE 100 FEET OF EACH CABLE
52. INSTALL DELINEATOR MARKER
53. STORE 50 FEET OF COMMUNICATIONS CABLE (EACH CABLE)
54. LASH CABLE(S) TO EXISTING SIGNAL/COMMUNICATIONS CABLE
55. LASH CABLE(S) TO EXISTING MESSENGER CABLE
56. LASH CABLE(S) TO NEW MESSENGER CABLE
57. MODIFY EXISTING ELECTRICAL SERVICE FOR CCTV/HUB
58. INSTALL NEW ELECTRICAL SERVICE FOR CCTV/HUB
59. INSTALL NEW POLE MOUNTED CCTV CABINET
60. INSTALL 4.9GHZ ETHERNET INTEGRATED RADIO /FLAT-PANEL ANTENNA
61. INSTALL UNI-DIRECTIONAL ANTENNA
62. INSTALL 4.9GHZ ETHERNET INTEGRATED RADIO /OMNI-DIRECTIONAL ANTENNA
63. INSTALL 900 MHZ ETHERNET RADIO
64. INTERCEPT AND REROUTE EXISTING CONDUITS
65. BOND MESSENGER TO POLE GROUND
66. BOND RISER TO POLE GROUND
67. BOND TRACER WIRE TO POLE GROUND
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ATTACHMENT POINT:
XXX DISTANCE ABOVE (IN) REFERENCE POINT
YYY REFERENCE POINT DISTANCE BELOW (IN) XXX

CONSTRUCTION NOTE SYMBOLOGY KEY
NUMBER OF CABLE(S) /LOOPS, – DETECTOR AMPLIFIERS, GUYS
NUMBER OF FIBERS/TWISTED PAIRS
NUMBER OF RISER(S)/ CONDUIT(S)
DIAMETER OF RISER(S)/ CONDUIT(S) (IN)

ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
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Prepared for the Offices of:
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750 Greenfield Parkway, Garner, NC 27529

SCALE 0 50 1"=50'

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE DATE 1-11-13

CADD Filename: CL A-006.dgn

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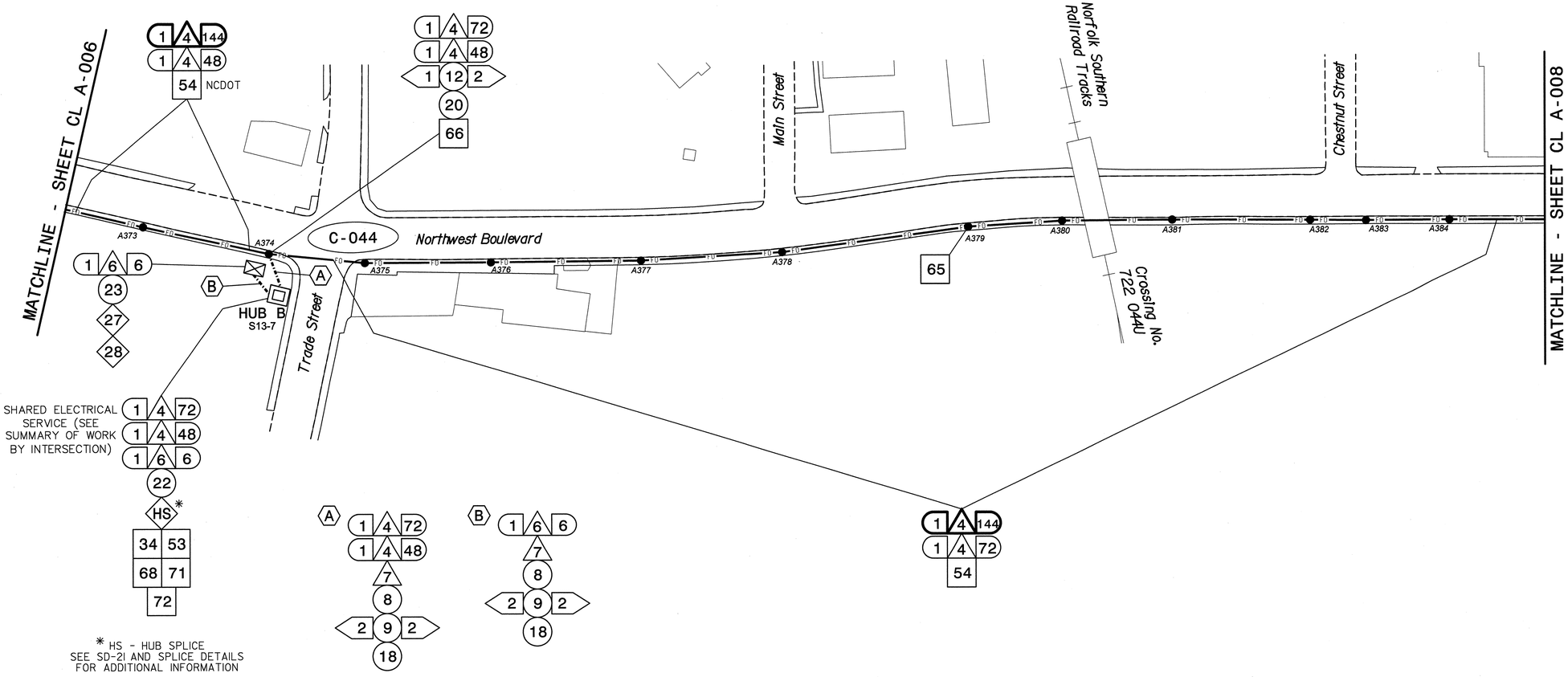
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-007



NOTES:

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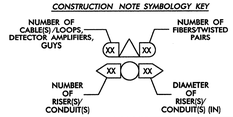

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(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
NCDOT Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE: January 2013 REVIEWED BY: MB Toth

PREPARED BY: BKS/AJD REVIEWED BY: LM Moon

SCALE: 0 50 — 1"=50'

N

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-007.dgn

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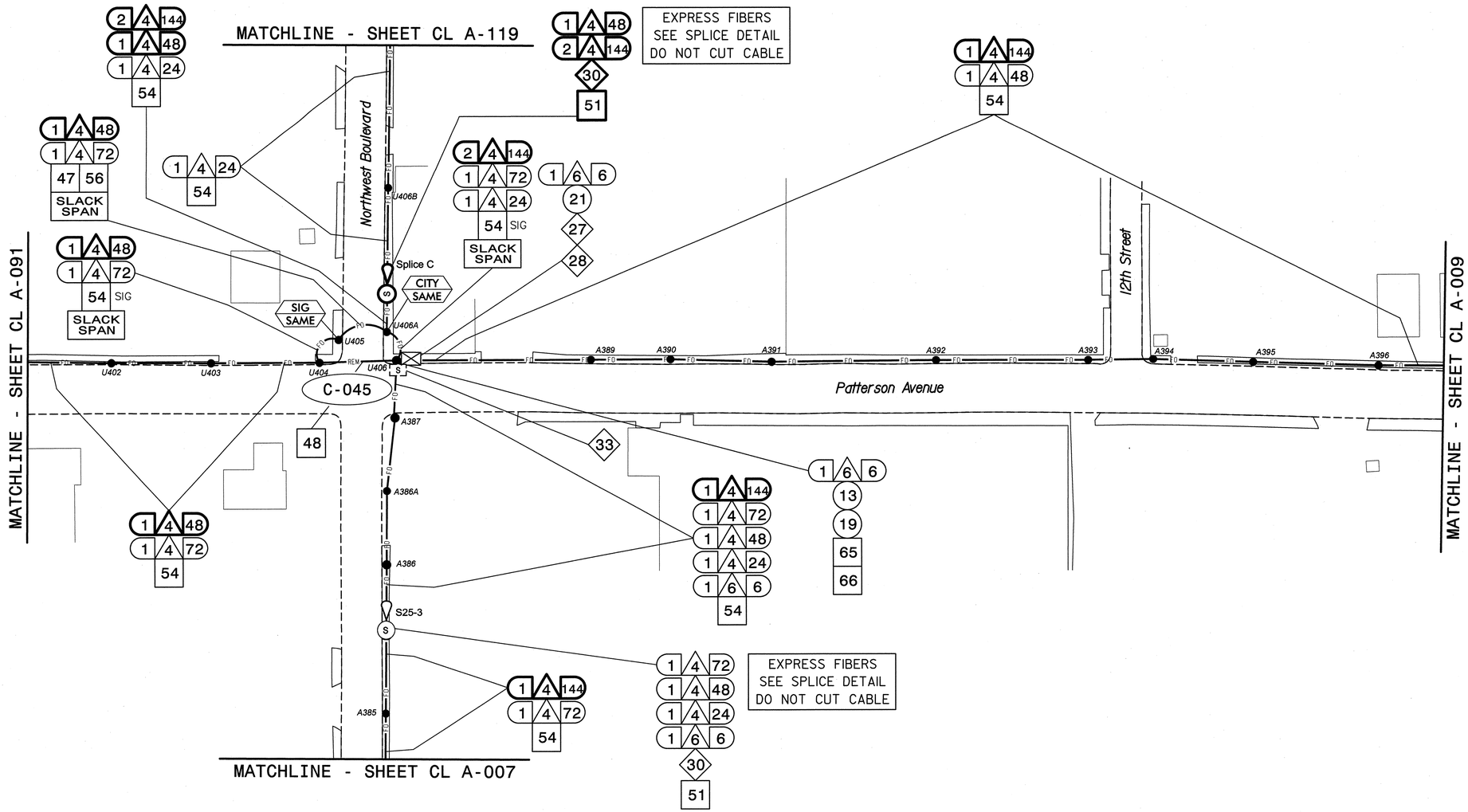
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-008



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DIAMETER OF RISER(S)/ CONDUIT(S) (IN)

ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
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Prepared for the Offices of:
North Carolina Department of Transportation Mobility and Safety Division Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

SCALE 0 50 1"=50'

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE DATE
CADD Filename: CL A-008.dgn

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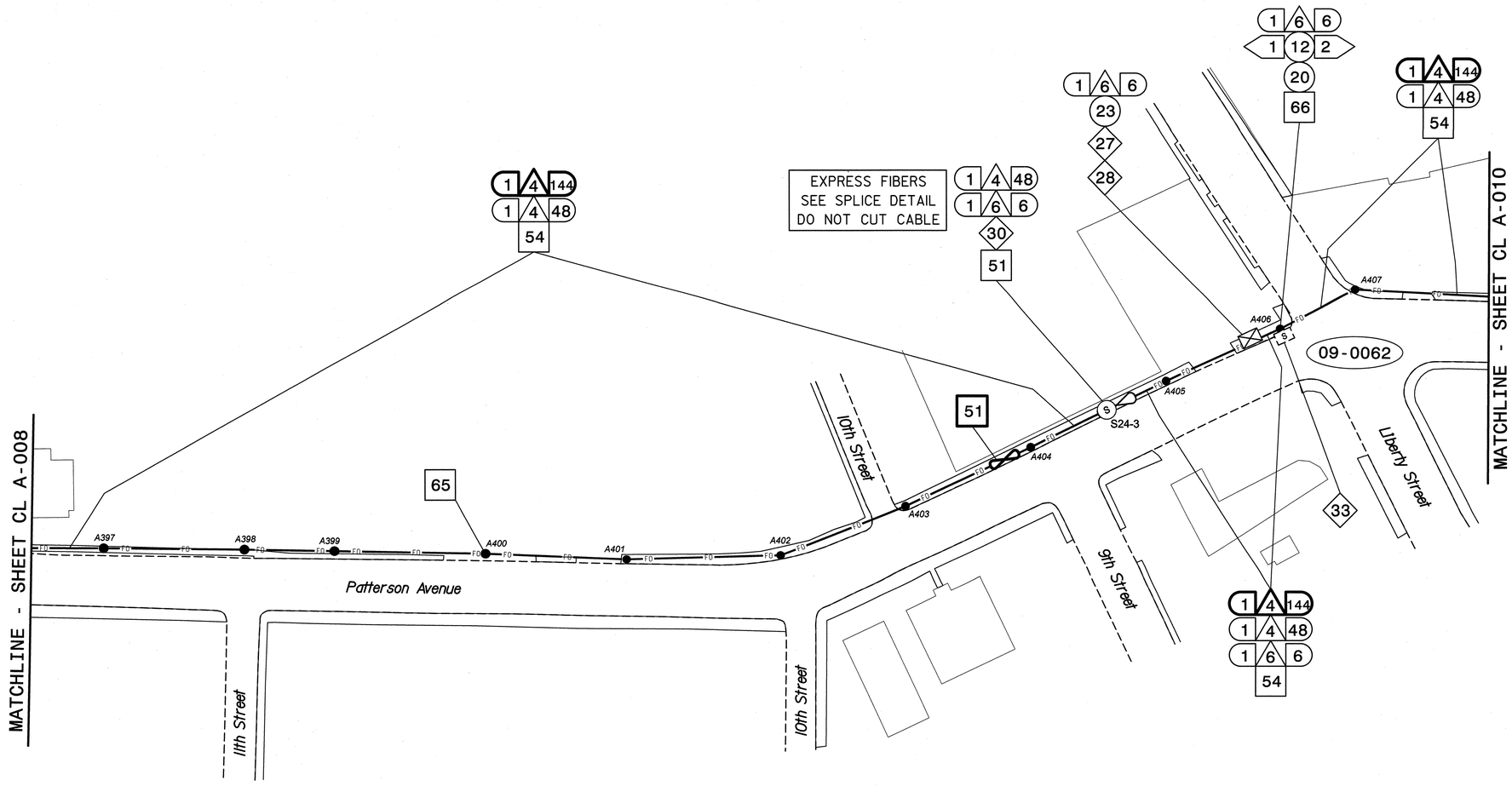
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-009



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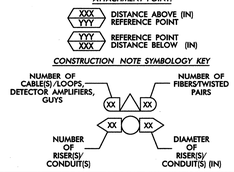

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Cable Layout Plans
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Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
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REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-009.dgn

07-JAN-2013 10:52
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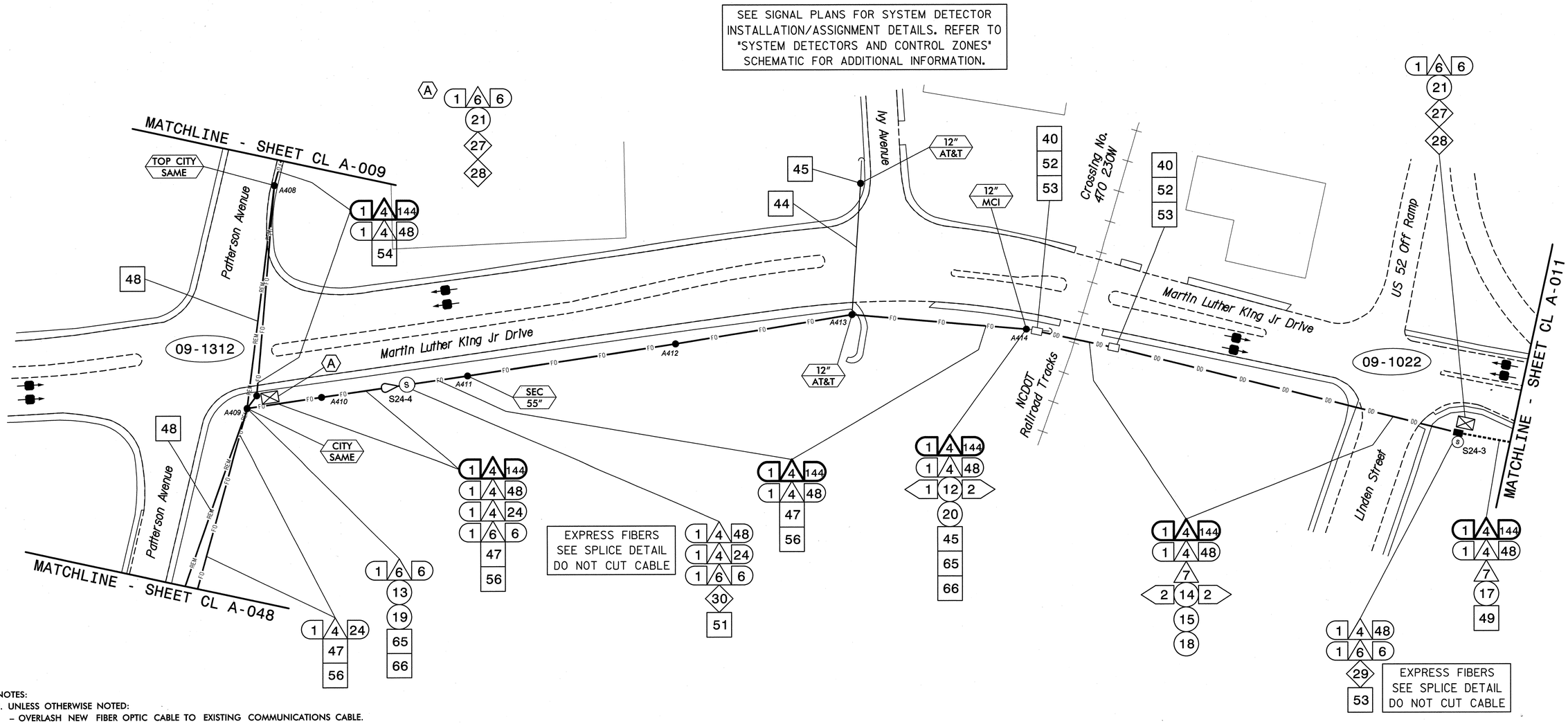
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-010



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ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of: North Carolina Department of Transportation, Mobility and Safety Division, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL — NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-010.dgn

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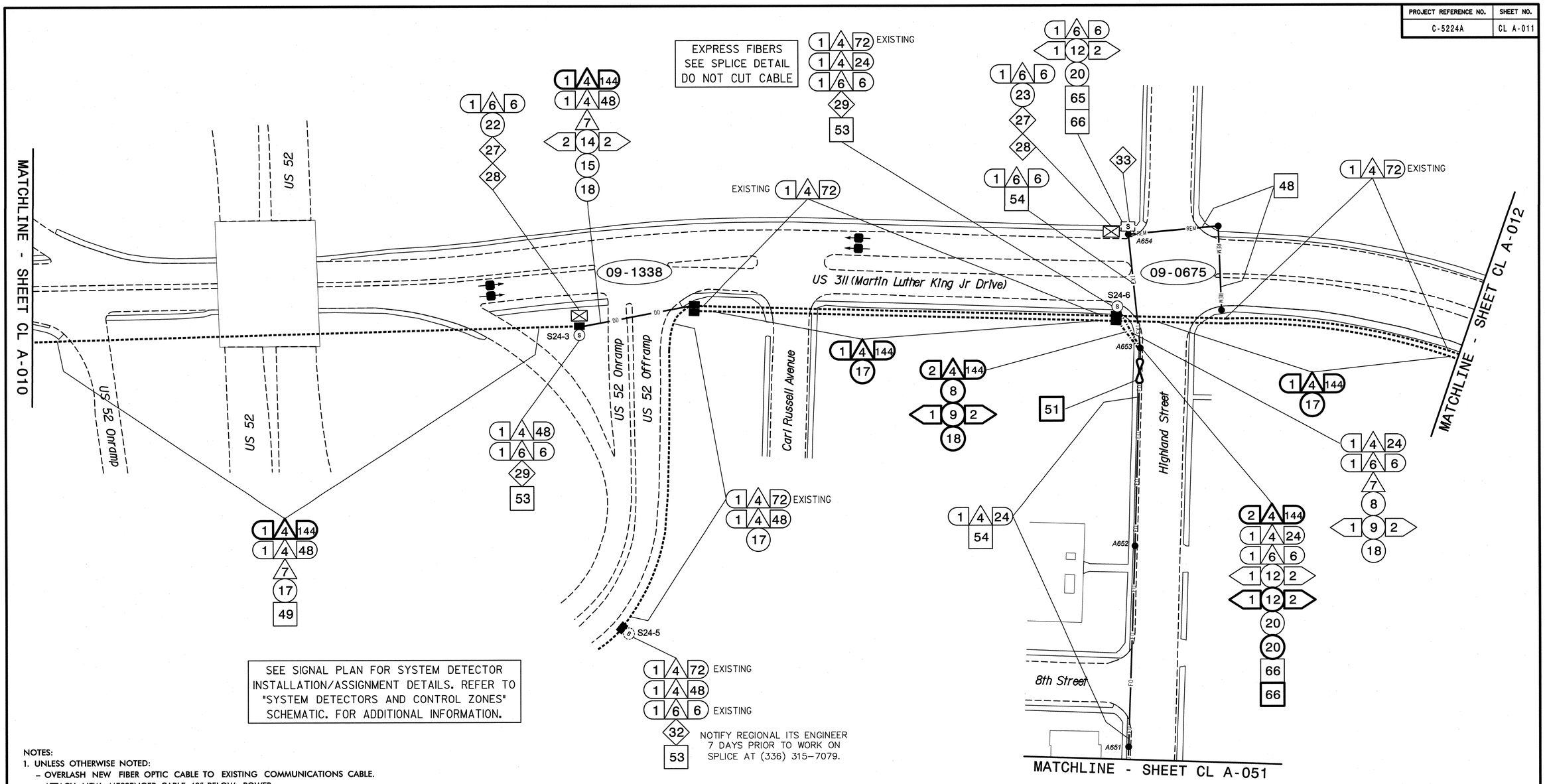
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-011



SEE SIGNAL PLAN FOR SYSTEM DETECTOR INSTALLATION/ASSIGNMENT DETAILS. REFER TO "SYSTEM DETECTORS AND CONTROL ZONES" SCHEMATIC. FOR ADDITIONAL INFORMATION.

NOTES:
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Prepared for the Offices of: North Carolina Department of Transportation, Mobility and Safety Division, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LW Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE 1-11-13 DATE
CADD Filename: CL A-011.dgn

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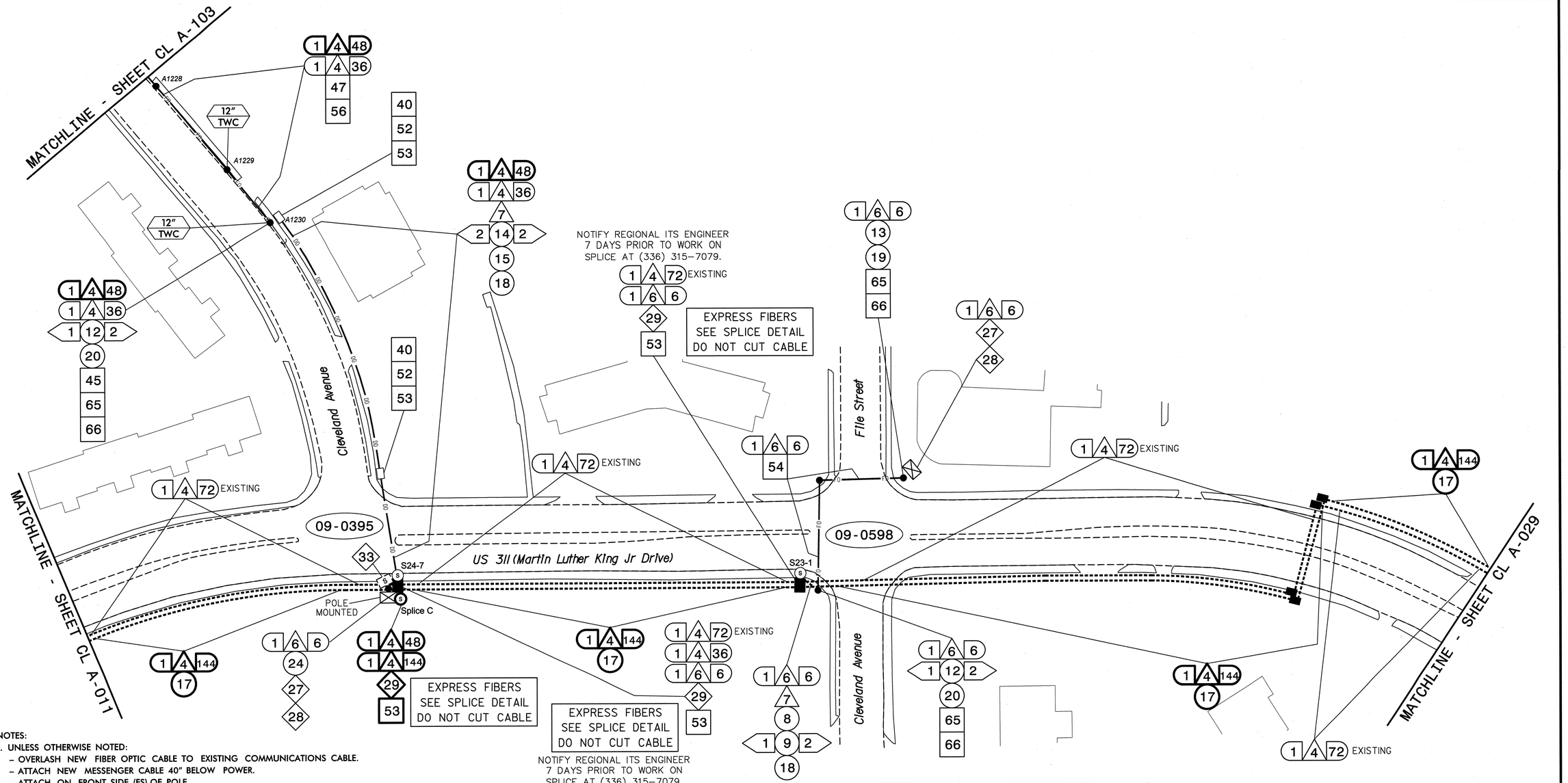
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-012



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ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
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(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of: NCDOT Mobility and Safety Division, Department of Transportation, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-012.dgn

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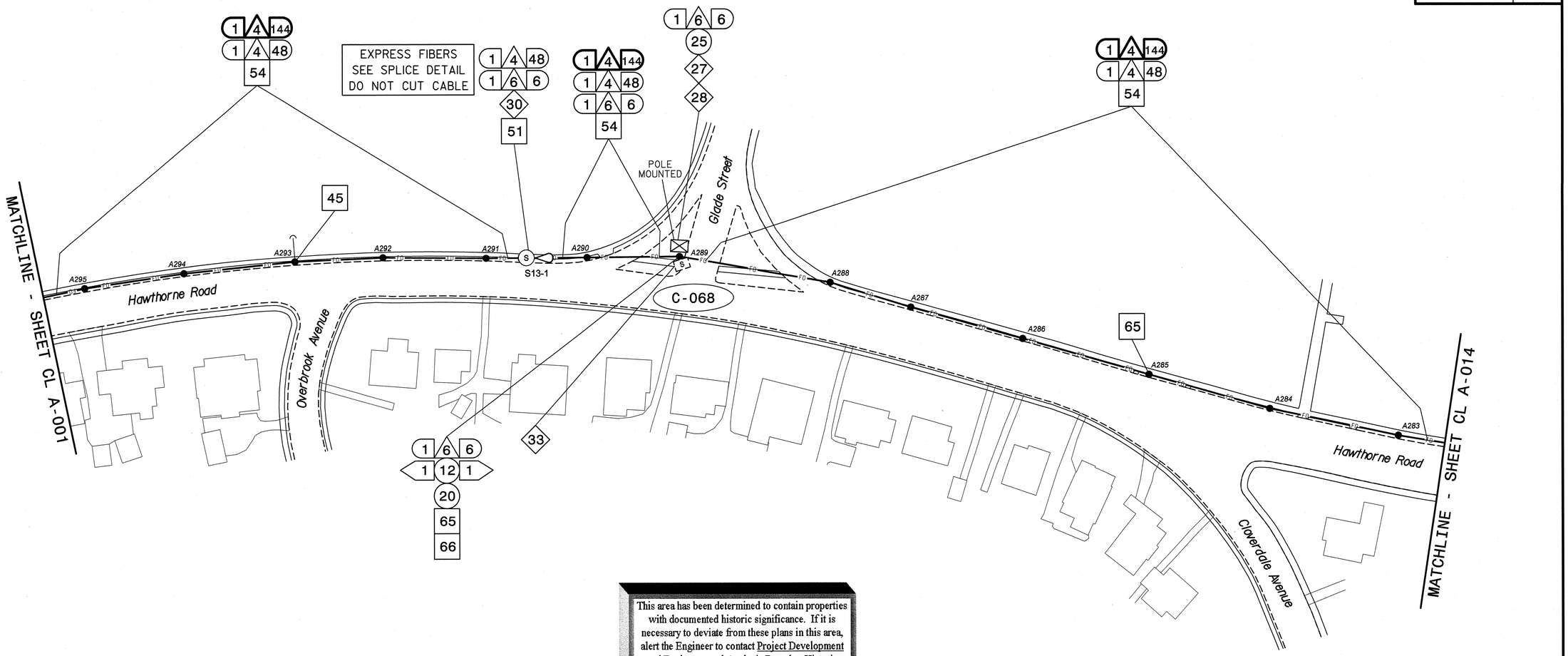
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-013



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Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE: January 2013 REVIEWED BY: MB Toth
PREPARED BY: BKS/AJD REVIEWED BY: LW Moon

REVISIONS	INIT.	DATE

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NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
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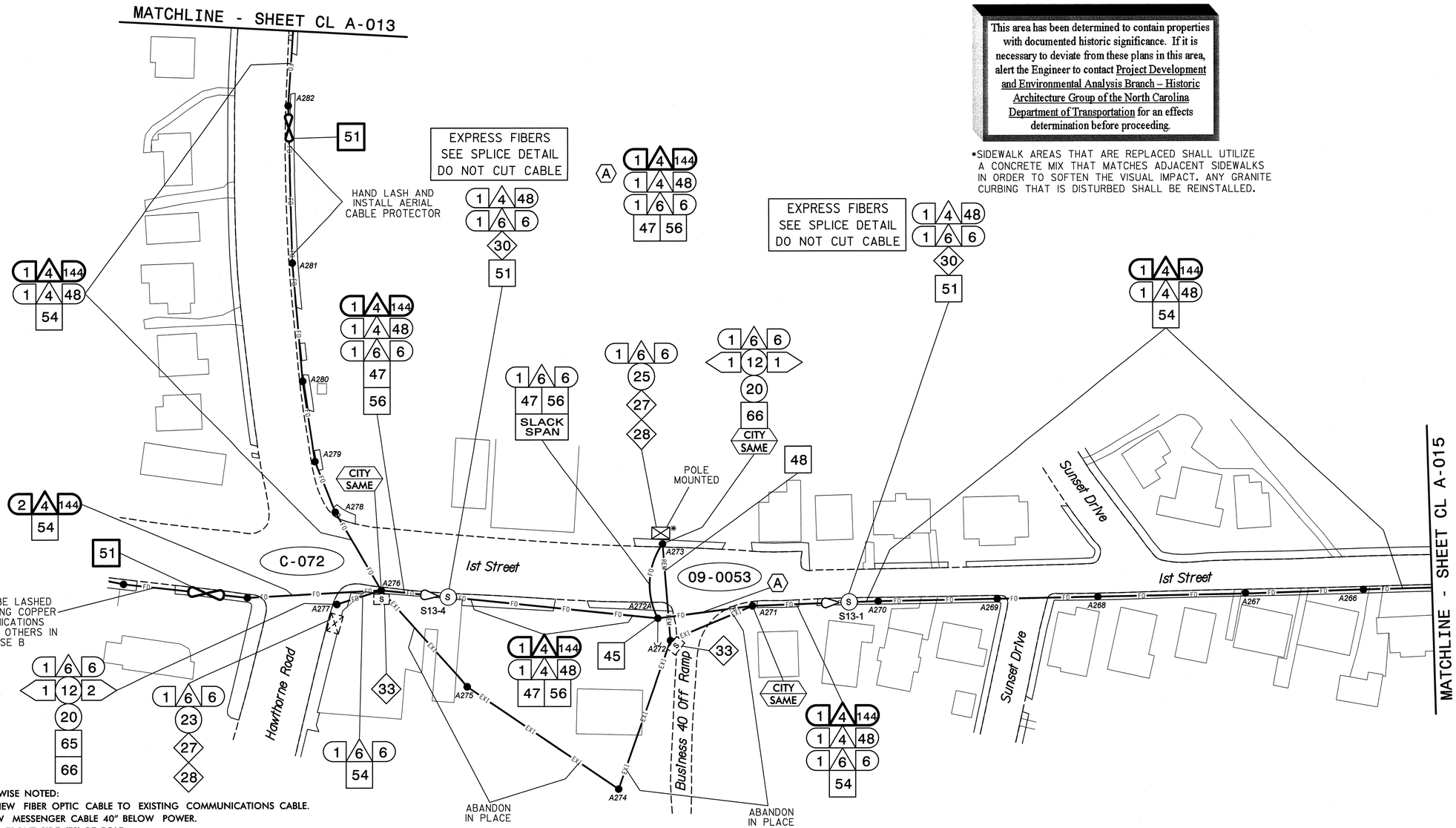

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•SIDEWALK AREAS THAT ARE REPLACED SHALL UTILIZE A CONCRETE MIX THAT MATCHES ADJACENT SIDEWALKS IN ORDER TO SOFTEN THE VISUAL IMPACT. ANY GRANITE CURBING THAT IS DISTURBED SHALL BE REINSTALLED.

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16. BORE AND JACK CONDUIT
17. INSTALL CABLE(S) IN EXISTING CONDUIT
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19. INSTALL CABLE(S) IN EXISTING RISER(S)
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22. INSTALL NEW CONDUIT INTO CABINET BASE (USE EX CONDUIT STUBOUTS WHEN AVAILABLE)
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25. INSTALL NEW RISER INTO POLE MOUNTED CABINET
26. INSTALL DIGITAL VIDEO ENCODER
27. INSTALL NEW ETHERNET EDGE SWITCH IN CABINET
28. INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET
29. INSTALL UNDERGROUND SPLICE ENCLOSURE
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31. INSTALL SPLICE CABINET
32. MODIFY EXISTING SPLICE ENCLOSURE OR INTERCONNECT CENTER
33. REMOVE EXISTING SPLICE /HUB /CCTV CABINET
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35. REMOVE EXISTING CABINET FOUNDATION
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47. INSTALL MESSENGER CABLE
48. REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE
49. REMOVE EXISTING COMMUNICATIONS CABLE
50. INSTALL WIRELESS DSL
51. INSTALL CABLE STORAGE GUIDE(S) [SNOW SHOE(S)] AND STORE 100 FEET OF EACH CABLE
52. INSTALL DELINEATOR MARKER
53. STORE 50 FEET OF COMMUNICATIONS CABLE (EACH CABLE)
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61. INSTALL UNI–DIRECTIONAL ANTENNA
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63. INSTALL 900 MHZ ETHERNET RADIO
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65. BOND MESSENGER TO POLE GROUND
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YYY REFERENCE POINT DISTANCE BELOW (IN)

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NUMBER OF FIBERS/TWISTED PAIRS
NUMBER OF RISER(S)/ CONDUIT(S)
DIAMETER OF RISER(S)/ CONDUIT(S) (IN)

ATKINS
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(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE
1-11-13
DATE

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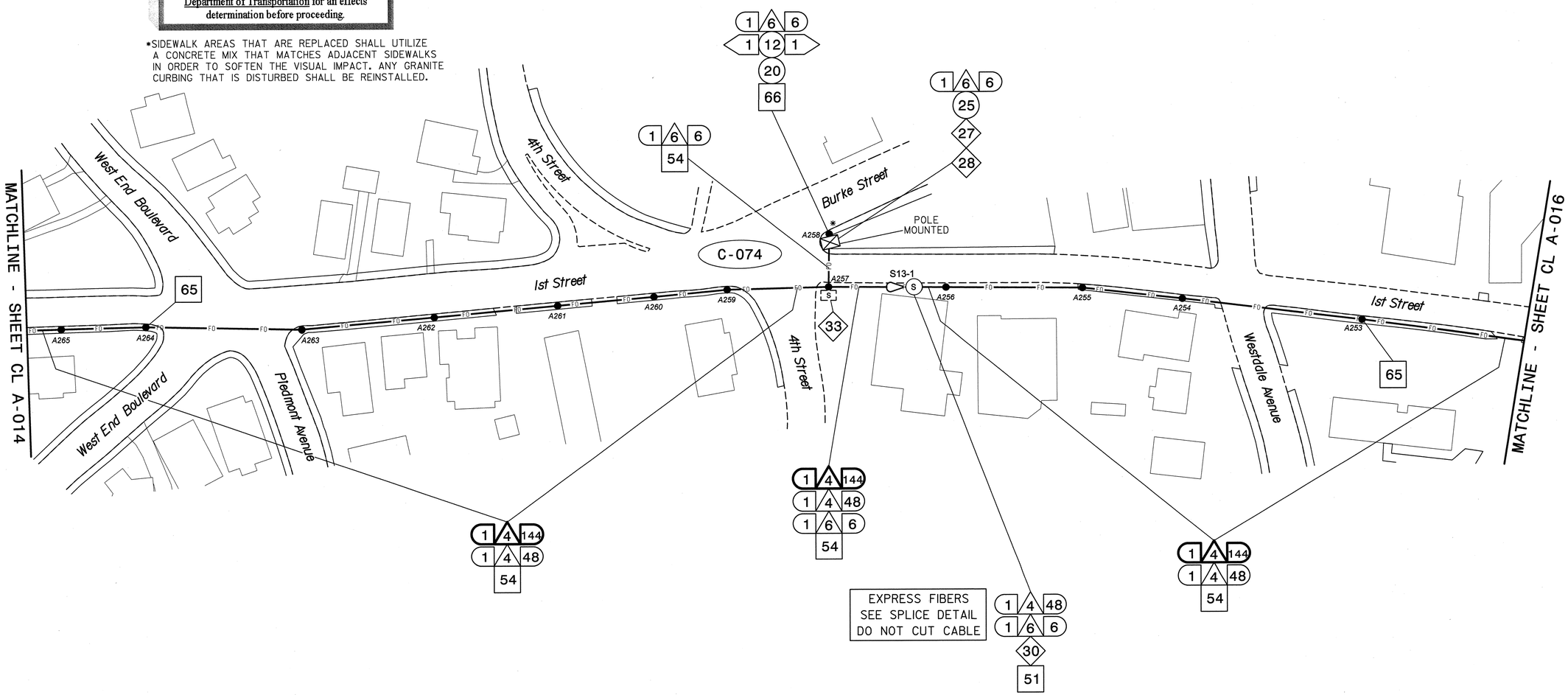
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-015

This area has been determined to contain properties with documented historic significance. If it is necessary to deviate from these plans in this area, alert the Engineer to contact Project Development and Environmental Analysis Branch – Historic Architecture Group of the North Carolina Department of Transportation for an effects determination before proceeding.

*SIDEWALK AREAS THAT ARE REPLACED SHALL UTILIZE A CONCRETE MIX THAT MATCHES ADJACENT SIDEWALKS IN ORDER TO SOFTEN THE VISUAL IMPACT. ANY GRANITE CURBING THAT IS DISTURBED SHALL BE REINSTALLED.



NOTES:
1. UNLESS OTHERWISE NOTED:
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2. SEAL ALL CONDUIT ENDS WITH DUCT AND CONDUIT SEALER, AT ALL JUNCTION BOX/CABINET ENTRANCES.

BOLD CONSTRUCTION NOTES SHOW NEW "IS FIBER" WORK

1. INSTALL REA, PE – 22, SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE
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CONSTRUCTION NOTE SYMBOLOGY KEY
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Prepared for the Offices of:
Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE
1/11/13
DATE

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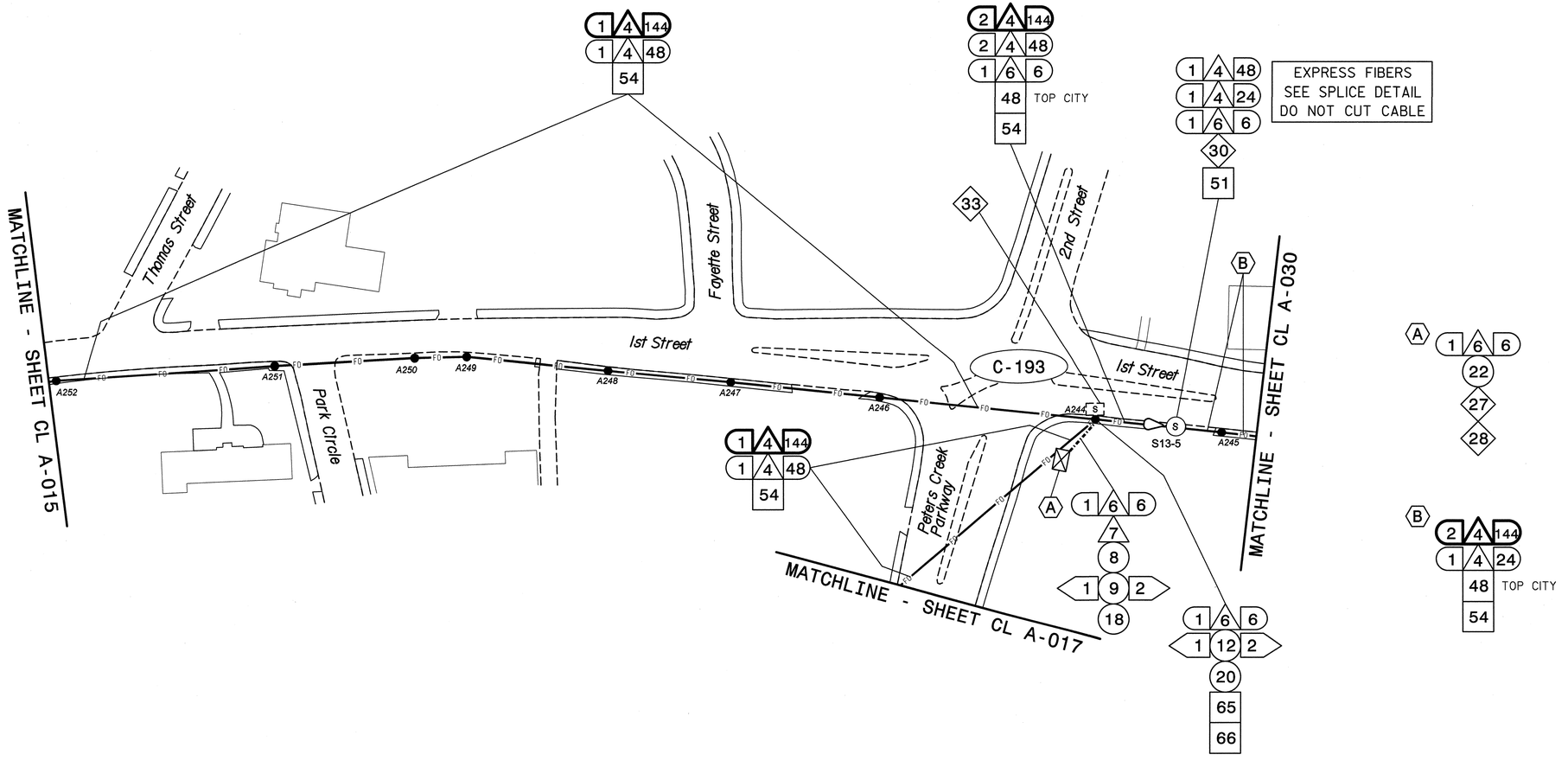
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-016



NOTES:
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BOLD CONSTRUCTION NOTES SHOW NEW "IS FIBER" WORK

1	INSTALL REA, PE – 22, SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE	13	INSTALL HEAT SHRINK TUBING RETROFIT KIT	25	INSTALL NEW RISER INTO POLE MOUNTED CABINET	37	INSTALL CCTV WOOD POLE
2	INSTALL REA, PE – 38, (FIGURE – 8) SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE	14	INSTALL HIGH DENSITY POLYETHYLENE CONDUIT	26	INSTALL DIGITAL VIDEO ENCODER	38	INSTALL STANDARD SIZE JUNCTION BOX
3	INSTALL CATEGORY 5E CABLE	15	DIRECTIONAL DRILL CONDUIT	27	INSTALL NEW ETHERNET EDGE SWITCH IN CABINET	39	INSTALL SPECIAL-SIZED JUNCTION BOX
4	INSTALL SMFO CABLE	16	BORE AND JACK CONDUIT	28	INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET	40	INSTALL OVER-SIZED JUNCTION BOX
5	INSTALL COAXIAL ANTENNA CABLE	17	INSTALL CABLE(S) IN EXISTING CONDUIT	29	INSTALL UNDERGROUND SPLICE ENCLOSURE	41	REMOVE EXISTING JUNCTION BOX
6	INSTALL FIBER-OPTIC DROP CABLE	18	INSTALL CABLE(S) IN NEW CONDUIT	30	INSTALL AERIAL SPLICE ENCLOSURE	42	INSTALL WOOD POLE
7	INSTALL TRACER WIRE	19	INSTALL CABLE(S) IN EXISTING RISER(S)	31	INSTALL SPLICE CABINET	43	REMOVE EXISTING WOOD POLE
8	INSTALL CONDUIT UNDERGROUND	20	INSTALL CABLE(S) IN NEW RISER(S)	32	MODIFY EXISTING SPLICE ENCLOSURE OR INTERCONNECT CENTER	44	INSTALL AERIAL GUY ASSEMBLY
9	INSTALL PVC CONDUIT	21	INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS	33	REMOVE EXISTING SPLICE /HUB /CCTV CABINET	45	INSTALL STANDARD GUY ASSEMBLY
10	INSTALL RIGID, GALVANIZED STEEL CONDUIT	22	INSTALL NEW CONDUIT INTO CABINET BASE (USE EX CONDUIT STUBOUTS WHEN AVAILABLE)	34	INSTALL CABINET FOUNDATION	46	INSTALL SIDEWALK GUY ASSEMBLY
11	INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD	23	INSTALL NEW RISER INTO CABINET BASE (USE EX CONDUIT STUBOUTS WHEN AVAILABLE)	35	REMOVE EXISTING CABINET FOUNDATION	47	INSTALL MESSENGER CABLE
12	INSTALL RIGID, GALVANIZED STEEL RISER WITH HEAT SHRINK TUBING	24	INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET	36	INSTALL CCTV CAMERA ASSEMBLY	48	REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE

49	REMOVE EXISTING COMMUNICATIONS CABLE	61	INSTALL UNI-DIRECTIONAL ANTENNA	73		85	
50	INSTALL WIRELESS DSL	62	INSTALL 4.9GHZ ETHERNET INTEGRATED RADIO /OMNI-DIRECTIONAL ANTENNA	74		86	
51	INSTALL CABLE STORAGE GUIDE(S) [SNOW SHOE(S)] AND STORE 100 FEET OF EACH CABLE	63	INSTALL 900 MHZ ETHERNET RADIO	75		87	
52	INSTALL DELINEATOR MARKER	64	INTERCEPT AND REROUTE EXISTING CONDUITS	76		88	
53	STORE 50 FEET OF COMMUNICATIONS CABLE (EACH CABLE)	65	BOND MESSENGER TO POLE GROUND	77		89	
54	LASH CABLE(S) TO EXISTING SIGNAL/COMMUNICATIONS CABLE	66	BOND RISER TO POLE GROUND	78		90	
55	LASH CABLE(S) TO EXISTING MESSENGER CABLE	67	BOND TRACER WIRE TO POLE GROUND	79		91	
56	LASH CABLE(S) TO NEW MESSENGER CABLE	68	BOND TRACER WIRE TO EQUIPMENT GROUND BUS	80		92	
57	MODIFY EXISTING ELECTRICAL SERVICE FOR CCTV/HUB	69	REMOVE EXISTING CCTV CAMERA ASSEMBLY	81		93	
58	INSTALL NEW ELECTRICAL SERVICE FOR CCTV/HUB	70	INSTALL 4.9GHZ FLAT-PANEL ANTENNA	82		94	
59	INSTALL NEW POLE MOUNTED CCTV CABINET	71	INSTALL HUB CABINET	83		95	
60	INSTALL 4.9GHZ ETHERNET INTEGRATED RADIO /FLAT-PANEL ANTENNA	72	INSTALL MANAGED ETHERNET SWITCH	84		96	

ATTACHMENT POINT:
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CONSTRUCTION NOTE SYMBOLOGY KEY

NUMBER OF CABLE(S) /LOOPS, DETECTOR AMPLIFIERS, GUYS — NUMBER OF FIBERS/TWISTED PAIRS — NUMBER OF RISER(S)/ CONDUIT(S) — DIAMETER OF RISER(S)/ CONDUIT(S) (IN)

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of: Transportation Mobility and Safety Division, STATE OF NORTH CAROLINA, DEPARTMENT OF TRANSPORTATION, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL — NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

SIGNATURE Lisa M. Moon 1-11-13 DATE

CADD Filename: CL A-016.dgn

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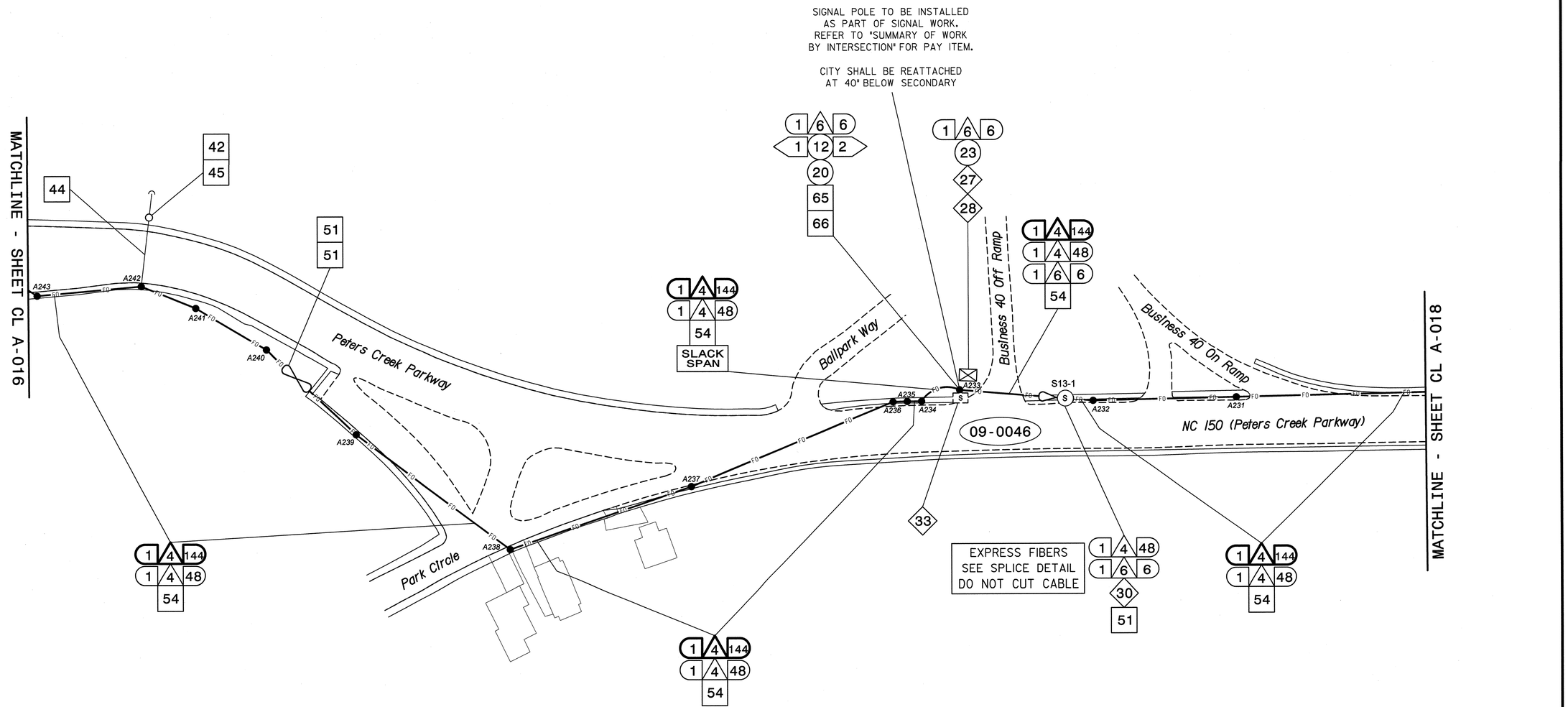
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-017



NOTES:

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Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

SIGNATURE DATE 1-11-13

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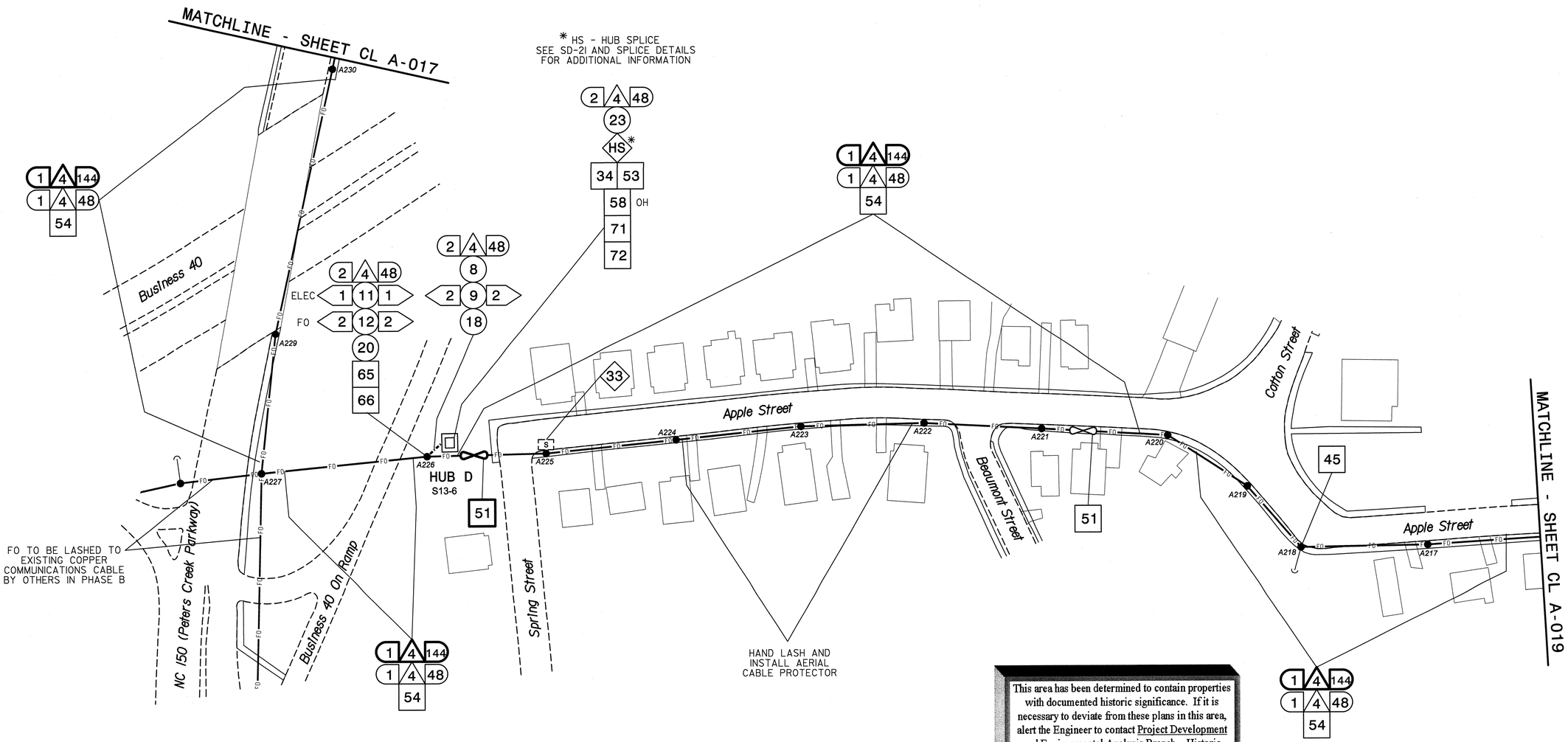
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-018



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ATKINS
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Prepared for the Offices of:
Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
Lisa M Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-018.dgn

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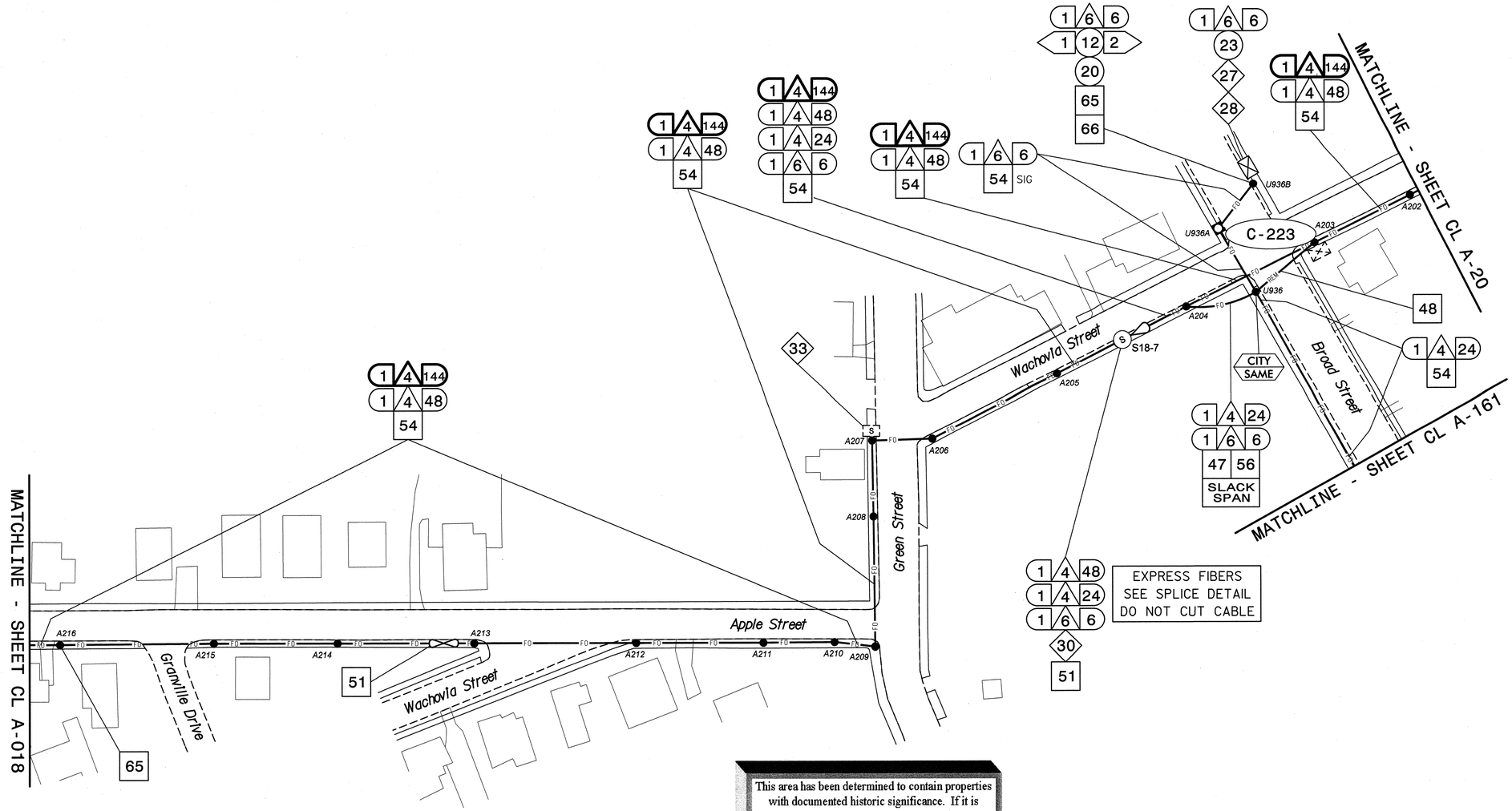
13833

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-019



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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION — Transportation Mobility and Safety Division — Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 | Forsyth County | Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022516 LISA M. MOON
SIGNATURE 1-11-13 DATE

CADD Filename: CL A-019.dgn

02-JAN-2013 16:38
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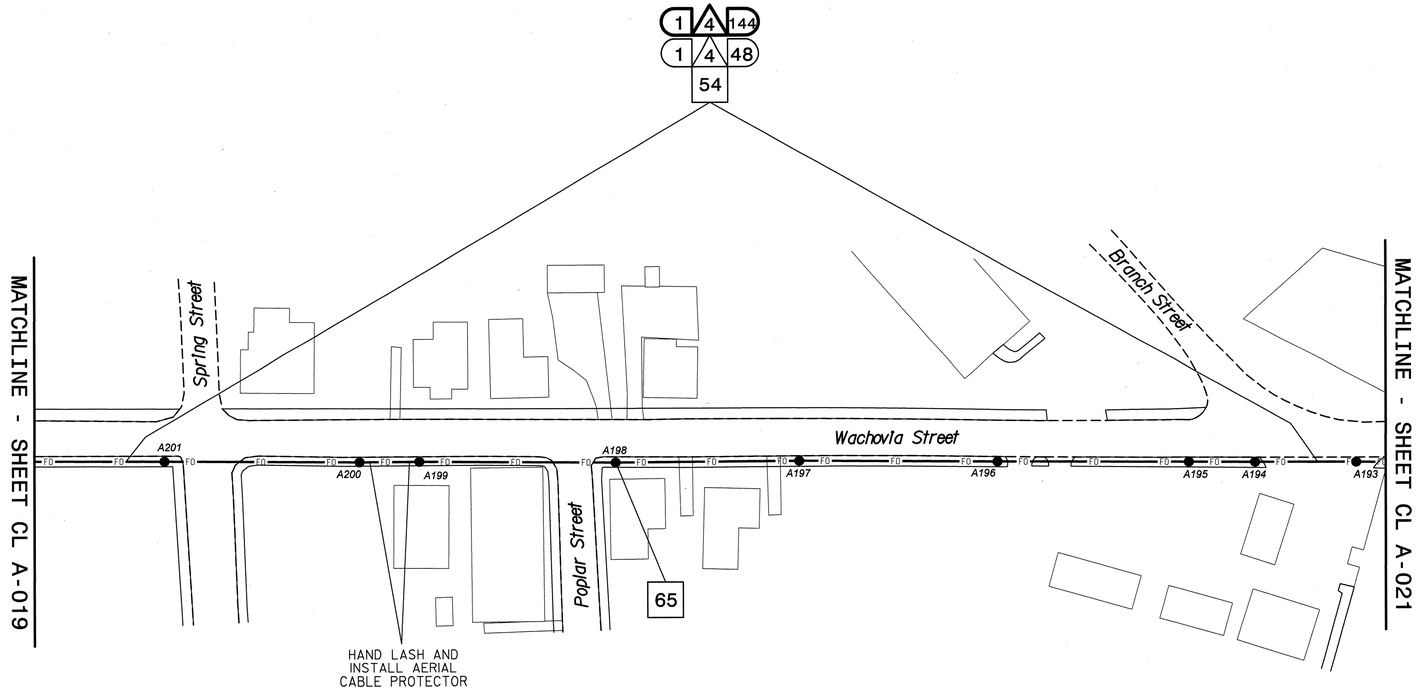
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-020



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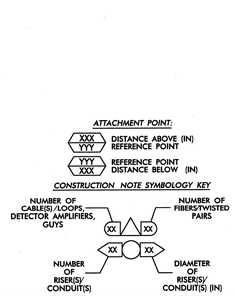

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:

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750 Greenfield Parkway, Garner, NC 27529

SCALE 0 50 1"=50'

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

Lisa M. Moon 1/17/13
SIGNATURE DATE

CADD Filename: CL A-020.dgn

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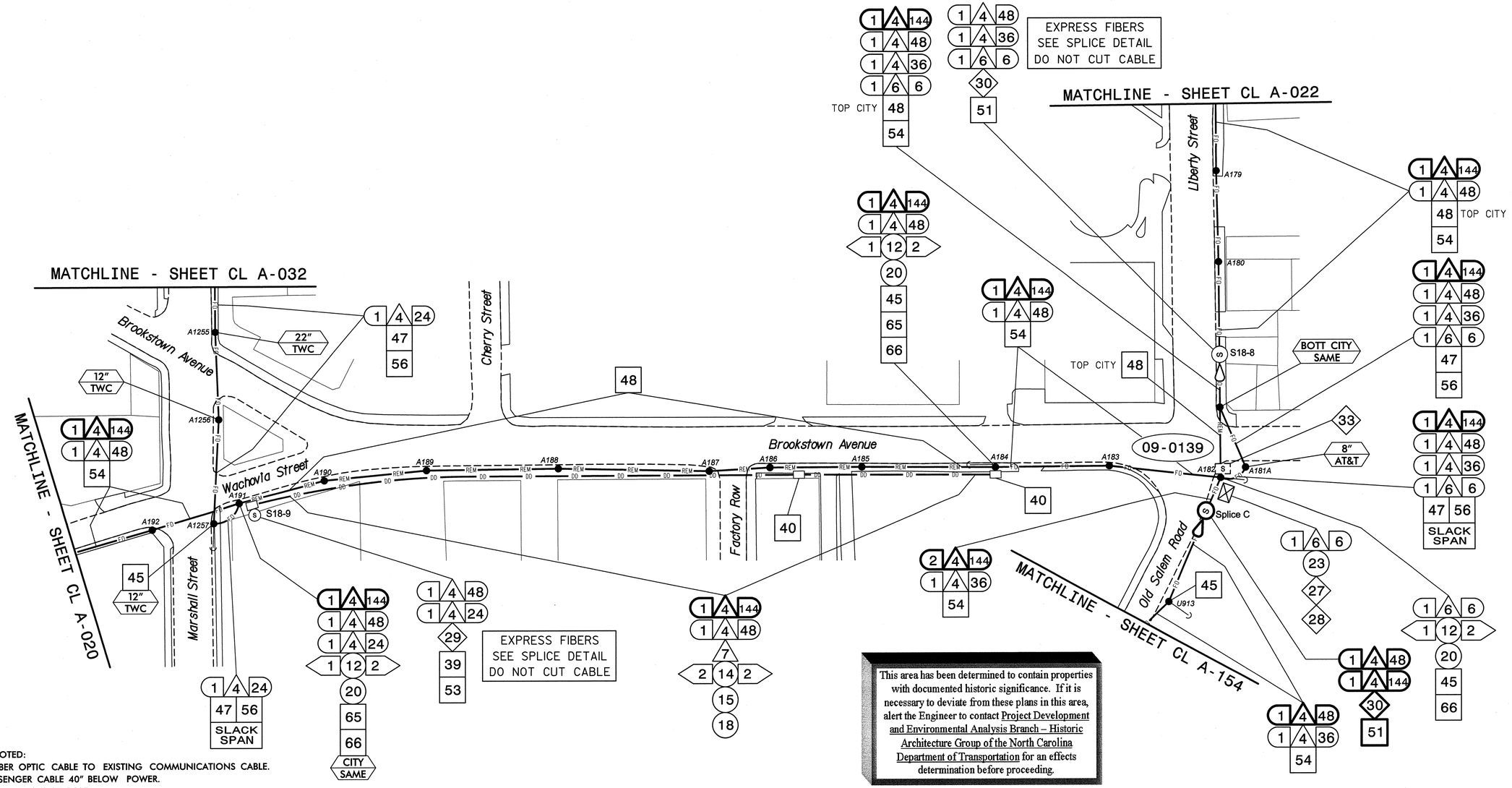
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-021



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Prepared for the Offices of:
Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

SEAL 022516 NORTH CAROLINA PROFESSIONAL ENGINEER LISA M. MOON

Lisa M Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-021.dgn

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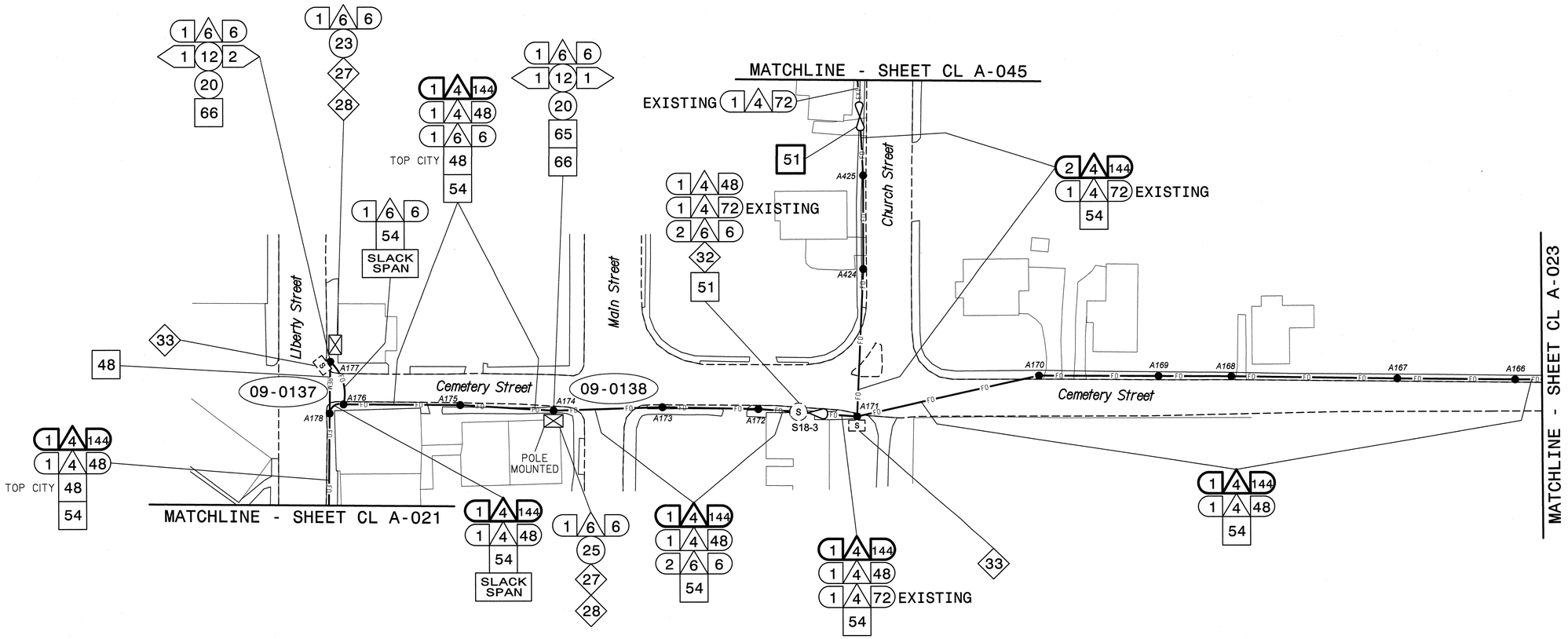
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-022



This area has been determined to contain properties with documented historic significance. If it is necessary to deviate from these plans in this area, alert the Engineer to contact Project Development and Environmental Analysis Branch – Historic Architecture Group of the North Carolina Department of Transportation for an effects determination before proceeding.

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   - ATTACH NEW MESSENGER CABLE 40" BELOW POWER.
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BOLD CONSTRUCTION NOTES SHOW NEW "IS FIBER" WORK

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ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of: Transportation Mobility and Safety Division, North Carolina Department of Transportation, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

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PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

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NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE Lisa M. Moon 1-11-13 DATE

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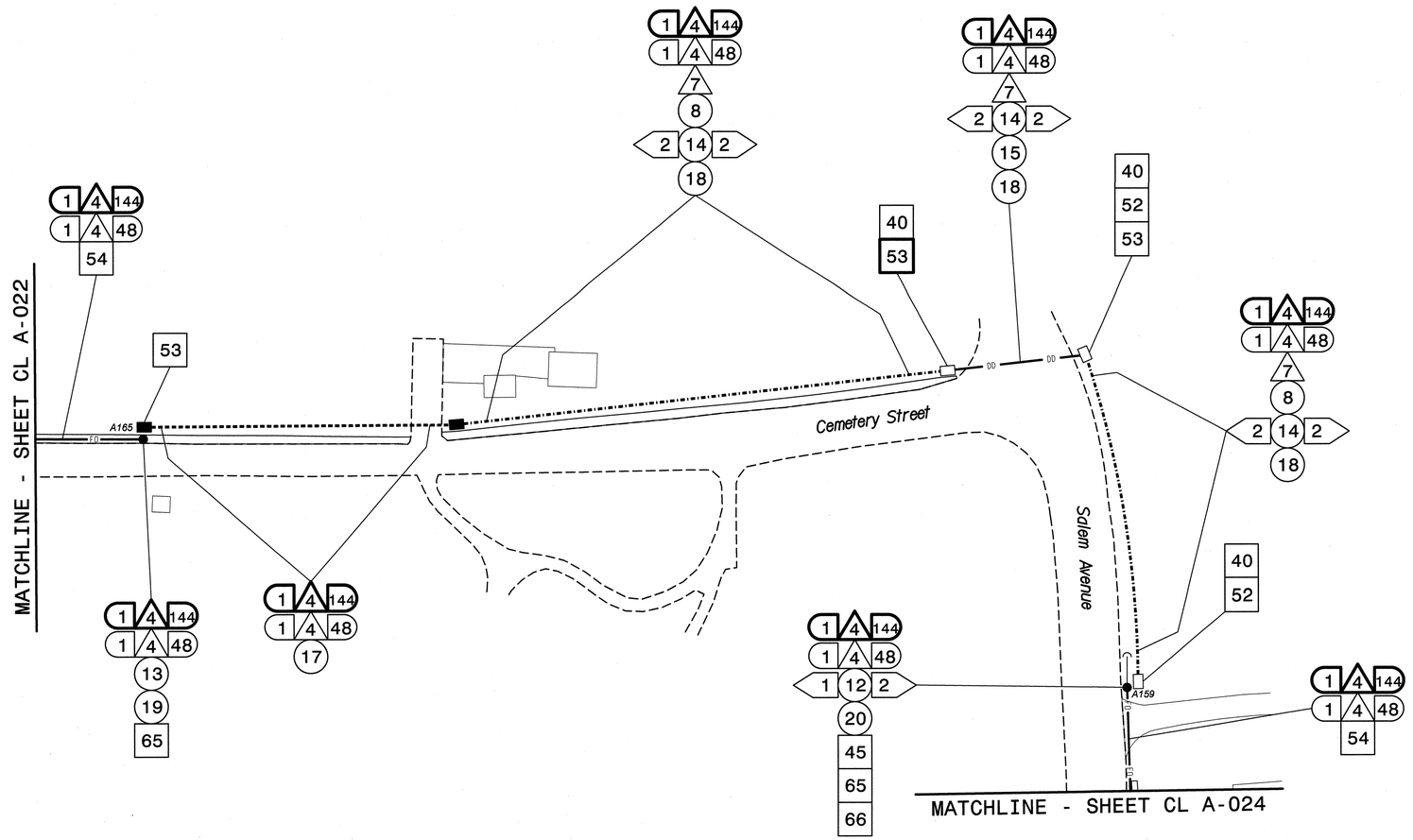
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-023



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Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LW Moon

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE Lisa M. Moon DATE 1-11-13

CADD Filename: CL A-023.dgn

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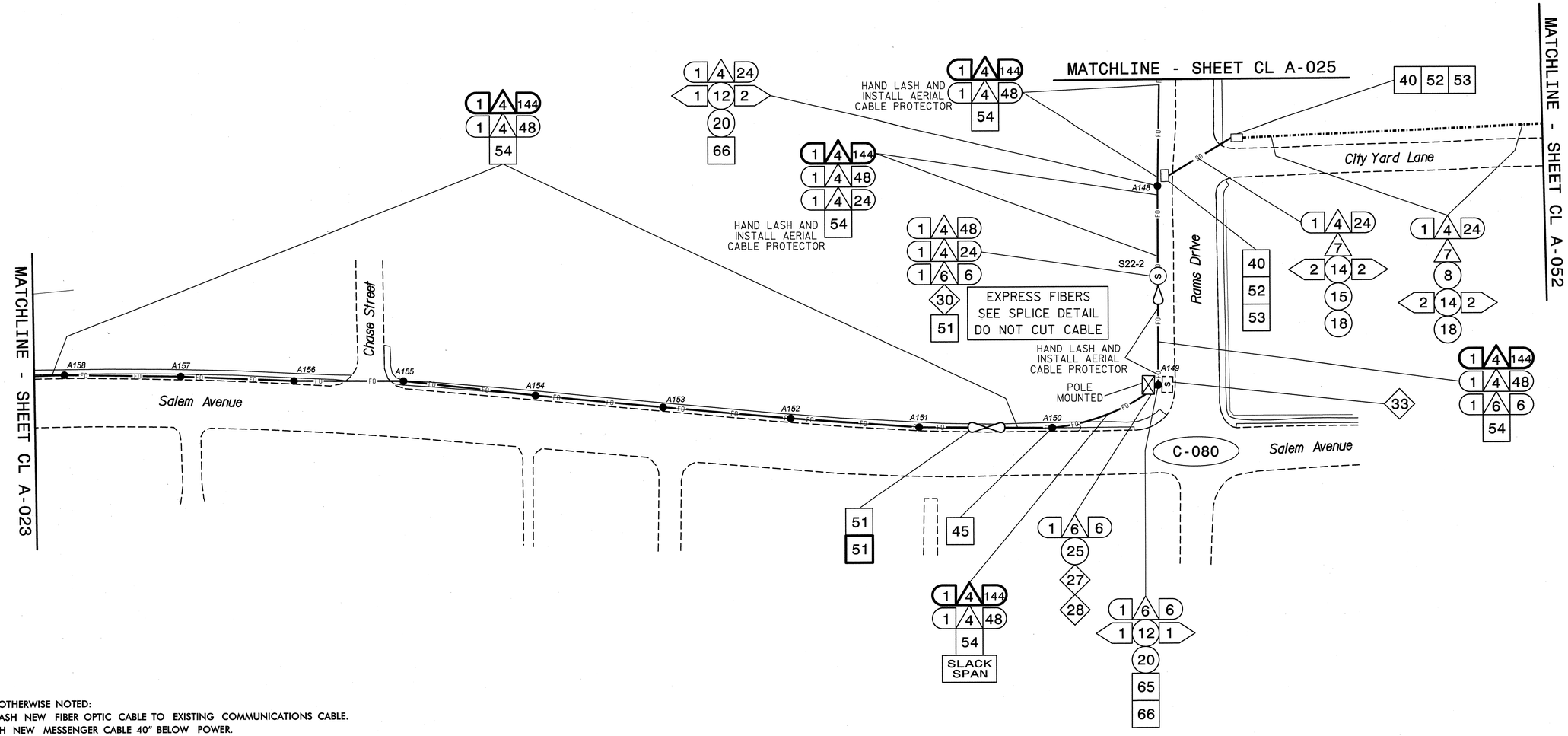
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-024



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PLAN DATE: January 2013 REVIEWED BY: MB Toth
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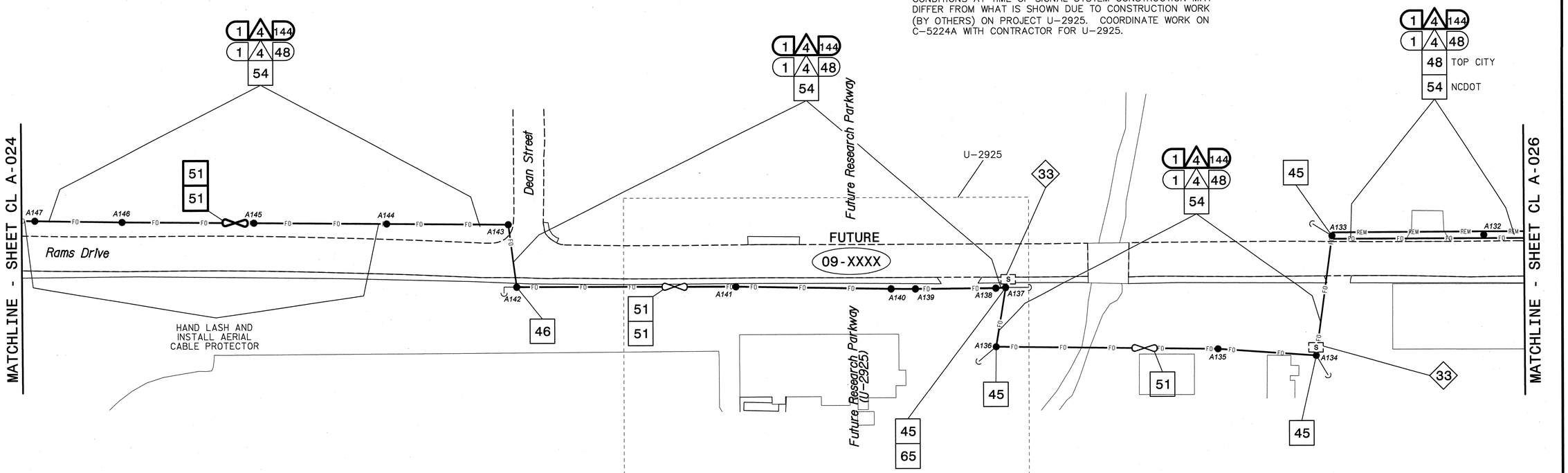
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-025

PLANS PREPARED SHOW EXISTING CONDITIONS PRIOR TO ANY CONSTRUCTION ON NCDOT PROJECT U-2925. ACTUAL CONDITIONS AT TIME OF SIGNAL SYSTEM CONSTRUCTION MAY DIFFER FROM WHAT IS SHOWN DUE TO CONSTRUCTION WORK (BY OTHERS) ON PROJECT U-2925. COORDINATE WORK ON C-5224A WITH CONTRACTOR FOR U-2925.



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69. REMOVE EXISTING CCTV CAMERA ASSEMBLY
70. INSTALL 4.9GHZ FLAT-PANEL ANTENNA
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72. INSTALL MANAGED ETHERNET SWITCH

ATTACHMENT POINT:
XXX DISTANCE ABOVE (IN)
YYY REFERENCE POINT
YYY REFERENCE POINT
XXX DISTANCE BELOW (IN)

CONSTRUCTION NOTE SYMBOLOGY KEY
NUMBER OF CABLE(S) /LOOPS, DETECTOR AMPLIFIERS, GUYS
NUMBER OF FIBERS/TWISTED PAIRS
NUMBER OF RISER(S)/ CONDUIT(S)
DIAMETER OF RISER(S)/ CONDUIT(S) (IN)

ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Transportation Mobility and Safety Division
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE Lisa M. Moon 1-11-13 DATE
CADD Filename: CL A-025.dgn

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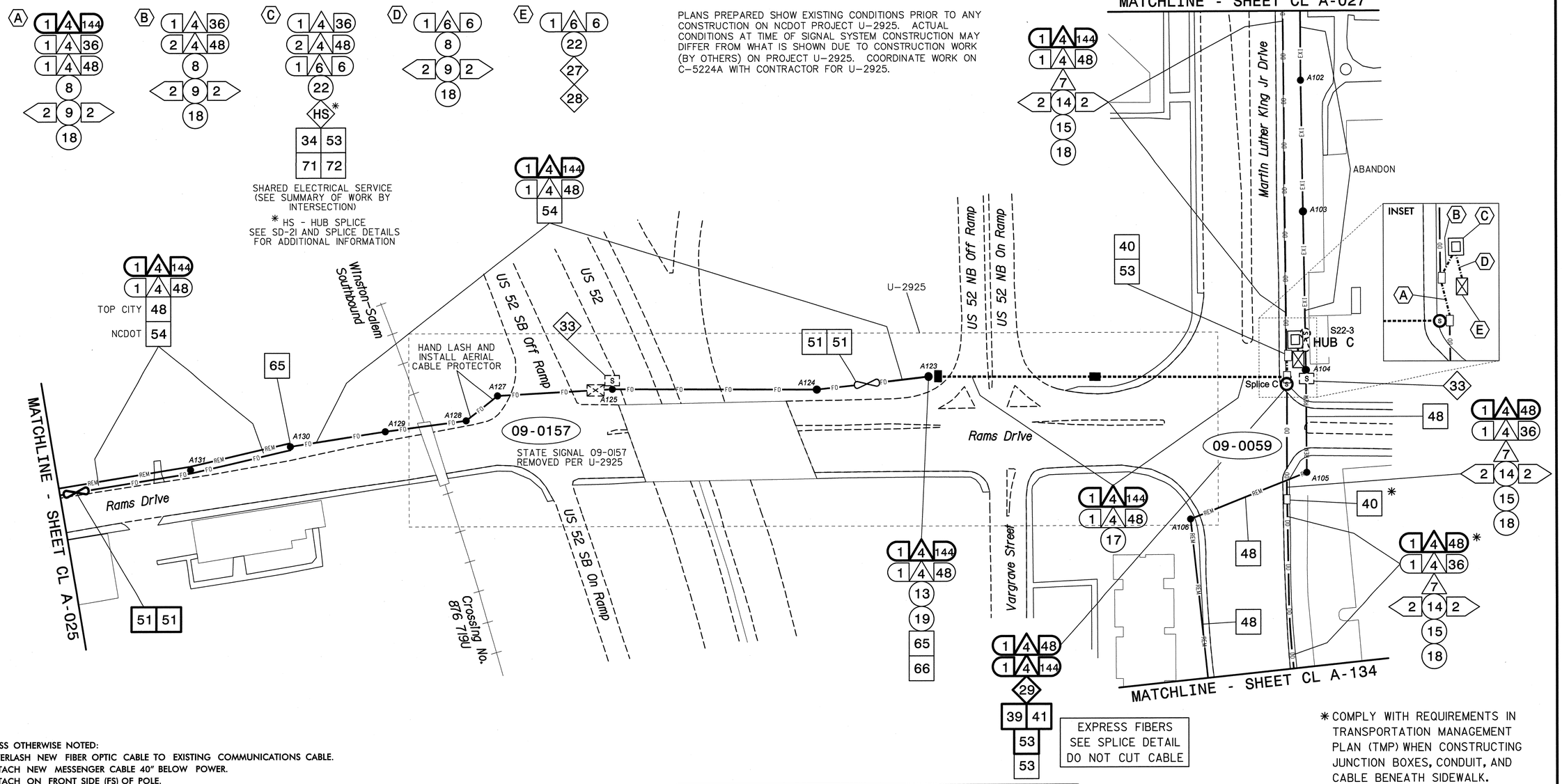
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-026



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* COMPLY WITH REQUIREMENTS IN TRANSPORTATION MANAGEMENT PLAN (TMP) WHEN CONSTRUCTING JUNCTION BOXES, CONDUIT, AND CABLE BENEATH SIDEWALK.

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YYY REFERENCE POINT DISTANCE BELOW (IN)
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Prepared for the Offices of:
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION Transportation Mobility and Safety Division Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem
PLAN DATE: January 2013 REVIEWED BY: MB Toth
PREPARED BY: BKS/AJD REVIEWED BY: LM Moon

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
Lisa M. Moon 1-11-13
SIGNATURE DATE
CADD Filename: CL A-026.dgn

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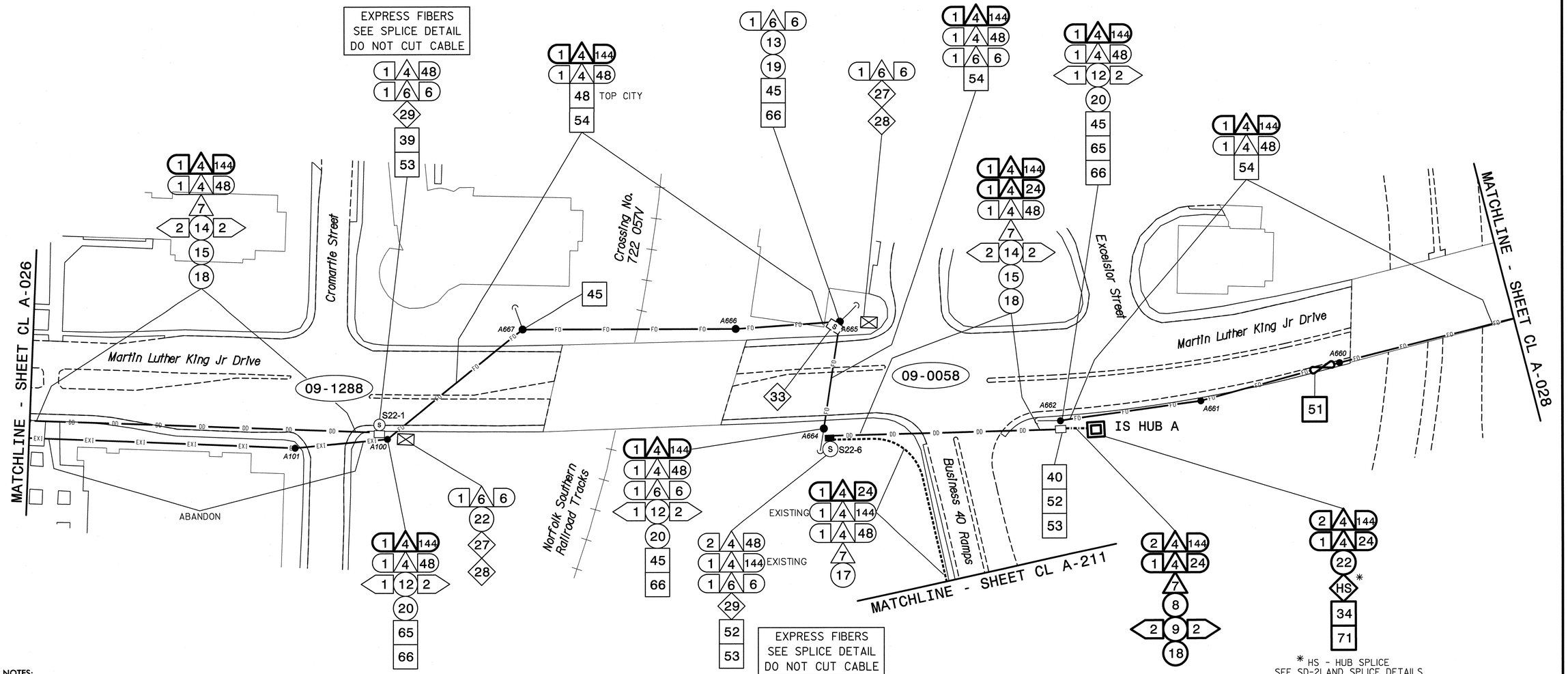
13833

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-027



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ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
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(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

Lisa M Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-027.dgn

10-JAN-2013 16:38
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13833

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-028

EXPRESS FIBERS
SEE SPLICE DETAIL
DO NOT CUT CABLE

EXPRESS FIBERS
SEE SPLICE DETAIL
DO NOT CUT CABLE

NOTIFY REGIONAL ITS ENGINEER
7 DAYS PRIOR TO WORK ON
SPLICE AT (336) 315-7079.

1st Street
2nd Street
3rd Street
Lawrence Street
Bellews Street
Martin Luther King Jr Drive
Business 40 Ramps

09-0056
09-0057

SLACK SPAN
SLACK SPAN

POLE MOUNTED

MATCHLINE - SHEET CL A-027

MATCHLINE - SHEET CL A-029

This area has been determined to contain properties with documented historic significance. If it is necessary to deviate from these plans in this area, alert the Engineer to contact Project Development and Environmental Analysis Branch – Historic Architecture Group of the North Carolina Department of Transportation for an effects determination before proceeding.

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Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-028.dgn

02-JAN-2013 16:45
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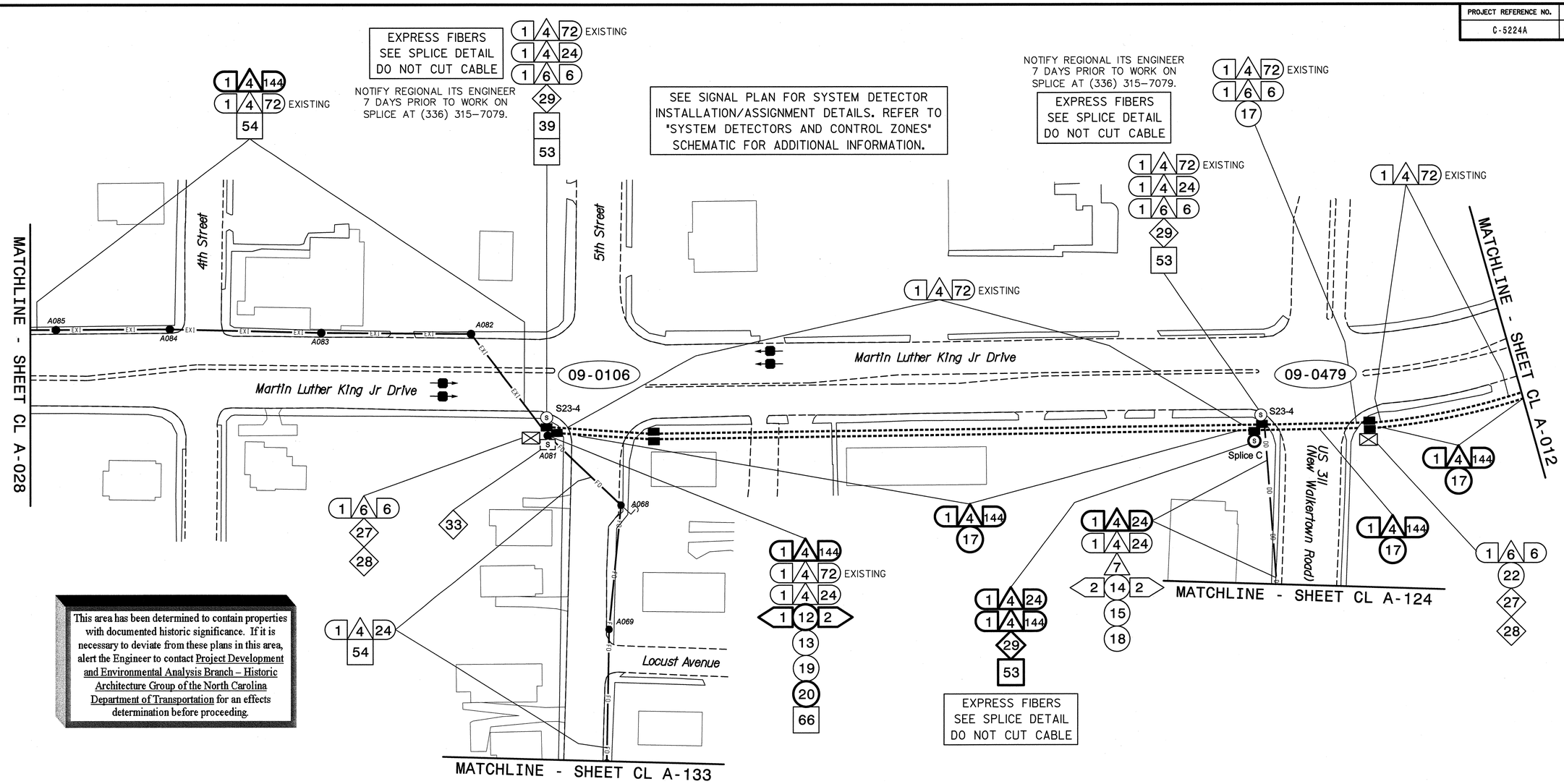
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-029



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ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
Transportation Mobility and Safety Division
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-029.dgn

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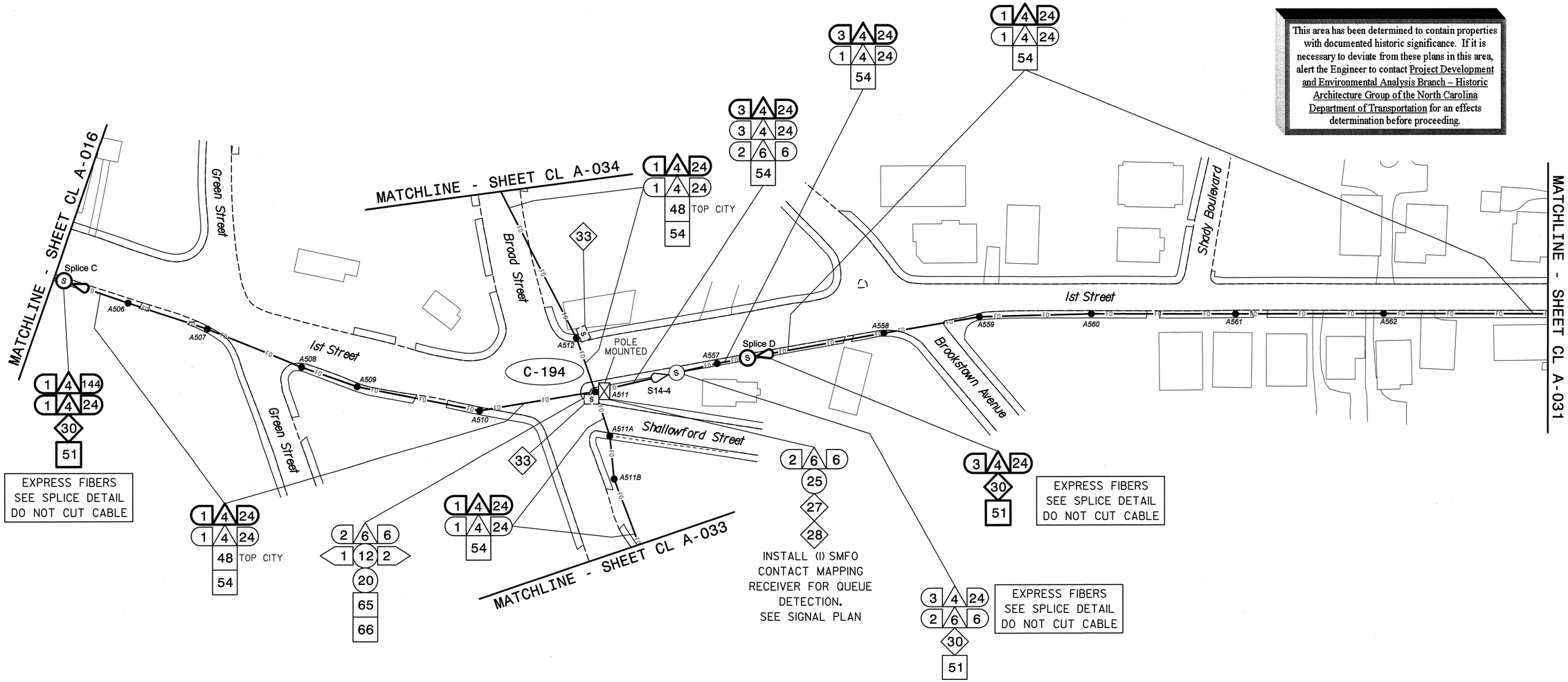
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-030



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ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of: NCDOT Transportation Mobility and Safety Division, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE: January 2013 REVIEWED BY: MB Toth
PREPARED BY: BKS/AJD REVIEWED BY: LM Moon

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE DATE
CADD Filename: CL A-030.dgn

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24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-031

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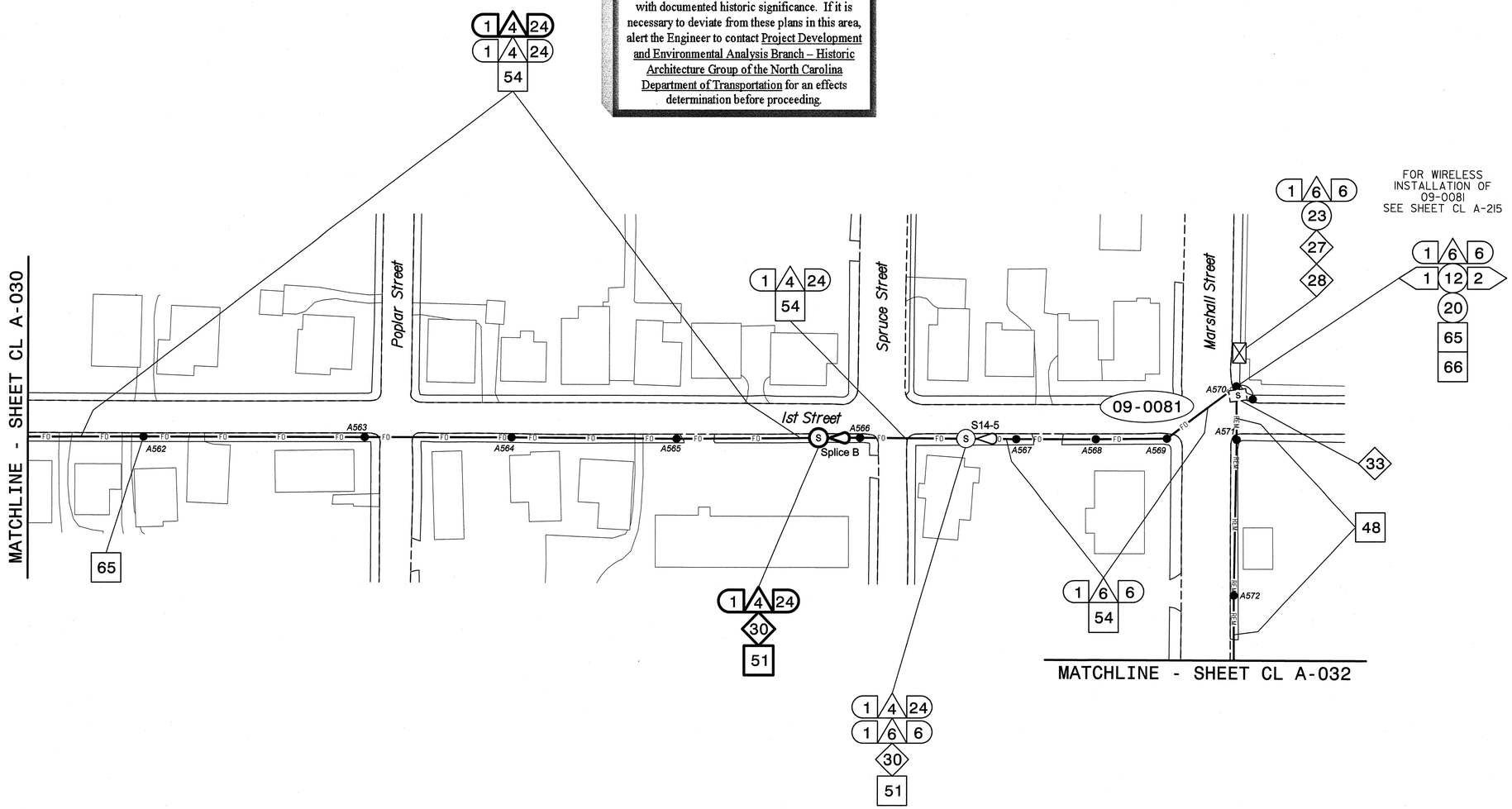

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Prepared for the Offices of:
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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

SCALE 0 50 1"=50'

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
Lisa M Moon 1/11/13
SIGNATURE DATE

CADD Filename: CL A-031.dgn

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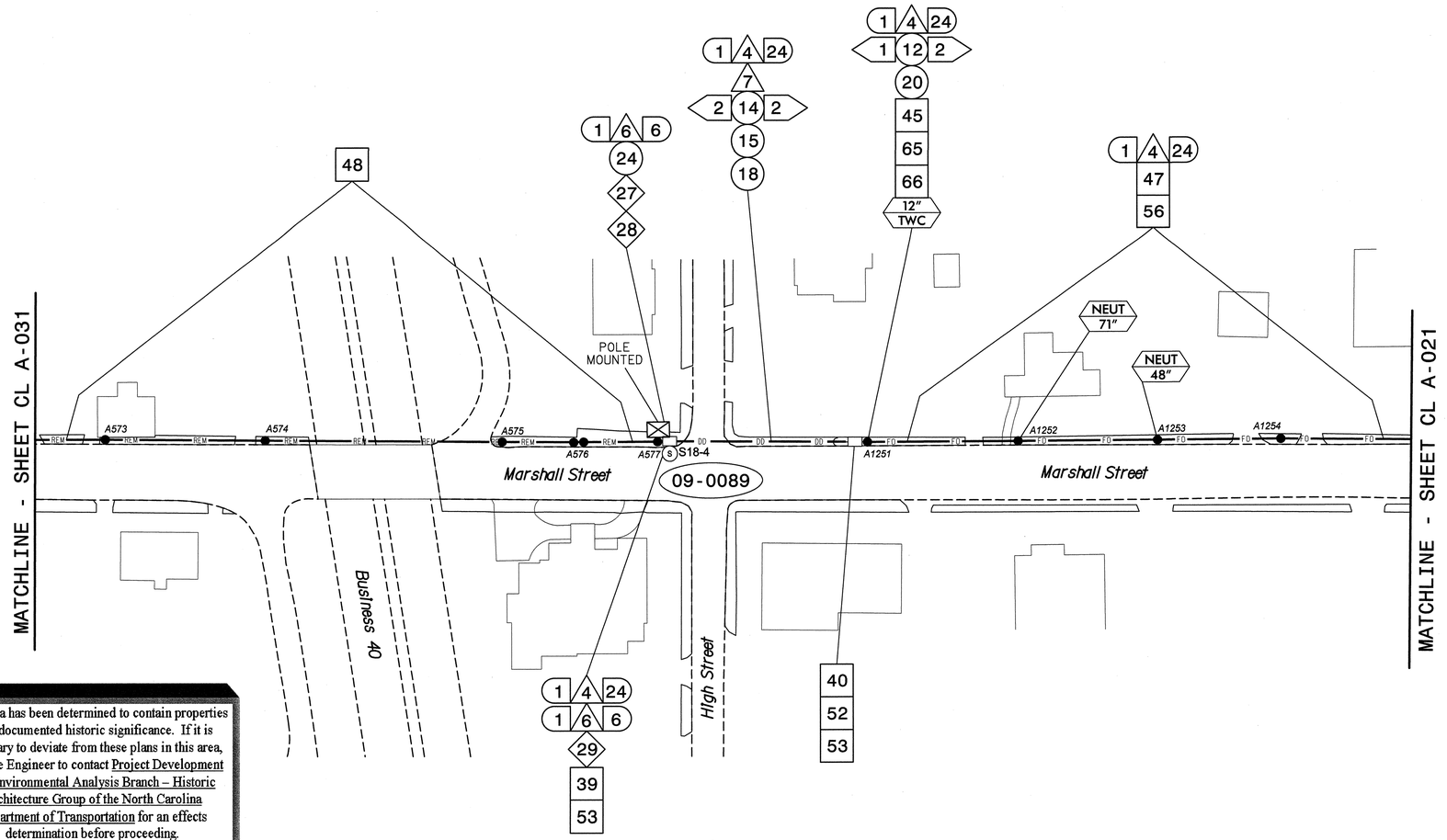
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-032



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PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
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SCALE 0 50 1"=50'

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE 1-11-13 DATE
CADD Filename: CL A-032.dgn

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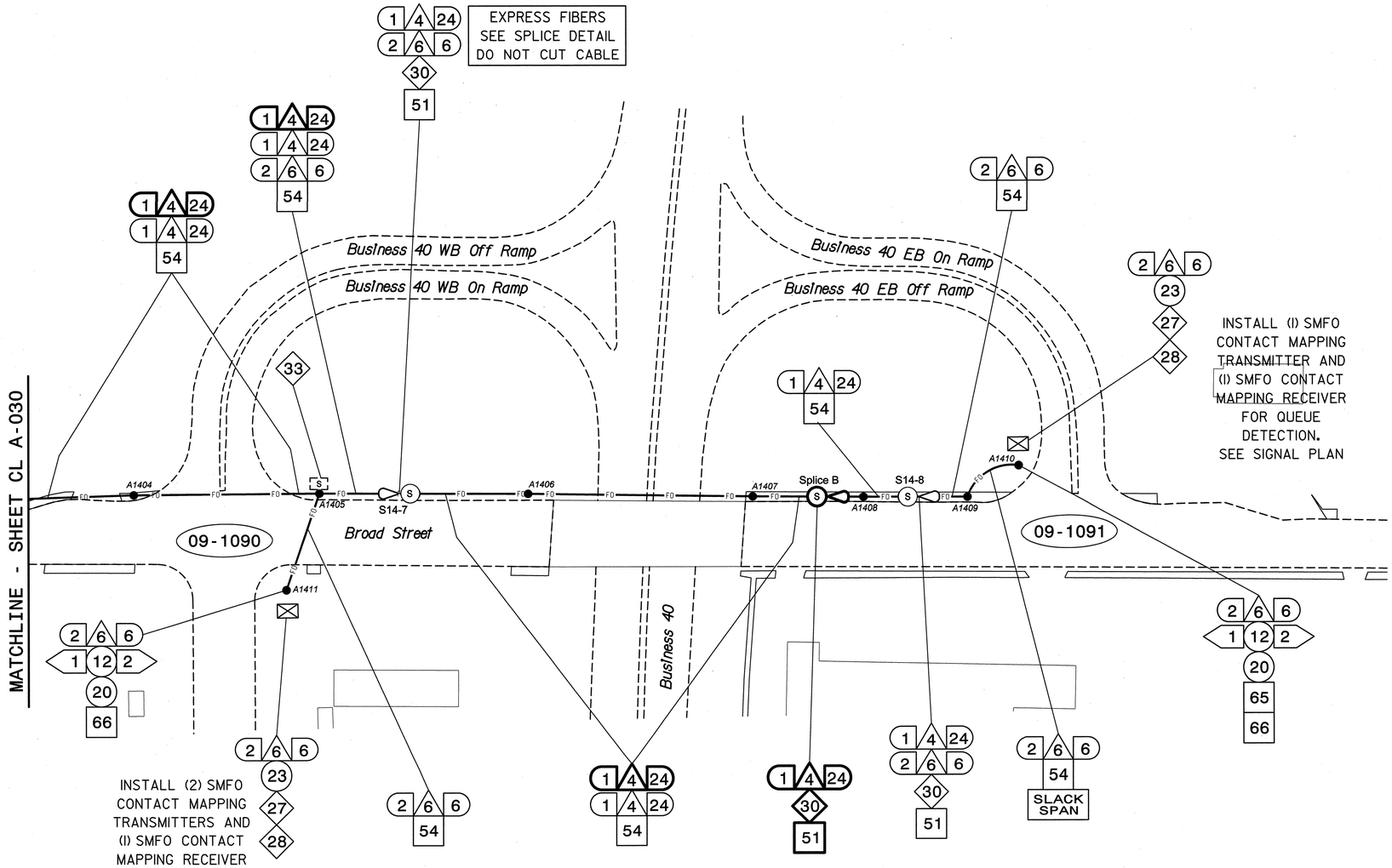
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-033



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27. INSTALL NEW ETHERNET EDGE SWITCH IN CABINET
28. INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET
29. INSTALL UNDERGROUND SPLICE ENCLOSURE
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YYY / XXX — REFERENCE POINT DISTANCE BELOW (IN)

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DIAMETER OF RISER(S)/ CONDUIT(S) (IN)

ATKINS
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(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION — Transportation Mobility and Safety Division — Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE: January 2013 REVIEWED BY: MB Toth
PREPARED BY: BKS/AJD REVIEWED BY: LM Moon

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE DATE 1-11-13
CADD Filename: CL A-033.dgn

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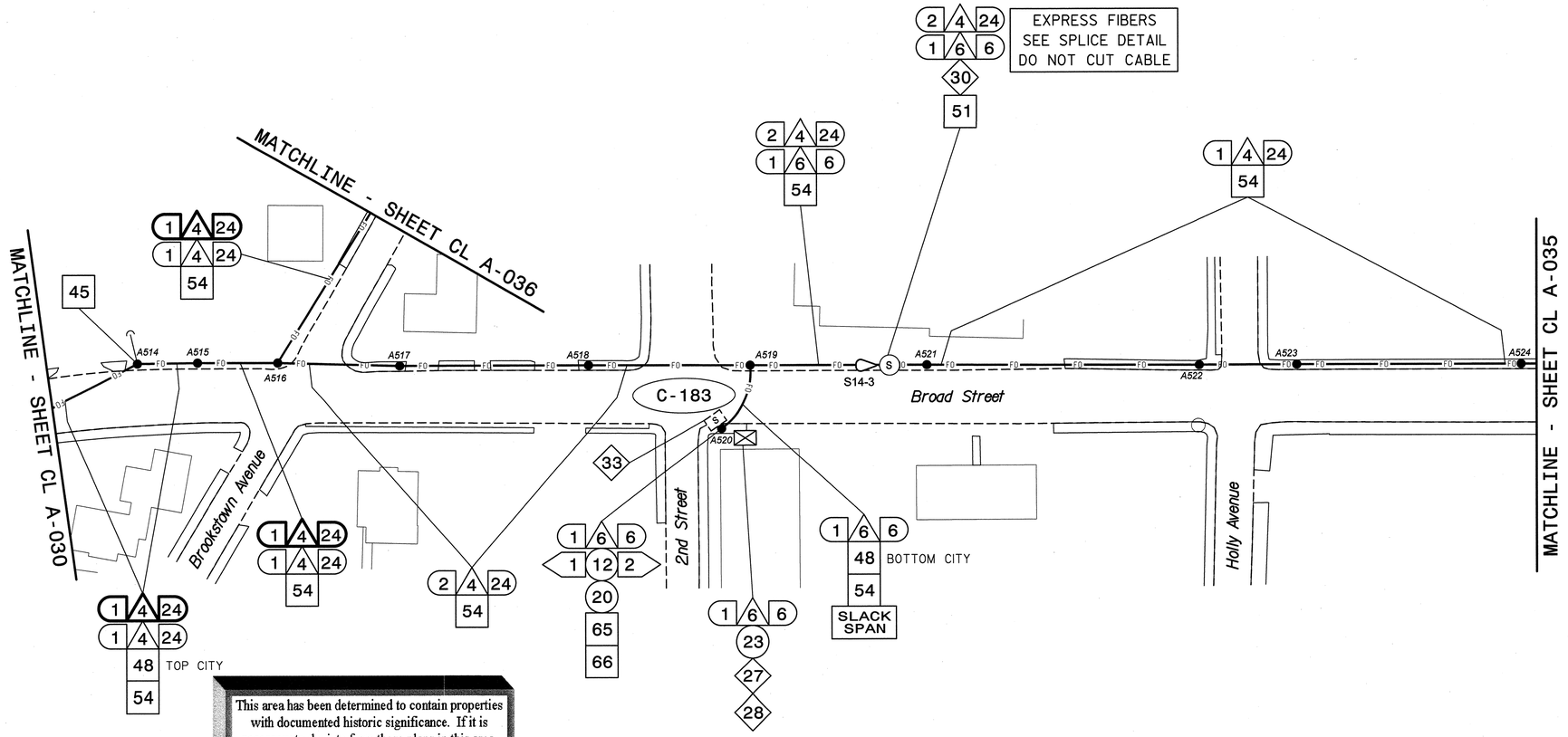
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-034



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Prepared for the Offices of:
North Carolina Department of Transportation, Mobility and Safety Division, Traffic Engineering Branch, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-034.dgn

02-JAN-2013 16:51
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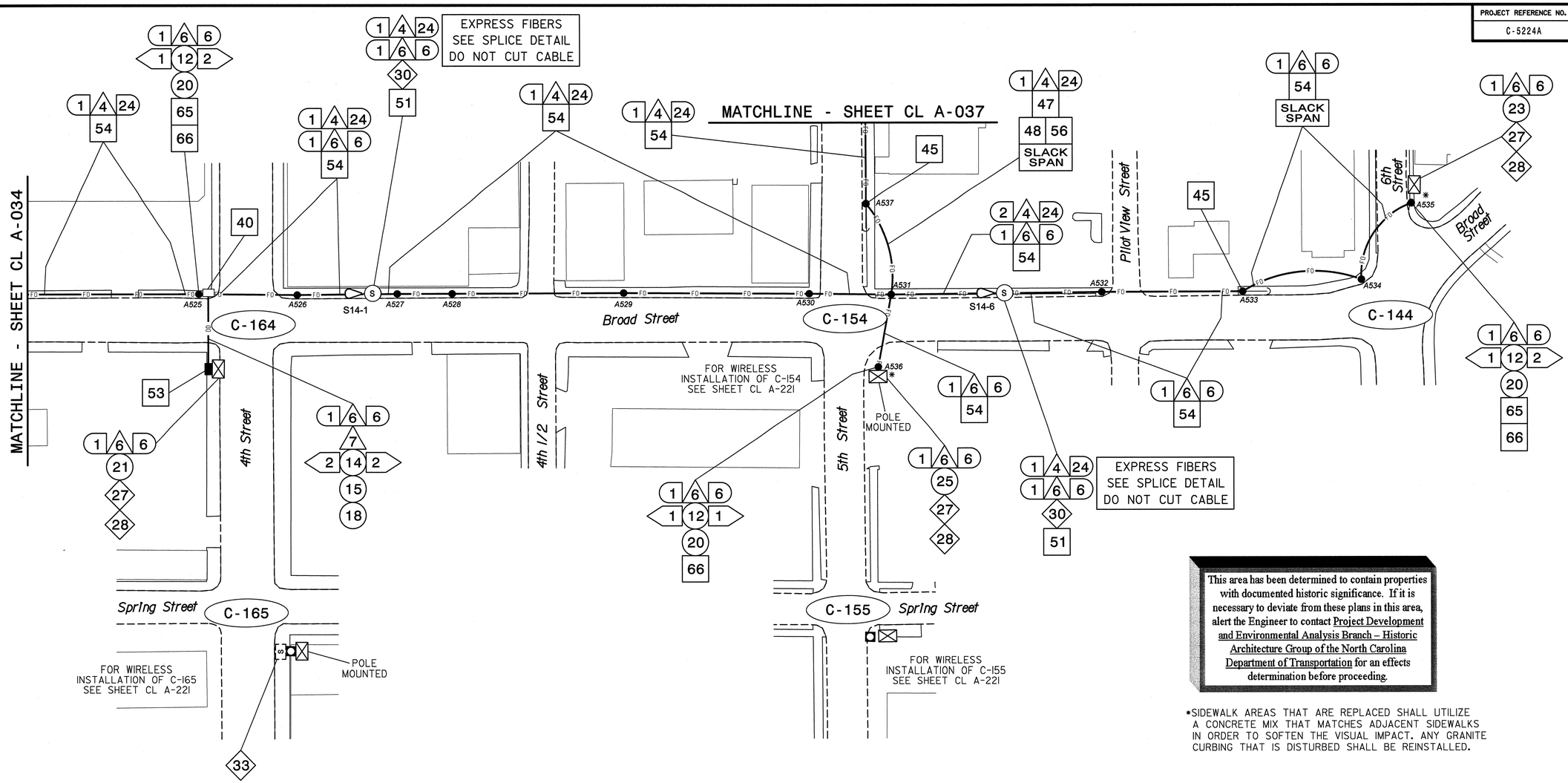
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-035



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Prepared for the Offices of: Transportation Mobility and Safety Division, North Carolina Department of Transportation, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-035.dgn

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13833

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-036

This area has been determined to contain properties with documented historic significance. If it is necessary to deviate from these plans in this area, alert the Engineer to contact Project Development and Environmental Analysis Branch – Historic Architecture Group of the North Carolina Department of Transportation for an effects determination before proceeding.

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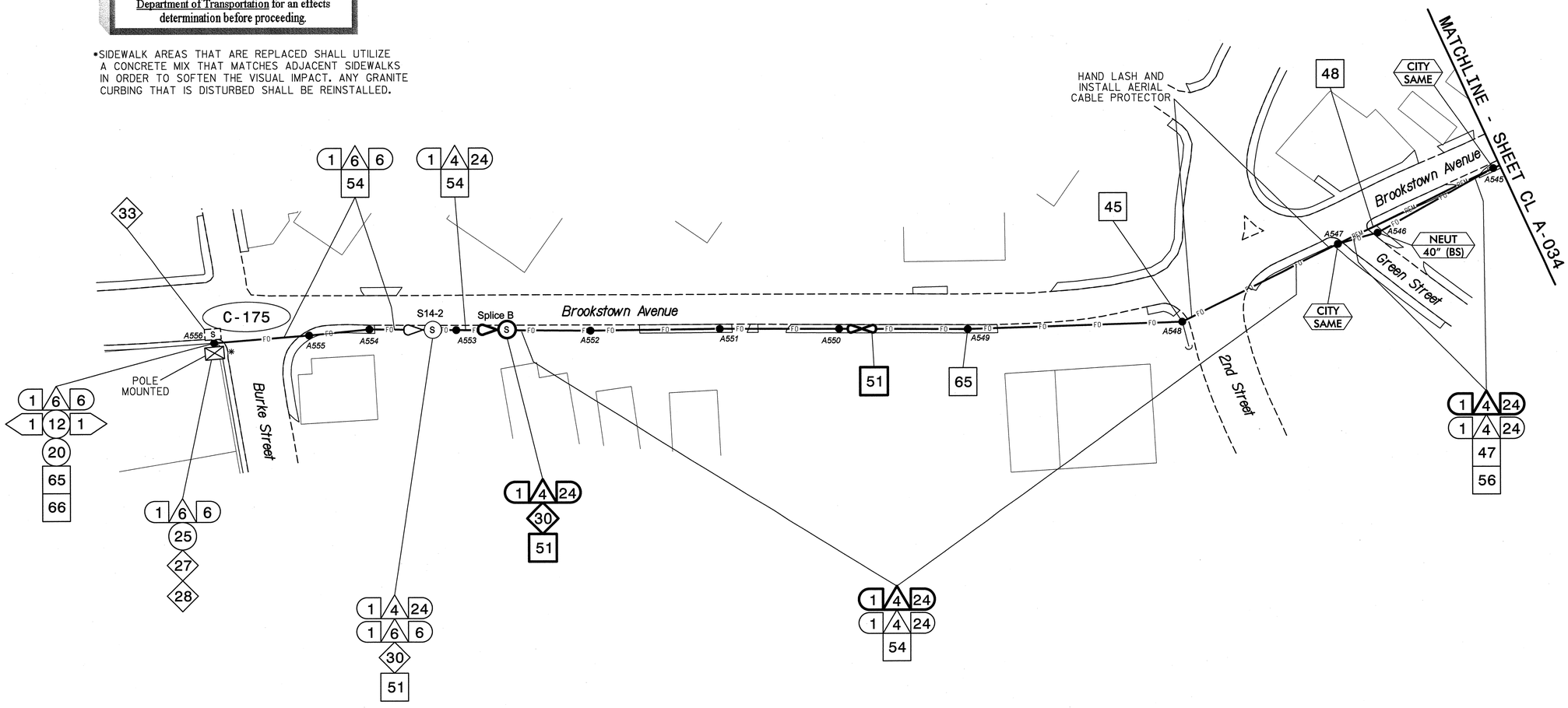

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Prepared for the Offices of:
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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE 1-11-13 DATE

CADD Filename: CL A-036.dgn

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24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-037

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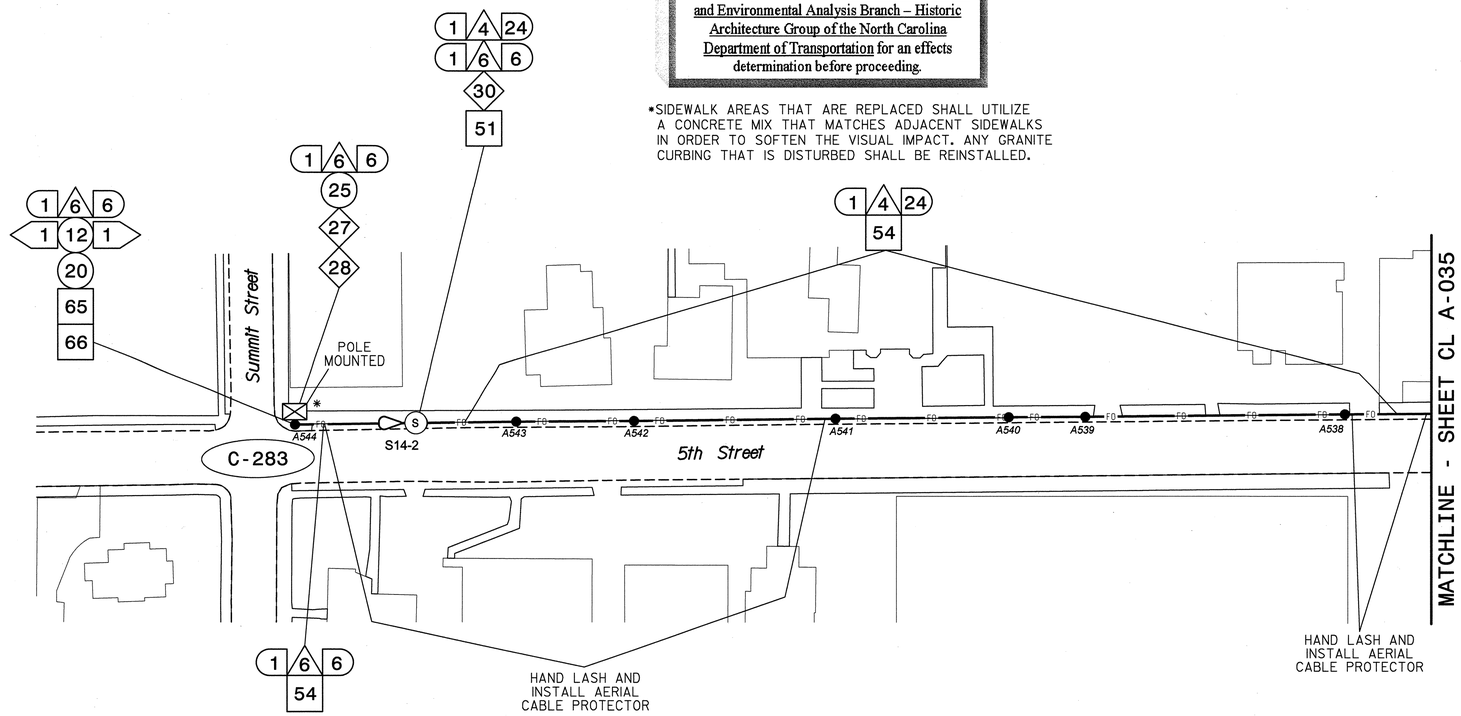

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2. SEAL ALL CONDUIT ENDS WITH DUCT AND CONDUIT SEALER, AT ALL JUNCTION BOX/CABINET ENTRANCES.

BOLD CONSTRUCTION NOTES SHOW NEW "IS FIBER" WORK

1 INSTALL REA, PE – 22, SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE	13 INSTALL HEAT SHRINK TUBING RETROFIT KIT	25 INSTALL NEW RISER INTO POLE MOUNTED CABINET	37 INSTALL CCTV WOOD POLE	49 REMOVE EXISTING COMMUNICATIONS CABLE	61 INSTALL UNI-DIRECTIONAL ANTENNA
2 INSTALL REA, PE – 38, (FIGURE – 8) SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE	14 INSTALL HIGH DENSITY POLYETHYLENE CONDUIT	26 INSTALL DIGITAL VIDEO ENCODER	38 INSTALL STANDARD SIZE JUNCTION BOX	50 INSTALL WIRELESS DSL	62 INSTALL 4.9GHZ ETHERNET INTEGRATED RADIO /OMNI-DIRECTIONAL ANTENNA
3 INSTALL CATEGORY 5E CABLE	15 DIRECTIONAL DRILL CONDUIT	27 INSTALL NEW ETHERNET EDGE SWITCH IN CABINET	39 INSTALL SPECIAL-SIZED JUNCTION BOX	51 INSTALL CABLE STORAGE GUIDE(S) [SNOW SHOE(S)] AND STORE 100 FEET OF EACH CABLE	63 INSTALL 900 MHZ ETHERNET RADIO
4 INSTALL SMFO CABLE	16 BORE AND JACK CONDUIT	28 INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET	40 INSTALL OVER-SIZED JUNCTION BOX	52 INSTALL DELINEATOR MARKER	64 INTERCEPT AND REROUTE EXISTING CONDUITS
5 INSTALL COAXIAL ANTENNA CABLE	17 INSTALL CABLE(S) IN EXISTING CONDUIT	29 INSTALL UNDERGROUND SPLICE ENCLOSURE	41 REMOVE EXISTING JUNCTION BOX	53 STORE 50 FEET OF COMMUNICATIONS CABLE (EACH CABLE)	65 BOND MESSENGER TO POLE GROUND
6 INSTALL FIBER-OPTIC DROP CABLE	18 INSTALL CABLE(S) IN NEW CONDUIT	30 INSTALL AERIAL SPLICE ENCLOSURE	42 INSTALL WOOD POLE	54 LASH CABLE(S) TO EXISTING SIGNAL/COMMUNICATIONS CABLE	66 BOND RISER TO POLE GROUND
7 INSTALL TRACER WIRE	19 INSTALL CABLE(S) IN EXISTING RISER(S)	31 INSTALL SPLICE CABINET	43 REMOVE EXISTING WOOD POLE	55 LASH CABLE(S) TO EXISTING MESSENGER CABLE	67 BOND TRACER WIRE TO POLE GROUND
8 INSTALL CONDUIT UNDERGROUND	20 INSTALL CABLE(S) IN NEW RISER(S)	32 MODIFY EXISTING SPLICE ENCLOSURE OR INTERCONNECT CENTER	44 INSTALL AERIAL GUY ASSEMBLY	56 LASH CABLE(S) TO NEW MESSENGER CABLE	68 BOND TRACER WIRE TO EQUIPMENT GROUND BUS
9 INSTALL PVC CONDUIT	21 INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS	33 REMOVE EXISTING SPLICE /HUB /CCTV CABINET	45 INSTALL STANDARD GUY ASSEMBLY	57 MODIFY EXISTING ELECTRICAL SERVICE FOR CCTV/HUB	69 REMOVE EXISTING CCTV CAMERA ASSEMBLY
10 INSTALL RIGID, GALVANIZED STEEL CONDUIT	22 INSTALL NEW CONDUIT INTO CABINET BASE (USE EX CONDUIT STUBOUTS WHEN AVAILABLE)	34 INSTALL CABINET FOUNDATION	46 INSTALL SIDEWALK GUY ASSEMBLY	58 INSTALL NEW ELECTRICAL SERVICE FOR CCTV/HUB	70 INSTALL 4.9GHZ FLAT-PANEL ANTENNA
11 INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD	23 INSTALL NEW RISER INTO CABINET BASE (USE EX CONDUIT STUBOUTS WHEN AVAILABLE)	35 REMOVE EXISTING CABINET FOUNDATION	47 INSTALL MESSENGER CABLE	59 INSTALL NEW POLE MOUNTED CCTV CABINET	71 INSTALL HUB CABINET
12 INSTALL RIGID, GALVANIZED STEEL RISER WITH HEAT SHRINK TUBING	24 INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET	36 INSTALL CCTV CAMERA ASSEMBLY	48 REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE	60 INSTALL 4.9GHZ ETHERNET INTEGRATED RADIO /FLAT-PANEL ANTENNA	72 INSTALL MANAGED ETHERNET SWITCH

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YYY / XXX — REFERENCE POINT DISTANCE BELOW (IN)

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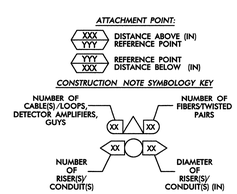

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(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
Mobility and Safety Division
Transportation Management Center
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

SCALE 0 50 1"=50'

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE: January 2013 REVIEWED BY: MB Toth

PREPARED BY: BKS/AJD REVIEWED BY: LW Moon

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

SIGNATURE DATE 1-11-13

CADD Filename: CL A-037.dgn

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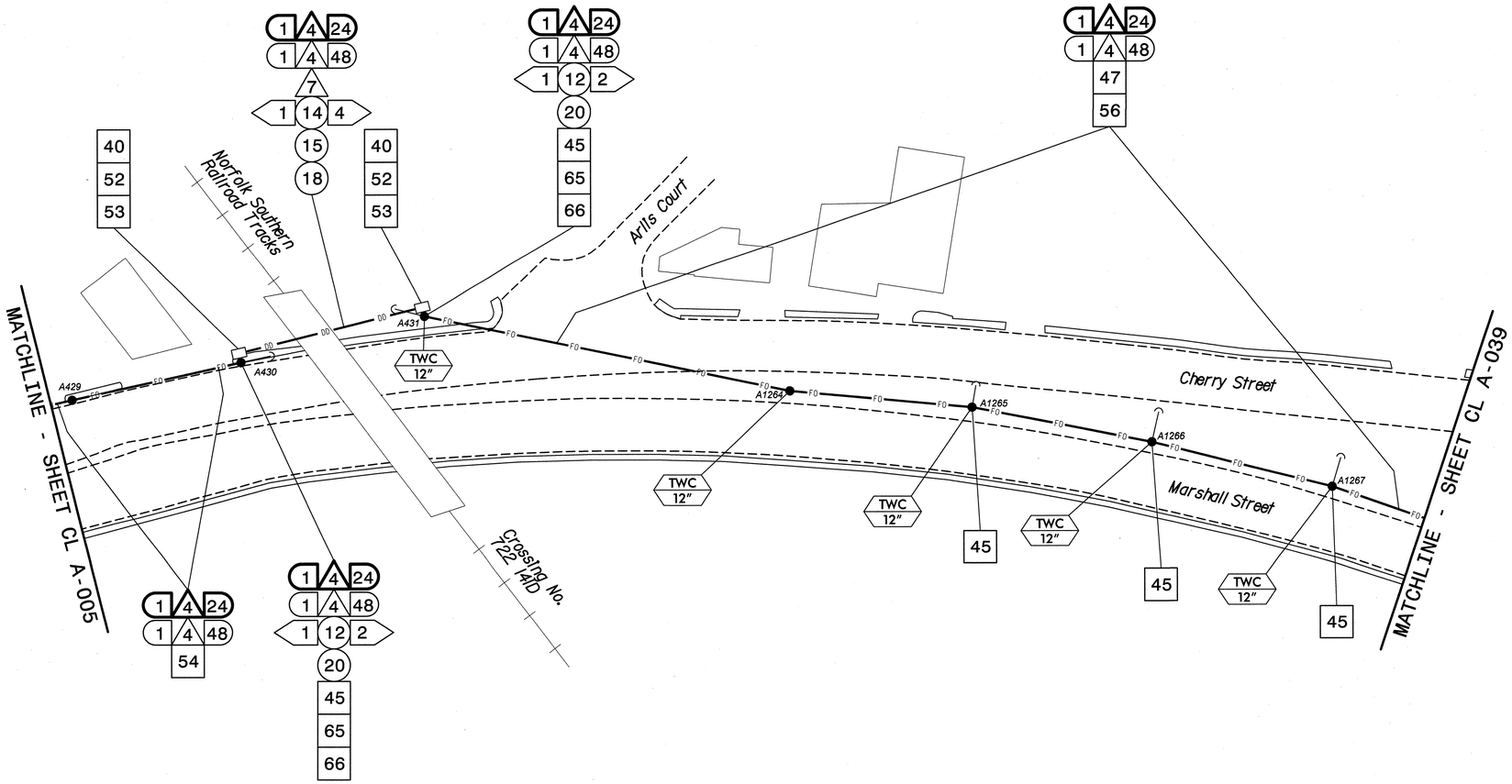
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-038



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Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

SCALE 0 50 1"=50'

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-038.dgn

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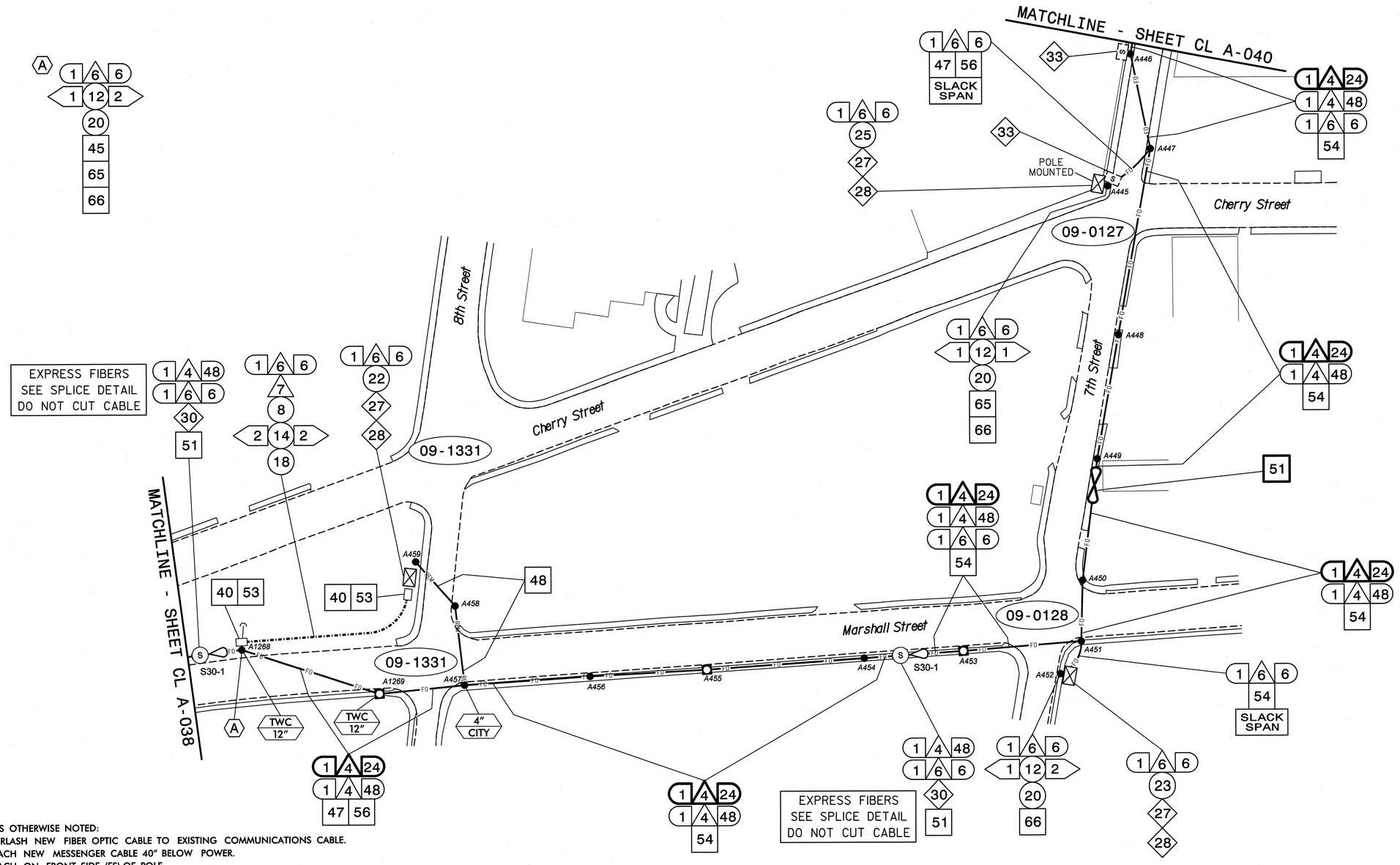
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	UMR A-039



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Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE Lisa M. Moon 1-11-13 DATE

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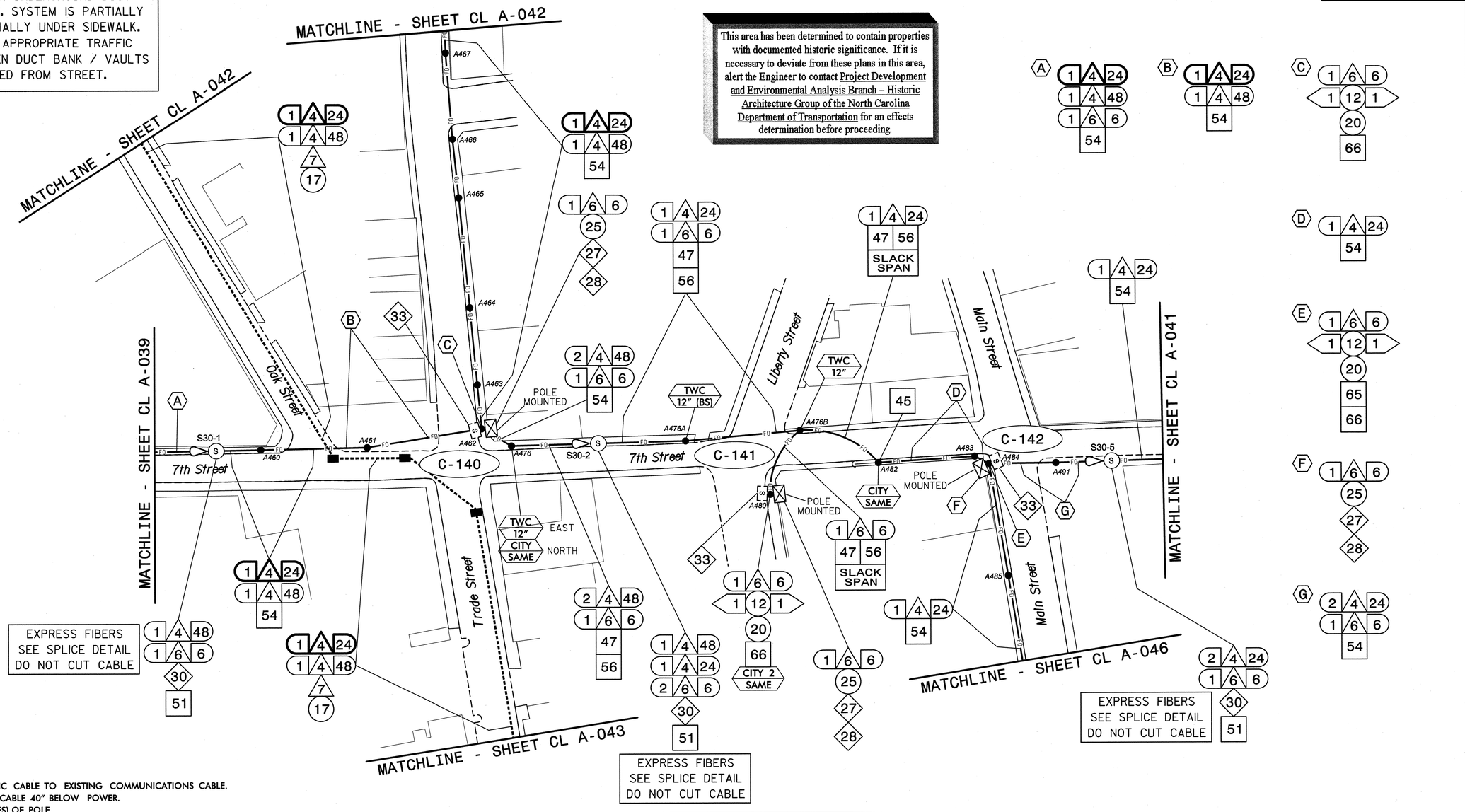
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-040

FIBER INSTALLATION IN UNDERGROUND DUCT BANK / VAULT SYSTEM. SYSTEM IS PARTIALLY IN ROADWAY AND PARTIALLY UNDER SIDEWALK. SEE TMP PLANS FOR APPROPRIATE TRAFFIC CONTROL MEASURES WHEN DUCT BANK / VAULTS MUST BE ACCESSED FROM STREET.

This area has been determined to contain properties with documented historic significance. If it is necessary to deviate from these plans in this area, alert the Engineer to contact Project Development and Environmental Analysis Branch – Historic Architecture Group of the North Carolina Department of Transportation for an effects determination before proceeding.



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CADD Filename: CL A-040.dgn

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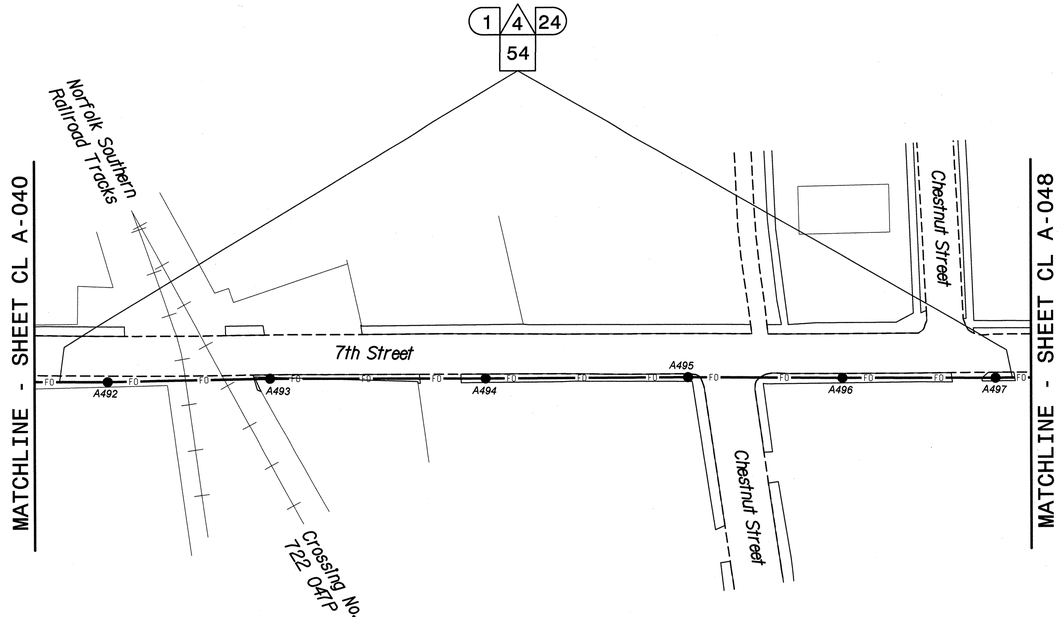
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-041



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NOTES:
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   - ATTACH NEW MESSENGER CABLE 40" BELOW POWER.
   - ATTACH ON FRONT SIDE (FS) OF POLE.
2. SEAL ALL CONDUIT ENDS WITH DUCT AND CONDUIT SEALER, AT ALL JUNCTION BOX/CABINET ENTRANCES.

BOLD CONSTRUCTION NOTES SHOW NEW "IS FIBER" WORK

1. INSTALL REA, PE – 22, SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE
2. INSTALL REA, PE – 38, (FIGURE – 8) SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE
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28. INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET
29. INSTALL UNDERGROUND SPLICE ENCLOSURE
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31. INSTALL SPLICE CABINET
32. MODIFY EXISTING SPLICE ENCLOSURE OR INTERCONNECT CENTER
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ATTACHMENT POINT:
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NUMBER OF FIBERS/TWISTED PAIRS
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ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
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(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LW Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

Lisa M. Moon 1-11-13
SIGNATURE DATE

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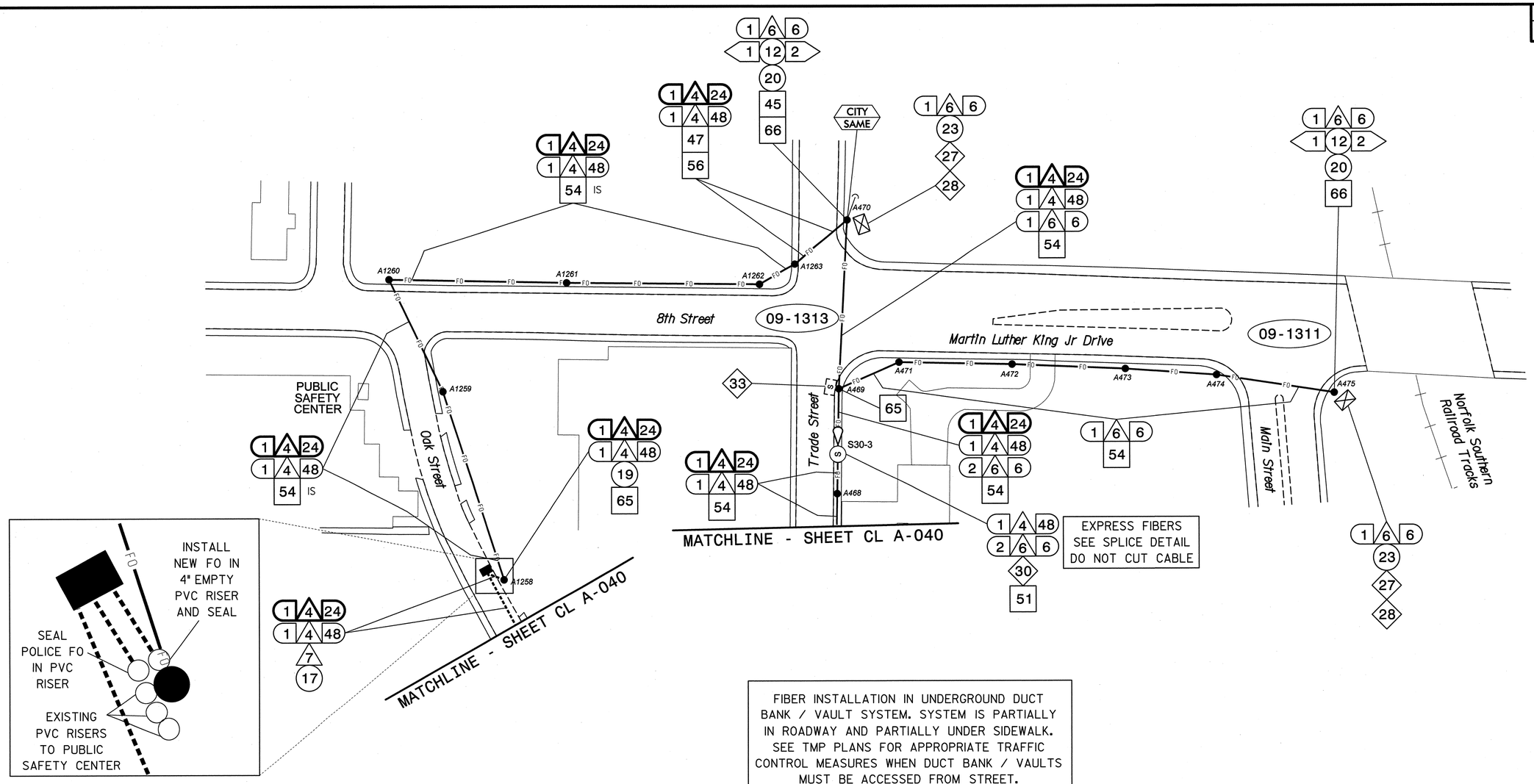
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-042



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750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-042.dgn

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PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-043

FIBER INSTALLATION IN UNDERGROUND DUCT BANK / VAULT SYSTEM. SYSTEM IS PARTIALLY IN ROADWAY AND PARTIALLY UNDER SIDEWALK. SEE TMP PLANS FOR APPROPRIATE TRAFFIC CONTROL MEASURES WHEN DUCT BANK / VAULTS MUST BE ACCESSED FROM STREET.

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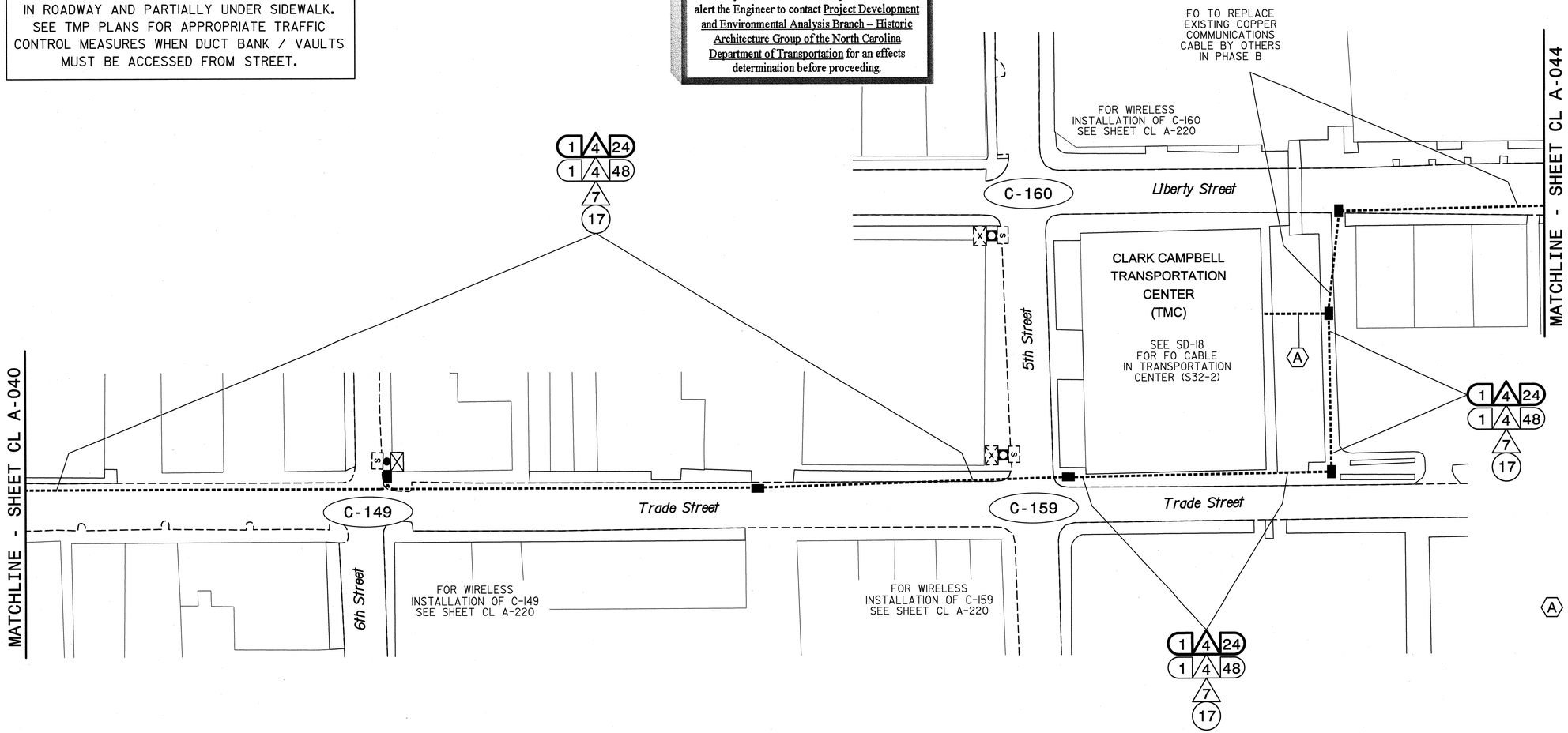

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Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

SIGNATURE 1-11-13 DATE

CADD Filename: CL A-043.dgn

07-JAN-2013 16:47
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24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-044

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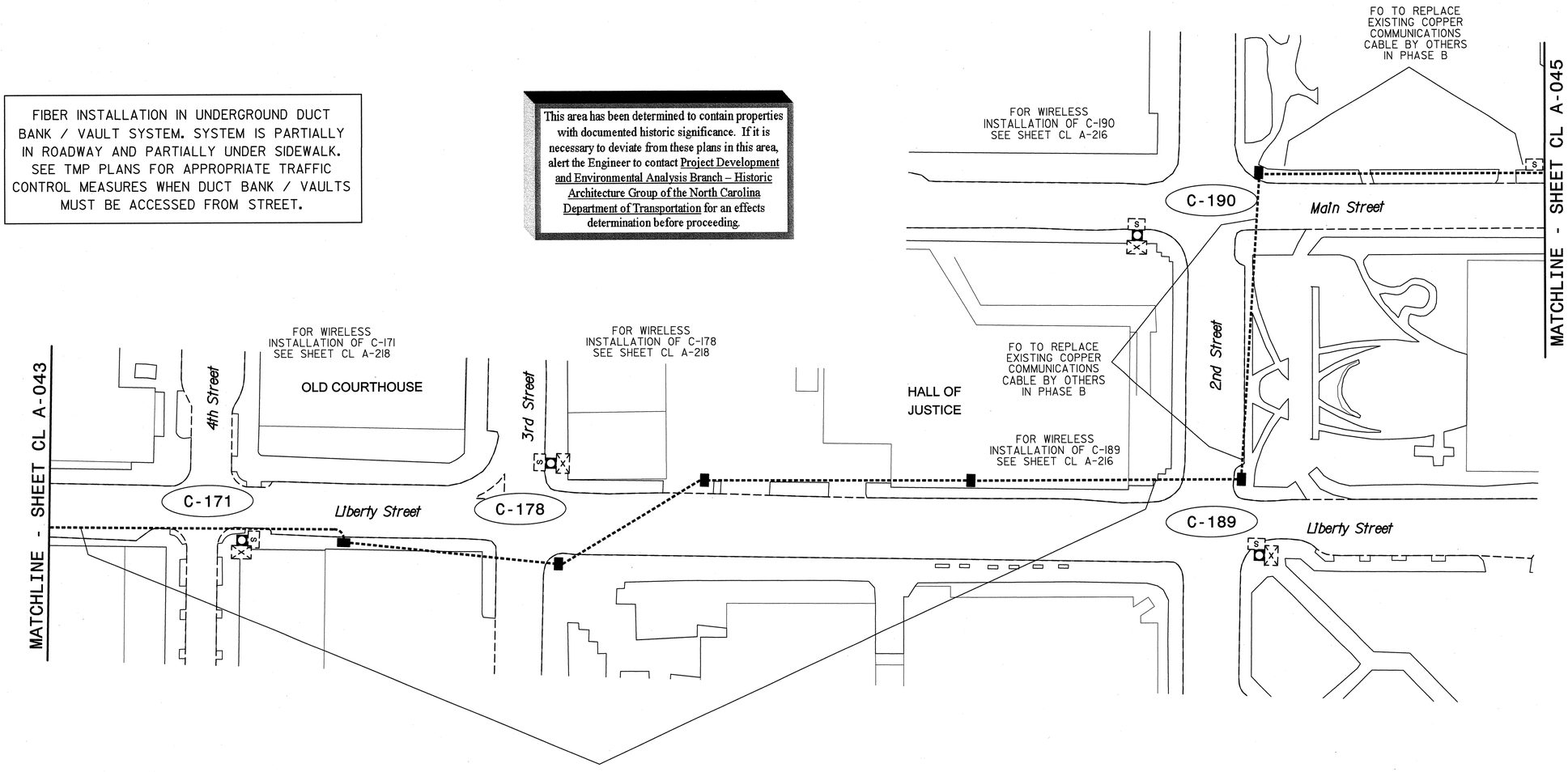

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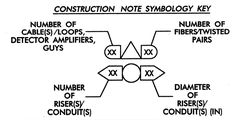
YYY / XXX — REFERENCE POINT / DISTANCE BELOW (IN)

CONSTRUCTION NOTE SYMBOLOGY KEY



ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 | Forsyth County | Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

SCALE: 0 50, 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022516 LISA M. MOON
SIGNATURE Lisa M Moon DATE 1-11-13
CADD Filename: CL A-044.dgn

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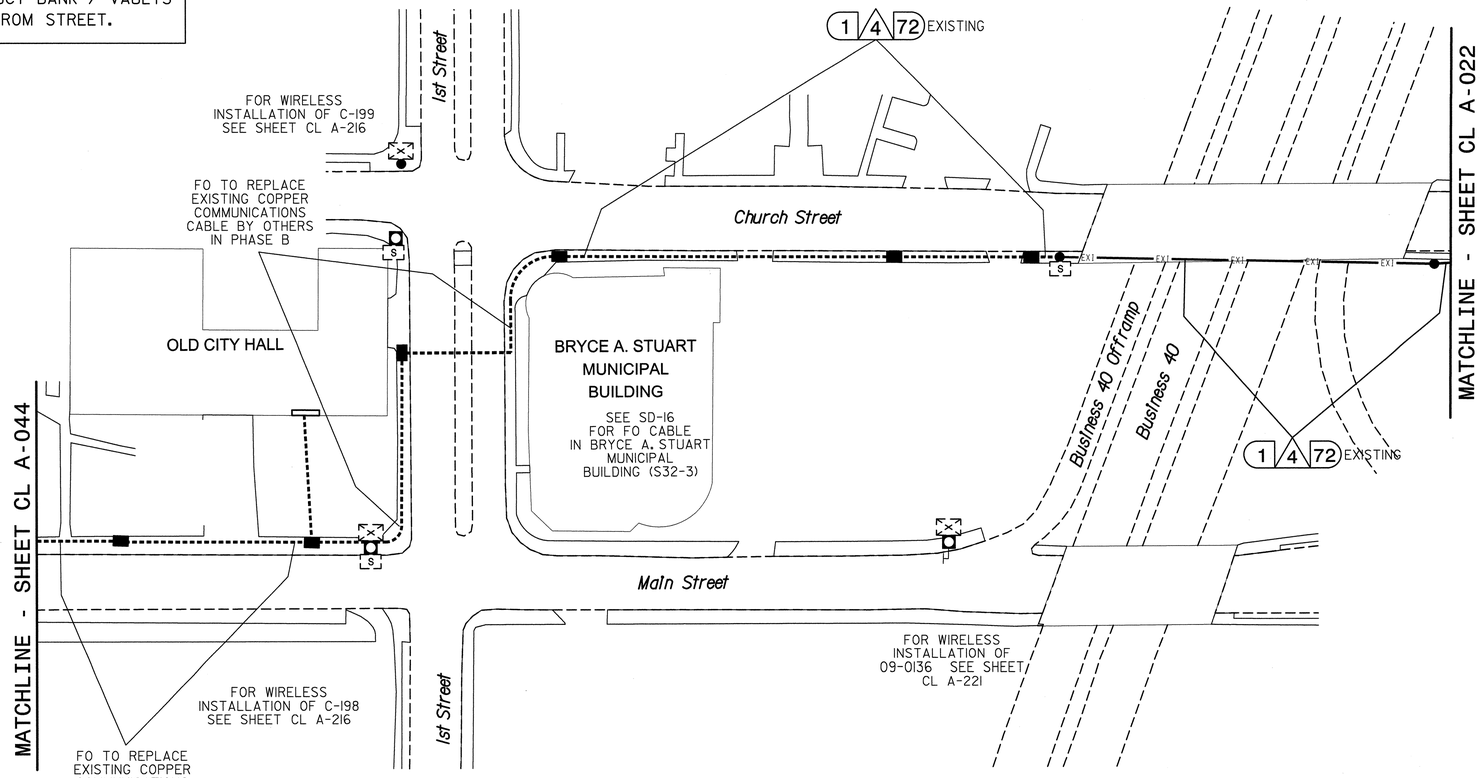
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-045

FIBER INSTALLATION IN UNDERGROUND DUCT BANK / VAULT SYSTEM. SYSTEM IS PARTIALLY IN ROADWAY AND PARTIALLY UNDER SIDEWALK. SEE TMP PLANS FOR APPROPRIATE TRAFFIC CONTROL MEASURES WHEN DUCT BANK / VAULTS MUST BE ACCESSED FROM STREET.



NOTES:
1. UNLESS OTHERWISE NOTED:
   - OVERLASH NEW FIBER OPTIC CABLE TO EXISTING COMMUNICATIONS CABLE.
   - ATTACH NEW MESSENGER CABLE 40" BELOW POWER.
   - ATTACH ON FRONT SIDE (FS) OF POLE.
2. SEAL ALL CONDUIT ENDS WITH DUCT AND CONDUIT SEALER, AT ALL JUNCTION BOX/CABINET ENTRANCES.

BOLD CONSTRUCTION NOTES SHOW NEW "IS FIBER" WORK

1	INSTALL REA, PE – 22, SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE	13	INSTALL HEAT SHRINK TUBING RETROFIT KIT	25	INSTALL NEW RISER INTO POLE MOUNTED CABINET	37	INSTALL CCTV WOOD POLE	49	REMOVE EXISTING COMMUNICATIONS CABLE	61	INSTALL UNI-DIRECTIONAL ANTENNA
2	INSTALL REA, PE – 38, (FIGURE – 8) SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE	14	INSTALL HIGH DENSITY POLYETHYLENE CONDUIT	26	INSTALL DIGITAL VIDEO ENCODER	38	INSTALL STANDARD SIZE JUNCTION BOX	50	INSTALL WIRELESS DSL	62	INSTALL 4.9GHZ ETHERNET INTEGRATED RADIO /OMNI-DIRECTIONAL ANTENNA
3	INSTALL CATEGORY 5E CABLE	15	DIRECTIONAL DRILL CONDUIT	27	INSTALL NEW ETHERNET EDGE SWITCH IN CABINET	39	INSTALL SPECIAL-SIZED JUNCTION BOX	51	INSTALL CABLE STORAGE GUIDE(S) [SNOW SHOE(S)] AND STORE 100 FEET OF EACH CABLE	63	INSTALL 900 MHZ ETHERNET RADIO
4	INSTALL SMFO CABLE	16	BORE AND JACK CONDUIT	28	INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET	40	INSTALL OVER-SIZED JUNCTION BOX	52	INSTALL DELINEATOR MARKER	64	INTERCEPT AND REROUTE EXISTING CONDUITS
5	INSTALL COAXIAL ANTENNA CABLE	17	INSTALL CABLE(S) IN EXISTING CONDUIT	29	INSTALL UNDERGROUND SPLICE ENCLOSURE	41	REMOVE EXISTING JUNCTION BOX	53	STORE 50 FEET OF COMMUNICATIONS CABLE (EACH CABLE)	65	BOND MESSENGER TO POLE GROUND
6	INSTALL FIBER-OPTIC DROP CABLE	18	INSTALL CABLE(S) IN NEW CONDUIT	30	INSTALL AERIAL SPLICE ENCLOSURE	42	INSTALL WOOD POLE	54	LASH CABLE(S) TO EXISTING SIGNAL/COMMUNICATIONS CABLE	66	BOND RISER TO POLE GROUND
7	INSTALL TRACER WIRE	19	INSTALL CABLE(S) IN EXISTING RISER(S)	31	INSTALL SPLICE CABINET	43	REMOVE EXISTING WOOD POLE	55	LASH CABLE(S) TO EXISTING MESSENGER CABLE	67	BOND TRACER WIRE TO POLE GROUND
8	INSTALL CONDUIT UNDERGROUND	20	INSTALL CABLE(S) IN NEW RISER(S)	32	MODIFY EXISTING SPLICE ENCLOSURE OR INTERCONNECT CENTER	44	INSTALL AERIAL GUY ASSEMBLY	56	LASH CABLE(S) TO NEW MESSENGER CABLE	68	BOND TRACER WIRE TO EQUIPMENT GROUND BUS
9	INSTALL PVC CONDUIT	21	INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS	33	REMOVE EXISTING SPLICE /HUB /CCTV CABINET	45	INSTALL STANDARD GUY ASSEMBLY	57	MODIFY EXISTING ELECTRICAL SERVICE FOR CCTV/HUB	69	REMOVE EXISTING CCTV CAMERA ASSEMBLY
10	INSTALL RIGID, GALVANIZED STEEL CONDUIT	22	INSTALL NEW CONDUIT INTO CABINET BASE (USE EX CONDUIT STUBOUTS WHEN AVAILABLE)	34	INSTALL CABINET FOUNDATION	46	INSTALL SIDEWALK GUY ASSEMBLY	58	INSTALL NEW ELECTRICAL SERVICE FOR CCTV/HUB	70	INSTALL 4.9GHZ FLAT-PANEL ANTENNA
11	INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD	23	INSTALL NEW RISER INTO CABINET BASE (USE EX CONDUIT STUBOUTS WHEN AVAILABLE)	35	REMOVE EXISTING CABINET FOUNDATION	47	INSTALL MESSENGER CABLE	59	INSTALL NEW POLE MOUNTED CCTV CABINET	71	INSTALL HUB CABINET
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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022516 LISA M. MOON
Lisa M. Moon 1-11-13
SIGNATURE DATE
CADD Filename: CL A-045.dgn

26-MAR-2013 13:24
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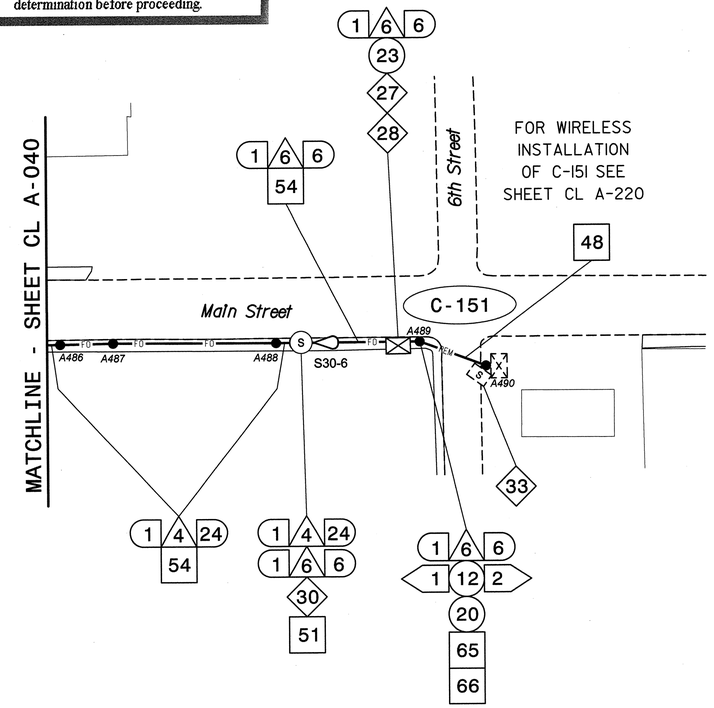
13833

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-046

This area has been determined to contain properties with documented historic significance. If it is necessary to deviate from these plans in this area, alert the Engineer to contact Project Development and Environmental Analysis Branch – Historic Architecture Group of the North Carolina Department of Transportation for an effects determination before proceeding.



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Prepared for the Offices of: North Carolina Department of Transportation, Mobility and Safety Division, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

SCALE 0 50 1"=50'

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-046.dgn

03-JAN-2013 10:10
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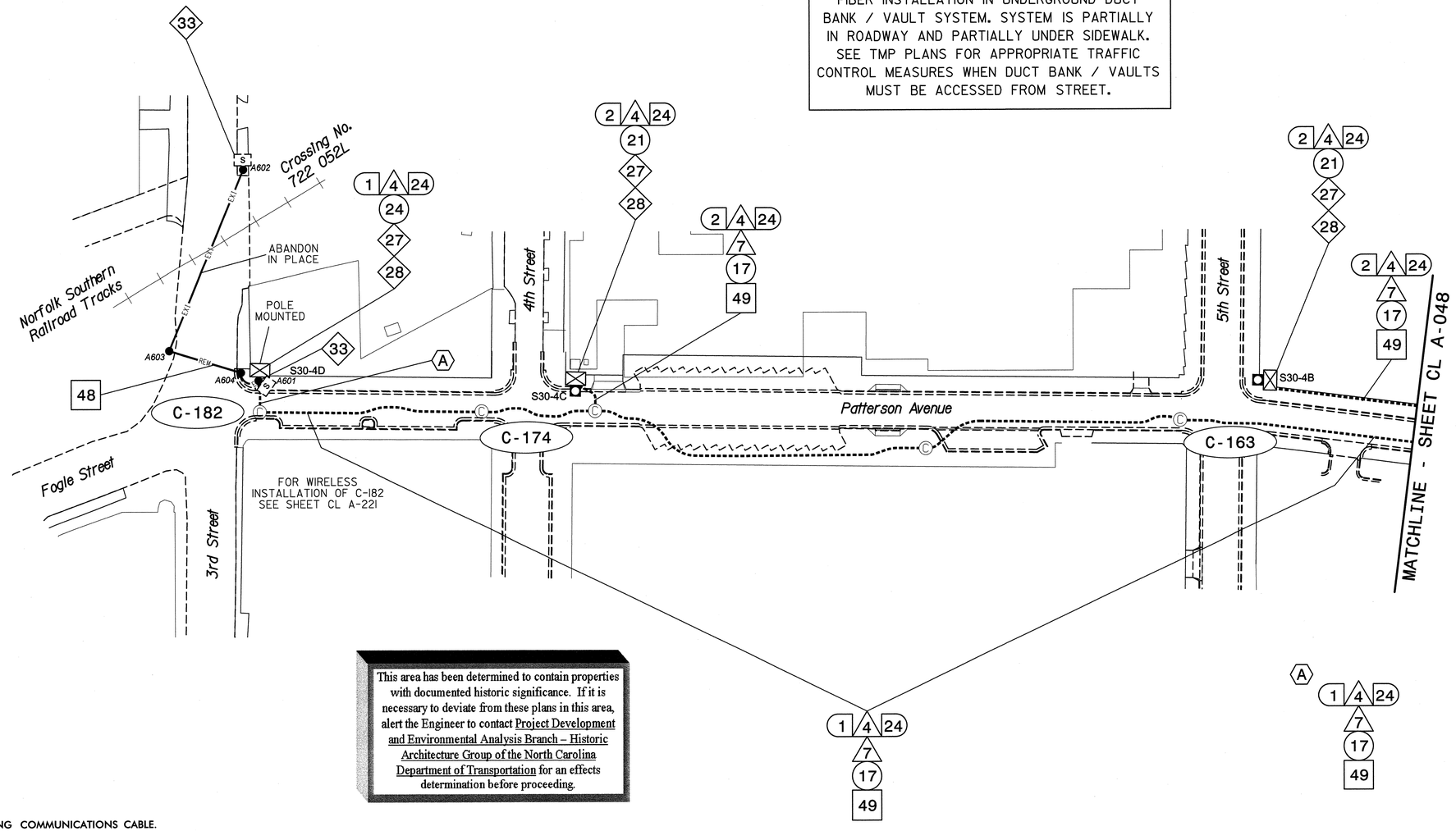
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-047

FIBER INSTALLATION IN UNDERGROUND DUCT BANK / VAULT SYSTEM. SYSTEM IS PARTIALLY IN ROADWAY AND PARTIALLY UNDER SIDEWALK. SEE TMP PLANS FOR APPROPRIATE TRAFFIC CONTROL MEASURES WHEN DUCT BANK / VAULTS MUST BE ACCESSED FROM STREET.



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XXX DISTANCE ABOVE (IN) REFERENCE POINT
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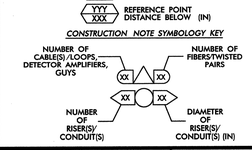
CONSTRUCTION NOTE SYMBOLOGY KEY



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DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M MOON
Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-047.dgn

10-JAN-2013 17:02
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24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-048

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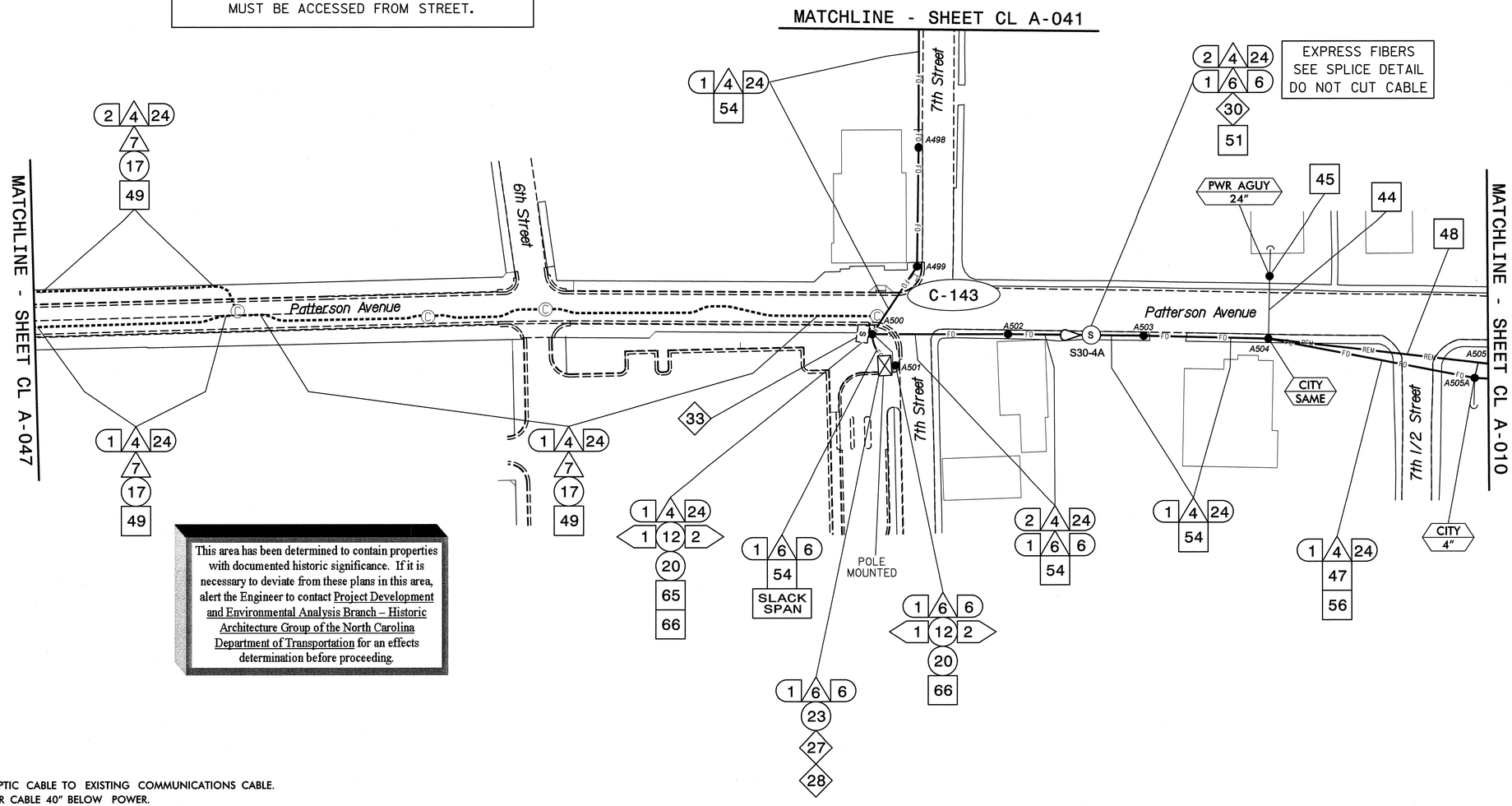

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CONSTRUCTION NOTE SYMBOLOGY KEY
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NUMBER OF RISER(S)/ CONDUIT(S)
DIAMETER OF RISER(S)/ CONDUIT(S) (IN)

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of: NC DEPARTMENT OF TRANSPORTATION Transportation Mobility and Safety Division Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE Lisa M. Moon 1-11-13 DATE

CADD Filename: CL A-048.dgn

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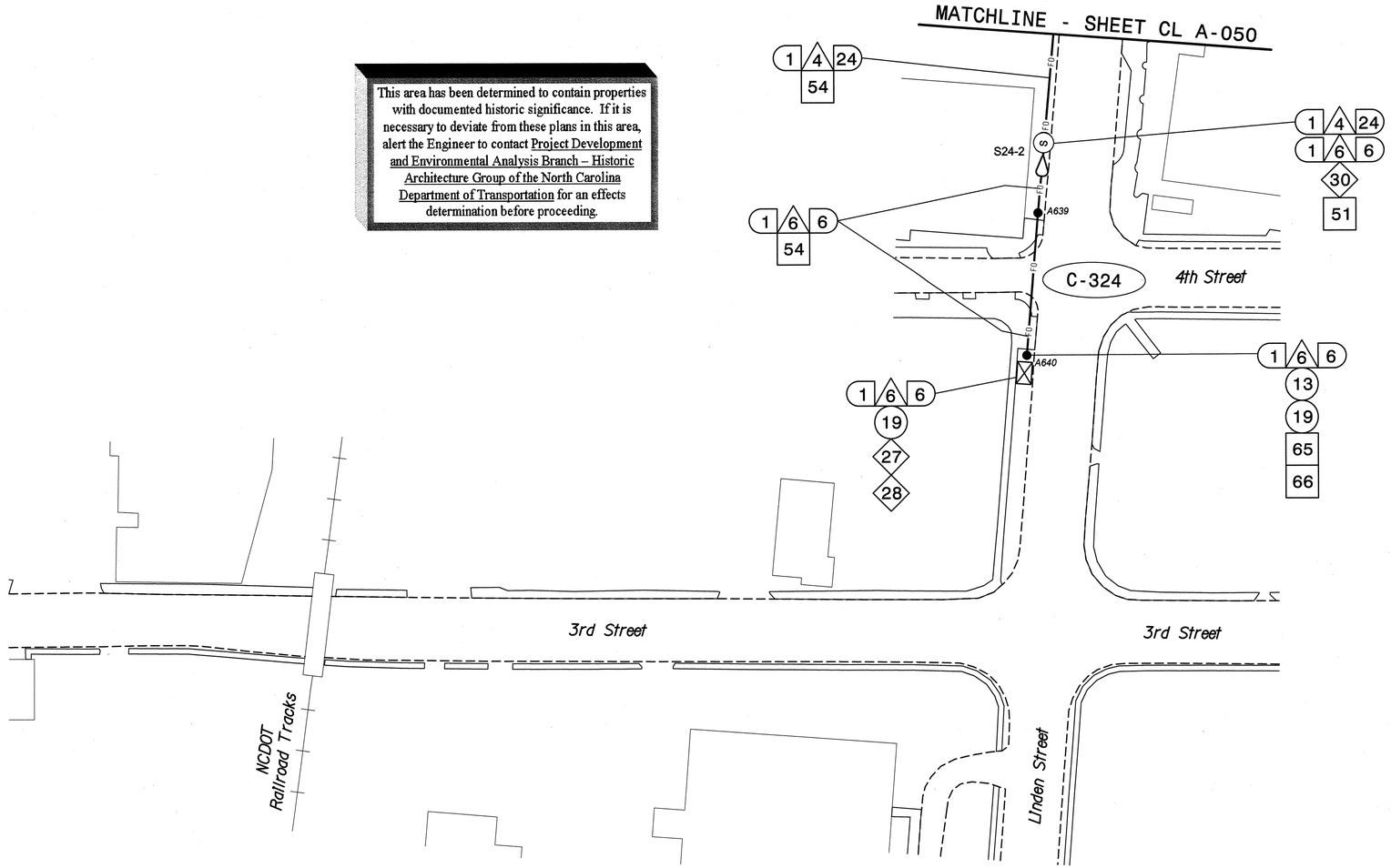
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-049



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ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE DATE
1-11-13
CADD Filename: CL A-049.dgn

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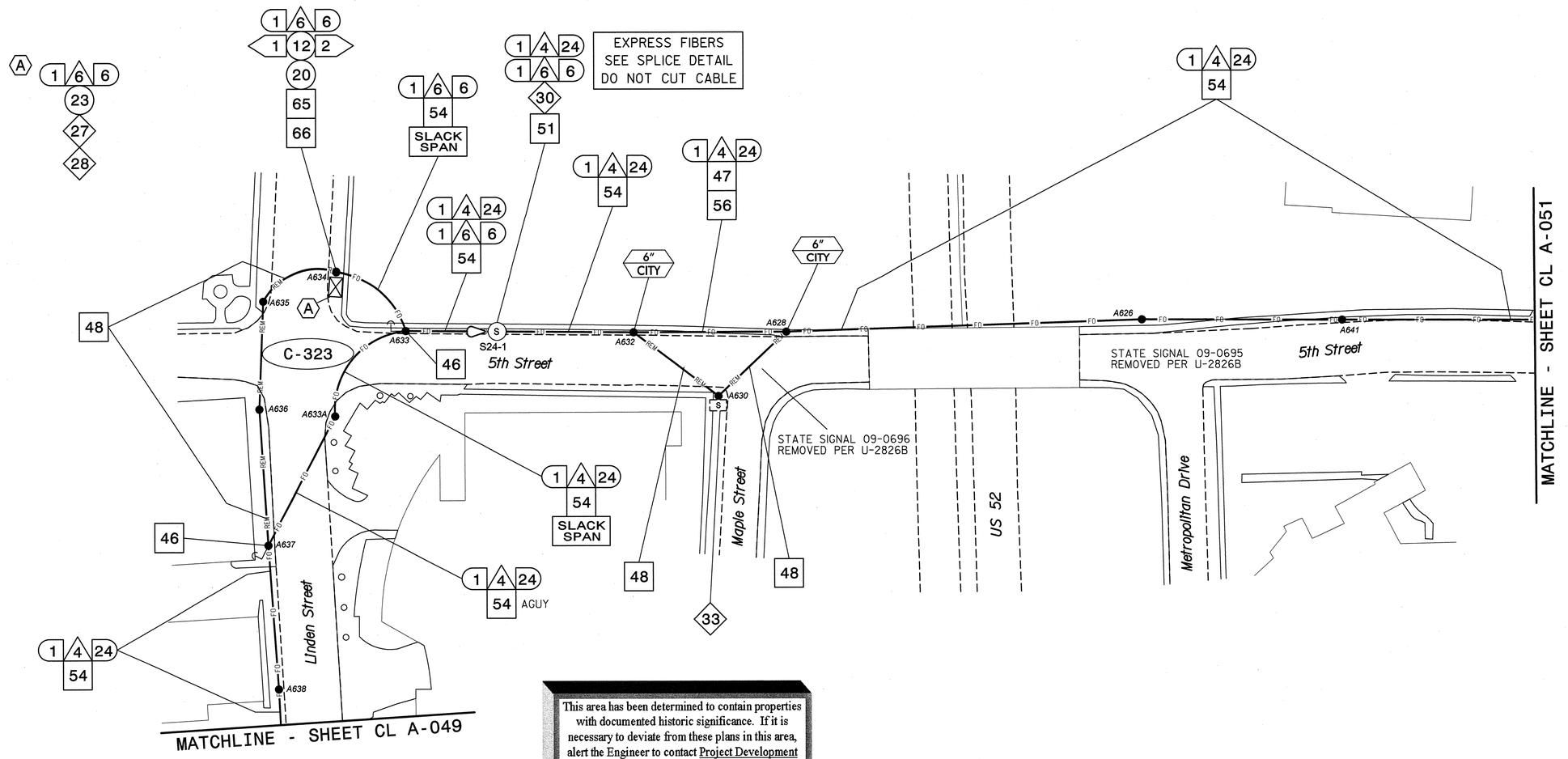
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-050



This area has been determined to contain properties with documented historic significance. If it is necessary to deviate from these plans in this area, alert the Engineer to contact Project Development and Environmental Analysis Branch – Historic Architecture Group of the North Carolina Department of Transportation for an effects determination before proceeding.

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ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of: North Carolina Department of Transportation, Mobility and Safety Division, Traffic Engineering Branch, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE: January 2013 REVIEWED BY: MB Toth
PREPARED BY: BKS/AJD REVIEWED BY: LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
Lisa M Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-050.dgn

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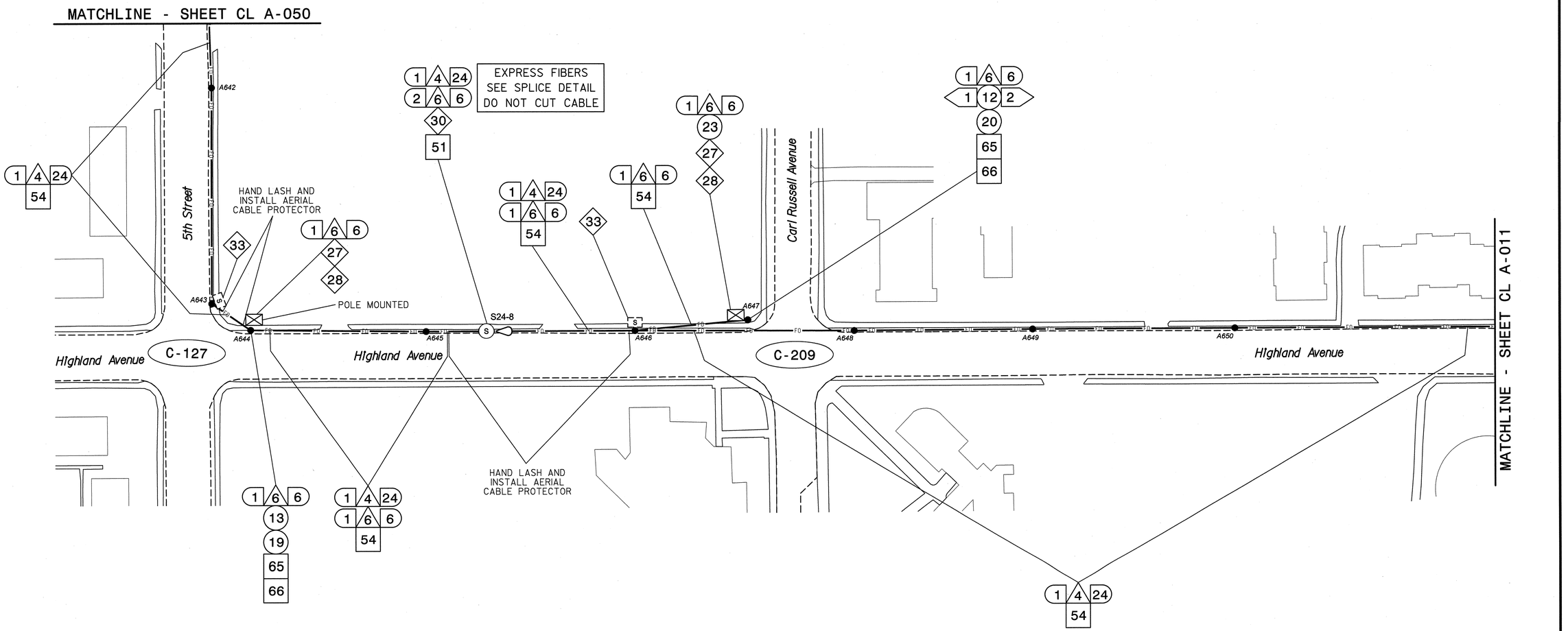
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-051



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Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 | Forsyth County | Winston-Salem

PLAN DATE: January 2013 | REVIEWED BY: MB Toth
PREPARED BY: BKS/AJD | REVIEWED BY: LM Moon

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
Lisa M. Moon 1-11-13
SIGNATURE DATE

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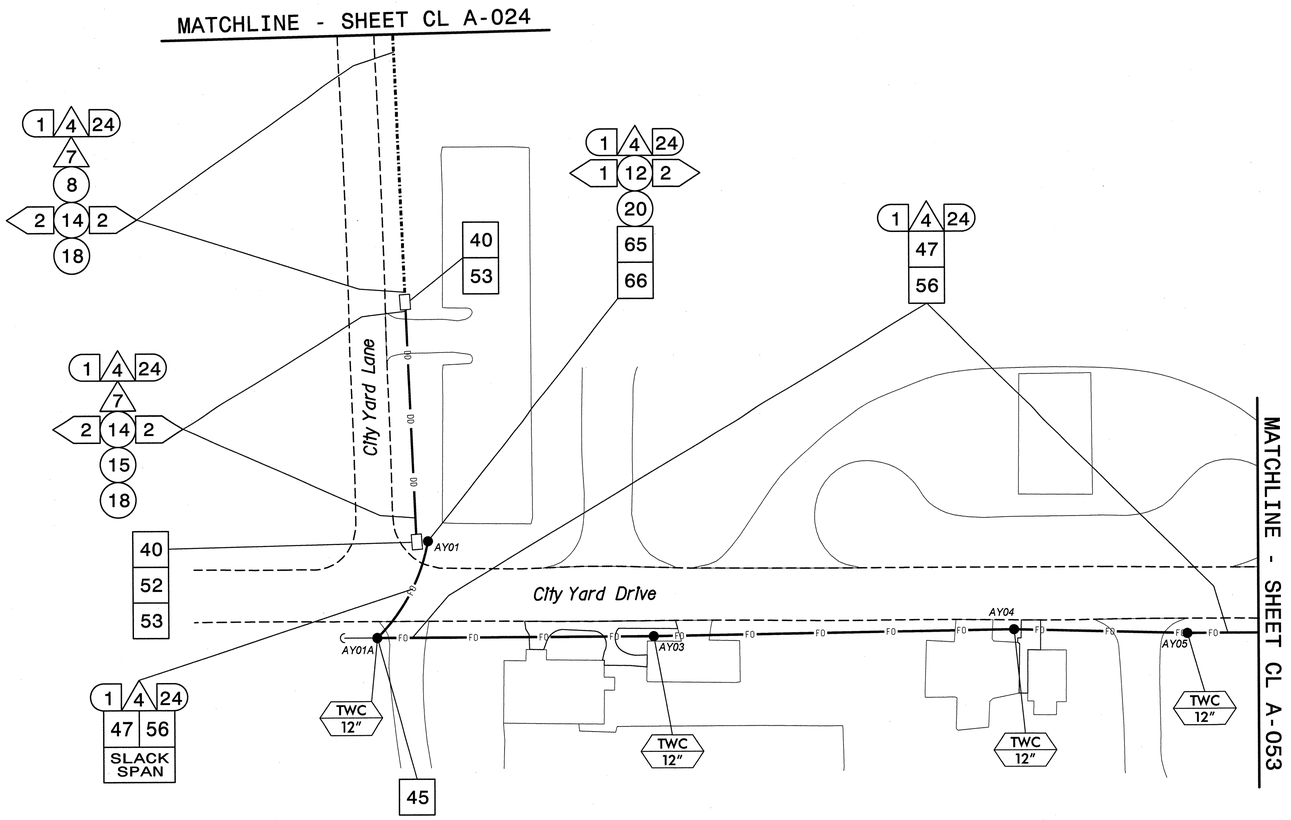
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-052



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ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of: Transportation Mobility and Safety Division, State of North Carolina, Department of Transportation, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL 022516 NORTH CAROLINA PROFESSIONAL ENGINEER LISA M. MOON
SIGNATURE Lisa M. Moon 1-11-13 DATE

CADD Filename: CL A-052.dgn

03-JAN-2013 10:16
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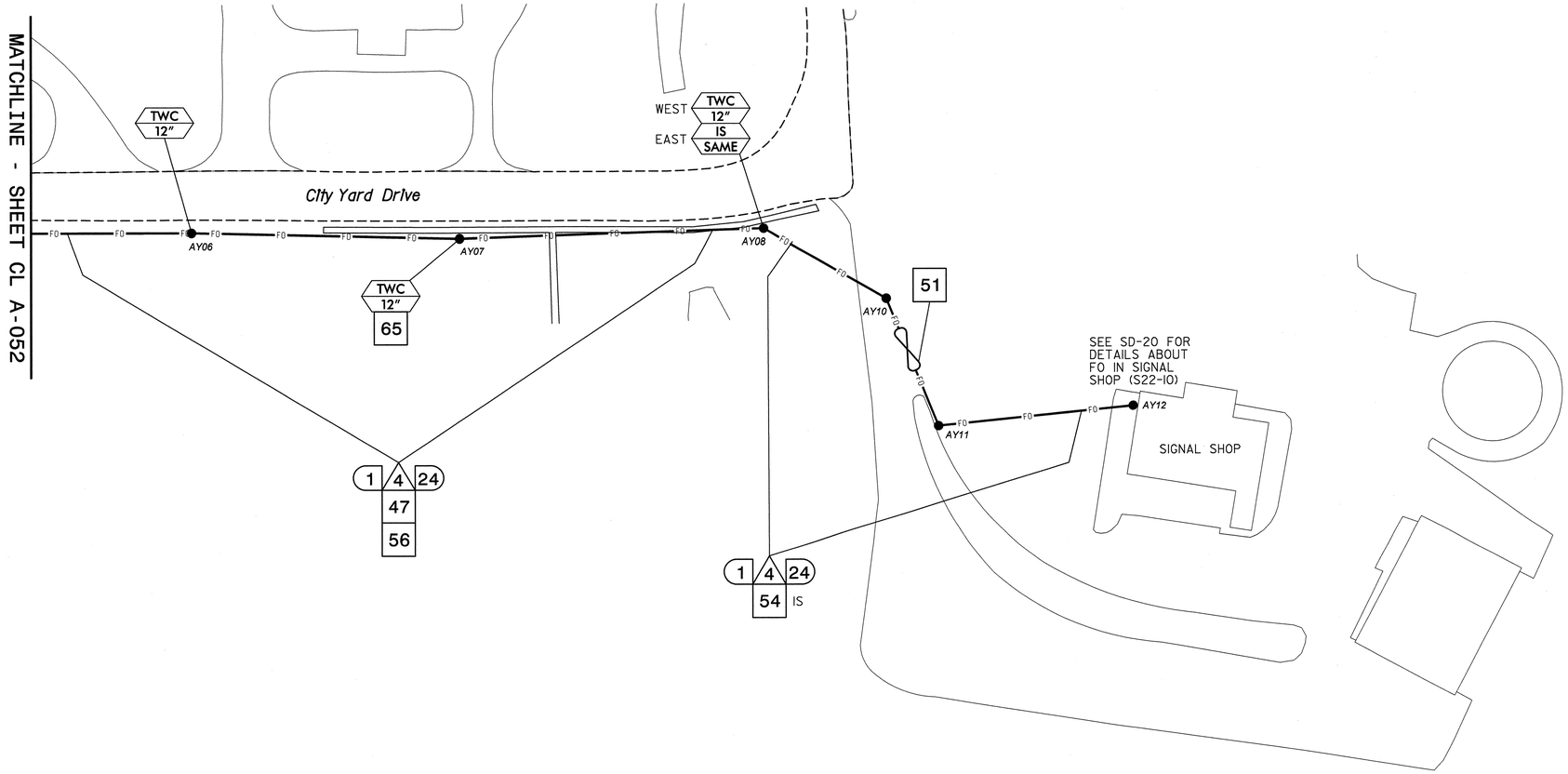
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-053



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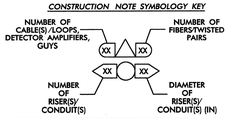

ATKINS
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Prepared for the Offices of:
Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
Lisa M Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-053.dgn

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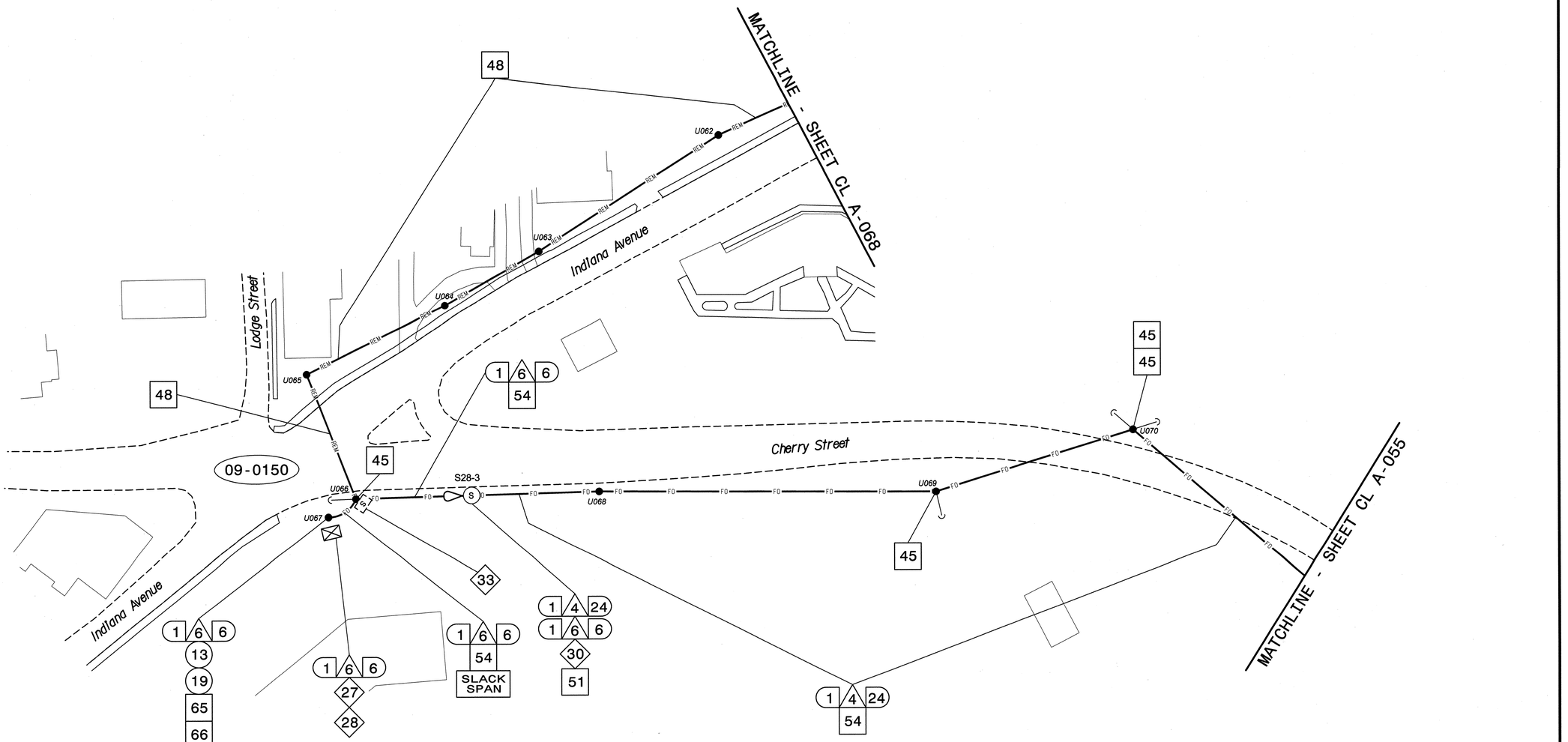
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-054



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ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:

Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems

750 Greenfield Parkway, Garner, NC 27529

SCALE 0 50 1"=50'

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-054.dgn

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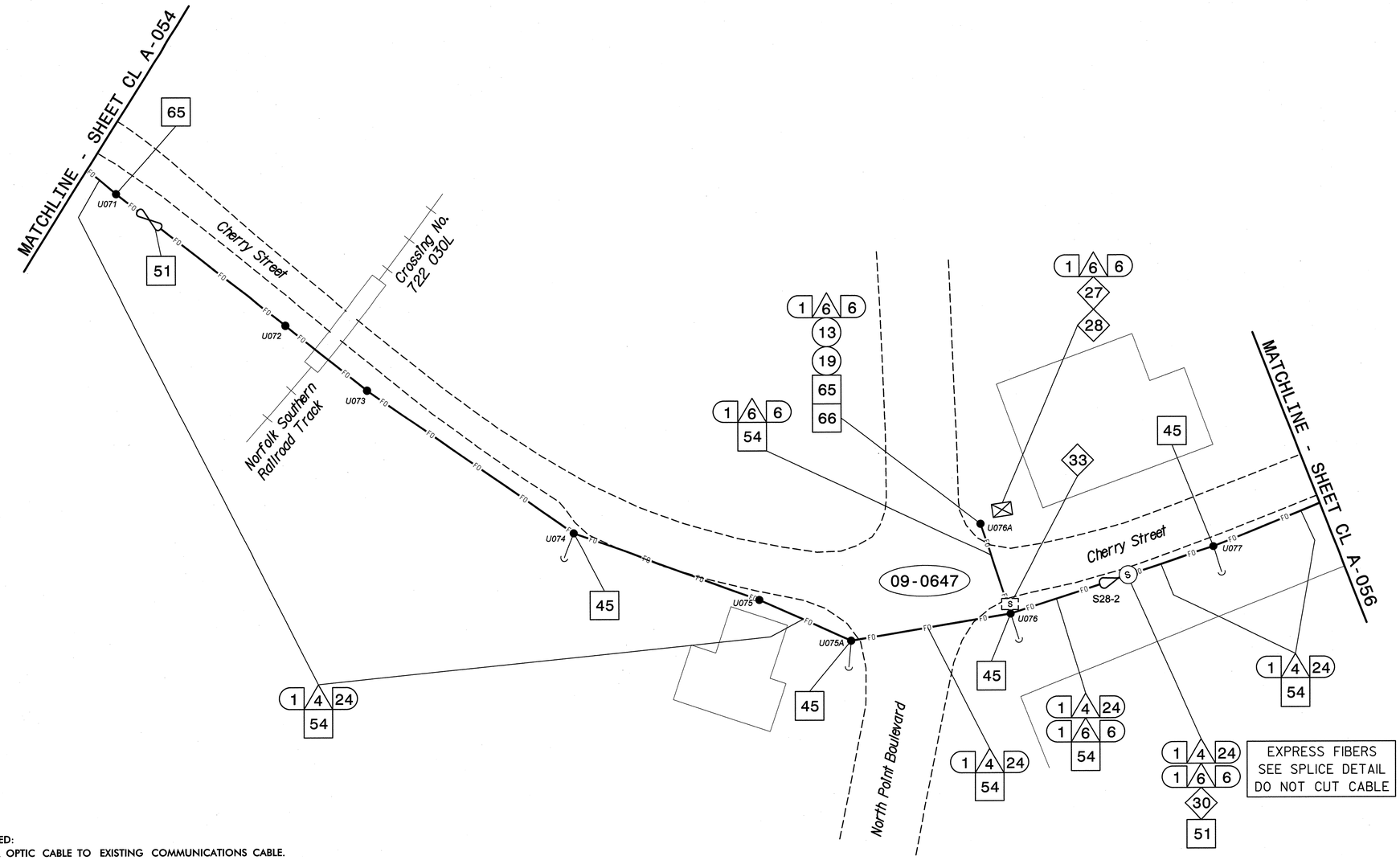
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-055



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Winston-Salem Signal System
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Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022516 LISA M. MOON
SIGNATURE DATE 1-11-13
CADD Filename: CL A-055.dgn

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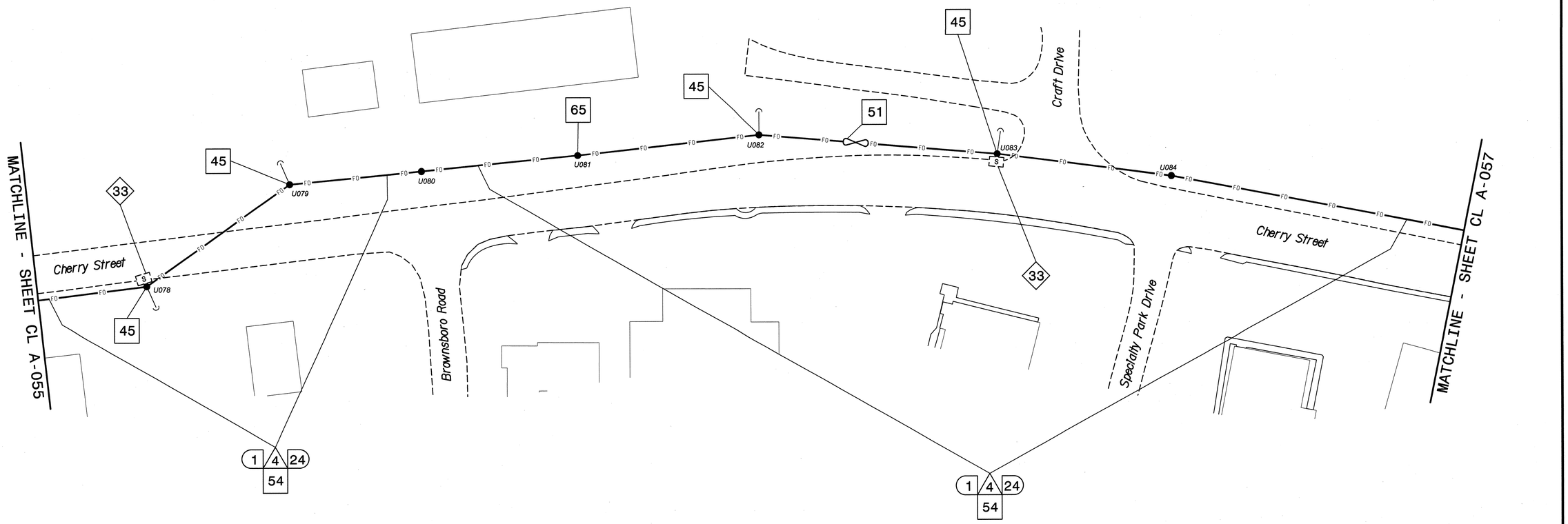
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-056



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NUMBER OF FIBERS/TWISTED PAIRS
NUMBER OF RISER(S)/ CONDUIT(S)
DIAMETER OF RISER(S)/ CONDUIT(S) (IN)

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-056.dgn

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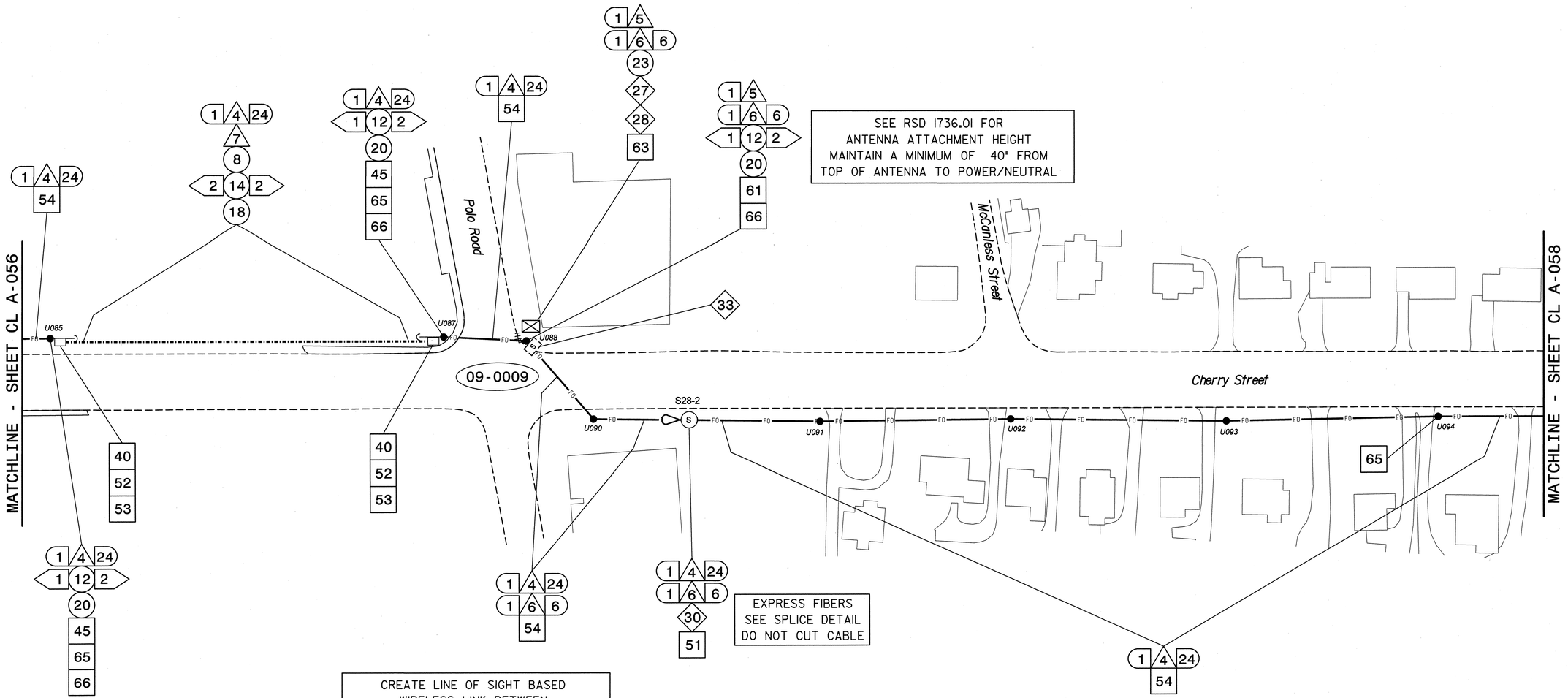
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-057



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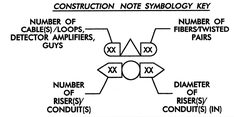

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RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of: Traffic Management and Signal Systems, Department of Transportation, State of North Carolina, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022516 LISA M. MOON

Lisa M. Moon 1-11-13
SIGNATURE DATE

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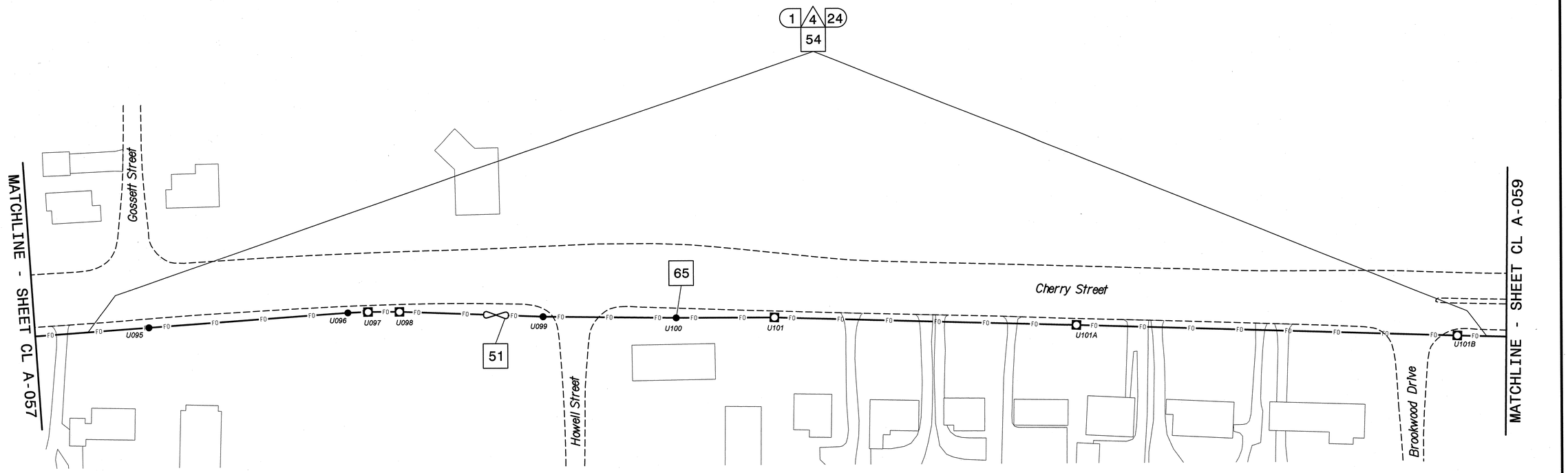
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-058



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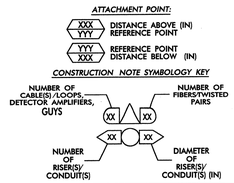

ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
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Prepared for the Offices of:

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION — Integrated Mobility and Safety Division — Traffic Engineering Branch

750 Greenfield Parkway, Garner, NC 27529

SCALE 0 50 — 1"=50'

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LW Moon

REVISIONS	INIT.	DATE

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

Lisa M. Moon 1/16/13

SIGNATURE DATE

CADD Filename: CL A-058.dgn

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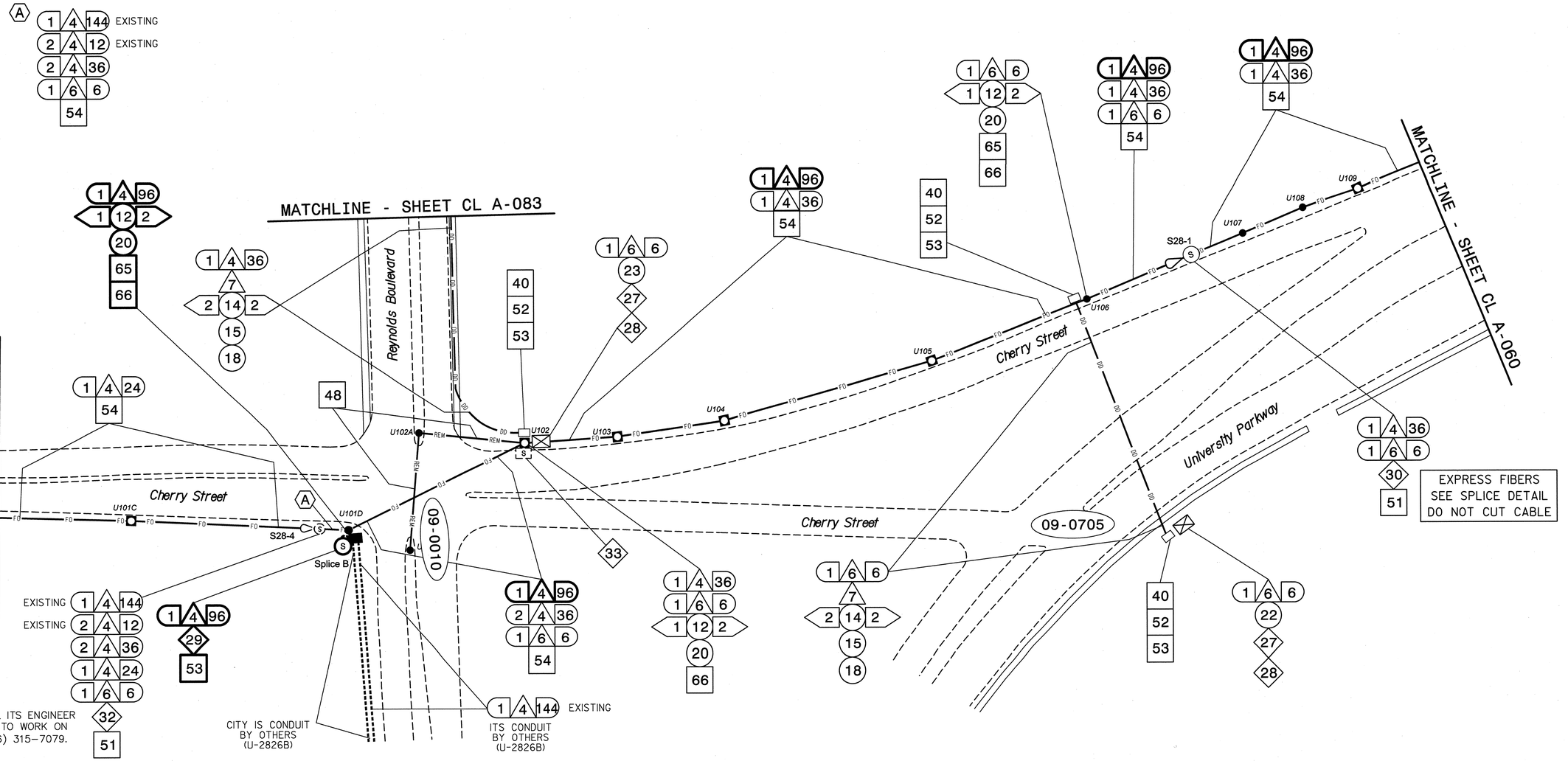
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-059



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Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE: January 2013 REVIEWED BY: MB Toth
PREPARED BY: BKS/AJD REVIEWED BY: LM Moon

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022516 LISA M. MOON
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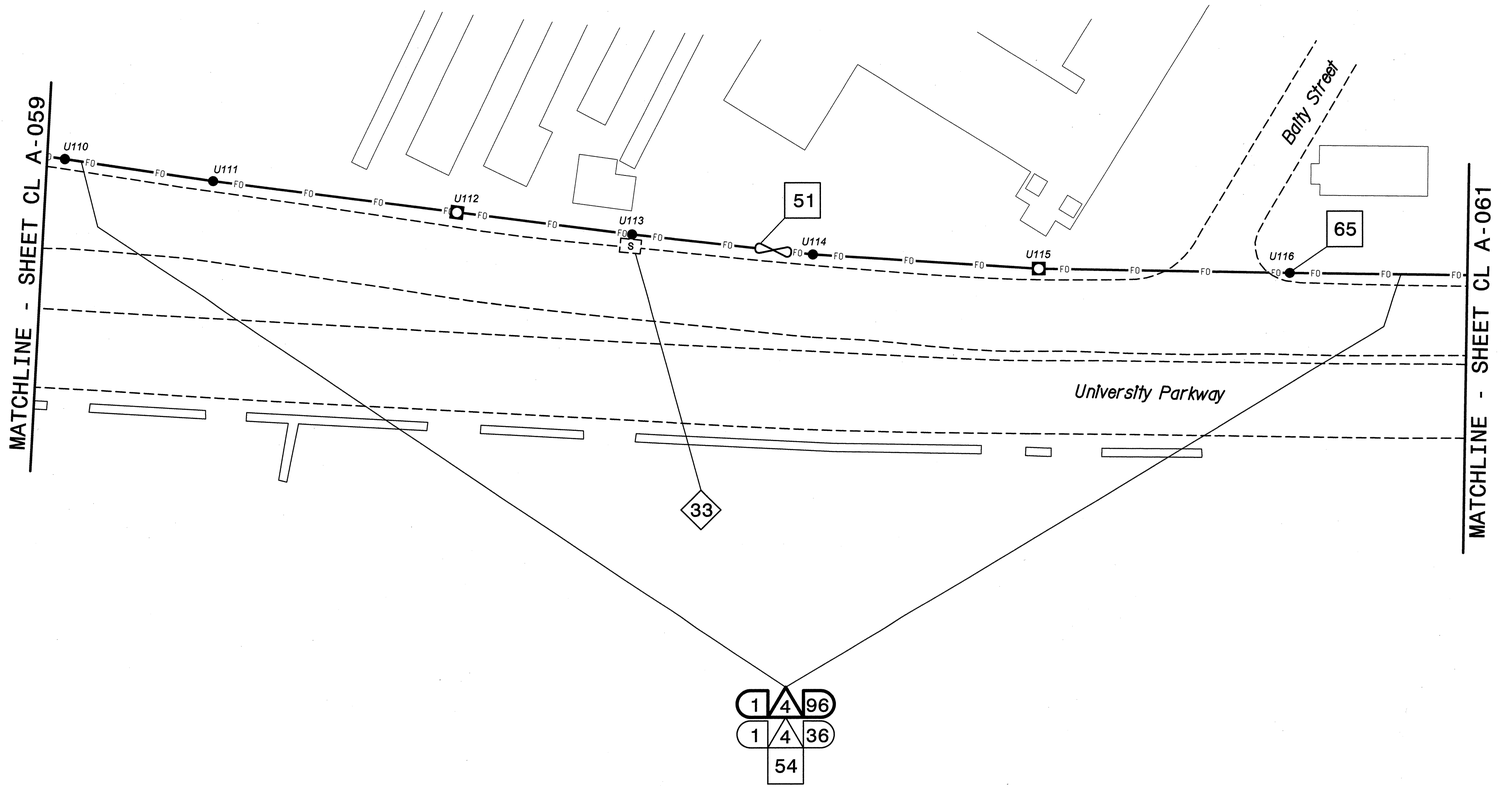

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   - ATTACH NEW MESSENGER CABLE 40" BELOW POWER.
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2. SEAL ALL CONDUIT ENDS WITH DUCT AND CONDUIT SEALER, AT ALL JUNCTION BOX/CABINET ENTRANCES.

BOLD CONSTRUCTION NOTES SHOW NEW "IS FIBER" WORK

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7. INSTALL TRACER WIRE
8. INSTALL CONDUIT UNDERGROUND
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12. INSTALL RIGID, GALVANIZED STEEL RISER WITH HEAT SHRINK TUBING
13. INSTALL HEAT SHRINK TUBING RETROFIT KIT
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16. BORE AND JACK CONDUIT
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22. INSTALL NEW CONDUIT INTO CABINET BASE (USE EX CONDUIT STUBOUTS WHEN AVAILABLE)
23. INSTALL NEW RISER INTO CABINET BASE (USE EX CONDUIT STUBOUTS WHEN AVAILABLE)
24. INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET
25. INSTALL NEW RISER INTO POLE MOUNTED CABINET
26. INSTALL DIGITAL VIDEO ENCODER
27. INSTALL NEW ETHERNET EDGE SWITCH IN CABINET
28. INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET
29. INSTALL UNDERGROUND SPLICE ENCLOSURE
30. INSTALL AERIAL SPLICE ENCLOSURE
31. INSTALL SPLICE CABINET
32. MODIFY EXISTING SPLICE ENCLOSURE OR INTERCONNECT CENTER
33. REMOVE EXISTING SPLICE /HUB /CCTV CABINET
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35. REMOVE EXISTING CABINET FOUNDATION
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37. INSTALL CCTV WOOD POLE
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49. REMOVE EXISTING COMMUNICATIONS CABLE
50. INSTALL WIRELESS DSL
51. INSTALL CABLE STORAGE GUIDE(S) [SNOW SHOE(S)] AND STORE 100 FEET OF EACH CABLE
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54. LASH CABLE(S) TO EXISTING SIGNAL/COMMUNICATIONS CABLE
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XXX DISTANCE ABOVE (IN) REFERENCE POINT
YYY REFERENCE POINT
XXX DISTANCE BELOW (IN)

CONSTRUCTION NOTE SYMBOLOGY KEY
NUMBER OF CABLE(S)/LOOPS DETECTOR AMPLIFIERS, GUYS
NUMBER OF FIBERS/TWISTED PAIRS
NUMBER OF RISER(S)/ CONDUIT(S)
DIAMETER OF RISER(S)/ CONDUIT(S) (IN)

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

SCALE 0 50 1"=50'

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE: January 2013 REVIEWED BY: MB Toth
PREPARED BY: BKS/AJD REVIEWED BY: LM Moon

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-060.dgn

03-JAN-2013 10:16
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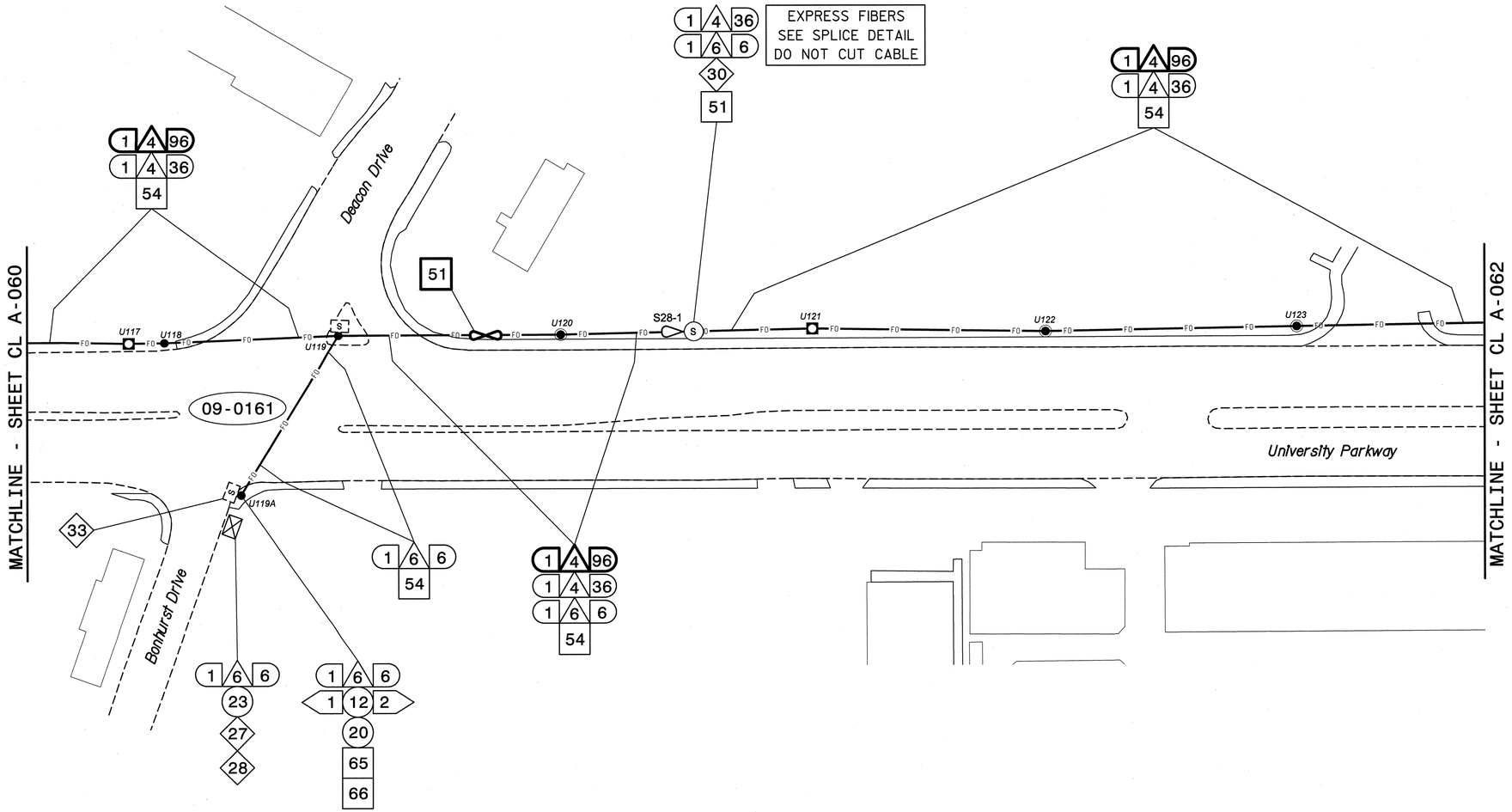
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-061



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ATKINS
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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE DATE 1-11-13
CADD Filename: CL A-061.dgn

03-JAN-2013 10:20
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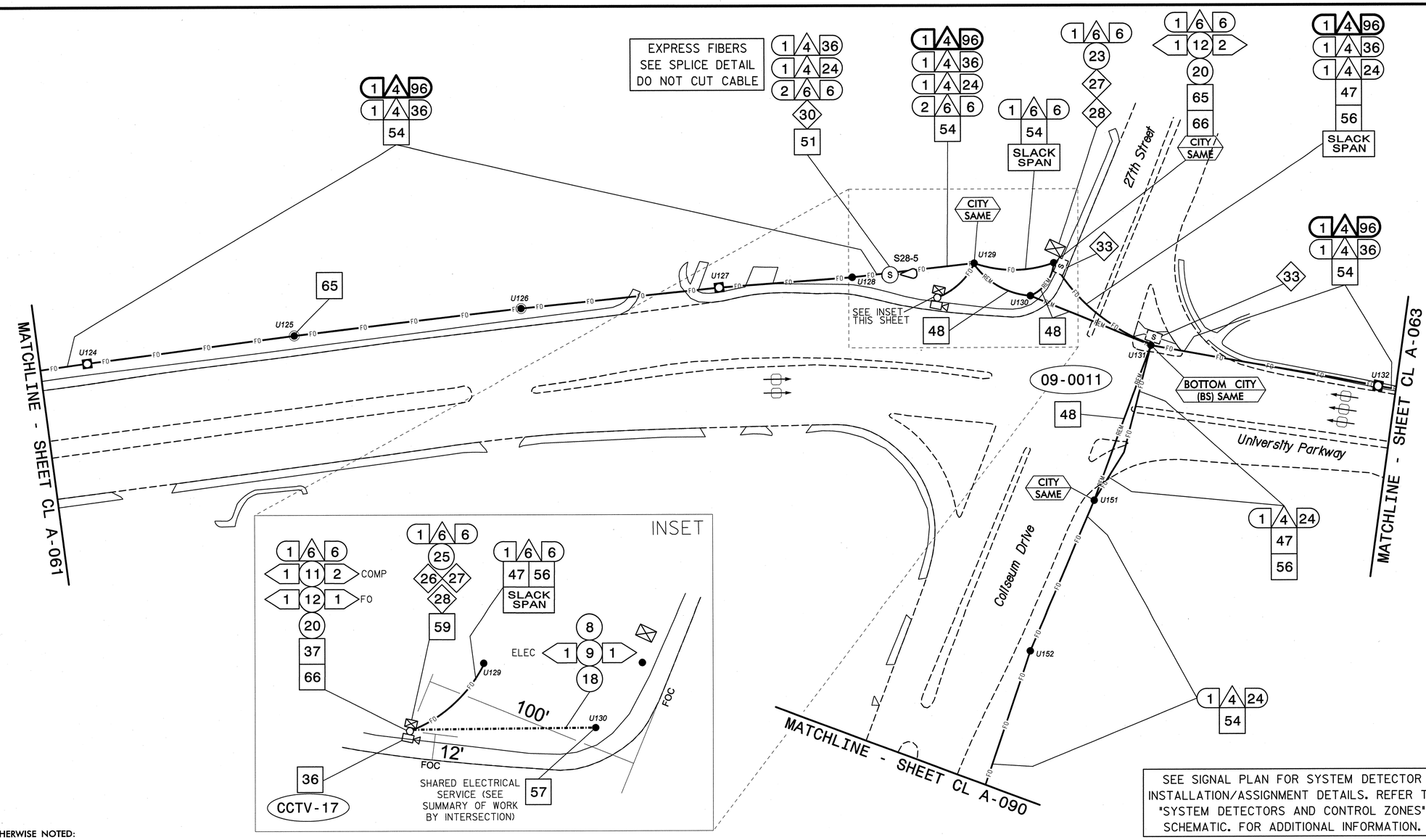
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-062



SEE SIGNAL PLAN FOR SYSTEM DETECTOR INSTALLATION/ASSIGNMENT DETAILS. REFER TO "SYSTEM DETECTORS AND CONTROL ZONES" SCHEMATIC. FOR ADDITIONAL INFORMATION.

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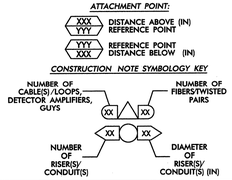
CONSTRUCTION NOTE SYMBOLOGY KEY



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750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE
1-11-13
DATE

CADD Filename: CL A-062.dgn

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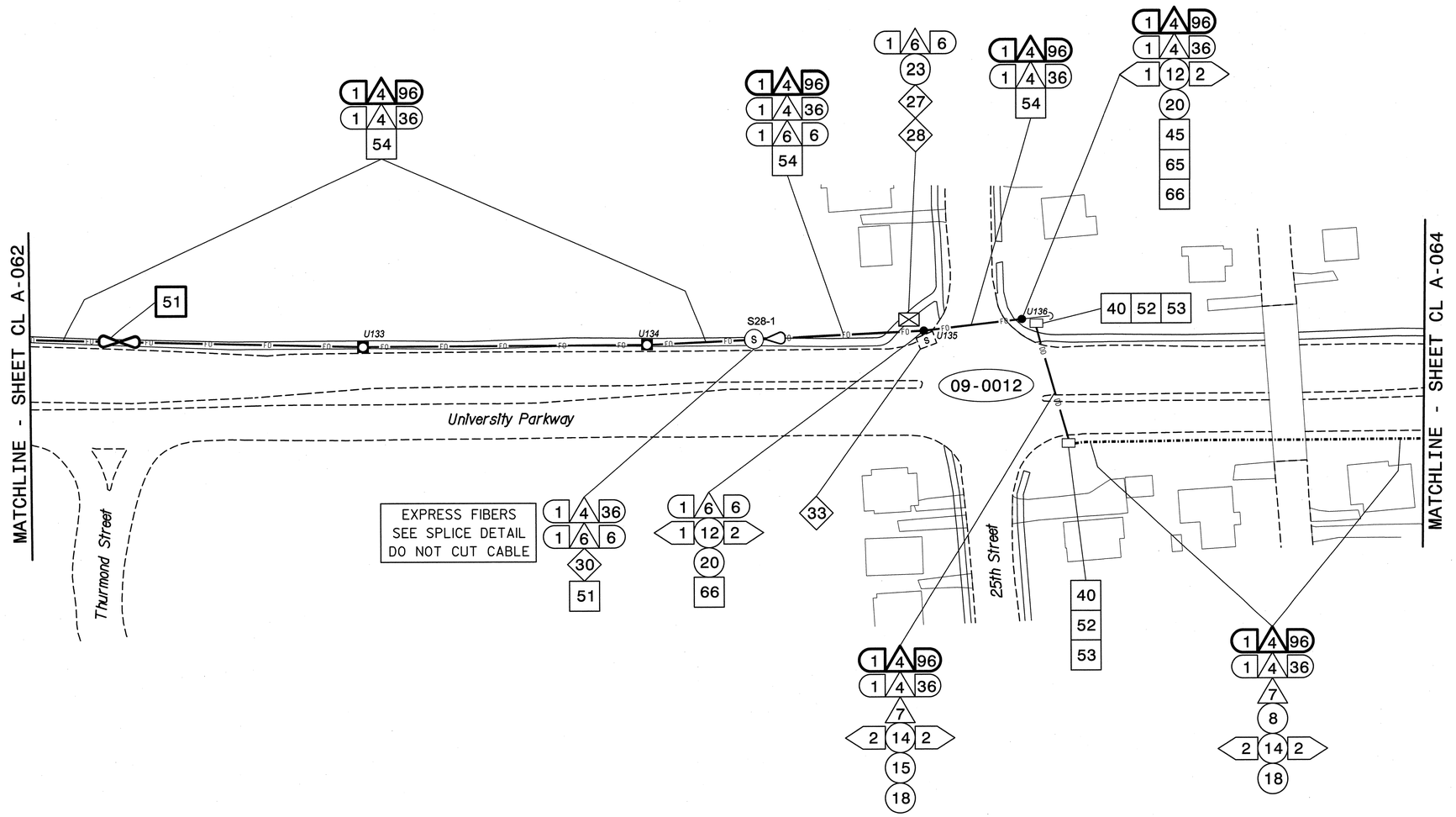
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-063



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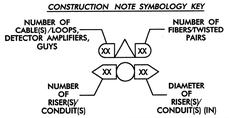

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Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE Lisa M Moon 1-11-13 DATE

CADD Filename: CL A-063.dgn

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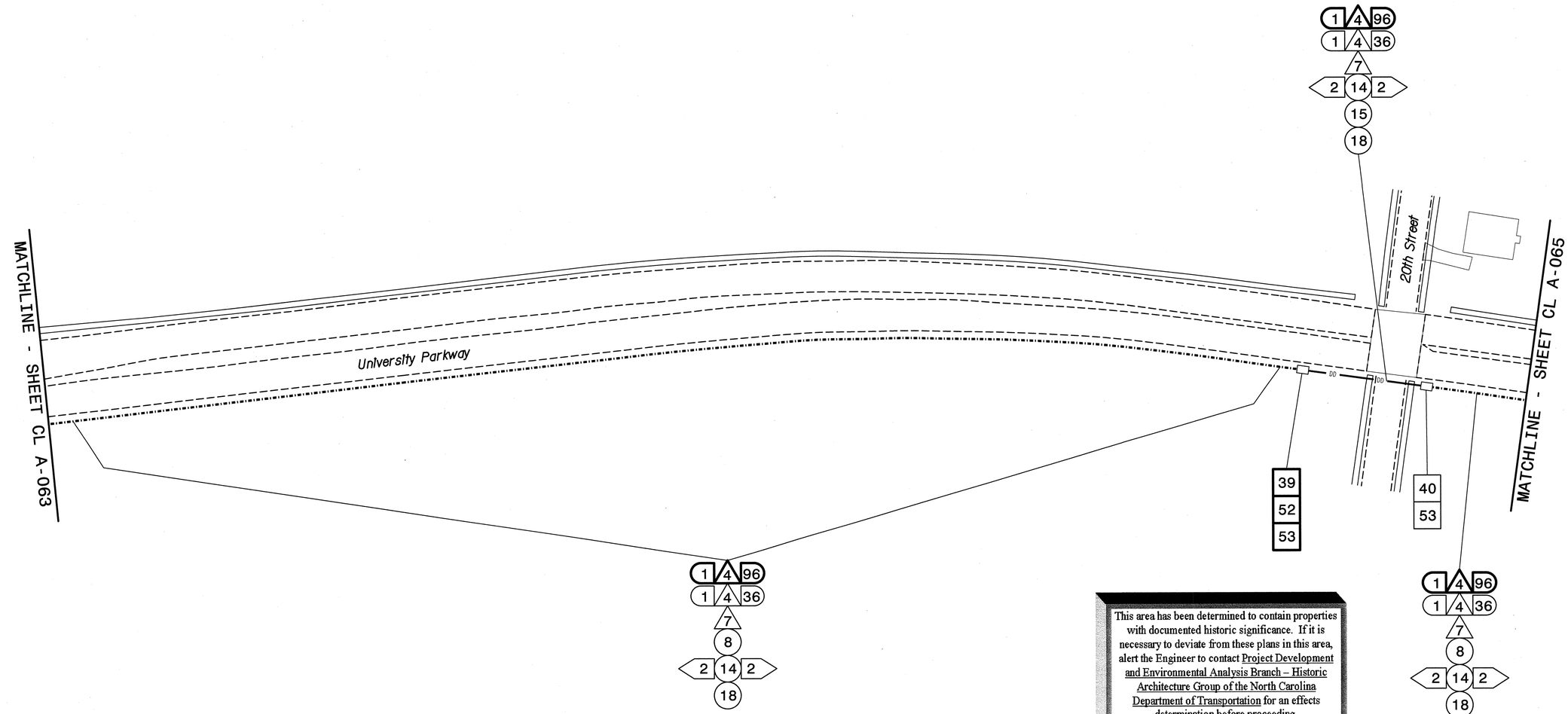
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-064



NOTES:
1. UNLESS OTHERWISE NOTED:
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   - ATTACH NEW MESSENGER CABLE 40" BELOW POWER.
   - ATTACH ON FRONT SIDE (FS) OF POLE.
2. SEAL ALL CONDUIT ENDS WITH DUCT AND CONDUIT SEALER, AT ALL JUNCTION BOX/CABINET ENTRANCES.

BOLD CONSTRUCTION NOTES SHOW NEW "IS FIBER" WORK

1. INSTALL REA, PE – 22, SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE
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25. INSTALL NEW RISER INTO POLE MOUNTED CABINET
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27. INSTALL NEW ETHERNET EDGE SWITCH IN CABINET
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29. INSTALL UNDERGROUND SPLICE ENCLOSURE
30. INSTALL AERIAL SPLICE ENCLOSURE
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CONSTRUCTION NOTE SYMBOLOGY KEY
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DIAMETER OF RISER(S)/ CONDUIT(S) (IN)

ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of: North Carolina Department of Transportation — Mobility and Safety Division — Traffic Engineering Branch
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
Lisa M Moon 1-11-13
SIGNATURE DATE

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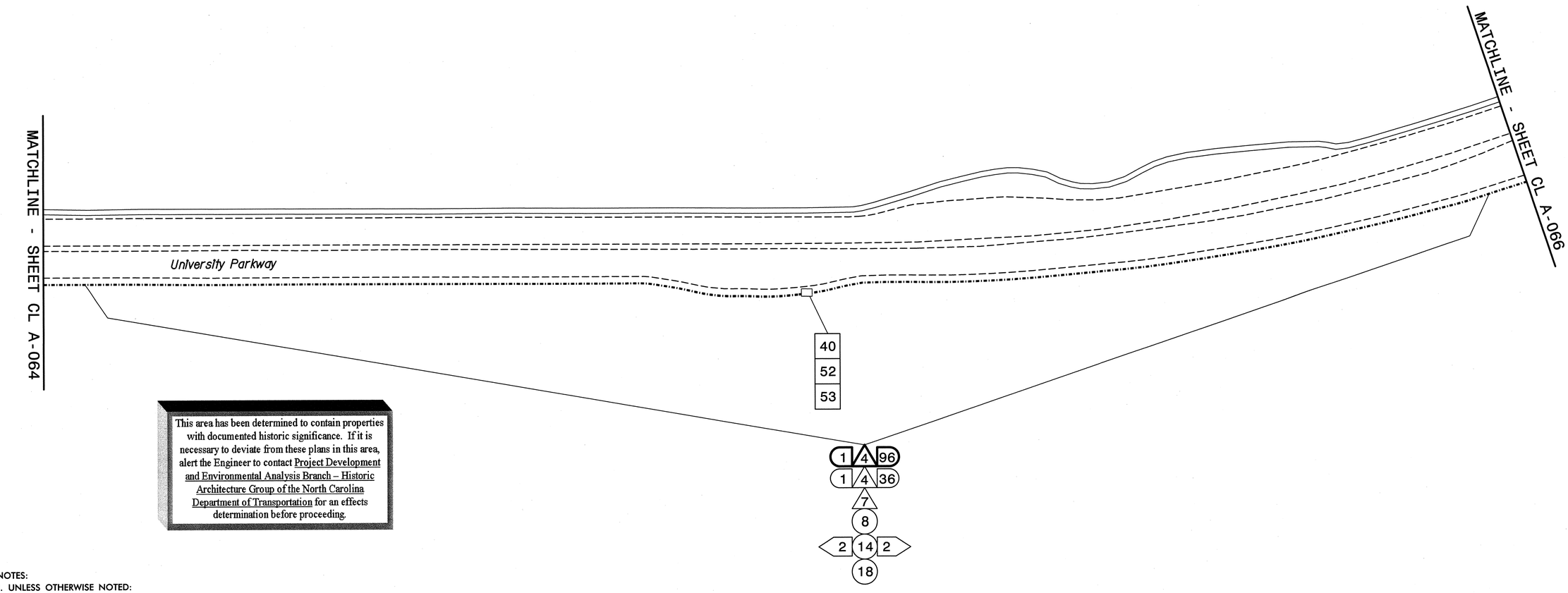
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-065



This area has been determined to contain properties with documented historic significance. If it is necessary to deviate from these plans in this area, alert the Engineer to contact Project Development and Environmental Analysis Branch – Historic Architecture Group of the North Carolina Department of Transportation for an effects determination before proceeding.

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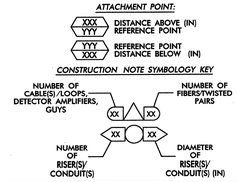

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE: January 2013 REVIEWED BY: MB Toth
PREPARED BY: BKS/AJD REVIEWED BY: LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE 1-11-13 DATE
CADD Filename: CL A-065.dgn

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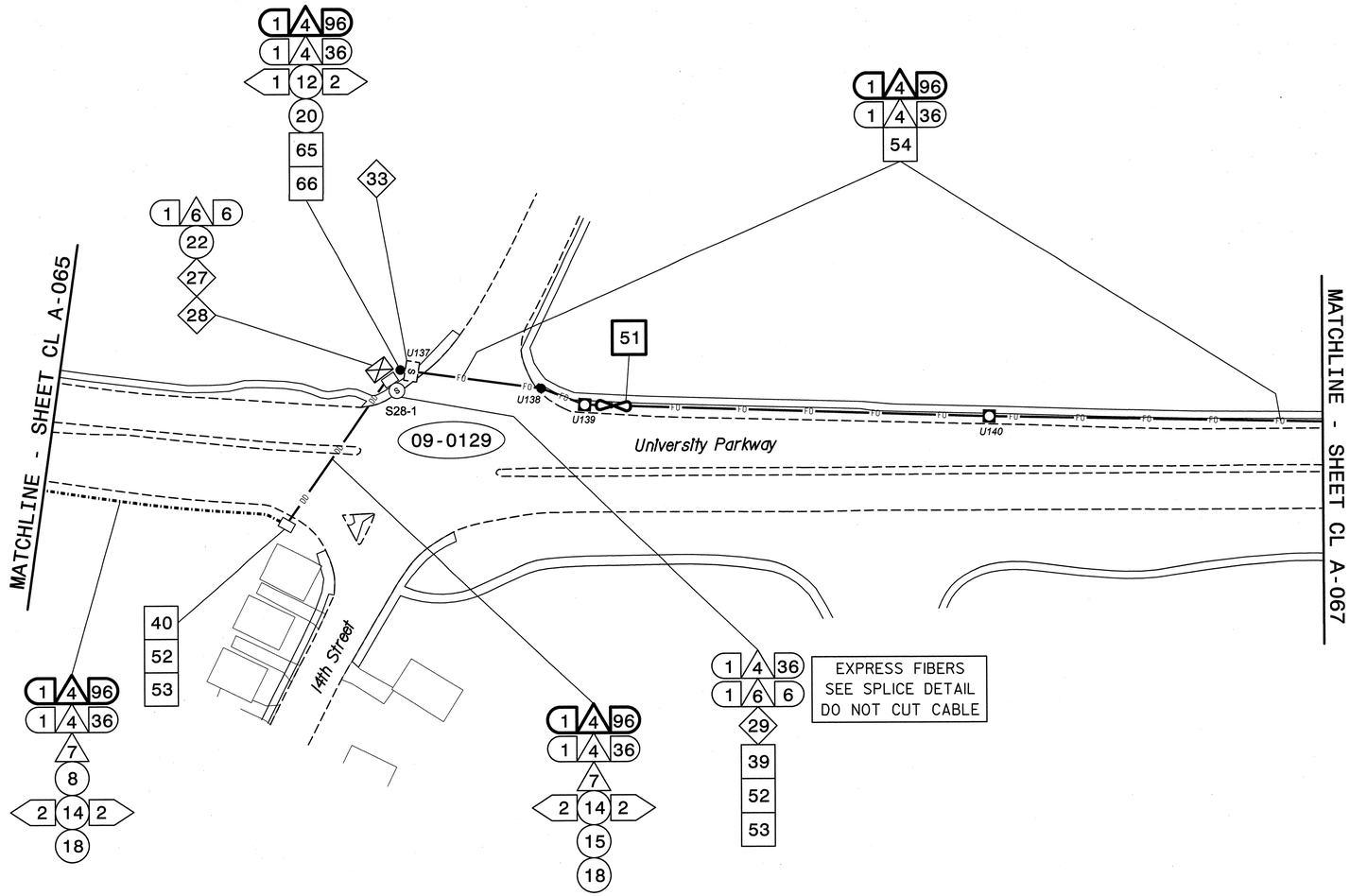
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-066



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8	INSTALL CONDUIT UNDERGROUND	20	INSTALL CABLE(S) IN NEW RISER(S)	32	MODIFY EXISTING SPLICE ENCLOSURE OR INTERCONNECT CENTER	44	INSTALL AERIAL GUY ASSEMBLY
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Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE: January 2013 REVIEWED BY: MB Toth
PREPARED BY: BKS/AJD REVIEWED BY: LM Moon

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-066.dgn

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PROJECT REFERENCE NO.	SHEET NO.
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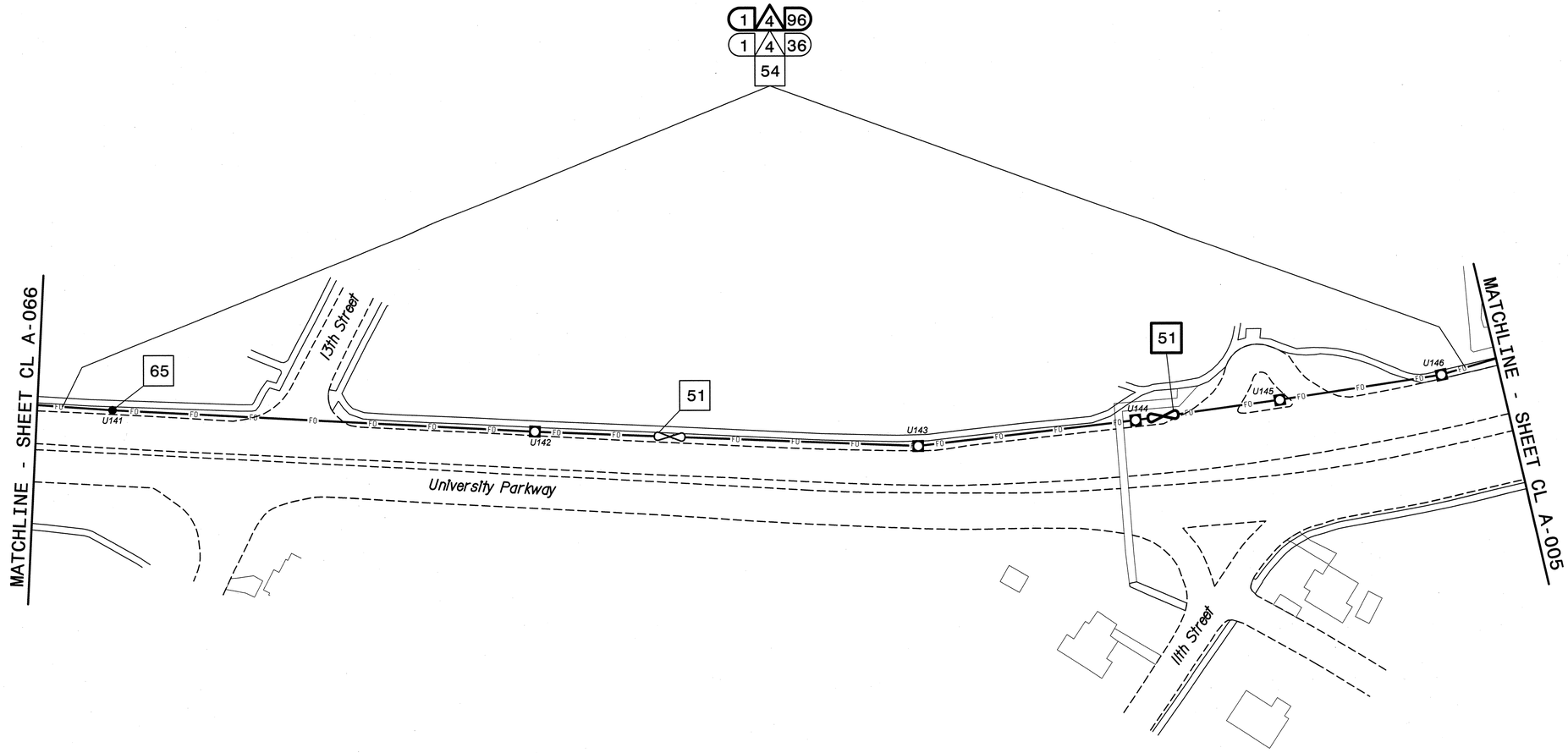

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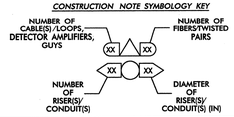

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(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:

Transportation Mobility and Safety Division — North Carolina Department of Transportation — Integrated Mobility Systems

750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 — 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022516 LISA M. MOON

SIGNATURE Lisa M. Moon DATE 1-11-13

CADD Filename: CL A-067.dgn

03-JAN-2013 10:20
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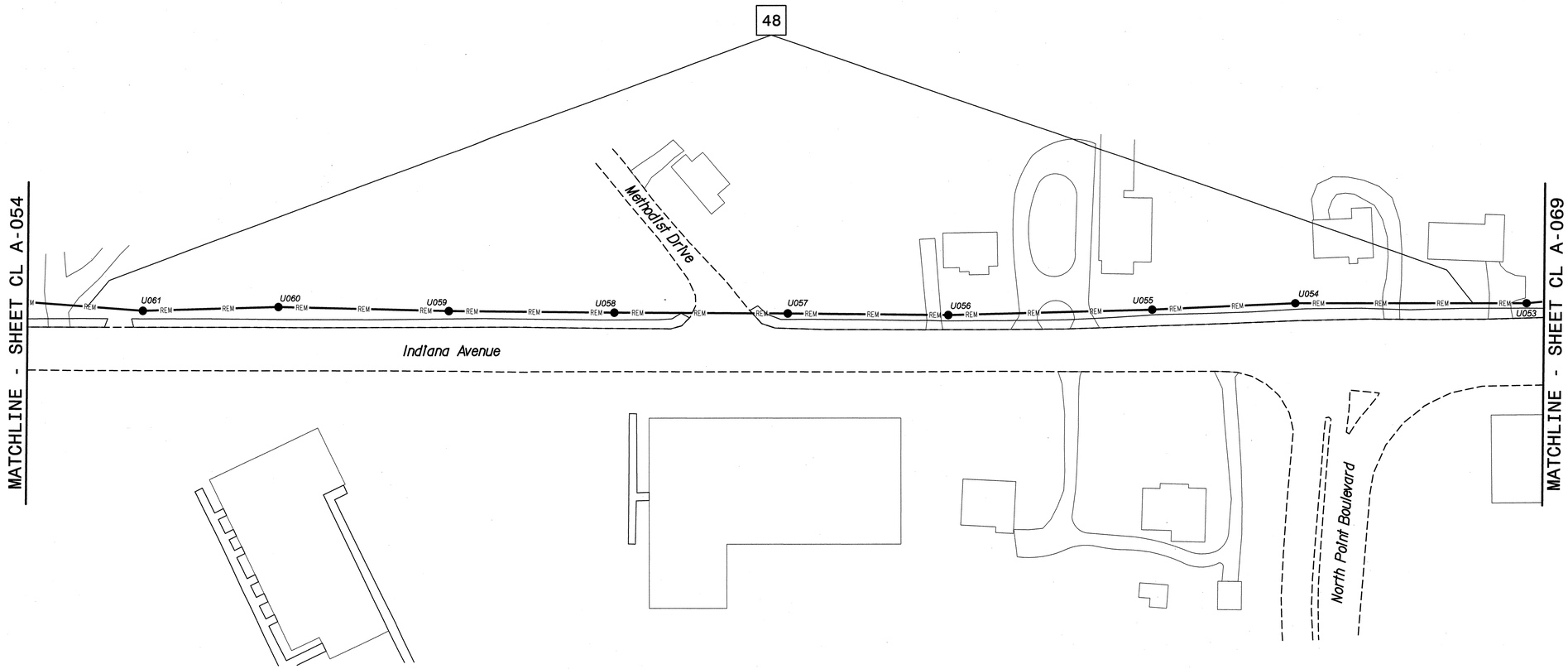
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-068



NOTES:
1. UNLESS OTHERWISE NOTED:
   – OVERLASH NEW FIBER OPTIC CABLE TO EXISTING COMMUNICATIONS CABLE.
   – ATTACH NEW MESSENGER CABLE 40" BELOW POWER.
   – ATTACH ON FRONT SIDE (FS) OF POLE.
2. SEAL ALL CONDUIT ENDS WITH DUCT AND CONDUIT SEALER, AT ALL JUNCTION BOX/CABINET ENTRANCES.

BOLD CONSTRUCTION NOTES SHOW NEW "IS FIBER" WORK

1. INSTALL REA, PE – 22, SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE
2. INSTALL REA, PE – 38, (FIGURE – 8) SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE
3. INSTALL CATEGORY 5E CABLE
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9. INSTALL PVC CONDUIT
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51. INSTALL CABLE STORAGE GUIDE(S) [SNOW SHOE(S)] AND STORE 100 FEET OF EACH CABLE
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CONSTRUCTION NOTE SYMBOLOGY KEY
NUMBER OF CABLES/LOOPS, DETECTOR AMPLIFIERS, GUYS
NUMBER OF FIBERS/TWISTED PAIRS
NUMBER OF RISER(S)/ CONDUIT(S)
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Mobility for Safer, Better Transportation
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M MOON

Lisa M. Moon 1-11-13
SIGNATURE DATE

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PROJECT REFERENCE NO.	SHEET NO.
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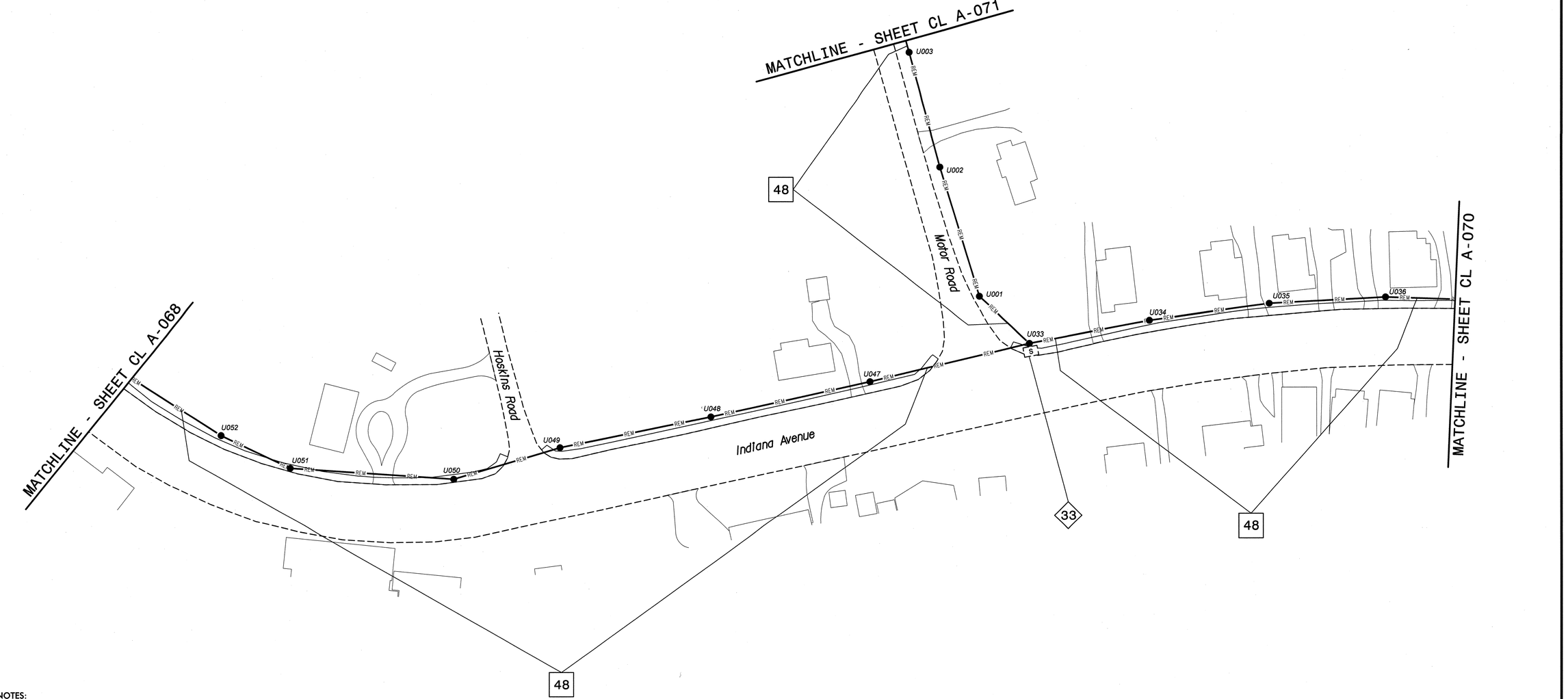

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BOLD CONSTRUCTION NOTES SHOW NEW "IS FIBER" WORK

1	INSTALL REA, PE – 22, SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE	13	INSTALL HEAT SHRINK TUBING RETROFIT KIT	25	INSTALL NEW RISER INTO POLE MOUNTED CABINET	37	INSTALL CCTV WOOD POLE	49	REMOVE EXISTING COMMUNICATIONS CABLE	61	INSTALL UNI-DIRECTIONAL ANTENNA
2	INSTALL REA, PE – 38, (FIGURE – 8) SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE	14	INSTALL HIGH DENSITY POLYETHYLENE CONDUIT	26	INSTALL DIGITAL VIDEO ENCODER	38	INSTALL STANDARD SIZE JUNCTION BOX	50	INSTALL WIRELESS DSL	62	INSTALL 4.9GHZ ETHERNET INTEGRATED RADIO /OMNI-DIRECTIONAL ANTENNA
3	INSTALL CATEGORY 5E CABLE	15	DIRECTIONAL DRILL CONDUIT	27	INSTALL NEW ETHERNET EDGE SWITCH IN CABINET	39	INSTALL SPECIAL-SIZED JUNCTION BOX	51	INSTALL CABLE STORAGE GUIDE(S) [SNOW SHOE(S)] AND STORE 100 FEET OF EACH CABLE	63	INSTALL 900 MHZ ETHERNET RADIO
4	INSTALL SMFO CABLE	16	BORE AND JACK CONDUIT	28	INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET	40	INSTALL OVER-SIZED JUNCTION BOX	52	INSTALL DELINEATOR MARKER	64	INTERCEPT AND REROUTE EXISTING CONDUITS
5	INSTALL COAXIAL ANTENNA CABLE	17	INSTALL CABLE(S) IN EXISTING CONDUIT	29	INSTALL UNDERGROUND SPLICE ENCLOSURE	41	REMOVE EXISTING JUNCTION BOX	53	STORE 50 FEET OF COMMUNICATIONS CABLE (EACH CABLE)	65	BOND MESSENGER TO POLE GROUND
6	INSTALL FIBER-OPTIC DROP CABLE	18	INSTALL CABLE(S) IN NEW CONDUIT	30	INSTALL AERIAL SPLICE ENCLOSURE	42	INSTALL WOOD POLE	54	LASH CABLE(S) TO EXISTING SIGNAL/COMMUNICATIONS CABLE	66	BOND RISER TO POLE GROUND
7	INSTALL TRACER WIRE	19	INSTALL CABLE(S) IN EXISTING RISER(S)	31	INSTALL SPLICE CABINET	43	REMOVE EXISTING WOOD POLE	55	LASH CABLE(S) TO EXISTING MESSENGER CABLE	67	BOND TRACER WIRE TO POLE GROUND
8	INSTALL CONDUIT UNDERGROUND	20	INSTALL CABLE(S) IN NEW RISER(S)	32	MODIFY EXISTING SPLICE ENCLOSURE OR INTERCONNECT CENTER	44	INSTALL AERIAL GUY ASSEMBLY	56	LASH CABLE(S) TO NEW MESSENGER CABLE	68	BOND TRACER WIRE TO EQUIPMENT GROUND BUS
9	INSTALL PVC CONDUIT	21	INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS	33	REMOVE EXISTING SPLICE /HUB /CCTV CABINET	45	INSTALL STANDARD GUY ASSEMBLY	57	MODIFY EXISTING ELECTRICAL SERVICE FOR CCTV/HUB	69	REMOVE EXISTING CCTV CAMERA ASSEMBLY
10	INSTALL RIGID, GALVANIZED STEEL CONDUIT	22	INSTALL NEW CONDUIT INTO CABINET BASE (USE EX CONDUIT STUBOUTS WHEN AVAILABLE)	34	INSTALL CABINET FOUNDATION	46	INSTALL SIDEWALK GUY ASSEMBLY	58	INSTALL NEW ELECTRICAL SERVICE FOR CCTV/HUB	70	INSTALL 4.9GHZ FLAT-PANEL ANTENNA
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12	INSTALL RIGID, GALVANIZED STEEL RISER WITH HEAT SHRINK TUBING	24	INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET	36	INSTALL CCTV CAMERA ASSEMBLY	48	REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE	60	INSTALL 4.9GHZ ETHERNET INTEGRATED RADIO /FLAT-PANEL ANTENNA	72	INSTALL MANAGED ETHERNET SWITCH

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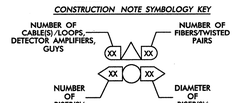

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Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
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SCALE 0 50 1"=50'

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SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022516 LISA M. MOON
SIGNATURE Lisa M. Moon DATE 1-11-13

CADD Filename: CL A-069.dgn

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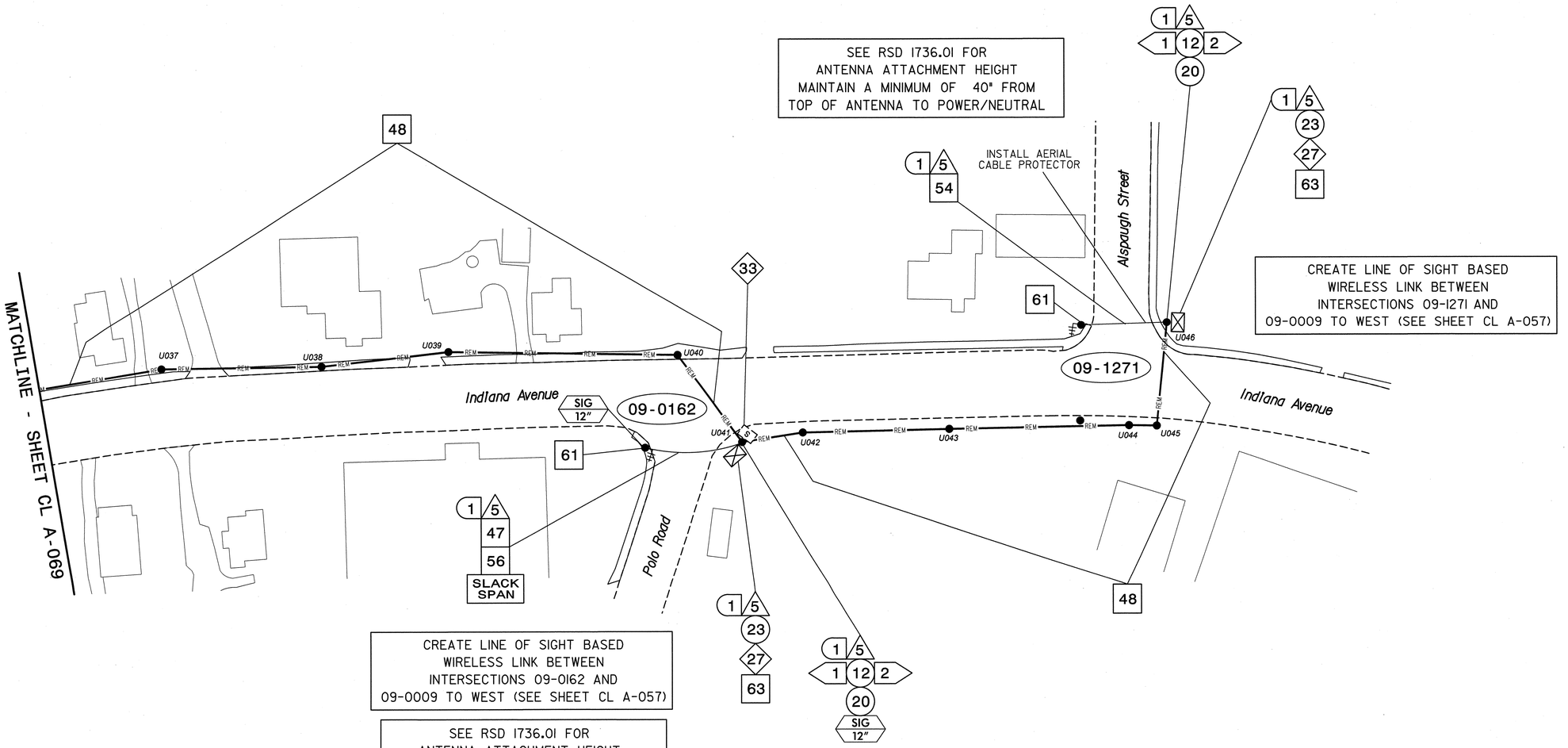
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-070



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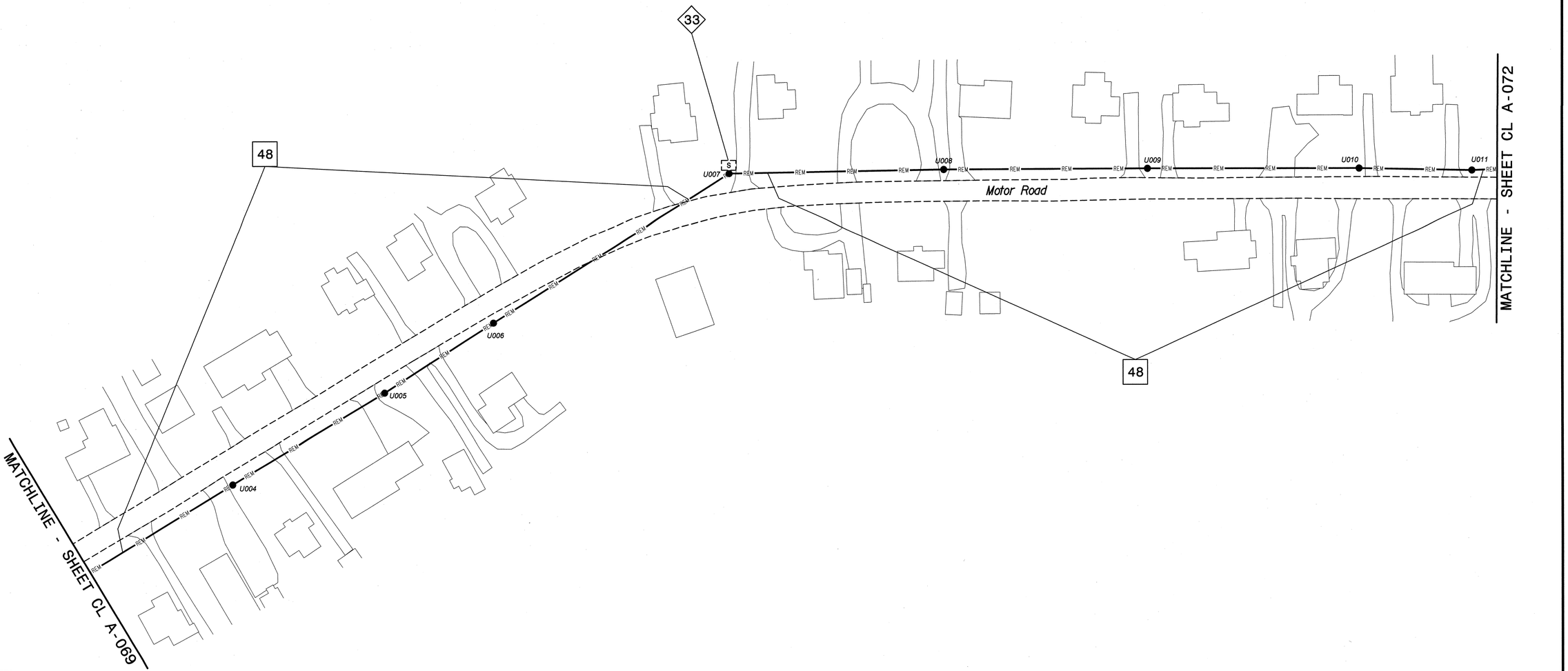

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NUMBER OF CABLE(S) /LOOPS, DETECTOR AMPLIFIERS, GUYS
NUMBER OF FIBERS/TWISTED PAIRS
NUMBER OF RISER(S)/ CONDUIT(S)
DIAMETER OF RISER(S)/ CONDUIT(S) (IN)

ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE Lisa M. Moon DATE 1-11-13
CADD Filename: CL A-071.dgn

MATCHLINE - SHEET CL A-072

MATCHLINE - SHEET CL A-069

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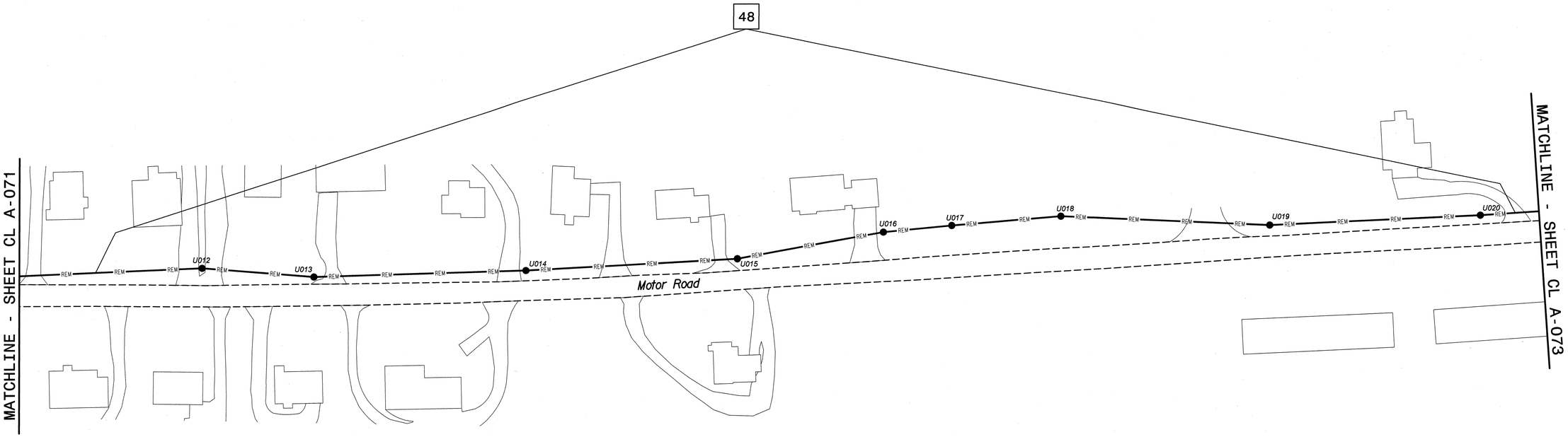
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-072



NOTES:
1. UNLESS OTHERWISE NOTED:
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   - ATTACH NEW MESSENGER CABLE 40" BELOW POWER.
   - ATTACH ON FRONT SIDE (FS) OF POLE.
2. SEAL ALL CONDUIT ENDS WITH DUCT AND CONDUIT SEALER, AT ALL JUNCTION BOX/CABINET ENTRANCES.

BOLD CONSTRUCTION NOTES SHOW NEW "IS FIBER" WORK

1. INSTALL REA, PE – 22, SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE
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SCALE 0 50 1"=50'

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-072.dgn

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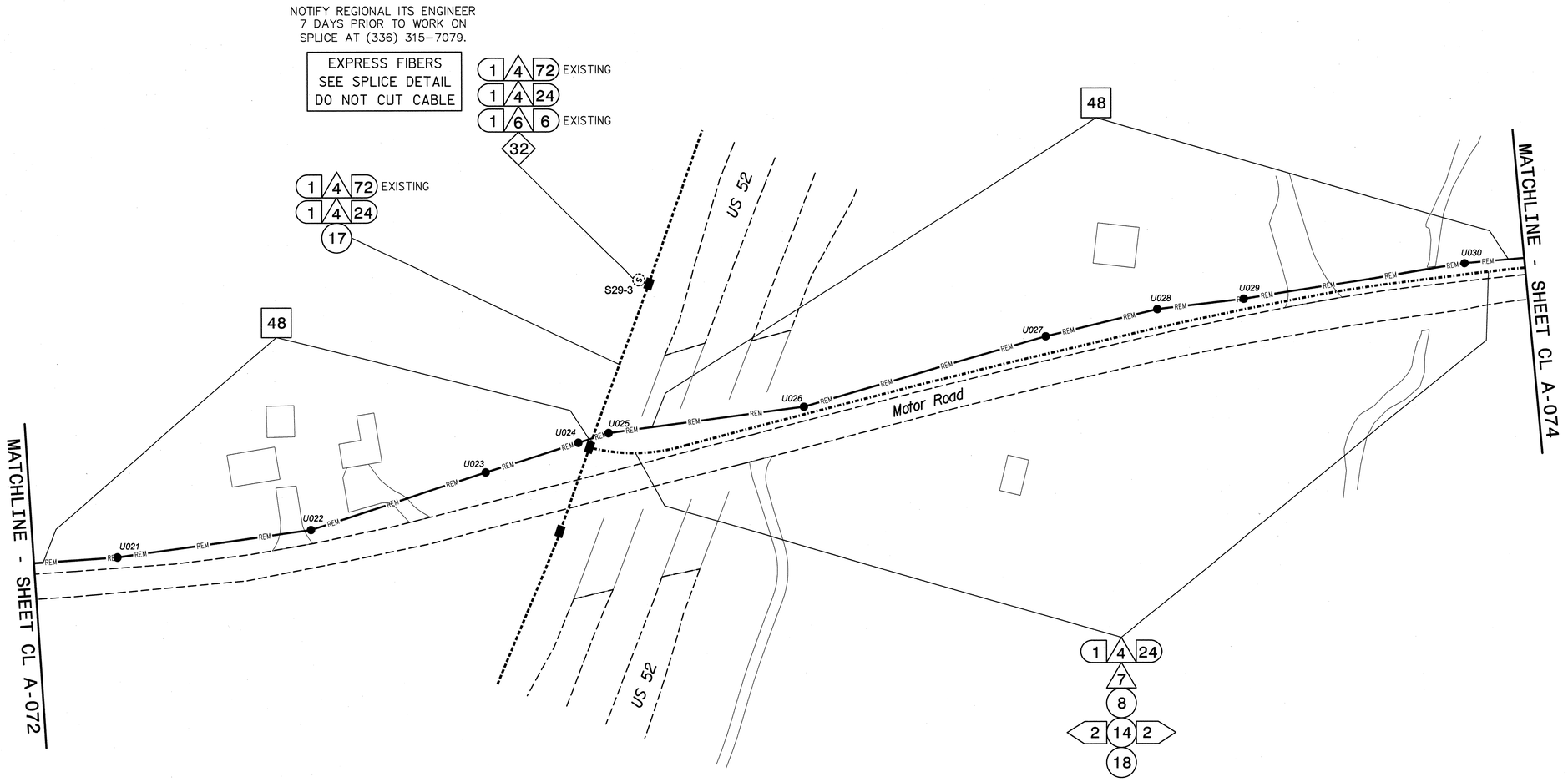

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BOLD CONSTRUCTION NOTES SHOW NEW "IS FIBER" WORK

1	INSTALL REA, PE – 22, SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE	13	INSTALL HEAT SHRINK TUBING RETROFIT KIT	25	INSTALL NEW RISER INTO POLE MOUNTED CABINET	37	INSTALL CCTV WOOD POLE
2	INSTALL REA, PE – 38, (FIGURE – 8) SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE	14	INSTALL HIGH DENSITY POLYETHYLENE CONDUIT	26	INSTALL DIGITAL VIDEO ENCODER	38	INSTALL STANDARD SIZE JUNCTION BOX
3	INSTALL CATEGORY 5E CABLE	15	DIRECTIONAL DRILL CONDUIT	27	INSTALL NEW ETHERNET EDGE SWITCH IN CABINET	39	INSTALL SPECIAL-SIZED JUNCTION BOX
4	INSTALL SMFO CABLE	16	BORE AND JACK CONDUIT	28	INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET	40	INSTALL OVER-SIZED JUNCTION BOX
5	INSTALL COAXIAL ANTENNA CABLE	17	INSTALL CABLE(S) IN EXISTING CONDUIT	29	INSTALL UNDERGROUND SPLICE ENCLOSURE	41	REMOVE EXISTING JUNCTION BOX
6	INSTALL FIBER-OPTIC DROP CABLE	18	INSTALL CABLE(S) IN NEW CONDUIT	30	INSTALL AERIAL SPLICE ENCLOSURE	42	INSTALL WOOD POLE
7	INSTALL TRACER WIRE	19	INSTALL CABLE(S) IN EXISTING RISER(S)	31	INSTALL SPLICE CABINET	43	REMOVE EXISTING WOOD POLE
8	INSTALL CONDUIT UNDERGROUND	20	INSTALL CABLE(S) IN NEW RISER(S)	32	MODIFY EXISTING SPLICE ENCLOSURE OR INTERCONNECT CENTER	44	INSTALL AERIAL GUY ASSEMBLY
9	INSTALL PVC CONDUIT	21	INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS	33	REMOVE EXISTING SPLICE /HUB /CCTV CABINET	45	INSTALL STANDARD GUY ASSEMBLY
10	INSTALL RIGID, GALVANIZED STEEL CONDUIT	22	INSTALL NEW CONDUIT INTO CABINET BASE (USE EX CONDUIT STUBOUTS WHEN AVAILABLE)	34	INSTALL CABINET FOUNDATION	46	INSTALL SIDEWALK GUY ASSEMBLY
11	INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD	23	INSTALL NEW RISER INTO CABINET BASE (USE EX CONDUIT STUBOUTS WHEN AVAILABLE)	35	REMOVE EXISTING CABINET FOUNDATION	47	INSTALL MESSENGER CABLE
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52	INSTALL DELINEATOR MARKER	64	INTERCEPT AND REROUTE EXISTING CONDUITS				
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59	INSTALL NEW POLE MOUNTED CCTV CABINET	71	INSTALL HUB CABINET				
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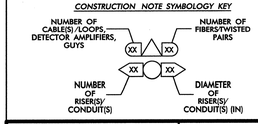

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750 Greenfield Parkway, Garner, NC 27529

SCALE 0 50 1"=50'

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09	Forsyth County		Winston-Salem
PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LW Moon

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE DATE 1-11-13

CADD Filename: CL A-073.dgn

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PROJECT REFERENCE NO.	SHEET NO.
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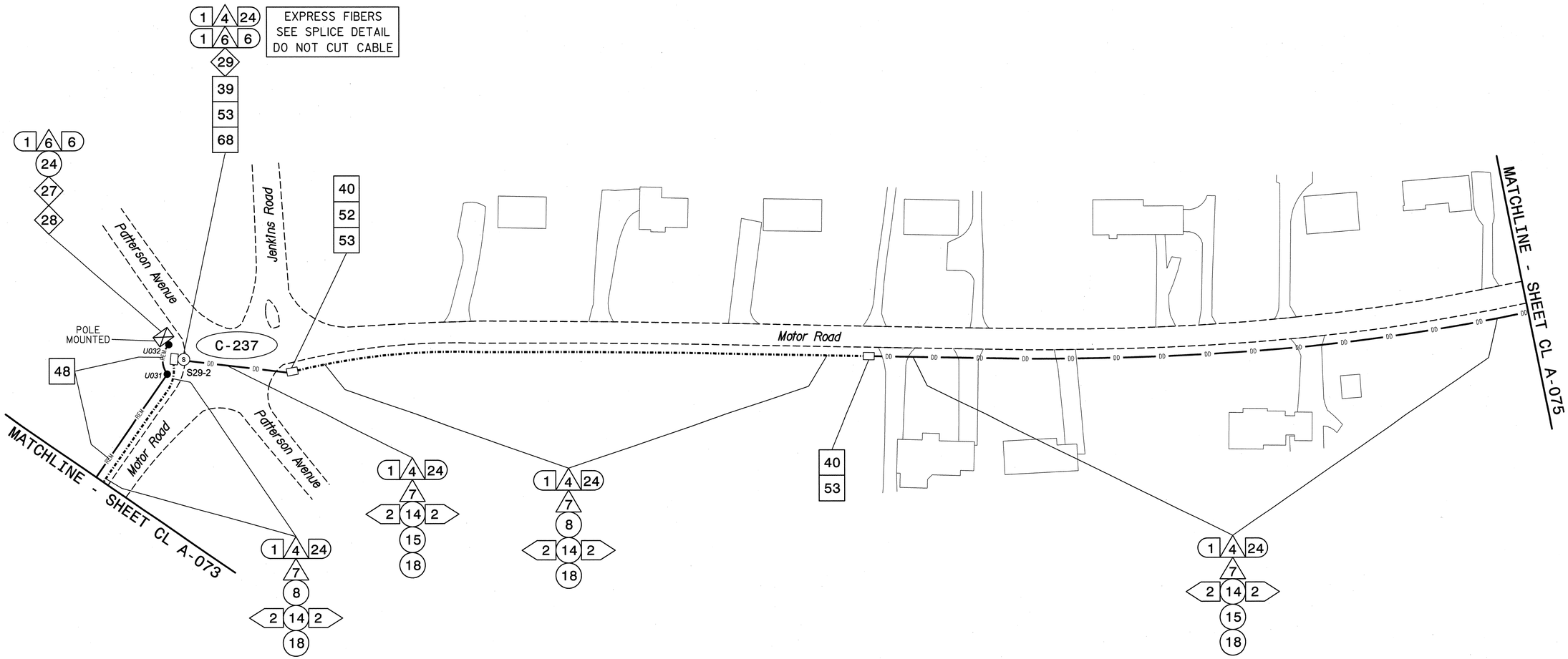

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Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
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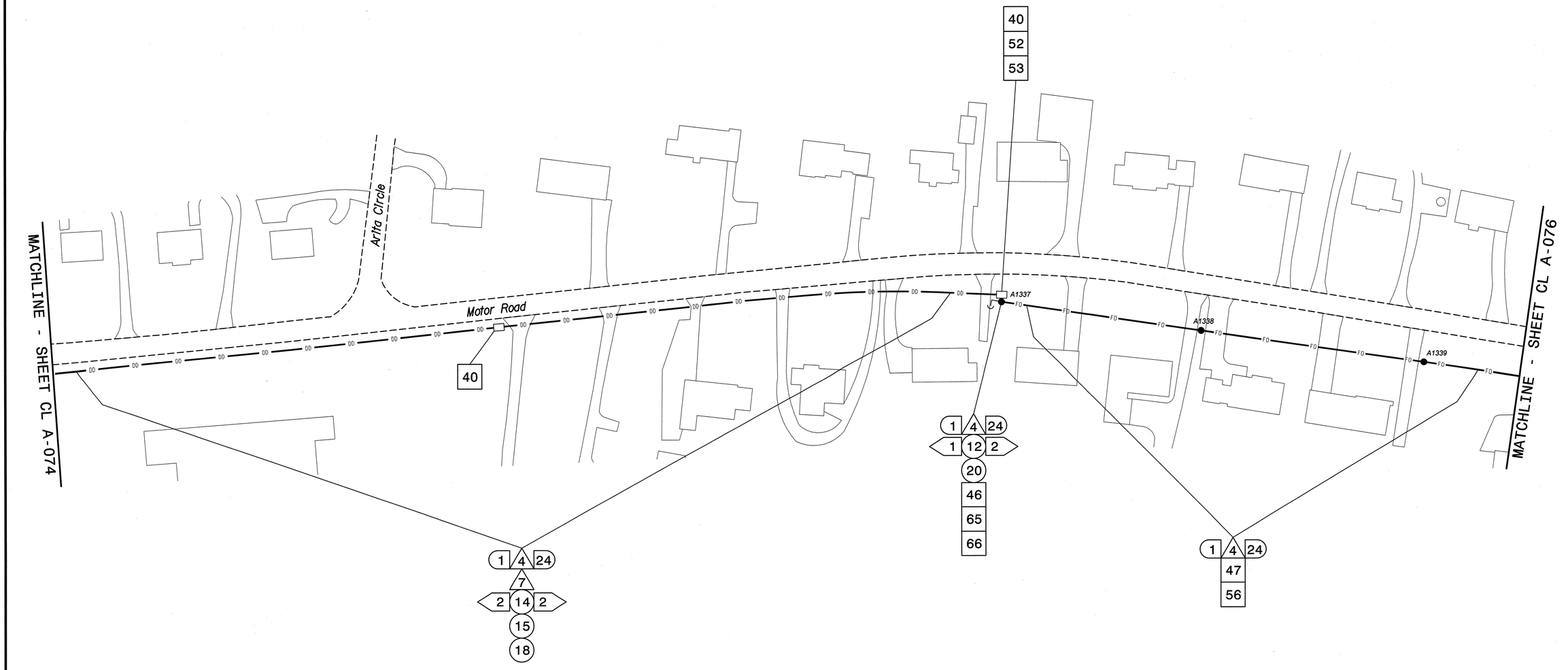

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70. INSTALL 4.9GHZ FLAT-PANEL ANTENNA
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72. INSTALL MANAGED ETHERNET SWITCH

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CONSTRUCTION NOTE SYMBOLOGY KEY
NUMBER OF CABLE(S) /LOOPS, DETECTOR AMPLIFIERS, GUYS
NUMBER OF FIBERS/TWISTED PAIRS
NUMBER OF RISER(S)/ CONDUIT(S)
DIAMETER OF RISER(S)/ CONDUIT(S) (IN)

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of: Transportation Mobility and Safety Division, North Carolina Department of Transportation, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL 022516 NORTH CAROLINA PROFESSIONAL ENGINEER LISA M. MOON

Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-075.dgn

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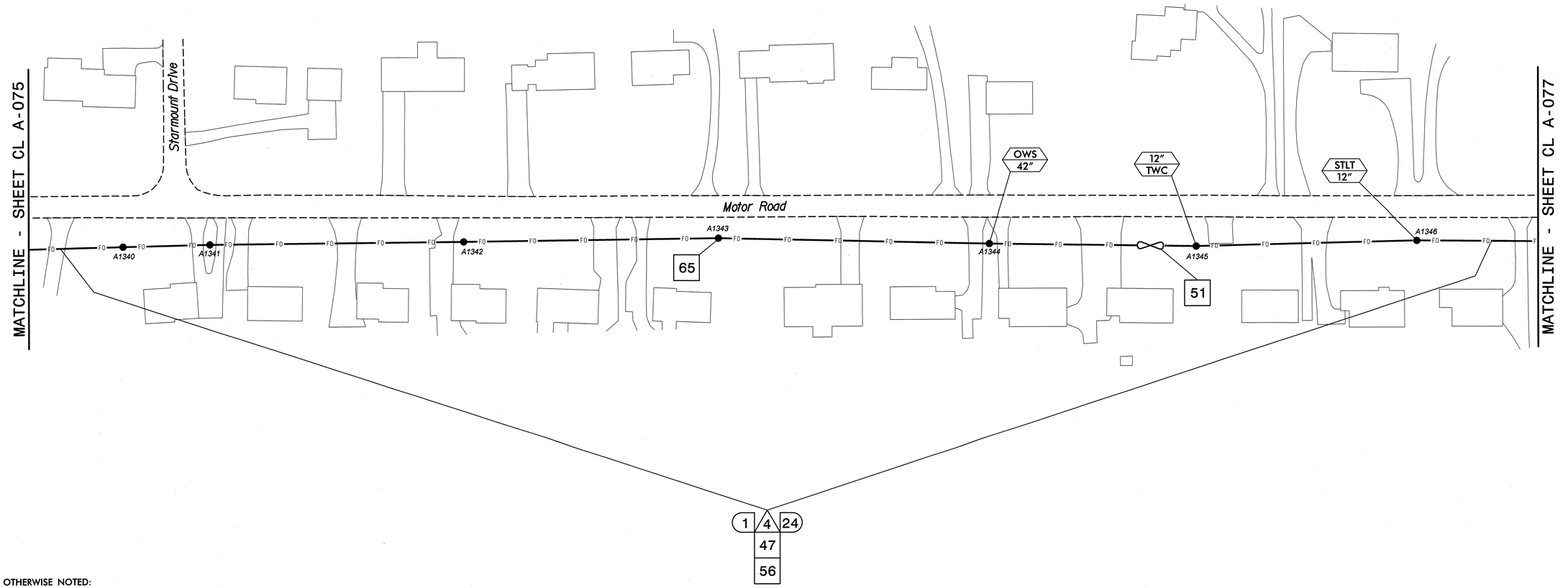
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-076



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ATKINS
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Prepared for the Offices of:
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION — Transportation Mobility and Safety Division — Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M MOON
SIGNATURE
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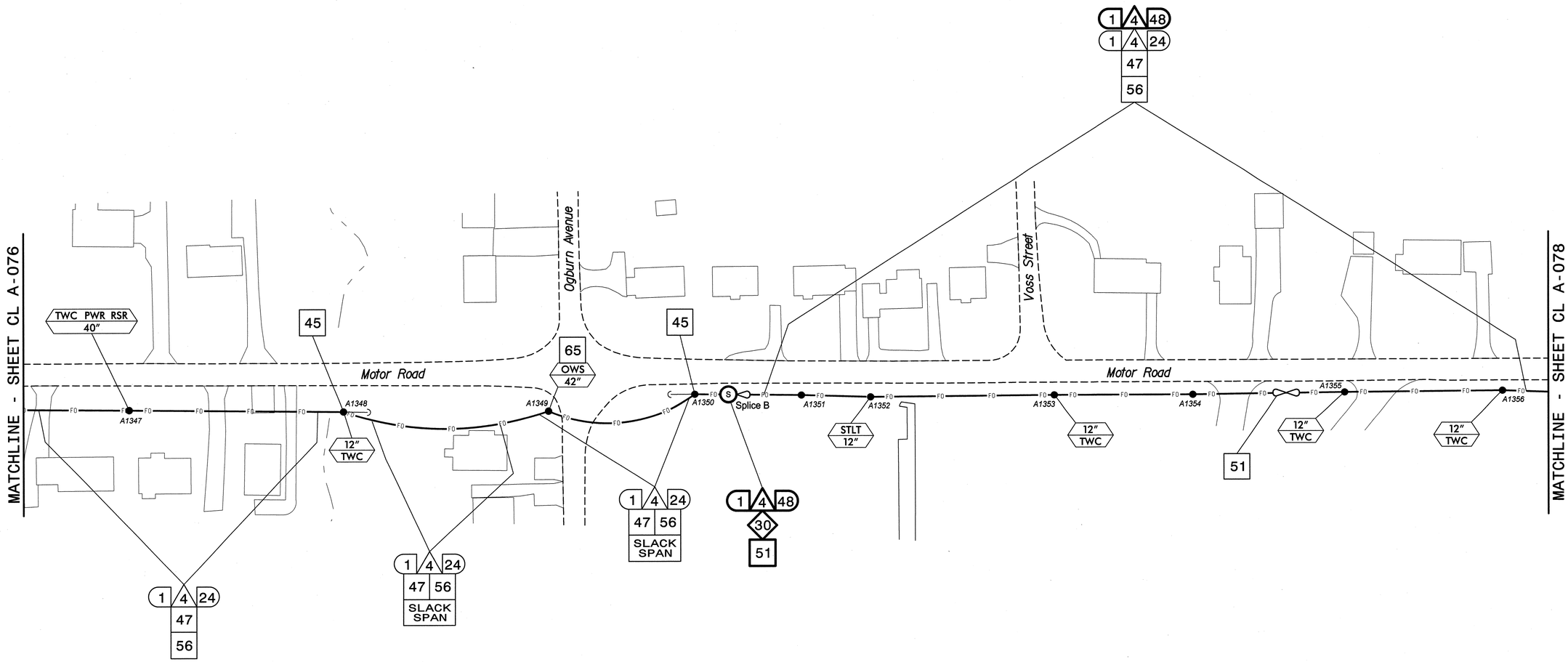

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1	INSTALL REA, PE – 22, SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE	13	INSTALL HEAT SHRINK TUBING RETROFIT KIT	25	INSTALL NEW RISER INTO POLE MOUNTED CABINET	37	INSTALL CCTV WOOD POLE	49	REMOVE EXISTING COMMUNICATIONS CABLE	61	INSTALL UNI-DIRECTIONAL ANTENNA
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3	INSTALL CATEGORY 5E CABLE	15	DIRECTIONAL DRILL CONDUIT	27	INSTALL NEW ETHERNET EDGE SWITCH IN CABINET	39	INSTALL SPECIAL-SIZED JUNCTION BOX	51	INSTALL CABLE STORAGE GUIDE(S) [SNOW SHOE(S)] AND STORE 100 FEET OF EACH CABLE	63	INSTALL 900 MHZ ETHERNET RADIO
4	INSTALL SMFO CABLE	16	BORE AND JACK CONDUIT	28	INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET	40	INSTALL OVER-SIZED JUNCTION BOX	52	INSTALL DELINEATOR MARKER	64	INTERCEPT AND REROUTE EXISTING CONDUITS
5	INSTALL COAXIAL ANTENNA CABLE	17	INSTALL CABLE(S) IN EXISTING CONDUIT	29	INSTALL UNDERGROUND SPLICE ENCLOSURE	41	REMOVE EXISTING JUNCTION BOX	53	STORE 50 FEET OF COMMUNICATIONS CABLE (EACH CABLE)	65	BOND MESSENGER TO POLE GROUND
6	INSTALL FIBER-OPTIC DROP CABLE	18	INSTALL CABLE(S) IN NEW CONDUIT	30	INSTALL AERIAL SPLICE ENCLOSURE	42	INSTALL WOOD POLE	54	LASH CABLE(S) TO EXISTING SIGNAL/COMMUNICATIONS CABLE	66	BOND RISER TO POLE GROUND
7	INSTALL TRACER WIRE	19	INSTALL CABLE(S) IN EXISTING RISER(S)	31	INSTALL SPLICE CABINET	43	REMOVE EXISTING WOOD POLE	55	LASH CABLE(S) TO EXISTING MESSENGER CABLE	67	BOND TRACER WIRE TO POLE GROUND
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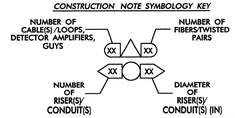

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Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE: January 2013 REVIEWED BY: MB Toth

PREPARED BY: BKS/AJD REVIEWED BY: LM Moon

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

Lisa M. Moon 1-11-13
SIGNATURE DATE

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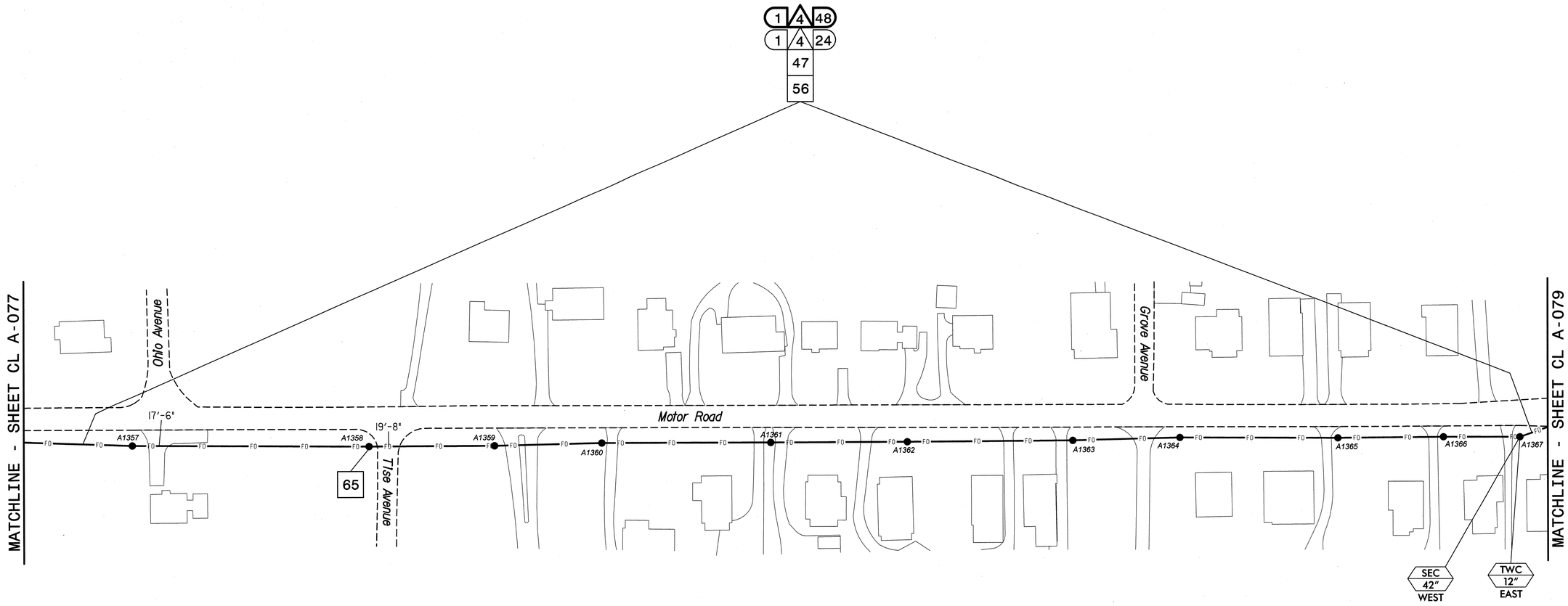
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-078



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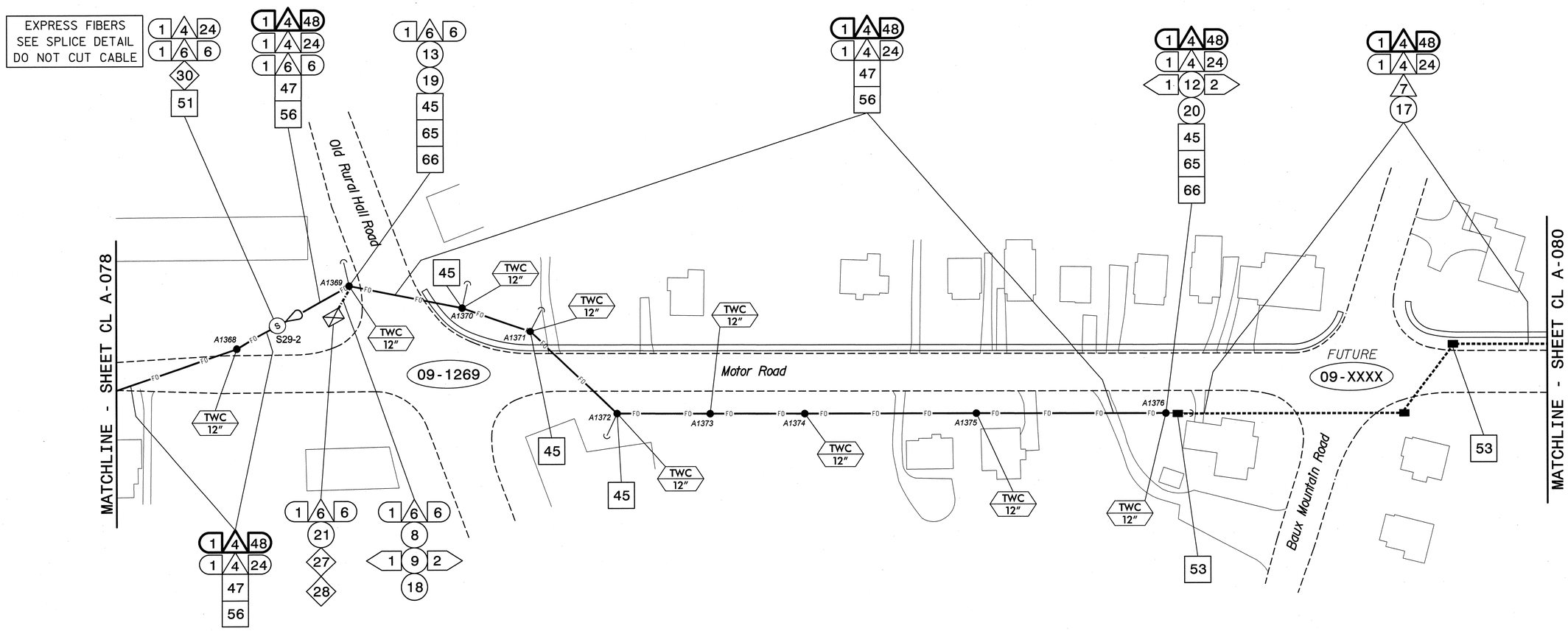

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XXX DISTANCE ABOVE (IN) REFERENCE POINT
YYY REFERENCE POINT DISTANCE BELOW (IN) XXX

CONSTRUCTION NOTE SYMBOLOGY KEY
NUMBER OF CABLE(S)/LOOPS/ DETECTOR AMPLIFIERS, GUYS — NUMBER OF FIBERS/TWISTED PAIRS
NUMBER OF RISER(S)/ CONDUIT(S) — DIAMETER OF RISER(S)/ CONDUIT(S) (IN)

ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
North Carolina Department of Transportation, Mobility and Safety Division, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

SCALE 0 50 1"=50'

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-079.dgn

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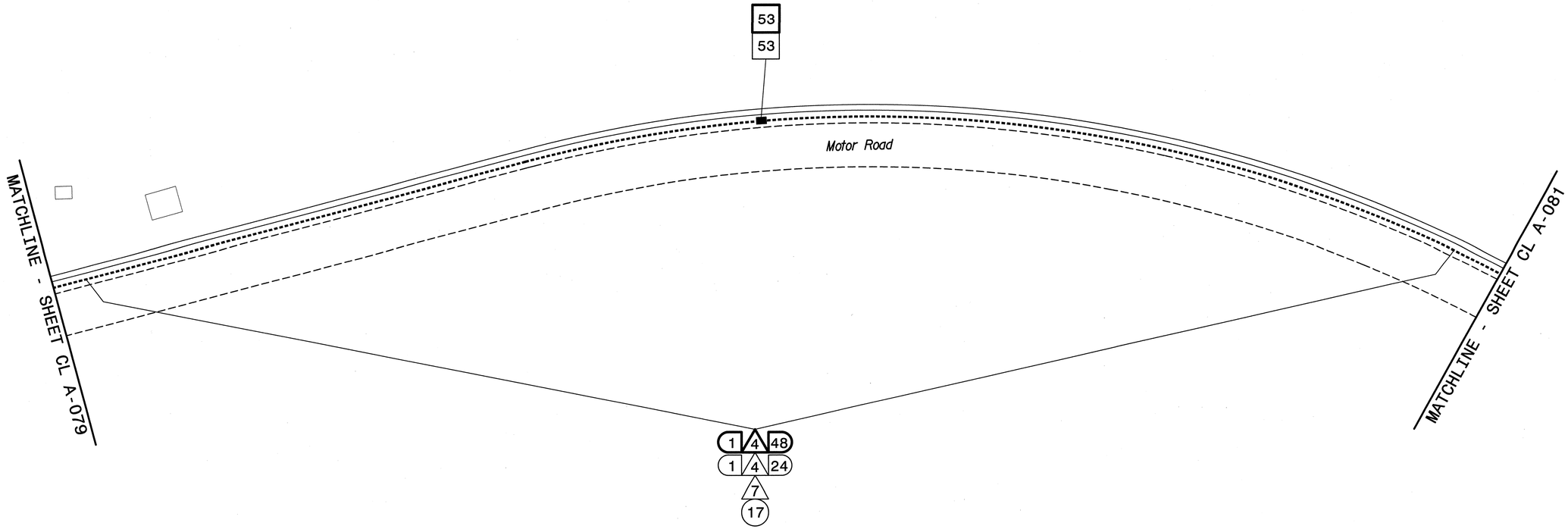
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-080



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Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-080.dgn

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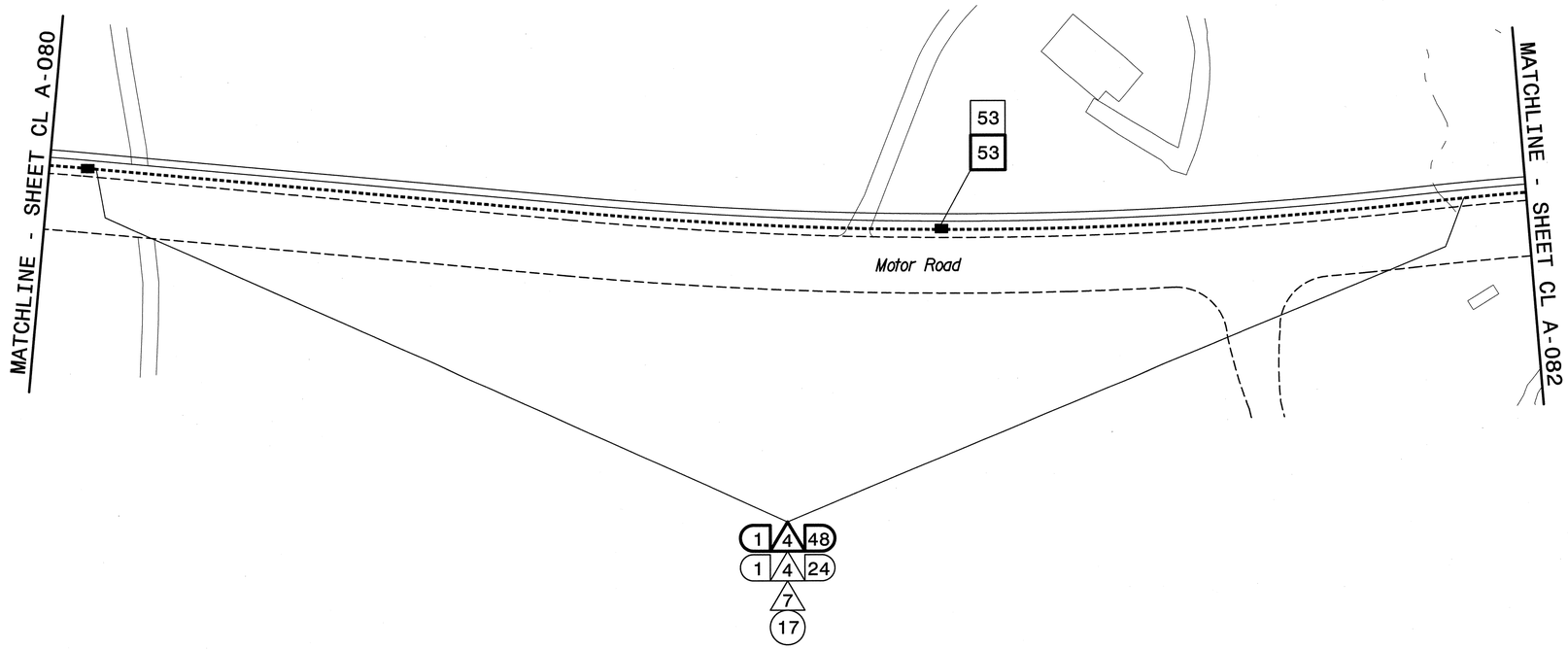
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-081



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Prepared for the Offices of:
Performance, Mobility and Safety Division
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-081.dgn

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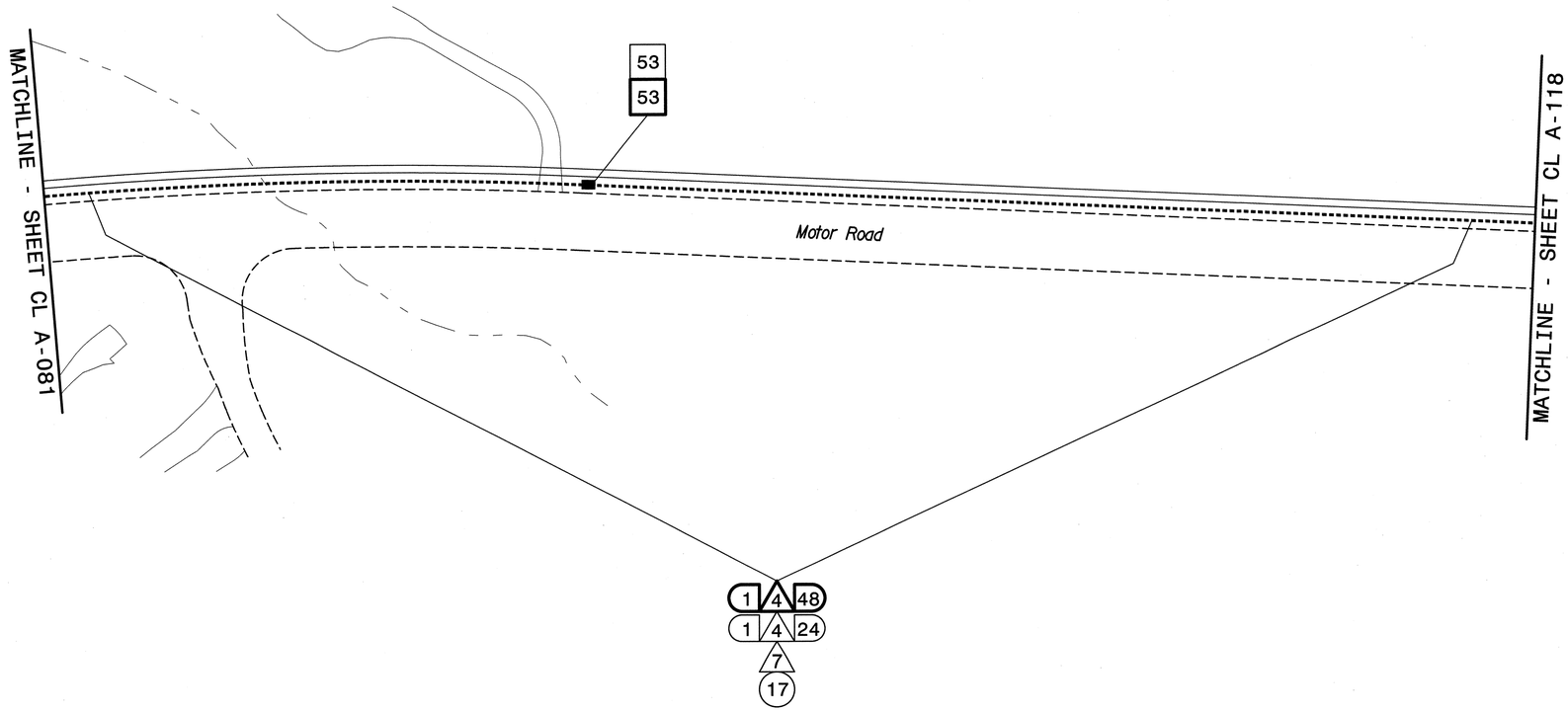
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-082



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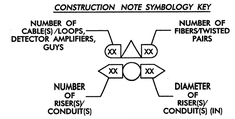

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Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-082.dgn

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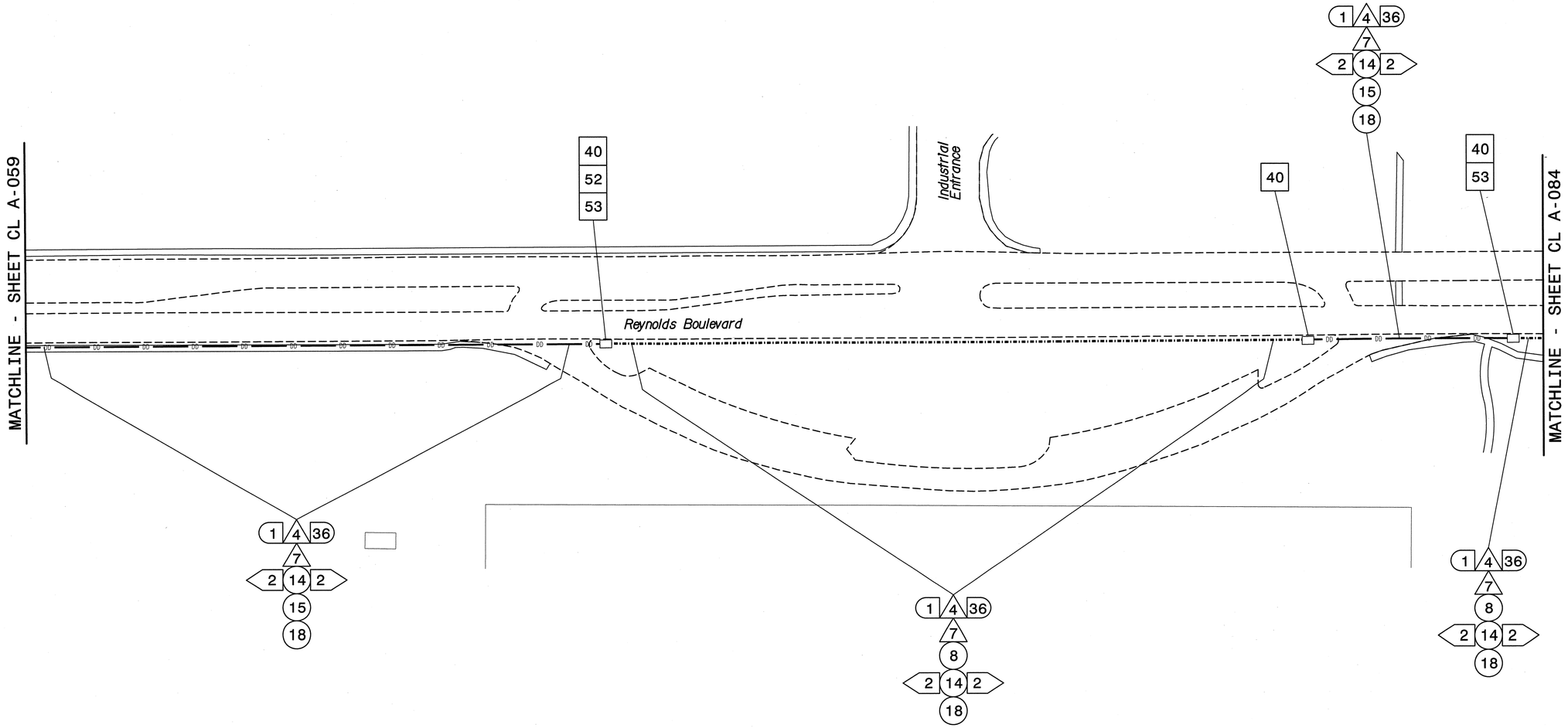
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-083



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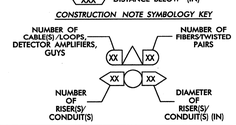
47. INSTALL MESSENGER CABLE
48. REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE
49. REMOVE EXISTING COMMUNICATIONS CABLE
50. INSTALL WIRELESS DSL
51. INSTALL CABLE STORAGE GUIDE(S) [SNOW SHOE(S)] AND STORE 100 FEET OF EACH CABLE
52. INSTALL DELINEATOR MARKER
53. STORE 50 FEET OF COMMUNICATIONS CABLE (EACH CABLE)
54. LASH CABLE(S) TO EXISTING SIGNAL/COMMUNICATIONS CABLE
55. LASH CABLE(S) TO EXISTING MESSENGER CABLE
56. LASH CABLE(S) TO NEW MESSENGER CABLE
57. MODIFY EXISTING ELECTRICAL SERVICE FOR CCTV/HUB
58. INSTALL NEW ELECTRICAL SERVICE FOR CCTV/HUB
59. INSTALL NEW POLE MOUNTED CCTV CABINET
60. INSTALL 4.9GHZ ETHERNET INTEGRATED RADIO /FLAT-PANEL ANTENNA
61. INSTALL UNI-DIRECTIONAL ANTENNA
62. INSTALL 4.9GHZ ETHERNET INTEGRATED RADIO /OMNI-DIRECTIONAL ANTENNA
63. INSTALL 900 MHZ ETHERNET RADIO
64. INTERCEPT AND REROUTE EXISTING CONDUITS
65. BOND MESSENGER TO POLE GROUND
66. BOND RISER TO POLE GROUND
67. BOND TRACER WIRE TO POLE GROUND
68. BOND TRACER WIRE TO EQUIPMENT GROUND BUS
69. REMOVE EXISTING CCTV CAMERA ASSEMBLY
70. INSTALL 4.9GHZ FLAT-PANEL ANTENNA
71. INSTALL HUB CABINET
72. INSTALL MANAGED ETHERNET SWITCH

ATTACHMENT POINT:

XXX / XYY — DISTANCE ABOVE (IN) REFERENCE POINT

YYY / XXX — REFERENCE POINT DISTANCE BELOW (IN)

CONSTRUCTION NOTE SYMBOLOGY KEY



ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:

North Carolina Department of Transportation, Integrated Mobility and Safety Division

750 Greenfield Parkway, Garner, NC 27529

N

SCALE 0 50 1"=50'

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE: January 2013 REVIEWED BY: MB Toth

PREPARED BY: BKS/AJD REVIEWED BY: LM Moon

REVISIONS	INIT.	DATE

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

Lisa M. Moon 1-11-13

SIGNATURE DATE

CADD Filename: CL A-083.dgn

03-JAN-2013 10:28
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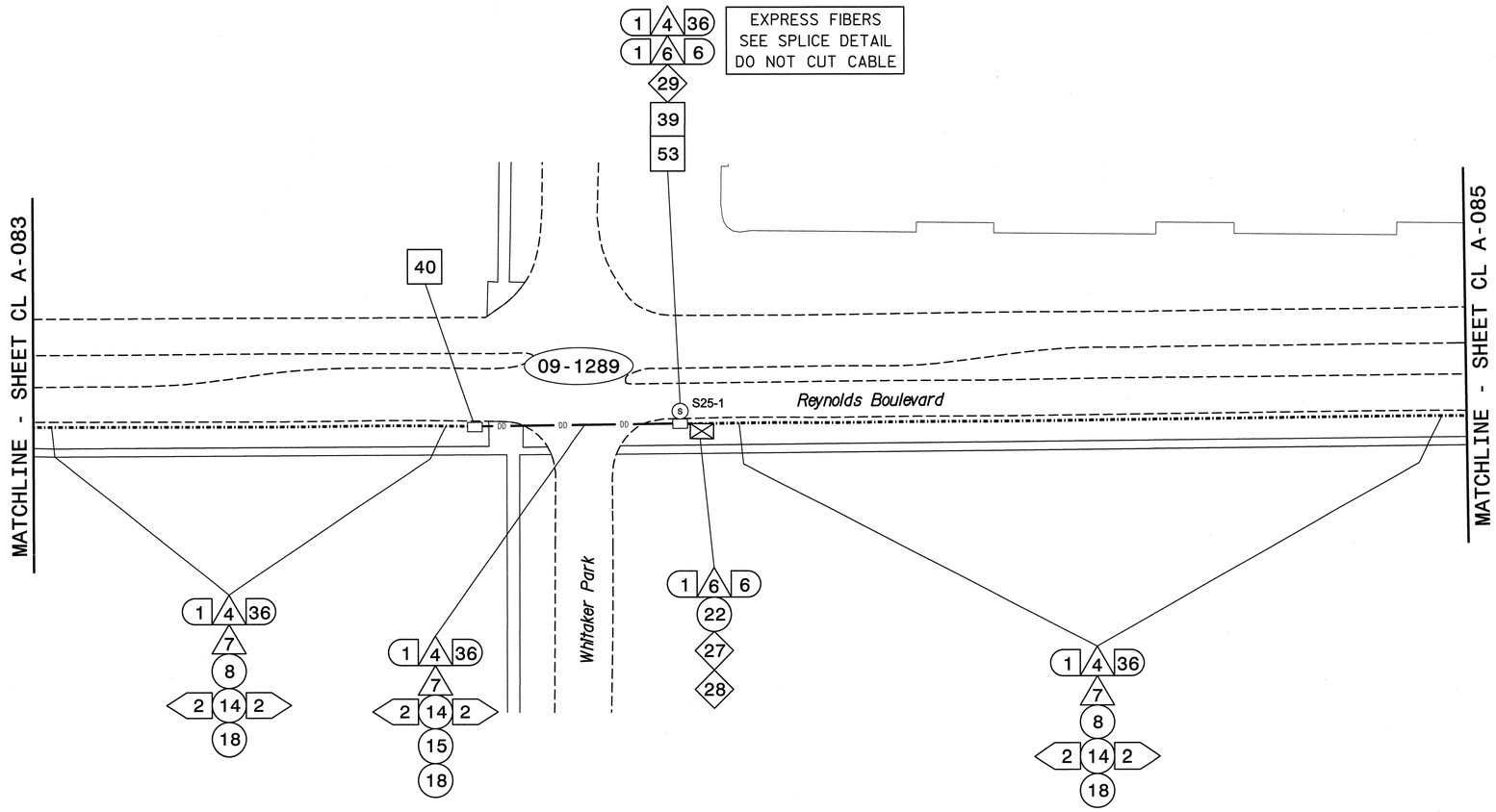
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-084



NOTES:
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ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of: Transportation Mobility and Safety Division, North Carolina Department of Transportation, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE DATE 1-11-13
CADD Filename: CL A-084.dgn

10-JAN-2013 14:15
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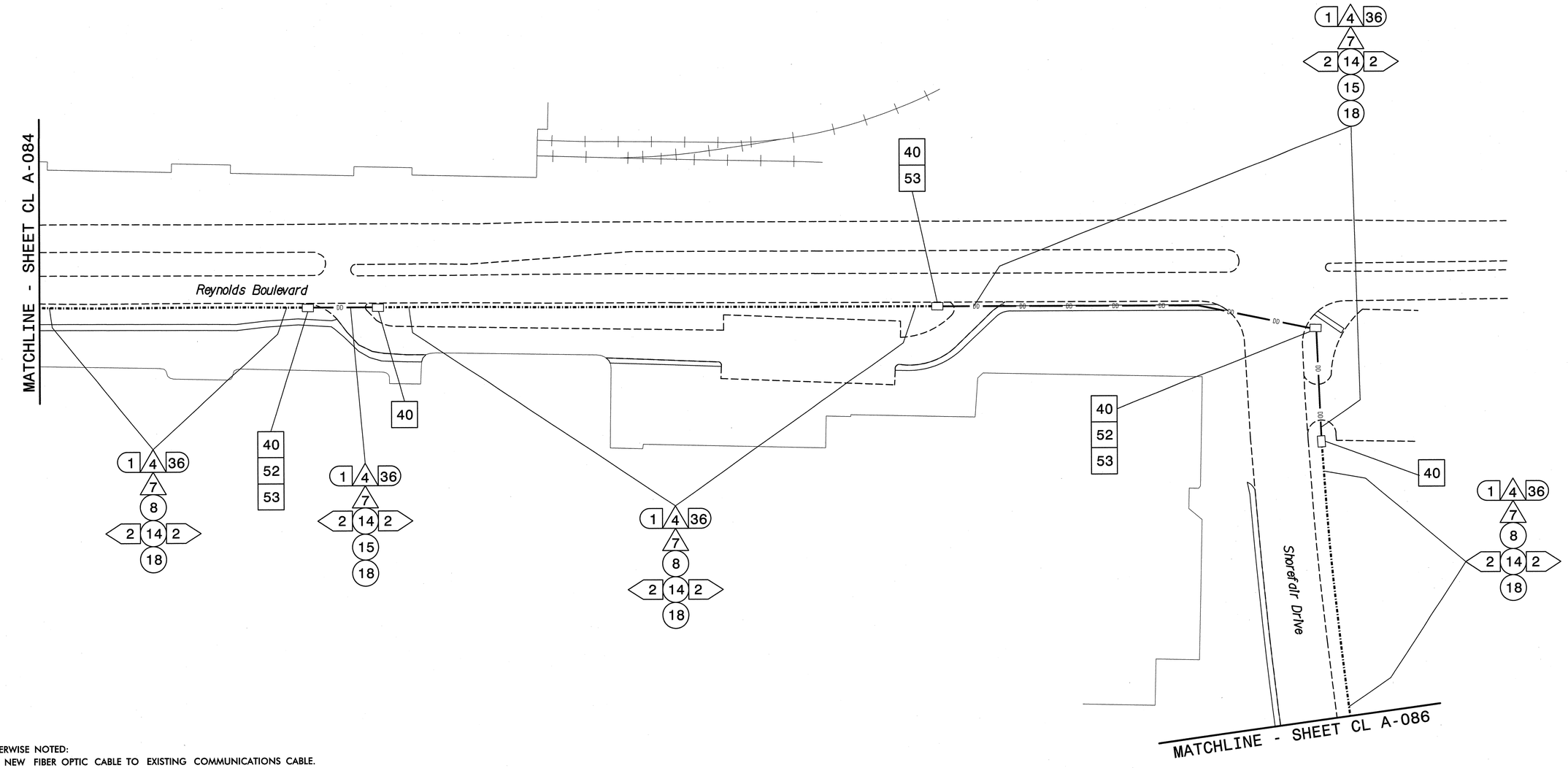
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-085



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ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
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Prepared for the Offices of:
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION — Transportation Mobility and Safety Division — Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE DATE 1-11-13
CADD Filename: CL A-085.dgn

03-JAN-2013 10:28
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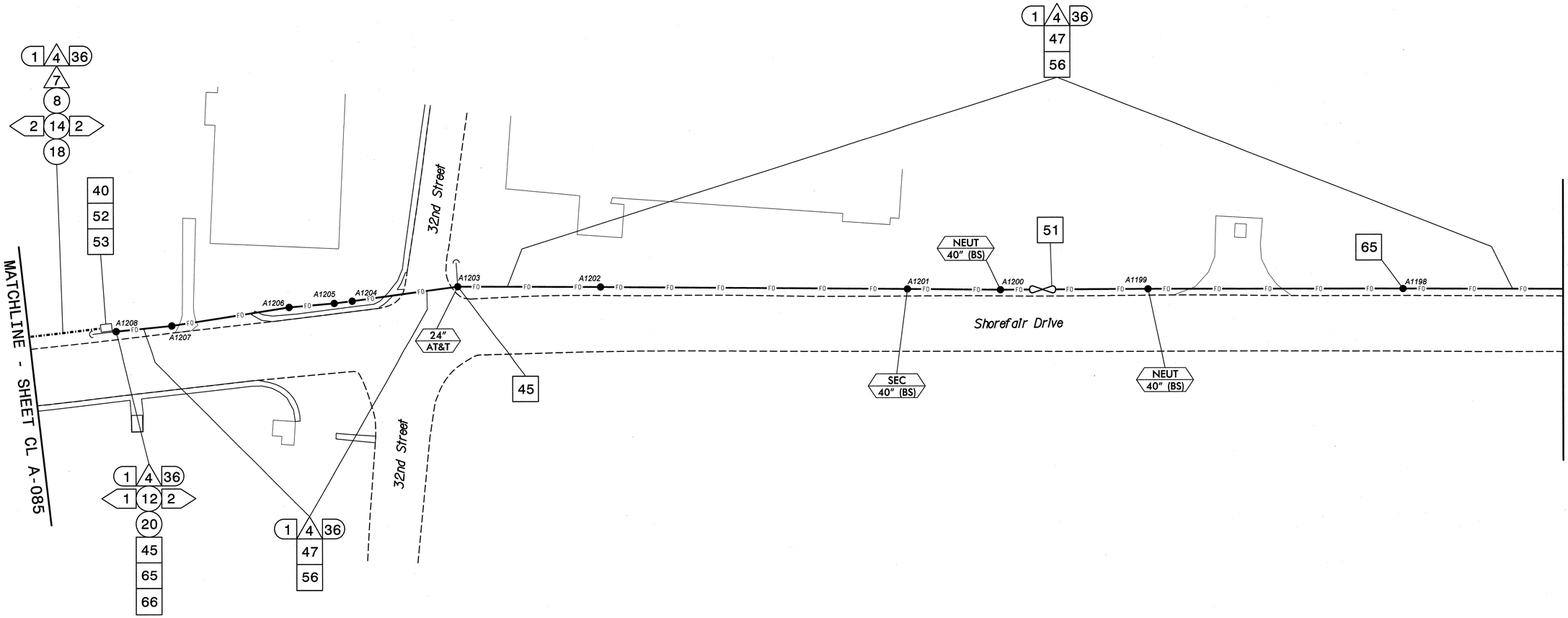
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-086



NOTES:
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BOLD CONSTRUCTION NOTES SHOW NEW "IS FIBER" WORK

1	INSTALL REA, PE – 22, SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE	13	INSTALL HEAT SHRINK TUBING RETROFIT KIT	25	INSTALL NEW RISER INTO POLE MOUNTED CABINET	37	INSTALL CCTV WOOD POLE
2	INSTALL REA, PE – 38, (FIGURE – 8) SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE	14	INSTALL HIGH DENSITY POLYETHYLENE CONDUIT	26	INSTALL DIGITAL VIDEO ENCODER	38	INSTALL STANDARD SIZE JUNCTION BOX
3	INSTALL CATEGORY 5E CABLE	15	DIRECTIONAL DRILL CONDUIT	27	INSTALL NEW ETHERNET EDGE SWITCH IN CABINET	39	INSTALL SPECIAL–SIZED JUNCTION BOX
4	INSTALL SMFO CABLE	16	BORE AND JACK CONDUIT	28	INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET	40	INSTALL OVER–SIZED JUNCTION BOX
5	INSTALL COAXIAL ANTENNA CABLE	17	INSTALL CABLE(S) IN EXISTING CONDUIT	29	INSTALL UNDERGROUND SPLICE ENCLOSURE	41	REMOVE EXISTING JUNCTION BOX
6	INSTALL FIBER–OPTIC DROP CABLE	18	INSTALL CABLE(S) IN NEW CONDUIT	30	INSTALL AERIAL SPLICE ENCLOSURE	42	INSTALL WOOD POLE
7	INSTALL TRACER WIRE	19	INSTALL CABLE(S) IN EXISTING RISER(S)	31	INSTALL SPLICE CABINET	43	REMOVE EXISTING WOOD POLE
8	INSTALL CONDUIT UNDERGROUND	20	INSTALL CABLE(S) IN NEW RISER(S)	32	MODIFY EXISTING SPLICE ENCLOSURE OR INTERCONNECT CENTER	44	INSTALL AERIAL GUY ASSEMBLY
9	INSTALL PVC CONDUIT	21	INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS	33	REMOVE EXISTING SPLICE /HUB /CCTV CABINET	45	INSTALL STANDARD GUY ASSEMBLY
10	INSTALL RIGID, GALVANIZED STEEL CONDUIT	22	INSTALL NEW CONDUIT INTO CABINET BASE (USE EX CONDUIT STUBOUTS WHEN AVAILABLE)	34	INSTALL CABINET FOUNDATION	46	INSTALL SIDEWALK GUY ASSEMBLY
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12	INSTALL RIGID, GALVANIZED STEEL RISER WITH HEAT SHRINK TUBING	24	INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET	36	INSTALL CCTV CAMERA ASSEMBLY	48	REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE

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50	INSTALL WIRELESS DSL	62	INSTALL 4.9GHZ ETHERNET INTEGRATED RADIO /OMNI–DIRECTIONAL ANTENNA	74		86	
51	INSTALL CABLE STORAGE GUIDE(S) [SNOW SHOE(S)] AND STORE 100 FEET OF EACH CABLE	63	INSTALL 900 MHZ ETHERNET RADIO	75		87	
52	INSTALL DELINEATOR MARKER	64	INTERCEPT AND REROUTE EXISTING CONDUITS	76		88	
53	STORE 50 FEET OF COMMUNICATIONS CABLE (EACH CABLE)	65	BOND MESSENGER TO POLE GROUND	77		89	
54	LASH CABLE(S) TO EXISTING SIGNAL/COMMUNICATIONS CABLE	66	BOND RISER TO POLE GROUND	78		90	
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56	LASH CABLE(S) TO NEW MESSENGER CABLE	68	BOND TRACER WIRE TO EQUIPMENT GROUND BUS	80		92	
57	MODIFY EXISTING ELECTRICAL SERVICE FOR CCTV/HUB	69	REMOVE EXISTING CCTV CAMERA ASSEMBLY	81		93	
58	INSTALL NEW ELECTRICAL SERVICE FOR CCTV/HUB	70	INSTALL 4.9GHZ FLAT–PANEL ANTENNA	82		94	
59	INSTALL NEW POLE MOUNTED CCTV CABINET	71	INSTALL HUB CABINET	83		95	
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Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 | Forsyth County | Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

SCALE: 0 50 — 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE — DATE 1-11-13
CADD Filename: CL A-086.dgn

03-JAN-2013 10:28
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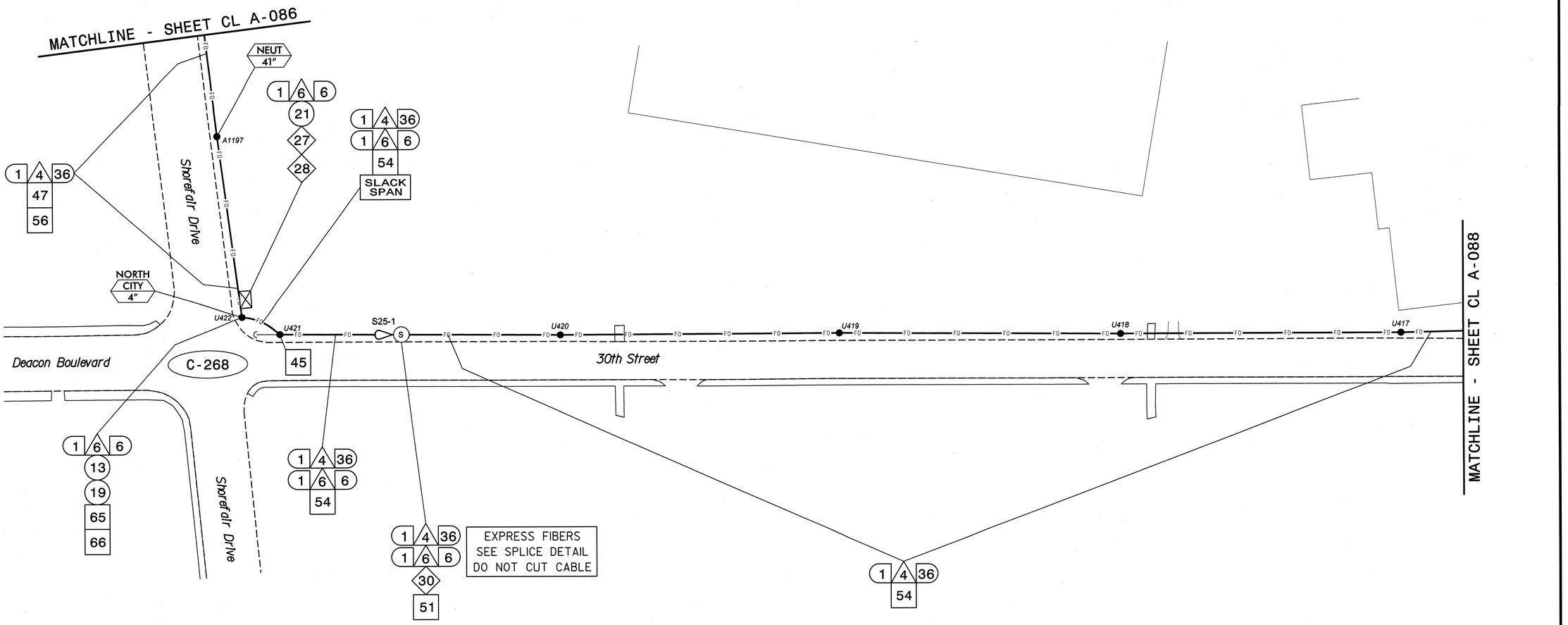
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-087



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ATKINS
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Prepared for the Offices of:
Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

SCALE 0 50 1"=50'

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE DATE 1-11-13

CADD Filename: CL A-087.dgn

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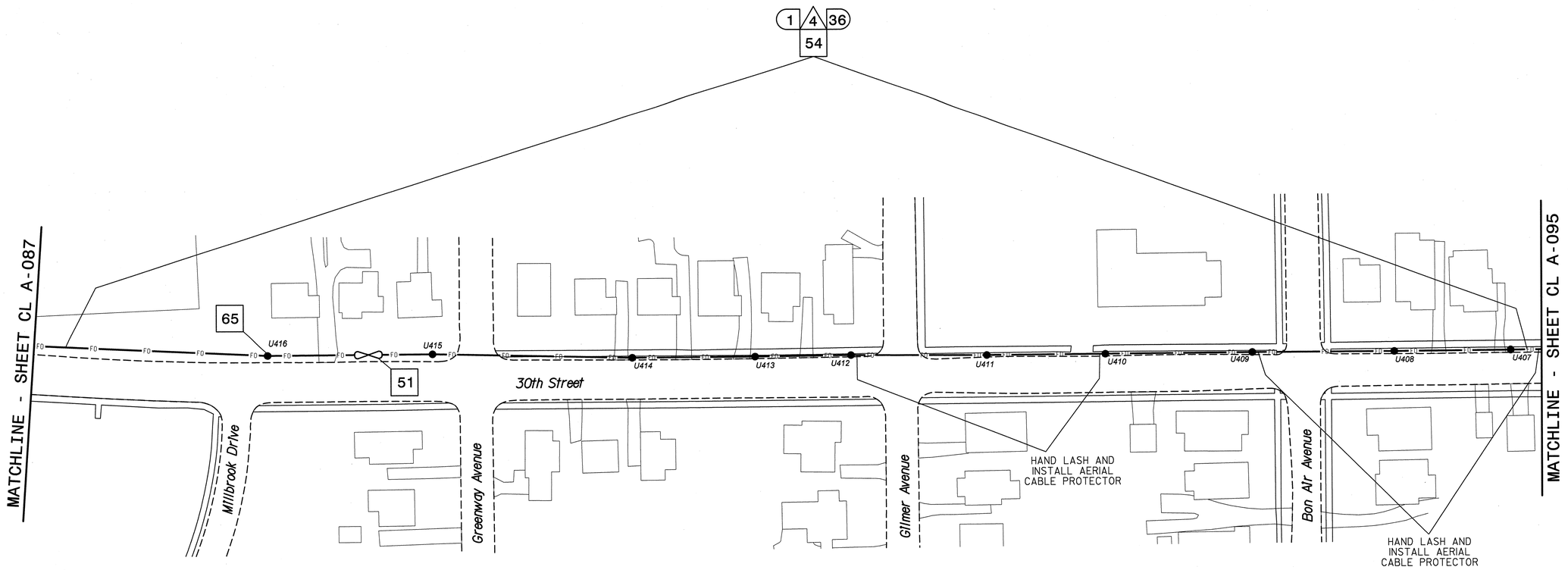
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-088



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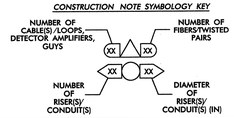

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Prepared for the Offices of:

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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems

750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022516 LISA M. MOON

SIGNATURE Lisa M. Moon 1-11-13 DATE

CADD Filename: CL A-088.dgn

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PROJECT REFERENCE NO.	SHEET NO.
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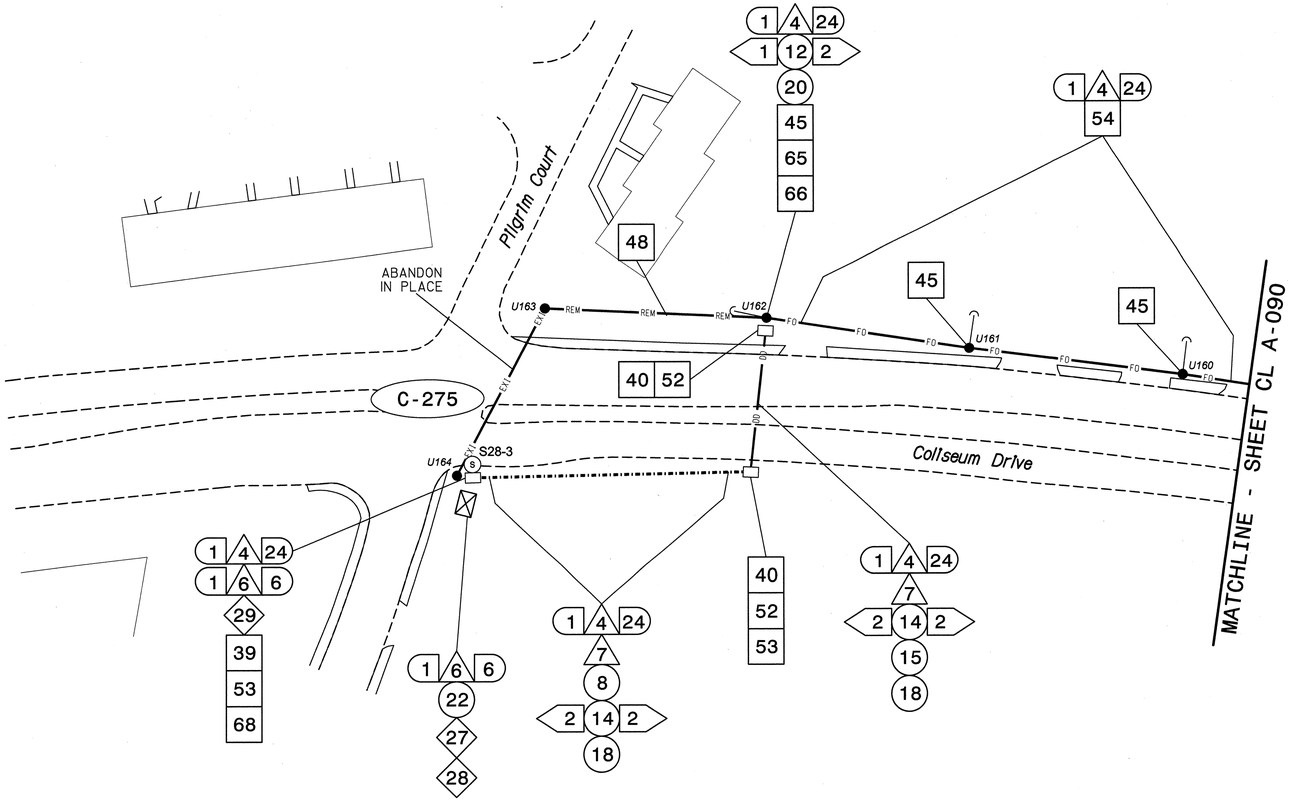

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Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE 1-11-13 DATE

CADD Filename: CL A-089.dgn

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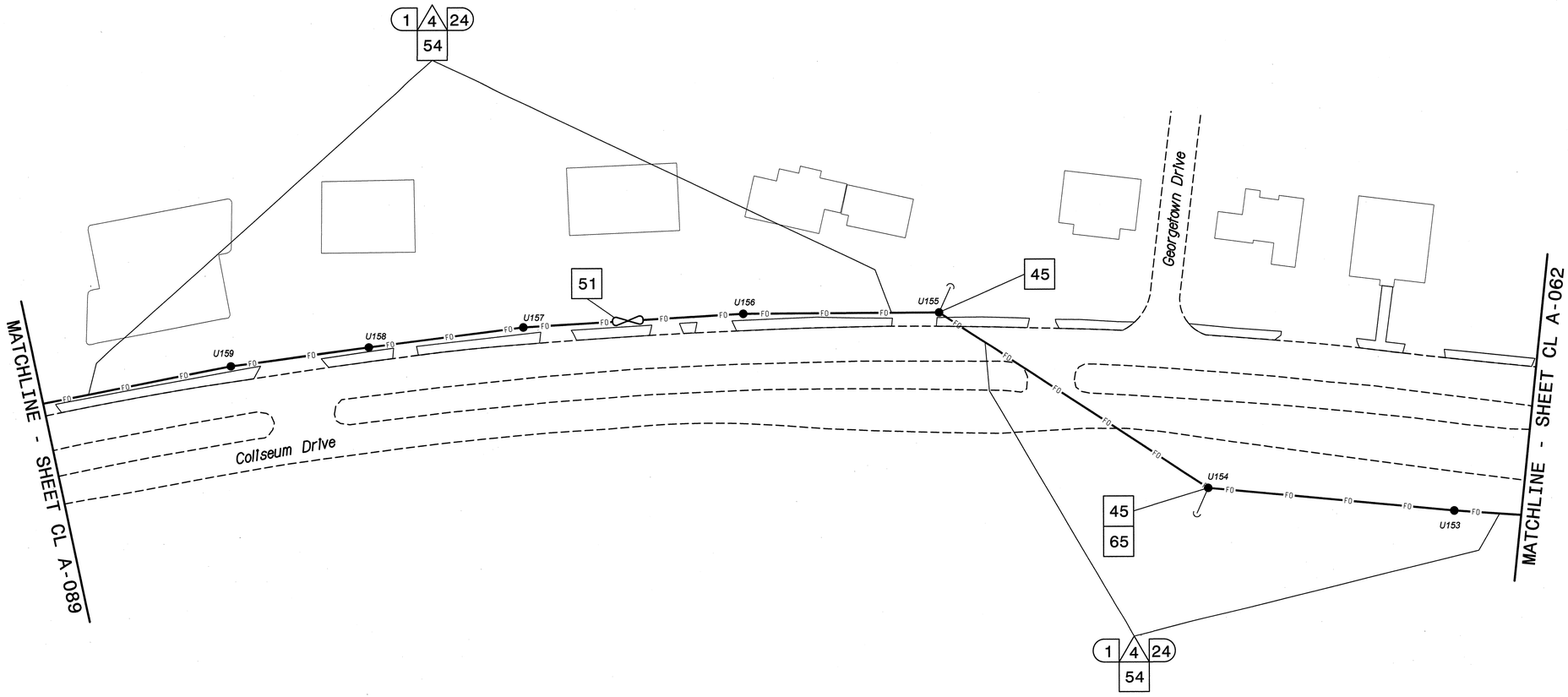
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-090



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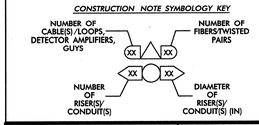

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Cable Layout Plans
Phase A

Division 09	Forsyth County		Winston-Salem
PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LW Moon

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

Lisa M. Moon 1-11-13
SIGNATURE DATE

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PROJECT REFERENCE NO.	SHEET NO.
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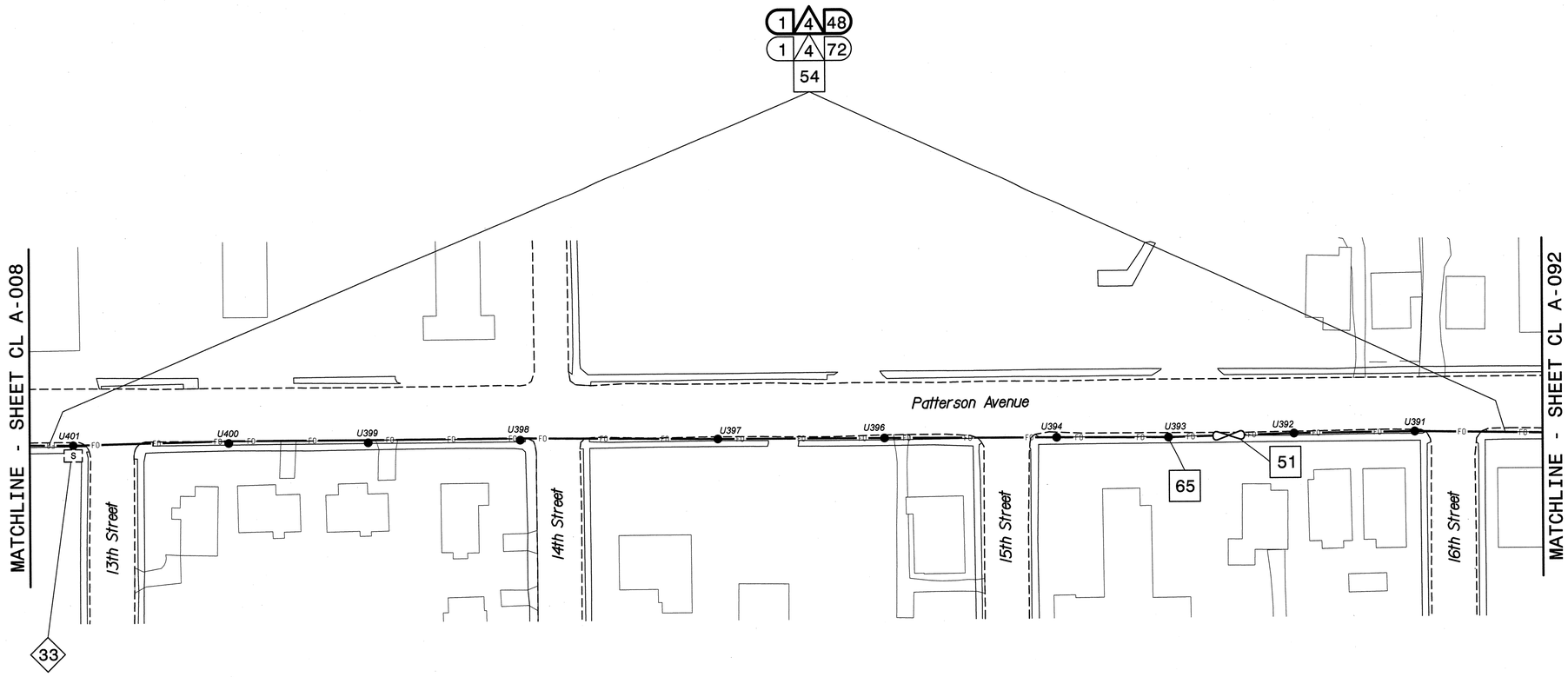

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17. INSTALL CABLE(S) IN EXISTING CONDUIT
18. INSTALL CABLE(S) IN NEW CONDUIT
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21. INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS
22. INSTALL NEW CONDUIT INTO CABINET BASE (USE EX CONDUIT STUBOUTS WHEN AVAILABLE)
23. INSTALL NEW RISER INTO CABINET BASE (USE EX CONDUIT STUBOUTS WHEN AVAILABLE)
24. INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET
25. INSTALL NEW RISER INTO POLE MOUNTED CABINET
26. INSTALL DIGITAL VIDEO ENCODER
27. INSTALL NEW ETHERNET EDGE SWITCH IN CABINET
28. INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET
29. INSTALL UNDERGROUND SPLICE ENCLOSURE
30. INSTALL AERIAL SPLICE ENCLOSURE
31. INSTALL SPLICE CABINET
32. MODIFY EXISTING SPLICE ENCLOSURE OR INTERCONNECT CENTER
33. REMOVE EXISTING SPLICE /HUB /CCTV CABINET
34. INSTALL CABINET FOUNDATION
35. REMOVE EXISTING CABINET FOUNDATION
36. INSTALL CCTV CAMERA ASSEMBLY
37. INSTALL CCTV WOOD POLE
38. INSTALL STANDARD SIZE JUNCTION BOX
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47. INSTALL MESSENGER CABLE
48. REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE
49. REMOVE EXISTING COMMUNICATIONS CABLE
50. INSTALL WIRELESS DSL
51. INSTALL CABLE STORAGE GUIDE(S) [SNOW SHOE(S)] AND STORE 100 FEET OF EACH CABLE
52. INSTALL DELINEATOR MARKER
53. STORE 50 FEET OF COMMUNICATIONS CABLE (EACH CABLE)
54. LASH CABLE(S) TO EXISTING SIGNAL/COMMUNICATIONS CABLE
55. LASH CABLE(S) TO EXISTING MESSENGER CABLE
56. LASH CABLE(S) TO NEW MESSENGER CABLE
57. MODIFY EXISTING ELECTRICAL SERVICE FOR CCTV/HUB
58. INSTALL NEW ELECTRICAL SERVICE FOR CCTV/HUB
59. INSTALL NEW POLE MOUNTED CCTV CABINET
60. INSTALL 4.9GHZ ETHERNET INTEGRATED RADIO /FLAT-PANEL ANTENNA
61. INSTALL UNI-DIRECTIONAL ANTENNA
62. INSTALL 4.9GHZ ETHERNET INTEGRATED RADIO /OMNI-DIRECTIONAL ANTENNA
63. INSTALL 900 MHZ ETHERNET RADIO
64. INTERCEPT AND REROUTE EXISTING CONDUITS
65. BOND MESSENGER TO POLE GROUND
66. BOND RISER TO POLE GROUND
67. BOND TRACER WIRE TO POLE GROUND
68. BOND TRACER WIRE TO EQUIPMENT GROUND BUS
69. REMOVE EXISTING CCTV CAMERA ASSEMBLY
70. INSTALL 4.9GHZ FLAT-PANEL ANTENNA
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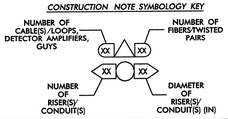
ATTACHMENT POINT:

XXX DISTANCE ABOVE (IN) REFERENCE POINT
YYY REFERENCE POINT DISTANCE BELOW (IN)

CONSTRUCTION NOTE SYMBOLOGY KEY



ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
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(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION — Integrated Mobility and Safety Initiative — Intelligent Transportation Systems

750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

Lisa M Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-091.dgn

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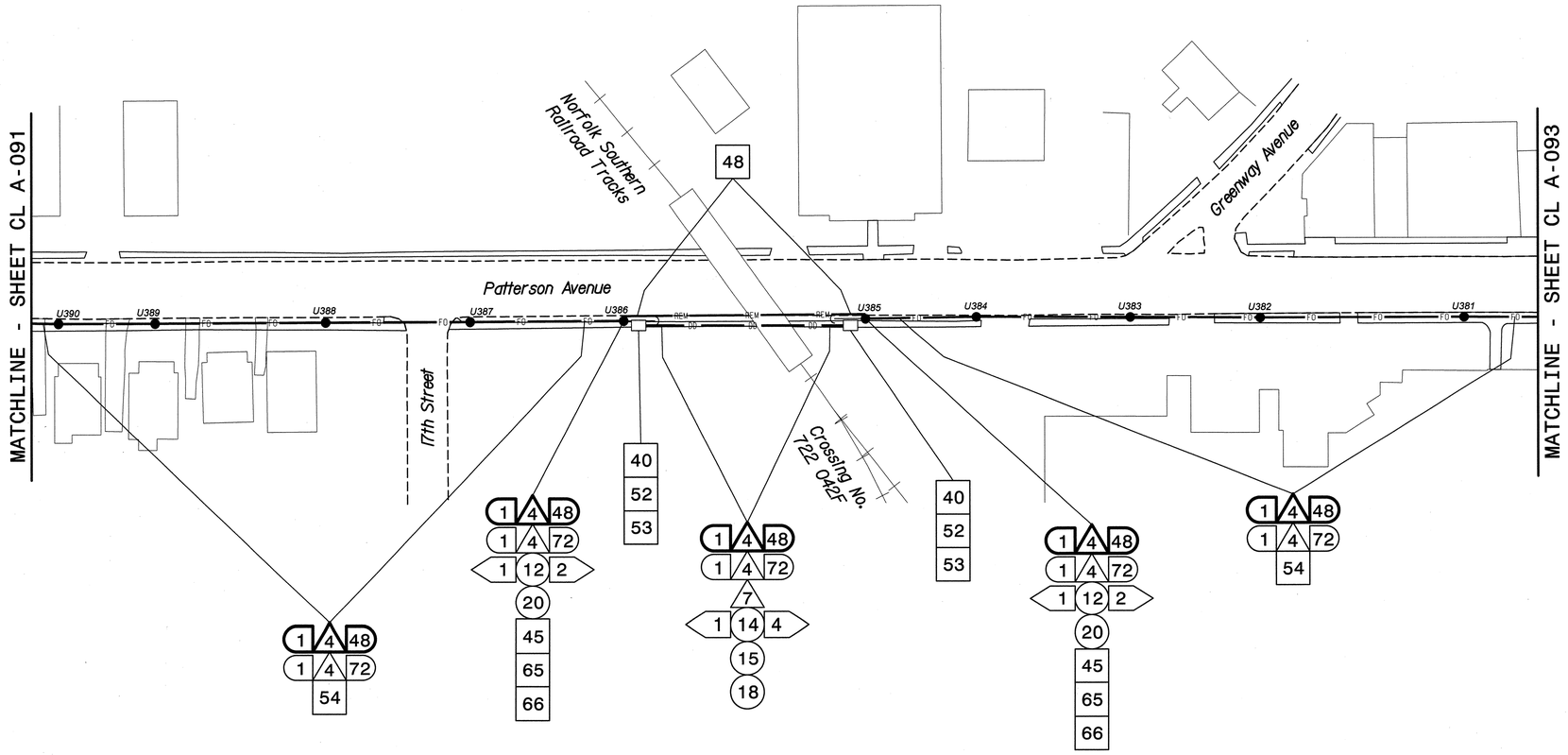
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-092



NOTES:
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BOLD CONSTRUCTION NOTES SHOW NEW "IS FIBER" WORK

1	INSTALL REA, PE – 22, SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE	13	INSTALL HEAT SHRINK TUBING RETROFIT KIT	25	INSTALL NEW RISER INTO POLE MOUNTED CABINET	37	INSTALL CCTV WOOD POLE	49	REMOVE EXISTING COMMUNICATIONS CABLE	61	INSTALL UNI-DIRECTIONAL ANTENNA
2	INSTALL REA, PE – 38, (FIGURE – 8) SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE	14	INSTALL HIGH DENSITY POLYETHYLENE CONDUIT	26	INSTALL DIGITAL VIDEO ENCODER	38	INSTALL STANDARD SIZE JUNCTION BOX	50	INSTALL WIRELESS DSL	62	INSTALL 4.9GHZ ETHERNET INTEGRATED RADIO /OMNI-DIRECTIONAL ANTENNA
3	INSTALL CATEGORY 5E CABLE	15	DIRECTIONAL DRILL CONDUIT	27	INSTALL NEW ETHERNET EDGE SWITCH IN CABINET	39	INSTALL SPECIAL-SIZED JUNCTION BOX	51	INSTALL CABLE STORAGE GUIDE(S) [SNOW SHOE(S)] AND STORE 100 FEET OF EACH CABLE	63	INSTALL 900 MHZ ETHERNET RADIO
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6	INSTALL FIBER-OPTIC DROP CABLE	18	INSTALL CABLE(S) IN NEW CONDUIT	30	INSTALL AERIAL SPLICE ENCLOSURE	42	INSTALL WOOD POLE	54	LASH CABLE(S) TO EXISTING SIGNAL/COMMUNICATIONS CABLE	66	BOND RISER TO POLE GROUND
7	INSTALL TRACER WIRE	19	INSTALL CABLE(S) IN EXISTING RISER(S)	31	INSTALL SPLICE CABINET	43	REMOVE EXISTING WOOD POLE	55	LASH CABLE(S) TO EXISTING MESSENGER CABLE	67	BOND TRACER WIRE TO POLE GROUND
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9	INSTALL PVC CONDUIT	21	INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS	33	REMOVE EXISTING SPLICE /HUB /CCTV CABINET	45	INSTALL STANDARD GUY ASSEMBLY	57	MODIFY EXISTING ELECTRICAL SERVICE FOR CCTV/HUB	69	REMOVE EXISTING CCTV CAMERA ASSEMBLY
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CONSTRUCTION NOTE SYMBOLOGY KEY
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NUMBER OF FIBERS/TWISTED PAIRS
NUMBER OF RISER(S)/ CONDUIT(S)
DIAMETER OF RISER(S)/ CONDUIT(S) (IN)

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Prepared for the Offices of:
Traffic Engineering Stability thru Safety Division
NCDEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
Lisa M. Moon 1-11-13
SIGNATURE DATE
CADD Filename: CL A-092.dgn

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PROJECT REFERENCE NO.	SHEET NO.
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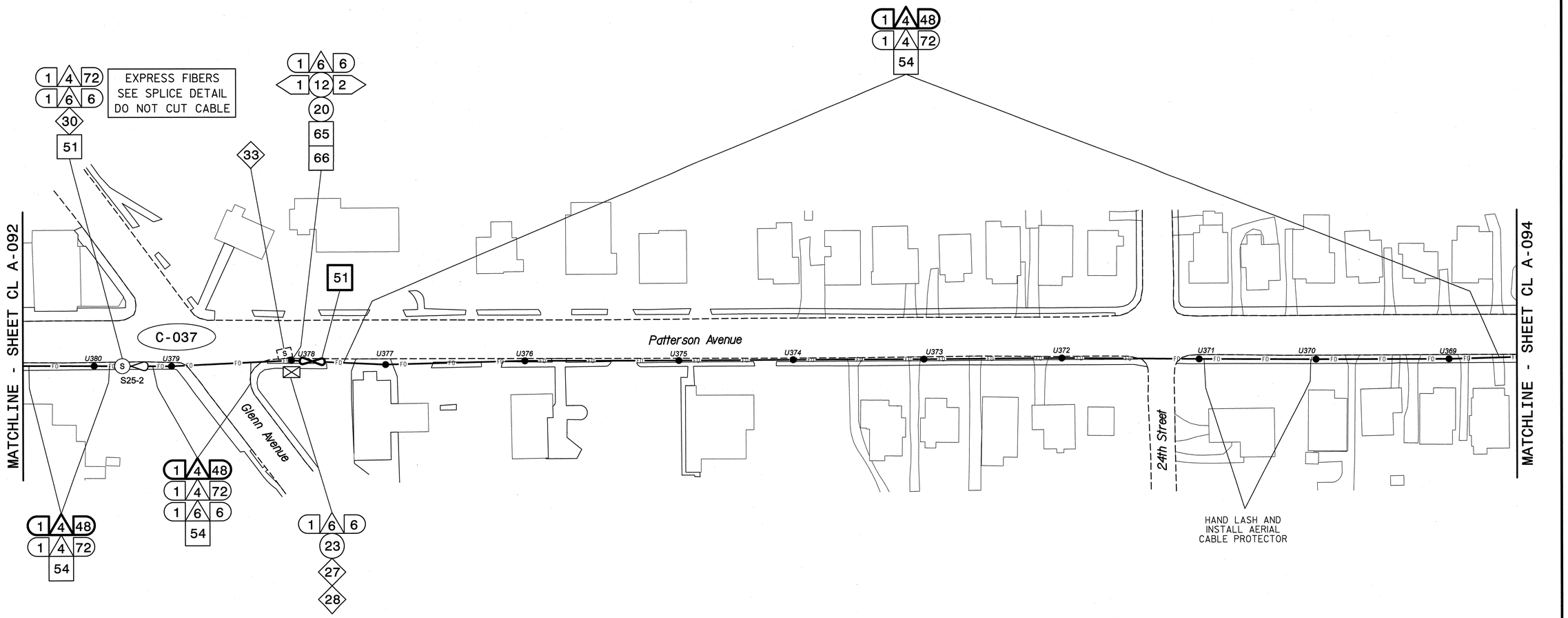

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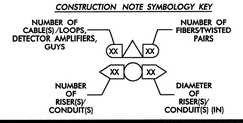

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Prepared for the Offices of:
Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

SIGNATURE DATE 1-11-13

CADD Filename: CL A-093.dgn

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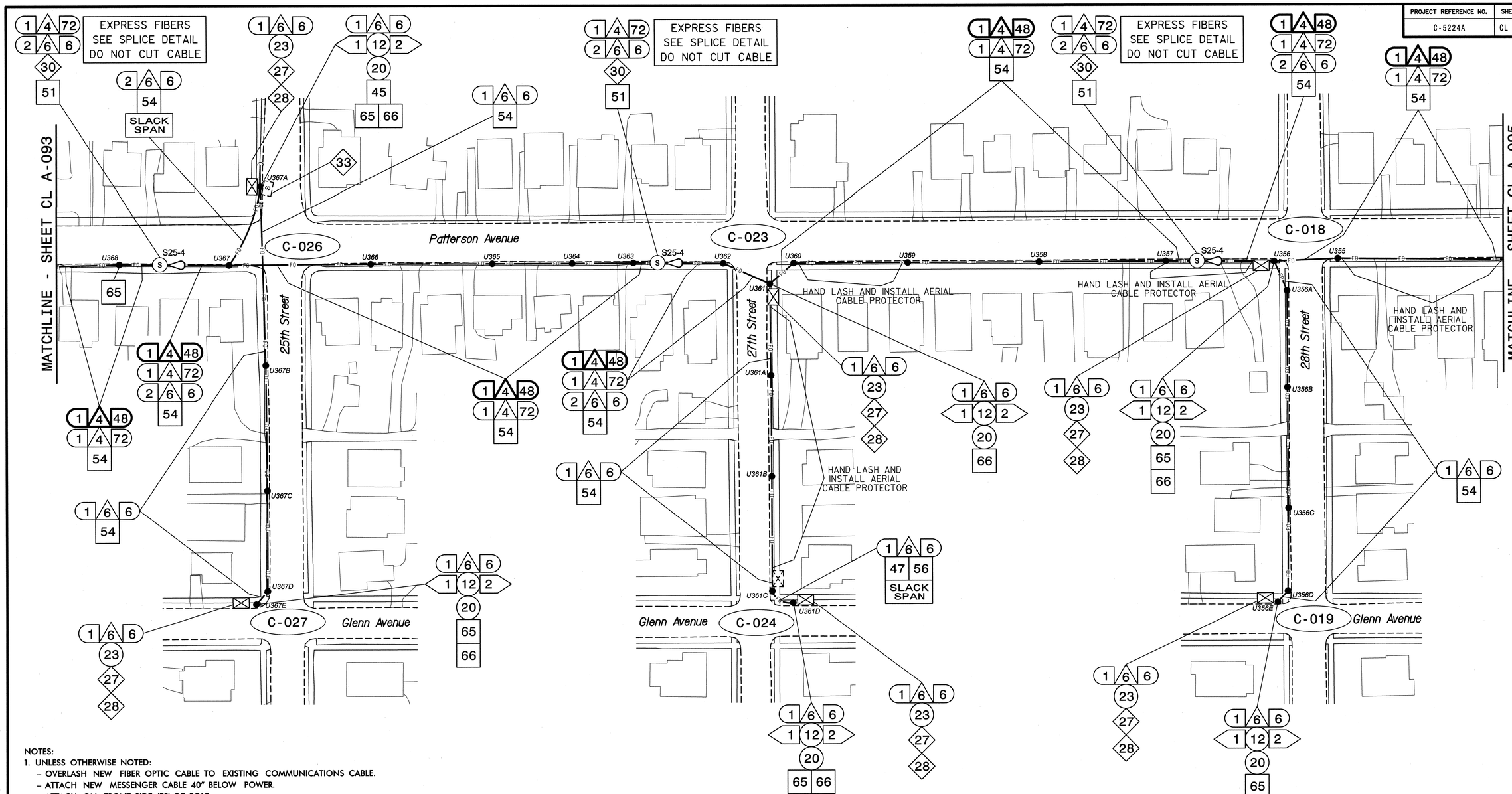
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-094



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Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE: January 2013 REVIEWED BY: MB Toth
PREPARED BY: BKS/AJD REVIEWED BY: LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
Lisa M. Moon 1-11-13
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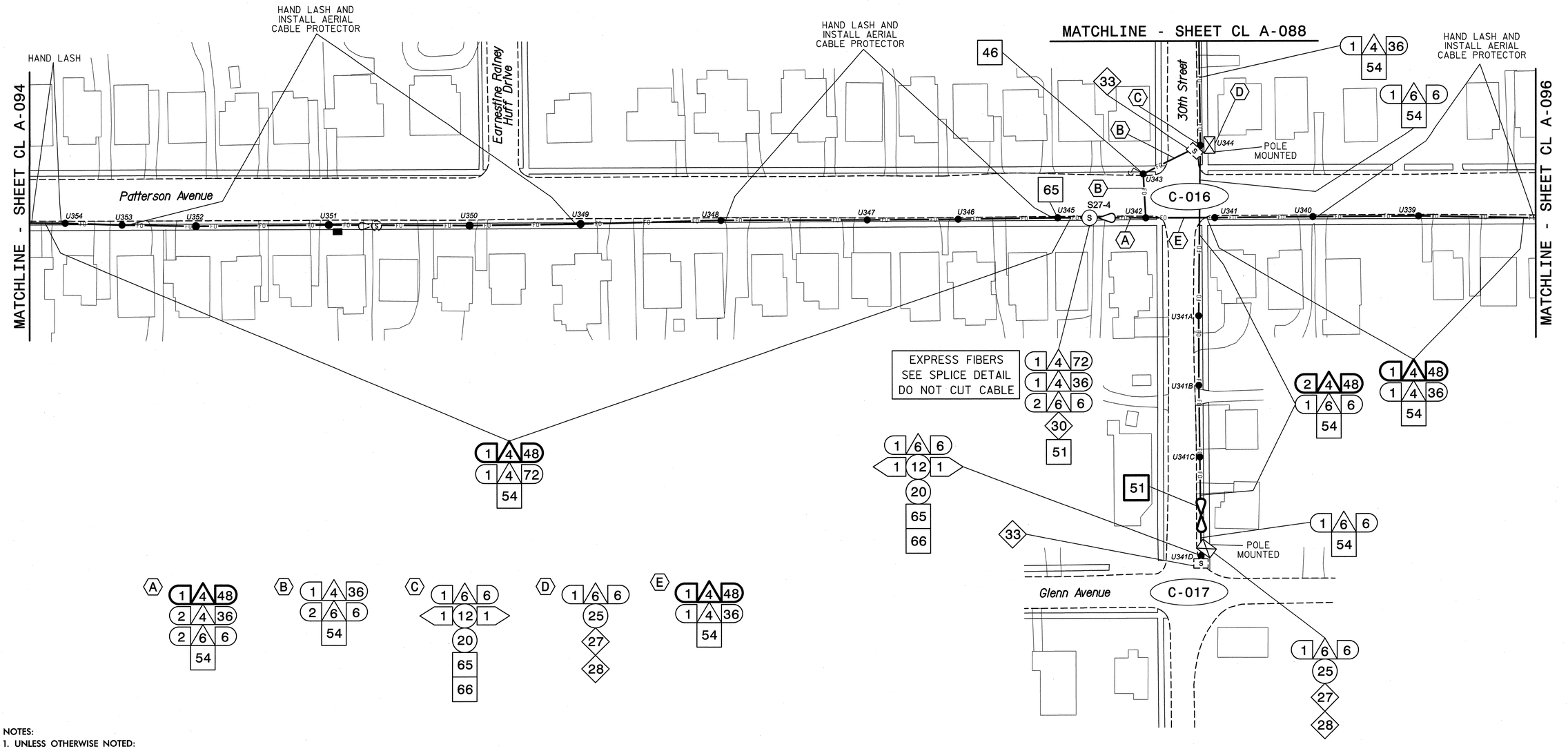

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32. MODIFY EXISTING SPLICE ENCLOSURE OR INTERCONNECT CENTER
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51. INSTALL CABLE STORAGE GUIDE(S) [SNOW SHOE(S)] AND STORE 100 FEET OF EACH CABLE
52. INSTALL DELINEATOR MARKER
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54. LASH CABLE(S) TO EXISTING SIGNAL/COMMUNICATIONS CABLE
55. LASH CABLE(S) TO EXISTING MESSENGER CABLE
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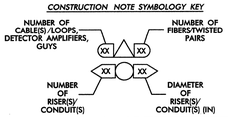
CONSTRUCTION NOTE SYMBOLOGY KEY



ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:

Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems

750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022516 LISA M. MOON

Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-095.dgn

03-JAN-2013 10:32
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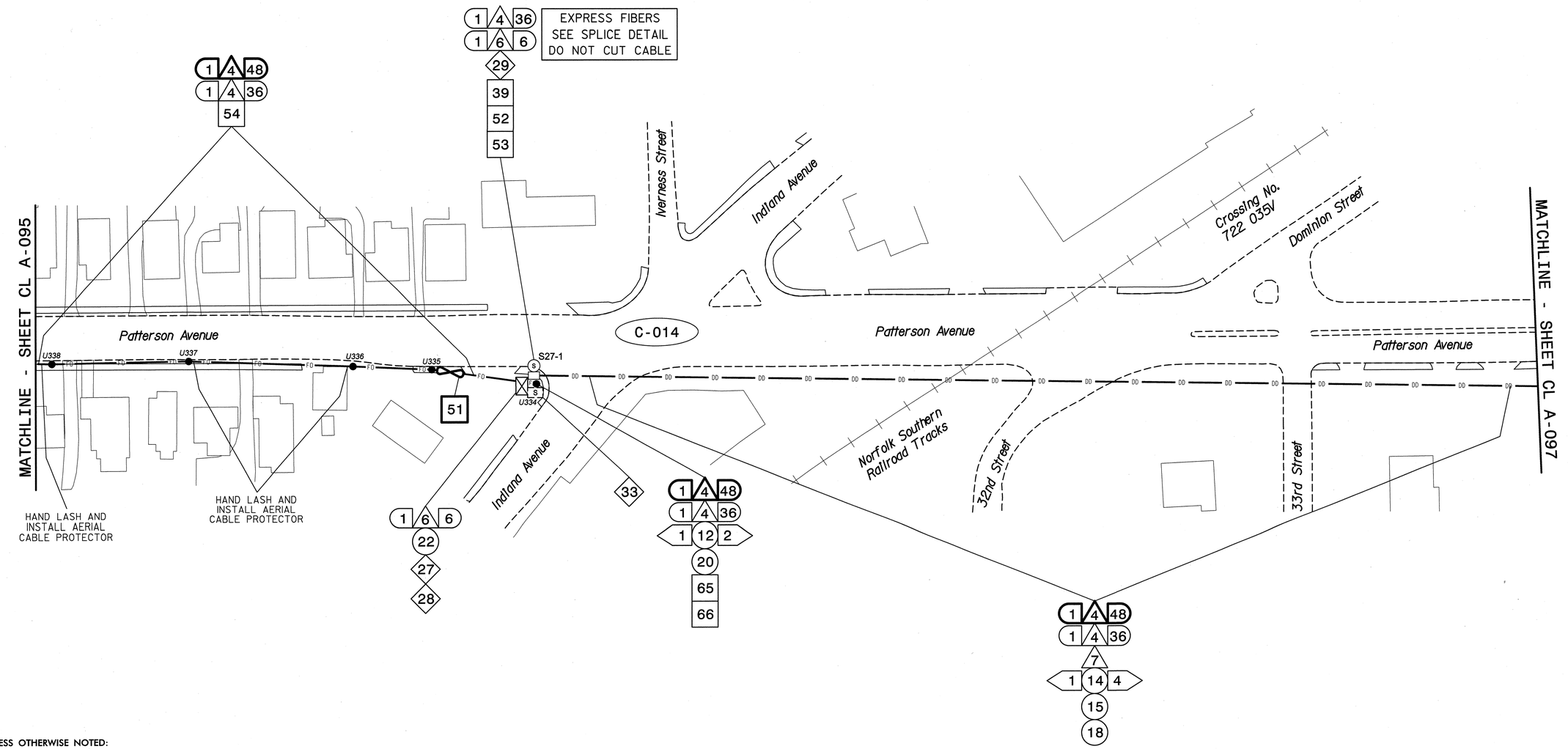
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-096



NOTES:
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2. SEAL ALL CONDUIT ENDS WITH DUCT AND CONDUIT SEALER, AT ALL JUNCTION BOX/CABINET ENTRANCES.

BOLD CONSTRUCTION NOTES SHOW NEW "IS FIBER" WORK

1	INSTALL REA, PE – 22, SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE	13	INSTALL HEAT SHRINK TUBING RETROFIT KIT	25	INSTALL NEW RISER INTO POLE MOUNTED CABINET	37	INSTALL CCTV WOOD POLE	49	REMOVE EXISTING COMMUNICATIONS CABLE	61	INSTALL UNI-DIRECTIONAL ANTENNA
2	INSTALL REA, PE – 38, (FIGURE – 8) SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE	14	INSTALL HIGH DENSITY POLYETHYLENE CONDUIT	26	INSTALL DIGITAL VIDEO ENCODER	38	INSTALL STANDARD SIZE JUNCTION BOX	50	INSTALL WIRELESS DSL	62	INSTALL 4.9GHZ ETHERNET INTEGRATED RADIO /OMNI-DIRECTIONAL ANTENNA
3	INSTALL CATEGORY 5E CABLE	15	DIRECTIONAL DRILL CONDUIT	27	INSTALL NEW ETHERNET EDGE SWITCH IN CABINET	39	INSTALL SPECIAL-SIZED JUNCTION BOX	51	INSTALL CABLE STORAGE GUIDE(S) [SNOW SHOE(S)] AND STORE 100 FEET OF EACH CABLE	63	INSTALL 900 MHZ ETHERNET RADIO
4	INSTALL SMFO CABLE	16	BORE AND JACK CONDUIT	28	INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET	40	INSTALL OVER-SIZED JUNCTION BOX	52	INSTALL DELINEATOR MARKER	64	INTERCEPT AND REROUTE EXISTING CONDUITS
5	INSTALL COAXIAL ANTENNA CABLE	17	INSTALL CABLE(S) IN EXISTING CONDUIT	29	INSTALL UNDERGROUND SPLICE ENCLOSURE	41	REMOVE EXISTING JUNCTION BOX	53	STORE 50 FEET OF COMMUNICATIONS CABLE (EACH CABLE)	65	BOND MESSENGER TO POLE GROUND
6	INSTALL FIBER-OPTIC DROP CABLE	18	INSTALL CABLE(S) IN NEW CONDUIT	30	INSTALL AERIAL SPLICE ENCLOSURE	42	INSTALL WOOD POLE	54	LASH CABLE(S) TO EXISTING SIGNAL/COMMUNICATIONS CABLE	66	BOND RISER TO POLE GROUND
7	INSTALL TRACER WIRE	19	INSTALL CABLE(S) IN EXISTING RISER(S)	31	INSTALL SPLICE CABINET	43	REMOVE EXISTING WOOD POLE	55	LASH CABLE(S) TO EXISTING MESSENGER CABLE	67	BOND TRACER WIRE TO POLE GROUND
8	INSTALL CONDUIT UNDERGROUND	20	INSTALL CABLE(S) IN NEW RISER(S)	32	MODIFY EXISTING SPLICE ENCLOSURE OR INTERCONNECT CENTER	44	INSTALL AERIAL GUY ASSEMBLY	56	LASH CABLE(S) TO NEW MESSENGER CABLE	68	BOND TRACER WIRE TO EQUIPMENT GROUND BUS
9	INSTALL PVC CONDUIT	21	INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS	33	REMOVE EXISTING SPLICE /HUB /CCTV CABINET	45	INSTALL STANDARD GUY ASSEMBLY	57	MODIFY EXISTING ELECTRICAL SERVICE FOR CCTV/HUB	69	REMOVE EXISTING CCTV CAMERA ASSEMBLY
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11	INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD	23	INSTALL NEW RISER INTO CABINET BASE (USE EX CONDUIT STUBOUTS WHEN AVAILABLE)	35	REMOVE EXISTING CABINET FOUNDATION	47	INSTALL MESSENGER CABLE	59	INSTALL NEW POLE MOUNTED CCTV CABINET	71	INSTALL HUB CABINET
12	INSTALL RIGID, GALVANIZED STEEL RISER WITH HEAT SHRINK TUBING	24	INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET	36	INSTALL CCTV CAMERA ASSEMBLY	48	REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE	60	INSTALL 4.9GHZ ETHERNET INTEGRATED RADIO /FLAT-PANEL ANTENNA	72	INSTALL MANAGED ETHERNET SWITCH

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ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of: Transportation Mobility and Safety Division, North Carolina Department of Transportation, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE DATE 1-11-13
CADD Filename: CL A-096.dgn

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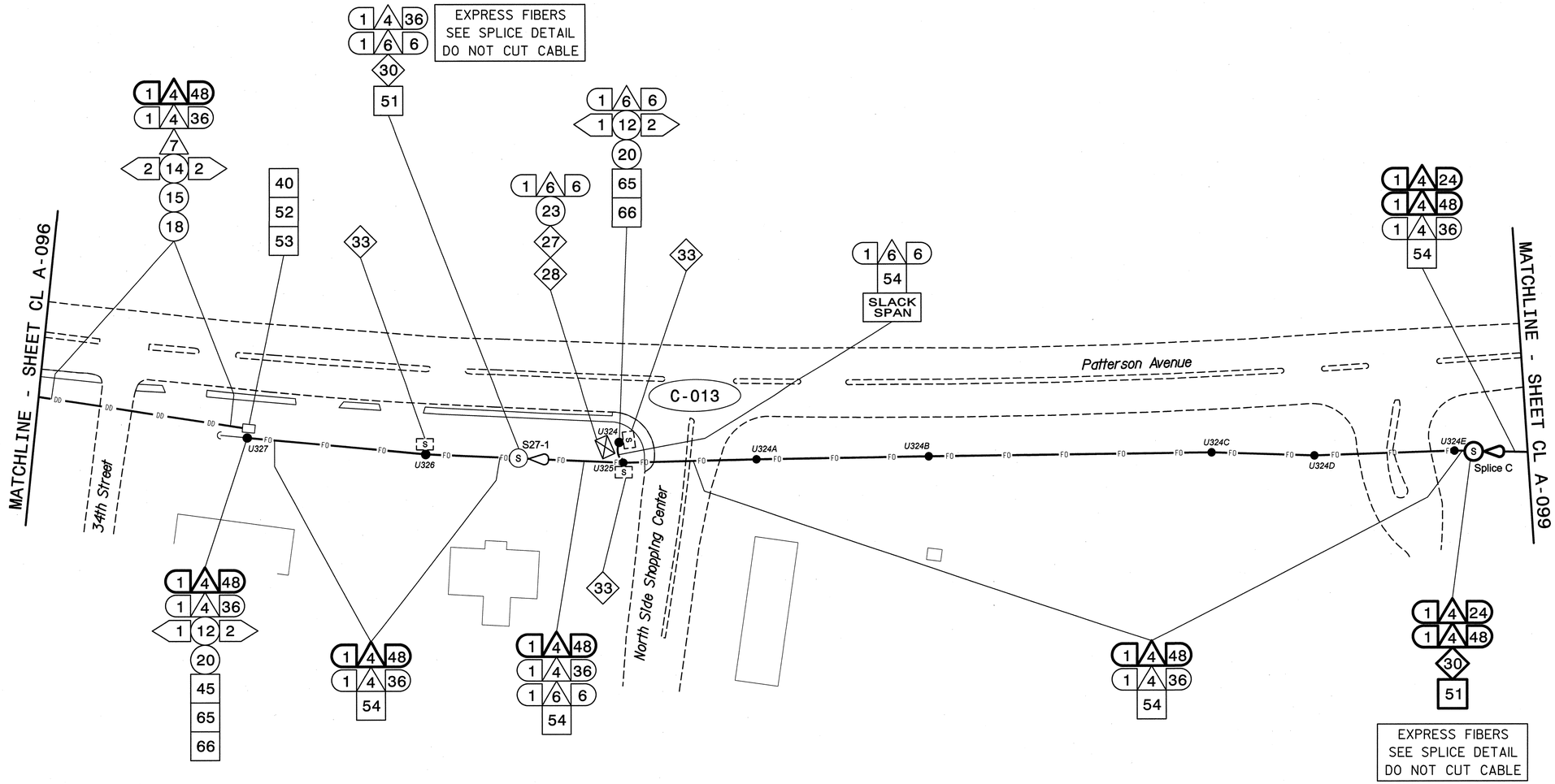
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-097



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Prepared for the Offices of:
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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-097.dgn

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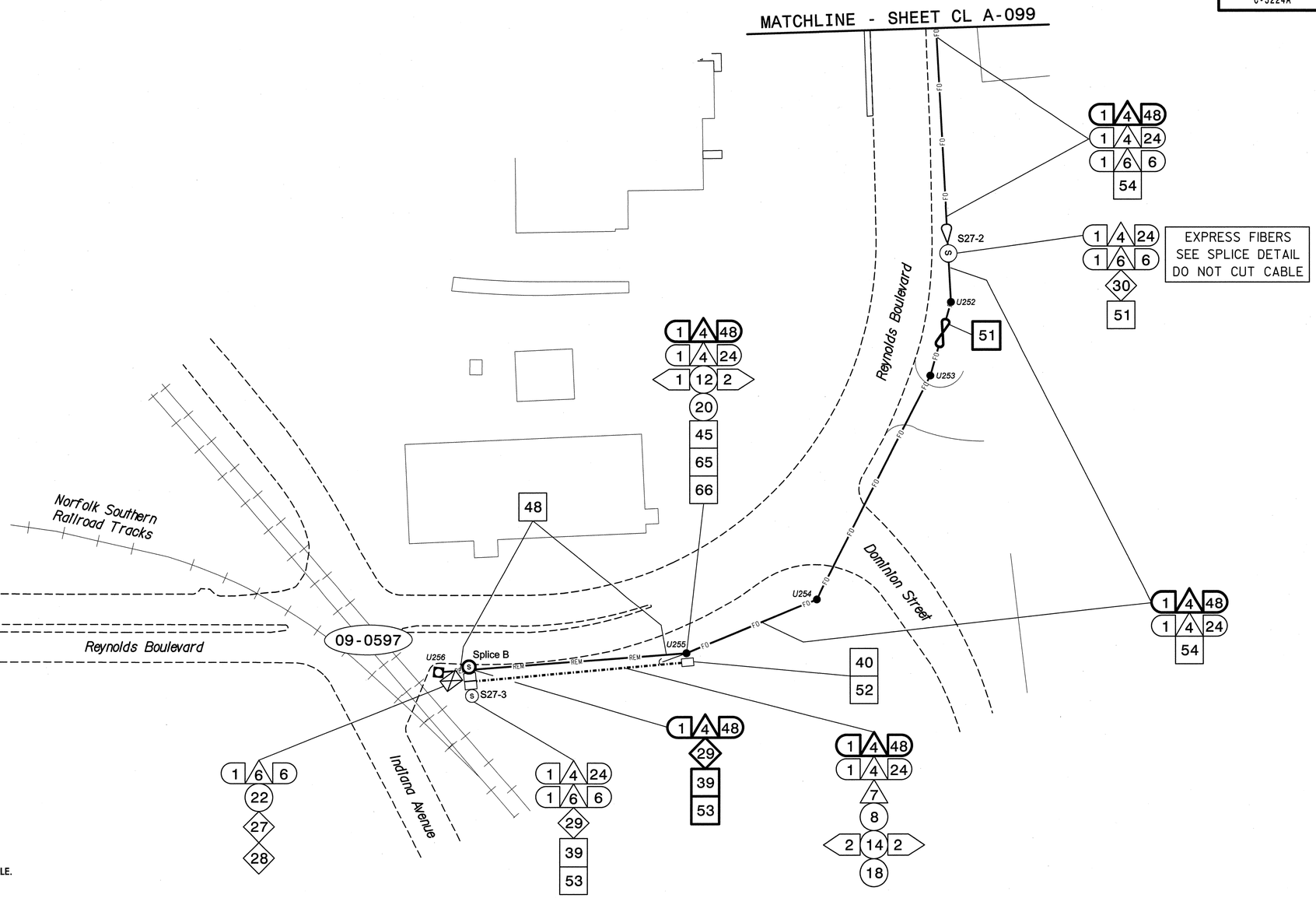
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-098



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Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
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REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE DATE 1-11-13
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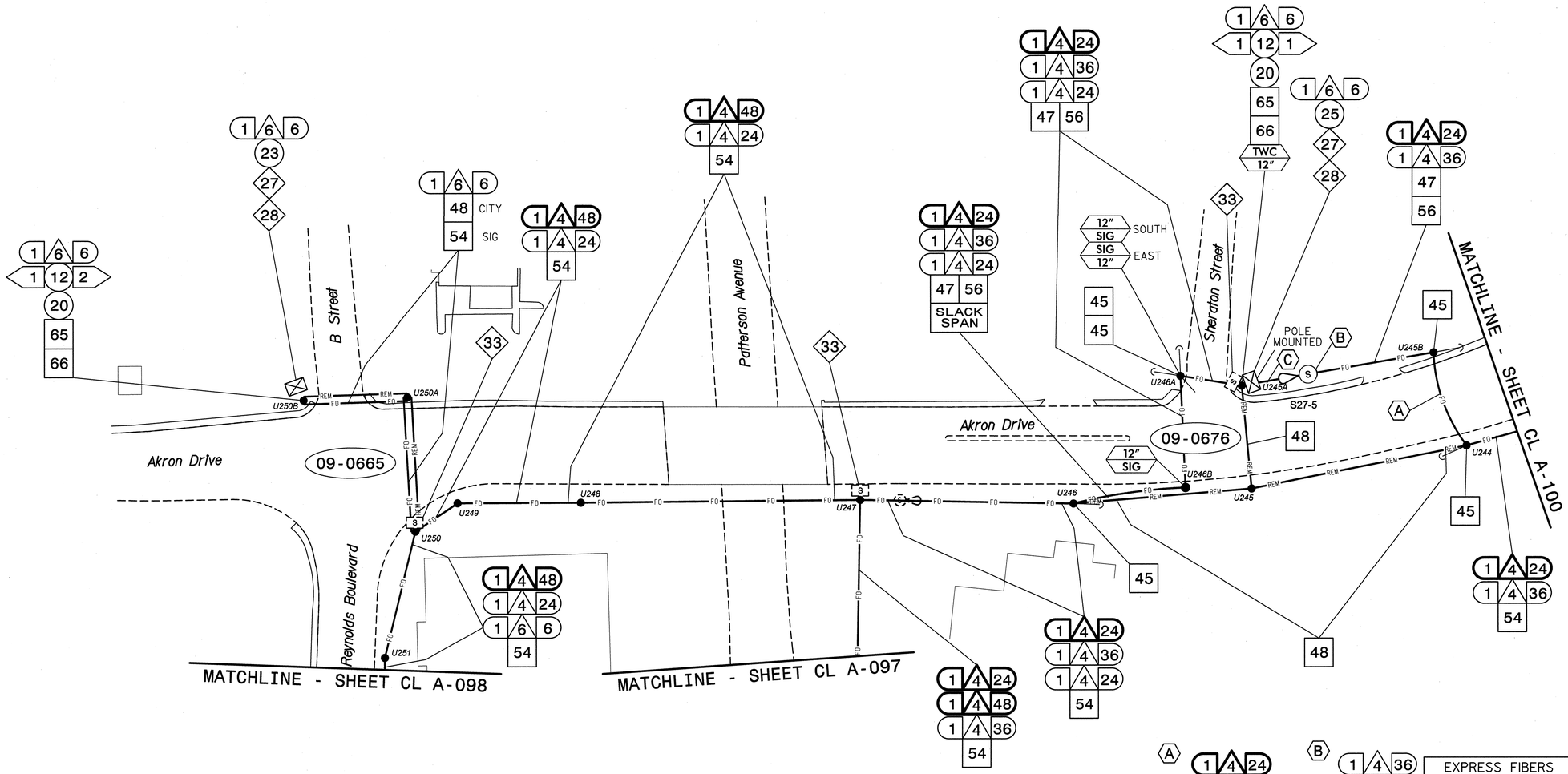

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11. INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
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24. INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET
25. INSTALL NEW RISER INTO POLE MOUNTED CABINET
26. INSTALL DIGITAL VIDEO ENCODER
27. INSTALL NEW ETHERNET EDGE SWITCH IN CABINET
28. INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET
29. INSTALL UNDERGROUND SPLICE ENCLOSURE
30. INSTALL AERIAL SPLICE ENCLOSURE
31. INSTALL SPLICE CABINET
32. MODIFY EXISTING SPLICE ENCLOSURE OR INTERCONNECT CENTER
33. REMOVE EXISTING SPLICE /HUB /CCTV CABINET
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49. REMOVE EXISTING COMMUNICATIONS CABLE
50. INSTALL WIRELESS DSL
51. INSTALL CABLE STORAGE GUIDE(S) [SNOW SHOE(S)] AND STORE 100 FEET OF EACH CABLE
52. INSTALL DELINEATOR MARKER
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63. INSTALL 900 MHZ ETHERNET RADIO
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65. BOND MESSENGER TO POLE GROUND
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YYY XXX REFERENCE POINT DISTANCE BELOW (IN)

CONSTRUCTION NOTE SYMBOLOGY KEY
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NUMBER OF FIBERS/TWISTED PAIRS
NUMBER OF RISER(S)/ CONDUIT(S)
DIAMETER OF RISER(S)/ CONDUIT(S) (IN)

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-099.dgn

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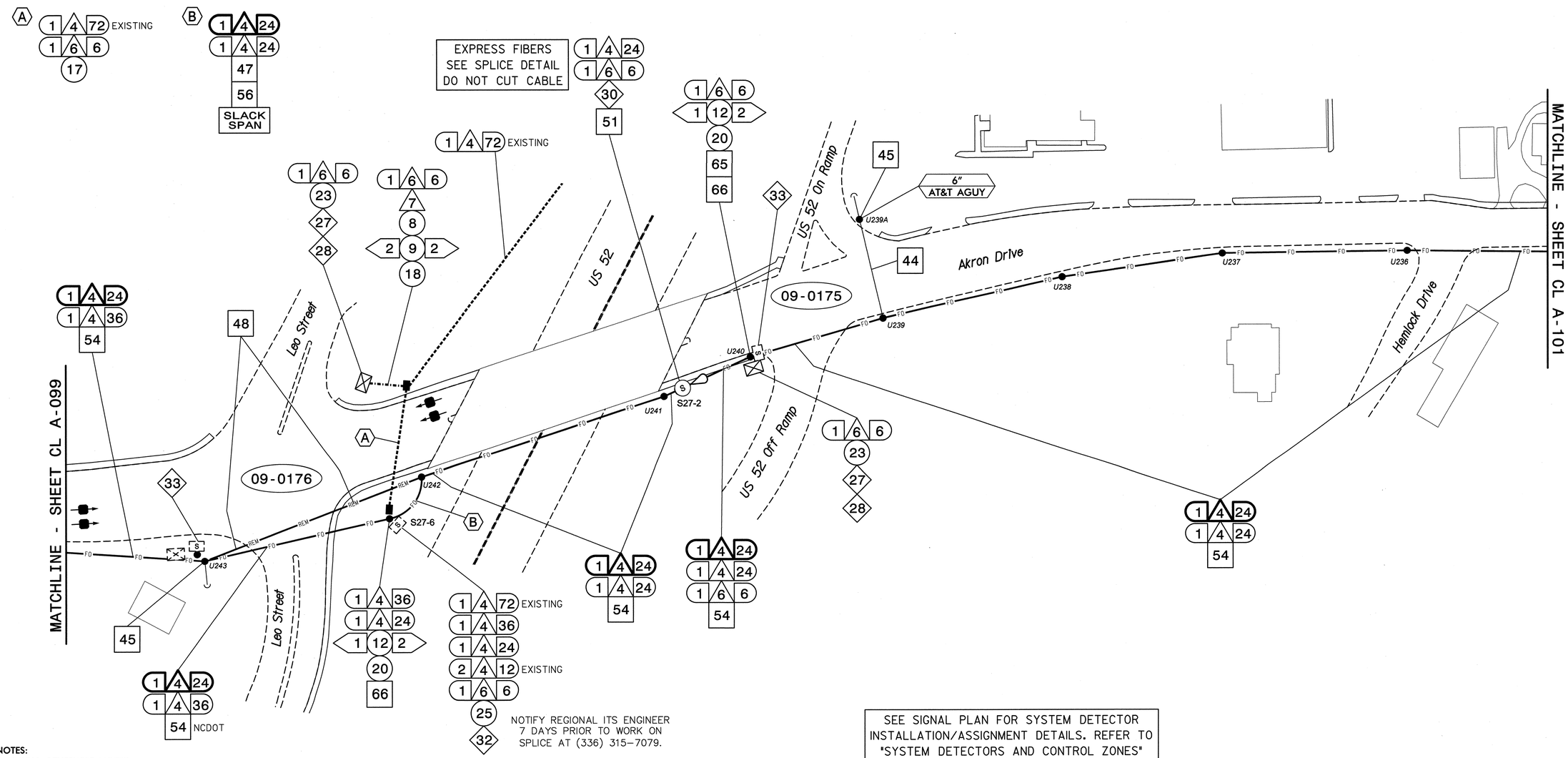
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-100



SEE SIGNAL PLAN FOR SYSTEM DETECTOR INSTALLATION/ASSIGNMENT DETAILS. REFER TO "SYSTEM DETECTORS AND CONTROL ZONES" SCHEMATIC FOR ADDITIONAL INFORMATION.

NOTES:

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Prepared for the Offices of:
Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022516 LISA M. MOON
SIGNATURE Lisa M. Moon 1-11-13 DATE

CADD Filename: CL A-100.dgn

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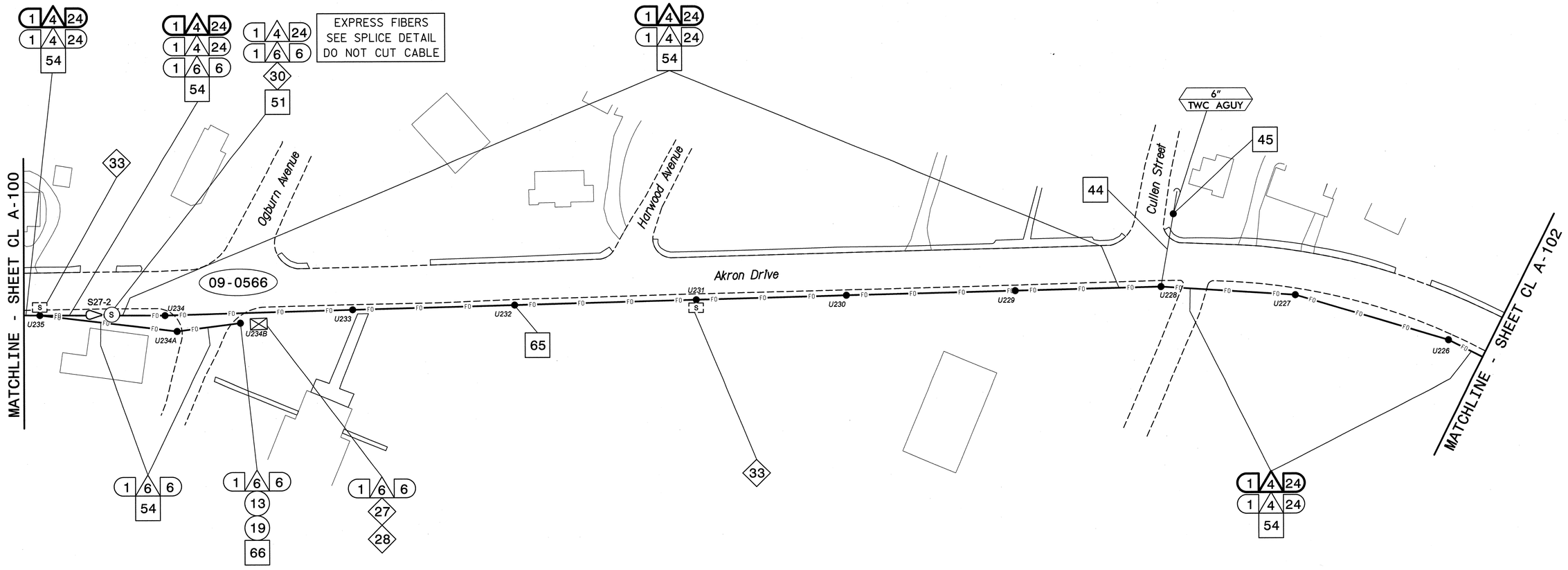
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-101



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1616 EAST MILLBROOK ROAD, SUITE 310
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Prepared for the Offices of:
Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE: January 2013 REVIEWED BY: MB Toth
PREPARED BY: BKS/AJD REVIEWED BY: LW Moon

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE DATE 1-11-13
CADD Filename: CL A-101.dgn

07-JAN-2013 17:30
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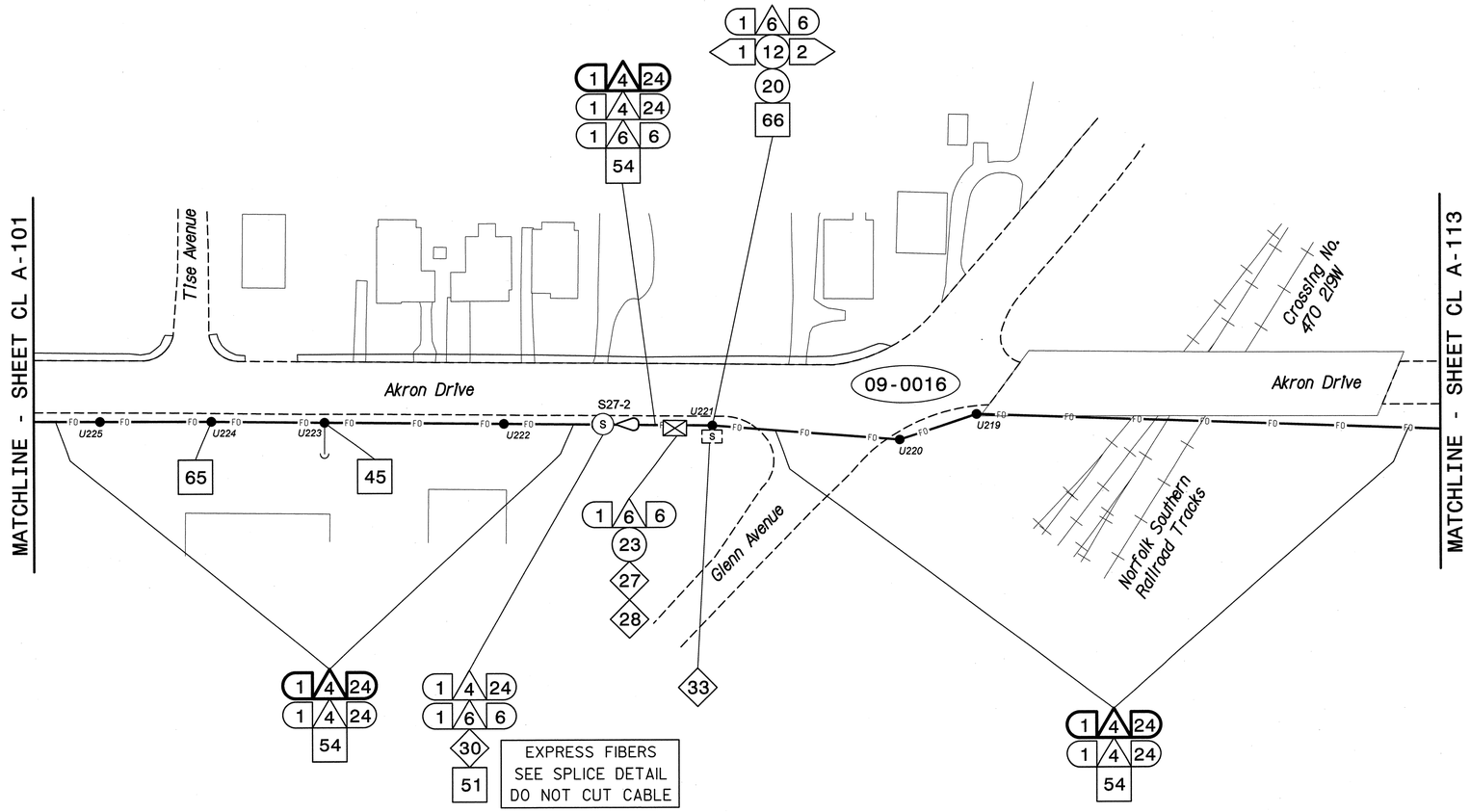
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-102



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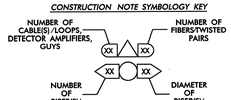

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NCDOT Integrated Mobility Division — Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE: January 2013 REVIEWED BY: MB Toth

PREPARED BY: BKS/AJD REVIEWED BY: LM Moon

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-102.dgn

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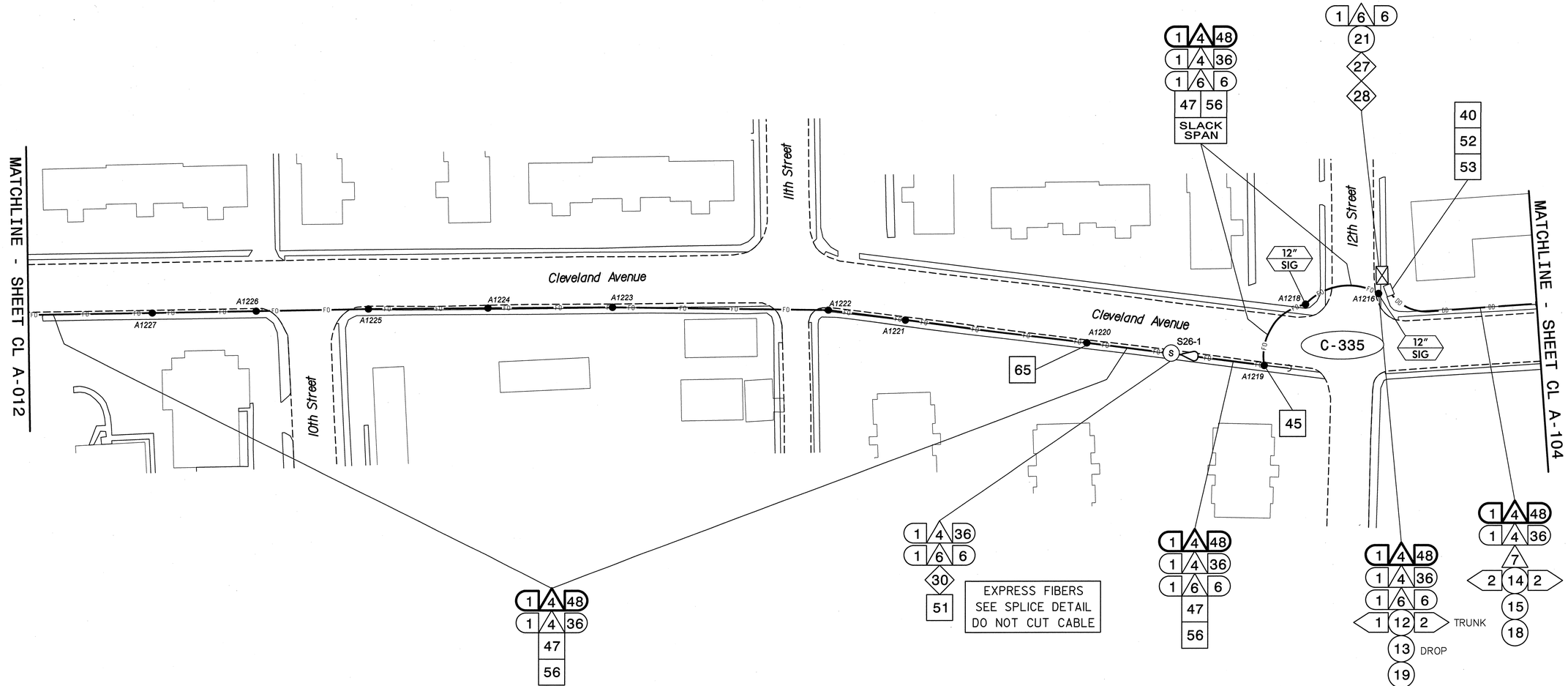
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-103



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1	INSTALL REA, PE – 22, SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE	13	INSTALL HEAT SHRINK TUBING RETROFIT KIT	25	INSTALL NEW RISER INTO POLE MOUNTED CABINET	37	INSTALL CCTV WOOD POLE
2	INSTALL REA, PE – 38, (FIGURE – 8) SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE	14	INSTALL HIGH DENSITY POLYETHYLENE CONDUIT	26	INSTALL DIGITAL VIDEO ENCODER	38	INSTALL STANDARD SIZE JUNCTION BOX
3	INSTALL CATEGORY 5E CABLE	15	DIRECTIONAL DRILL CONDUIT	27	INSTALL NEW ETHERNET EDGE SWITCH IN CABINET	39	INSTALL SPECIAL–SIZED JUNCTION BOX
4	INSTALL SMFO CABLE	16	BORE AND JACK CONDUIT	28	INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET	40	INSTALL OVER–SIZED JUNCTION BOX
5	INSTALL COAXIAL ANTENNA CABLE	17	INSTALL CABLE(S) IN EXISTING CONDUIT	29	INSTALL UNDERGROUND SPLICE ENCLOSURE	41	REMOVE EXISTING JUNCTION BOX
6	INSTALL FIBER–OPTIC DROP CABLE	18	INSTALL CABLE(S) IN NEW CONDUIT	30	INSTALL AERIAL SPLICE ENCLOSURE	42	INSTALL WOOD POLE
7	INSTALL TRACER WIRE	19	INSTALL CABLE(S) IN EXISTING RISER(S)	31	INSTALL SPLICE CABINET	43	REMOVE EXISTING WOOD POLE
8	INSTALL CONDUIT UNDERGROUND	20	INSTALL CABLE(S) IN NEW RISER(S)	32	MODIFY EXISTING SPLICE ENCLOSURE OR INTERCONNECT CENTER	44	INSTALL AERIAL GUY ASSEMBLY
9	INSTALL PVC CONDUIT	21	INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS	33	REMOVE EXISTING SPLICE /HUB /CCTV CABINET	45	INSTALL STANDARD GUY ASSEMBLY
10	INSTALL RIGID, GALVANIZED STEEL CONDUIT	22	INSTALL NEW CONDUIT INTO CABINET BASE (USE EX CONDUIT STUBOUTS WHEN AVAILABLE)	34	INSTALL CABINET FOUNDATION	46	INSTALL SIDEWALK GUY ASSEMBLY
11	INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD	23	INSTALL NEW RISER INTO CABINET BASE (USE EX CONDUIT STUBOUTS WHEN AVAILABLE)	35	REMOVE EXISTING CABINET FOUNDATION	47	INSTALL MESSENGER CABLE
12	INSTALL RIGID, GALVANIZED STEEL RISER WITH HEAT SHRINK TUBING	24	INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET	36	INSTALL CCTV CAMERA ASSEMBLY	48	REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE

49	REMOVE EXISTING COMMUNICATIONS CABLE	61	INSTALL UNI–DIRECTIONAL ANTENNA				
50	INSTALL WIRELESS DSL	62	INSTALL 4.9GHZ ETHERNET INTEGRATED RADIO /OMNI–DIRECTIONAL ANTENNA				
51	INSTALL CABLE STORAGE GUIDE(S) [SNOW SHOE(S)] AND STORE 100 FEET OF EACH CABLE	63	INSTALL 900 MHZ ETHERNET RADIO				
52	INSTALL DELINEATOR MARKER	64	INTERCEPT AND REROUTE EXISTING CONDUITS				
53	STORE 50 FEET OF COMMUNICATIONS CABLE (EACH CABLE)	65	BOND MESSENGER TO POLE GROUND				
54	LASH CABLE(S) TO EXISTING SIGNAL/COMMUNICATIONS CABLE	66	BOND RISER TO POLE GROUND				
55	LASH CABLE(S) TO EXISTING MESSENGER CABLE	67	BOND TRACER WIRE TO POLE GROUND				
56	LASH CABLE(S) TO NEW MESSENGER CABLE	68	BOND TRACER WIRE TO EQUIPMENT GROUND BUS				
57	MODIFY EXISTING ELECTRICAL SERVICE FOR CCTV/HUB	69	REMOVE EXISTING CCTV CAMERA ASSEMBLY				
58	INSTALL NEW ELECTRICAL SERVICE FOR CCTV/HUB	70	INSTALL 4.9GHZ FLAT–PANEL ANTENNA				
59	INSTALL NEW POLE MOUNTED CCTV CABINET	71	INSTALL HUB CABINET				
60	INSTALL 4.9GHZ ETHERNET INTEGRATED RADIO /FLAT–PANEL ANTENNA	72	INSTALL MANAGED ETHERNET SWITCH				

ATTACHMENT POINT:
XXX / YYY — DISTANCE ABOVE (IN) REFERENCE POINT
YYY / XXX — REFERENCE POINT DISTANCE BELOW (IN)

CONSTRUCTION NOTE SYMBOLOGY KEY
NUMBER OF CABLE(S)/LOOPS, DETECTOR AMPLIFIERS, GUYS — NUMBER OF FIBERS/TWISTED PAIRS
NUMBER OF RISER(S)/ CONDUIT(S) — DIAMETER OF RISER(S)/ CONDUIT(S) (IN)

ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE Lisa M. Moon 1-11-13 DATE
CADD Filename: CL A-103.dgn

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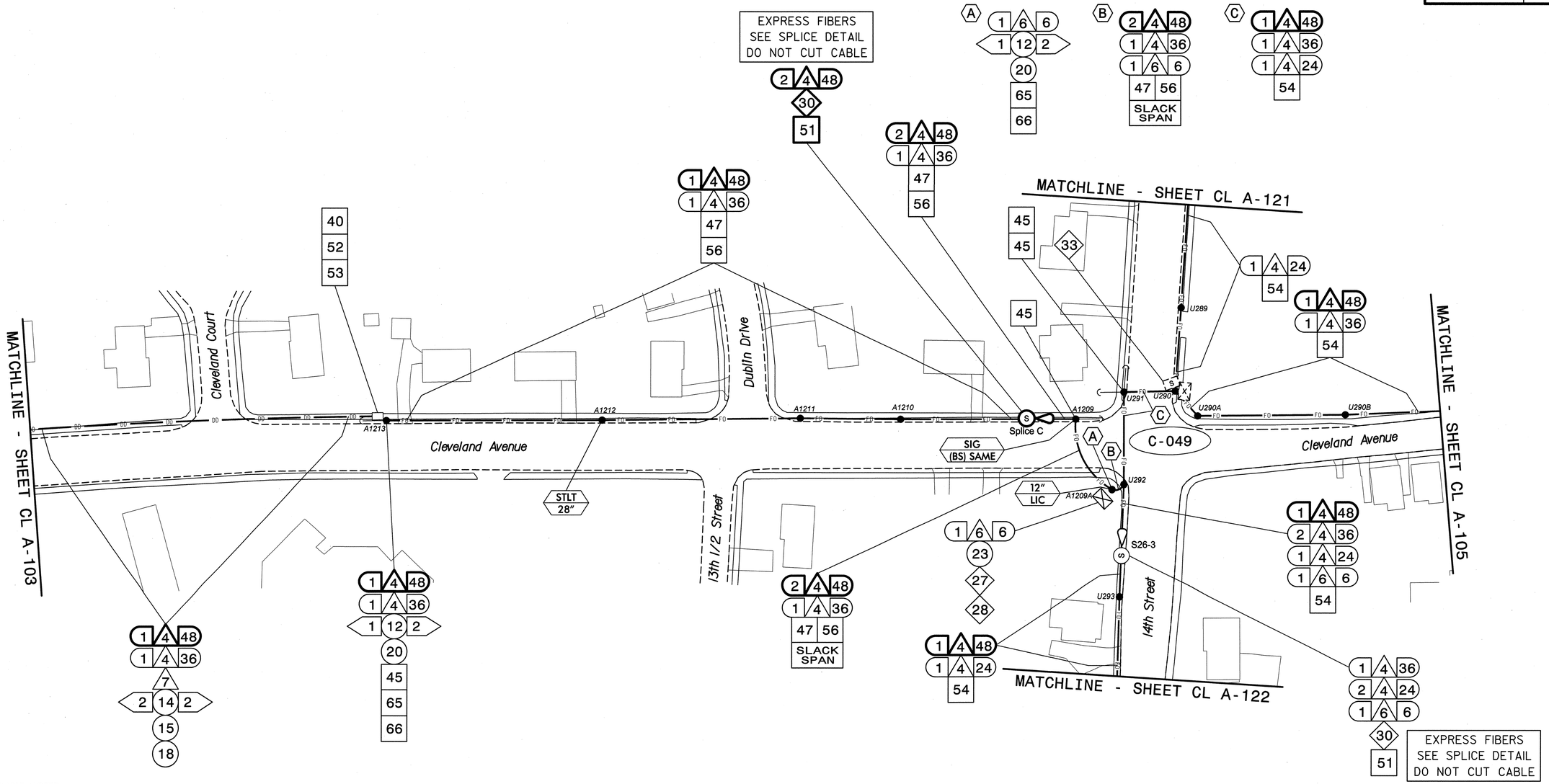
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-104



NOTES:

1. UNLESS OTHERWISE NOTED:
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29. INSTALL UNDERGROUND SPLICE ENCLOSURE
30. INSTALL AERIAL SPLICE ENCLOSURE
31. INSTALL SPLICE CABINET
32. MODIFY EXISTING SPLICE ENCLOSURE OR INTERCONNECT CENTER
33. REMOVE EXISTING SPLICE /HUB /CCTV CABINET
34. INSTALL CABINET FOUNDATION
35. REMOVE EXISTING CABINET FOUNDATION
36. INSTALL CCTV CAMERA ASSEMBLY
37. INSTALL CCTV WOOD POLE
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40. INSTALL OVER-SIZED JUNCTION BOX
41. REMOVE EXISTING JUNCTION BOX
42. INSTALL WOOD POLE
43. REMOVE EXISTING WOOD POLE
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Prepared for the Offices of:

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION — Mobility and Safety Through Intelligent Transportation Systems

750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE: January 2013 REVIEWED BY: MB Toth

PREPARED BY: BKS/AJD REVIEWED BY: LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022516 LISA M. MOON

Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-104.dgn

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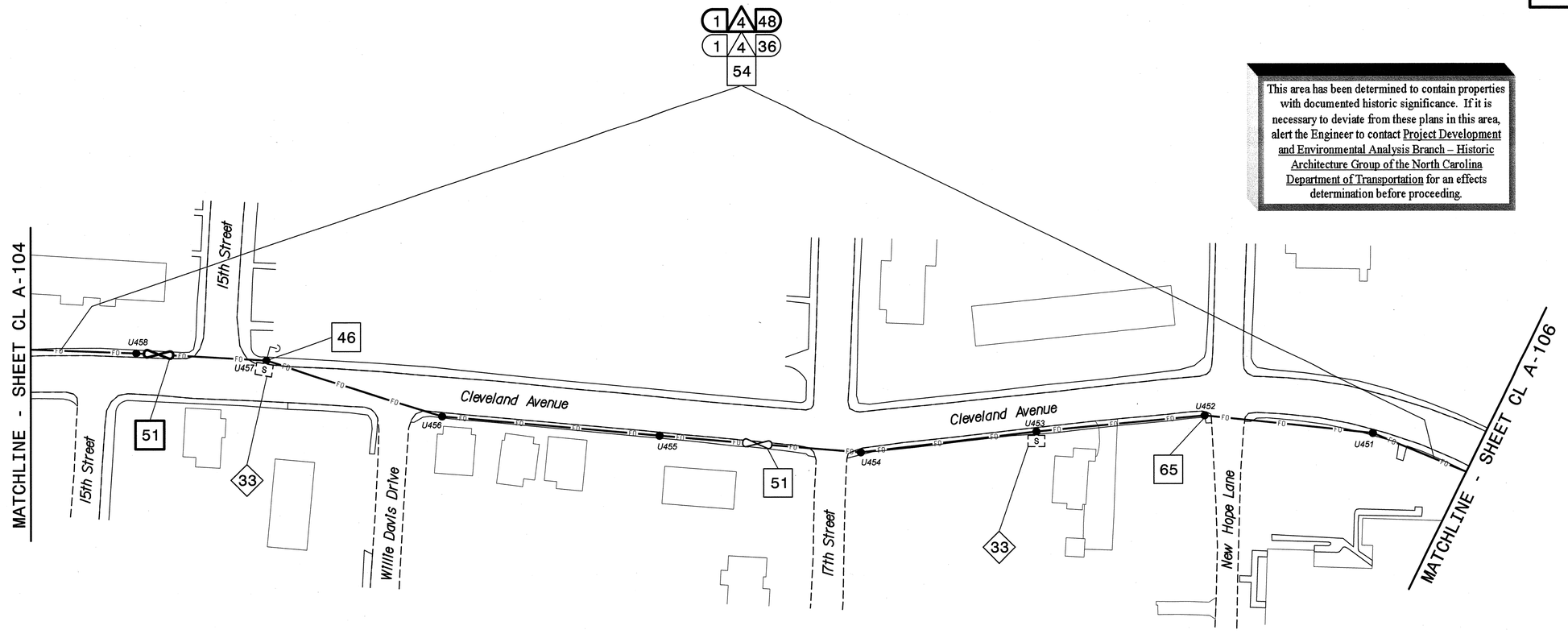
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-105



This area has been determined to contain properties with documented historic significance. If it is necessary to deviate from these plans in this area, alert the Engineer to contact Project Development and Environmental Analysis Branch – Historic Architecture Group of the North Carolina Department of Transportation for an effects determination before proceeding.

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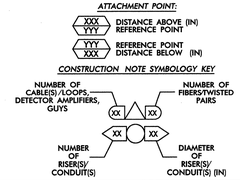

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:

Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems

750 Greenfield Parkway, Garner, NC 27529

SCALE 0 50 1"=50'

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE: January 2013 REVIEWED BY: MB Toth

PREPARED BY: BKS/AJD REVIEWED BY: LW Moon

REVISIONS	INIT.	DATE

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

SIGNATURE DATE 1-11-13

CADD Filename: CL A-105.dgn

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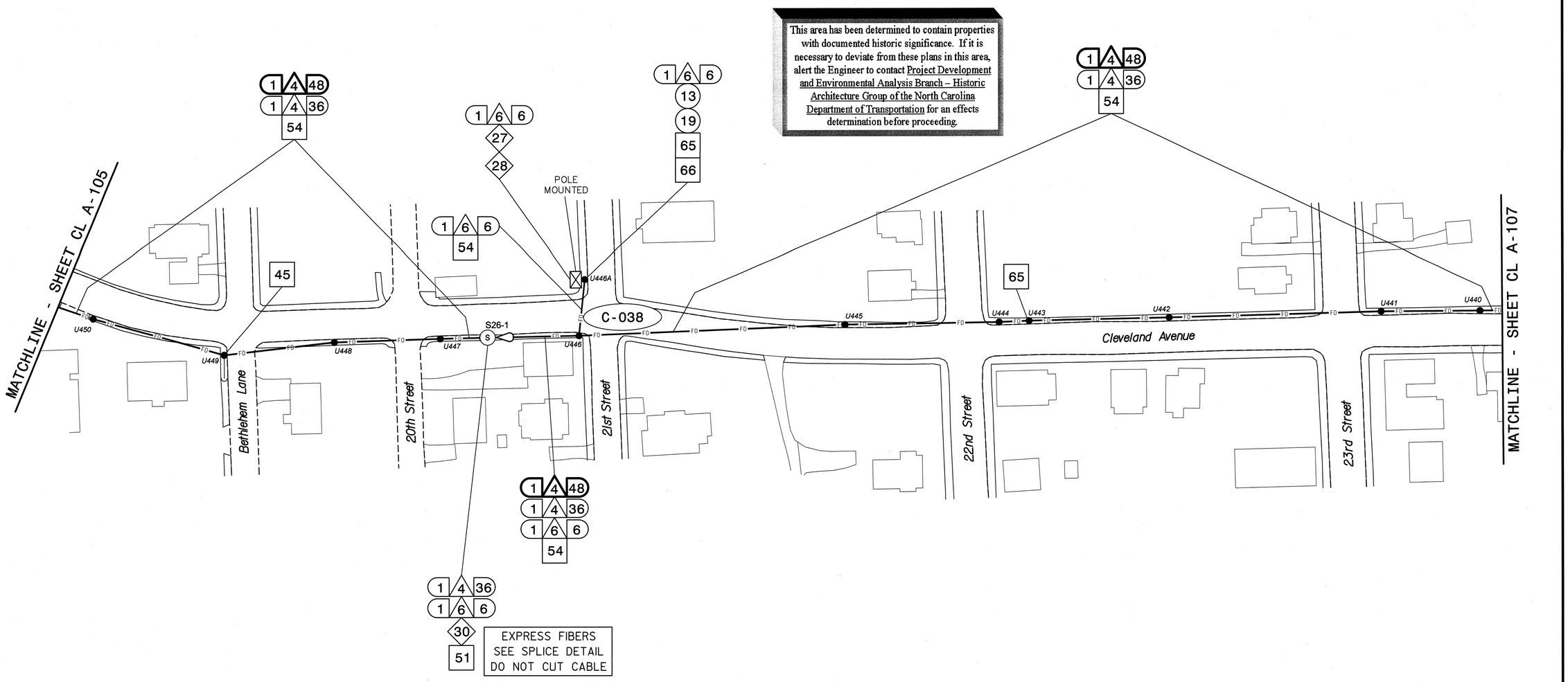
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-106



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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
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750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE Lisa M. Moon 1-11-13 DATE

CADD Filename: CL A-106.dgn

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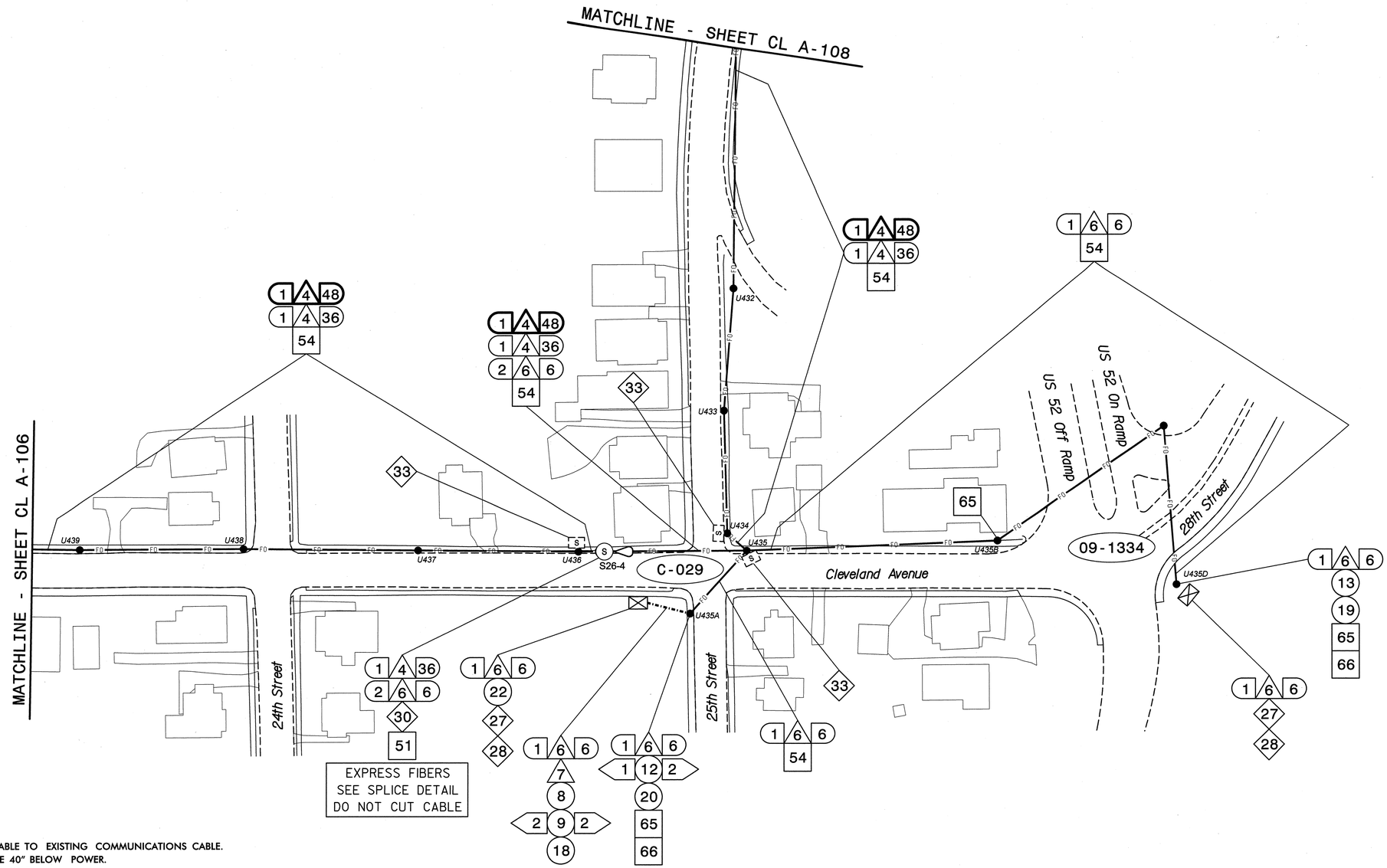
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-107



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2. SEAL ALL CONDUIT ENDS WITH DUCT AND CONDUIT SEALER, AT ALL JUNCTION BOX/CABINET ENTRANCES.

BOLD CONSTRUCTION NOTES SHOW NEW "IS FIBER" WORK

1 INSTALL REA, PE – 22, SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE	13 INSTALL HEAT SHRINK TUBING RETROFIT KIT	25 INSTALL NEW RISER INTO POLE MOUNTED CABINET	37 INSTALL CCTV WOOD POLE	49 REMOVE EXISTING COMMUNICATIONS CABLE	61 INSTALL UNI-DIRECTIONAL ANTENNA
2 INSTALL REA, PE – 38, (FIGURE – 8) SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE	14 INSTALL HIGH DENSITY POLYETHYLENE CONDUIT	26 INSTALL DIGITAL VIDEO ENCODER	38 INSTALL STANDARD SIZE JUNCTION BOX	50 INSTALL WIRELESS DSL	62 INSTALL 4.9GHZ ETHERNET INTEGRATED RADIO /OMNI-DIRECTIONAL ANTENNA
3 INSTALL CATEGORY 5E CABLE	15 DIRECTIONAL DRILL CONDUIT	27 INSTALL NEW ETHERNET EDGE SWITCH IN CABINET	39 INSTALL SPECIAL-SIZED JUNCTION BOX	51 INSTALL CABLE STORAGE GUIDE(S) [SNOW SHOE(S)] AND STORE 100 FEET OF EACH CABLE	63 INSTALL 900 MHZ ETHERNET RADIO
4 INSTALL SMFO CABLE	16 BORE AND JACK CONDUIT	28 INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET	40 INSTALL OVER-SIZED JUNCTION BOX	52 INSTALL DELINEATOR MARKER	64 INTERCEPT AND REROUTE EXISTING CONDUITS
5 INSTALL COAXIAL ANTENNA CABLE	17 INSTALL CABLE(S) IN EXISTING CONDUIT	29 INSTALL UNDERGROUND SPLICE ENCLOSURE	41 REMOVE EXISTING JUNCTION BOX	53 STORE 50 FEET OF COMMUNICATIONS CABLE (EACH CABLE)	65 BOND MESSENGER TO POLE GROUND
6 INSTALL FIBER-OPTIC DROP CABLE	18 INSTALL CABLE(S) IN NEW CONDUIT	30 INSTALL AERIAL SPLICE ENCLOSURE	42 INSTALL WOOD POLE	54 LASH CABLE(S) TO EXISTING SIGNAL/COMMUNICATIONS CABLE	66 BOND RISER TO POLE GROUND
7 INSTALL TRACER WIRE	19 INSTALL CABLE(S) IN EXISTING RISER(S)	31 INSTALL SPLICE CABINET	43 REMOVE EXISTING WOOD POLE	55 LASH CABLE(S) TO EXISTING MESSENGER CABLE	67 BOND TRACER WIRE TO POLE GROUND
8 INSTALL CONDUIT UNDERGROUND	20 INSTALL CABLE(S) IN NEW RISER(S)	32 MODIFY EXISTING SPLICE ENCLOSURE OR INTERCONNECT CENTER	44 INSTALL AERIAL GUY ASSEMBLY	56 LASH CABLE(S) TO NEW MESSENGER CABLE	68 BOND TRACER WIRE TO EQUIPMENT GROUND BUS
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YYY REFERENCE POINT
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CONSTRUCTION NOTE SYMBOLOGY KEY
NUMBER OF CABLE(S) /LOOPS, DETECTOR AMPLIFIERS, GUYS
NUMBER OF FIBERS/TWISTED PAIRS
NUMBER OF RISER(S)/ CONDUIT(S)
DIAMETER OF RISER(S)/ CONDUIT(S) (IN)

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
Traffic Engineering Branch, Mobility and Safety Division, NCDOT, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LW Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE
DATE 1-11-13
CADD Filename: CL A-107.dgn

03-JAN-2013 10:39
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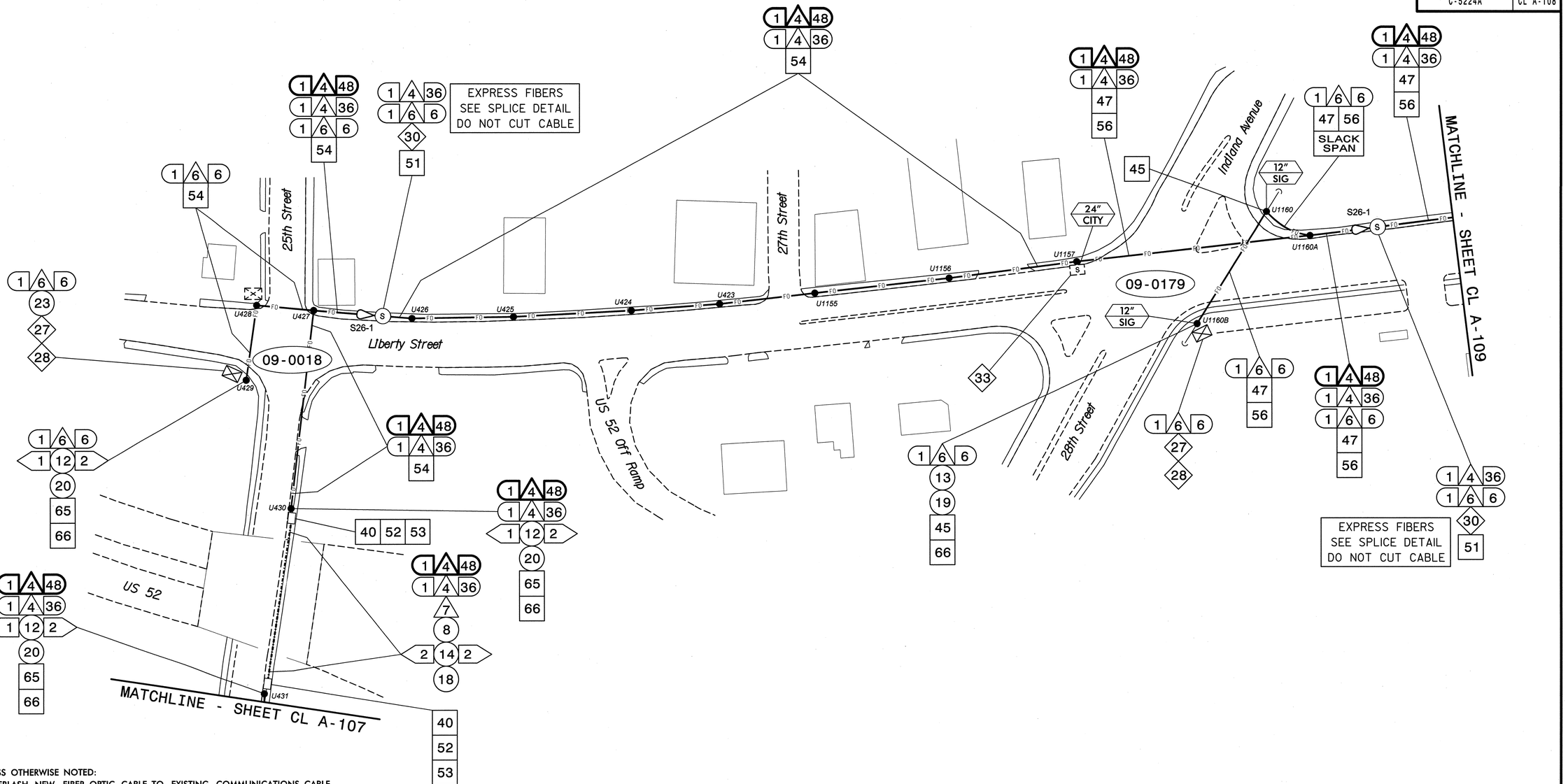
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-108



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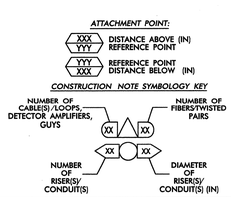

ATKINS
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Prepared for the Offices of: North Carolina Department of Transportation, Mobility and Safety Division, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LW Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

SIGNATURE Lisa M. Moon 1-11-13 DATE

CADD Filename: CL A-108.dgn

07-JAN-2013 17:30
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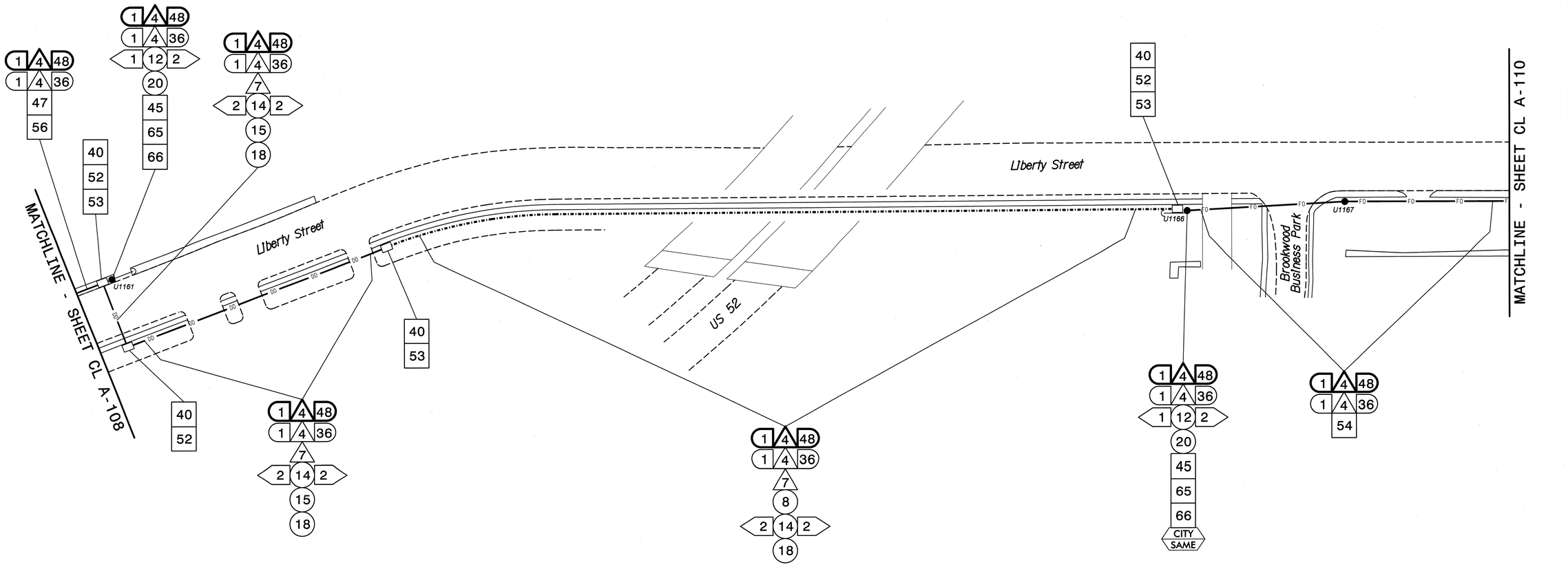
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-109



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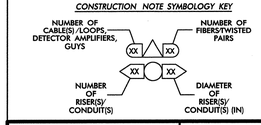

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Prepared for the Offices of:
Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

SCALE 0 50 1"=50'

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE: January 2013 REVIEWED BY: MB Toth

PREPARED BY: BKS/AJD REVIEWED BY: LM Moon

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-109.dgn

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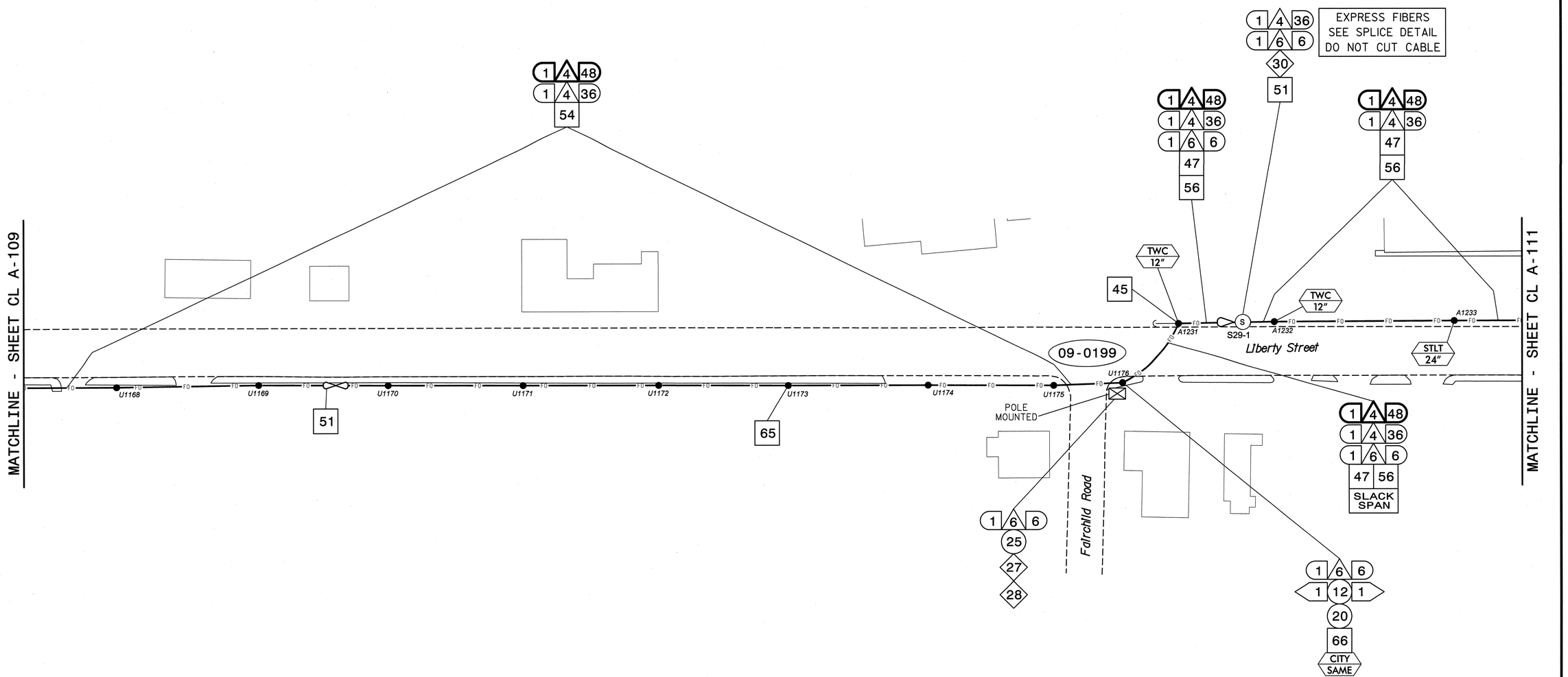
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-110



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Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
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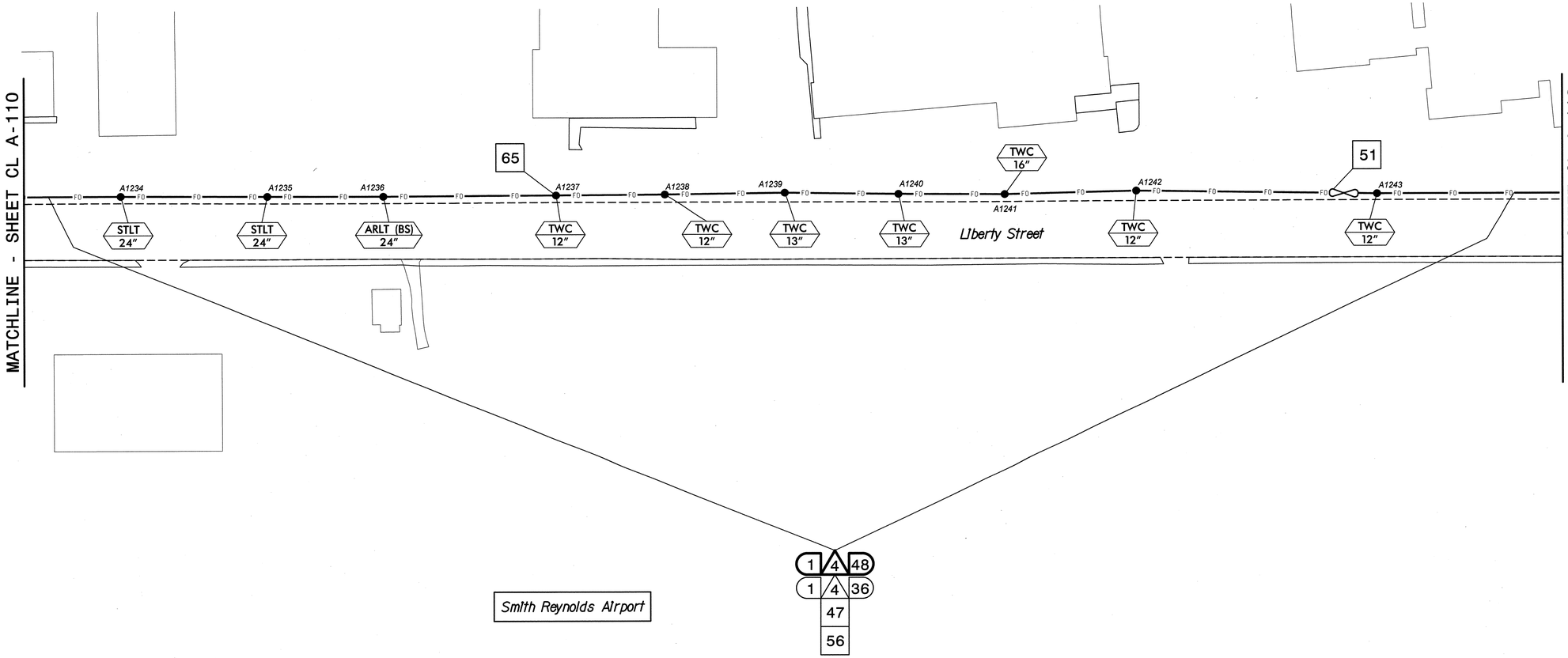

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6. INSTALL FIBER-OPTIC DROP CABLE
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26. INSTALL DIGITAL VIDEO ENCODER
27. INSTALL NEW ETHERNET EDGE SWITCH IN CABINET
28. INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET
29. INSTALL UNDERGROUND SPLICE ENCLOSURE
30. INSTALL AERIAL SPLICE ENCLOSURE
31. INSTALL SPLICE CABINET
32. MODIFY EXISTING SPLICE ENCLOSURE OR INTERCONNECT CENTER
33. REMOVE EXISTING SPLICE /HUB /CCTV CABINET
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36. INSTALL CCTV CAMERA ASSEMBLY
37. INSTALL CCTV WOOD POLE
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49. REMOVE EXISTING COMMUNICATIONS CABLE
50. INSTALL WIRELESS DSL
51. INSTALL CABLE STORAGE GUIDE(S) [SNOW SHOE(S)] AND STORE 100 FEET OF EACH CABLE
52. INSTALL DELINEATOR MARKER
53. STORE 50 FEET OF COMMUNICATIONS CABLE (EACH CABLE)
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62. INSTALL 4.9GHZ ETHERNET INTEGRATED RADIO /OMNI-DIRECTIONAL ANTENNA
63. INSTALL 900 MHZ ETHERNET RADIO
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66. BOND RISER TO POLE GROUND
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70. INSTALL 4.9GHZ FLAT-PANEL ANTENNA
71. INSTALL HUB CABINET
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ATTACHMENT POINT:
XXX DISTANCE ABOVE (IN) REFERENCE POINT
YYY REFERENCE POINT DISTANCE BELOW (IN)

CONSTRUCTION NOTE SYMBOLOGY KEY
NUMBER OF CABLE(S)/LOOPS, DETECTOR AMPLIFIERS, GUYS
NUMBER OF FIBERS/TWISTED PAIRS
NUMBER OF RISER(S)/ CONDUIT(S)
DIAMETER OF RISER(S)/ CONDUIT(S) (IN)

ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Transportation Mobility and Safety Division
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-111.dgn

07-JAN-2013 17:37
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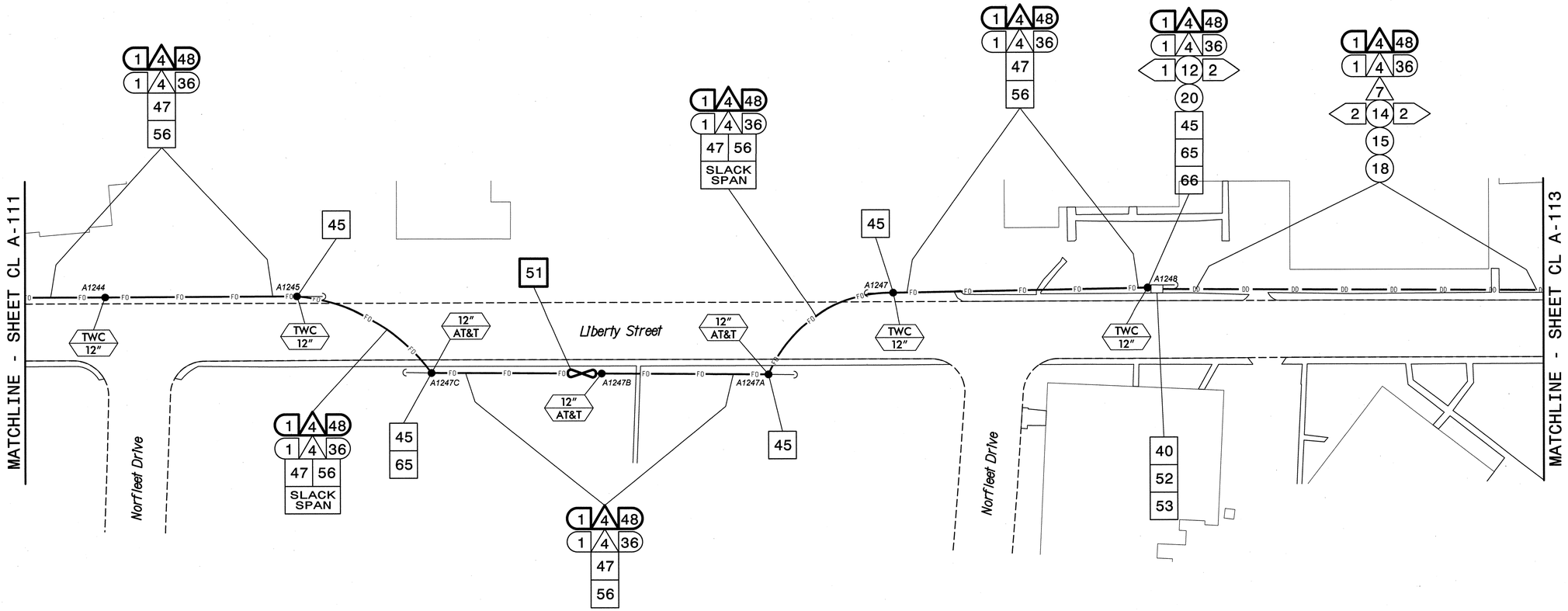
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-112



NOTES:
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BOLD CONSTRUCTION NOTES SHOW NEW "IS FIBER" WORK

1 INSTALL REA, PE – 22, SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE	13 INSTALL HEAT SHRINK TUBING RETROFIT KIT	25 INSTALL NEW RISER INTO POLE MOUNTED CABINET	37 INSTALL CCTV WOOD POLE	49 REMOVE EXISTING COMMUNICATIONS CABLE	61 INSTALL UNI–DIRECTIONAL ANTENNA
2 INSTALL REA, PE – 38, (FIGURE – 8) SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE	14 INSTALL HIGH DENSITY POLYETHYLENE CONDUIT	26 INSTALL DIGITAL VIDEO ENCODER	38 INSTALL STANDARD SIZE JUNCTION BOX	50 INSTALL WIRELESS DSL	62 INSTALL 4.9GHZ ETHERNET INTEGRATED RADIO /OMNI-DIRECTIONAL ANTENNA
3 INSTALL CATEGORY 5E CABLE	15 DIRECTIONAL DRILL CONDUIT	27 INSTALL NEW ETHERNET EDGE SWITCH IN CABINET	39 INSTALL SPECIAL–SIZED JUNCTION BOX	51 INSTALL CABLE STORAGE GUIDE(S) [SNOW SHOE(S)] AND STORE 100 FEET OF EACH CABLE	63 INSTALL 900 MHZ ETHERNET RADIO
4 INSTALL SMFO CABLE	16 BORE AND JACK CONDUIT	28 INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET	40 INSTALL OVER–SIZED JUNCTION BOX	52 INSTALL DELINEATOR MARKER	64 INTERCEPT AND REROUTE EXISTING CONDUITS
5 INSTALL COAXIAL ANTENNA CABLE	17 INSTALL CABLE(S) IN EXISTING CONDUIT	29 INSTALL UNDERGROUND SPLICE ENCLOSURE	41 REMOVE EXISTING JUNCTION BOX	53 STORE 50 FEET OF COMMUNICATIONS CABLE (EACH CABLE)	65 BOND MESSENGER TO POLE GROUND
6 INSTALL FIBER–OPTIC DROP CABLE	18 INSTALL CABLE(S) IN NEW CONDUIT	30 INSTALL AERIAL SPLICE ENCLOSURE	42 INSTALL WOOD POLE	54 LASH CABLE(S) TO EXISTING SIGNAL/COMMUNICATIONS CABLE	66 BOND RISER TO POLE GROUND
7 INSTALL TRACER WIRE	19 INSTALL CABLE(S) IN EXISTING RISER(S)	31 INSTALL SPLICE CABINET	43 REMOVE EXISTING WOOD POLE	55 LASH CABLE(S) TO EXISTING MESSENGER CABLE	67 BOND TRACER WIRE TO POLE GROUND
8 INSTALL CONDUIT UNDERGROUND	20 INSTALL CABLE(S) IN NEW RISER(S)	32 MODIFY EXISTING SPLICE ENCLOSURE OR INTERCONNECT CENTER	44 INSTALL AERIAL GUY ASSEMBLY	56 LASH CABLE(S) TO NEW MESSENGER CABLE	68 BOND TRACER WIRE TO EQUIPMENT GROUND BUS
9 INSTALL PVC CONDUIT	21 INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS	33 REMOVE EXISTING SPLICE /HUB /CCTV CABINET	45 INSTALL STANDARD GUY ASSEMBLY	57 MODIFY EXISTING ELECTRICAL SERVICE FOR CCTV/HUB	69 REMOVE EXISTING CCTV CAMERA ASSEMBLY
10 INSTALL RIGID, GALVANIZED STEEL CONDUIT	22 INSTALL NEW CONDUIT INTO CABINET BASE (USE EX CONDUIT STUBOUTS WHEN AVAILABLE)	34 INSTALL CABINET FOUNDATION	46 INSTALL SIDEWALK GUY ASSEMBLY	58 INSTALL NEW ELECTRICAL SERVICE FOR CCTV/HUB	70 INSTALL 4.9GHZ FLAT–PANEL ANTENNA
11 INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD	23 INSTALL NEW RISER INTO CABINET BASE (USE EX CONDUIT STUBOUTS WHEN AVAILABLE)	35 REMOVE EXISTING CABINET FOUNDATION	47 INSTALL MESSENGER CABLE	59 INSTALL NEW POLE MOUNTED CCTV CABINET	71 INSTALL HUB CABINET
12 INSTALL RIGID, GALVANIZED STEEL RISER WITH HEAT SHRINK TUBING	24 INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET	36 INSTALL CCTV CAMERA ASSEMBLY	48 REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE	60 INSTALL 4.9GHZ ETHERNET INTEGRATED RADIO /FLAT–PANEL ANTENNA	72 INSTALL MANAGED ETHERNET SWITCH

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ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LW Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

Lisa M Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-112.dgn

03-JAN-2013 10:44
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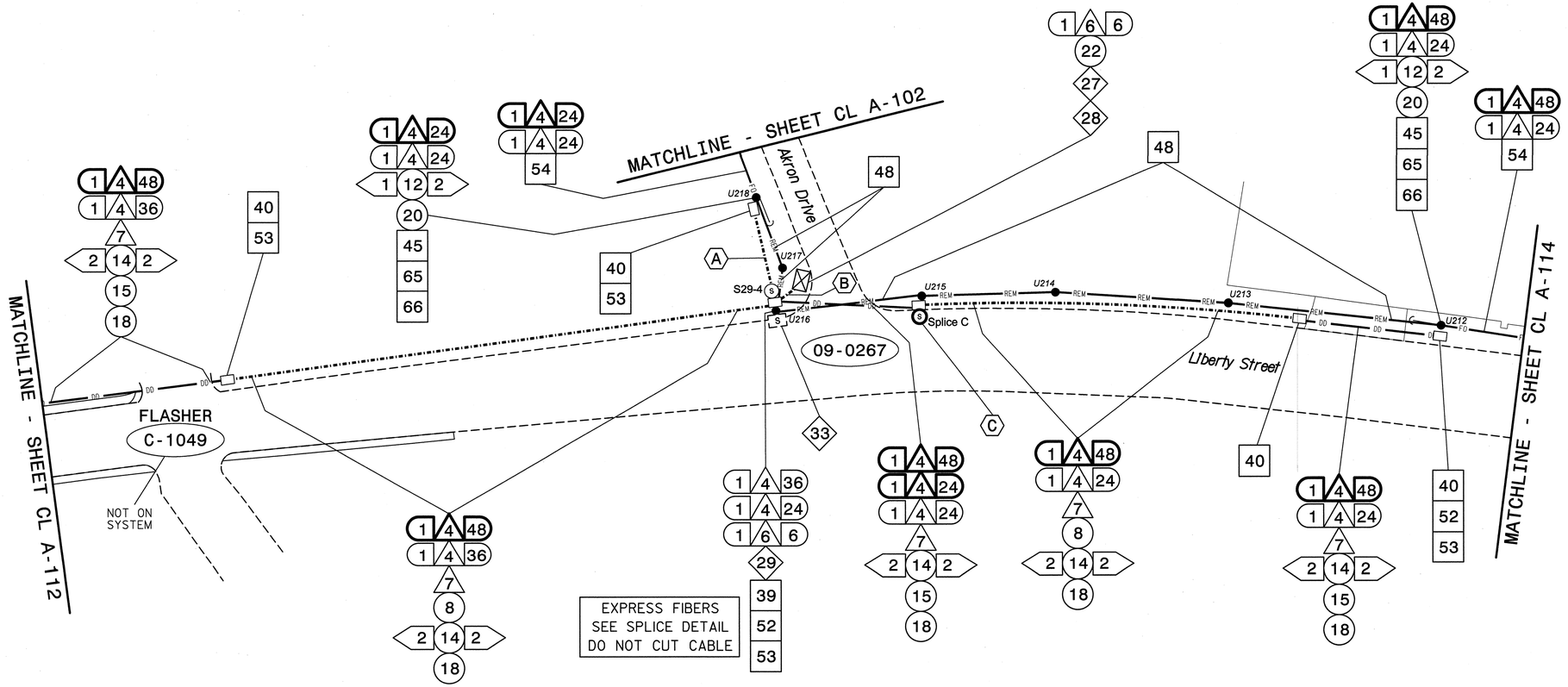
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-113



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Prepared for the Offices of:
North Carolina Department of Transportation, Mobility and Safety Division, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-113.dgn

03-JAN-2013 10:44
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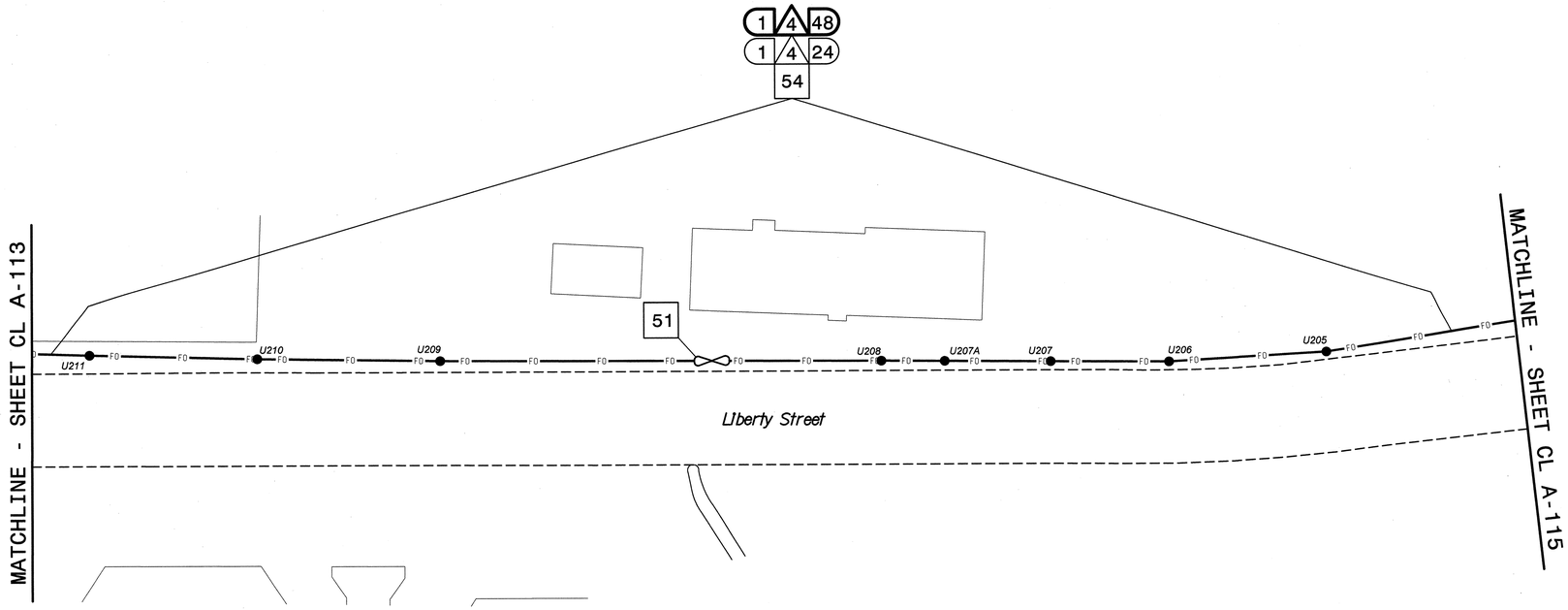
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-114



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Winston-Salem Signal System
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Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
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PROJECT REFERENCE NO.	SHEET NO.
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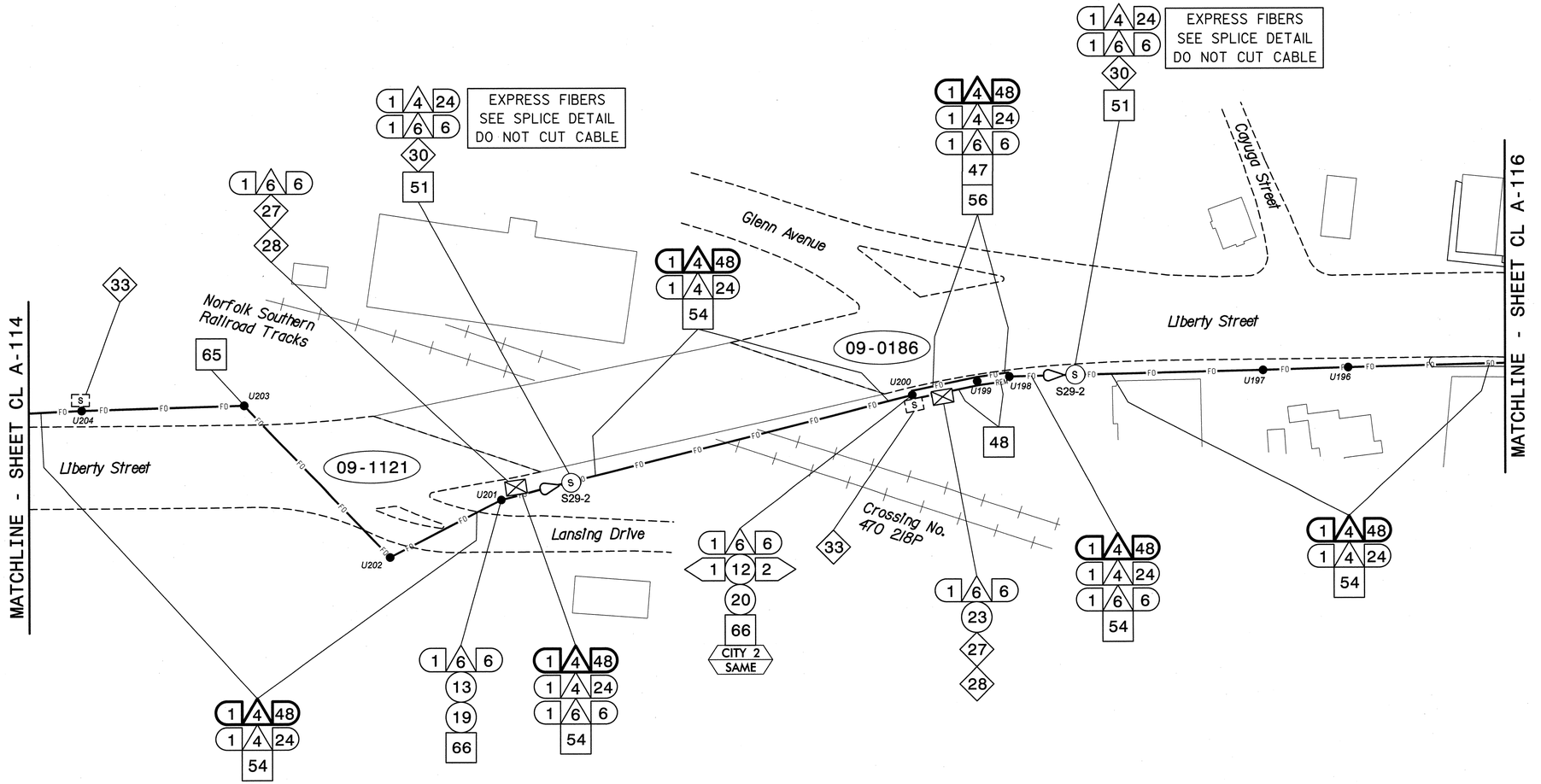

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NUMBER OF FIBERS/TWISTED PAIRS
NUMBER OF RISER(S)/ CONDUIT(S)
DIAMETER OF RISER(S)/ CONDUIT(S) (IN)

ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
North Carolina Department of Transportation, Mobility and Safety Division, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

SIGNATURE DATE 1-11-13

CADD Filename: CL A-115.dgn

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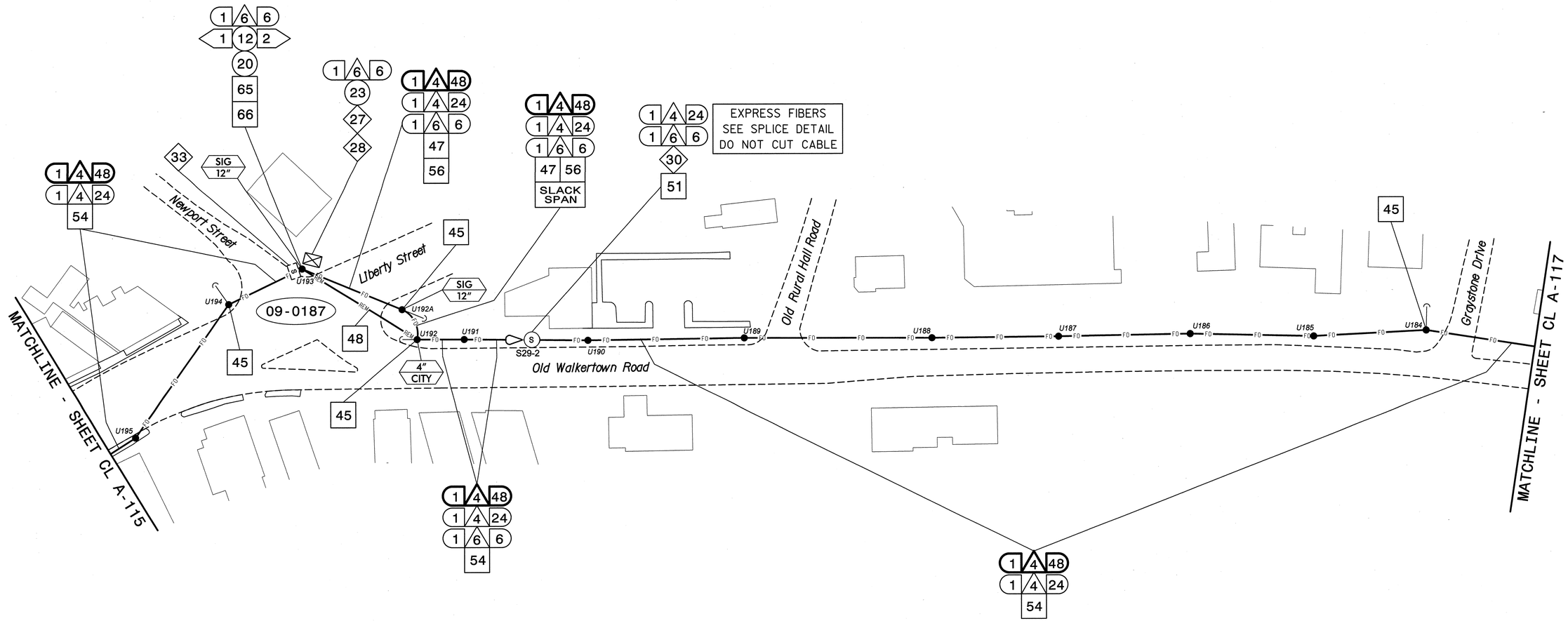
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-116



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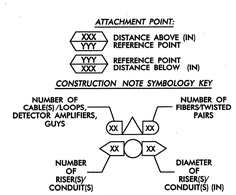

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Prepared for the Offices of:
Traffic Engineering Branch, Mobility and Safety Division, North Carolina Department of Transportation, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

Lisa M. Moon 1-11-13
SIGNATURE DATE

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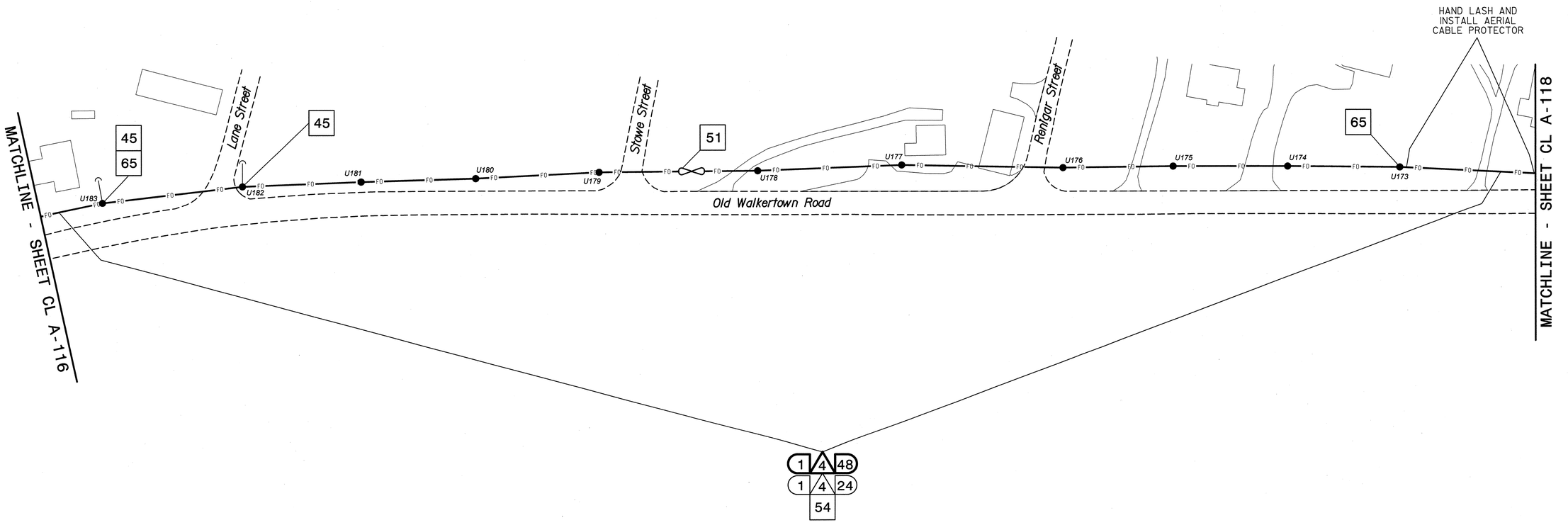
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-117



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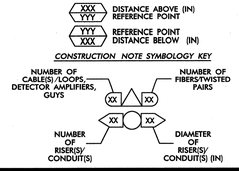

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:

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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems

750 Greenfield Parkway, Garner, NC 27529

SCALE 0 50 1"=50'

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE: January 2013 REVIEWED BY: MB Toth

PREPARED BY: BKS/AJD REVIEWED BY: LM Moon

REVISIONS	INIT.	DATE

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-117.dgn

03-JAN-2013 10:44
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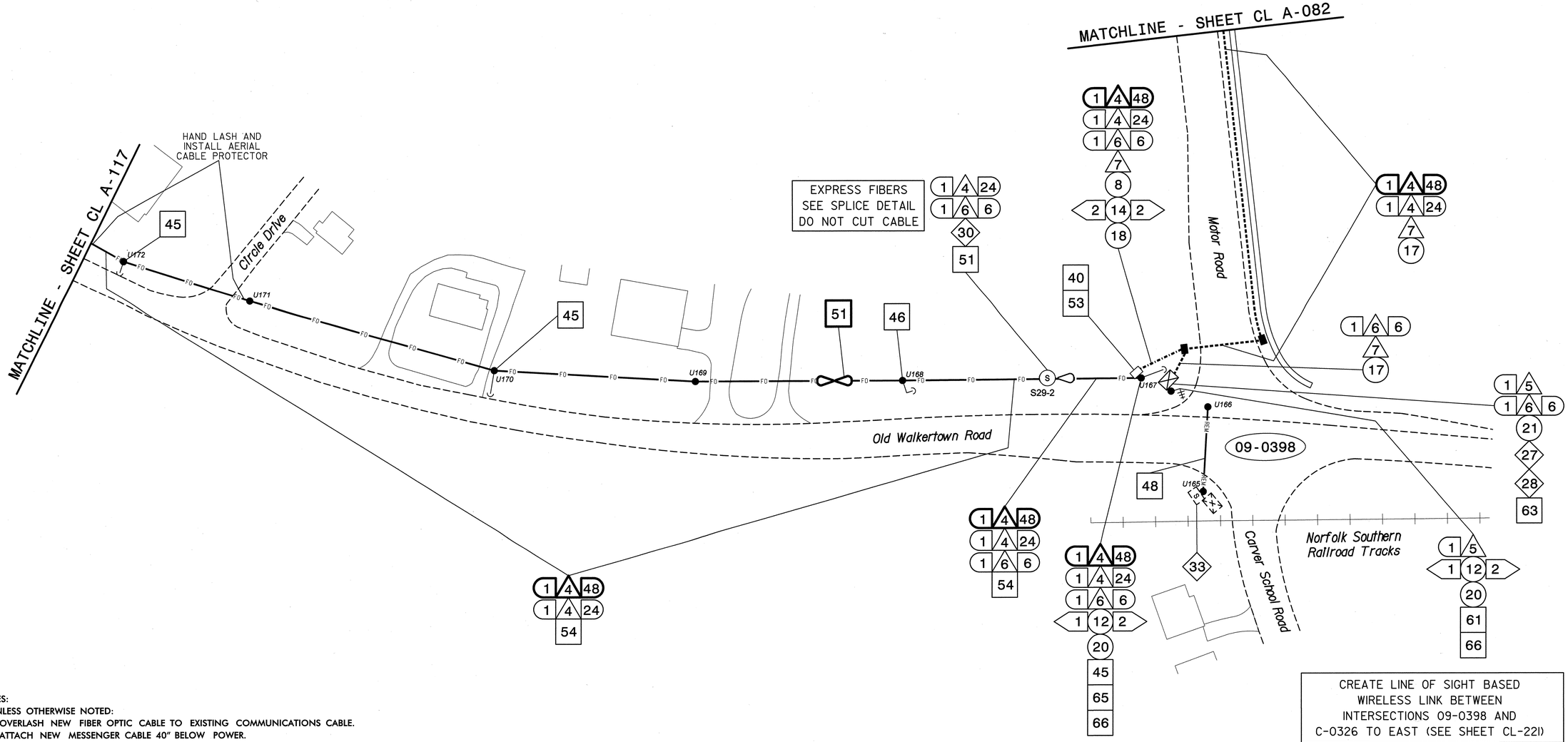
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-118



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CREATE LINE OF SIGHT BASED WIRELESS LINK BETWEEN INTERSECTIONS 09-0398 AND C-0326 TO EAST (SEE SHEET CL-221)

SEE RSD I736.01 FOR ANTENNA ATTACHMENT HEIGHT MAINTAIN A MINIMUM OF 40" FROM TOP OF ANTENNA TO POWER/NEUTRAL

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Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-118.dgn

03-JAN-2013 10:44
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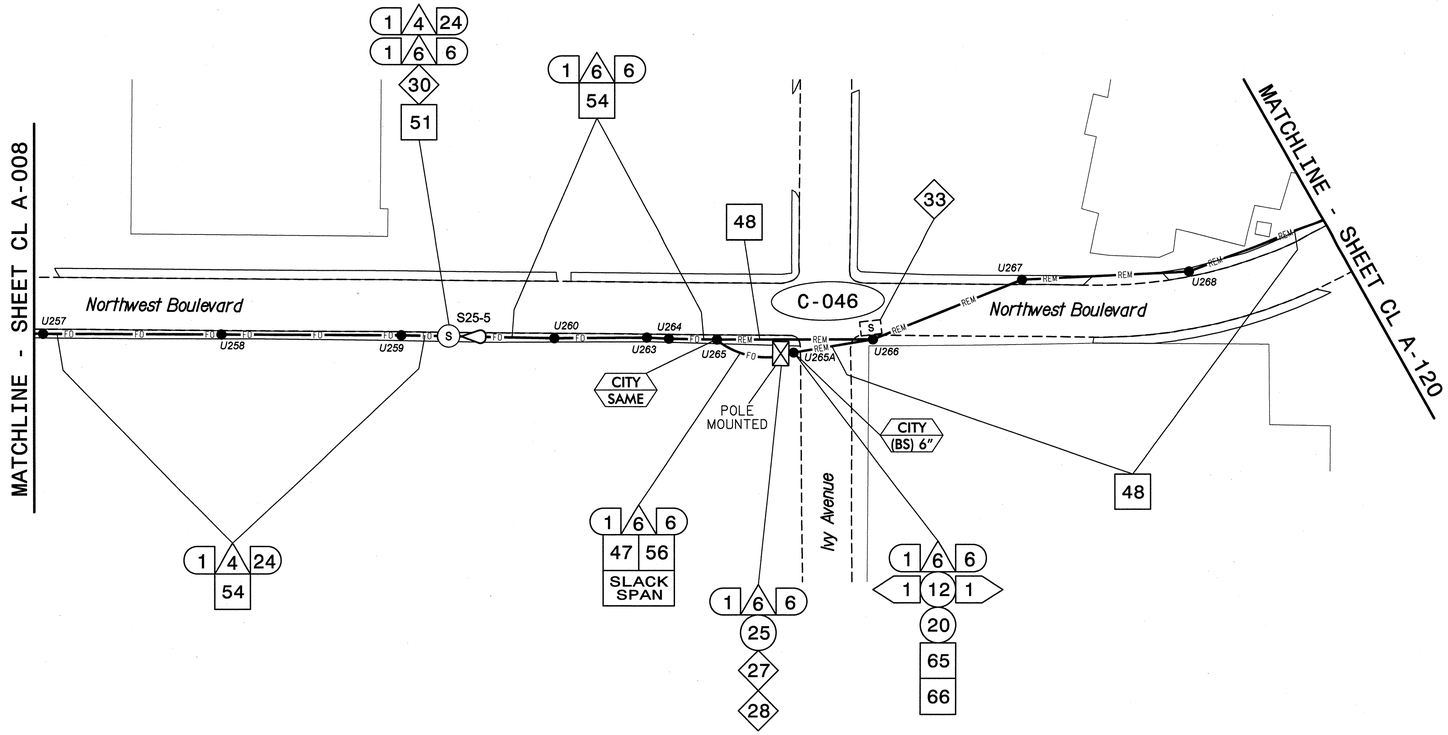
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-119



NOTES:

1. UNLESS OTHERWISE NOTED:
   - OVERLASH NEW FIBER OPTIC CABLE TO EXISTING COMMUNICATIONS CABLE.
   - ATTACH NEW MESSENGER CABLE 40" BELOW POWER.
   - ATTACH ON FRONT SIDE (FS) OF POLE.
2. SEAL ALL CONDUIT ENDS WITH DUCT AND CONDUIT SEALER, AT ALL JUNCTION BOX/CABINET ENTRANCES.

BOLD CONSTRUCTION NOTES SHOW NEW "IS FIBER" WORK

1	INSTALL REA, PE – 22, SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE	13	INSTALL HEAT SHRINK TUBING RETROFIT KIT	25	INSTALL NEW RISER INTO POLE MOUNTED CABINET	37	INSTALL CCTV WOOD POLE	49	REMOVE EXISTING COMMUNICATIONS CABLE	61	INSTALL UNI-DIRECTIONAL ANTENNA
2	INSTALL REA, PE – 38, (FIGURE – 8) SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE	14	INSTALL HIGH DENSITY POLYETHYLENE CONDUIT	26	INSTALL DIGITAL VIDEO ENCODER	38	INSTALL STANDARD SIZE JUNCTION BOX	50	INSTALL WIRELESS DSL	62	INSTALL 4.9GHZ ETHERNET INTEGRATED RADIO /OMNI-DIRECTIONAL ANTENNA
3	INSTALL CATEGORY 5E CABLE	15	DIRECTIONAL DRILL CONDUIT	27	INSTALL NEW ETHERNET EDGE SWITCH IN CABINET	39	INSTALL SPECIAL-SIZED JUNCTION BOX	51	INSTALL CABLE STORAGE GUIDE(S) [SNOW SHOE(S)] AND STORE 100 FEET OF EACH CABLE	63	INSTALL 900 MHZ ETHERNET RADIO
4	INSTALL SMFO CABLE	16	BORE AND JACK CONDUIT	28	INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET	40	INSTALL OVER-SIZED JUNCTION BOX	52	INSTALL DELINEATOR MARKER	64	INTERCEPT AND REROUTE EXISTING CONDUITS
5	INSTALL COAXIAL ANTENNA CABLE	17	INSTALL CABLE(S) IN EXISTING CONDUIT	29	INSTALL UNDERGROUND SPLICE ENCLOSURE	41	REMOVE EXISTING JUNCTION BOX	53	STORE 50 FEET OF COMMUNICATIONS CABLE (EACH CABLE)	65	BOND MESSENGER TO POLE GROUND
6	INSTALL FIBER-OPTIC DROP CABLE	18	INSTALL CABLE(S) IN NEW CONDUIT	30	INSTALL AERIAL SPLICE ENCLOSURE	42	INSTALL WOOD POLE	54	LASH CABLE(S) TO EXISTING SIGNAL/COMMUNICATIONS CABLE	66	BOND RISER TO POLE GROUND
7	INSTALL TRACER WIRE	19	INSTALL CABLE(S) IN EXISTING RISER(S)	31	INSTALL SPLICE CABINET	43	REMOVE EXISTING WOOD POLE	55	LASH CABLE(S) TO EXISTING MESSENGER CABLE	67	BOND TRACER WIRE TO POLE GROUND
8	INSTALL CONDUIT UNDERGROUND	20	INSTALL CABLE(S) IN NEW RISER(S)	32	MODIFY EXISTING SPLICE ENCLOSURE OR INTERCONNECT CENTER	44	INSTALL AERIAL GUY ASSEMBLY	56	LASH CABLE(S) TO NEW MESSENGER CABLE	68	BOND TRACER WIRE TO EQUIPMENT GROUND BUS
9	INSTALL PVC CONDUIT	21	INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS	33	REMOVE EXISTING SPLICE /HUB /CCTV CABINET	45	INSTALL STANDARD GUY ASSEMBLY	57	MODIFY EXISTING ELECTRICAL SERVICE FOR CCTV/HUB	69	REMOVE EXISTING CCTV CAMERA ASSEMBLY
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ATTACHMENT POINT:
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YYY / XXX — REFERENCE POINT DISTANCE BELOW (IN)

CONSTRUCTION NOTE SYMBOLOGY KEY
NUMBER OF CABLE(S) /LOOPS, DETECTOR AMPLIFIERS, GUYS
NUMBER OF FIBERS/TWISTED PAIRS
NUMBER OF RISER(S)/ CONDUIT(S)
DIAMETER OF RISER(S)/ CONDUIT(S) (IN)

ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

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PROJECT REFERENCE NO.	SHEET NO.
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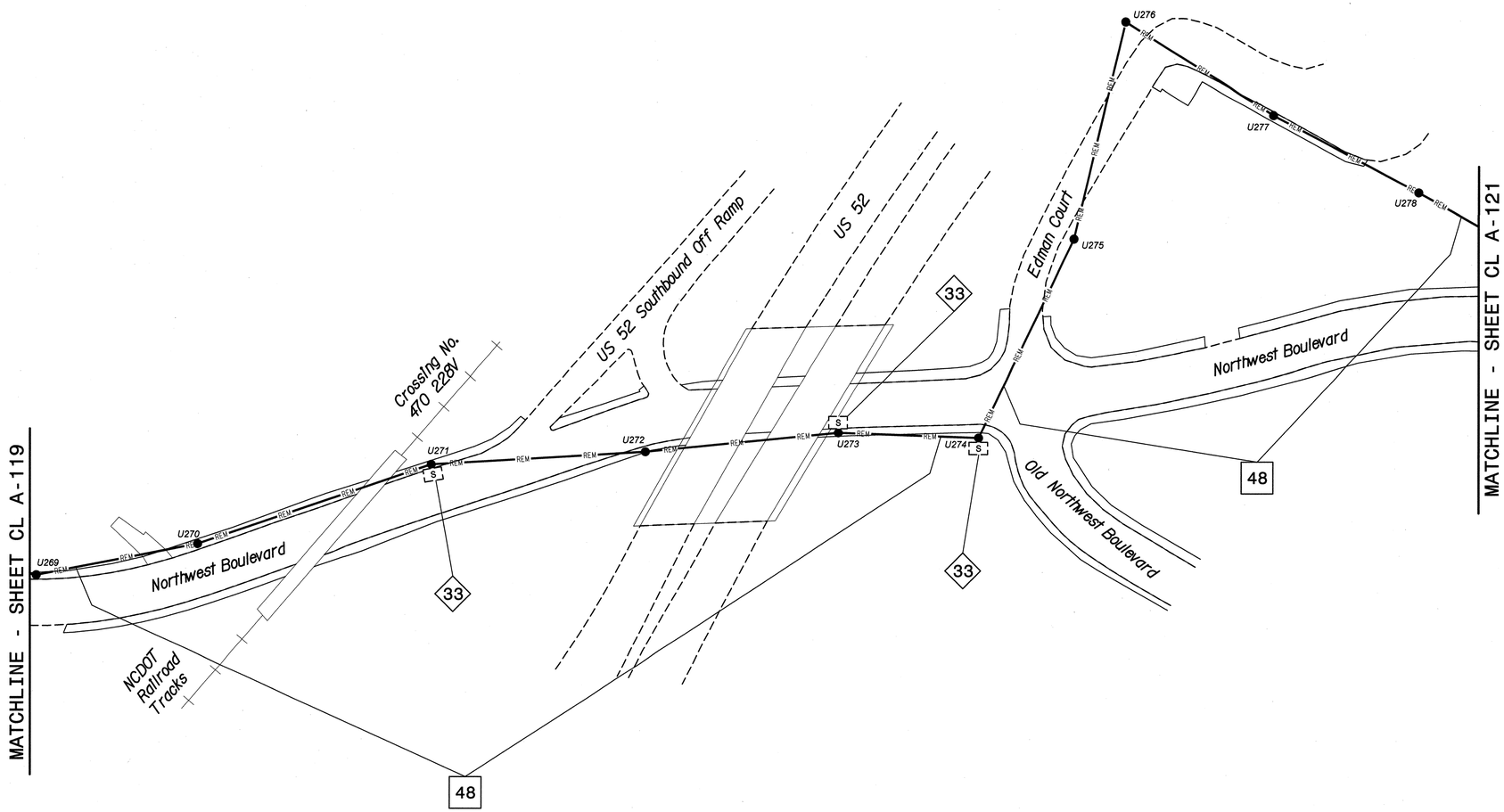

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ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

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Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

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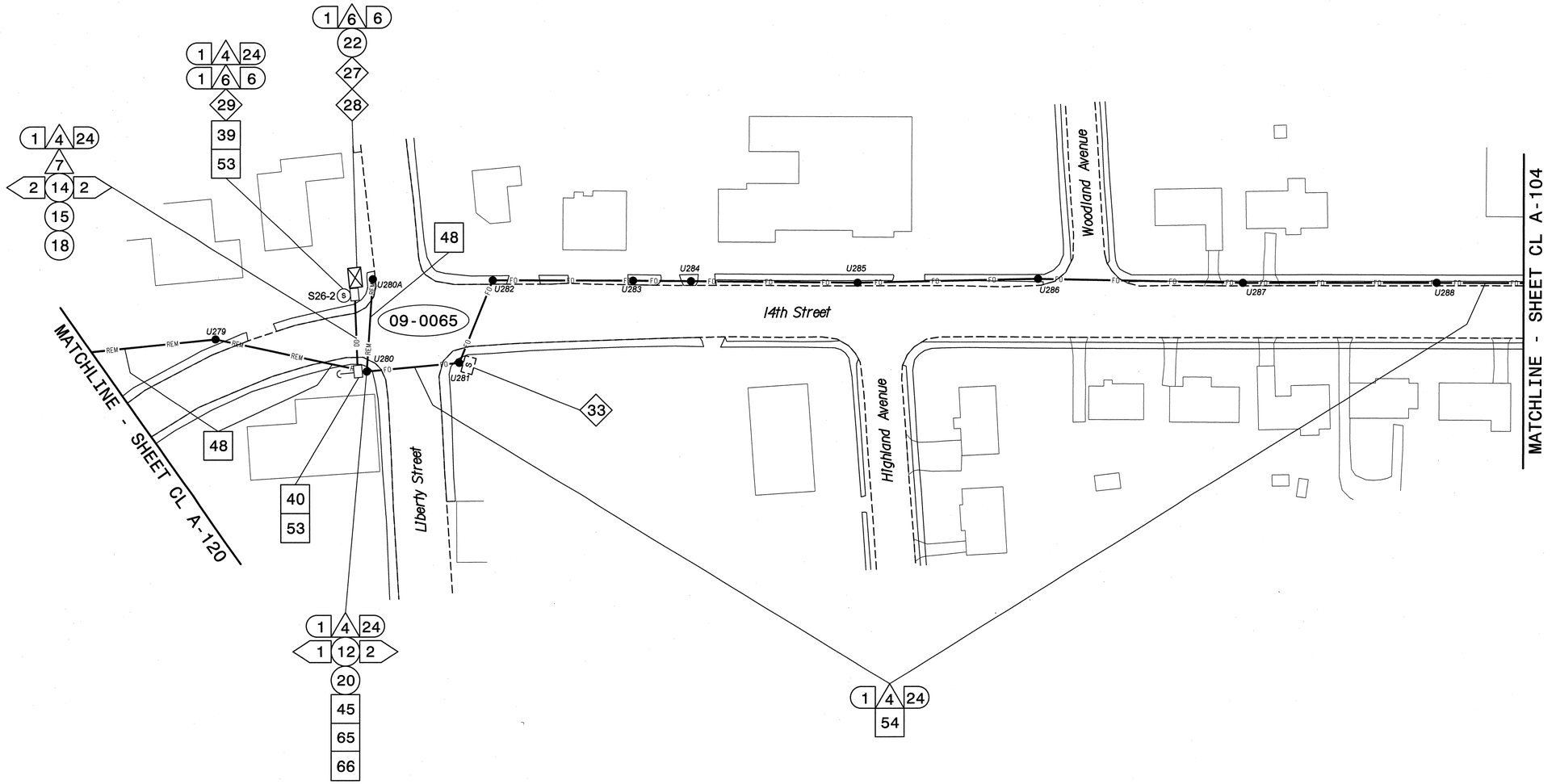
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-121



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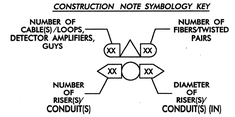

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Phase A

Division 09	Forsyth County		Winston-Salem
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Lisa M. Moon 1-11-13
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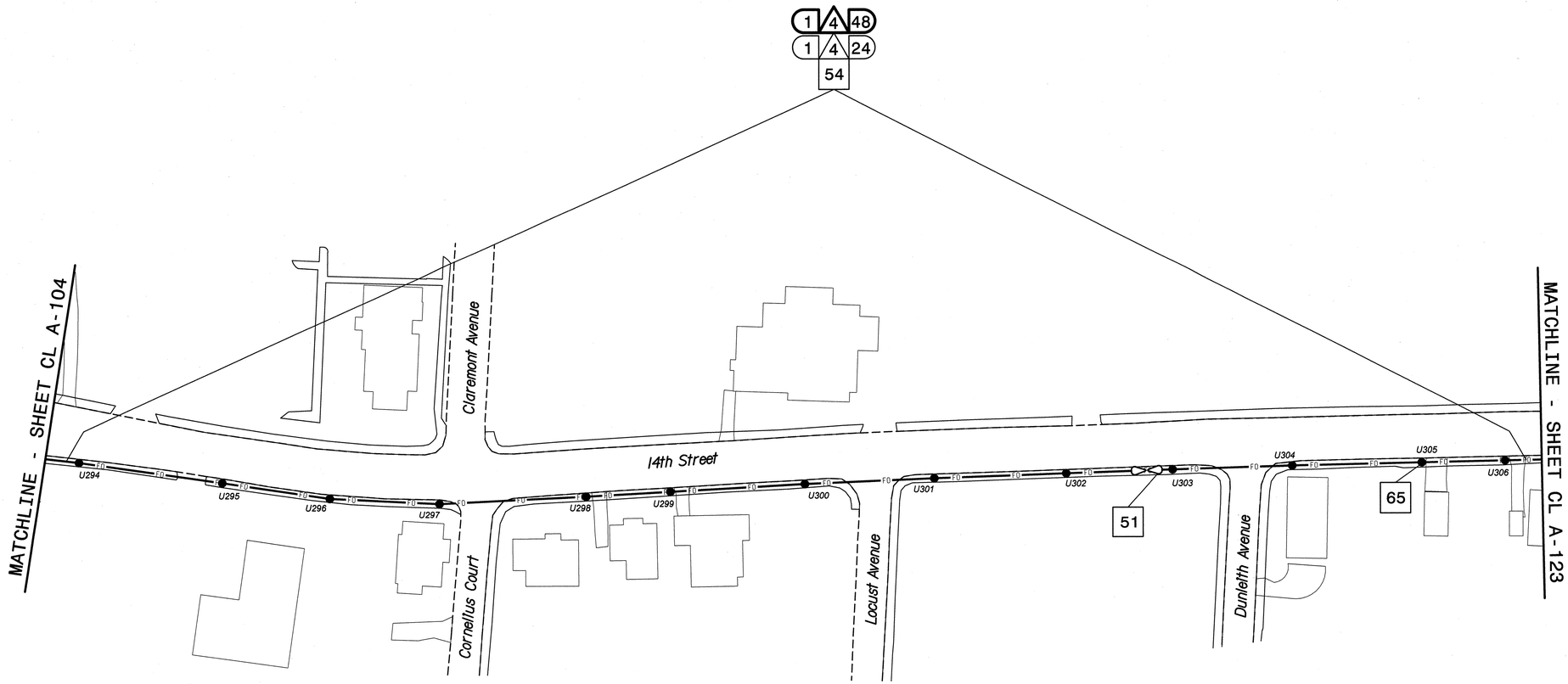
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-122



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Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE Lisa M. Moon DATE 1-11-13

CADD Filename: CL A-122.dgn

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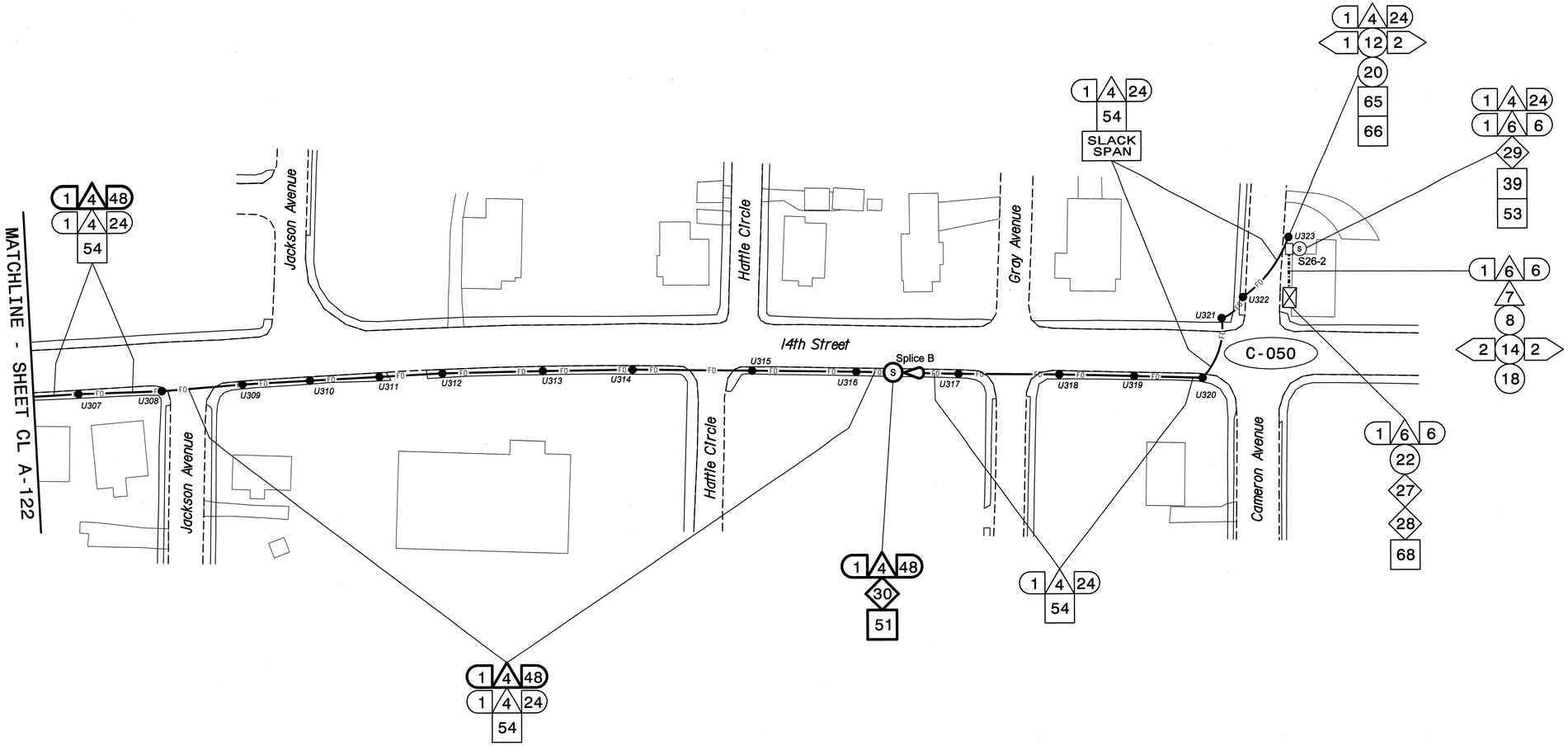
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-123



NOTES:
1. UNLESS OTHERWISE NOTED:
   - OVERLASH NEW FIBER OPTIC CABLE TO EXISTING COMMUNICATIONS CABLE.
   - ATTACH NEW MESSENGER CABLE 40" BELOW POWER.
   - ATTACH ON FRONT SIDE (FS) OF POLE.
2. SEAL ALL CONDUIT ENDS WITH DUCT AND CONDUIT SEALER, AT ALL JUNCTION BOX/CABINET ENTRANCES.

BOLD CONSTRUCTION NOTES SHOW NEW "IS FIBER" WORK

1. INSTALL REA, PE – 22, SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE
2. INSTALL REA, PE – 38, (FIGURE – 8) SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE
3. INSTALL CATEGORY 5E CABLE
4. INSTALL SMFO CABLE
5. INSTALL COAXIAL ANTENNA CABLE
6. INSTALL FIBER-OPTIC DROP CABLE
7. INSTALL TRACER WIRE
8. INSTALL CONDUIT UNDERGROUND
9. INSTALL PVC CONDUIT
10. INSTALL RIGID, GALVANIZED STEEL CONDUIT
11. INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
12. INSTALL RIGID, GALVANIZED STEEL RISER WITH HEAT SHRINK TUBING
13. INSTALL HEAT SHRINK TUBING RETROFIT KIT
14. INSTALL HIGH DENSITY POLYETHYLENE CONDUIT
15. DIRECTIONAL DRILL CONDUIT
16. BORE AND JACK CONDUIT
17. INSTALL CABLE(S) IN EXISTING CONDUIT
18. INSTALL CABLE(S) IN NEW CONDUIT
19. INSTALL CABLE(S) IN EXISTING RISER(S)
20. INSTALL CABLE(S) IN NEW RISER(S)
21. INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS
22. INSTALL NEW CONDUIT INTO CABINET BASE (USE EX CONDUIT STUBOUTS WHEN AVAILABLE)
23. INSTALL NEW RISER INTO CABINET BASE (USE EX CONDUIT STUBOUTS WHEN AVAILABLE)
24. INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET
25. INSTALL NEW RISER INTO POLE MOUNTED CABINET
26. INSTALL DIGITAL VIDEO ENCODER
27. INSTALL NEW ETHERNET EDGE SWITCH IN CABINET
28. INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET
29. INSTALL UNDERGROUND SPLICE ENCLOSURE
30. INSTALL AERIAL SPLICE ENCLOSURE
31. INSTALL SPLICE CABINET
32. MODIFY EXISTING SPLICE ENCLOSURE OR INTERCONNECT CENTER
33. REMOVE EXISTING SPLICE /HUB /CCTV CABINET
34. INSTALL CABINET FOUNDATION
35. REMOVE EXISTING CABINET FOUNDATION
36. INSTALL CCTV CAMERA ASSEMBLY
37. INSTALL CCTV WOOD POLE
38. INSTALL STANDARD SIZE JUNCTION BOX
39. INSTALL SPECIAL–SIZED JUNCTION BOX
40. INSTALL OVER–SIZED JUNCTION BOX
41. REMOVE EXISTING JUNCTION BOX
42. INSTALL WOOD POLE
43. REMOVE EXISTING WOOD POLE
44. INSTALL AERIAL GUY ASSEMBLY
45. INSTALL STANDARD GUY ASSEMBLY
46. INSTALL SIDEWALK GUY ASSEMBLY
47. INSTALL MESSENGER CABLE
48. REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE
49. REMOVE EXISTING COMMUNICATIONS CABLE
50. INSTALL WIRELESS DSL
51. INSTALL CABLE STORAGE GUIDE(S) [SNOW SHOE(S)] AND STORE 100 FEET OF EACH CABLE
52. INSTALL DELINEATOR MARKER
53. STORE 50 FEET OF COMMUNICATIONS CABLE (EACH CABLE)
54. LASH CABLE(S) TO EXISTING SIGNAL/COMMUNICATIONS CABLE
55. LASH CABLE(S) TO EXISTING MESSENGER CABLE
56. LASH CABLE(S) TO NEW MESSENGER CABLE
57. MODIFY EXISTING ELECTRICAL SERVICE FOR CCTV/HUB
58. INSTALL NEW ELECTRICAL SERVICE FOR CCTV/HUB
59. INSTALL NEW POLE MOUNTED CCTV CABINET
60. INSTALL 4.9GHZ ETHERNET INTEGRATED RADIO /FLAT-PANEL ANTENNA
61. INSTALL UNI-DIRECTIONAL ANTENNA
62. INSTALL 4.9GHZ ETHERNET INTEGRATED RADIO /OMNI-DIRECTIONAL ANTENNA
63. INSTALL 900 MHZ ETHERNET RADIO
64. INTERCEPT AND REROUTE EXISTING CONDUITS
65. BOND MESSENGER TO POLE GROUND
66. BOND RISER TO POLE GROUND
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ATTACHMENT POINT:
XXX / YYY — DISTANCE ABOVE (IN) REFERENCE POINT
YYY / XXX — REFERENCE POINT DISTANCE BELOW (IN)

CONSTRUCTION NOTE SYMBOLOGY KEY
NUMBER OF CABLE(S) /LOOPS /DETECTOR AMPLIFIERS, GUYS
NUMBER OF FIBERS/TWISTED PAIRS
NUMBER OF RISER(S)/ CONDUIT(S)
DIAMETER OF RISER(S)/ CONDUIT(S) (IN)

ATKINS
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Prepared for the Offices of:
Transportation Mobility and Safety Division
North Carolina Department of Transportation
Intelligent Transportation Systems
759 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-123.dgn

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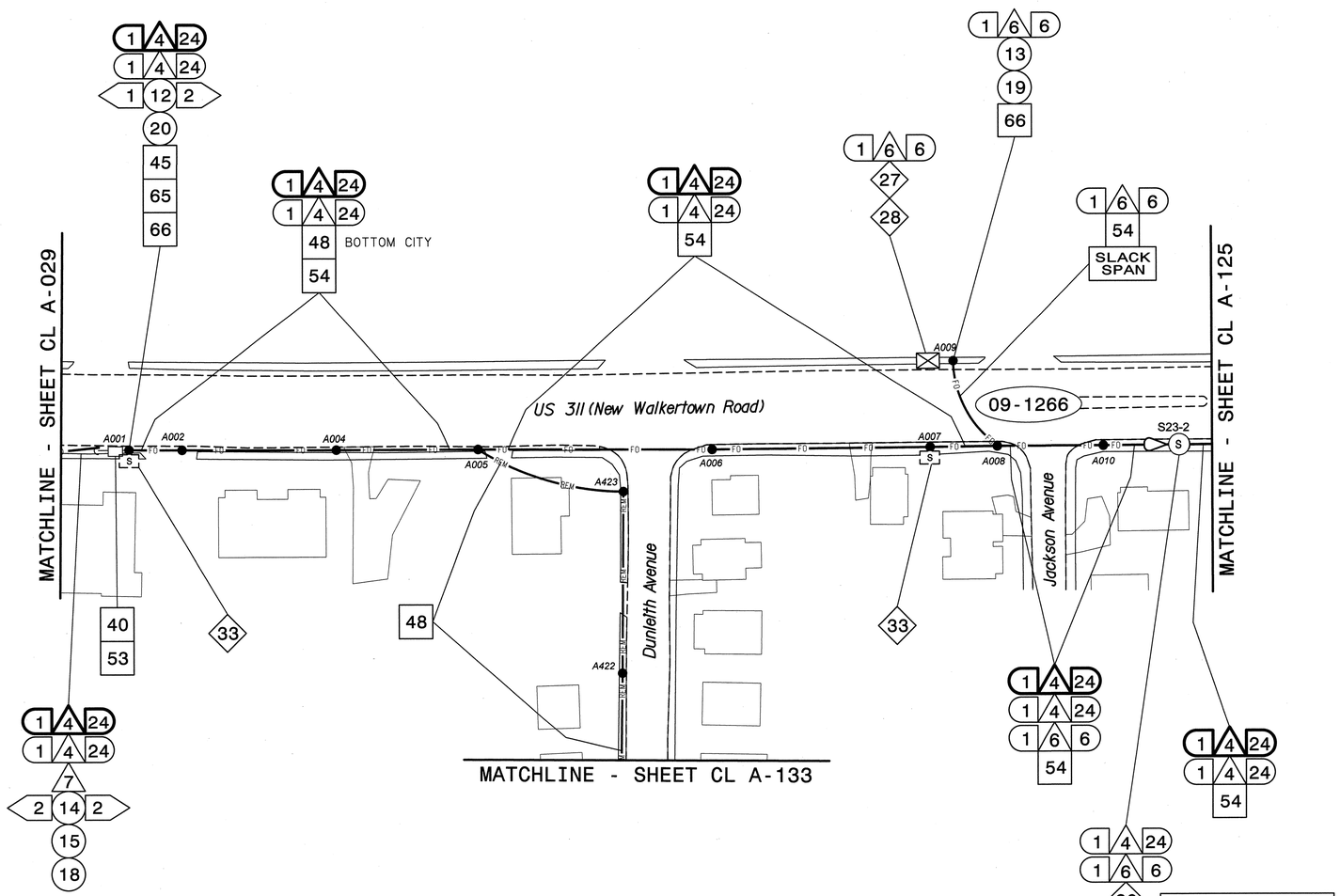
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-124



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Prepared for the Offices of:
Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE DATE 1-11-13

CADD Filename: CL A-124.dgn

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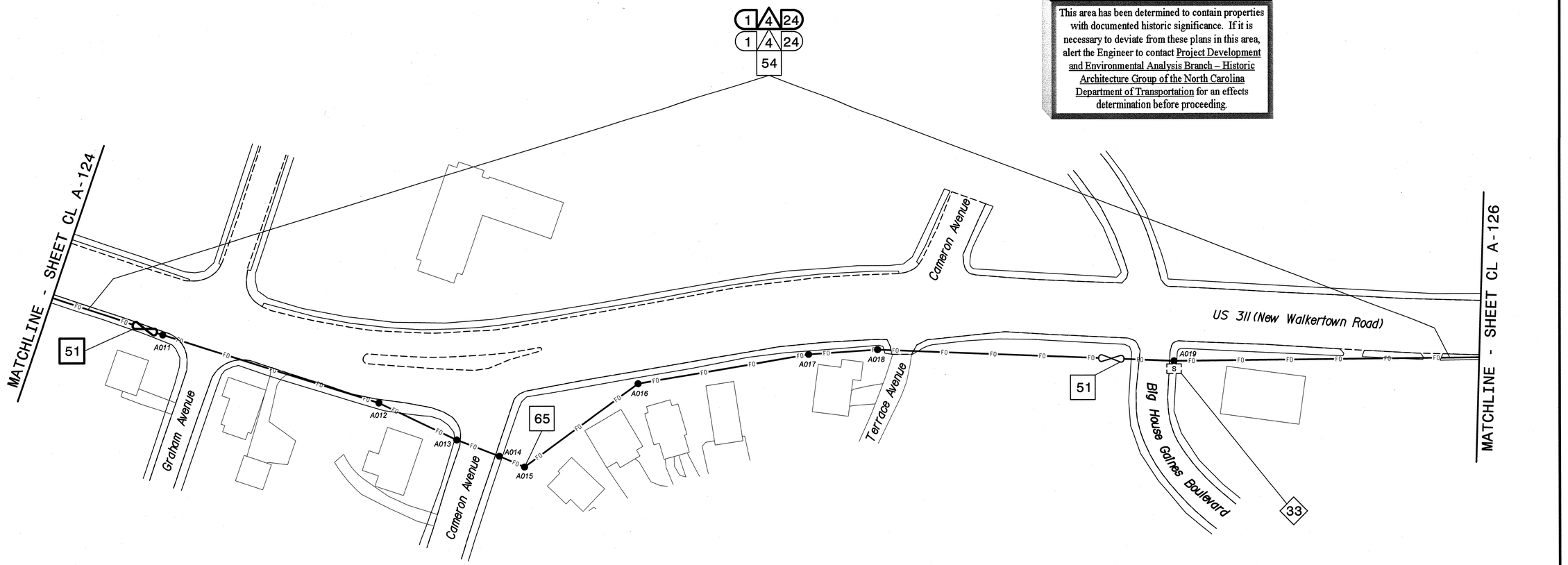
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-125



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BOLD CONSTRUCTION NOTES SHOW NEW "IS FIBER" WORK

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2 INSTALL REA, PE – 38, (FIGURE – 8) SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE	14 INSTALL HIGH DENSITY POLYETHYLENE CONDUIT	26 INSTALL DIGITAL VIDEO ENCODER	38 INSTALL STANDARD SIZE JUNCTION BOX	50 INSTALL WIRELESS DSL	62 INSTALL 4.9GHZ ETHERNET INTEGRATED RADIO /OMNI–DIRECTIONAL ANTENNA
3 INSTALL CATEGORY 5E CABLE	15 DIRECTIONAL DRILL CONDUIT	27 INSTALL NEW ETHERNET EDGE SWITCH IN CABINET	39 INSTALL SPECIAL–SIZED JUNCTION BOX	51 INSTALL CABLE STORAGE GUIDE(S) [SNOW SHOE(S)] AND STORE 100 FEET OF EACH CABLE	63 INSTALL 900 MHZ ETHERNET RADIO
4 INSTALL SMFO CABLE	16 BORE AND JACK CONDUIT	28 INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET	40 INSTALL OVER–SIZED JUNCTION BOX	52 INSTALL DELINEATOR MARKER	64 INTERCEPT AND REROUTE EXISTING CONDUITS
5 INSTALL COAXIAL ANTENNA CABLE	17 INSTALL CABLE(S) IN EXISTING CONDUIT	29 INSTALL UNDERGROUND SPLICE ENCLOSURE	41 REMOVE EXISTING JUNCTION BOX	53 STORE 50 FEET OF COMMUNICATIONS CABLE (EACH CABLE)	65 BOND MESSENGER TO POLE GROUND
6 INSTALL FIBER–OPTIC DROP CABLE	18 INSTALL CABLE(S) IN NEW CONDUIT	30 INSTALL AERIAL SPLICE ENCLOSURE	42 INSTALL WOOD POLE	54 LASH CABLE(S) TO EXISTING SIGNAL/COMMUNICATIONS CABLE	66 BOND RISER TO POLE GROUND
7 INSTALL TRACER WIRE	19 INSTALL CABLE(S) IN EXISTING RISER(S)	31 INSTALL SPLICE CABINET	43 REMOVE EXISTING WOOD POLE	55 LASH CABLE(S) TO EXISTING MESSENGER CABLE	67 BOND TRACER WIRE TO POLE GROUND
8 INSTALL CONDUIT UNDERGROUND	20 INSTALL CABLE(S) IN NEW RISER(S)	32 MODIFY EXISTING SPLICE ENCLOSURE OR INTERCONNECT CENTER	44 INSTALL AERIAL GUY ASSEMBLY	56 LASH CABLE(S) TO NEW MESSENGER CABLE	68 BOND TRACER WIRE TO EQUIPMENT GROUND BUS
9 INSTALL PVC CONDUIT	21 INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS	33 REMOVE EXISTING SPLICE /HUB /CCTV CABINET	45 INSTALL STANDARD GUY ASSEMBLY	57 MODIFY EXISTING ELECTRICAL SERVICE FOR CCTV/HUB	69 REMOVE EXISTING CCTV CAMERA ASSEMBLY
10 INSTALL RIGID, GALVANIZED STEEL CONDUIT	22 INSTALL NEW CONDUIT INTO CABINET BASE (USE EX CONDUIT STUBOUTS WHEN AVAILABLE)	34 INSTALL CABINET FOUNDATION	46 INSTALL SIDEWALK GUY ASSEMBLY	58 INSTALL NEW ELECTRICAL SERVICE FOR CCTV/HUB	70 INSTALL 4.9GHZ FLAT–PANEL ANTENNA
11 INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD	23 INSTALL NEW RISER INTO CABINET BASE (USE EX CONDUIT STUBOUTS WHEN AVAILABLE)	35 REMOVE EXISTING CABINET FOUNDATION	47 INSTALL MESSENGER CABLE	59 INSTALL NEW POLE MOUNTED CCTV CABINET	71 INSTALL HUB CABINET
12 INSTALL RIGID, GALVANIZED STEEL RISER WITH HEAT SHRINK TUBING	24 INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET	36 INSTALL CCTV CAMERA ASSEMBLY	48 REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE	60 INSTALL 4.9GHZ ETHERNET INTEGRATED RADIO /FLAT–PANEL ANTENNA	72 INSTALL MANAGED ETHERNET SWITCH

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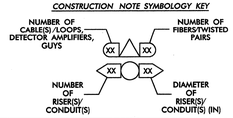
CONSTRUCTION NOTE SYMBOLOGY KEY



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Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
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SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022516 LISA M. MOON
SIGNATURE DATE
Lisa M Moon 1.11.13
CADD Filename: CL A-125.dgn

03-JAN-2013 12:57
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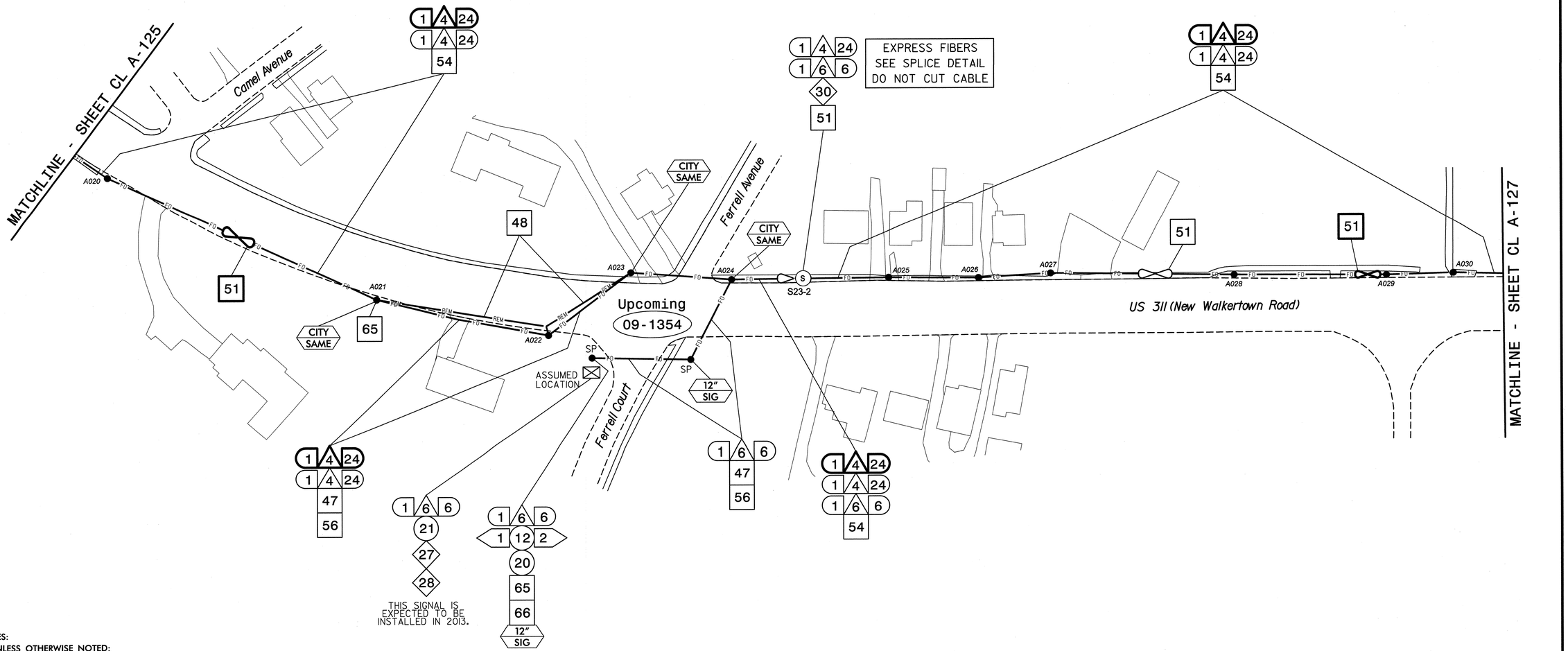
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-126



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ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

SCALE 0 50 1"=50'

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LW Moon

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

Lisa M Moon 1-14-13
SIGNATURE DATE

CADD Filename: CL A-126.dgn

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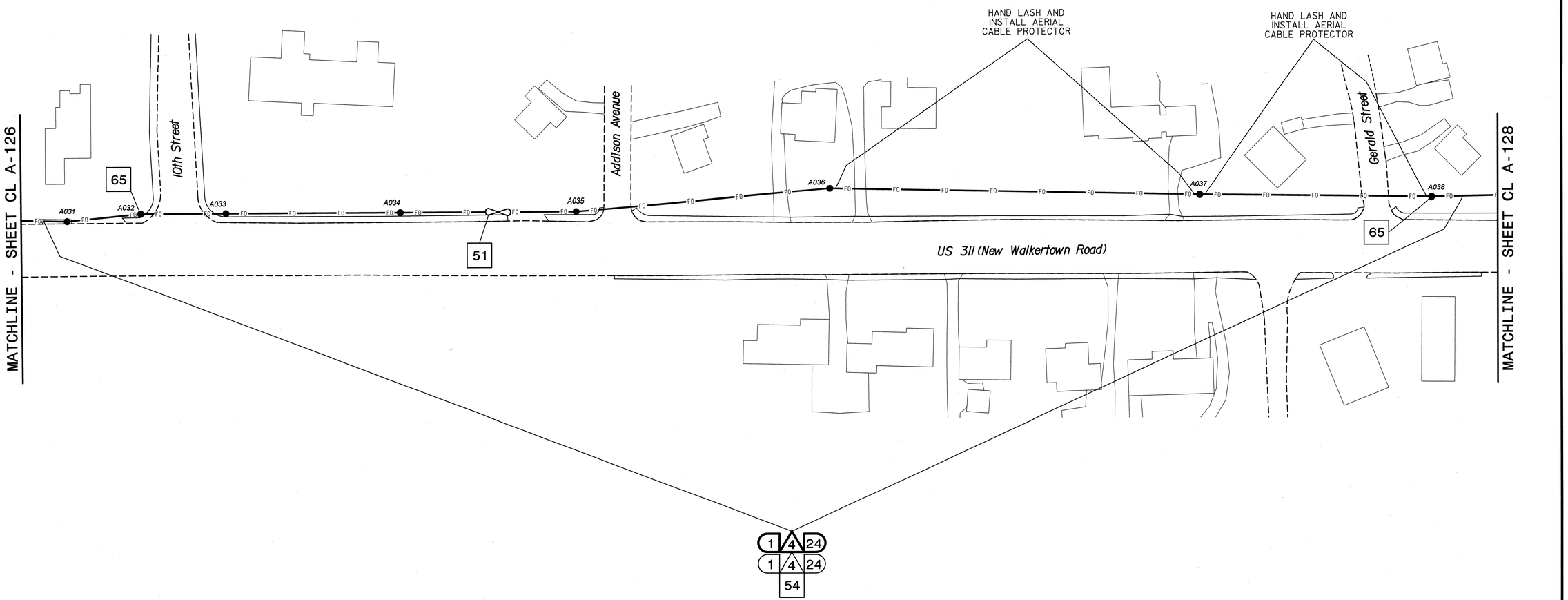
13833

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-127



NOTES:
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BOLD CONSTRUCTION NOTES SHOW NEW "IS FIBER" WORK

1. INSTALL REA, PE – 22, SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE
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Prepared for the Offices of:
Department of Transportation — Mobility and Safety Division — State of North Carolina — Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE: January 2013 REVIEWED BY: MB Toth
PREPARED BY: BKS/AJD REVIEWED BY: LW Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
Lisa M. Moon 1-11-13
SIGNATURE DATE

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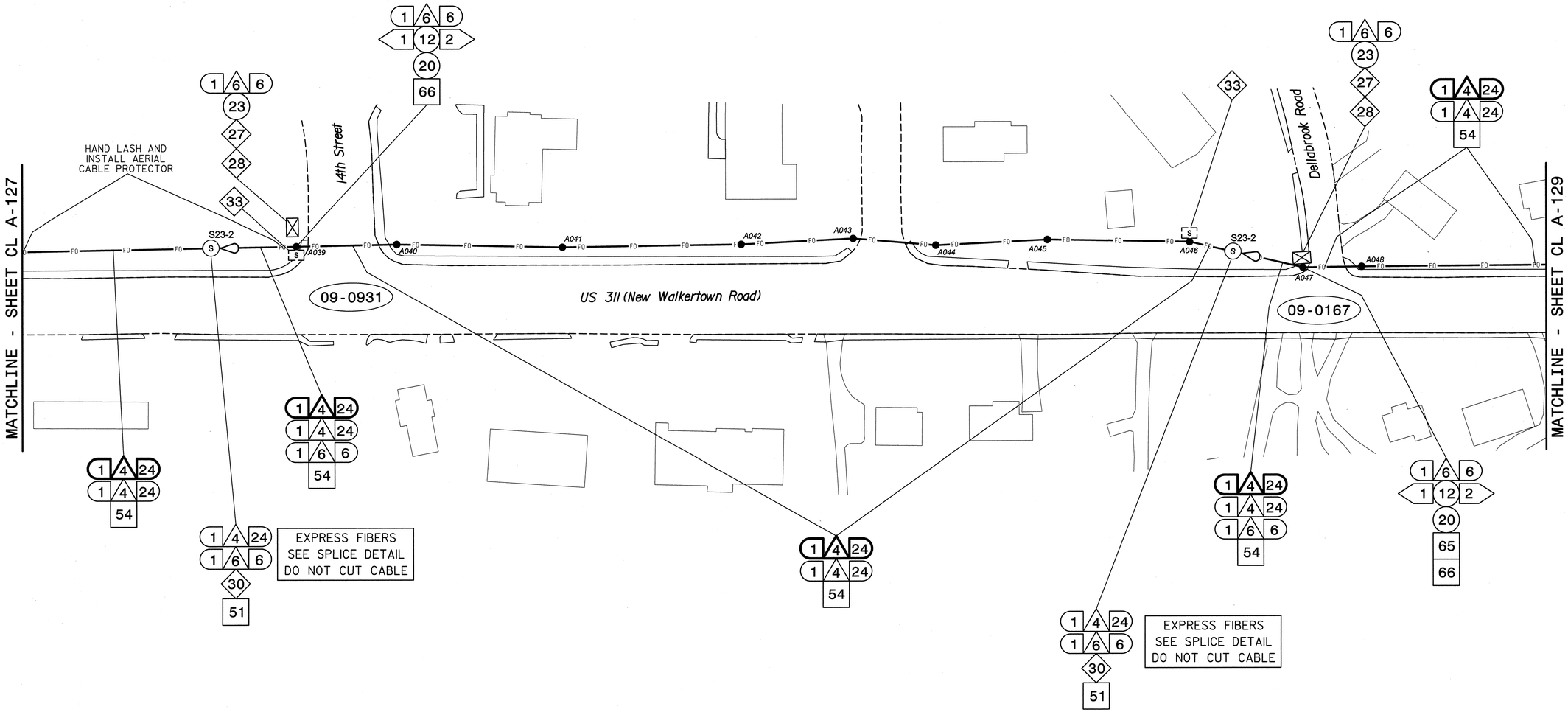
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-128



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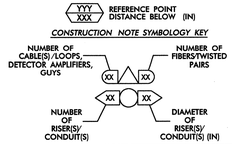

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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems

750 Greenfield Parkway, Garner, NC 27529

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Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL
SEAL 022516
ENGINEER
LISA M. MOON

Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-128.dgn

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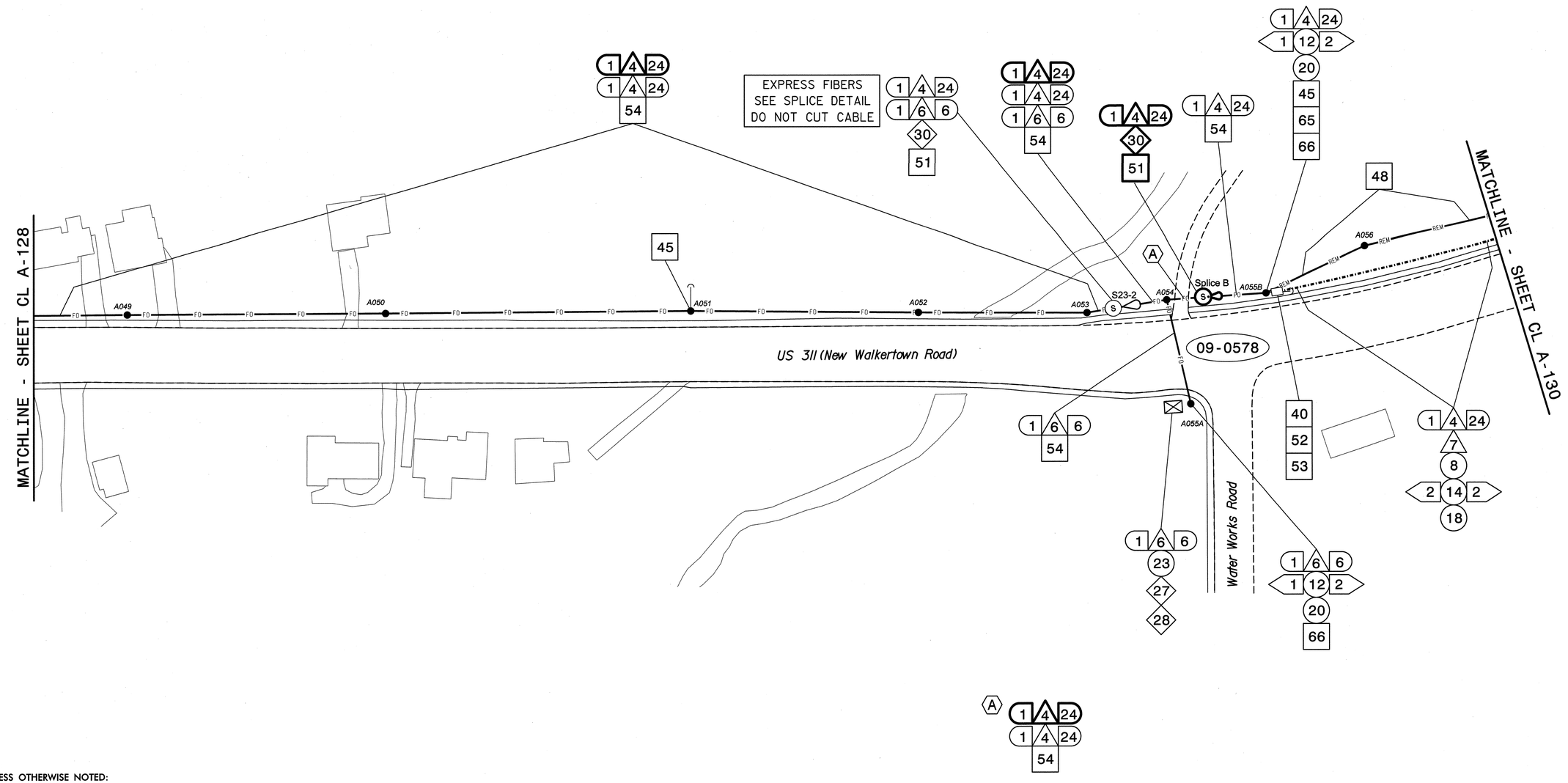
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-129



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Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
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SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022516 LISA M. MOON
SIGNATURE DATE 1-11-13
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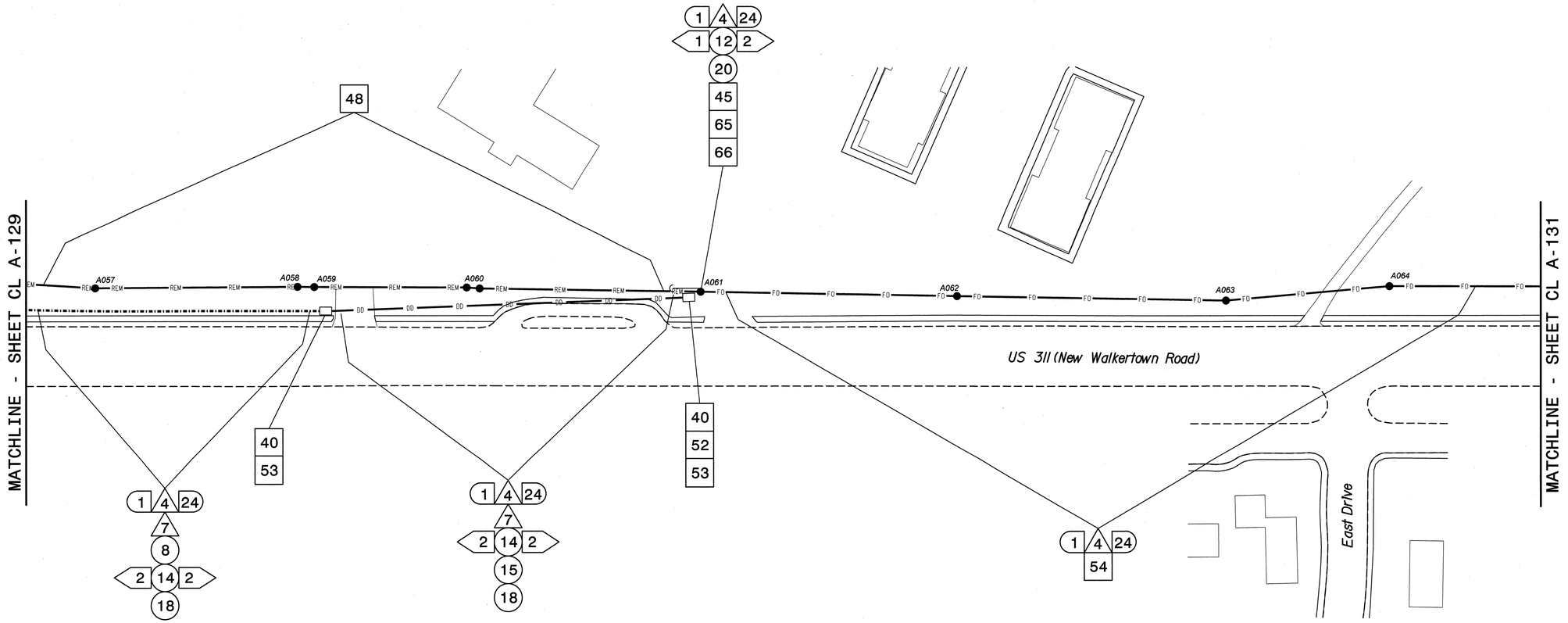
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-130



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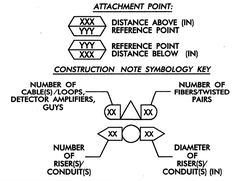
ATTACHMENT POINT:

XXX DISTANCE ABOVE (IN) REFERENCE POINT
YYY REFERENCE POINT DISTANCE BELOW (IN)

CONSTRUCTION NOTE SYMBOLOGY KEY



ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:

Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems

750 Greenfield Parkway, Garner, NC 27529

SCALE 0 50 1"=50'

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

SIGNATURE 1-11-13 DATE

CADD Filename: CL A-130.dgn

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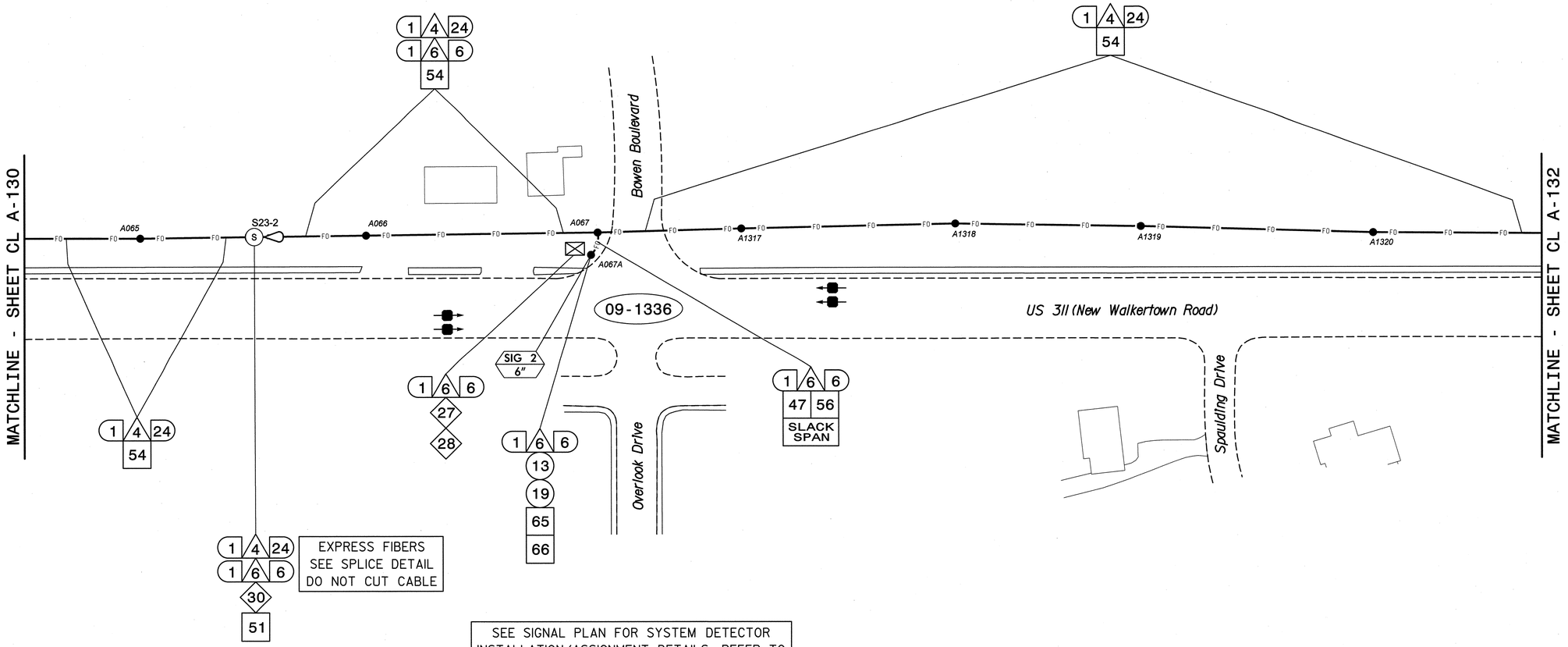
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-131



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STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-131.dgn

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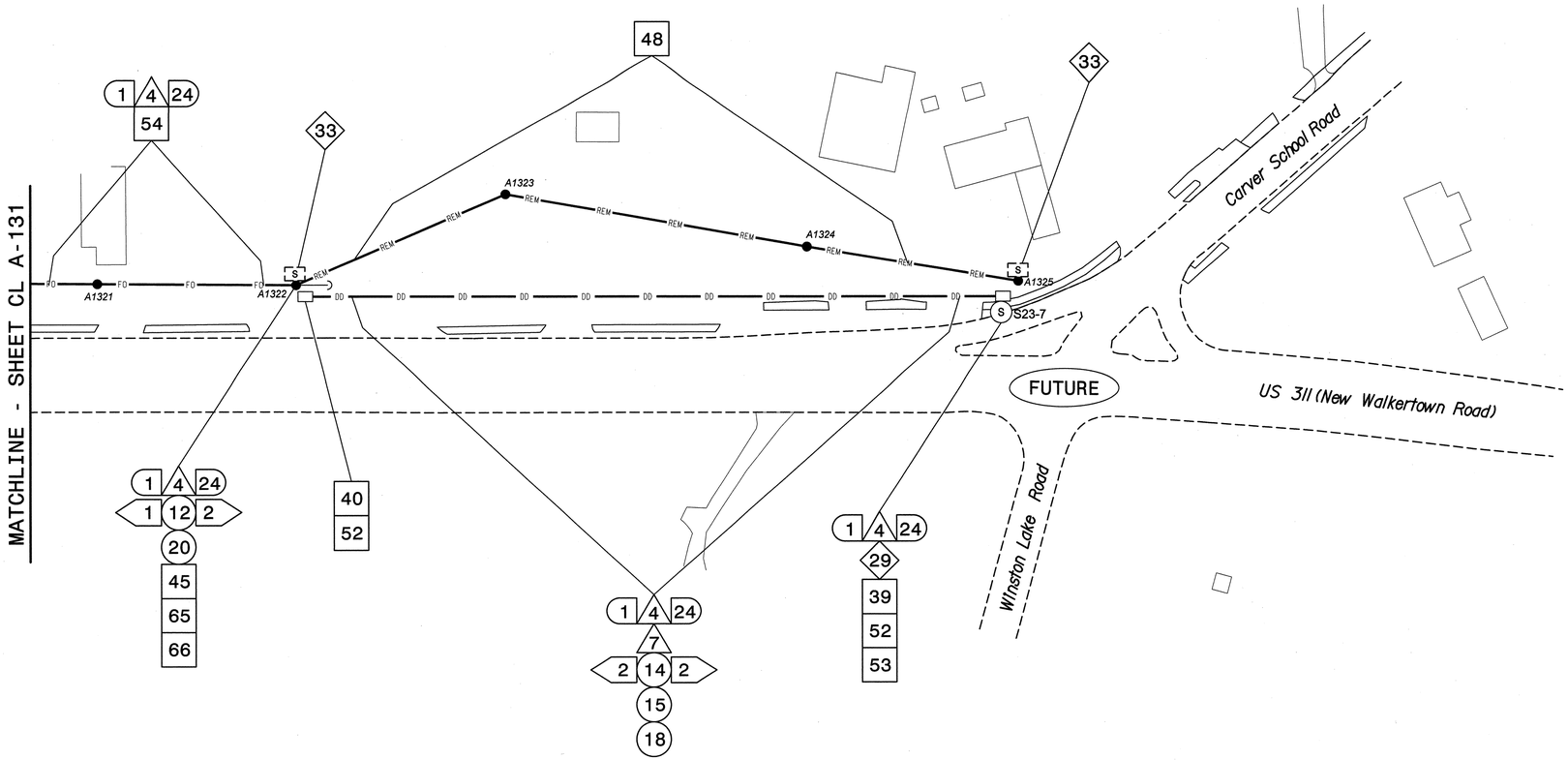
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-132



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ATKINS
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Prepared for the Offices of:
North Carolina Department of Transportation — Transportation Mobility and Safety Division — Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

Lisa M. Moon 1-11-13
SIGNATURE DATE

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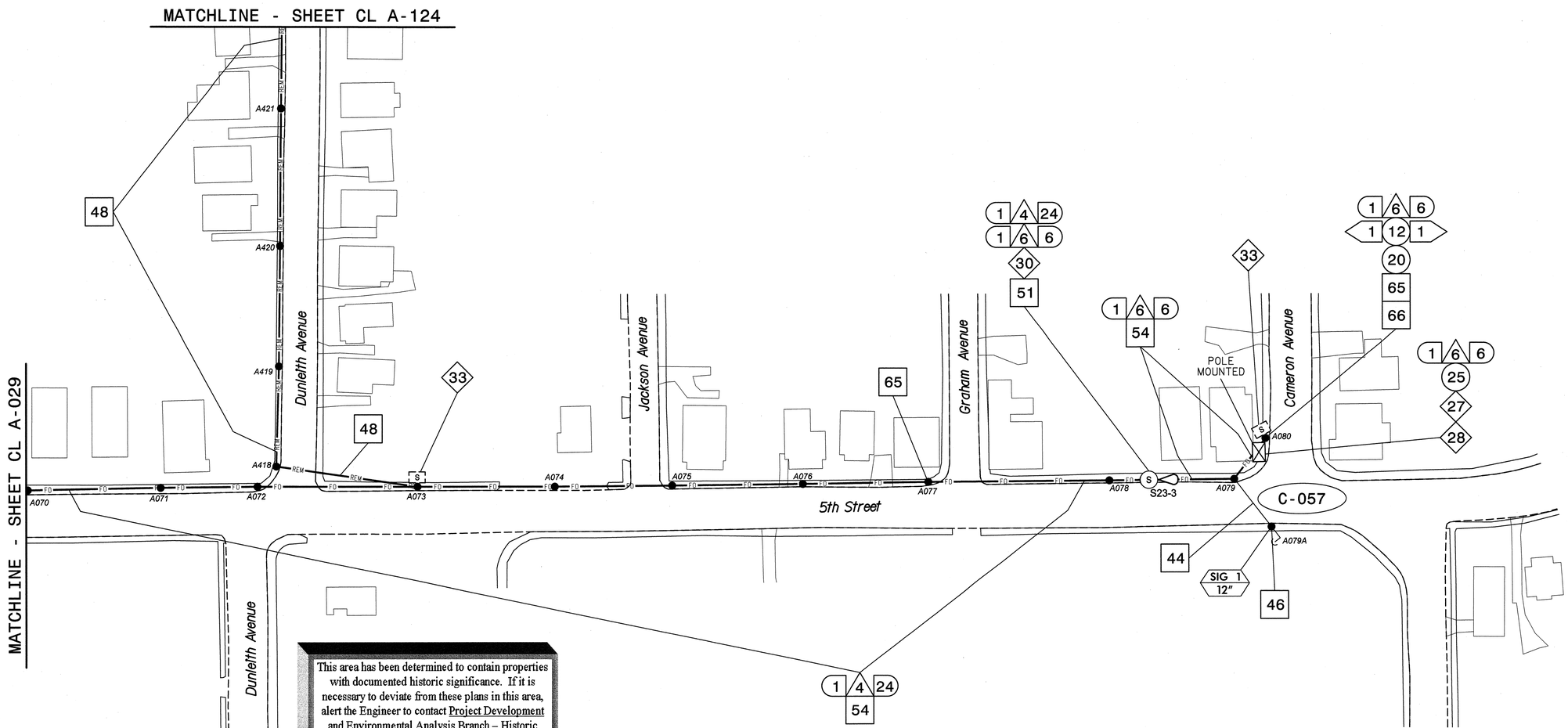
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-133



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SCALE 0 50 1"=50'

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

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PROJECT REFERENCE NO.	SHEET NO.
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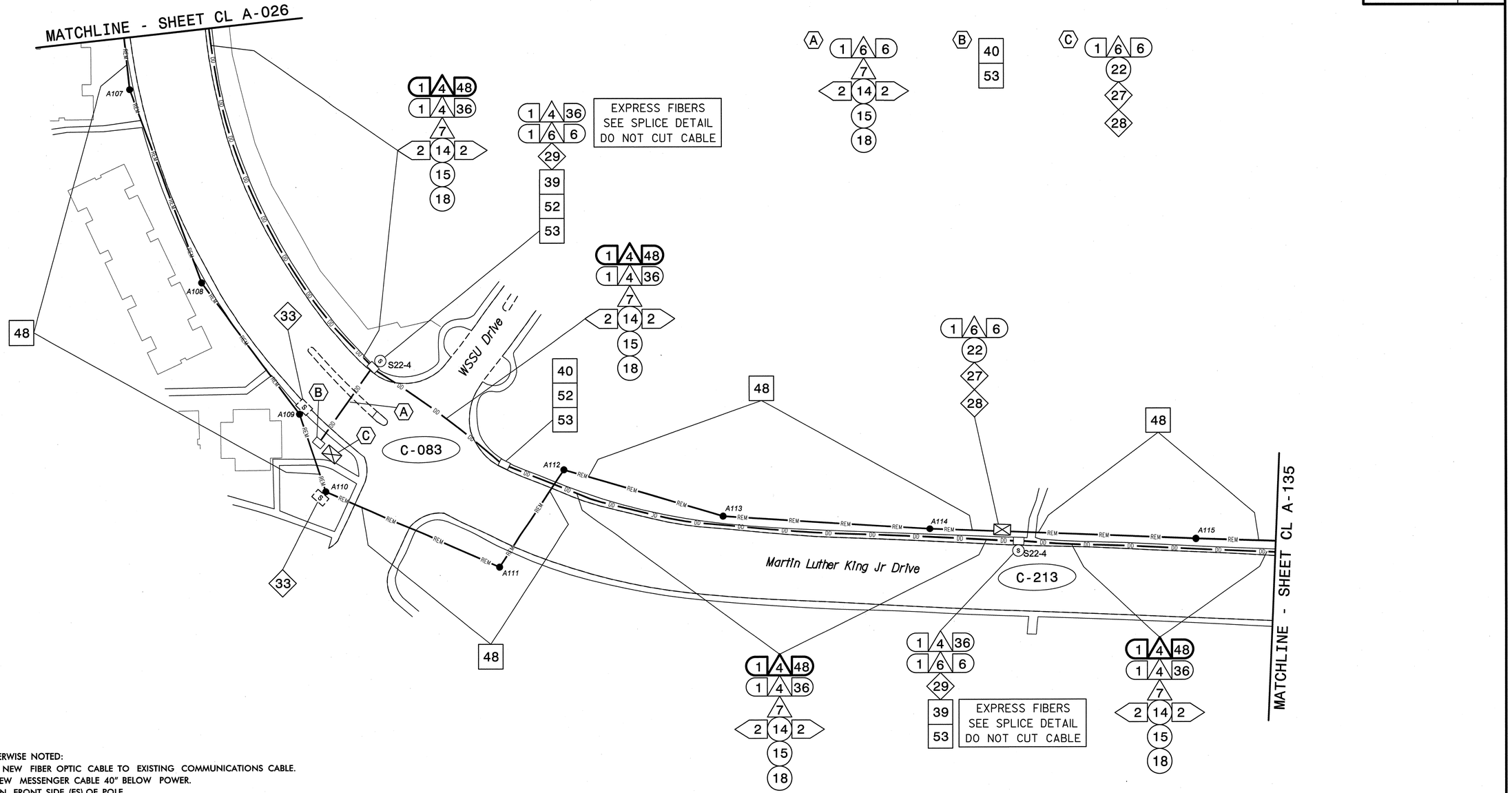

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52. INSTALL DELINEATOR MARKER
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NUMBER OF FIBERS/TWISTED PAIRS
NUMBER OF RISER(S)/ CONDUIT(S)
DIAMETER OF RISER(S)/ CONDUIT(S) (IN)

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

SCALE 0 50 1"=50'

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE: January 2013 REVIEWED BY: MB Toth

PREPARED BY: BKS/AJD REVIEWED BY: LW Moon

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA W. MOON
SIGNATURE DATE 1-11-13

CADD Filename: CL A-134.dgn

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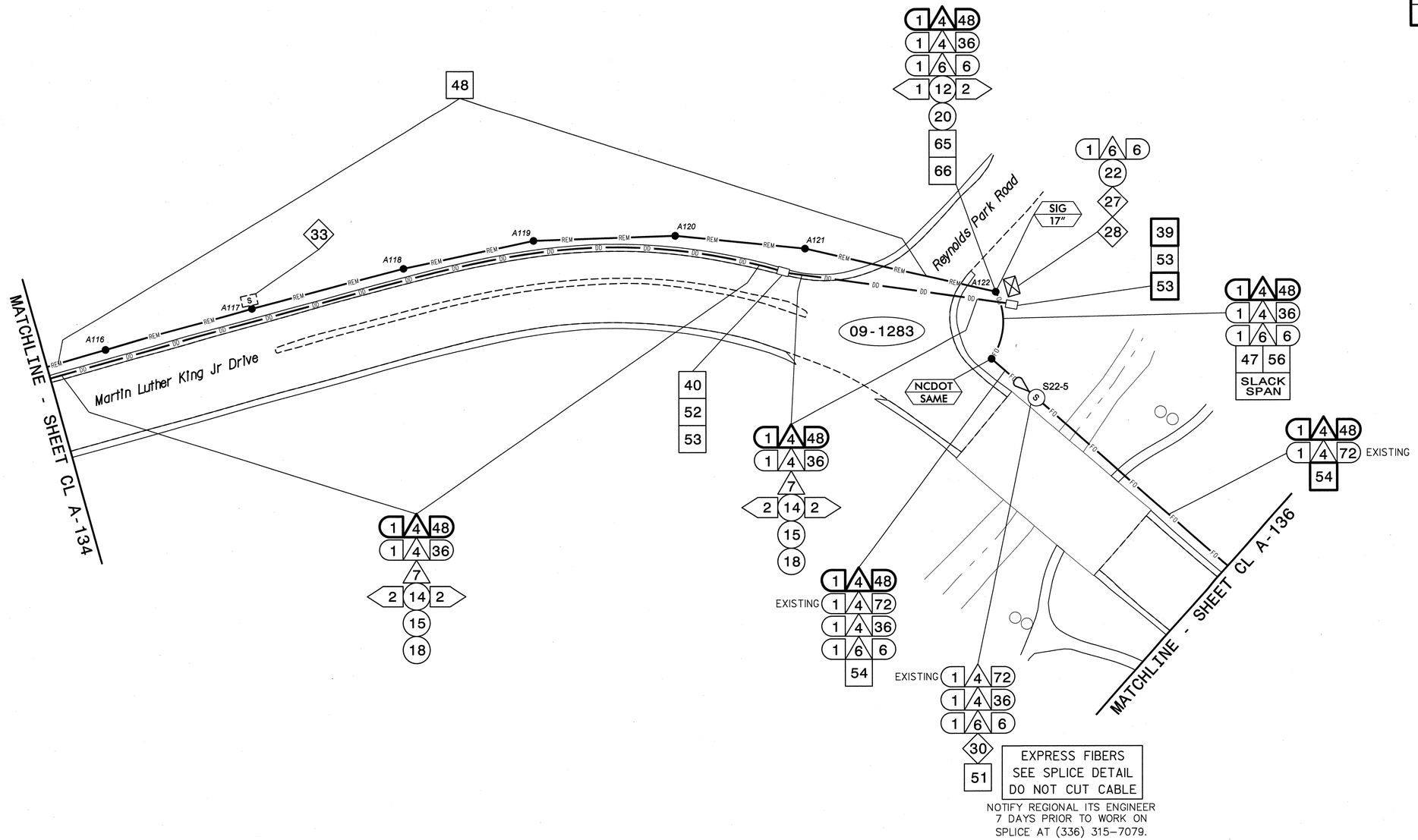
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-135



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Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
Lisa M Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-135.dgn

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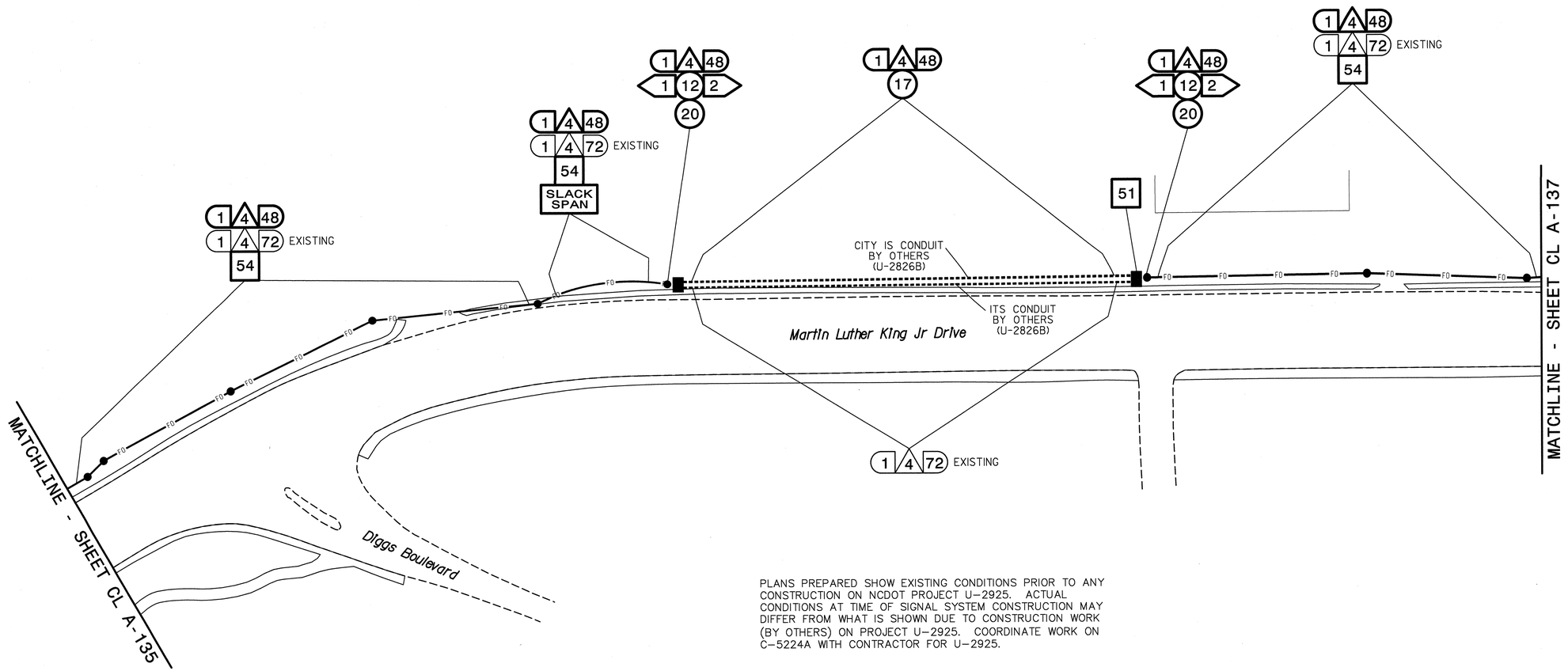
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-136



PLANS PREPARED SHOW EXISTING CONDITIONS PRIOR TO ANY CONSTRUCTION ON NCDOT PROJECT U-2925. ACTUAL CONDITIONS AT TIME OF SIGNAL SYSTEM CONSTRUCTION MAY DIFFER FROM WHAT IS SHOWN DUE TO CONSTRUCTION WORK (BY OTHERS) ON PROJECT U-2925. COORDINATE WORK ON C-5224A WITH CONTRACTOR FOR U-2925.

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Prepared for the Offices of:
NCDOT Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-136.dgn

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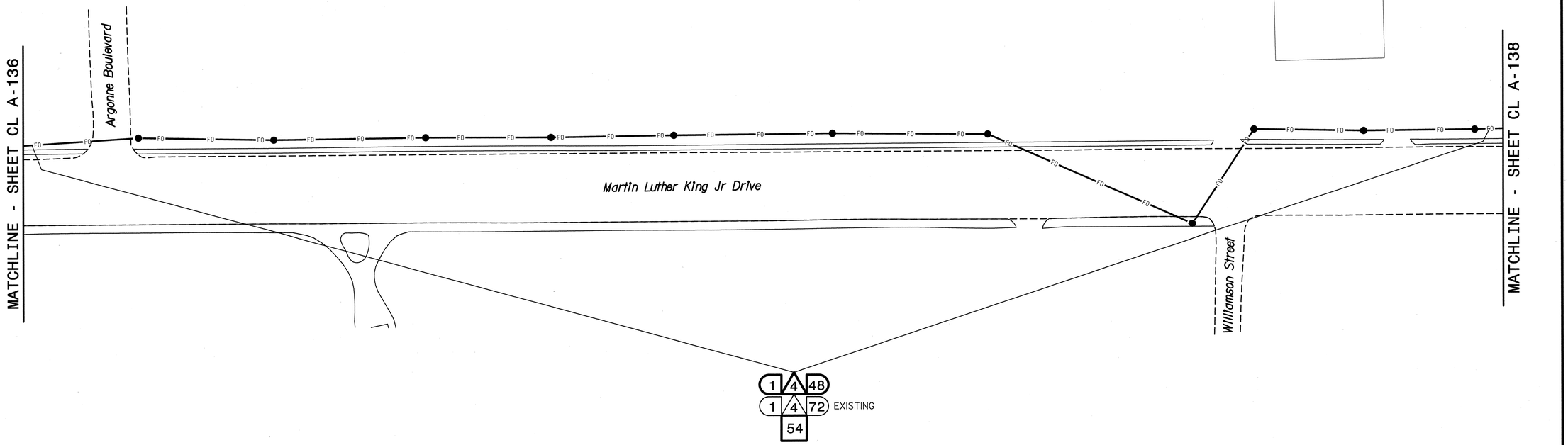
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-137



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Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE Lisa M. Moon 1-11-13 DATE

CADD Filename: CL A-137.dgn

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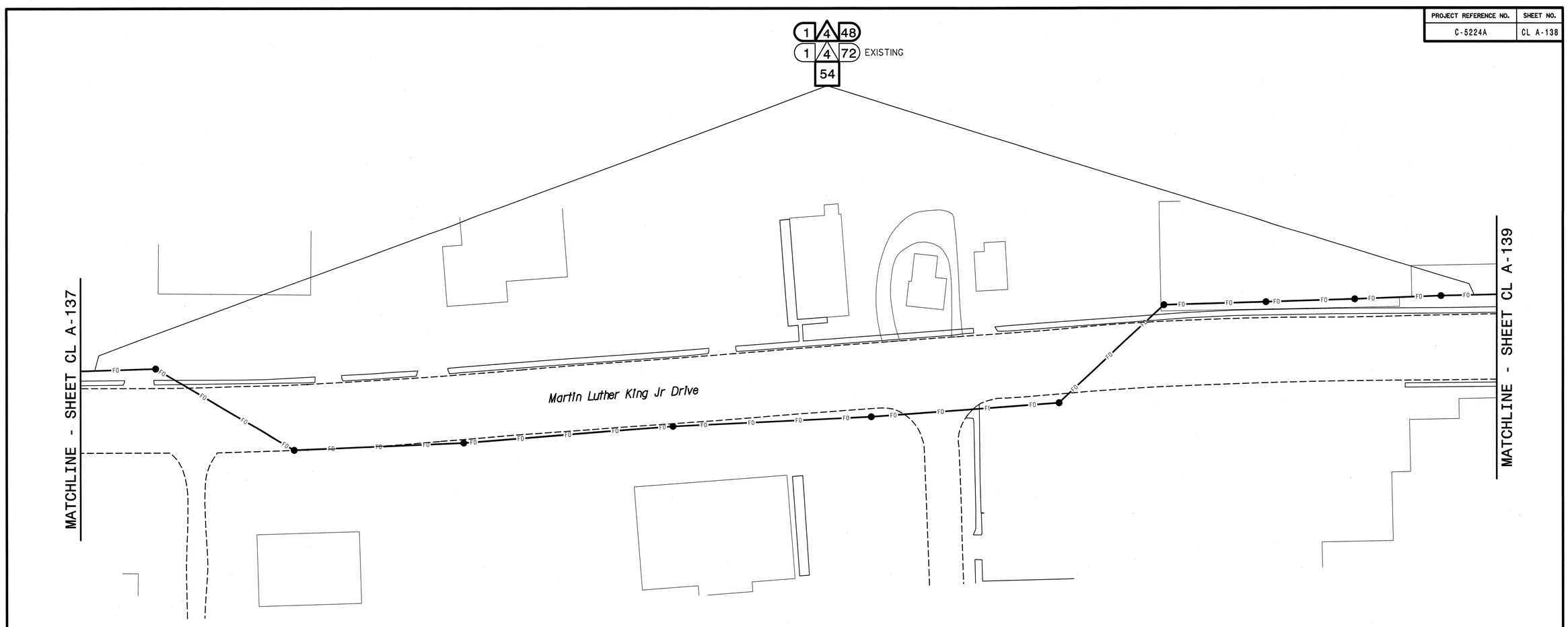
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-138



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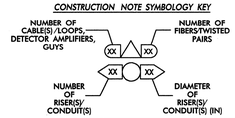

ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION — Integrated Mobility and Safer Roads — Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE DATE
CADD Filename: CL A-138.dgn

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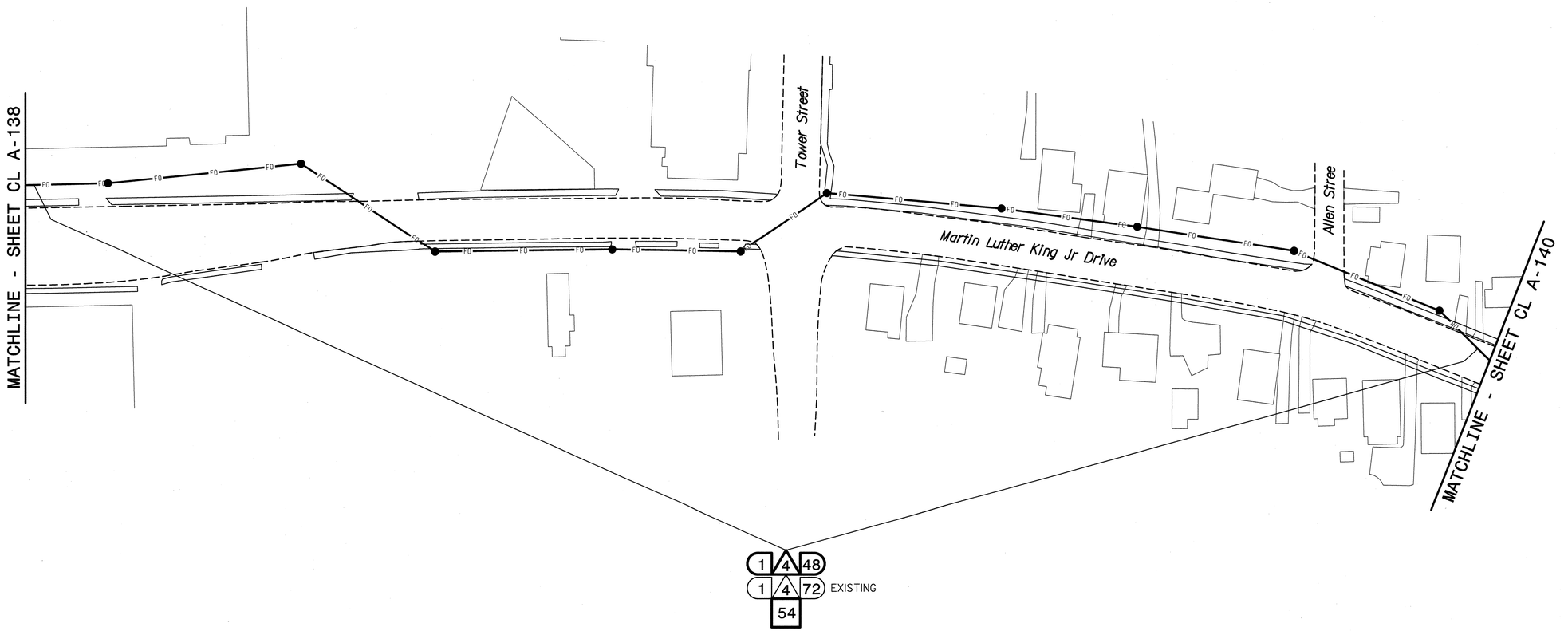
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-139



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ATKINS
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Prepared for the Offices of:
North Carolina Department of Transportation — Integrated Mobility and Safety Division — Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022516 LISA M. MOON

Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-139.dgn

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PROJECT REFERENCE NO.	SHEET NO.
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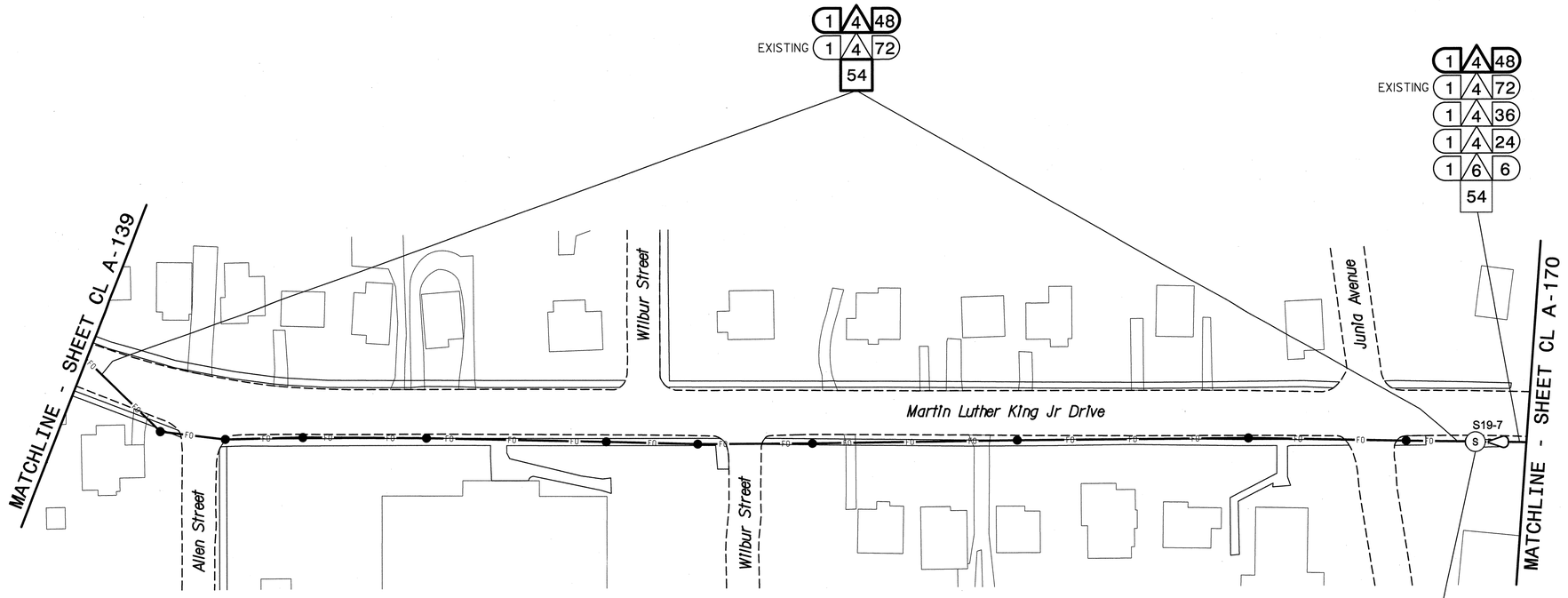

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ATKINS
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Prepared for the Offices of:
Transportation Mobility and Safety Division
NCDOT North Carolina Department of Transportation
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
Lisa M Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-140.dgn

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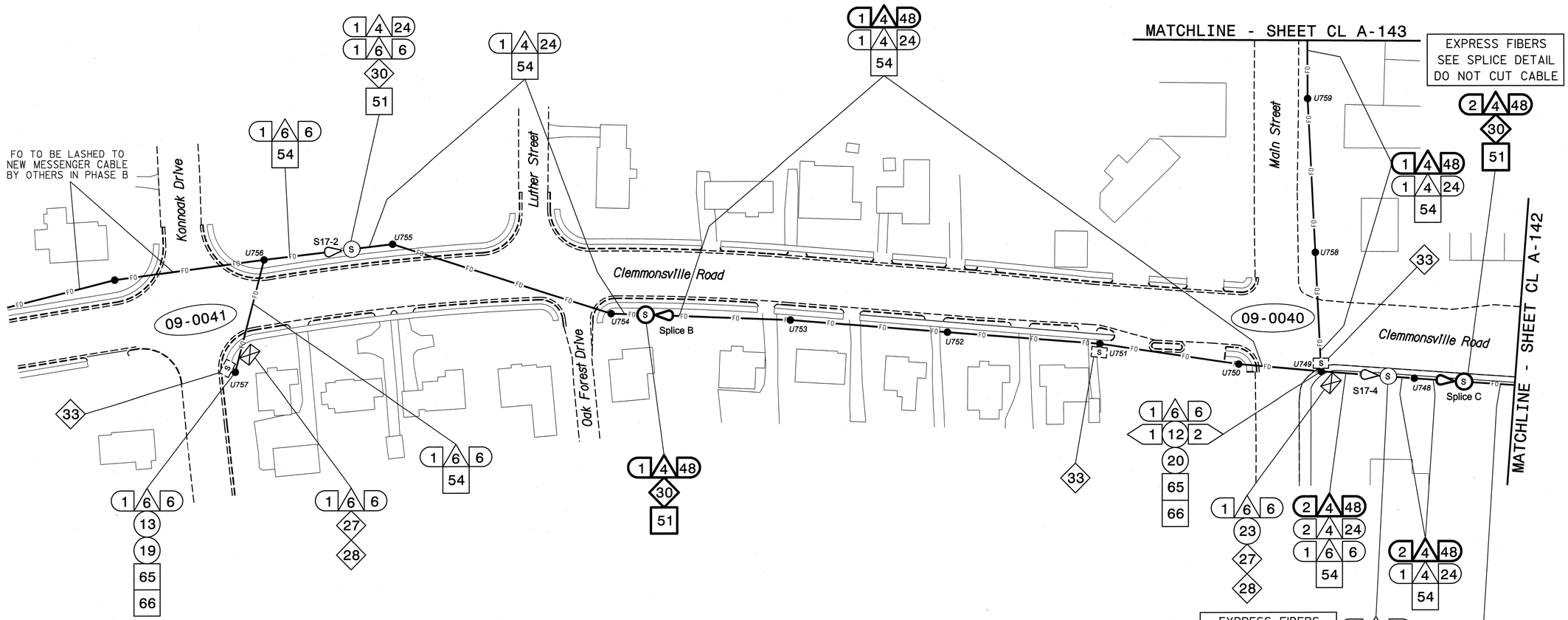
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-141



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SCALE 0 50 1"=50'

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE: January 2013 REVIEWED BY: MB Toth
PREPARED BY: BKS/AJD REVIEWED BY: LM Moon

REVISIONS	INIT.	DATE

SEAL 022516 NORTH CAROLINA PROFESSIONAL ENGINEER LISA M. MOON

Lisa M. Moon 1-17-13
SIGNATURE DATE

CADD Filename: CL A-141.dgn

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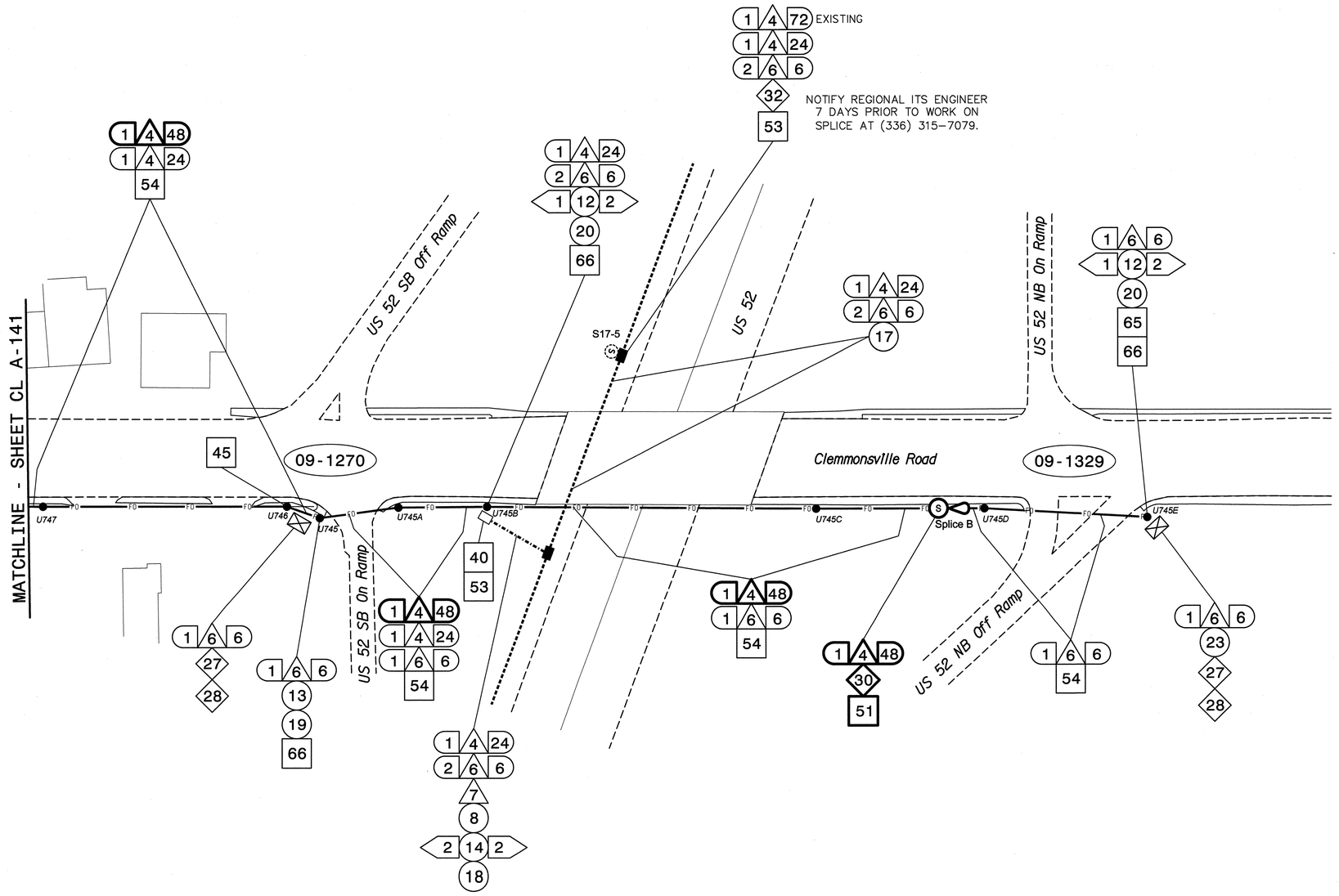
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-142



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24. INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET
25. INSTALL NEW RISER INTO POLE MOUNTED CABINET
26. INSTALL DIGITAL VIDEO ENCODER
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28. INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET
29. INSTALL UNDERGROUND SPLICE ENCLOSURE
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46. INSTALL SIDEWALK GUY ASSEMBLY
47. INSTALL MESSENGER CABLE
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50. INSTALL WIRELESS DSL
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YYY REFERENCE POINT DISTANCE BELOW (IN)

CONSTRUCTION NOTE SYMBOLOGY KEY
NUMBER OF CABLE(S)/LOOPS, DETECTOR AMPLIFIERS, GUYS
NUMBER OF FIBERS/TWISTED PAIRS
NUMBER OF RISER(S)/ CONDUIT(S)
DIAMETER OF RISER(S)/ CONDUIT(S) (IN)

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of: North Carolina Department of Transportation, Mobility and Safety Division, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

SIGNATURE DATE 1-11-13

CADD Filename: CL A-142.dgn

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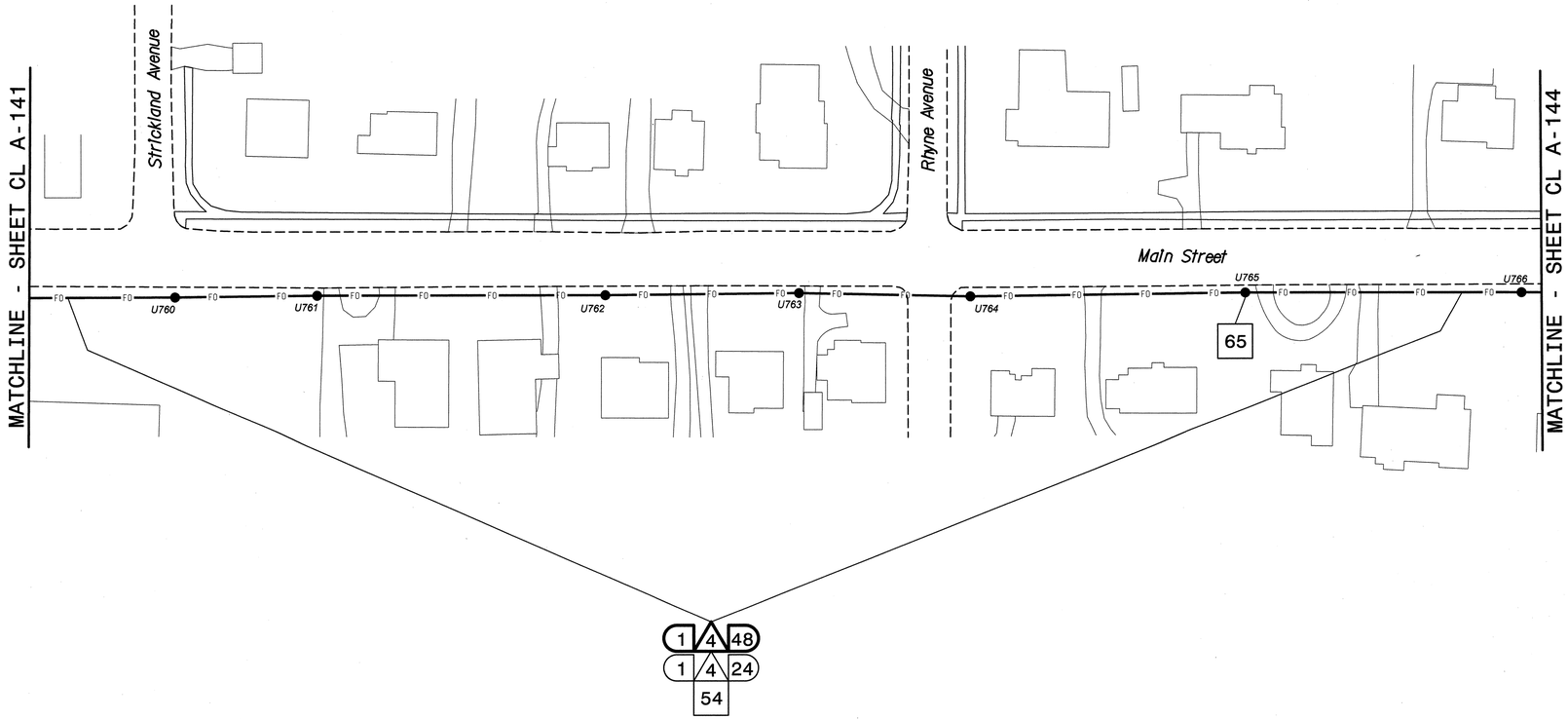
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-143



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ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
North Carolina Department of Transportation, Mobility and Safety Division, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
Lisa M. Moon 1-11-13
SIGNATURE DATE
CADD Filename: CL A-143.dgn

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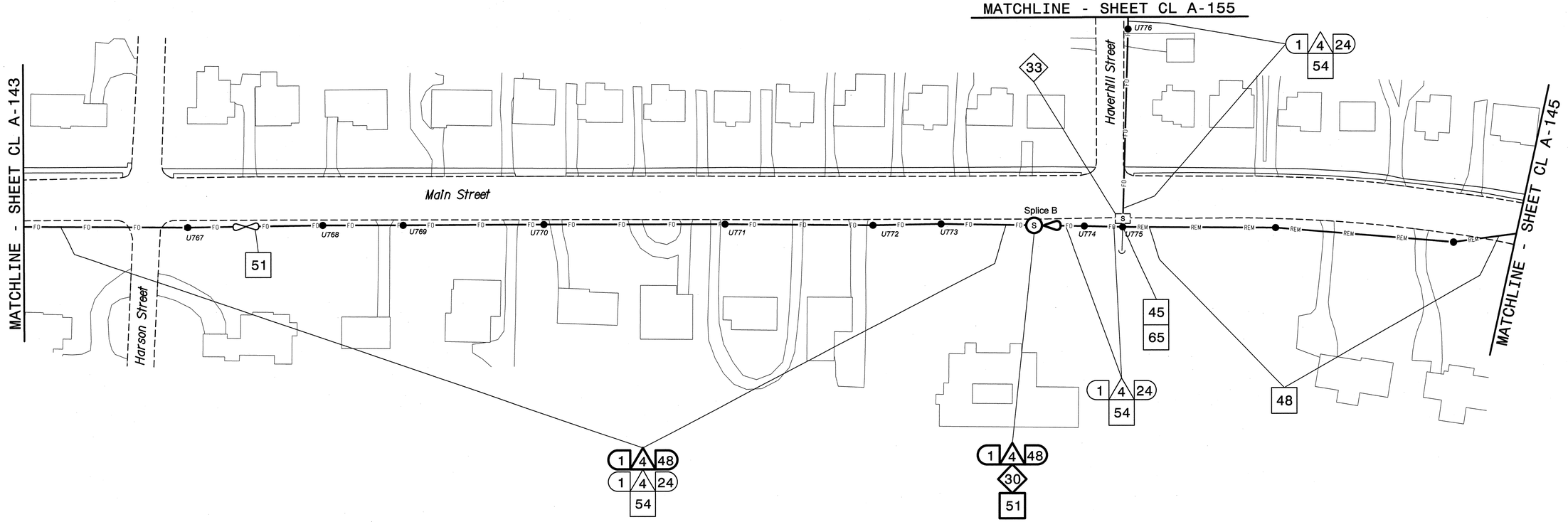
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-144



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ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

Lisa M. Moon 1/11/13
SIGNATURE DATE

CADD Filename: CL A-144.dgn

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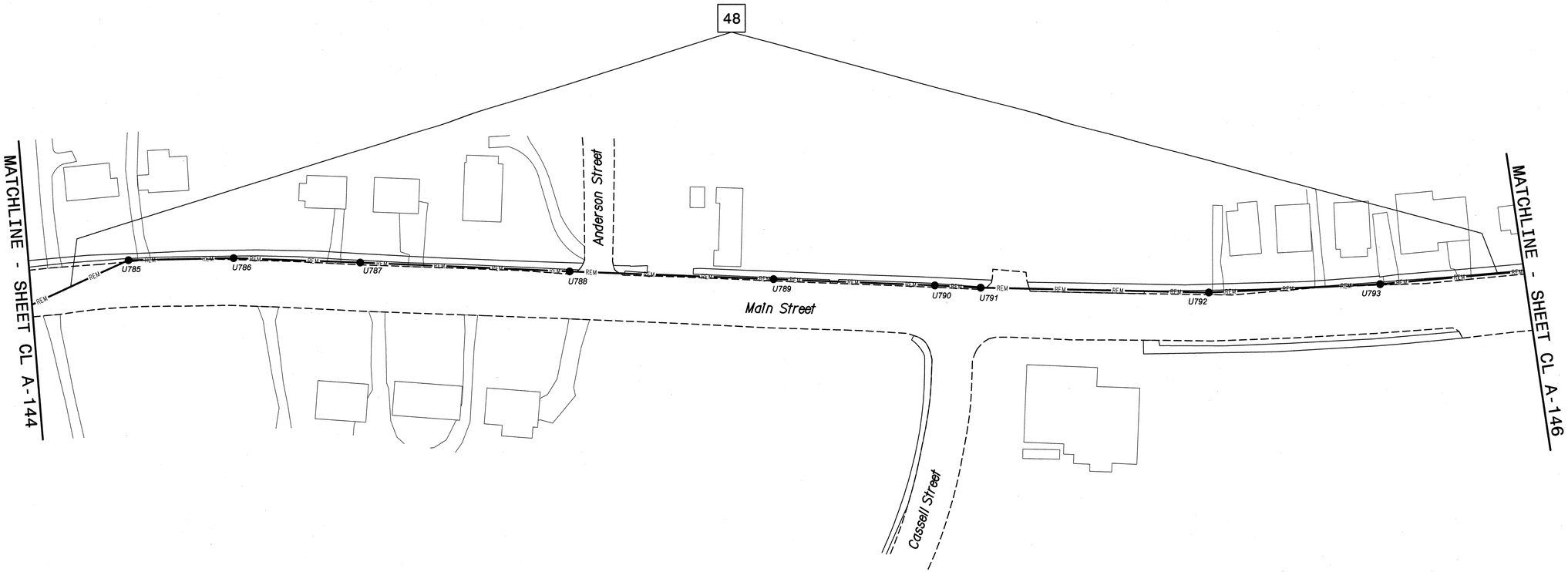
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-145



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750 Greenfield Parkway, Garner, NC 27529

SCALE 0 50 1"=50'

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE: January 2013 REVIEWED BY: MB Toth
PREPARED BY: BKS/AJD REVIEWED BY: LM Woon

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
Lisa M. Moon 1/11/13
SIGNATURE DATE

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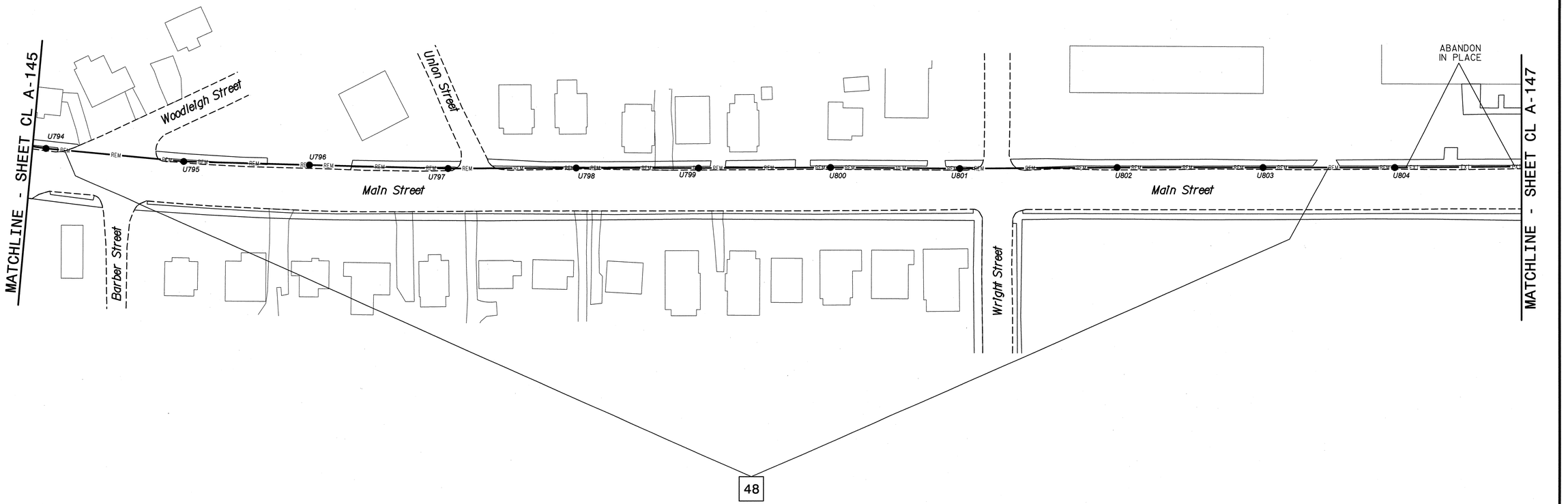

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26. INSTALL DIGITAL VIDEO ENCODER
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32. MODIFY EXISTING SPLICE ENCLOSURE OR INTERCONNECT CENTER
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ATTACHMENT POINT:
XXX DISTANCE ABOVE (IN) REFERENCE POINT
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XXX

CONSTRUCTION NOTE SYMBOLOGY KEY
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ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
NCDOT Transportation Mobility and Safety Division — Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LW Moon

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE DATE 1-11-13
CADD Filename: CL A-146.dgn

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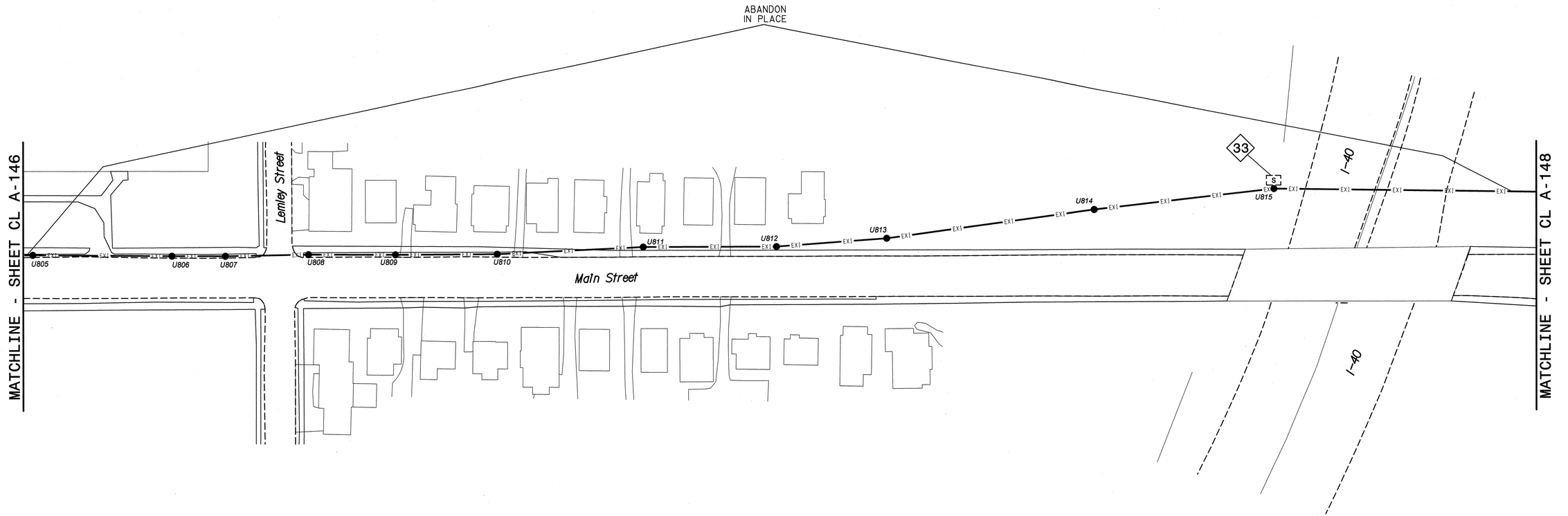
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-147



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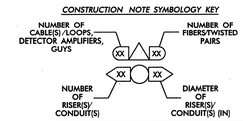

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Prepared for the Offices of:

Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Integrated Transportation Systems

750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

Lisa M. Moon 1-11-13
SIGNATURE DATE

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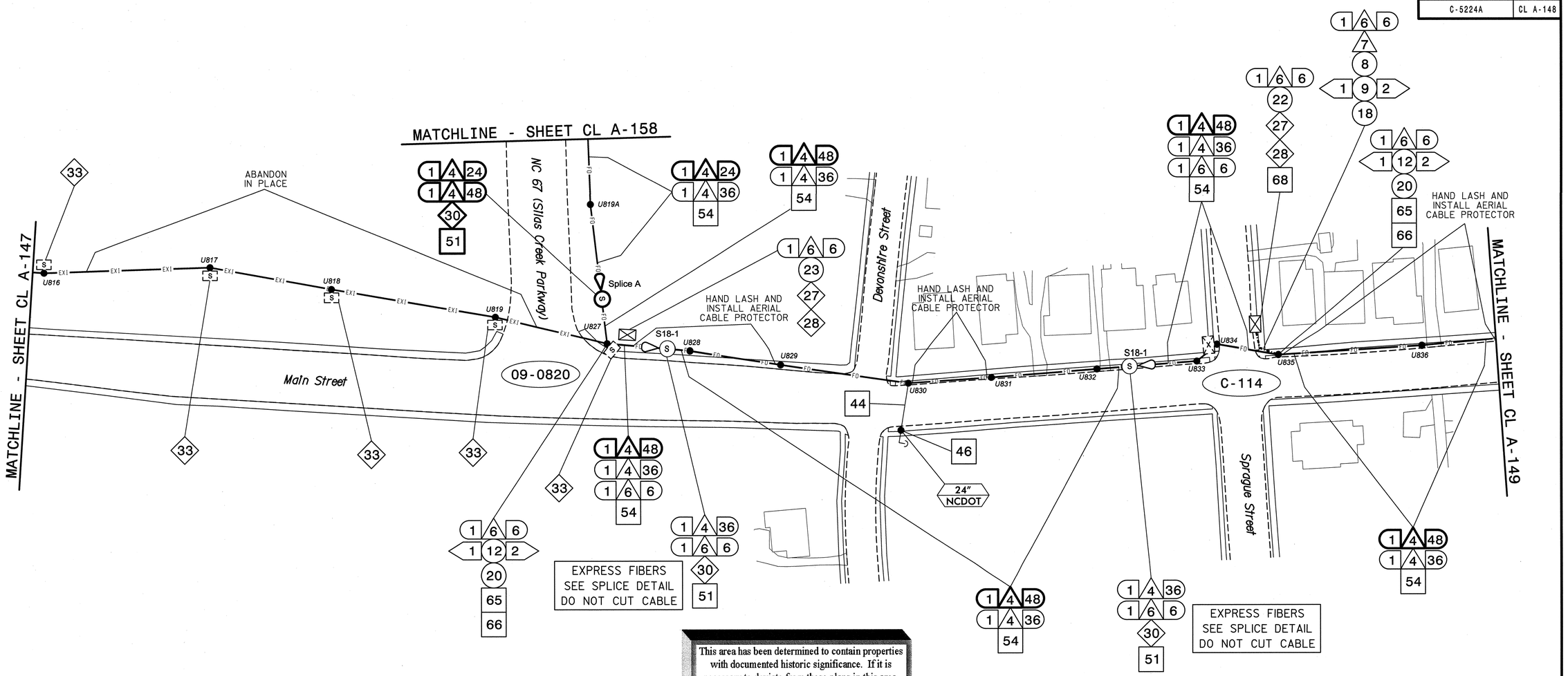
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-148



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1	INSTALL REA, PE – 22, SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE	13	INSTALL HEAT SHRINK TUBING RETROFIT KIT	25	INSTALL NEW RISER INTO POLE MOUNTED CABINET	37	INSTALL CCTV WOOD POLE	49	REMOVE EXISTING COMMUNICATIONS CABLE	61	INSTALL UNI-DIRECTIONAL ANTENNA
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5	INSTALL COAXIAL ANTENNA CABLE	17	INSTALL CABLE(S) IN EXISTING CONDUIT	29	INSTALL UNDERGROUND SPLICE ENCLOSURE	41	REMOVE EXISTING JUNCTION BOX	53	STORE 50 FEET OF COMMUNICATIONS CABLE (EACH CABLE)	65	BOND MESSENGER TO POLE GROUND
6	INSTALL FIBER-OPTIC DROP CABLE	18	INSTALL CABLE(S) IN NEW CONDUIT	30	INSTALL AERIAL SPLICE ENCLOSURE	42	INSTALL WOOD POLE	54	LASH CABLE(S) TO EXISTING SIGNAL/COMMUNICATIONS CABLE	66	BOND RISER TO POLE GROUND
7	INSTALL TRACER WIRE	19	INSTALL CABLE(S) IN EXISTING RISER(S)	31	INSTALL SPLICE CABINET	43	REMOVE EXISTING WOOD POLE	55	LASH CABLE(S) TO EXISTING MESSENGER CABLE	67	BOND TRACER WIRE TO POLE GROUND
8	INSTALL CONDUIT UNDERGROUND	20	INSTALL CABLE(S) IN NEW RISER(S)	32	MODIFY EXISTING SPLICE ENCLOSURE OR INTERCONNECT CENTER	44	INSTALL AERIAL GUY ASSEMBLY	56	LASH CABLE(S) TO NEW MESSENGER CABLE	68	BOND TRACER WIRE TO EQUIPMENT GROUND BUS
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ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LW Moon

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022516 LISA M. MOON
Lisa M Moon 1-11-13
SIGNATURE DATE
CADD Filename: CL A-148.dgn

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24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-149

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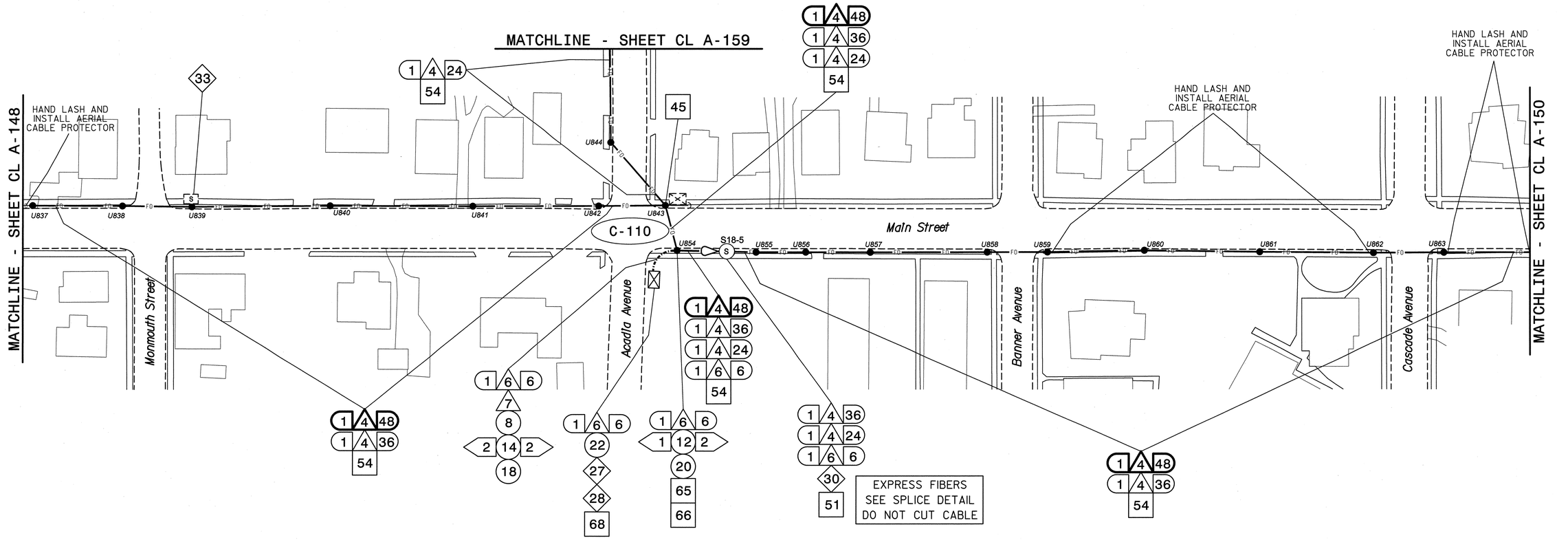

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Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

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Lisa M. Moon 1-11-13
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PROJECT REFERENCE NO.	SHEET NO.
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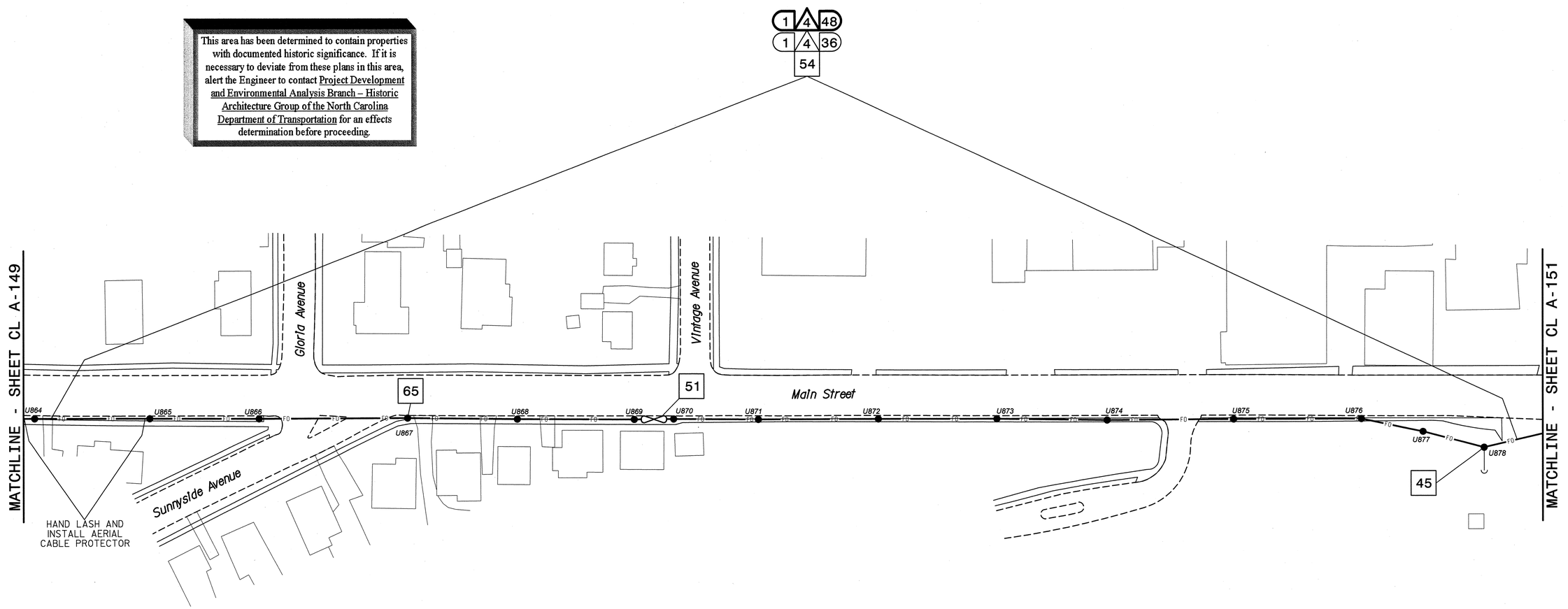

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BOLD CONSTRUCTION NOTES SHOW NEW "IS FIBER" WORK

1 INSTALL REA, PE – 22, SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE	13 INSTALL HEAT SHRINK TUBING RETROFIT KIT	25 INSTALL NEW RISER INTO POLE MOUNTED CABINET	37 INSTALL CCTV WOOD POLE	49 REMOVE EXISTING COMMUNICATIONS CABLE	61 INSTALL UNI–DIRECTIONAL ANTENNA
2 INSTALL REA, PE – 38, (FIGURE – 8) SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE	14 INSTALL HIGH DENSITY POLYETHYLENE CONDUIT	26 INSTALL DIGITAL VIDEO ENCODER	38 INSTALL STANDARD SIZE JUNCTION BOX	50 INSTALL WIRELESS DSL	62 INSTALL 4.9GHZ ETHERNET INTEGRATED RADIO /OMNI-DIRECTIONAL ANTENNA
3 INSTALL CATEGORY 5E CABLE	15 DIRECTIONAL DRILL CONDUIT	27 INSTALL NEW ETHERNET EDGE SWITCH IN CABINET	39 INSTALL SPECIAL-SIZED JUNCTION BOX	51 INSTALL CABLE STORAGE GUIDE(S) [SNOW SHOE(S)] AND STORE 100 FEET OF EACH CABLE	63 INSTALL 900 MHZ ETHERNET RADIO
4 INSTALL SMFO CABLE	16 BORE AND JACK CONDUIT	28 INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET	40 INSTALL OVER-SIZED JUNCTION BOX	52 INSTALL DELINEATOR MARKER	64 INTERCEPT AND REROUTE EXISTING CONDUITS
5 INSTALL COAXIAL ANTENNA CABLE	17 INSTALL CABLE(S) IN EXISTING CONDUIT	29 INSTALL UNDERGROUND SPLICE ENCLOSURE	41 REMOVE EXISTING JUNCTION BOX	53 STORE 50 FEET OF COMMUNICATIONS CABLE (EACH CABLE)	65 BOND MESSENGER TO POLE GROUND
6 INSTALL FIBER–OPTIC DROP CABLE	18 INSTALL CABLE(S) IN NEW CONDUIT	30 INSTALL AERIAL SPLICE ENCLOSURE	42 INSTALL WOOD POLE	54 LASH CABLE(S) TO EXISTING SIGNAL/COMMUNICATIONS CABLE	66 BOND RISER TO POLE GROUND
7 INSTALL TRACER WIRE	19 INSTALL CABLE(S) IN EXISTING RISER(S)	31 INSTALL SPLICE CABINET	43 REMOVE EXISTING WOOD POLE	55 LASH CABLE(S) TO EXISTING MESSENGER CABLE	67 BOND TRACER WIRE TO POLE GROUND
8 INSTALL CONDUIT UNDERGROUND	20 INSTALL CABLE(S) IN NEW RISER(S)	32 MODIFY EXISTING SPLICE ENCLOSURE OR INTERCONNECT CENTER	44 INSTALL AERIAL GUY ASSEMBLY	56 LASH CABLE(S) TO NEW MESSENGER CABLE	68 BOND TRACER WIRE TO EQUIPMENT GROUND BUS
9 INSTALL PVC CONDUIT	21 INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS	33 REMOVE EXISTING SPLICE /HUB /CCTV CABINET	45 INSTALL STANDARD GUY ASSEMBLY	57 MODIFY EXISTING ELECTRICAL SERVICE FOR CCTV/HUB	69 REMOVE EXISTING CCTV CAMERA ASSEMBLY
10 INSTALL RIGID, GALVANIZED STEEL CONDUIT	22 INSTALL NEW CONDUIT INTO CABINET BASE (USE EX CONDUIT STUBOUTS WHEN AVAILABLE)	34 INSTALL CABINET FOUNDATION	46 INSTALL SIDEWALK GUY ASSEMBLY	58 INSTALL NEW ELECTRICAL SERVICE FOR CCTV/HUB	70 INSTALL 4.9GHZ FLAT-PANEL ANTENNA
11 INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD	23 INSTALL NEW RISER INTO CABINET BASE (USE EX CONDUIT STUBOUTS WHEN AVAILABLE)	35 REMOVE EXISTING CABINET FOUNDATION	47 INSTALL MESSENGER CABLE	59 INSTALL NEW POLE MOUNTED CCTV CABINET	71 INSTALL HUB CABINET
12 INSTALL RIGID, GALVANIZED STEEL RISER WITH HEAT SHRINK TUBING	24 INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET	36 INSTALL CCTV CAMERA ASSEMBLY	48 REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE	60 INSTALL 4.9GHZ ETHERNET INTEGRATED RADIO /FLAT-PANEL ANTENNA	72 INSTALL MANAGED ETHERNET SWITCH

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YYY REFERENCE POINT DISTANCE BELOW (IN)
XXX

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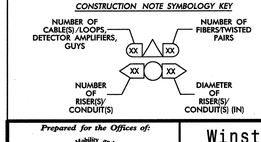

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE: January 2013 REVIEWED BY: MB Toth
PREPARED BY: BKS/AJD REVIEWED BY: LM Moon

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-150.dgn

03-JAN-2013 13:29
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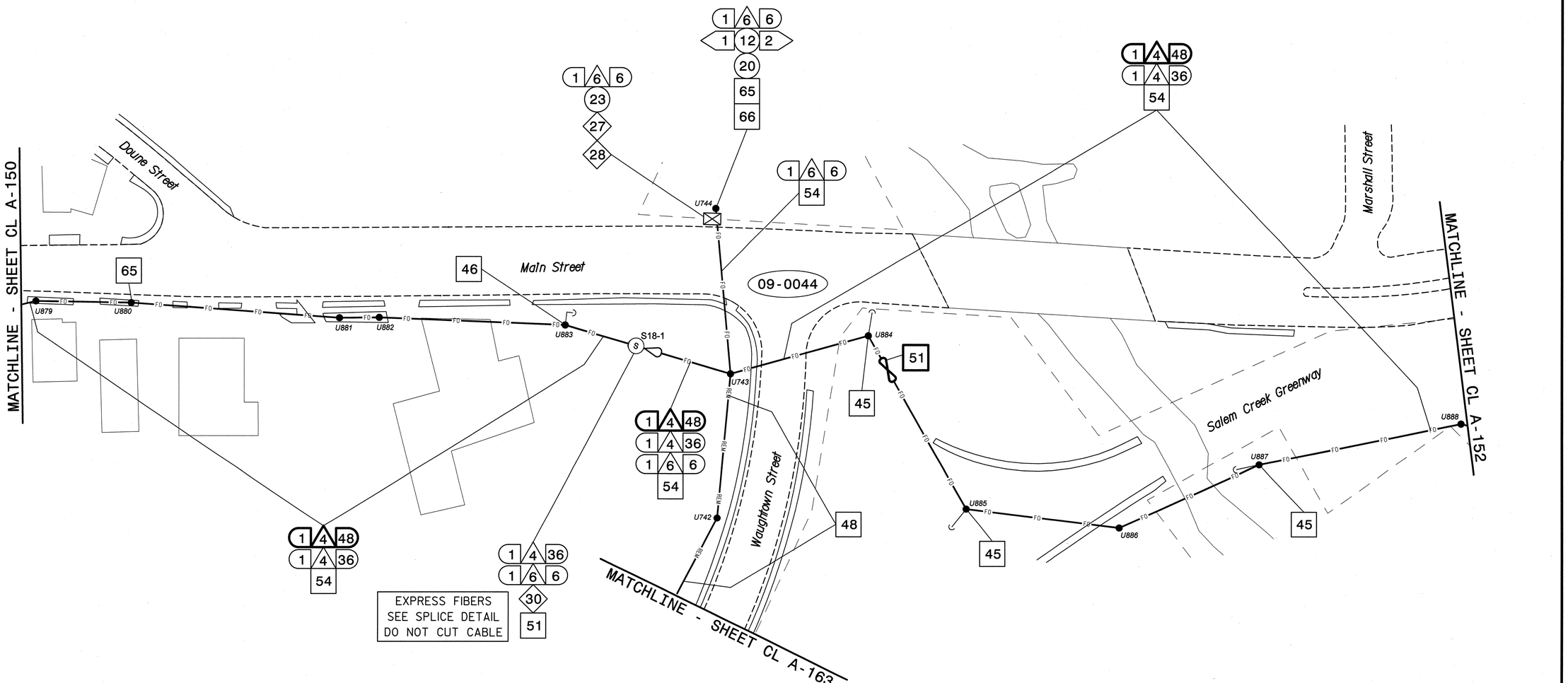
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-151



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ATKINS
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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LW Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

Lisa M. Moon 1-11-13
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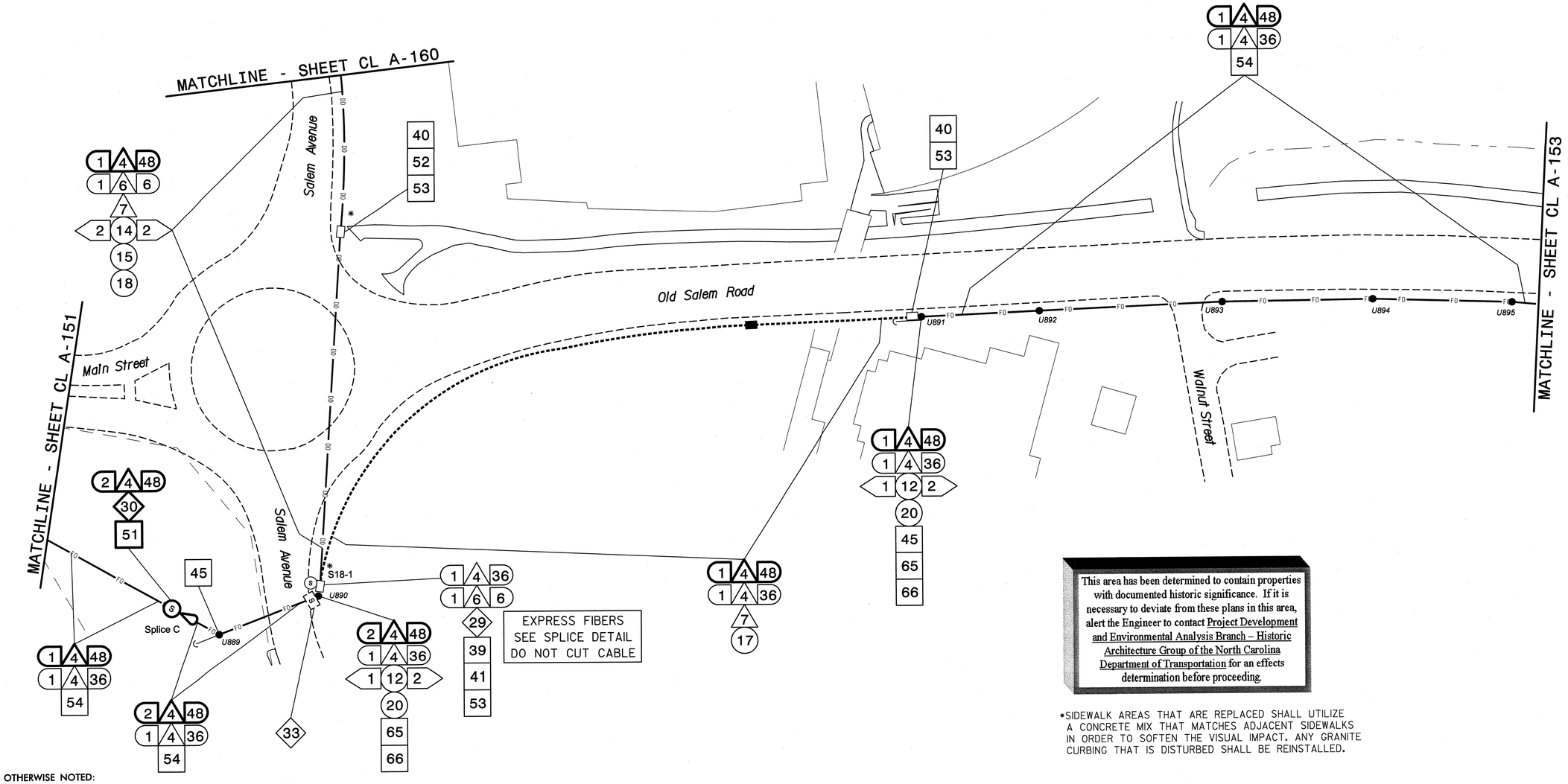
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-152



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SCALE 0 50 1"=50'

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem
PLAN DATE: January 2013 REVIEWED BY: MB Toth
PREPARED BY: BKS/AJD REVIEWED BY: LW Moon

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE DATE
CADD Filename: CL A-152.dgn

07-JAN-2013 17:38
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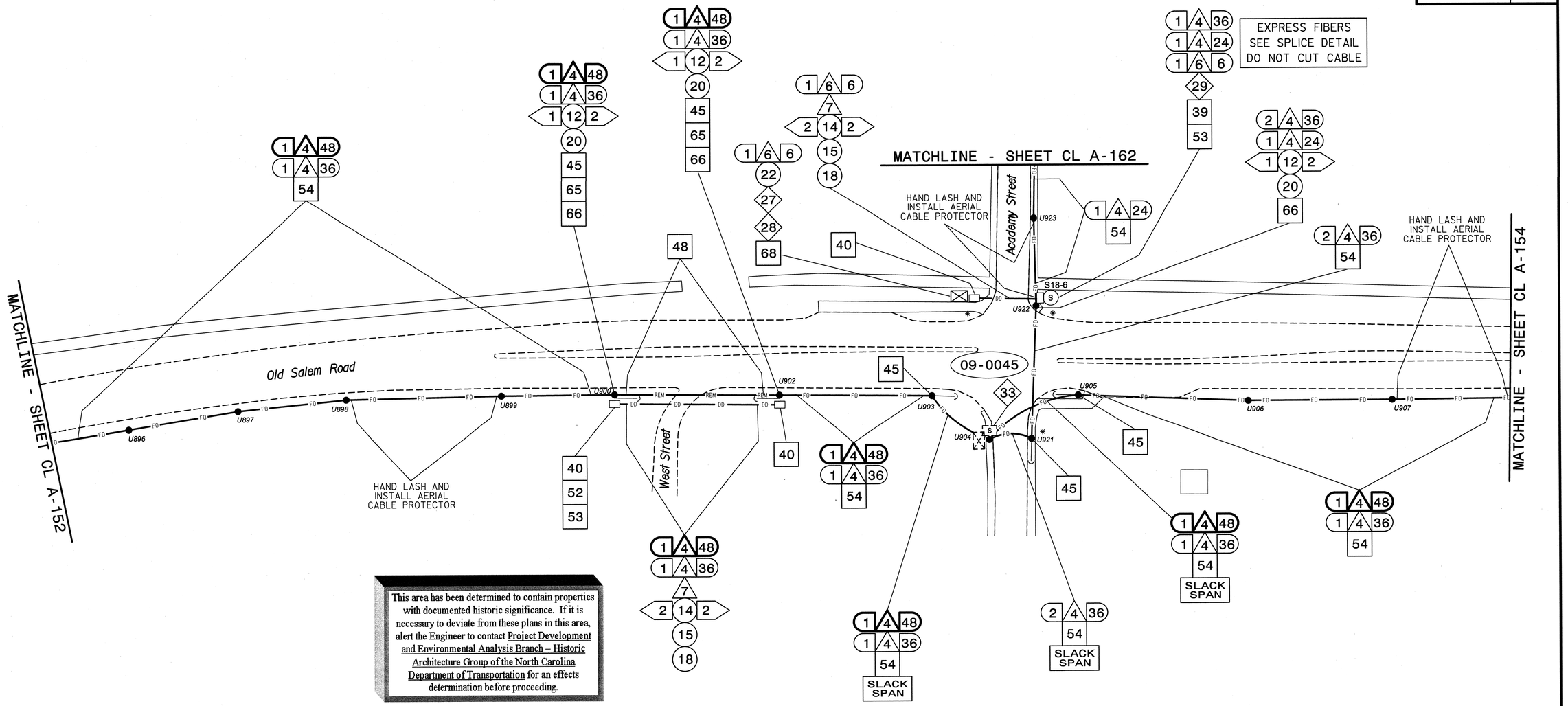
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-153



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Prepared for the Offices of: Transportation Mobility and Safety Division, North Carolina Department of Transportation, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

SCALE 0 50 1"=50'

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE: January 2013 REVIEWED BY: MB Toth

PREPARED BY: BKS/AJD REVIEWED BY: LW Moon

REVISIONS	INIT.	DATE

SEAL NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022516 LISA M. MOON

SIGNATURE 1-11-13 DATE

CADD Filename: CL A-153.dgn

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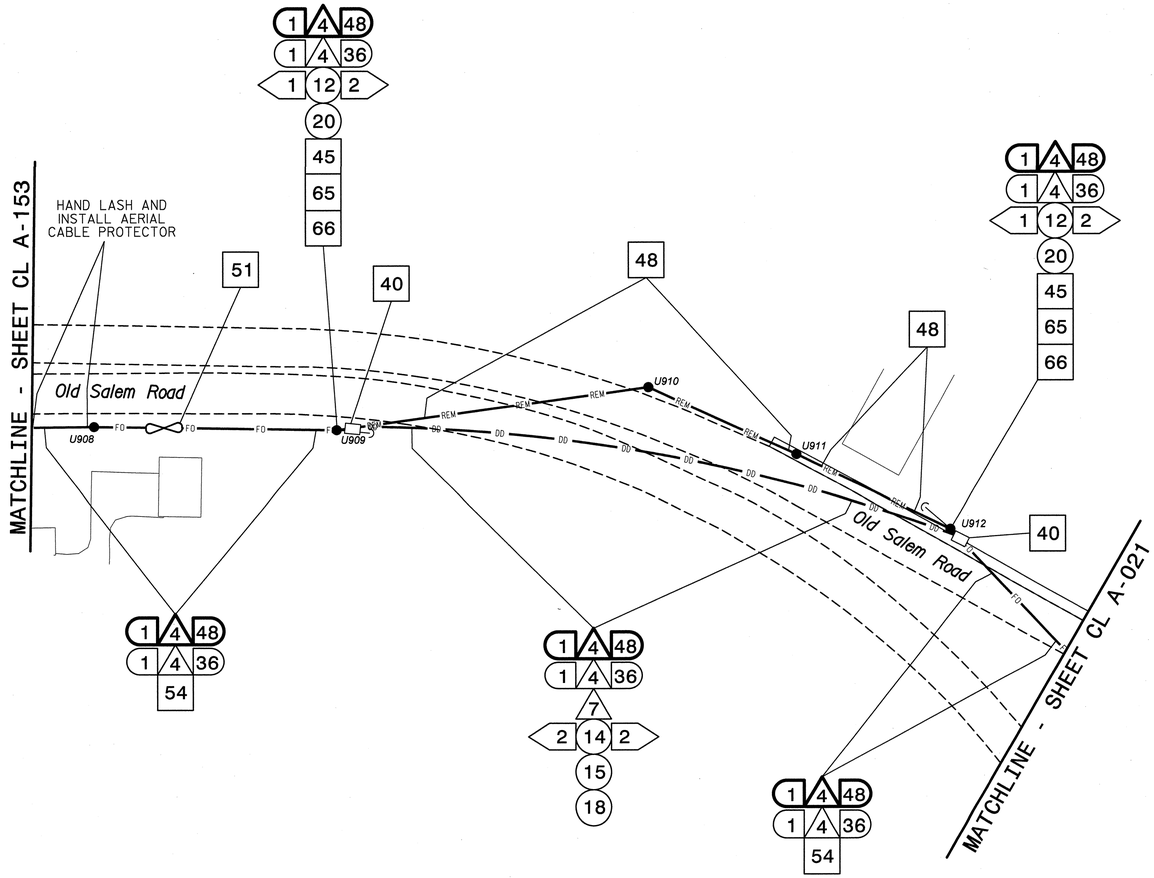
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-154



This area has been determined to contain properties with documented historic significance. If it is necessary to deviate from these plans in this area, alert the Engineer to contact Project Development and Environmental Analysis Branch – Historic Architecture Group of the North Carolina Department of Transportation for an effects determination before proceeding.

NOTES:
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   - OVERLASH NEW FIBER OPTIC CABLE TO EXISTING COMMUNICATIONS CABLE.
   - ATTACH NEW MESSENGER CABLE 40" BELOW POWER.
   - ATTACH ON FRONT SIDE (FS) OF POLE.
2. SEAL ALL CONDUIT ENDS WITH DUCT AND CONDUIT SEALER, AT ALL JUNCTION BOX/CABINET ENTRANCES.

BOLD CONSTRUCTION NOTES SHOW NEW "IS FIBER" WORK

1. INSTALL REA, PE – 22, SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE
2. INSTALL REA, PE – 38, (FIGURE – 8) SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE
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26. INSTALL DIGITAL VIDEO ENCODER
27. INSTALL NEW ETHERNET EDGE SWITCH IN CABINET
28. INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET
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31. INSTALL SPLICE CABINET
32. MODIFY EXISTING SPLICE ENCLOSURE OR INTERCONNECT CENTER
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63. INSTALL 900 MHZ ETHERNET RADIO
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ATTACHMENT POINT:
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CONSTRUCTION NOTE SYMBOLOGY KEY
NUMBER OF CABLE(S) /LOOPS, DETECTOR AMPLIFIERS, GUYS
NUMBER OF FIBERS/TWISTED PAIRS
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ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
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Prepared for the Offices of: Traffic Engineering Branch, Mobility and Safety Division, NCDEPARTMENT OF TRANSPORTATION, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

SIGNATURE Lisa M Moon DATE 1/11/13

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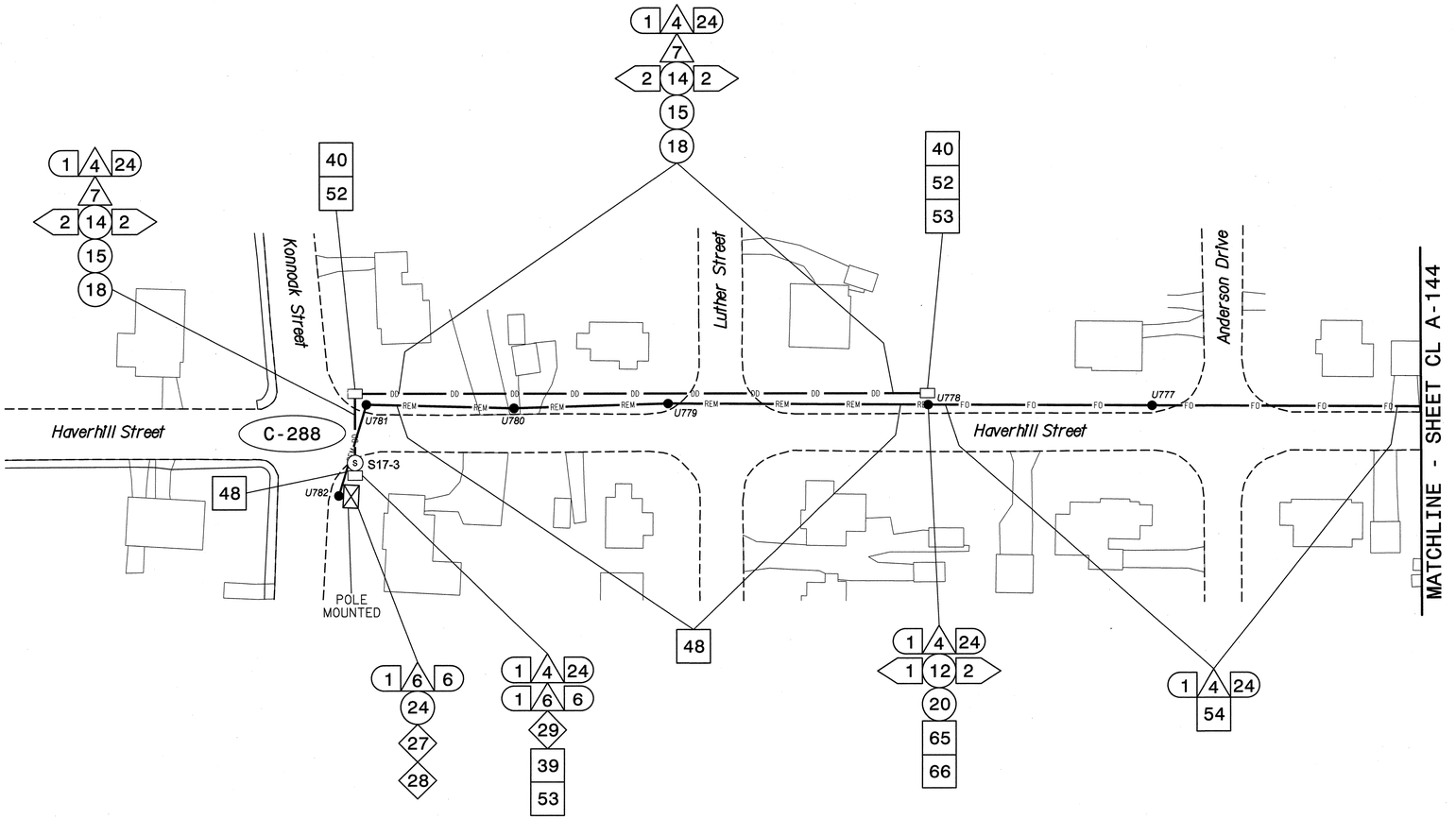
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-155



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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
Lisa M. Moon 1-11-13
SIGNATURE DATE
CADD Filename: CL A-155.dgn

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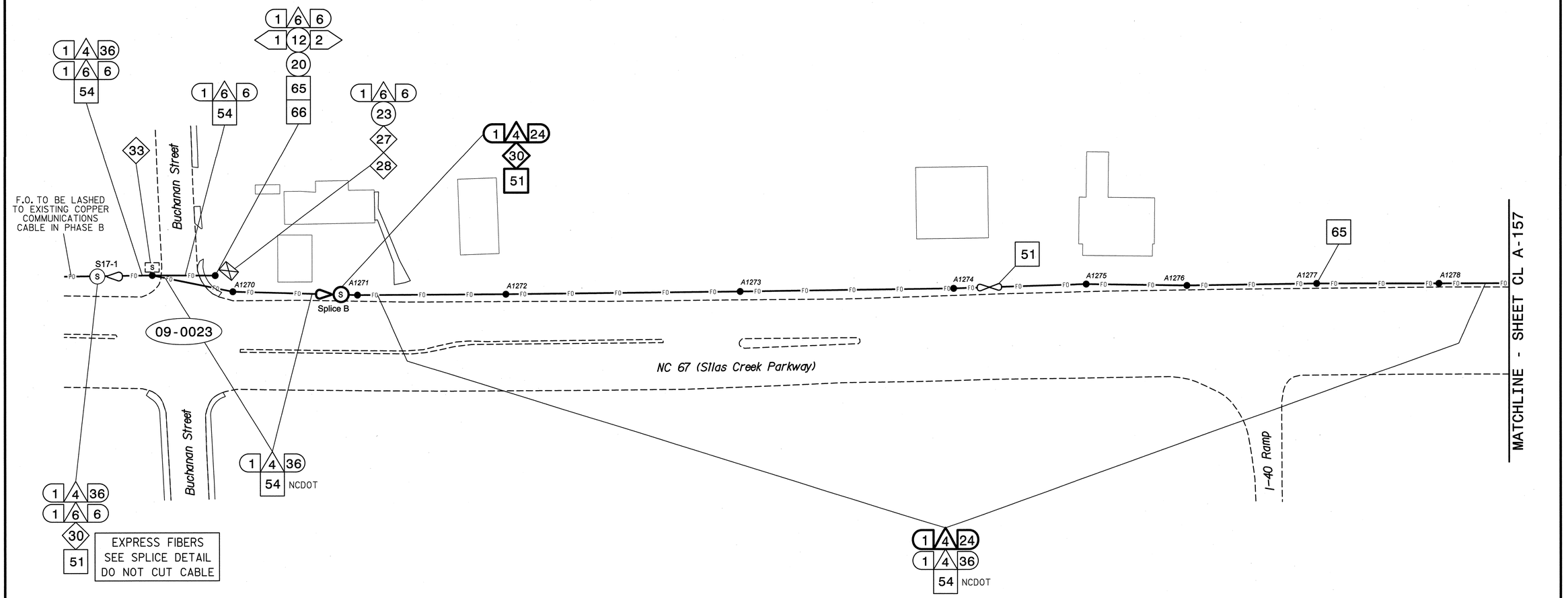
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-156



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6	INSTALL FIBER-OPTIC DROP CABLE	18	INSTALL CABLE(S) IN NEW CONDUIT	30	INSTALL AERIAL SPLICE ENCLOSURE	42	INSTALL WOOD POLE	54	LASH CABLE(S) TO EXISTING SIGNAL/COMMUNICATIONS CABLE	66	BOND RISER TO POLE GROUND
7	INSTALL TRACER WIRE	19	INSTALL CABLE(S) IN EXISTING RISER(S)	31	INSTALL SPLICE CABINET	43	REMOVE EXISTING WOOD POLE	55	LASH CABLE(S) TO EXISTING MESSENGER CABLE	67	BOND TRACER WIRE TO POLE GROUND
8	INSTALL CONDUIT UNDERGROUND	20	INSTALL CABLE(S) IN NEW RISER(S)	32	MODIFY EXISTING SPLICE ENCLOSURE OR INTERCONNECT CENTER	44	INSTALL AERIAL GUY ASSEMBLY	56	LASH CABLE(S) TO NEW MESSENGER CABLE	68	BOND TRACER WIRE TO EQUIPMENT GROUND BUS
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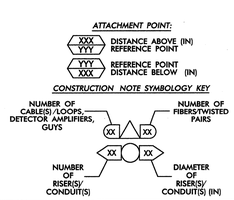

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Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

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Lisa M. Moon 1-11-13
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CADD Filename: CL A-156.dgn

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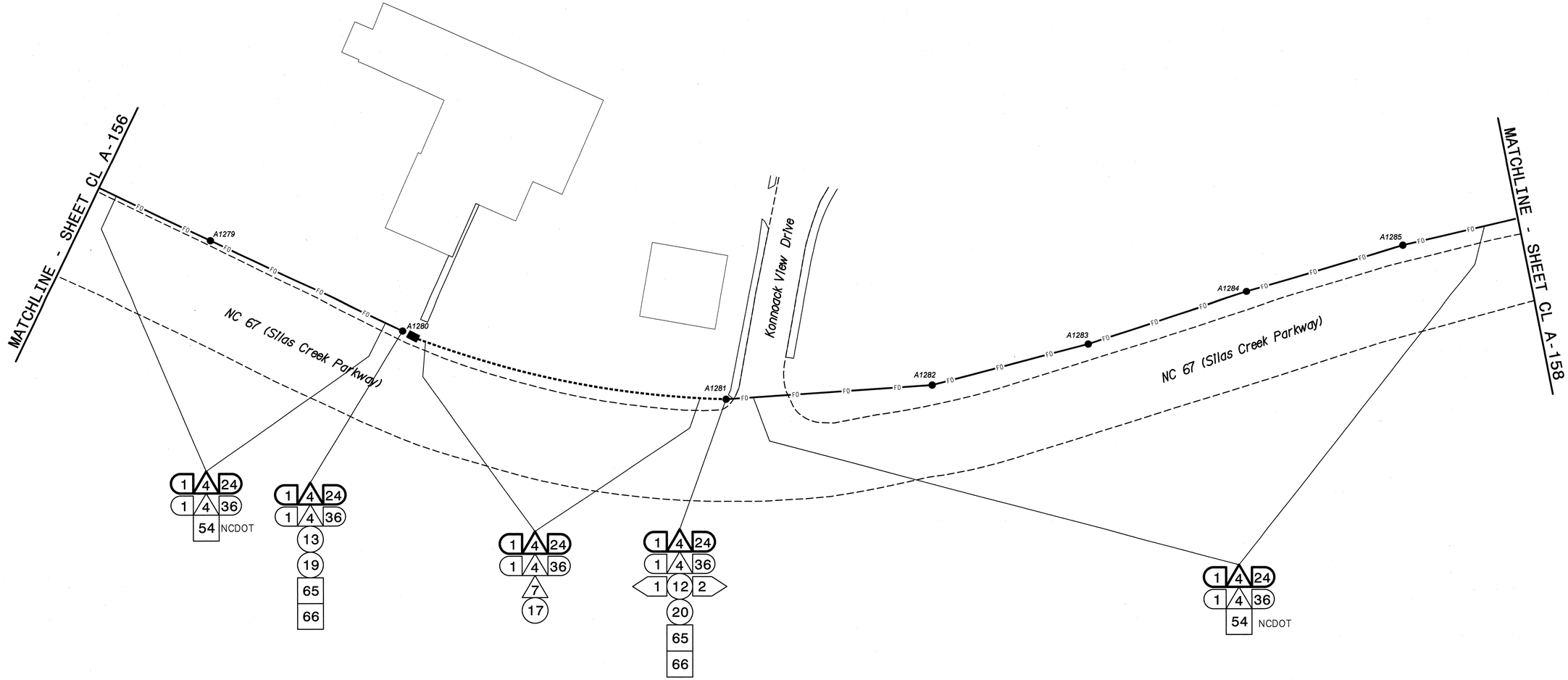
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-157



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NUMBER OF CABLE(S)/LOOPS, DETECTOR AMPLIFIERS, GUYS — NUMBER OF FIBERS/TWISTED PAIRS

NUMBER OF RISER(S)/ CONDUIT(S) — DIAMETER OF RISER(S)/ CONDUIT(S) (IN)

ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
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(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:

Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems

750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LW Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL
SEAL 022516 ENGINEER LISA M. MOON

Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-157.dgn

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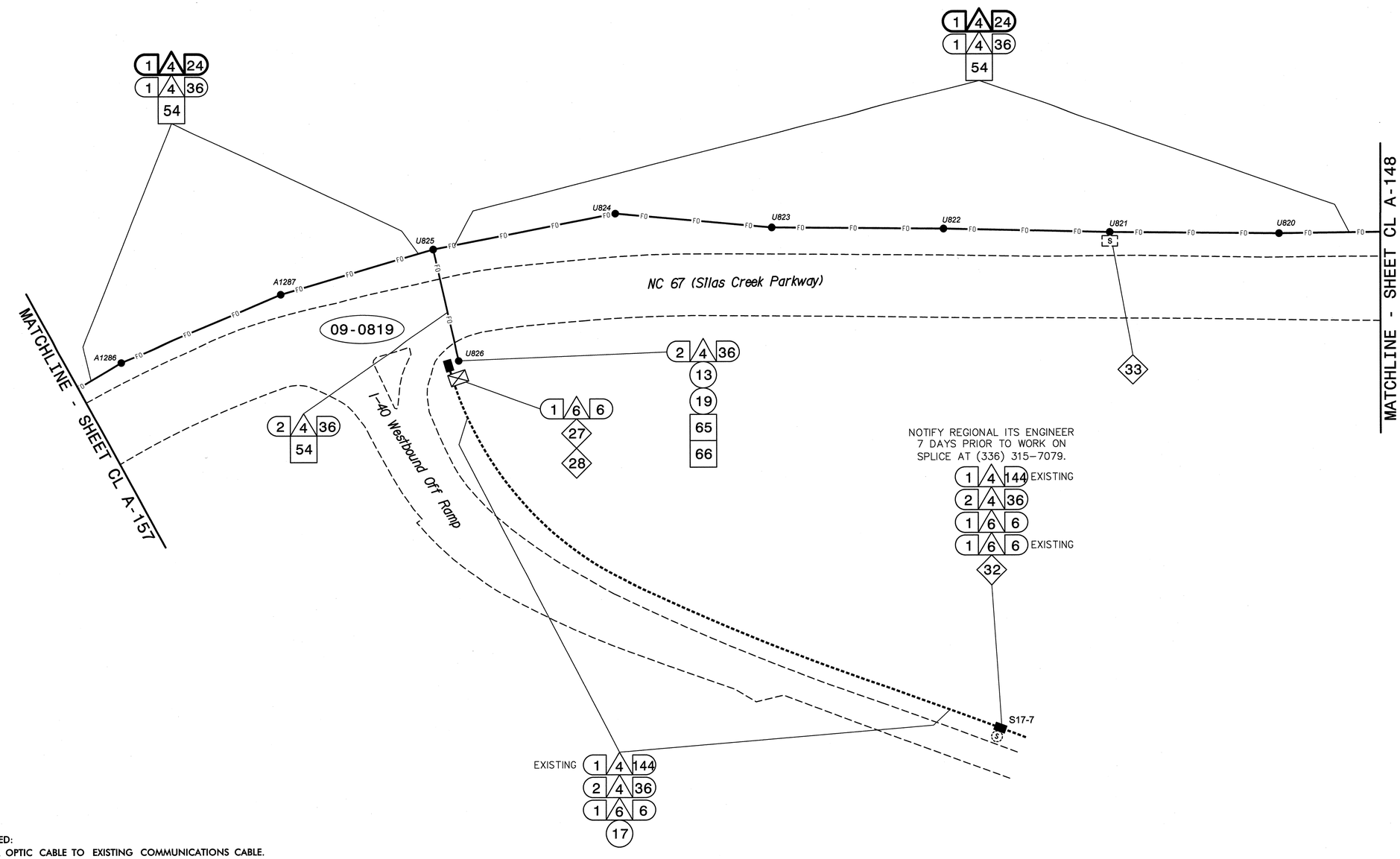
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-158



NOTES:
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BOLD CONSTRUCTION NOTES SHOW NEW "IS FIBER" WORK

1. INSTALL REA, PE – 22, SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE
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Prepared for the Offices of:
North Carolina Department of Transportation — Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 | Forsyth County | Winston-Salem

PLAN DATE: January 2013 | REVIEWED BY: MB Toth
PREPARED BY: BKS/AJD | REVIEWED BY: LW Moon

REVISIONS	INIT.	DATE

SCALE 0 50 — 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE
1-11-13
DATE

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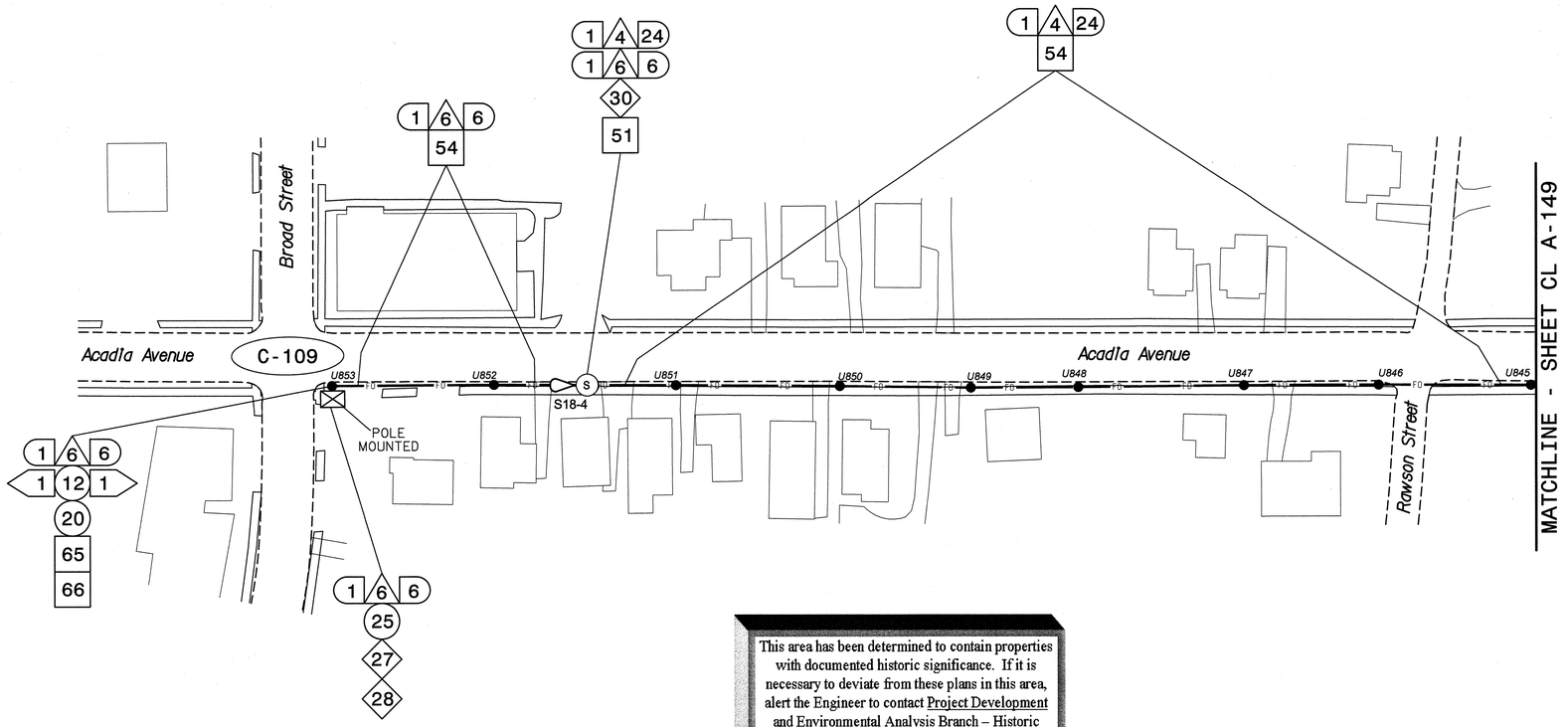
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-159



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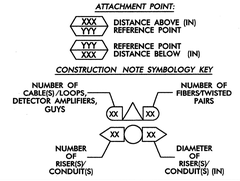
CONSTRUCTION NOTE SYMBOLOGY KEY



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750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LW Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE Lisa M. Moon 1-11-13 DATE

CADD Filename: CL A-159.dgn

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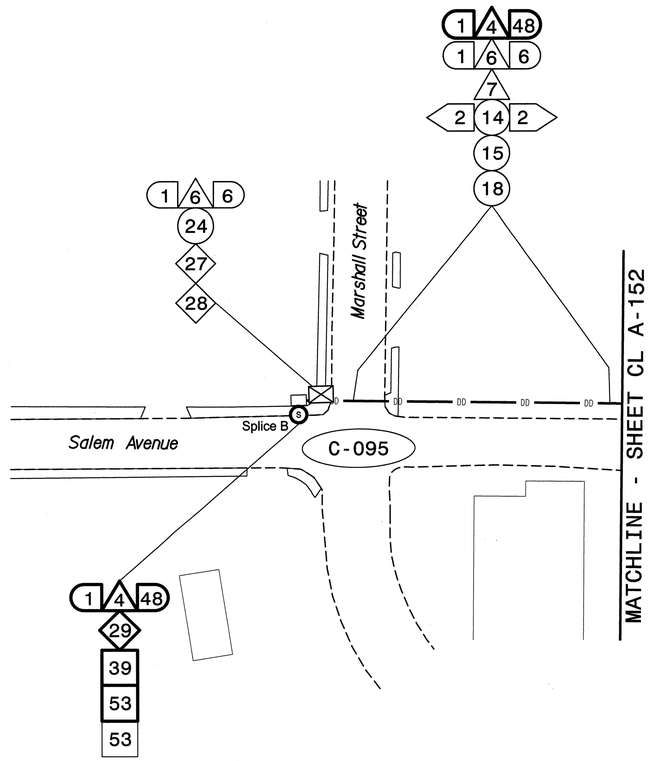
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-160



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1	INSTALL REA, PE – 22, SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE	13	INSTALL HEAT SHRINK TUBING RETROFIT KIT	25	INSTALL NEW RISER INTO POLE MOUNTED CABINET	37	INSTALL CCTV WOOD POLE	49	REMOVE EXISTING COMMUNICATIONS CABLE	61	INSTALL UNI-DIRECTIONAL ANTENNA
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7	INSTALL TRACER WIRE	19	INSTALL CABLE(S) IN EXISTING RISER(S)	31	INSTALL SPLICE CABINET	43	REMOVE EXISTING WOOD POLE	55	LASH CABLE(S) TO EXISTING MESSENGER CABLE	67	BOND TRACER WIRE TO POLE GROUND
8	INSTALL CONDUIT UNDERGROUND	20	INSTALL CABLE(S) IN NEW RISER(S)	32	MODIFY EXISTING SPLICE ENCLOSURE OR INTERCONNECT CENTER	44	INSTALL AERIAL GUY ASSEMBLY	56	LASH CABLE(S) TO NEW MESSENGER CABLE	68	BOND TRACER WIRE TO EQUIPMENT GROUND BUS
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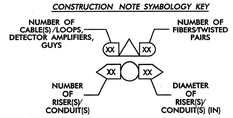

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Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
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SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

Lisa M. Moon 1-11-13
SIGNATURE DATE

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PROJECT REFERENCE NO.	SHEET NO.
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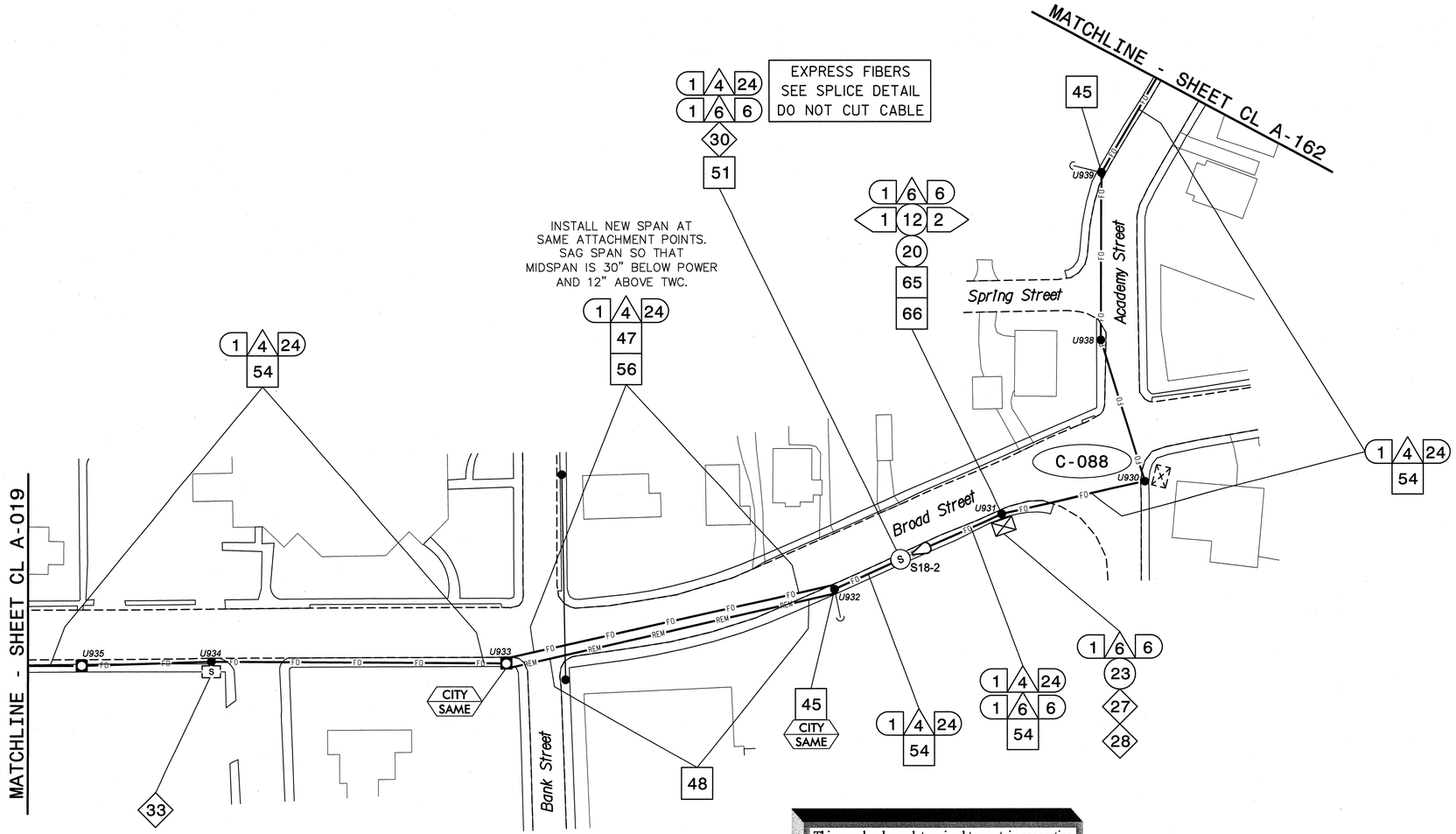

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60. INSTALL 4.9GHZ ETHERNET INTEGRATED RADIO /FLAT-PANEL ANTENNA
61. INSTALL UNI-DIRECTIONAL ANTENNA
62. INSTALL 4.9GHZ ETHERNET INTEGRATED RADIO /OMNI-DIRECTIONAL ANTENNA
63. INSTALL 900 MHZ ETHERNET RADIO
64. INTERCEPT AND REROUTE EXISTING CONDUITS
65. BOND MESSENGER TO POLE GROUND
66. BOND RISER TO POLE GROUND
67. BOND TRACER WIRE TO POLE GROUND
68. BOND TRACER WIRE TO EQUIPMENT GROUND BUS
69. REMOVE EXISTING CCTV CAMERA ASSEMBLY
70. INSTALL 4.9GHZ FLAT-PANEL ANTENNA
71. INSTALL HUB CABINET
72. INSTALL MANAGED ETHERNET SWITCH

ATTACHMENT POINT:
XXX DISTANCE ABOVE (IN) REFERENCE POINT
YYY REFERENCE POINT DISTANCE BELOW (IN)

CONSTRUCTION NOTE SYMBOLOGY KEY
NUMBER OF CABLE(S)/LOOPS-DETECTOR AMPLIFIERS, GUYS
NUMBER OF FIBERS/TWISTED PAIRS
NUMBER OF RISER(S)/ CONDUIT(S)
DIAMETER OF RISER(S)/ CONDUIT(S) (IN)

ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
North Carolina Department of Transportation – Mobility and Safety Division – Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
Lisa M Moon 1-11-13
SIGNATURE DATE
CADD Filename: CL A-161.dgn

03-JAN-2013 13:30
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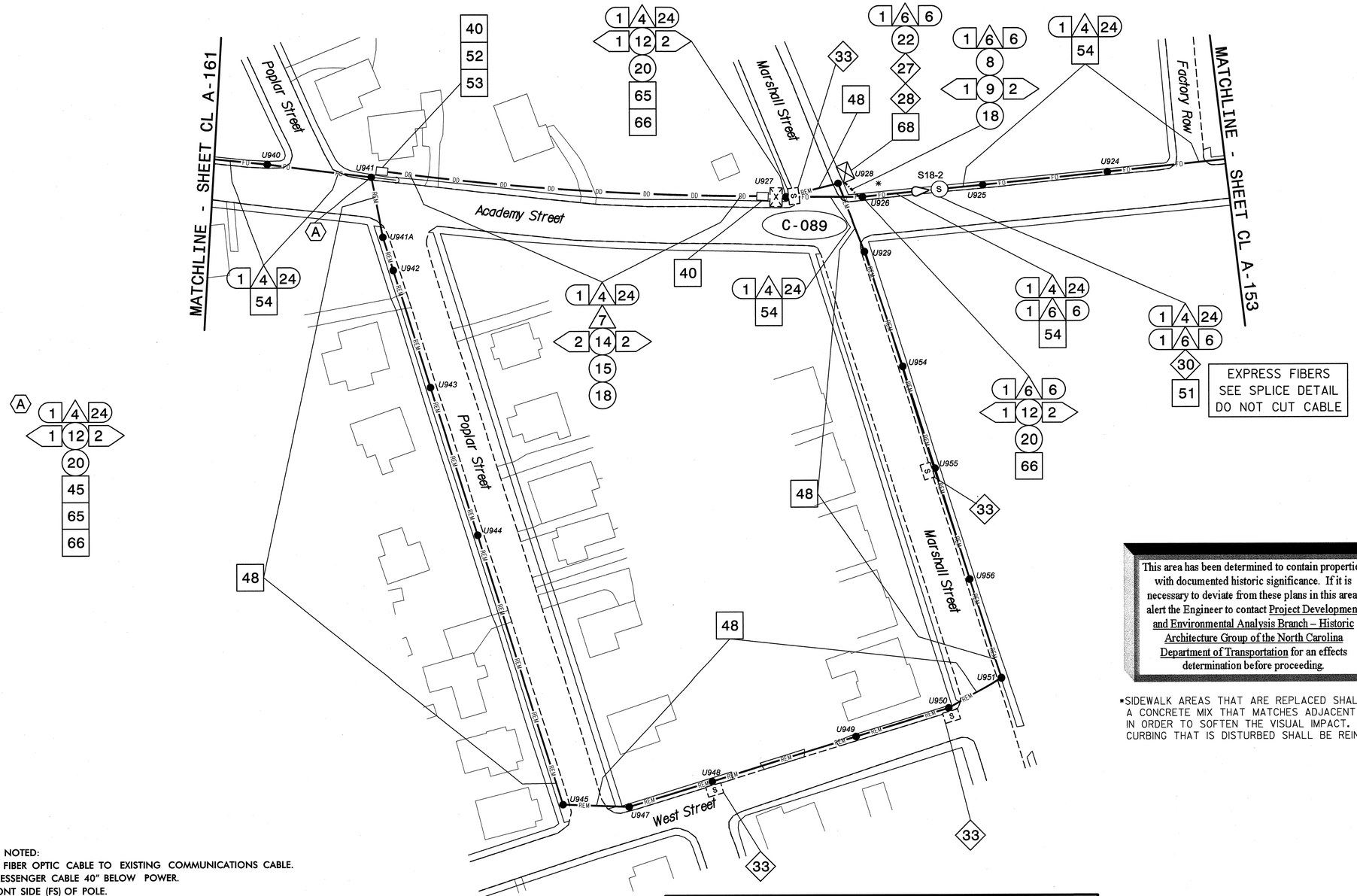
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-162



This area has been determined to contain properties with documented historic significance. If it is necessary to deviate from these plans in this area, alert the Engineer to contact Project Development and Environmental Analysis Branch – Historic Architecture Group of the North Carolina Department of Transportation for an effects determination before proceeding.

*SIDEWALK AREAS THAT ARE REPLACED SHALL UTILIZE A CONCRETE MIX THAT MATCHES ADJACENT SIDEWALKS IN ORDER TO SOFTEN THE VISUAL IMPACT. ANY GRANITE CURBING THAT IS DISTURBED SHALL BE REINSTALLED.

NOTES:
1. UNLESS OTHERWISE NOTED:
   - OVERLASH NEW FIBER OPTIC CABLE TO EXISTING COMMUNICATIONS CABLE.
   - ATTACH NEW MESSENGER CABLE 40" BELOW POWER.
   - ATTACH ON FRONT SIDE (FS) OF POLE.
2. SEAL ALL CONDUIT ENDS WITH DUCT AND CONDUIT SEALER, AT ALL JUNCTION BOX/CABINET ENTRANCES.

BOLD CONSTRUCTION NOTES SHOW NEW "IS FIBER" WORK

1. INSTALL REA, PE – 22, SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE
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26. INSTALL DIGITAL VIDEO ENCODER
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29. INSTALL UNDERGROUND SPLICE ENCLOSURE
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32. MODIFY EXISTING SPLICE ENCLOSURE OR INTERCONNECT CENTER
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50. INSTALL WIRELESS DSL
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53. STORE 50 FEET OF COMMUNICATIONS CABLE (EACH CABLE)
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Prepared for the Offices of:
Transportation Mobility and Safety Division
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022516 LISA M. MOON
SIGNATURE
1-11-13
DATE

CADD Filename: CL A-162.dgn

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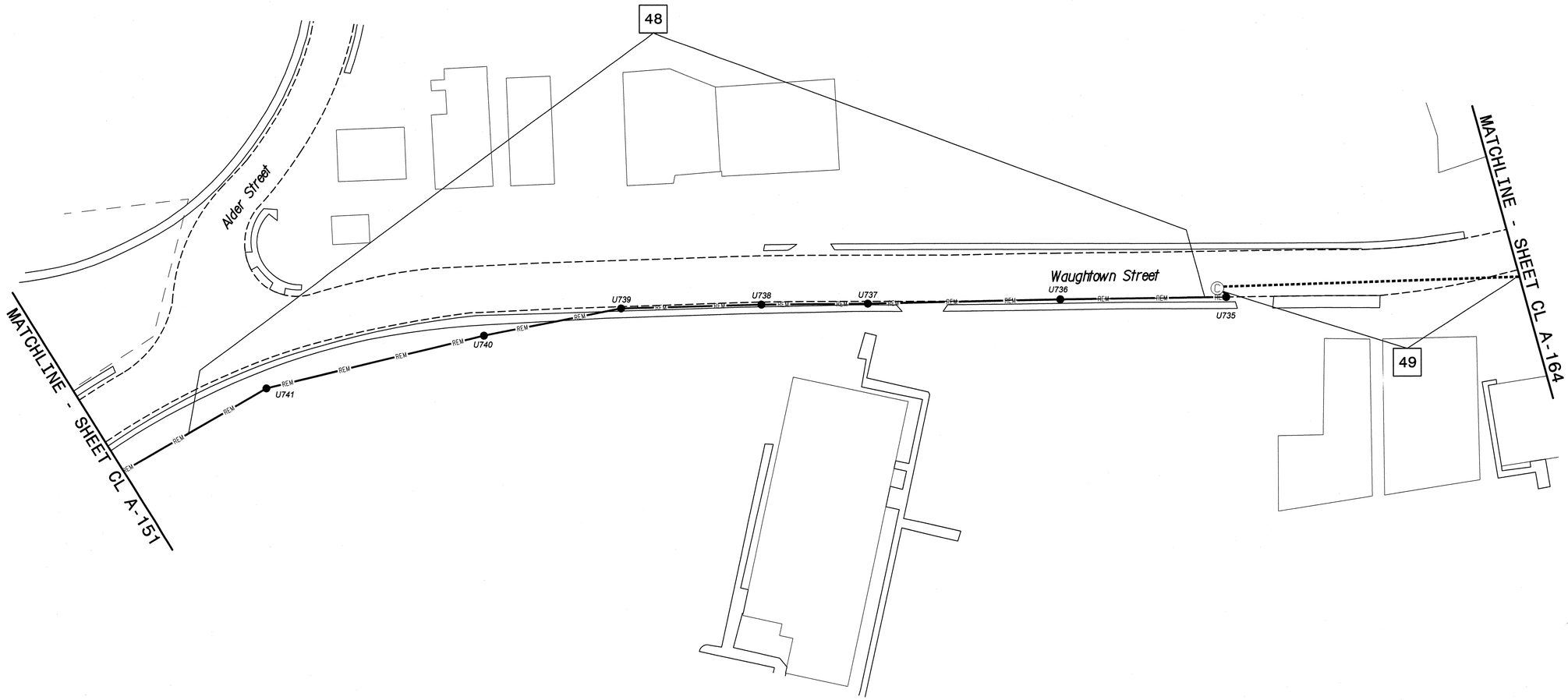
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-163



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YYY REFERENCE POINT
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DIAMETER OF RISER(S)/ CONDUIT(S) (IN)

ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
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(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
Traffic Engineering Branch, Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022516 LISA M. MOON
SIGNATURE 1-11-13 DATE
CADD Filename: CL A-163.dgn

11-JAN-2013 13:40
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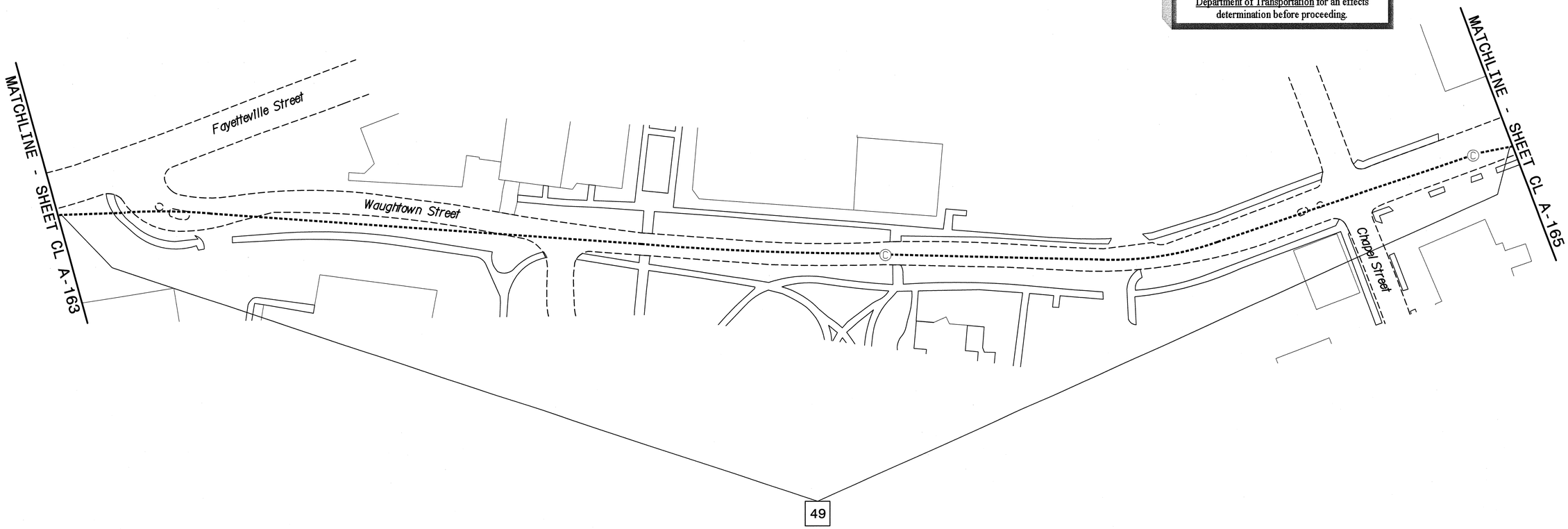
13833

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-164

This area has been determined to contain properties with documented historic significance. If it is necessary to deviate from these plans in this area, alert the Engineer to contact Project Development and Environmental Analysis Branch – Historic Architecture Group of the North Carolina Department of Transportation for an effects determination before proceeding.



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BOLD CONSTRUCTION NOTES SHOW NEW "IS FIBER" WORK

1 INSTALL REA, PE – 22, SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE	13 INSTALL HEAT SHRINK TUBING RETROFIT KIT	25 INSTALL NEW RISER INTO POLE MOUNTED CABINET	37 INSTALL CCTV WOOD POLE	49 REMOVE EXISTING COMMUNICATIONS CABLE	61 INSTALL UNI–DIRECTIONAL ANTENNA
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4 INSTALL SMFO CABLE	16 BORE AND JACK CONDUIT	28 INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET	40 INSTALL OVER–SIZED JUNCTION BOX	52 INSTALL DELINEATOR MARKER	64 INTERCEPT AND REROUTE EXISTING CONDUITS
5 INSTALL COAXIAL ANTENNA CABLE	17 INSTALL CABLE(S) IN EXISTING CONDUIT	29 INSTALL UNDERGROUND SPLICE ENCLOSURE	41 REMOVE EXISTING JUNCTION BOX	53 STORE 50 FEET OF COMMUNICATIONS CABLE (EACH CABLE)	65 BOND MESSENGER TO POLE GROUND
6 INSTALL FIBER–OPTIC DROP CABLE	18 INSTALL CABLE(S) IN NEW CONDUIT	30 INSTALL AERIAL SPLICE ENCLOSURE	42 INSTALL WOOD POLE	54 LASH CABLE(S) TO EXISTING SIGNAL/COMMUNICATIONS CABLE	66 BOND RISER TO POLE GROUND
7 INSTALL TRACER WIRE	19 INSTALL CABLE(S) IN EXISTING RISER(S)	31 INSTALL SPLICE CABINET	43 REMOVE EXISTING WOOD POLE	55 LASH CABLE(S) TO EXISTING MESSENGER CABLE	67 BOND TRACER WIRE TO POLE GROUND
8 INSTALL CONDUIT UNDERGROUND	20 INSTALL CABLE(S) IN NEW RISER(S)	32 MODIFY EXISTING SPLICE ENCLOSURE OR INTERCONNECT CENTER	44 INSTALL AERIAL GUY ASSEMBLY	56 LASH CABLE(S) TO NEW MESSENGER CABLE	68 BOND TRACER WIRE TO EQUIPMENT GROUND BUS
9 INSTALL PVC CONDUIT	21 INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS	33 REMOVE EXISTING SPLICE /HUB /CCTV CABINET	45 INSTALL STANDARD GUY ASSEMBLY	57 MODIFY EXISTING ELECTRICAL SERVICE FOR CCTV/HUB	69 REMOVE EXISTING CCTV CAMERA ASSEMBLY
10 INSTALL RIGID, GALVANIZED STEEL CONDUIT	22 INSTALL NEW CONDUIT INTO CABINET BASE (USE EX CONDUIT STUBOUTS WHEN AVAILABLE)	34 INSTALL CABINET FOUNDATION	46 INSTALL SIDEWALK GUY ASSEMBLY	58 INSTALL NEW ELECTRICAL SERVICE FOR CCTV/HUB	70 INSTALL 4.9GHZ FLAT–PANEL ANTENNA
11 INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD	23 INSTALL NEW RISER INTO CABINET BASE (USE EX CONDUIT STUBOUTS WHEN AVAILABLE)	35 REMOVE EXISTING CABINET FOUNDATION	47 INSTALL MESSENGER CABLE	59 INSTALL NEW POLE MOUNTED CCTV CABINET	71 INSTALL HUB CABINET
12 INSTALL RIGID, GALVANIZED STEEL RISER WITH HEAT SHRINK TUBING	24 INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET	36 INSTALL CCTV CAMERA ASSEMBLY	48 REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE	60 INSTALL 4.9GHZ ETHERNET INTEGRATED RADIO /FLAT–PANEL ANTENNA	72 INSTALL MANAGED ETHERNET SWITCH

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SCALE 0 50 1"=50'

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022516 LISA M. MOON
SIGNATURE 1-11-13 DATE

CADD Filename: CL A-164.dgn

11-JAN-2013 13:40
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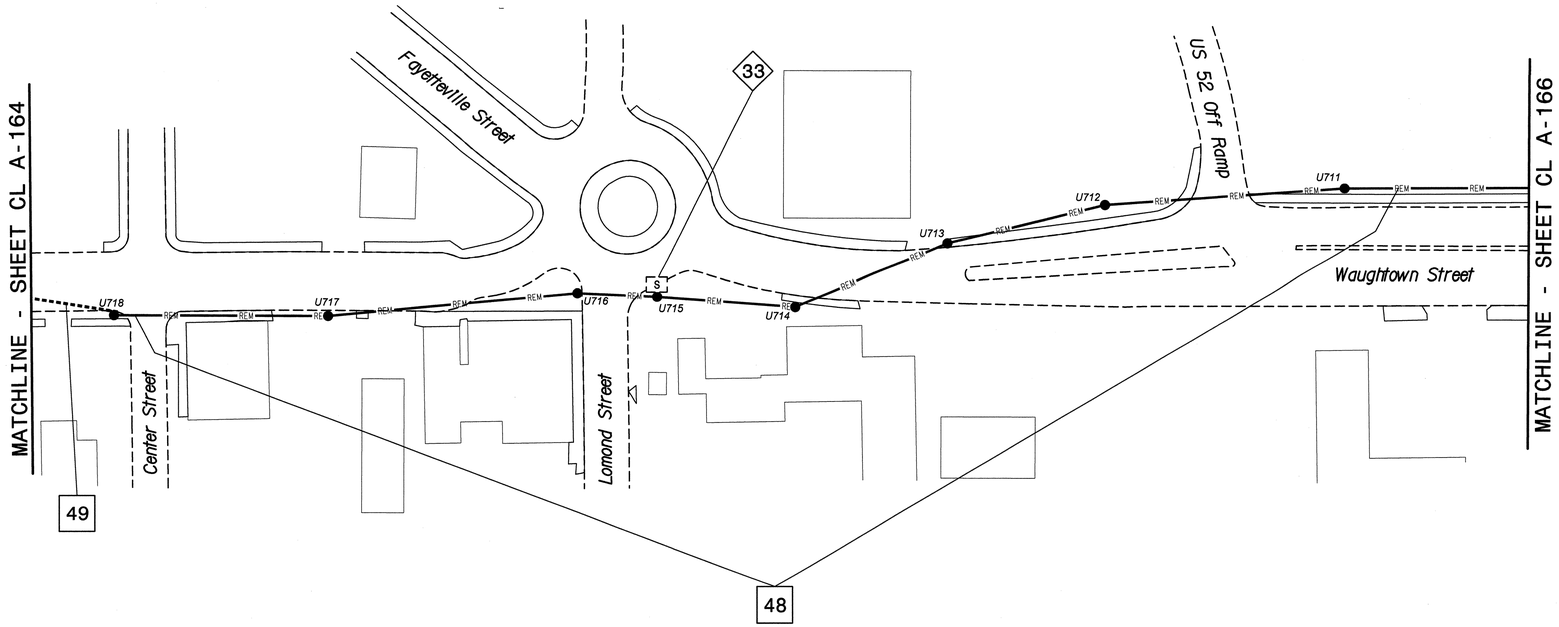
13833

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-165



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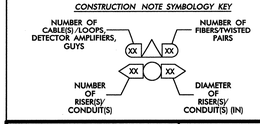
YYY REFERENCE POINT
YYY DISTANCE BELOW (IN)
XXX

CONSTRUCTION NOTE SYMBOLOGY KEY



ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:

Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems

750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-165.dgn

11-JAN-2013 13:40
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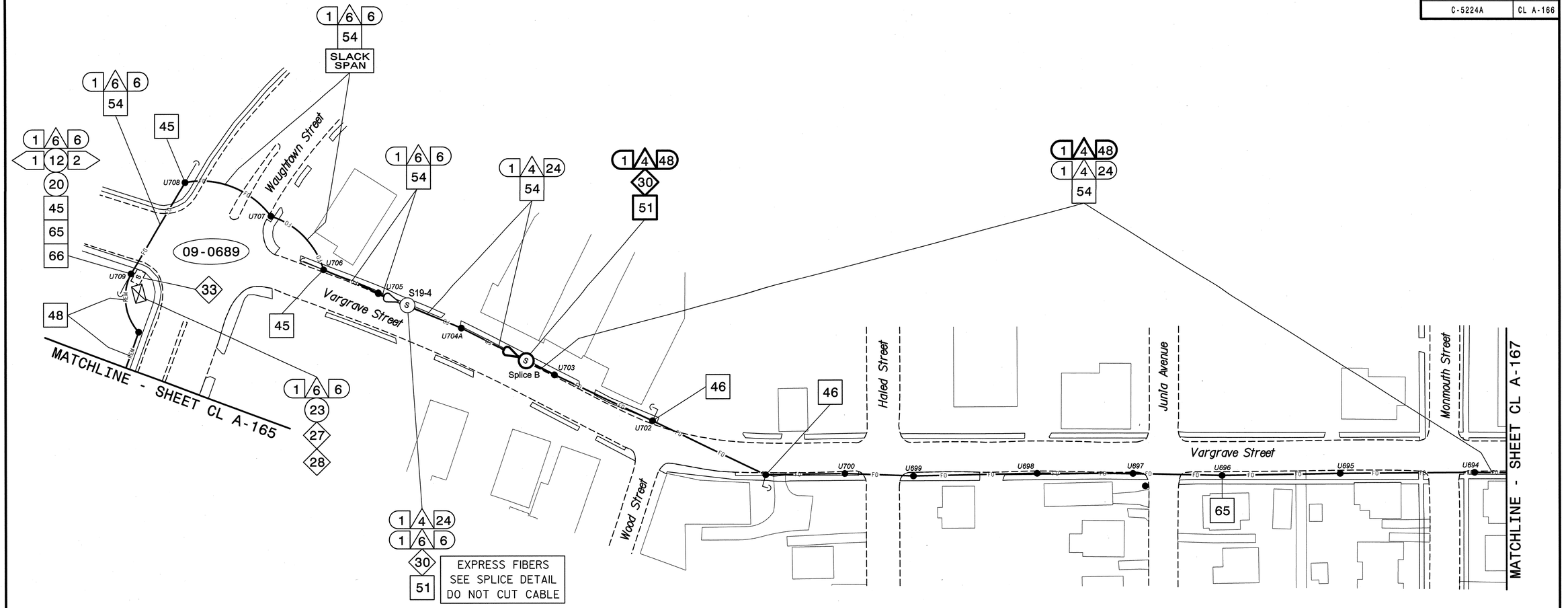
13833

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-166



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ATKINS
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Prepared for the Offices of:
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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE Lisa M. Moon 1-11-13 DATE

CADD Filename: CL A-166.dgn

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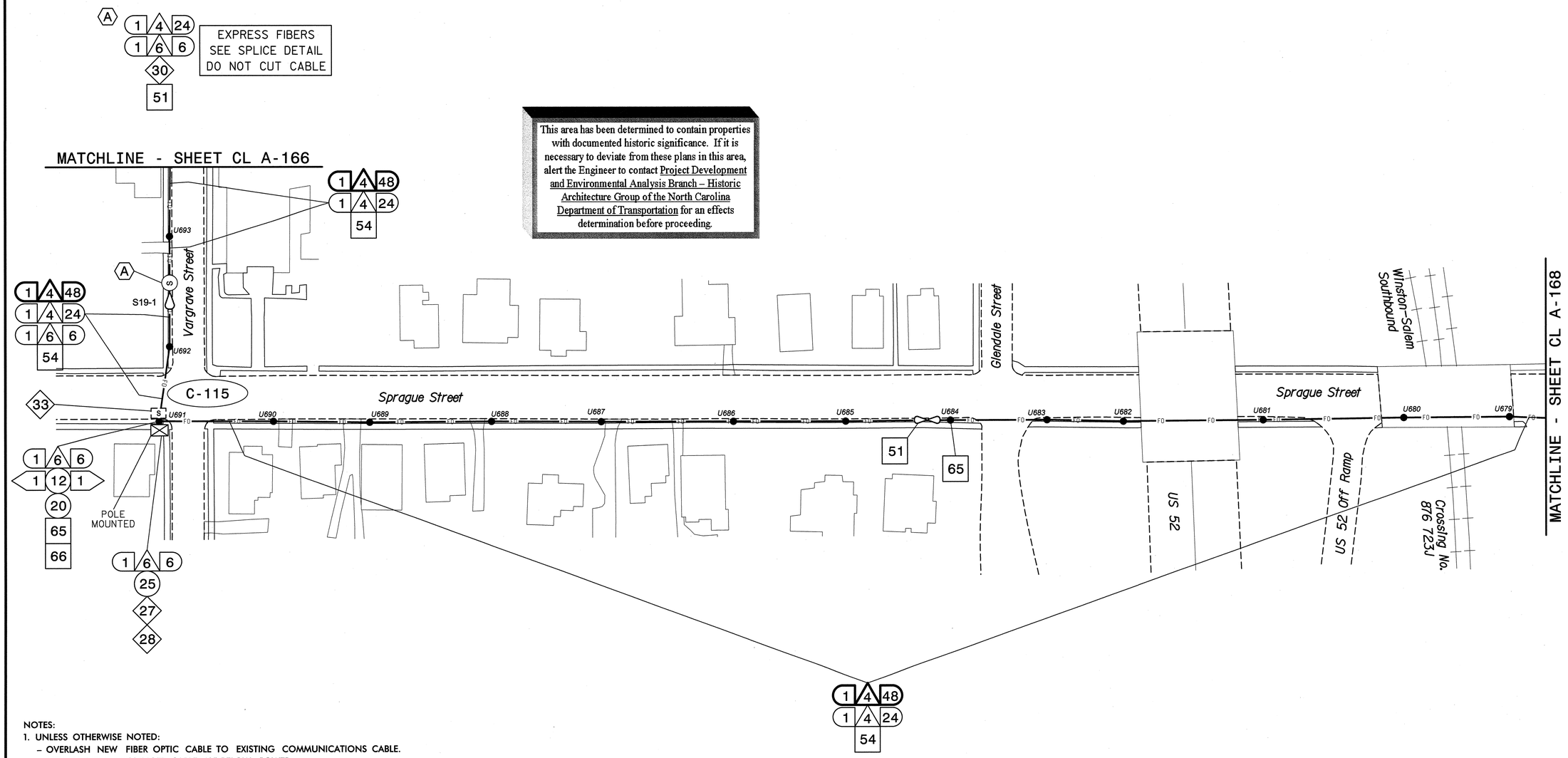
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-167



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ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Transportation Mobility and Safety Division
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LW Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE 1-11-13 DATE

CADD Filename: CL A-167.dgn

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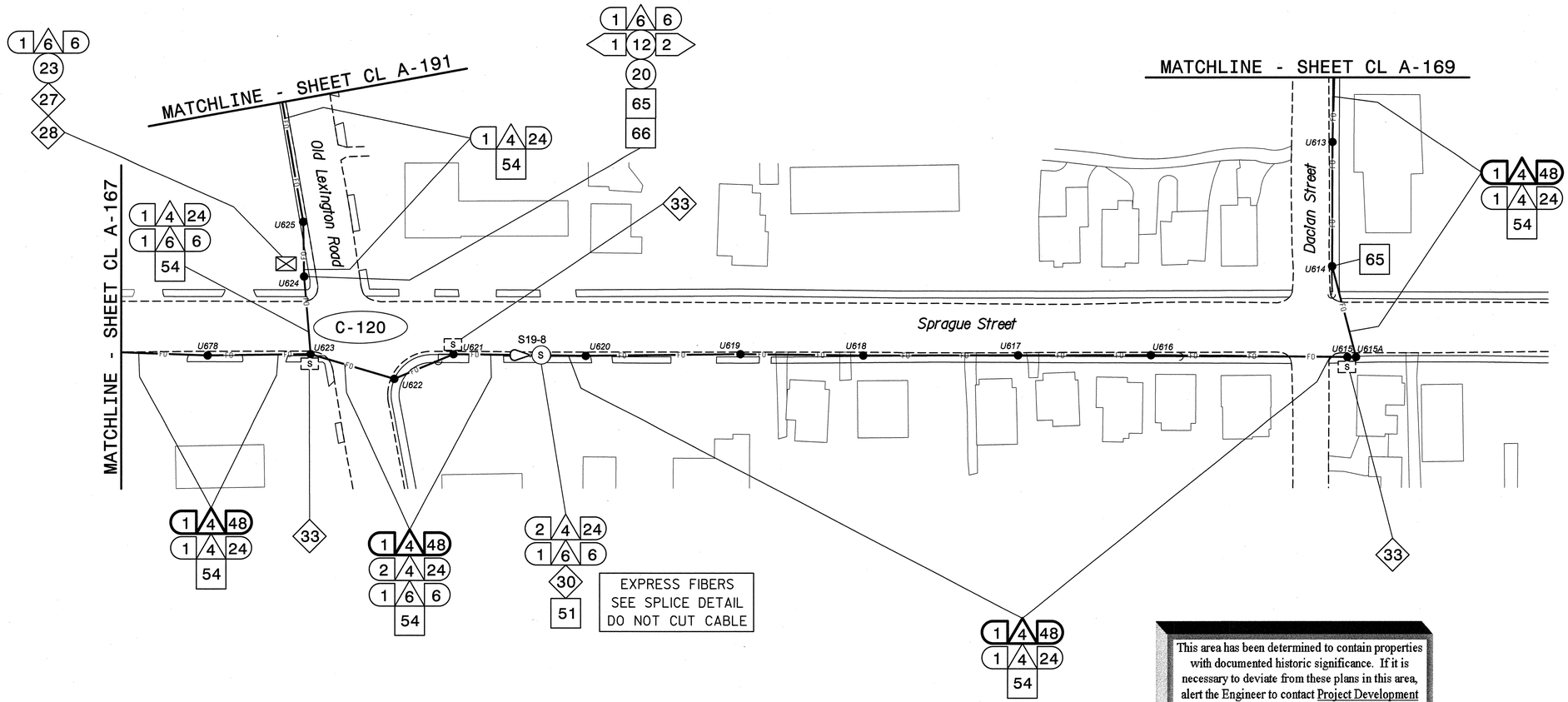
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-168



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Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

Lisa M Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-168.dgn

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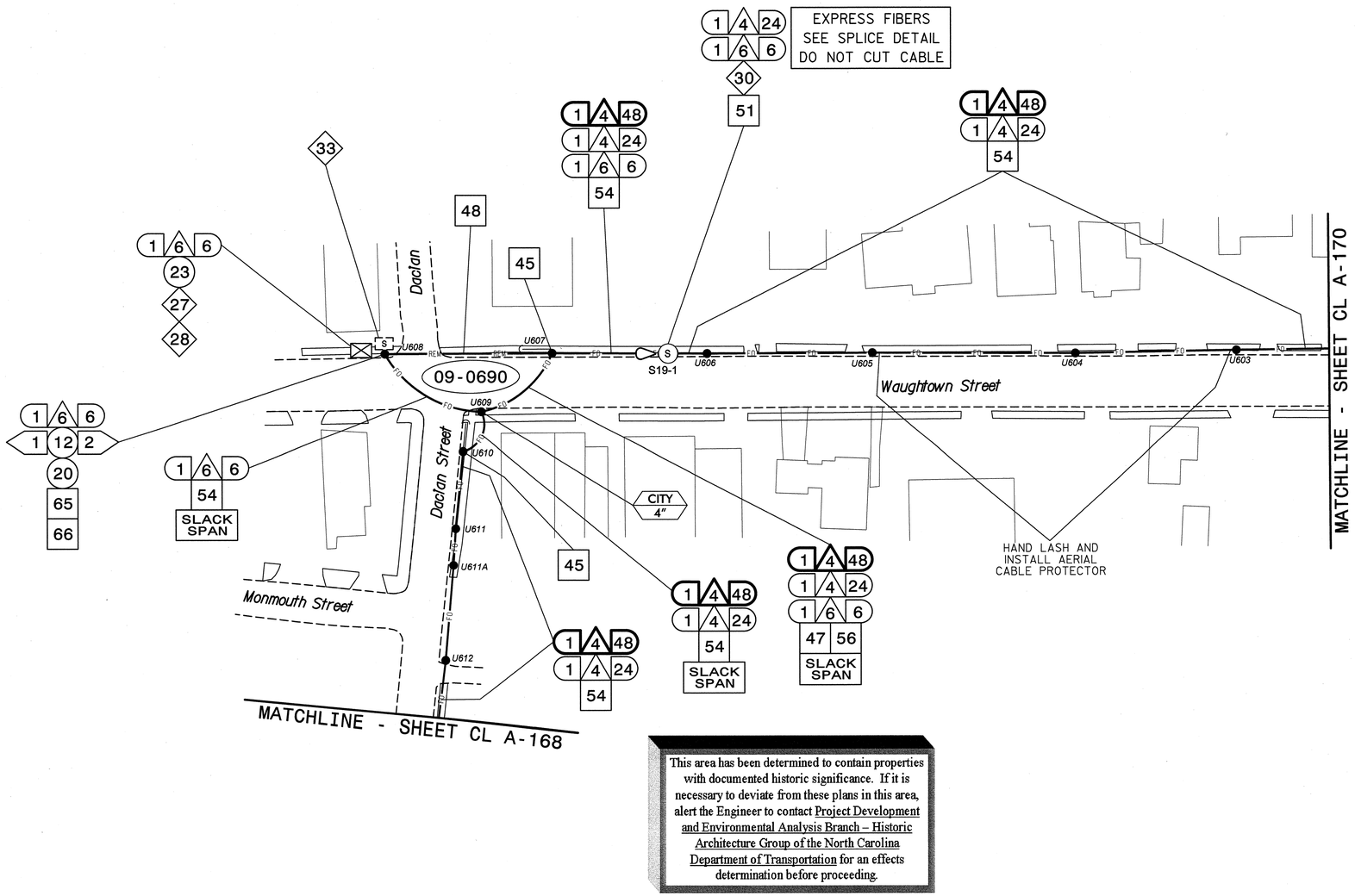
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-169



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23. INSTALL NEW RISER INTO CABINET BASE (USE EX CONDUIT STUBOUTS WHEN AVAILABLE)
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ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
NCDOT Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE 1-16-13 DATE

CADD Filename: CL A-169.dgn

03-JAN-2013 13:38
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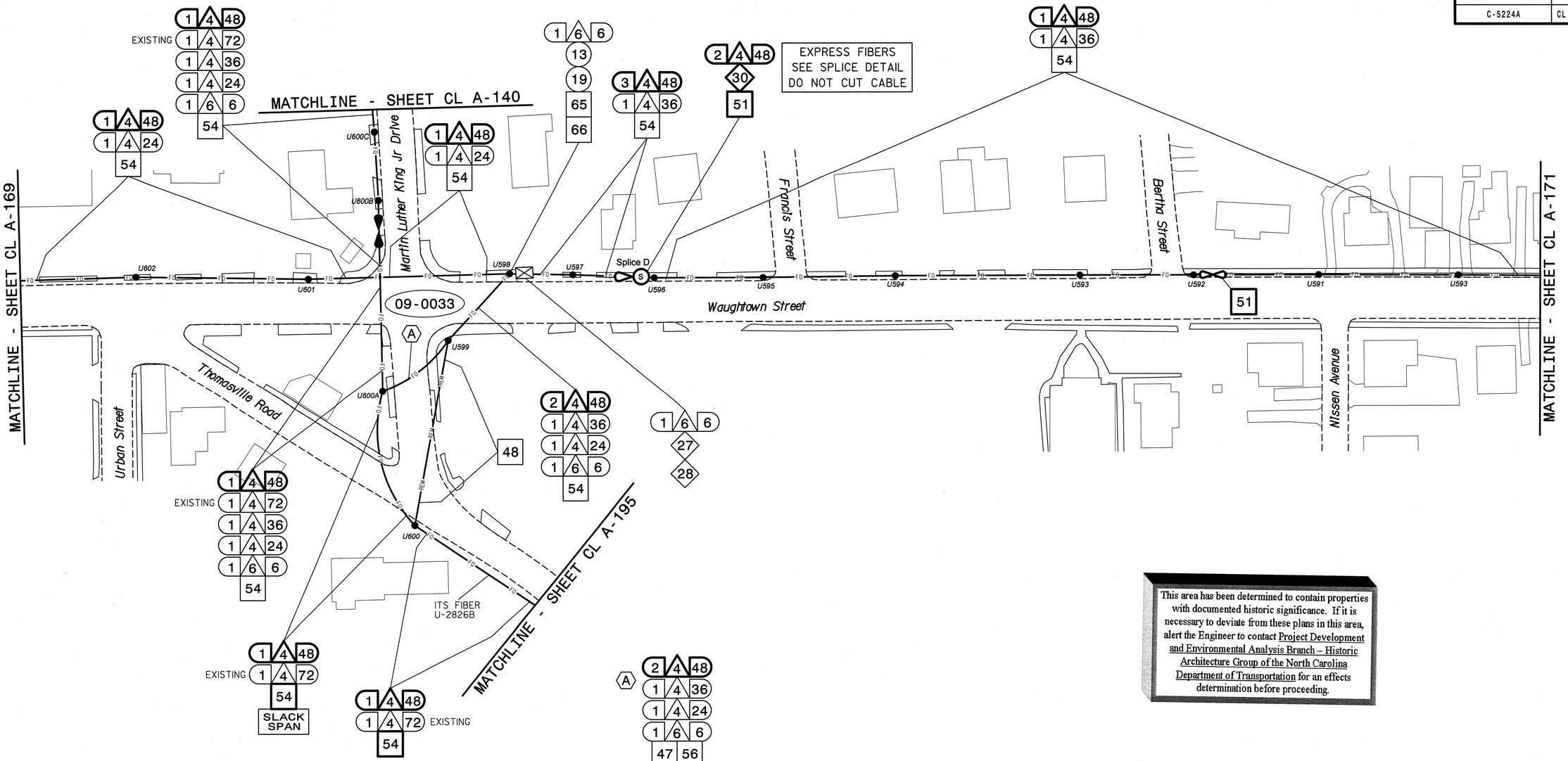
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-170



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ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of: North Carolina Department of Transportation, Transportation Mobility and Safety Division, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

SCALE 0 50 1"=50'

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-170.dgn

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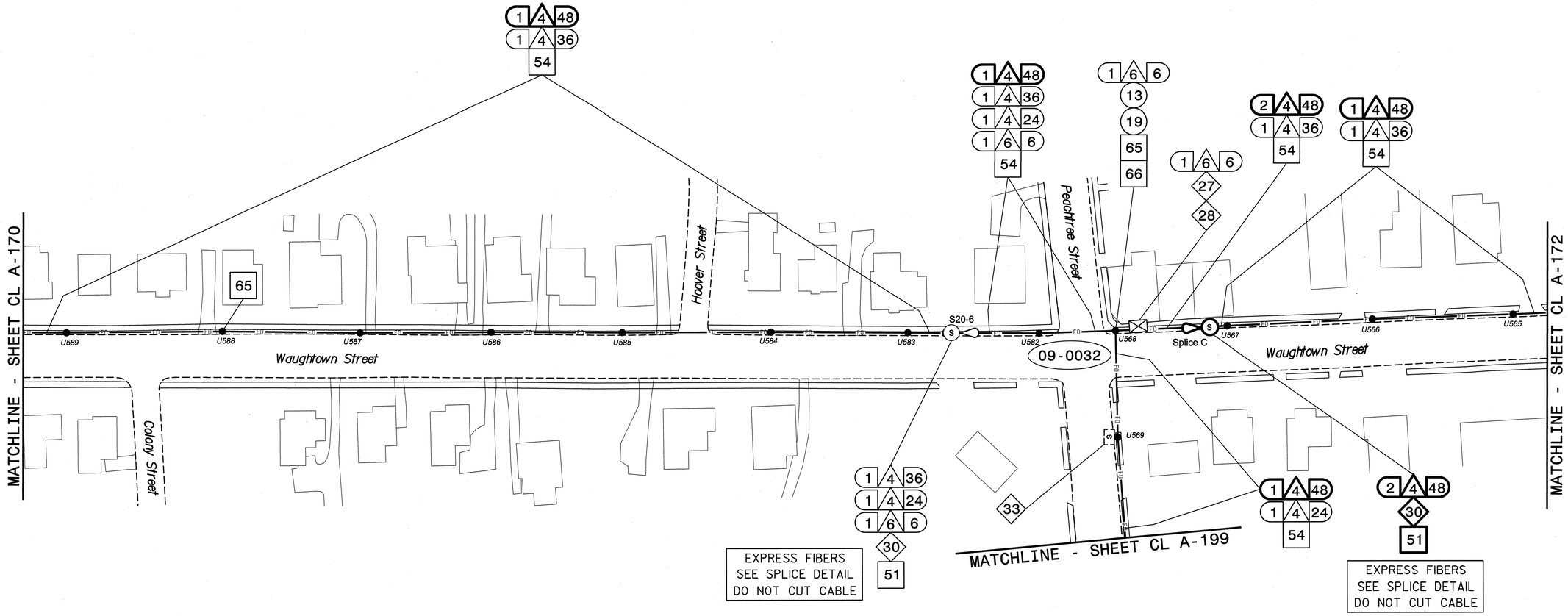
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-171



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ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of: North Carolina Department of Transportation, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-171.dgn

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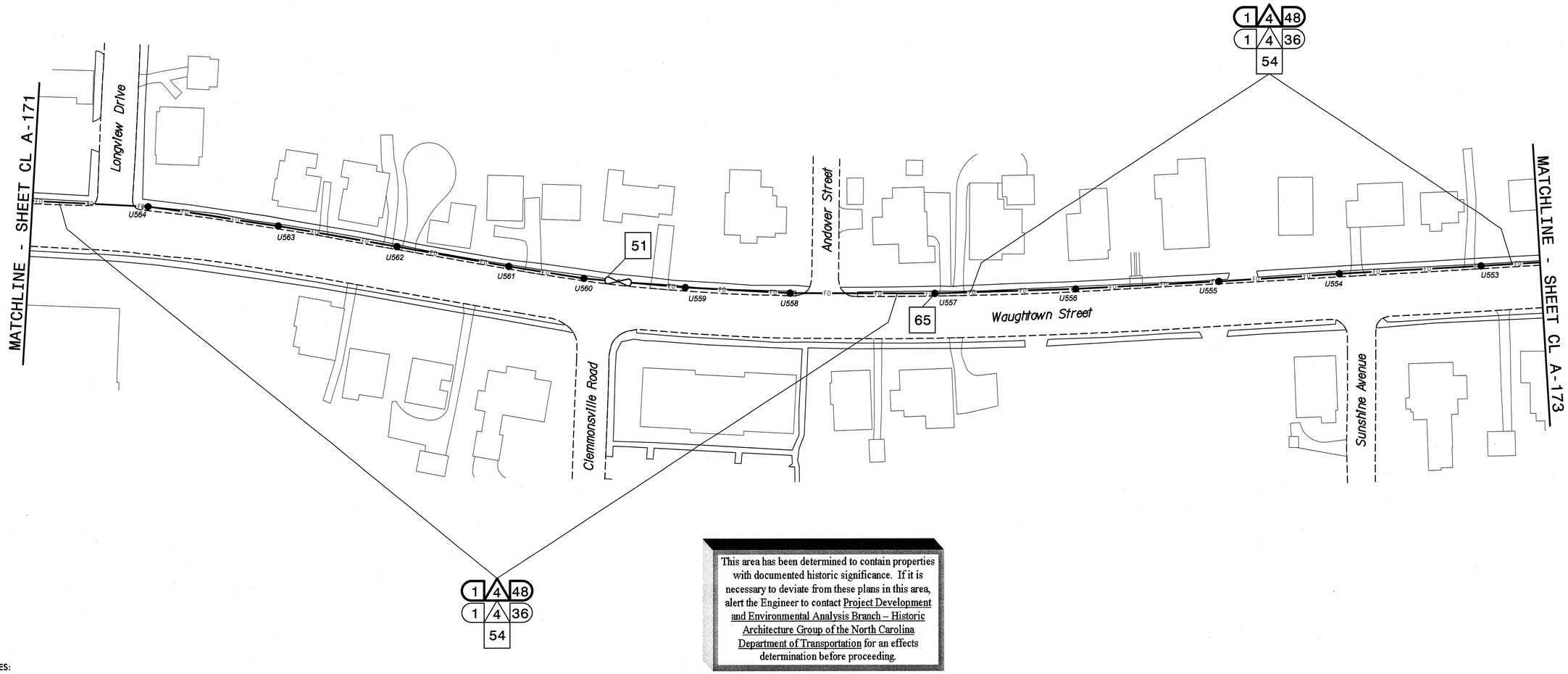
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-172



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Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE: January 2013 REVIEWED BY: MB Toth
PREPARED BY: BKS/AJD REVIEWED BY: LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-172.dgn

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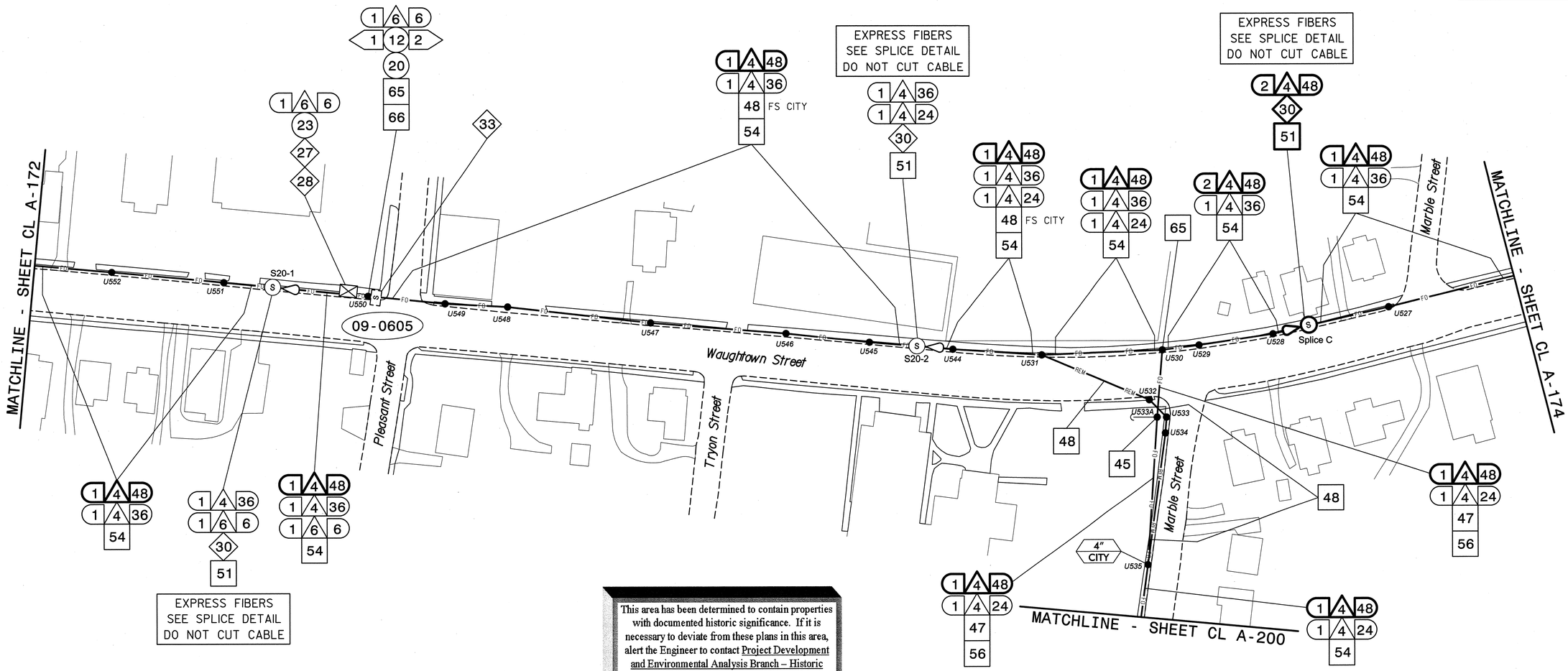
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-173



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2. SEAL ALL CONDUIT ENDS WITH DUCT AND CONDUIT SEALER, AT ALL JUNCTION BOX/CABINET ENTRANCES.

BOLD CONSTRUCTION NOTES SHOW NEW "IS FIBER" WORK

1. INSTALL REA, PE – 22, SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE
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7. INSTALL TRACER WIRE
8. INSTALL CONDUIT UNDERGROUND
9. INSTALL PVC CONDUIT
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11. INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
12. INSTALL RIGID, GALVANIZED STEEL RISER WITH HEAT SHRINK TUBING
13. INSTALL HEAT SHRINK TUBING RETROFIT KIT
14. INSTALL HIGH DENSITY POLYETHYLENE CONDUIT
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16. BORE AND JACK CONDUIT
17. INSTALL CABLE(S) IN EXISTING CONDUIT
18. INSTALL CABLE(S) IN NEW CONDUIT
19. INSTALL CABLE(S) IN EXISTING RISER(S)
20. INSTALL CABLE(S) IN NEW RISER(S)
21. INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS
22. INSTALL NEW CONDUIT INTO CABINET BASE (USE EX CONDUIT STUBOUTS WHEN AVAILABLE)
23. INSTALL NEW RISER INTO CABINET BASE (USE EX CONDUIT STUBOUTS WHEN AVAILABLE)
24. INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET
25. INSTALL NEW RISER INTO POLE MOUNTED CABINET
26. INSTALL DIGITAL VIDEO ENCODER
27. INSTALL NEW ETHERNET EDGE SWITCH IN CABINET
28. INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET
29. INSTALL UNDERGROUND SPLICE ENCLOSURE
30. INSTALL AERIAL SPLICE ENCLOSURE
31. INSTALL SPLICE CABINET
32. MODIFY EXISTING SPLICE ENCLOSURE OR INTERCONNECT CENTER
33. REMOVE EXISTING SPLICE /HUB /CCTV CABINET
34. INSTALL CABINET FOUNDATION
35. REMOVE EXISTING CABINET FOUNDATION
36. INSTALL CCTV CAMERA ASSEMBLY
37. INSTALL CCTV WOOD POLE
38. INSTALL STANDARD SIZE JUNCTION BOX
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40. INSTALL OVER-SIZED JUNCTION BOX
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47. INSTALL MESSENGER CABLE
48. REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE
49. REMOVE EXISTING COMMUNICATIONS CABLE
50. INSTALL WIRELESS DSL
51. INSTALL CABLE STORAGE GUIDE(S) [SNOW SHOE(S)] AND STORE 100 FEET OF EACH CABLE
52. INSTALL DELINEATOR MARKER
53. STORE 50 FEET OF COMMUNICATIONS CABLE (EACH CABLE)
54. LASH CABLE(S) TO EXISTING SIGNAL/COMMUNICATIONS CABLE
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62. INSTALL 4.9GHZ ETHERNET INTEGRATED RADIO /OMNI-DIRECTIONAL ANTENNA
63. INSTALL 900 MHZ ETHERNET RADIO
64. INTERCEPT AND REROUTE EXISTING CONDUITS
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ATTACHMENT POINT:
XXX DISTANCE ABOVE (IN) REFERENCE POINT
YYY REFERENCE POINT DISTANCE BELOW (IN)

CONSTRUCTION NOTE SYMBOLOGY KEY
NUMBER OF CABLE(S) /LOOPS, DETECTOR AMPLIFIERS, GUYS
NUMBER OF FIBERS/TWISTED PAIRS
NUMBER OF RISER(S)/ CONDUIT(S)
DIAMETER OF RISER(S)/ CONDUIT(S) (IN)

ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION Transportation Mobility and Safety Division Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE DATE 1-11-13
CADD Filename: CL A-173.dgn

03-JAN-2013 13:38
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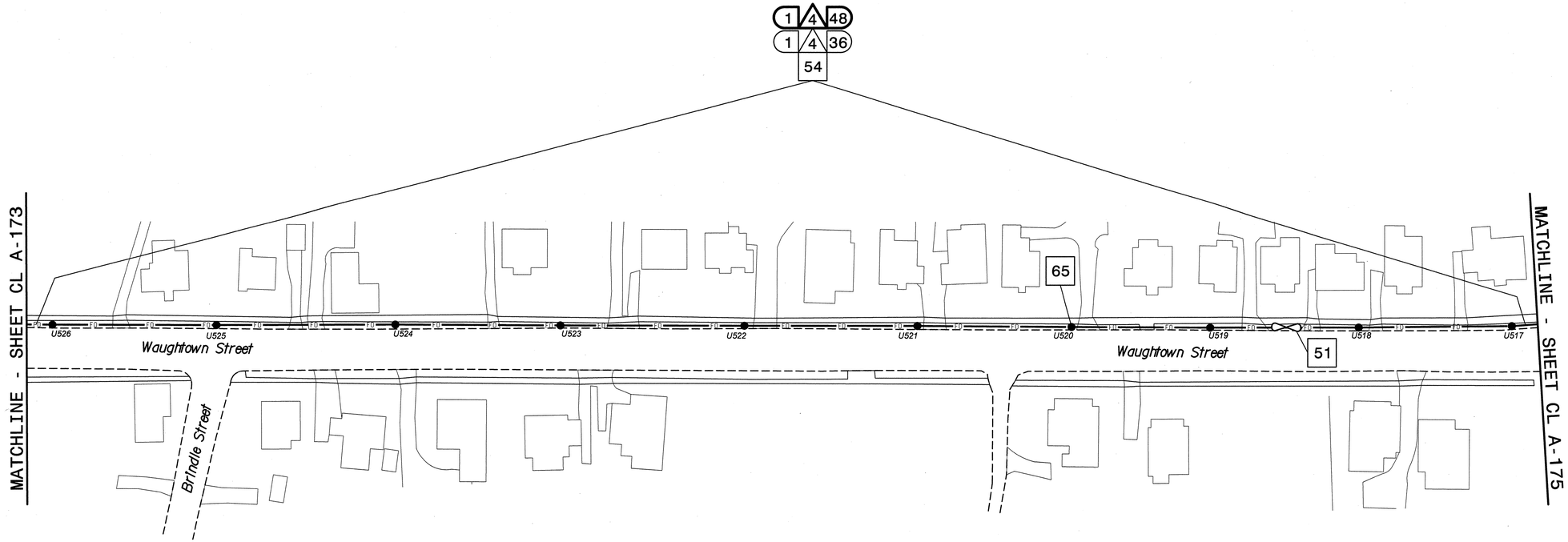
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-174



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ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Woon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE DATE 1-11-13
CADD Filename: CL A-174.dgn

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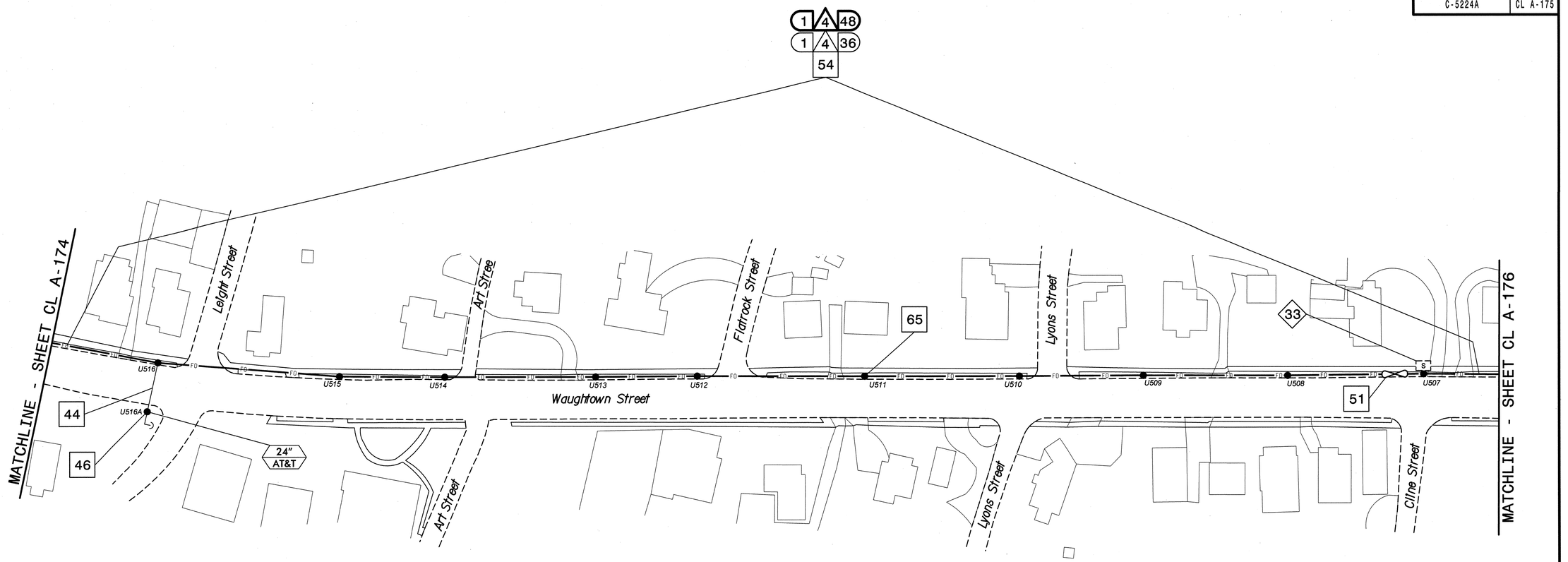
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-175



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ATTACHMENT POINT:
XXX DISTANCE ABOVE (IN) REFERENCE POINT
YYY REFERENCE POINT
XXX DISTANCE BELOW (IN) YYY

CONSTRUCTION NOTE SYMBOLOGY KEY
NUMBER OF CABLE(S) /LOOPS, DETECTOR AMPLIFIERS, GUYS — NUMBER OF FIBERS/TWISTED PAIRS
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ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of: Transportation Mobility and Safety Division, STATE OF NORTH CAROLINA, DEPARTMENT OF TRANSPORTATION, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-175.dgn

03-JAN-2013 13:38
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24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-176

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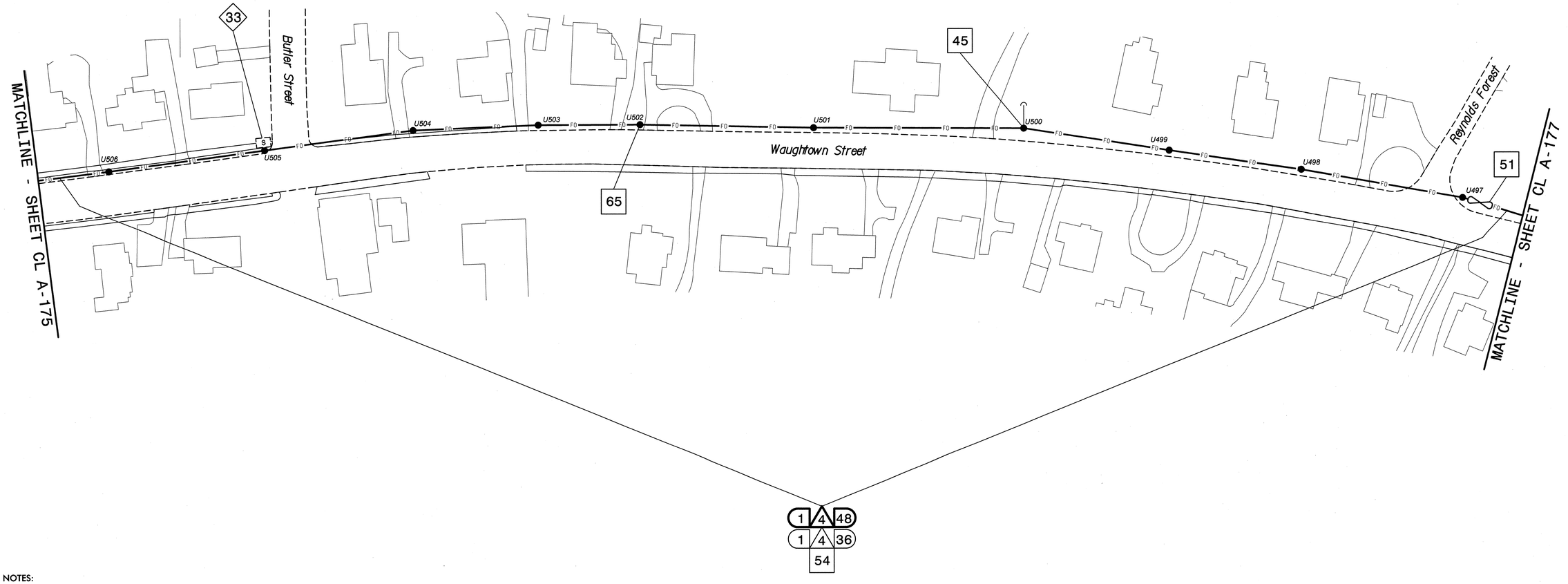

NOTES:
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750 Greenfield Parkway, Garner, NC 27529

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Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
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REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

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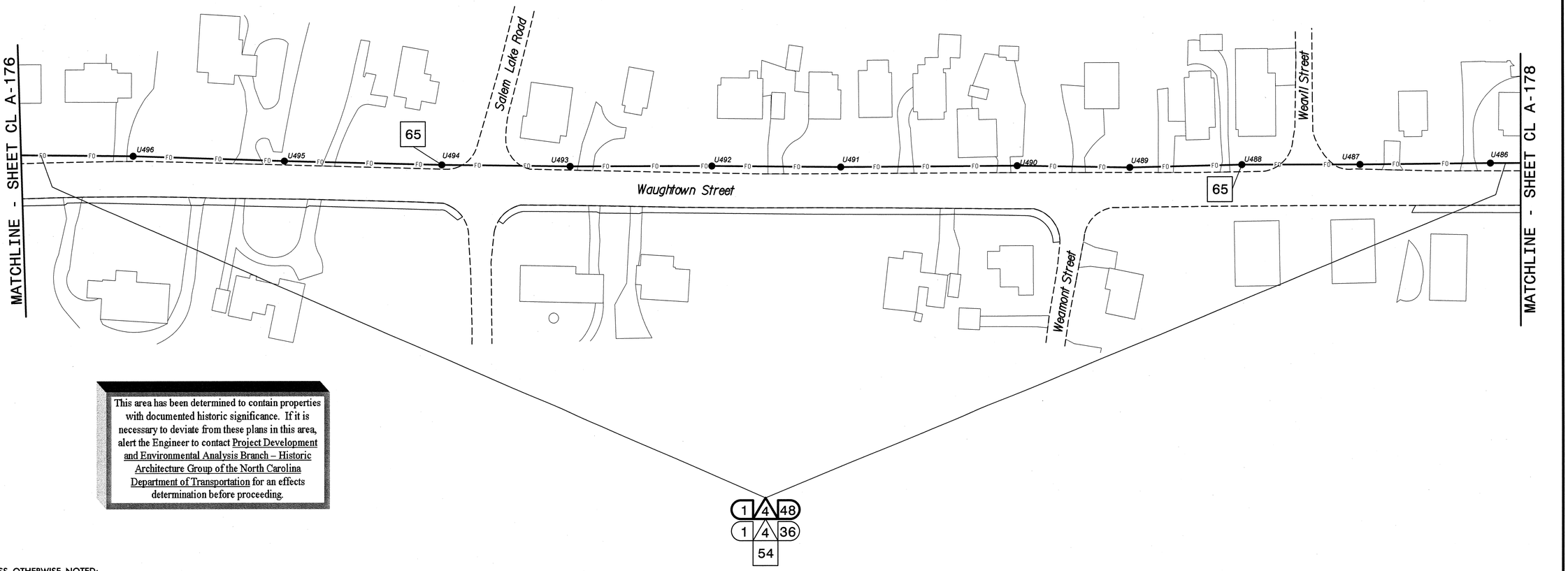
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-177



This area has been determined to contain properties with documented historic significance. If it is necessary to deviate from these plans in this area, alert the Engineer to contact Project Development and Environmental Analysis Branch – Historic Architecture Group of the North Carolina Department of Transportation for an effects determination before proceeding.

NOTES:
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   – ATTACH NEW MESSENGER CABLE 40" BELOW POWER.
   – ATTACH ON FRONT SIDE (FS) OF POLE.
2. SEAL ALL CONDUIT ENDS WITH DUCT AND CONDUIT SEALER, AT ALL JUNCTION BOX/CABINET ENTRANCES.

BOLD CONSTRUCTION NOTES SHOW NEW "IS FIBER" WORK

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26. INSTALL DIGITAL VIDEO ENCODER
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28. INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET
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ATTACHMENT POINT:
XXX / YYY — DISTANCE ABOVE (IN) REFERENCE POINT
YYY / XXX — REFERENCE POINT DISTANCE BELOW (IN)

CONSTRUCTION NOTE SYMBOLOGY KEY
NUMBER OF CABLE(S)/LOOPS, DETECTOR AMPLIFIERS, GUYS
NUMBER OF FIBERS/TWISTED PAIRS
NUMBER OF RISER(S)/ CONDUIT(S)
DIAMETER OF RISER(S)/ CONDUIT(S) (IN)

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Prepared for the Offices of:
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION — Integrated Mobility and Safety Division — Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE: January 2013 REVIEWED BY: MB Toth
PREPARED BY: BKS/AJD REVIEWED BY: LM Moon

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE 1-17-13 DATE

CADD Filename: CL A-177.dgn

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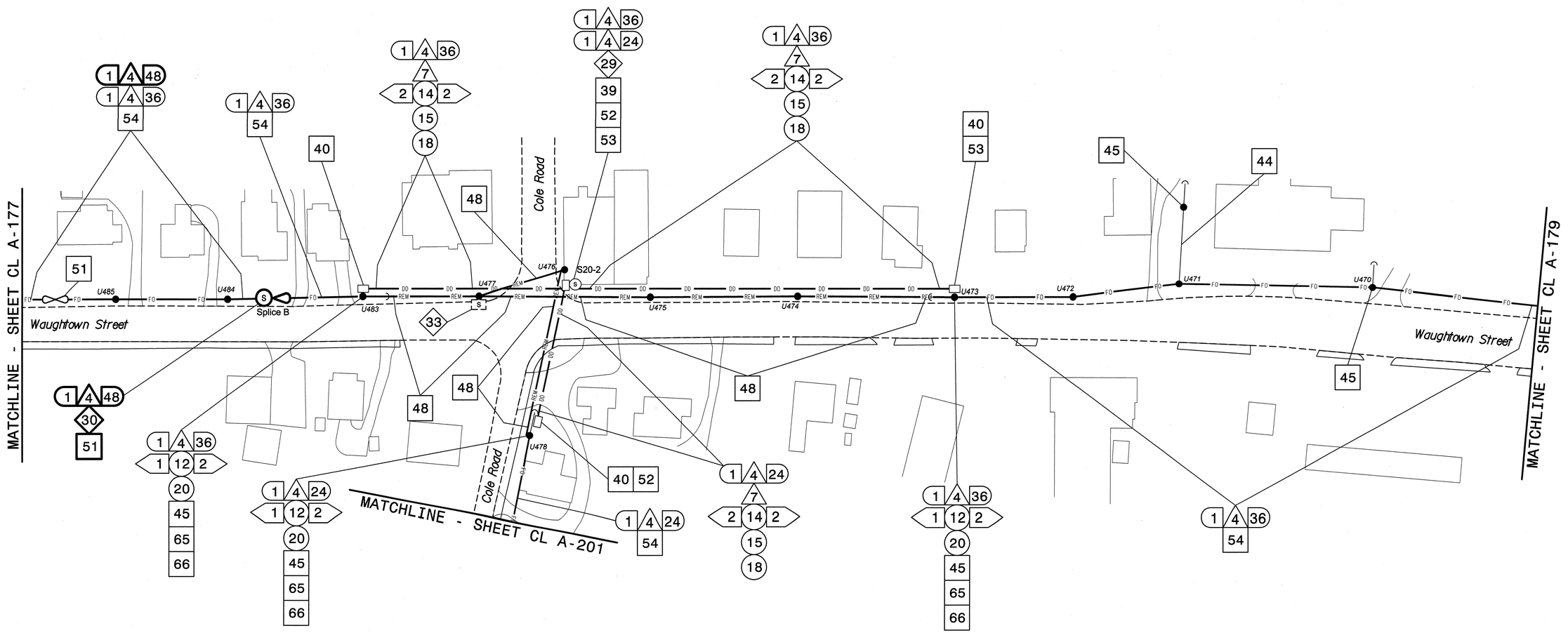
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-178

EXPRESS FIBERS
SEE SPLICE DETAIL
DO NOT CUT CABLE



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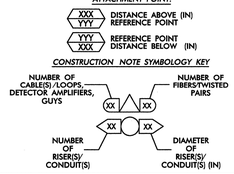

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Prepared for the Offices of:
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750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE
1-11-13
DATE

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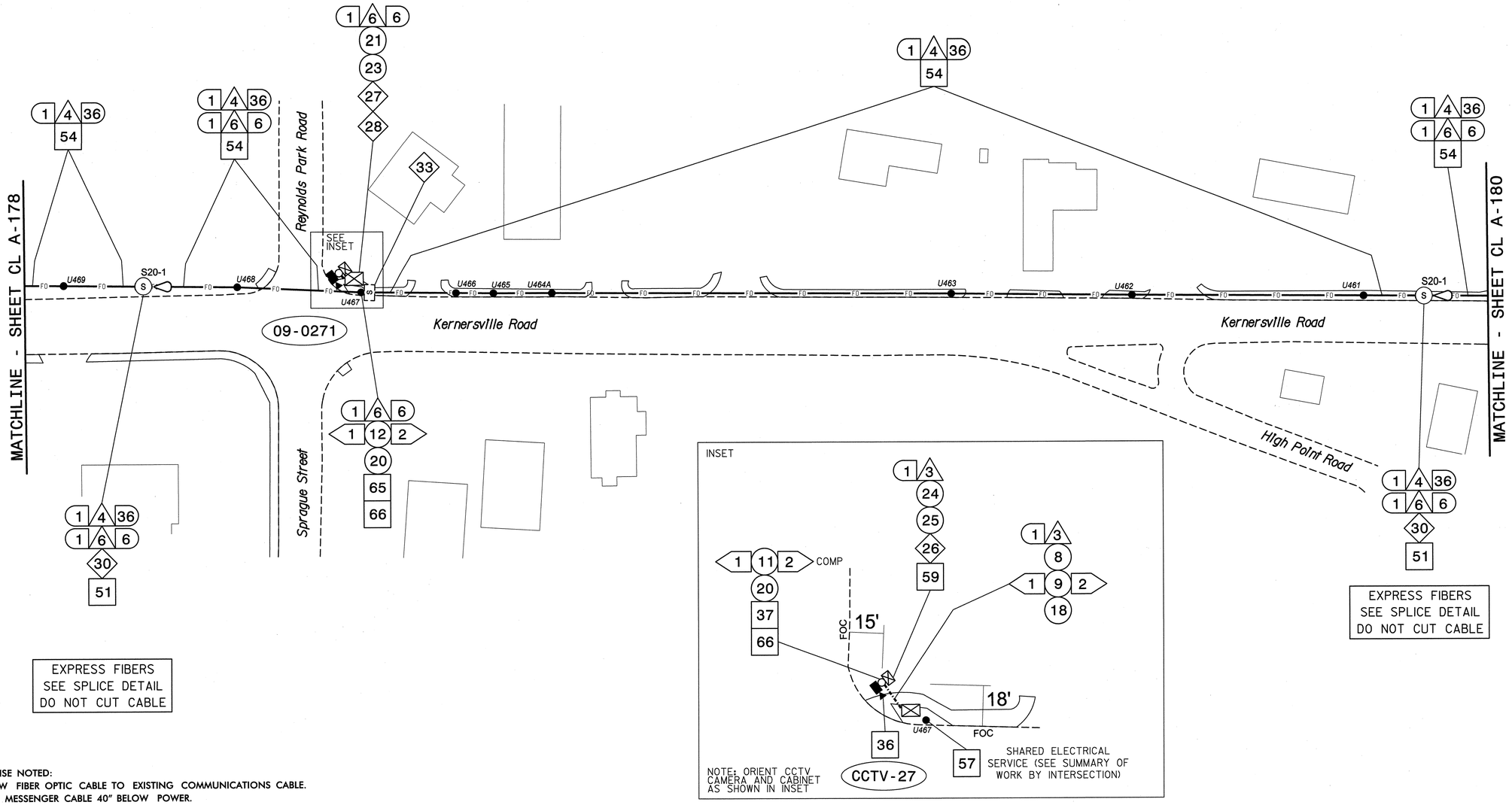
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-179



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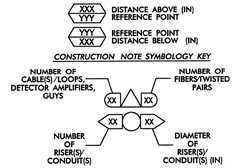

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Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE DATE
CADD Filename: CL A-179.dgn

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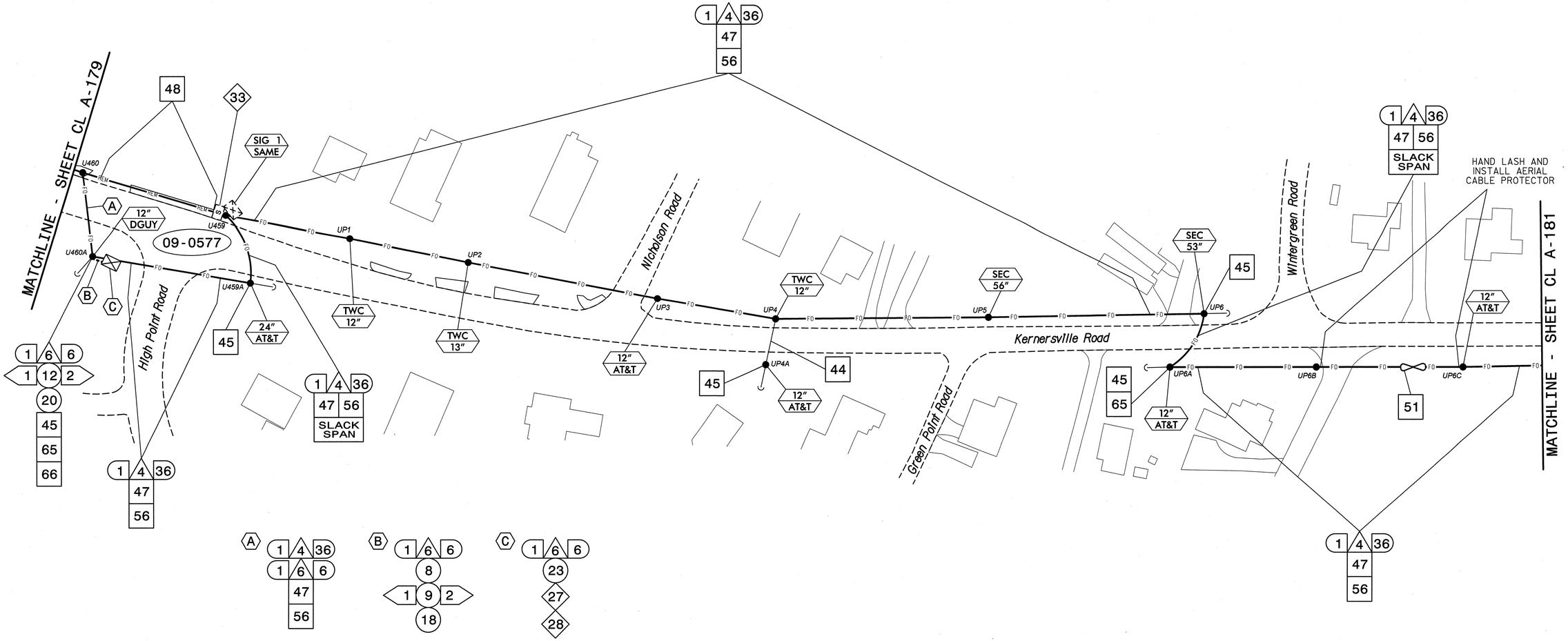
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-180



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Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LW Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-180.dgn

03-JAN-2013 13:39
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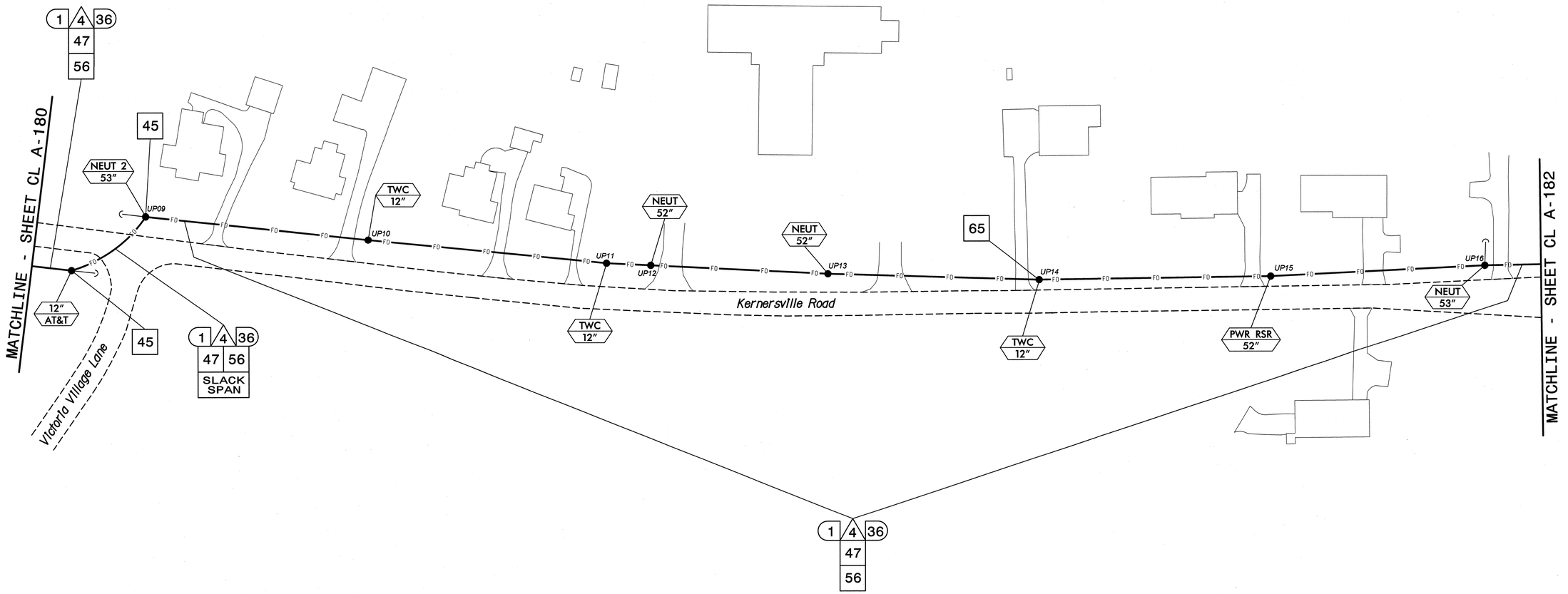
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-181



NOTES:
1. UNLESS OTHERWISE NOTED:
   - OVERLASH NEW FIBER OPTIC CABLE TO EXISTING COMMUNICATIONS CABLE.
   - ATTACH NEW MESSENGER CABLE 40" BELOW POWER.
   - ATTACH ON FRONT SIDE (FS) OF POLE.
2. SEAL ALL CONDUIT ENDS WITH DUCT AND CONDUIT SEALER, AT ALL JUNCTION BOX/CABINET ENTRANCES.

BOLD CONSTRUCTION NOTES SHOW NEW "IS FIBER" WORK

1	INSTALL REA, PE – 22, SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE	13	INSTALL HEAT SHRINK TUBING RETROFIT KIT	25	INSTALL NEW RISER INTO POLE MOUNTED CABINET	37	INSTALL CCTV WOOD POLE
2	INSTALL REA, PE – 38, (FIGURE – 8) SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE	14	INSTALL HIGH DENSITY POLYETHYLENE CONDUIT	26	INSTALL DIGITAL VIDEO ENCODER	38	INSTALL STANDARD SIZE JUNCTION BOX
3	INSTALL CATEGORY 5E CABLE	15	DIRECTIONAL DRILL CONDUIT	27	INSTALL NEW ETHERNET EDGE SWITCH IN CABINET	39	INSTALL SPECIAL-SIZED JUNCTION BOX
4	INSTALL SMFO CABLE	16	BORE AND JACK CONDUIT	28	INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET	40	INSTALL OVER-SIZED JUNCTION BOX
5	INSTALL COAXIAL ANTENNA CABLE	17	INSTALL CABLE(S) IN EXISTING CONDUIT	29	INSTALL UNDERGROUND SPLICE ENCLOSURE	41	REMOVE EXISTING JUNCTION BOX
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53	STORE 50 FEET OF COMMUNICATIONS CABLE (EACH CABLE)	65	BOND MESSENGER TO POLE GROUND				
54	LASH CABLE(S) TO EXISTING SIGNAL/COMMUNICATIONS CABLE	66	BOND RISER TO POLE GROUND				
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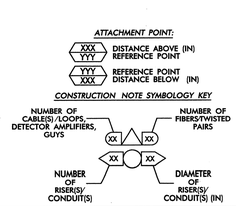

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of: Transportation Mobility and Safety Division, North Carolina Department of Transportation, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

SCALE 0 50 1"=50'

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

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SEAL — NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

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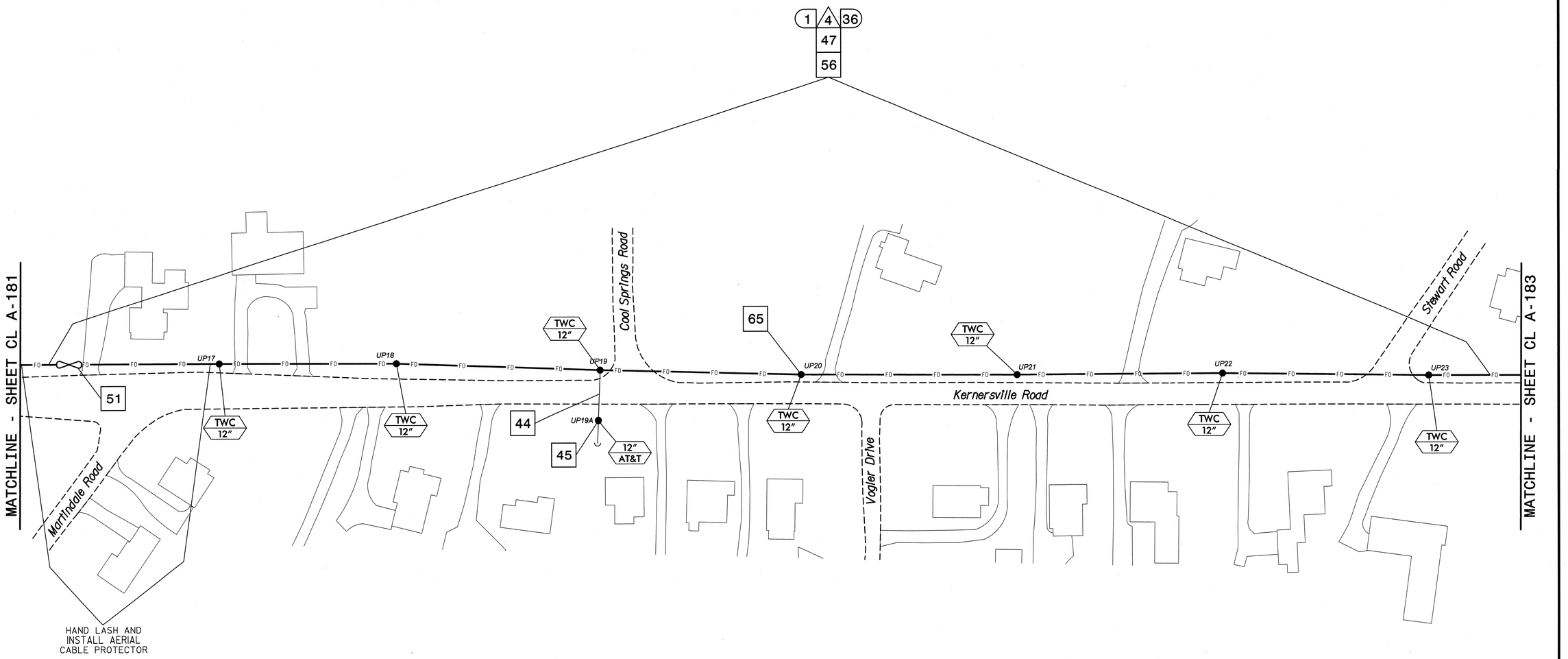
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-182



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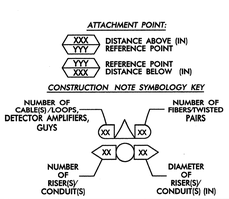

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Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE: January 2013 REVIEWED BY: MB Toth

PREPARED BY: BKS/AJD REVIEWED BY: LM Noon

REVISIONS	INIT.	DATE

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

SIGNATURE DATE 1-11-13

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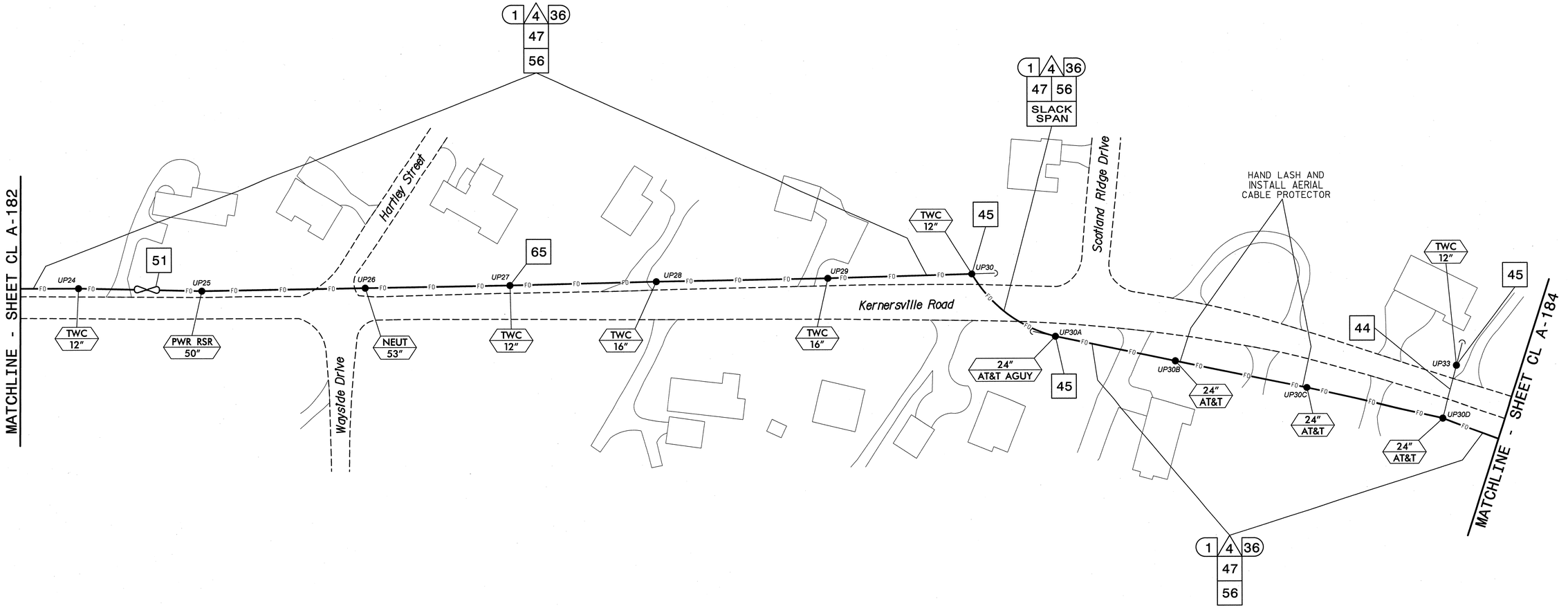
C-5224A	CL A-183



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CONSTRUCTION NOTE SYMBOLOGY KEY
NUMBER OF CABLE(S)/LOOPS DETECTOR AMPLIFIERS, GUYS
NUMBER OF FIBERS/TWISTED PAIRS
NUMBER OF RISER(S)/ CONDUIT(S)
DIAMETER OF RISER(S)/ CONDUIT(S) (IN)

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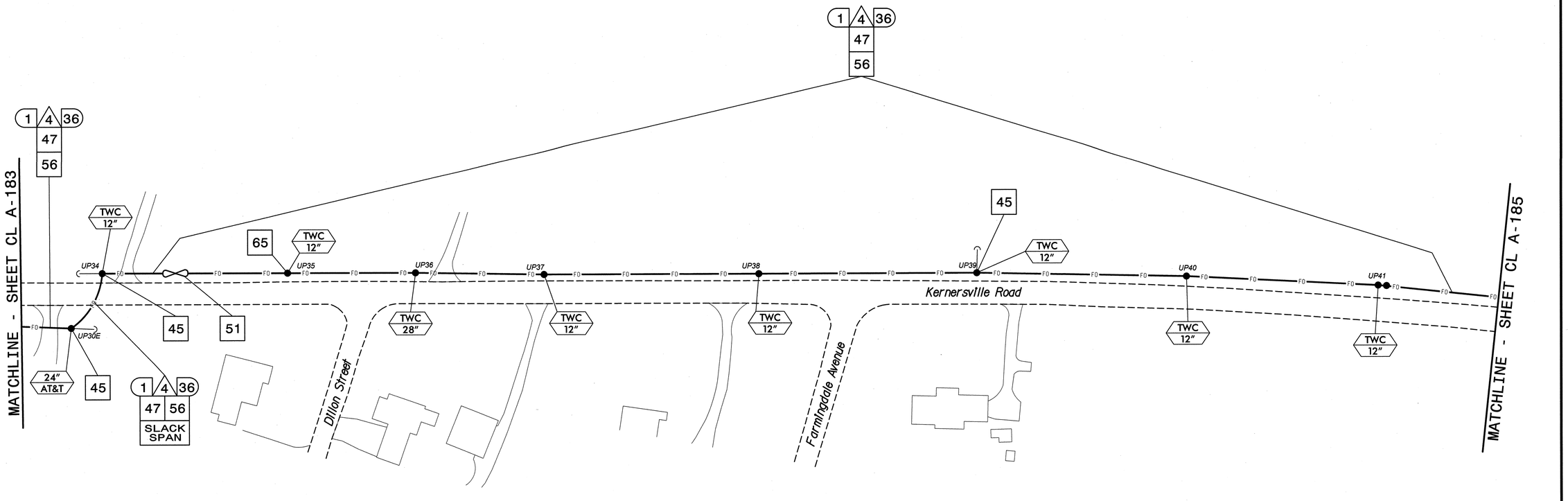

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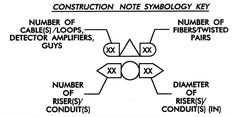

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-184.dgn

03-JAN-2013 14:01
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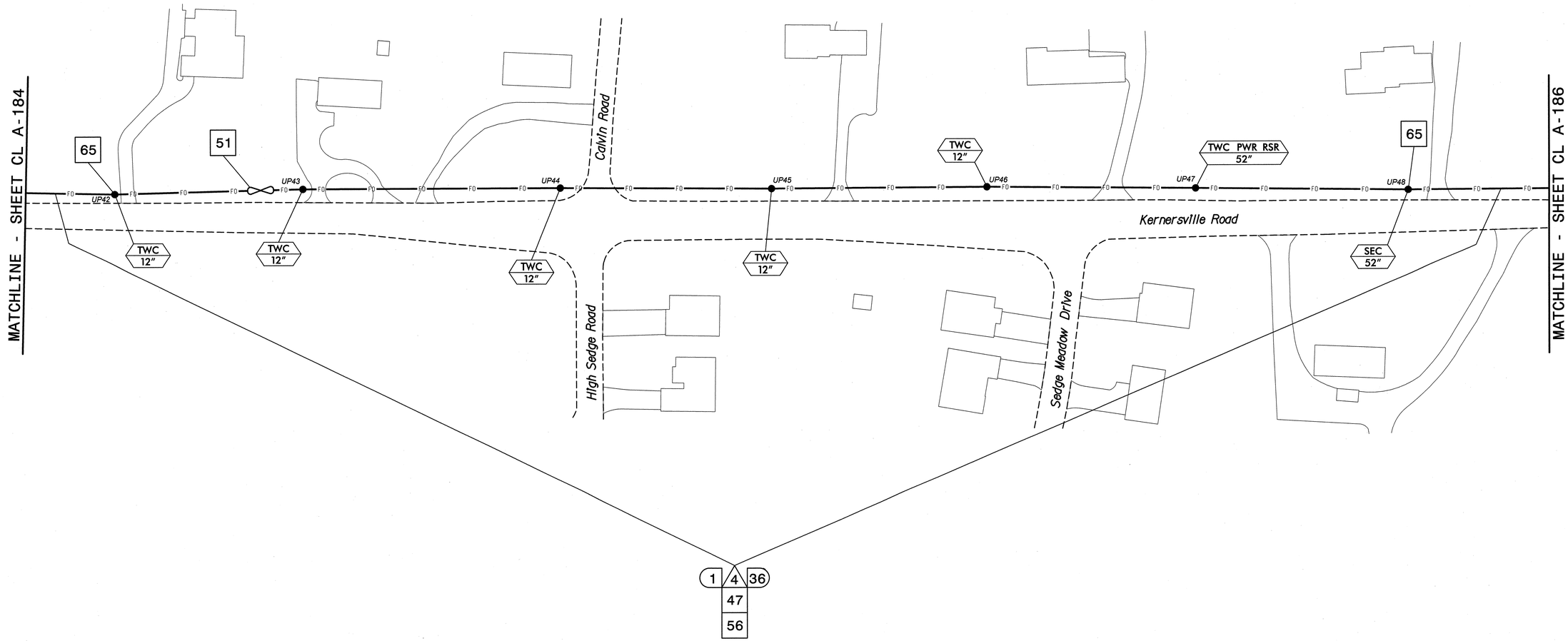
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-185



NOTES:
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   - OVERLASH NEW FIBER OPTIC CABLE TO EXISTING COMMUNICATIONS CABLE.
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2. SEAL ALL CONDUIT ENDS WITH DUCT AND CONDUIT SEALER, AT ALL JUNCTION BOX/CABINET ENTRANCES.

BOLD CONSTRUCTION NOTES SHOW NEW "IS FIBER" WORK

1 INSTALL REA, PE – 22, SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE	13 INSTALL HEAT SHRINK TUBING RETROFIT KIT	25 INSTALL NEW RISER INTO POLE MOUNTED CABINET	37 INSTALL CCTV WOOD POLE	49 REMOVE EXISTING COMMUNICATIONS CABLE	61 INSTALL UNI-DIRECTIONAL ANTENNA
2 INSTALL REA, PE – 38, (FIGURE – 8) SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE	14 INSTALL HIGH DENSITY POLYETHYLENE CONDUIT	26 INSTALL DIGITAL VIDEO ENCODER	38 INSTALL STANDARD SIZE JUNCTION BOX	50 INSTALL WIRELESS DSL	62 INSTALL 4.9GHZ ETHERNET INTEGRATED RADIO /OMNI-DIRECTIONAL ANTENNA
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7 INSTALL TRACER WIRE	19 INSTALL CABLE(S) IN EXISTING RISER(S)	31 INSTALL SPLICE CABINET	43 REMOVE EXISTING WOOD POLE	55 LASH CABLE(S) TO EXISTING MESSENGER CABLE	67 BOND TRACER WIRE TO POLE GROUND
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ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
North Carolina Department of Transportation, Transportation Mobility and Safety Division, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

SCALE 0 50 1"=50'

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem
PLAN DATE: January 2013 REVIEWED BY: MB Toth
PREPARED BY: BKS/AJD REVIEWED BY: LW Moon

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE DATE 1-11-13
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PROJECT REFERENCE NO.	SHEET NO.
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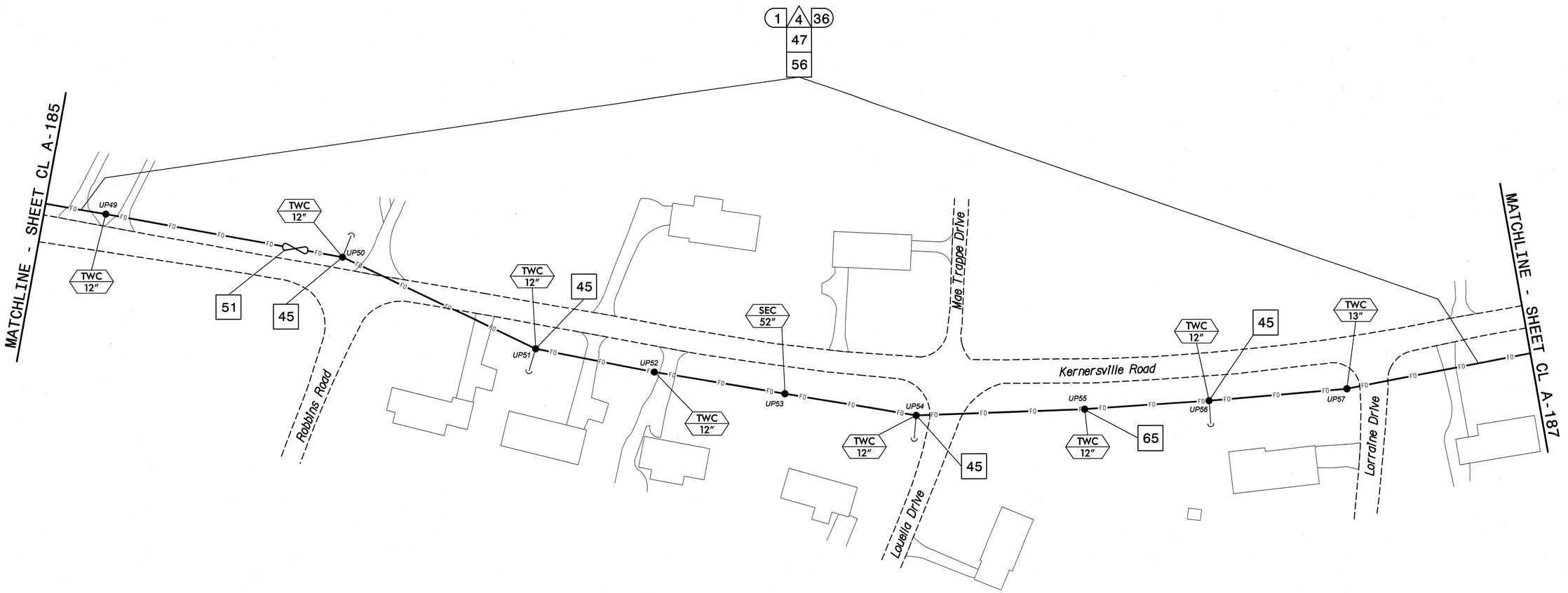

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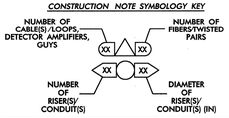

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Prepared for the Offices of:
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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE: January 2013 REVIEWED BY: MB Toth

PREPARED BY: BKS/AJD REVIEWED BY: LW Moon

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE DATE 11/13

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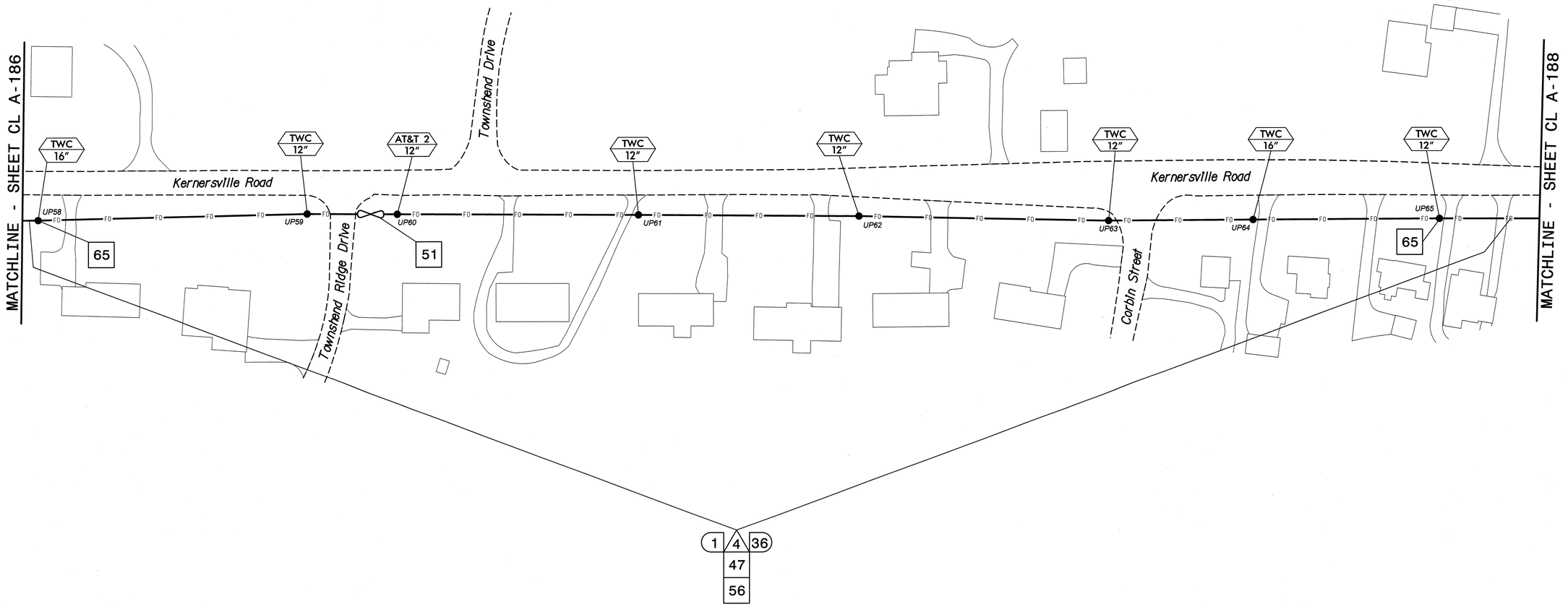

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Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem
PLAN DATE: January 2013 REVIEWED BY: MB Toth
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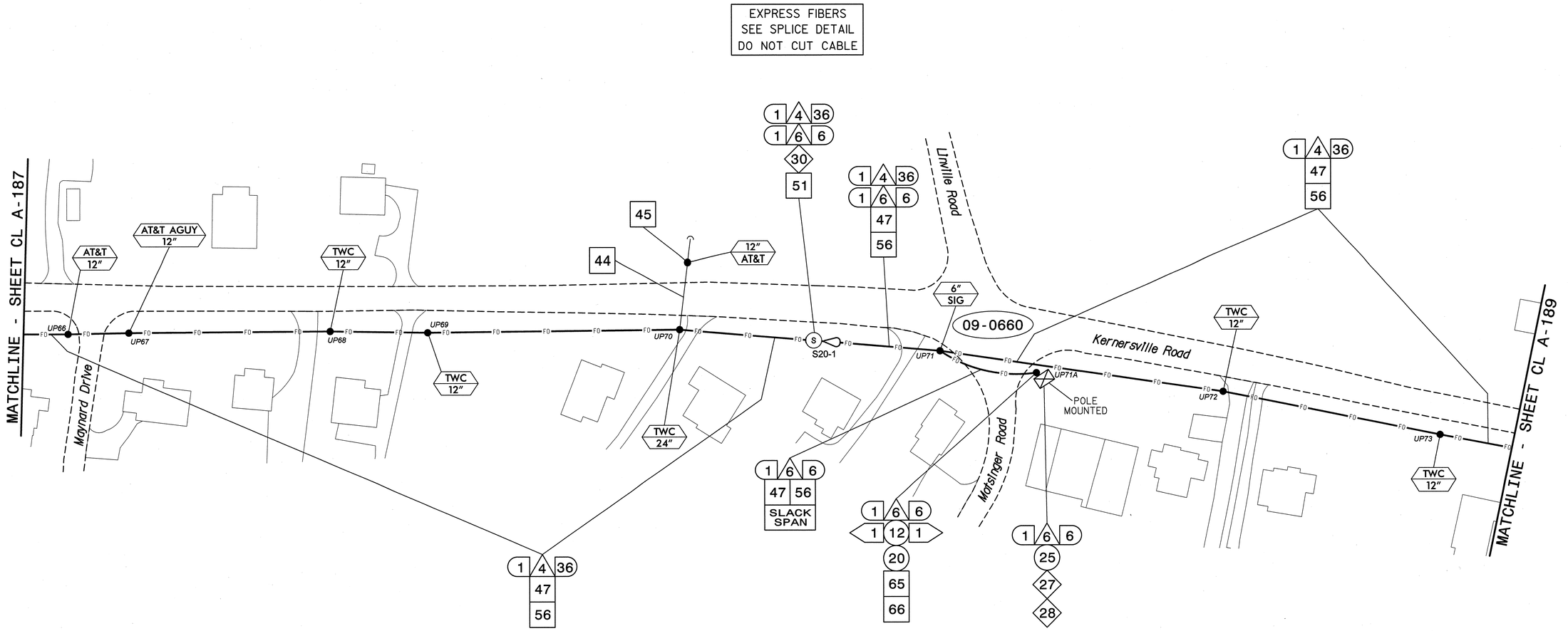

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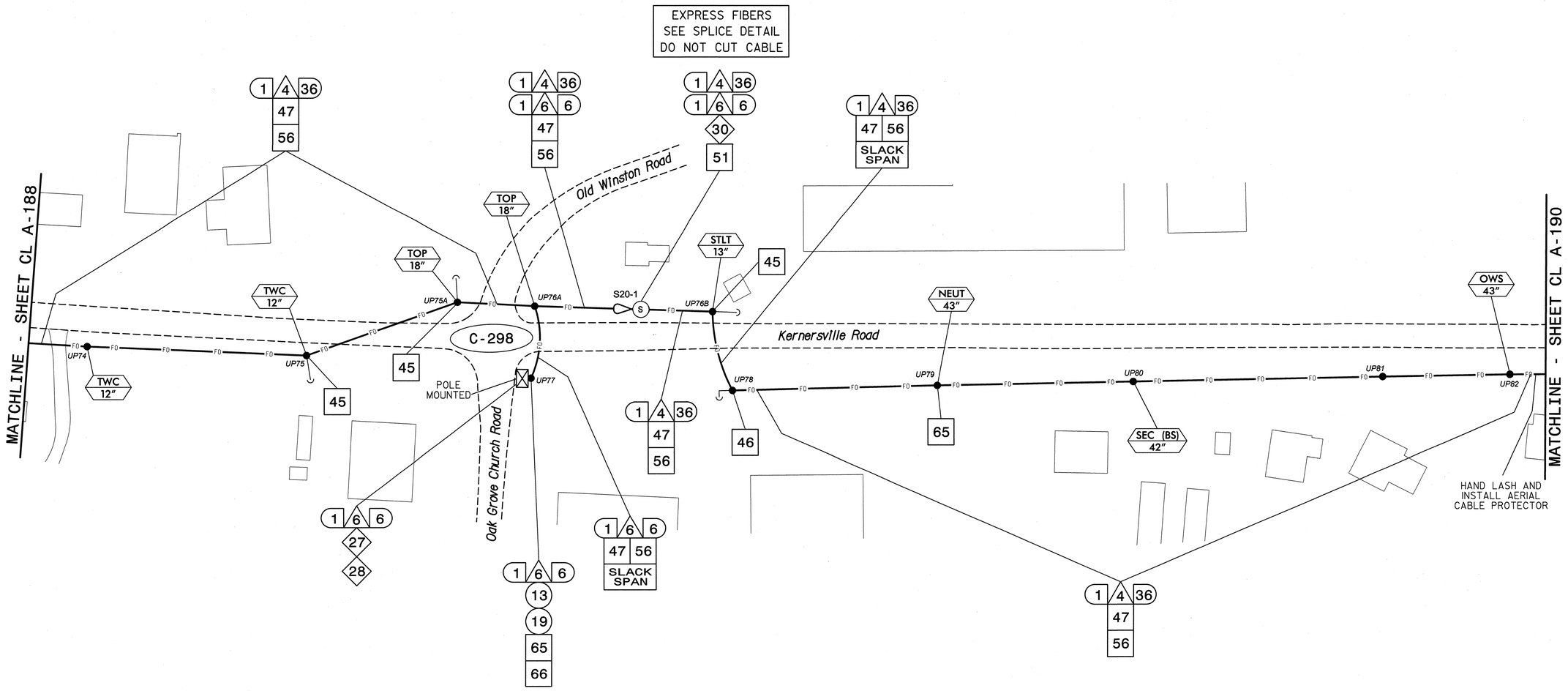
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-189



NOTES:
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2. SEAL ALL CONDUIT ENDS WITH DUCT AND CONDUIT SEALER, AT ALL JUNCTION BOX/CABINET ENTRANCES.

BOLD CONSTRUCTION NOTES SHOW NEW "IS FIBER" WORK

1 INSTALL REA, PE – 22, SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE	13 INSTALL HEAT SHRINK TUBING RETROFIT KIT	25 INSTALL NEW RISER INTO POLE MOUNTED CABINET	37 INSTALL CCTV WOOD POLE	49 REMOVE EXISTING COMMUNICATIONS CABLE	61 INSTALL UNI-DIRECTIONAL ANTENNA
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ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of: Transportation Mobility and Safety Division, State of North Carolina, Department of Transportation, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL 022516 ENGINEER LISA M. MOON

SIGNATURE Lisa M. Moon 1-11-13 DATE

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PROJECT REFERENCE NO.	SHEET NO.
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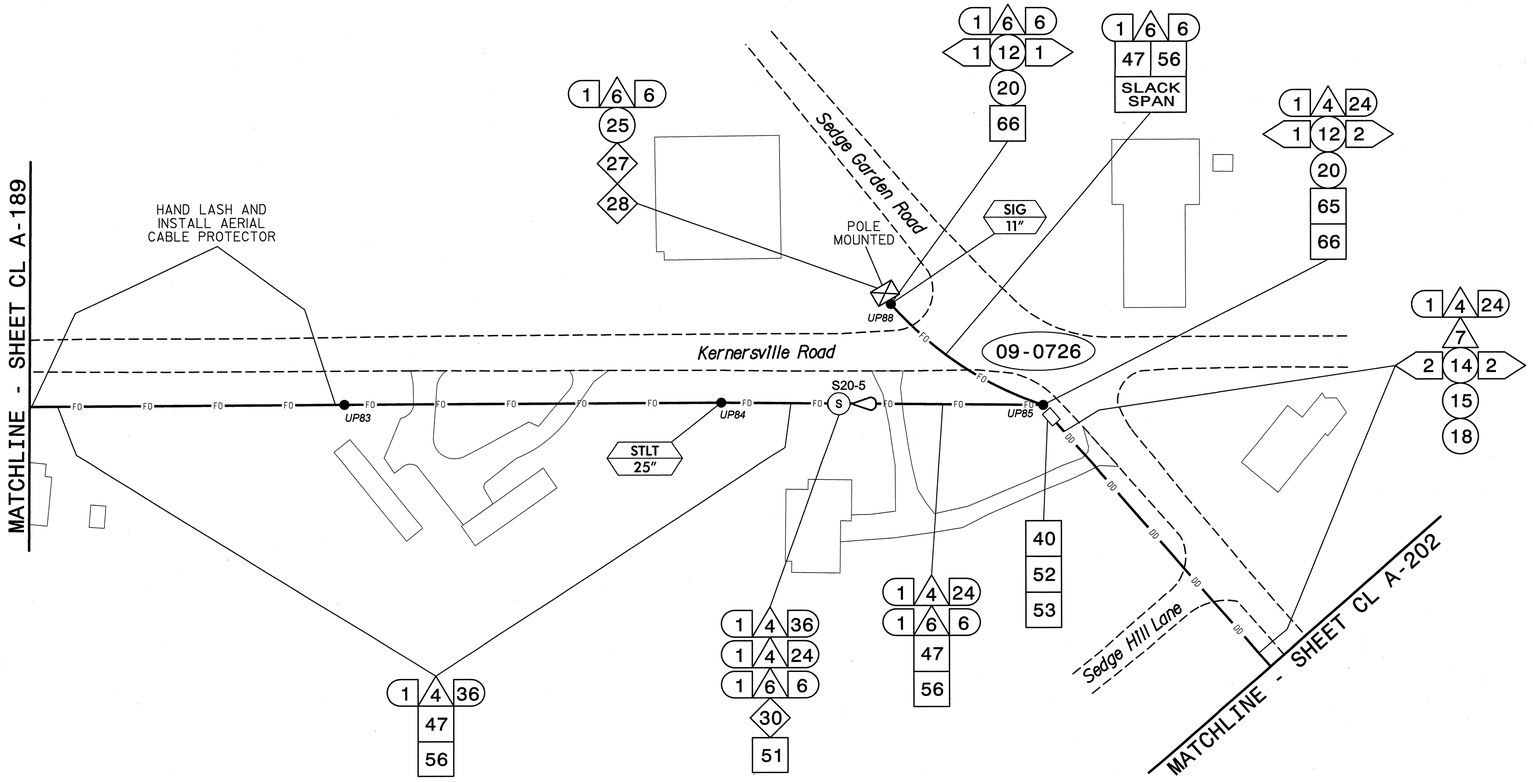

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Prepared for the Offices of: North Carolina Department of Transportation, Mobility and Safety Division, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LW Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE Lisa M. Moon DATE 1-11-13
CADD Filename: CL A-190.dgn

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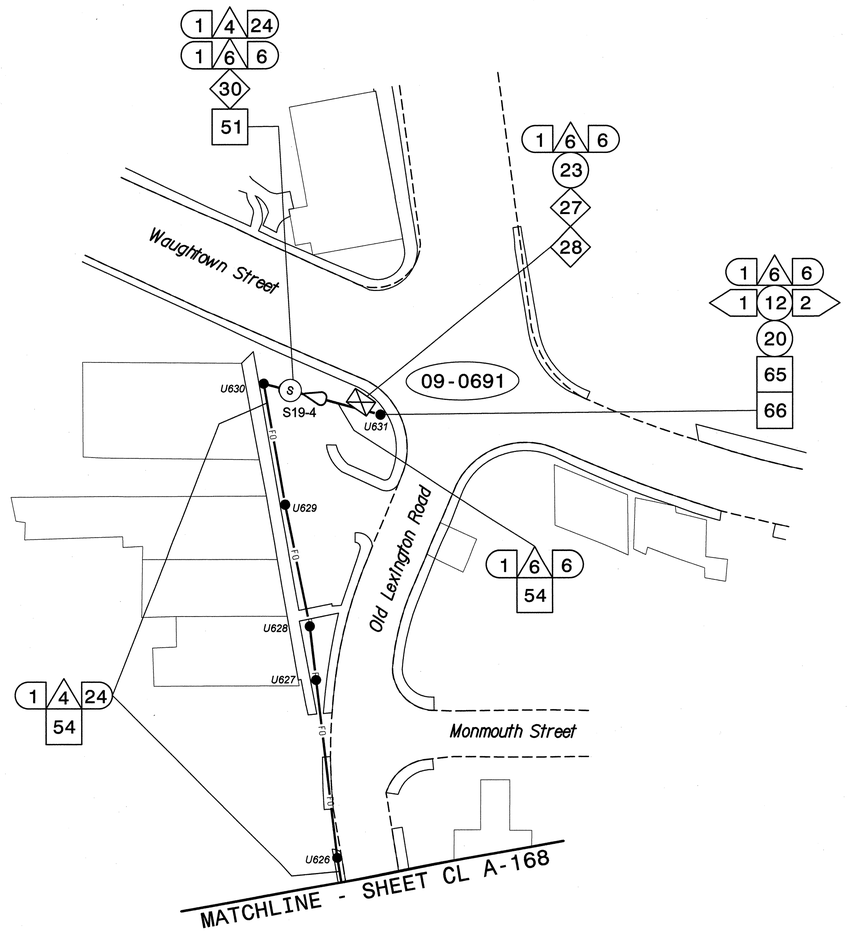
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-191



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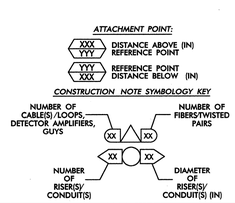

ATKINS
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RALEIGH, NORTH CAROLINA 27609
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Prepared for the Offices of:

Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems

750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LW Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

SIGNATURE 1-11-13 DATE

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PROJECT REFERENCE NO.	SHEET NO.
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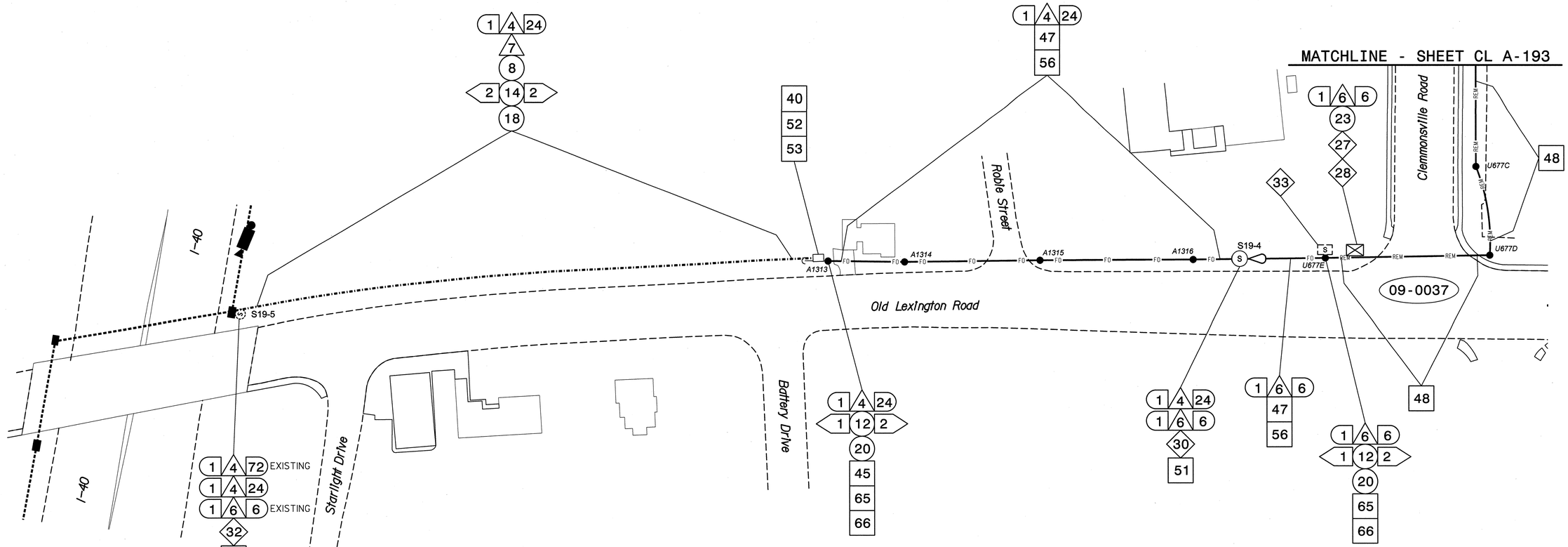

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Division 09 Forsyth County Winston-Salem

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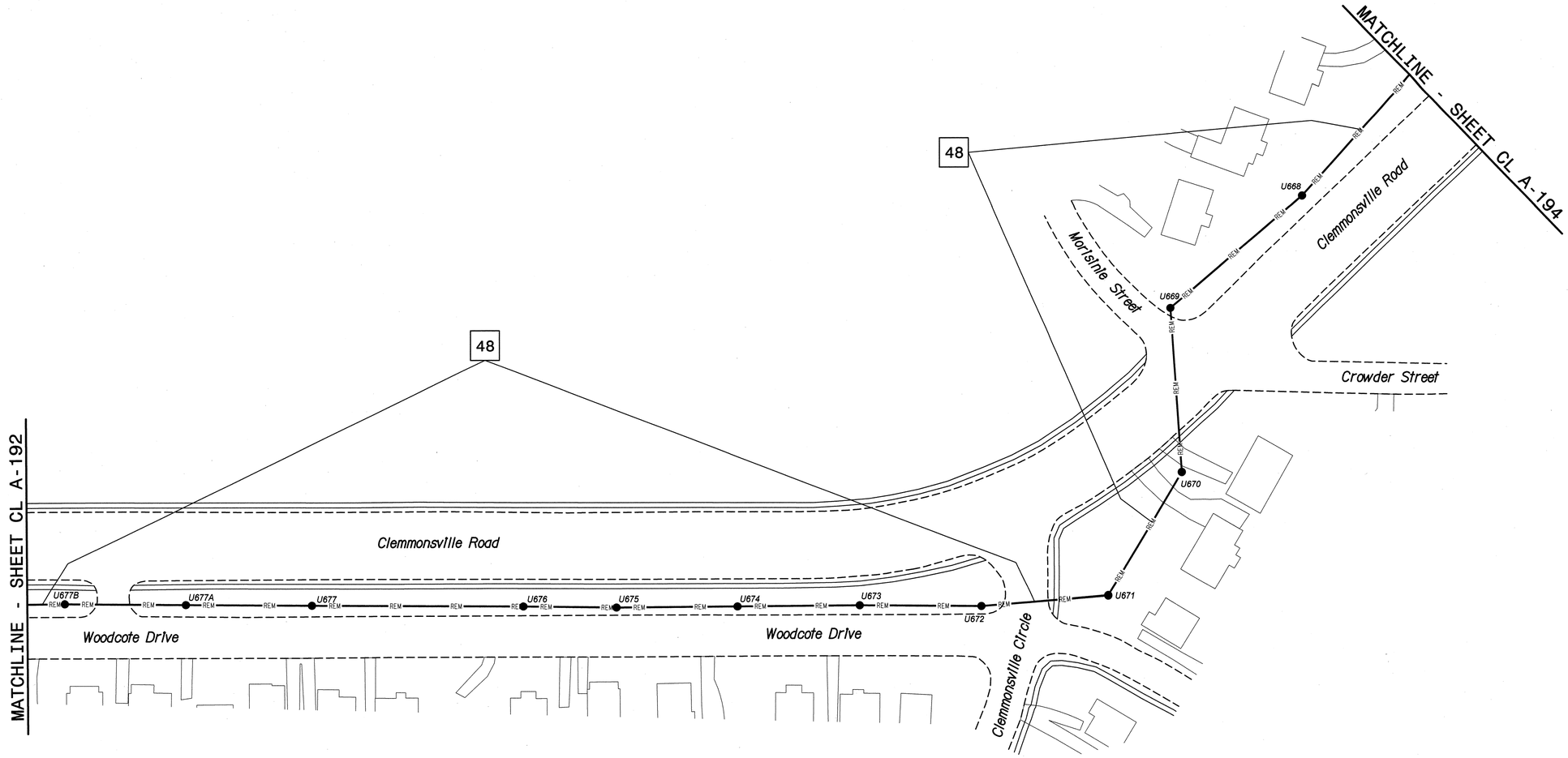

NOTES:

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   - ATTACH NEW MESSENGER CABLE 40" BELOW POWER.
   - ATTACH ON FRONT SIDE (FS) OF POLE.
2. SEAL ALL CONDUIT ENDS WITH DUCT AND CONDUIT SEALER, AT ALL JUNCTION BOX/CABINET ENTRANCES.

BOLD CONSTRUCTION NOTES SHOW NEW "IS FIBER" WORK

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11. INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
12. INSTALL RIGID, GALVANIZED STEEL RISER WITH HEAT SHRINK TUBING
13. INSTALL HEAT SHRINK TUBING RETROFIT KIT
14. INSTALL HIGH DENSITY POLYETHYLENE CONDUIT
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22. INSTALL NEW CONDUIT INTO CABINET BASE (USE EX CONDUIT STUBOUTS WHEN AVAILABLE)
23. INSTALL NEW RISER INTO CABINET BASE (USE EX CONDUIT STUBOUTS WHEN AVAILABLE)
24. INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET
25. INSTALL NEW RISER INTO POLE MOUNTED CABINET
26. INSTALL DIGITAL VIDEO ENCODER
27. INSTALL NEW ETHERNET EDGE SWITCH IN CABINET
28. INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET
29. INSTALL UNDERGROUND SPLICE ENCLOSURE
30. INSTALL AERIAL SPLICE ENCLOSURE
31. INSTALL SPLICE CABINET
32. MODIFY EXISTING SPLICE ENCLOSURE OR INTERCONNECT CENTER
33. REMOVE EXISTING SPLICE /HUB /CCTV CABINET
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35. REMOVE EXISTING CABINET FOUNDATION
36. INSTALL CCTV CAMERA ASSEMBLY
37. INSTALL CCTV WOOD POLE
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41. REMOVE EXISTING JUNCTION BOX
42. INSTALL WOOD POLE
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47. INSTALL MESSENGER CABLE
48. REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE
49. REMOVE EXISTING COMMUNICATIONS CABLE
50. INSTALL WIRELESS DSL
51. INSTALL CABLE STORAGE GUIDE(S) [SNOW SHOE(S)] AND STORE 100 FEET OF EACH CABLE
52. INSTALL DELINEATOR MARKER
53. STORE 50 FEET OF COMMUNICATIONS CABLE (EACH CABLE)
54. LASH CABLE(S) TO EXISTING SIGNAL/COMMUNICATIONS CABLE
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65. BOND MESSENGER TO POLE GROUND
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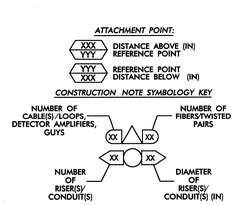
ATTACHMENT POINT:

XXX DISTANCE ABOVE (IN)
YYY REFERENCE POINT

YYY REFERENCE POINT
XXX DISTANCE BELOW (IN)

CONSTRUCTION NOTE SYMBOLOGY KEY



ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE: January 2013 REVIEWED BY: MB Toth
PREPARED BY: BKS/AJD REVIEWED BY: LM Moon

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE DATE 1-11-13

CADD Filename: CL A-193.dgn

03-JAN-2013 14:01
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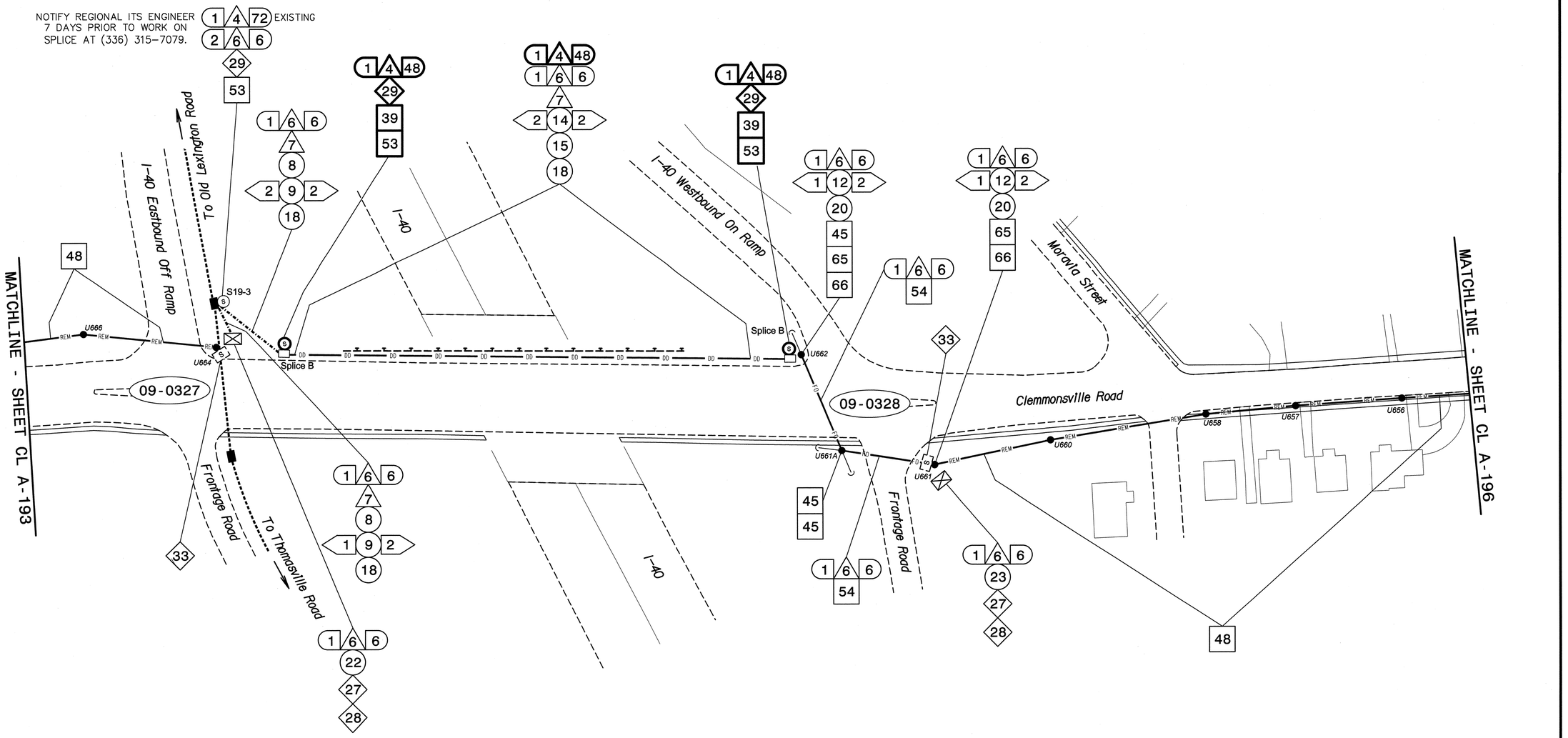
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-194



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ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
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(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LW Moon

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE DATE
CADD Filename: CL A-194.dgn

09-JAN-2013 16:56
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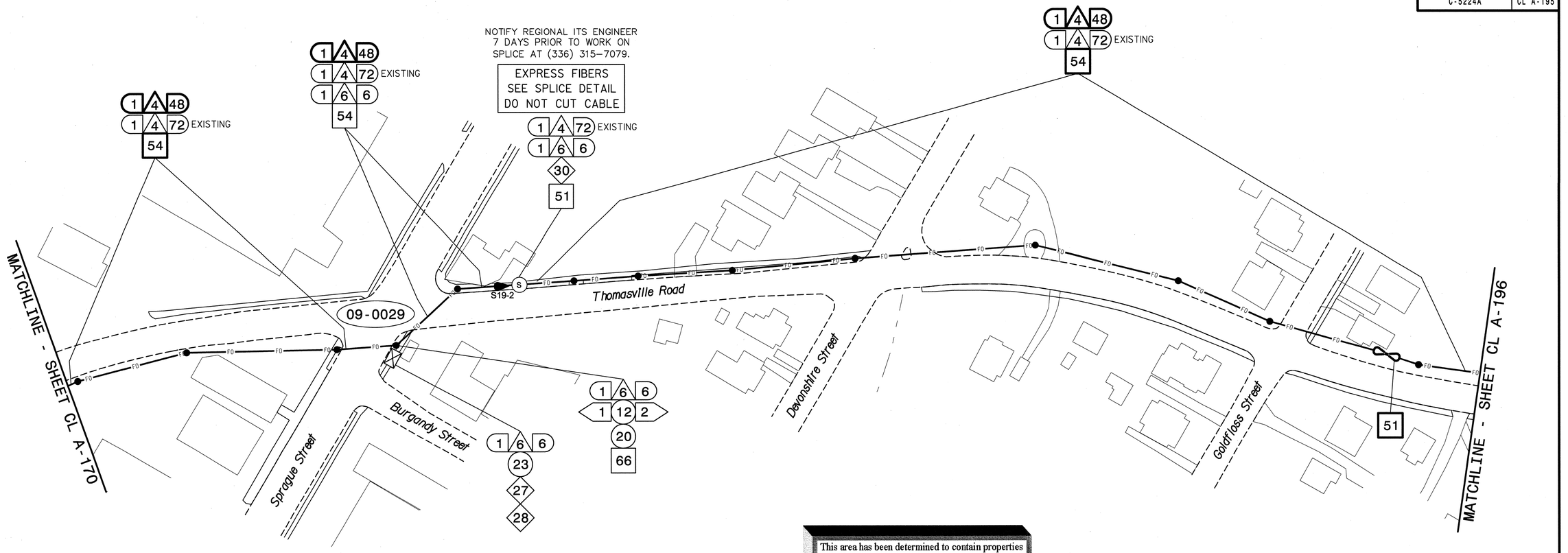
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-195



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ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
NCDOT Transportation Mobility and Safety Division — Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE: January 2013 REVIEWED BY: MB Toth
PREPARED BY: BKS/AJD REVIEWED BY: LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
Lisa M. Moon 1-11-13
SIGNATURE DATE

CADD Filename: CL A-195.dgn

03-JAN-2013 14:01
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24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-196

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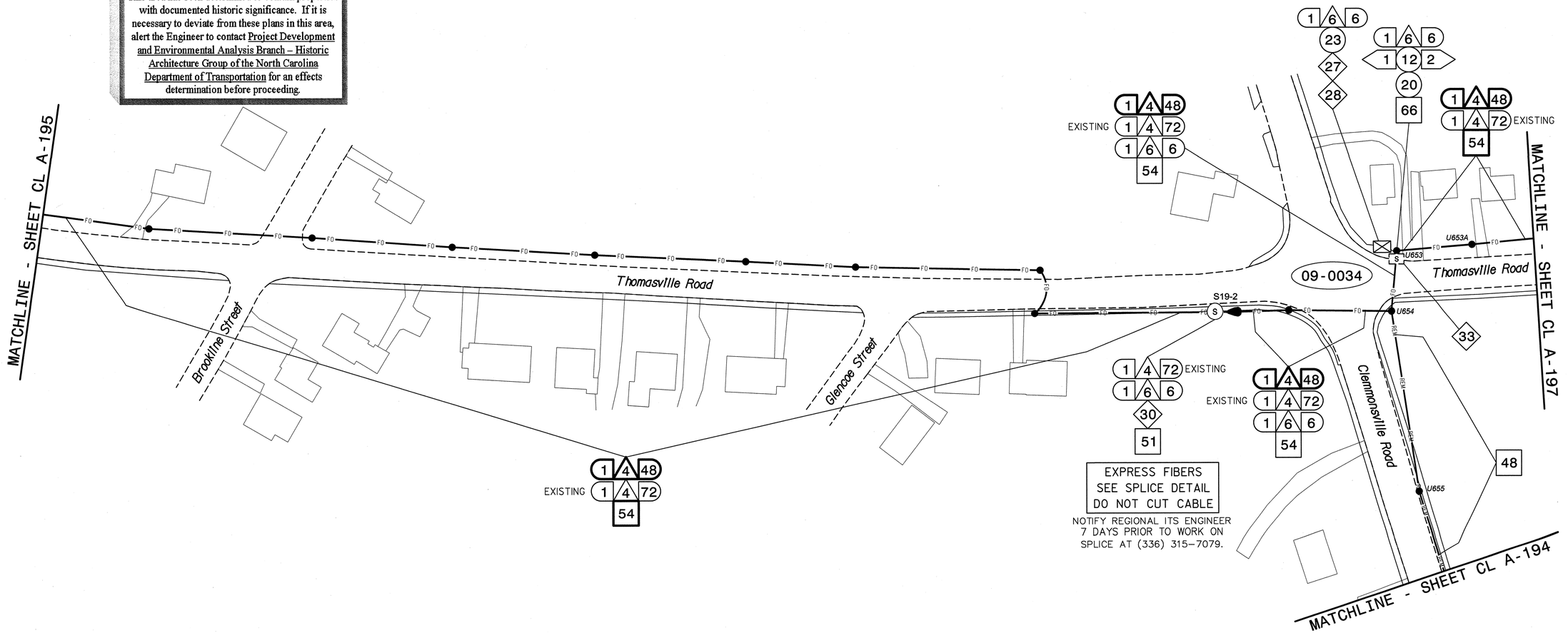

EXPRESS FIBERS
SEE SPLICE DETAIL
DO NOT CUT CABLE

NOTIFY REGIONAL ITS ENGINEER
7 DAYS PRIOR TO WORK ON
SPLICE AT (336) 315-7079.

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Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE Lisa M. Moon 1-11-13 DATE

CADD Filename: CL A-196.dgn

03-JAN-2013 14:01
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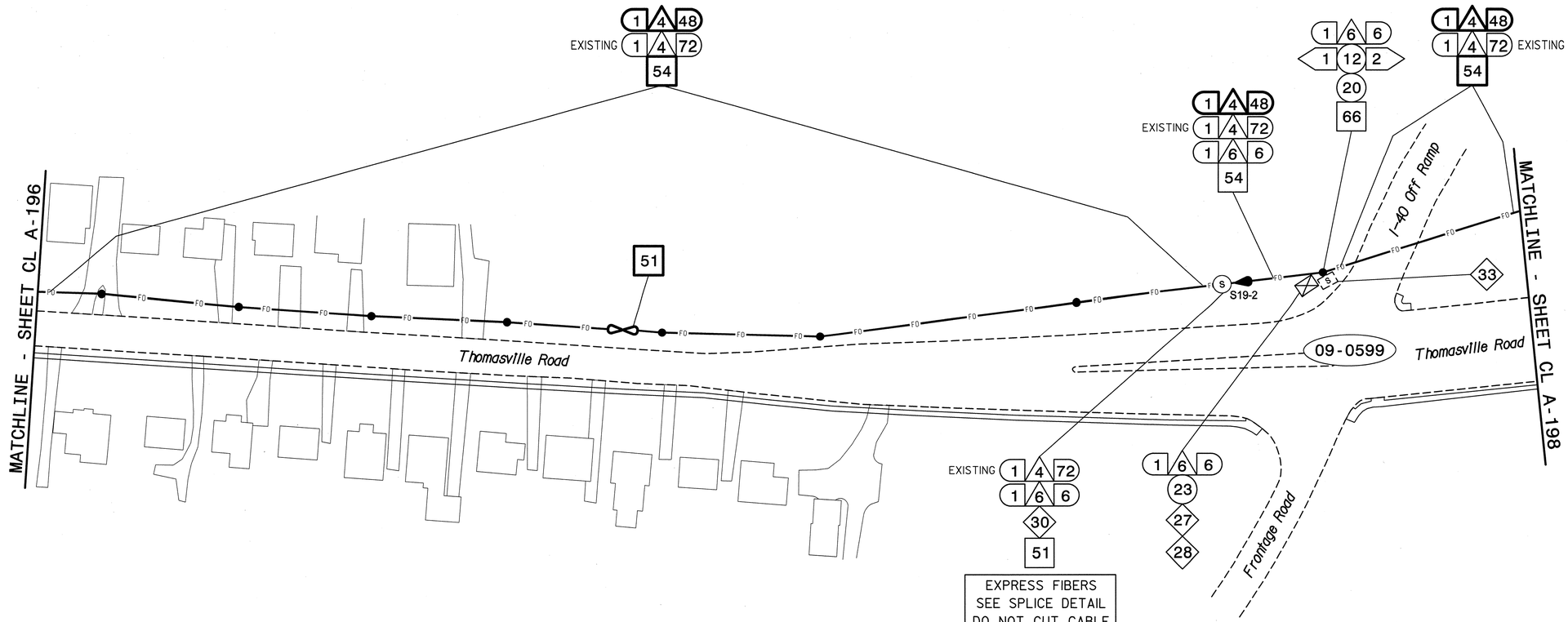
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-197



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ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of: North Carolina Department of Transportation, Mobility and Safety Division, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LW Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

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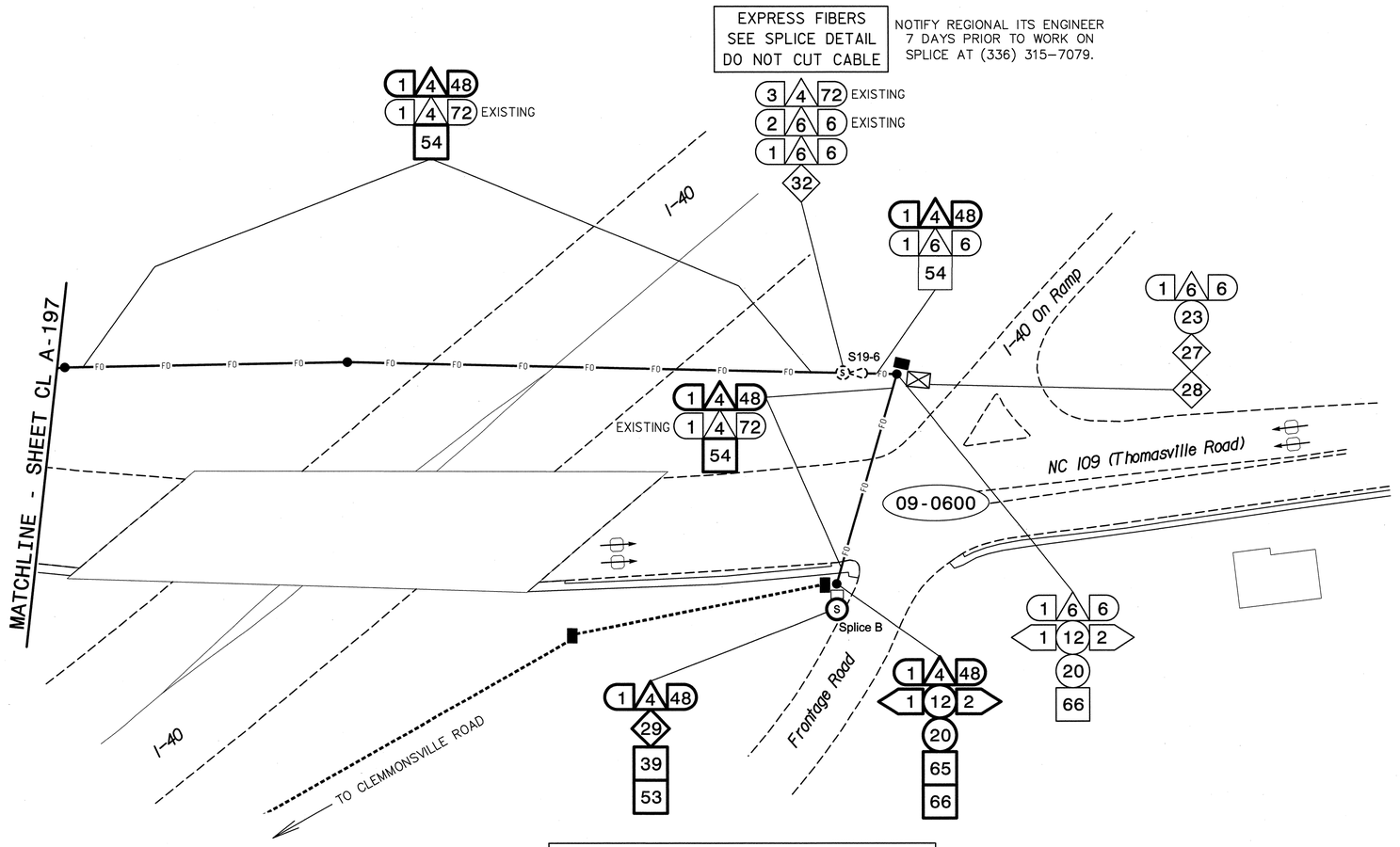

SEE SIGNAL PLAN FOR SYSTEM DETECTOR INSTALLATION/ASSIGNMENT DETAILS. REFER TO "SYSTEM DETECTORS AND CONTROL ZONES" SCHEMATIC FOR ADDITIONAL INFORMATION.

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Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

SCALE 0 50 1"=50'

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LW Moon

REVISIONS	INIT.	DATE

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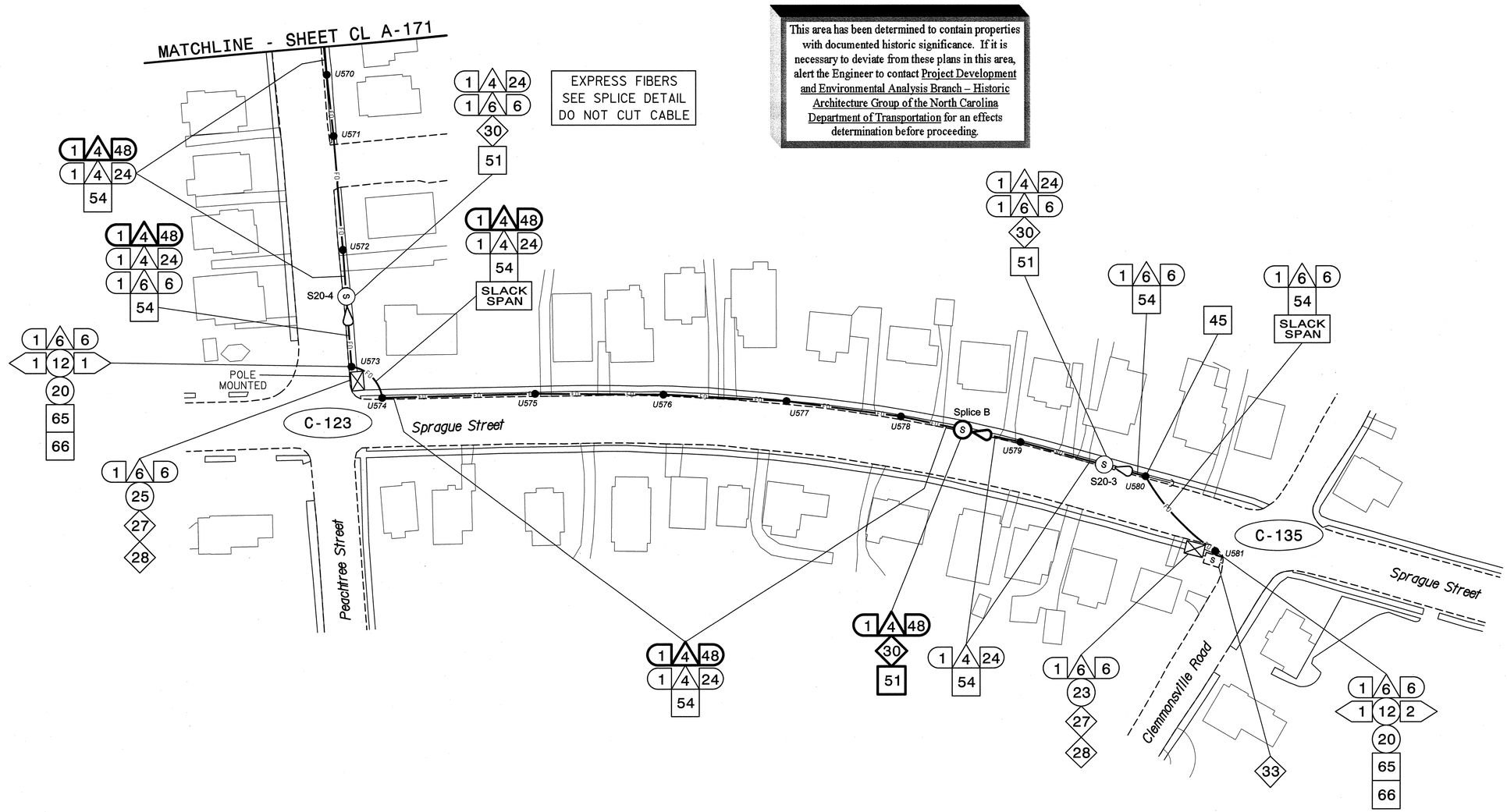

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750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

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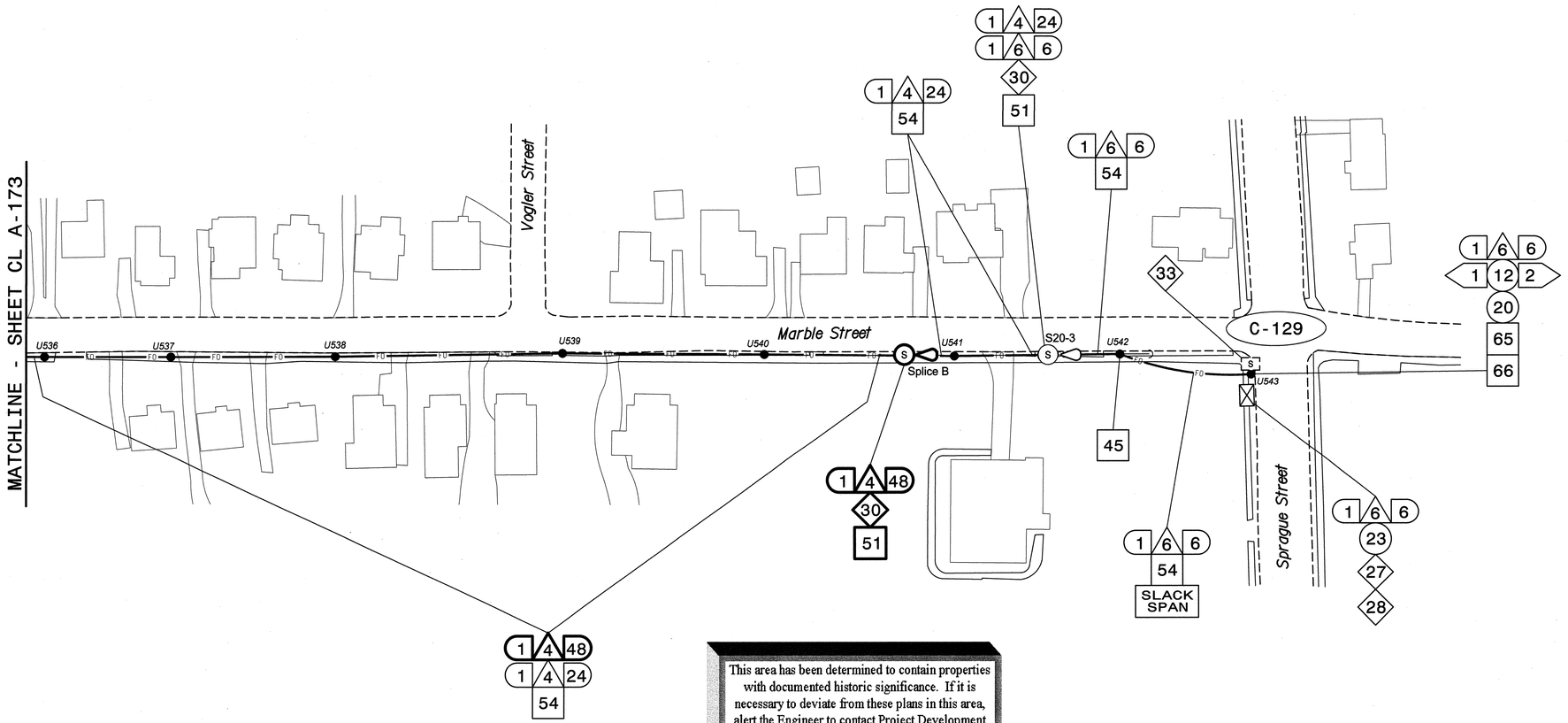

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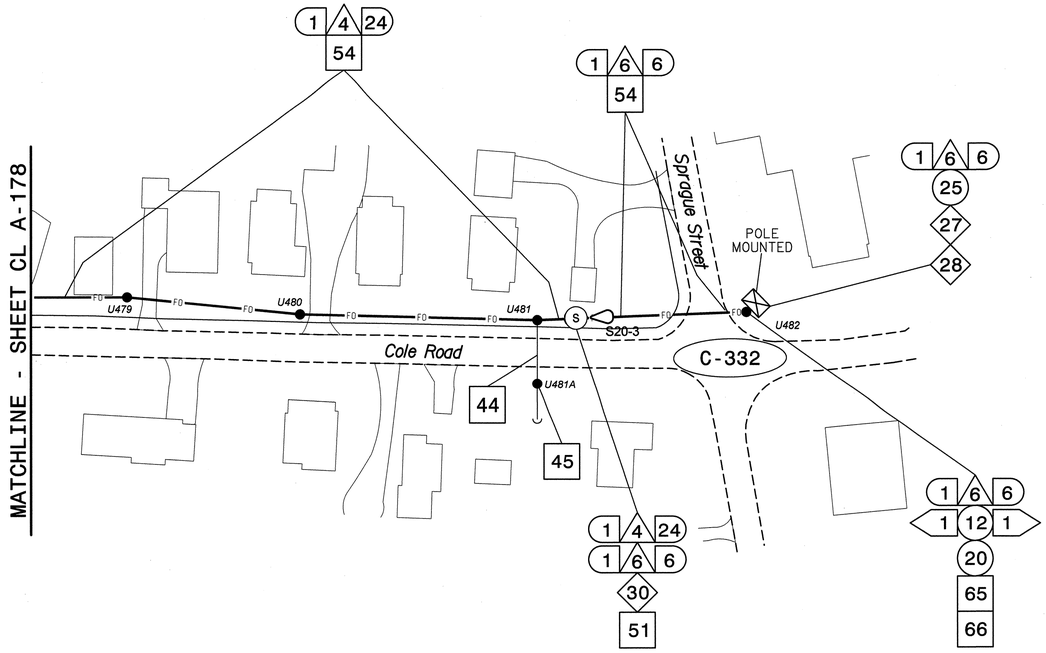

NOTES:
1. UNLESS OTHERWISE NOTED:
   – OVERLASH NEW FIBER OPTIC CABLE TO EXISTING COMMUNICATIONS CABLE.
   – ATTACH NEW MESSENGER CABLE 40" BELOW POWER.
   – ATTACH ON FRONT SIDE (FS) OF POLE.
2. SEAL ALL CONDUIT ENDS WITH DUCT AND CONDUIT SEALER, AT ALL JUNCTION BOX/CABINET ENTRANCES.

BOLD CONSTRUCTION NOTES SHOW NEW "IS FIBER" WORK

1	INSTALL REA, PE – 22, SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE	13	INSTALL HEAT SHRINK TUBING RETROFIT KIT	25	INSTALL NEW RISER INTO POLE MOUNTED CABINET	37	INSTALL CCTV WOOD POLE
2	INSTALL REA, PE – 38, (FIGURE – 8) SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE	14	INSTALL HIGH DENSITY POLYETHYLENE CONDUIT	26	INSTALL DIGITAL VIDEO ENCODER	38	INSTALL STANDARD SIZE JUNCTION BOX
3	INSTALL CATEGORY 5E CABLE	15	DIRECTIONAL DRILL CONDUIT	27	INSTALL NEW ETHERNET EDGE SWITCH IN CABINET	39	INSTALL SPECIAL-SIZED JUNCTION BOX
4	INSTALL SMFO CABLE	16	BORE AND JACK CONDUIT	28	INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET	40	INSTALL OVER-SIZED JUNCTION BOX
5	INSTALL COAXIAL ANTENNA CABLE	17	INSTALL CABLE(S) IN EXISTING CONDUIT	29	INSTALL UNDERGROUND SPLICE ENCLOSURE	41	REMOVE EXISTING JUNCTION BOX
6	INSTALL FIBER-OPTIC DROP CABLE	18	INSTALL CABLE(S) IN NEW CONDUIT	30	INSTALL AERIAL SPLICE ENCLOSURE	42	INSTALL WOOD POLE
7	INSTALL TRACER WIRE	19	INSTALL CABLE(S) IN EXISTING RISER(S)	31	INSTALL SPLICE CABINET	43	REMOVE EXISTING WOOD POLE
8	INSTALL CONDUIT UNDERGROUND	20	INSTALL CABLE(S) IN NEW RISER(S)	32	MODIFY EXISTING SPLICE ENCLOSURE OR INTERCONNECT CENTER	44	INSTALL AERIAL GUY ASSEMBLY
9	INSTALL PVC CONDUIT	21	INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS	33	REMOVE EXISTING SPLICE /HUB /CCTV CABINET	45	INSTALL STANDARD GUY ASSEMBLY
10	INSTALL RIGID, GALVANIZED STEEL CONDUIT	22	INSTALL NEW CONDUIT INTO CABINET BASE (USE EX CONDUIT STUBOUTS WHEN AVAILABLE)	34	INSTALL CABINET FOUNDATION	46	INSTALL SIDEWALK GUY ASSEMBLY
11	INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD	23	INSTALL NEW RISER INTO CABINET BASE (USE EX CONDUIT STUBOUTS WHEN AVAILABLE)	35	REMOVE EXISTING CABINET FOUNDATION	47	INSTALL MESSENGER CABLE
12	INSTALL RIGID, GALVANIZED STEEL RISER WITH HEAT SHRINK TUBING	24	INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET	36	INSTALL CCTV CAMERA ASSEMBLY	48	REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE

49	REMOVE EXISTING COMMUNICATIONS CABLE	61	INSTALL UNI-DIRECTIONAL ANTENNA	73		85	
50	INSTALL WIRELESS DSL	62	INSTALL 4.9GHZ ETHERNET INTEGRATED RADIO /OMNI-DIRECTIONAL ANTENNA	74		86	
51	INSTALL CABLE STORAGE GUIDE(S) [SNOW SHOE(S)] AND STORE 100 FEET OF EACH CABLE	63	INSTALL 900 MHZ ETHERNET RADIO	75		87	
52	INSTALL DELINEATOR MARKER	64	INTERCEPT AND REROUTE EXISTING CONDUITS	76		88	
53	STORE 50 FEET OF COMMUNICATIONS CABLE (EACH CABLE)	65	BOND MESSENGER TO POLE GROUND	77		89	
54	LASH CABLE(S) TO EXISTING SIGNAL/COMMUNICATIONS CABLE	66	BOND RISER TO POLE GROUND	78		90	
55	LASH CABLE(S) TO EXISTING MESSENGER CABLE	67	BOND TRACER WIRE TO POLE GROUND	79		91	
56	LASH CABLE(S) TO NEW MESSENGER CABLE	68	BOND TRACER WIRE TO EQUIPMENT GROUND BUS	80		92	
57	MODIFY EXISTING ELECTRICAL SERVICE FOR CCTV/HUB	69	REMOVE EXISTING CCTV CAMERA ASSEMBLY	81		93	
58	INSTALL NEW ELECTRICAL SERVICE FOR CCTV/HUB	70	INSTALL 4.9GHZ FLAT-PANEL ANTENNA	82		94	
59	INSTALL NEW POLE MOUNTED CCTV CABINET	71	INSTALL HUB CABINET	83		95	
60	INSTALL 4.9GHZ ETHERNET INTEGRATED RADIO /FLAT-PANEL ANTENNA	72	INSTALL MANAGED ETHERNET SWITCH	84		96	

ATTACHMENT POINT:
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YYY / XXX — REFERENCE POINT DISTANCE BELOW (IN)

CONSTRUCTION NOTE SYMBOLOGY KEY
NUMBER OF CABLES/LOOPS, DETECTOR AMPLIFIERS, GUYS — NUMBER OF FIBERS/TWISTED PAIRS
NUMBER OF RISER(S)/ CONDUIT(S) — DIAMETER OF RISER(S)/ CONDUIT(S) (IN)

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(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Integrated Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

SCALE 0 50 1"=50'

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE DATE 1-11-13
CADD Filename: CL A-201.dgn

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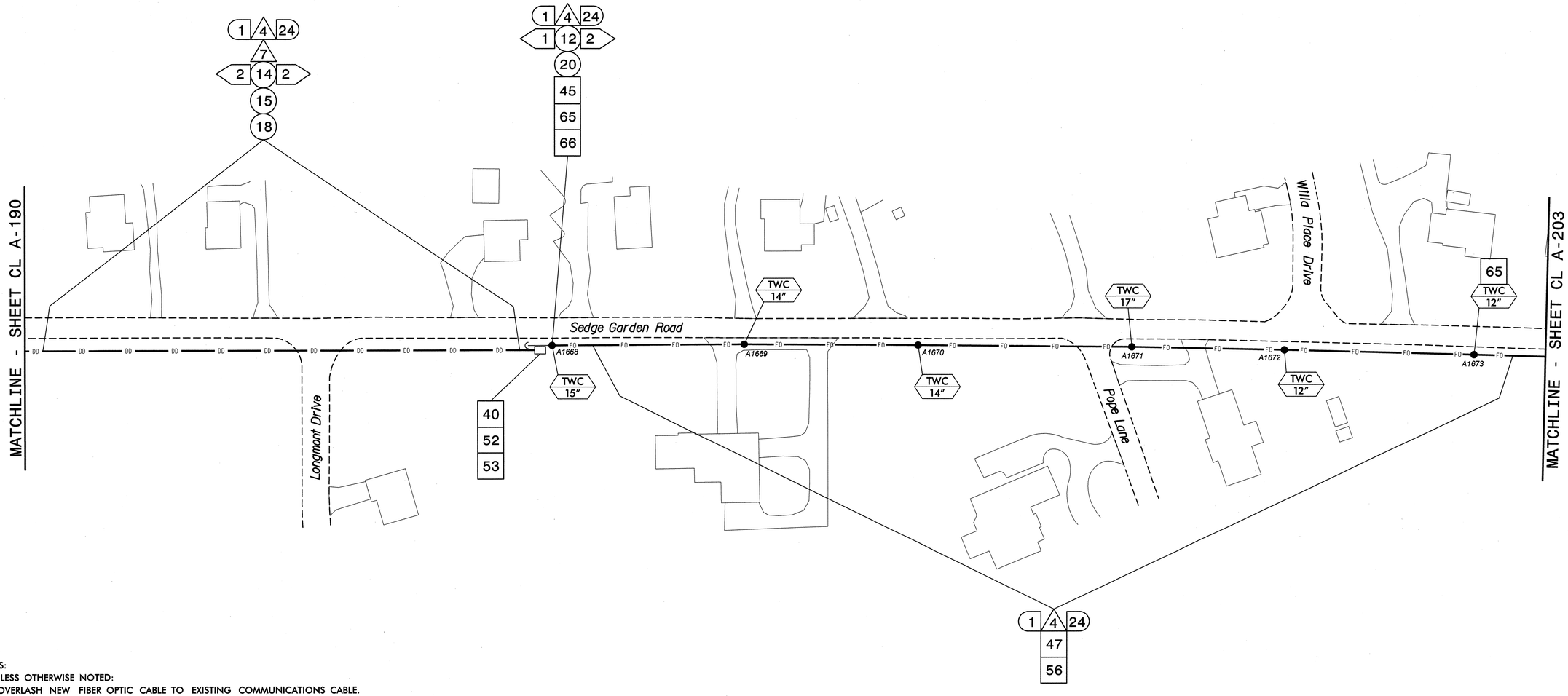
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-202



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17. INSTALL CABLE(S) IN EXISTING CONDUIT
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21. INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS
22. INSTALL NEW CONDUIT INTO CABINET BASE (USE EX CONDUIT STUBOUTS WHEN AVAILABLE)
23. INSTALL NEW RISER INTO CABINET BASE (USE EX CONDUIT STUBOUTS WHEN AVAILABLE)
24. INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET
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29. INSTALL UNDERGROUND SPLICE ENCLOSURE
30. INSTALL AERIAL SPLICE ENCLOSURE
31. INSTALL SPLICE CABINET
32. MODIFY EXISTING SPLICE ENCLOSURE OR INTERCONNECT CENTER
33. REMOVE EXISTING SPLICE /HUB /CCTV CABINET
34. INSTALL CABINET FOUNDATION
35. REMOVE EXISTING CABINET FOUNDATION
36. INSTALL CCTV CAMERA ASSEMBLY
37. INSTALL CCTV WOOD POLE
38. INSTALL STANDARD SIZE JUNCTION BOX
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49. REMOVE EXISTING COMMUNICATIONS CABLE
50. INSTALL WIRELESS DSL
51. INSTALL CABLE STORAGE GUIDE(S) [SNOW SHOE(S)] AND STORE 100 FEET OF EACH CABLE
52. INSTALL DELINEATOR MARKER
53. STORE 50 FEET OF COMMUNICATIONS CABLE (EACH CABLE)
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ATKINS
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Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

SCALE 0 50 1"=50'

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE DATE 1-11-13
CADD Filename: CL A-202.dgn

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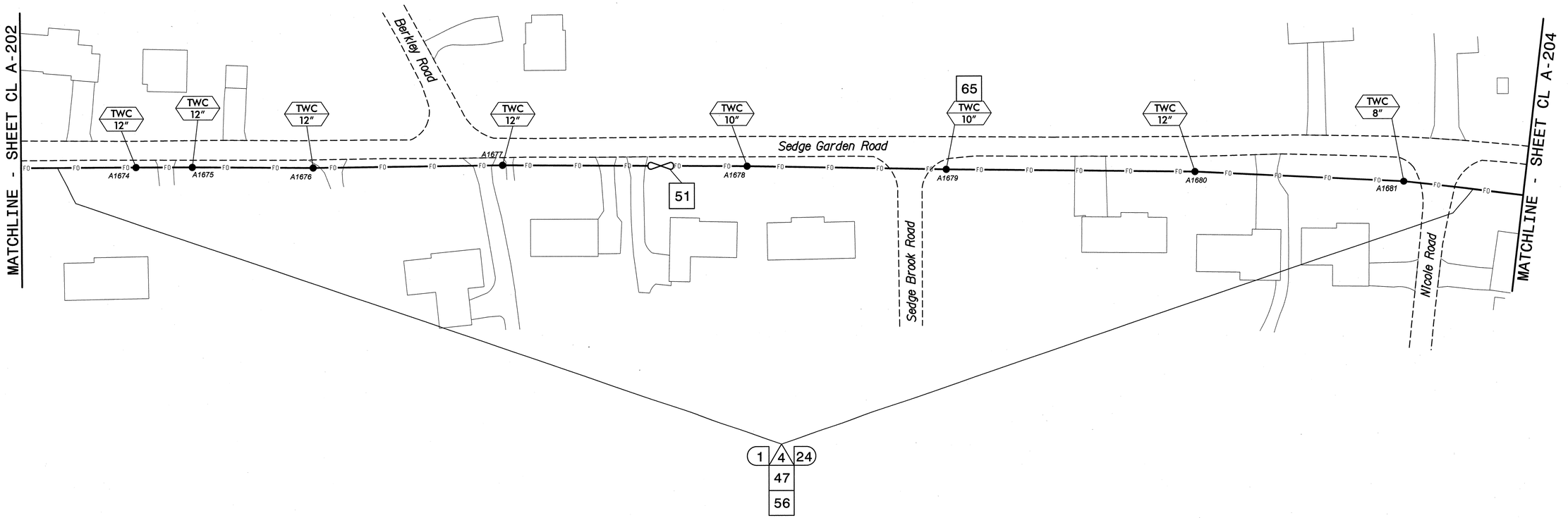
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-203



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North Carolina Department of Transportation — Transportation Mobility and Safety Division — Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LW Moon

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE DATE
CADD Filename: CL A-203.dgn

03-JAN-2013 14:09
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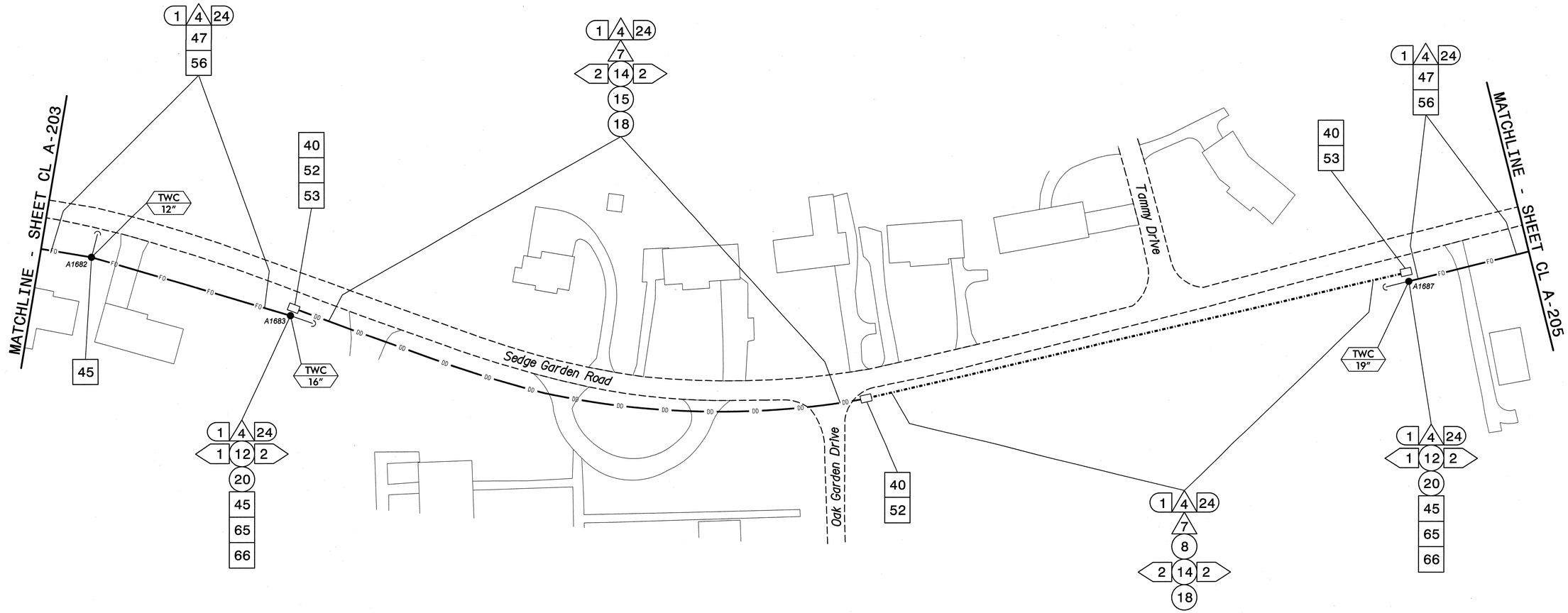
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-204



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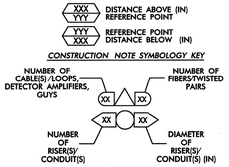

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Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LW Moon

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022516 LISA M. MOON
SIGNATURE Lisa M. Moon 1-11-13 DATE
CADD Filename: CL A-204.dgn

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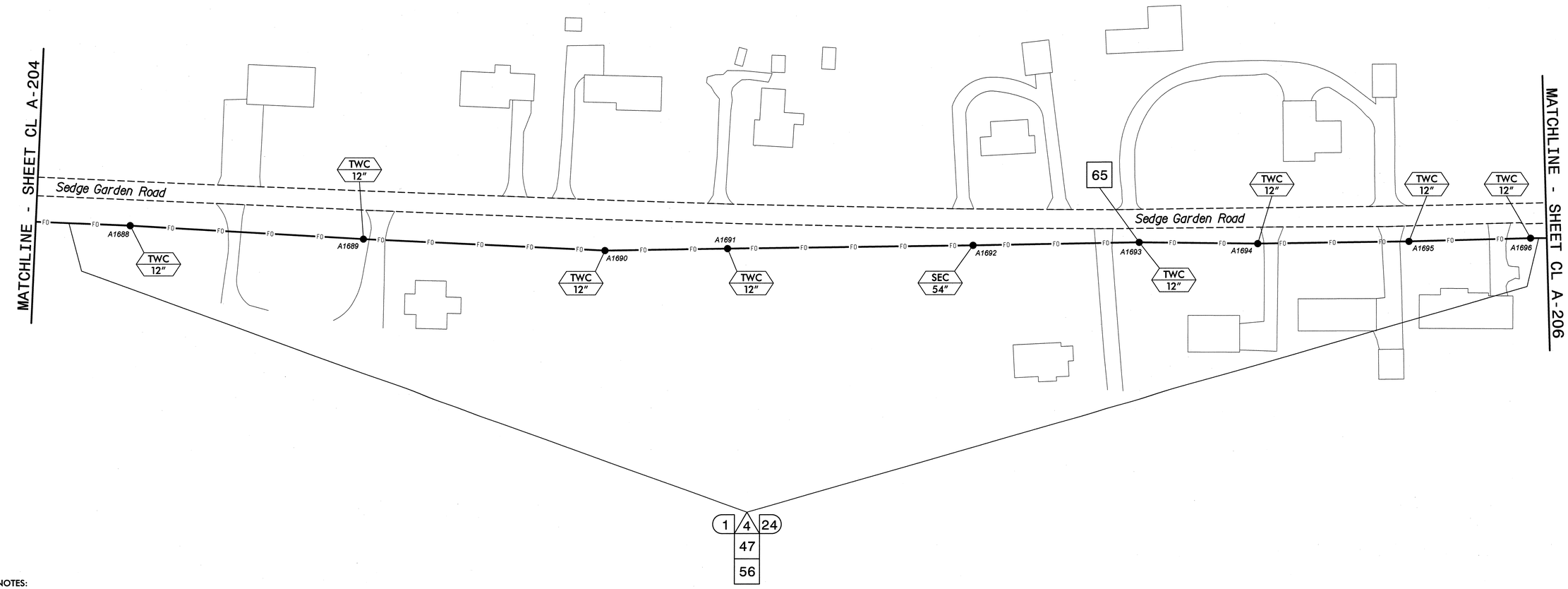
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-205



NOTES:
1. UNLESS OTHERWISE NOTED:
   - OVERLASH NEW FIBER OPTIC CABLE TO EXISTING COMMUNICATIONS CABLE.
   - ATTACH NEW MESSENGER CABLE 40" BELOW POWER.
   - ATTACH ON FRONT SIDE (FS) OF POLE.
2. SEAL ALL CONDUIT ENDS WITH DUCT AND CONDUIT SEALER, AT ALL JUNCTION BOX/CABINET ENTRANCES.

BOLD CONSTRUCTION NOTES SHOW NEW "IS FIBER" WORK

1. INSTALL REA, PE – 22, SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE
2. INSTALL REA, PE – 38, (FIGURE – 8) SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE
3. INSTALL CATEGORY 5E CABLE
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6. INSTALL FIBER-OPTIC DROP CABLE
7. INSTALL TRACER WIRE
8. INSTALL CONDUIT UNDERGROUND
9. INSTALL PVC CONDUIT
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11. INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
12. INSTALL RIGID, GALVANIZED STEEL RISER WITH HEAT SHRINK TUBING
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23. INSTALL NEW RISER INTO CABINET BASE (USE EX CONDUIT STUBOUTS WHEN AVAILABLE)
24. INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET
25. INSTALL NEW RISER INTO POLE MOUNTED CABINET
26. INSTALL DIGITAL VIDEO ENCODER
27. INSTALL NEW ETHERNET EDGE SWITCH IN CABINET
28. INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET
29. INSTALL UNDERGROUND SPLICE ENCLOSURE
30. INSTALL AERIAL SPLICE ENCLOSURE
31. INSTALL SPLICE CABINET
32. MODIFY EXISTING SPLICE ENCLOSURE OR INTERCONNECT CENTER
33. REMOVE EXISTING SPLICE /HUB /CCTV CABINET
34. INSTALL CABINET FOUNDATION
35. REMOVE EXISTING CABINET FOUNDATION
36. INSTALL CCTV CAMERA ASSEMBLY
37. INSTALL CCTV WOOD POLE
38. INSTALL STANDARD SIZE JUNCTION BOX
39. INSTALL SPECIAL-SIZED JUNCTION BOX
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46. INSTALL SIDEWALK GUY ASSEMBLY
47. INSTALL MESSENGER CABLE
48. REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE
49. REMOVE EXISTING COMMUNICATIONS CABLE
50. INSTALL WIRELESS DSL
51. INSTALL CABLE STORAGE GUIDE(S) [SNOW SHOE(S)] AND STORE 100 FEET OF EACH CABLE
52. INSTALL DELINEATOR MARKER
53. STORE 50 FEET OF COMMUNICATIONS CABLE (EACH CABLE)
54. LASH CABLE(S) TO EXISTING SIGNAL/COMMUNICATIONS CABLE
55. LASH CABLE(S) TO EXISTING MESSENGER CABLE
56. LASH CABLE(S) TO NEW MESSENGER CABLE
57. MODIFY EXISTING ELECTRICAL SERVICE FOR CCTV/HUB
58. INSTALL NEW ELECTRICAL SERVICE FOR CCTV/HUB
59. INSTALL NEW POLE MOUNTED CCTV CABINET
60. INSTALL 4.9GHZ ETHERNET INTEGRATED RADIO /FLAT-PANEL ANTENNA
61. INSTALL UNI-DIRECTIONAL ANTENNA
62. INSTALL 4.9GHZ ETHERNET INTEGRATED RADIO /OMNI-DIRECTIONAL ANTENNA
63. INSTALL 900 MHZ ETHERNET RADIO
64. INTERCEPT AND REROUTE EXISTING CONDUITS
65. BOND MESSENGER TO POLE GROUND
66. BOND RISER TO POLE GROUND
67. BOND TRACER WIRE TO POLE GROUND
68. BOND TRACER WIRE TO EQUIPMENT GROUND BUS
69. REMOVE EXISTING CCTV CAMERA ASSEMBLY
70. INSTALL 4.9GHZ FLAT-PANEL ANTENNA
71. INSTALL HUB CABINET
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ATTACHMENT POINT:
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CONSTRUCTION NOTE SYMBOLOGY KEY
NUMBER OF CABLE(S) /LOOPS, DETECTOR AMPLIFIERS, GUYS
NUMBER OF FIBERS/TWISTED PAIRS
NUMBER OF RISER(S)/ CONDUIT(S)
DIAMETER OF RISER(S)/ CONDUIT(S) (IN)

ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
Traffic Engineering, Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

SCALE 0 50 1"=50'

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022516 LISA M. MOON
Lisa M. Moon 1-16-13
SIGNATURE DATE

CADD Filename: CL A-205.dgn

03-JAN-2013 14:09
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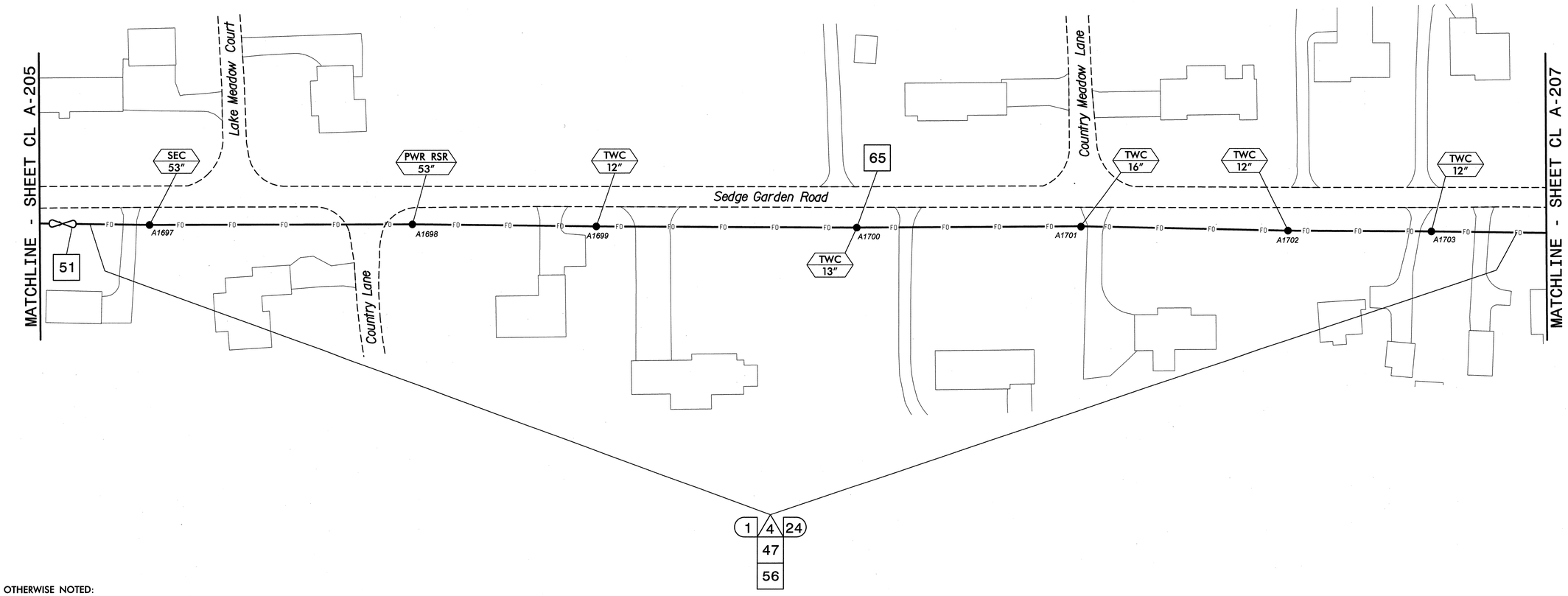
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-206



NOTES:
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BOLD CONSTRUCTION NOTES SHOW NEW "IS FIBER" WORK

1	INSTALL REA, PE – 22, SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE	13	INSTALL HEAT SHRINK TUBING RETROFIT KIT	25	INSTALL NEW RISER INTO POLE MOUNTED CABINET	37	INSTALL CCTV WOOD POLE	49	REMOVE EXISTING COMMUNICATIONS CABLE	61	INSTALL UNI-DIRECTIONAL ANTENNA
2	INSTALL REA, PE – 38, (FIGURE – 8) SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE	14	INSTALL HIGH DENSITY POLYETHYLENE CONDUIT	26	INSTALL DIGITAL VIDEO ENCODER	38	INSTALL STANDARD SIZE JUNCTION BOX	50	INSTALL WIRELESS DSL	62	INSTALL 4.9GHZ ETHERNET INTEGRATED RADIO /OMNI-DIRECTIONAL ANTENNA
3	INSTALL CATEGORY 5E CABLE	15	DIRECTIONAL DRILL CONDUIT	27	INSTALL NEW ETHERNET EDGE SWITCH IN CABINET	39	INSTALL SPECIAL–SIZED JUNCTION BOX	51	INSTALL CABLE STORAGE GUIDE(S) [SNOW SHOE(S)] AND STORE 100 FEET OF EACH CABLE	63	INSTALL 900 MHZ ETHERNET RADIO
4	INSTALL SMFO CABLE	16	BORE AND JACK CONDUIT	28	INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET	40	INSTALL OVER–SIZED JUNCTION BOX	52	INSTALL DELINEATOR MARKER	64	INTERCEPT AND REROUTE EXISTING CONDUITS
5	INSTALL COAXIAL ANTENNA CABLE	17	INSTALL CABLE(S) IN EXISTING CONDUIT	29	INSTALL UNDERGROUND SPLICE ENCLOSURE	41	REMOVE EXISTING JUNCTION BOX	53	STORE 50 FEET OF COMMUNICATIONS CABLE (EACH CABLE)	65	BOND MESSENGER TO POLE GROUND
6	INSTALL FIBER–OPTIC DROP CABLE	18	INSTALL CABLE(S) IN NEW CONDUIT	30	INSTALL AERIAL SPLICE ENCLOSURE	42	INSTALL WOOD POLE	54	LASH CABLE(S) TO EXISTING SIGNAL/COMMUNICATIONS CABLE	66	BOND RISER TO POLE GROUND
7	INSTALL TRACER WIRE	19	INSTALL CABLE(S) IN EXISTING RISER(S)	31	INSTALL SPLICE CABINET	43	REMOVE EXISTING WOOD POLE	55	LASH CABLE(S) TO EXISTING MESSENGER CABLE	67	BOND TRACER WIRE TO POLE GROUND
8	INSTALL CONDUIT UNDERGROUND	20	INSTALL CABLE(S) IN NEW RISER(S)	32	MODIFY EXISTING SPLICE ENCLOSURE OR INTERCONNECT CENTER	44	INSTALL AERIAL GUY ASSEMBLY	56	LASH CABLE(S) TO NEW MESSENGER CABLE	68	BOND TRACER WIRE TO EQUIPMENT GROUND BUS
9	INSTALL PVC CONDUIT	21	INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS	33	REMOVE EXISTING SPLICE /HUB /CCTV CABINET	45	INSTALL STANDARD GUY ASSEMBLY	57	MODIFY EXISTING ELECTRICAL SERVICE FOR CCTV/HUB	69	REMOVE EXISTING CCTV CAMERA ASSEMBLY
10	INSTALL RIGID, GALVANIZED STEEL CONDUIT	22	INSTALL NEW CONDUIT INTO CABINET BASE (USE EX CONDUIT STUBOUTS WHEN AVAILABLE)	34	INSTALL CABINET FOUNDATION	46	INSTALL SIDEWALK GUY ASSEMBLY	58	INSTALL NEW ELECTRICAL SERVICE FOR CCTV/HUB	70	INSTALL 4.9GHZ FLAT–PANEL ANTENNA
11	INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD	23	INSTALL NEW RISER INTO CABINET BASE (USE EX CONDUIT STUBOUTS WHEN AVAILABLE)	35	REMOVE EXISTING CABINET FOUNDATION	47	INSTALL MESSENGER CABLE	59	INSTALL NEW POLE MOUNTED CCTV CABINET	71	INSTALL HUB CABINET
12	INSTALL RIGID, GALVANIZED STEEL RISER WITH HEAT SHRINK TUBING	24	INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET	36	INSTALL CCTV CAMERA ASSEMBLY	48	REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE	60	INSTALL 4.9GHZ ETHERNET INTEGRATED RADIO /FLAT–PANEL ANTENNA	72	INSTALL MANAGED ETHERNET SWITCH

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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE: January 2013 REVIEWED BY: MB Toth
PREPARED BY: BKS/AJD REVIEWED BY: LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022516 LISA M. MOON
SIGNATURE DATE 1-11-13
CADD Filename: CL A-206.dgn

03-JAN-2013 14:09
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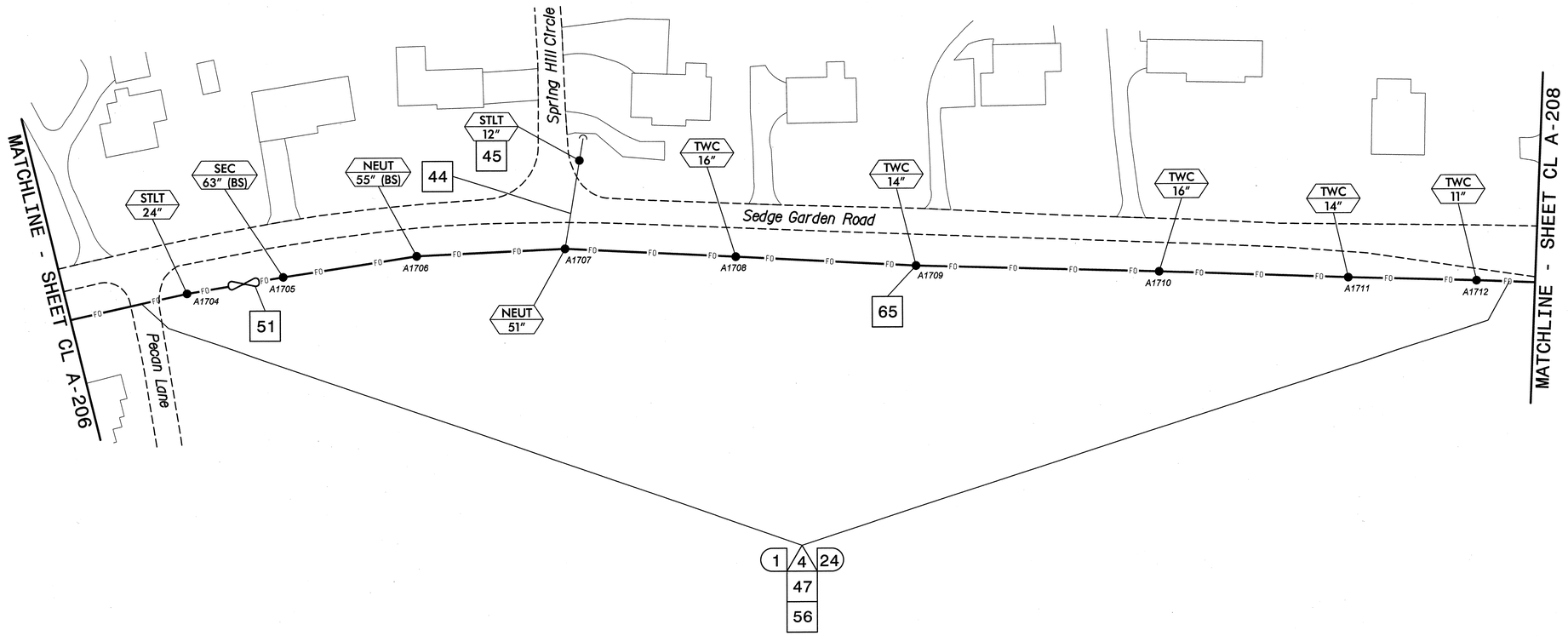
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-207



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ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
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Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022516 LISA M. MOON

Lisa M Moon 1-16-13
SIGNATURE DATE

CADD Filename: CL A-207.dgn

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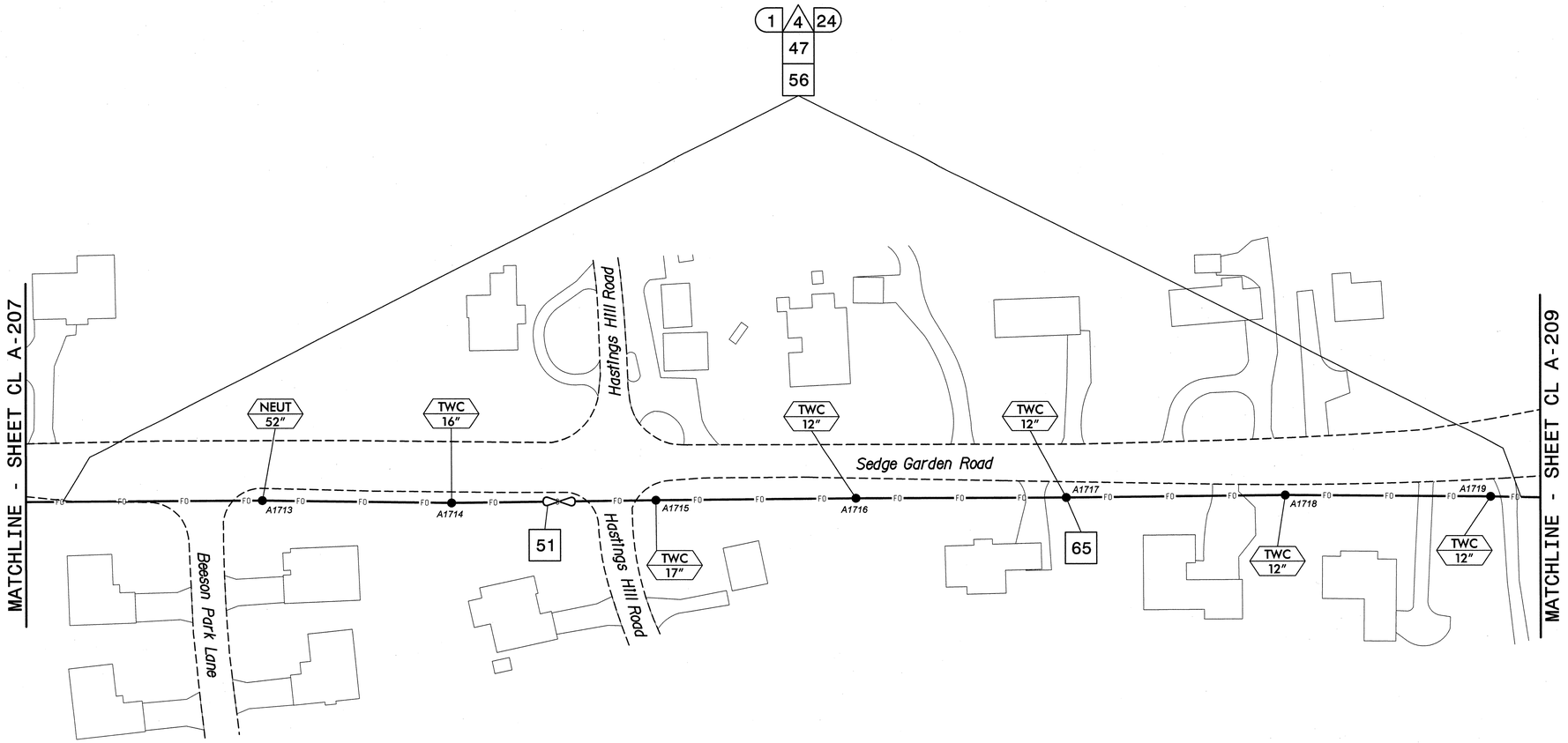
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-208



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Winston-Salem Signal System
Cable Layout Plans
Phase A

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PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
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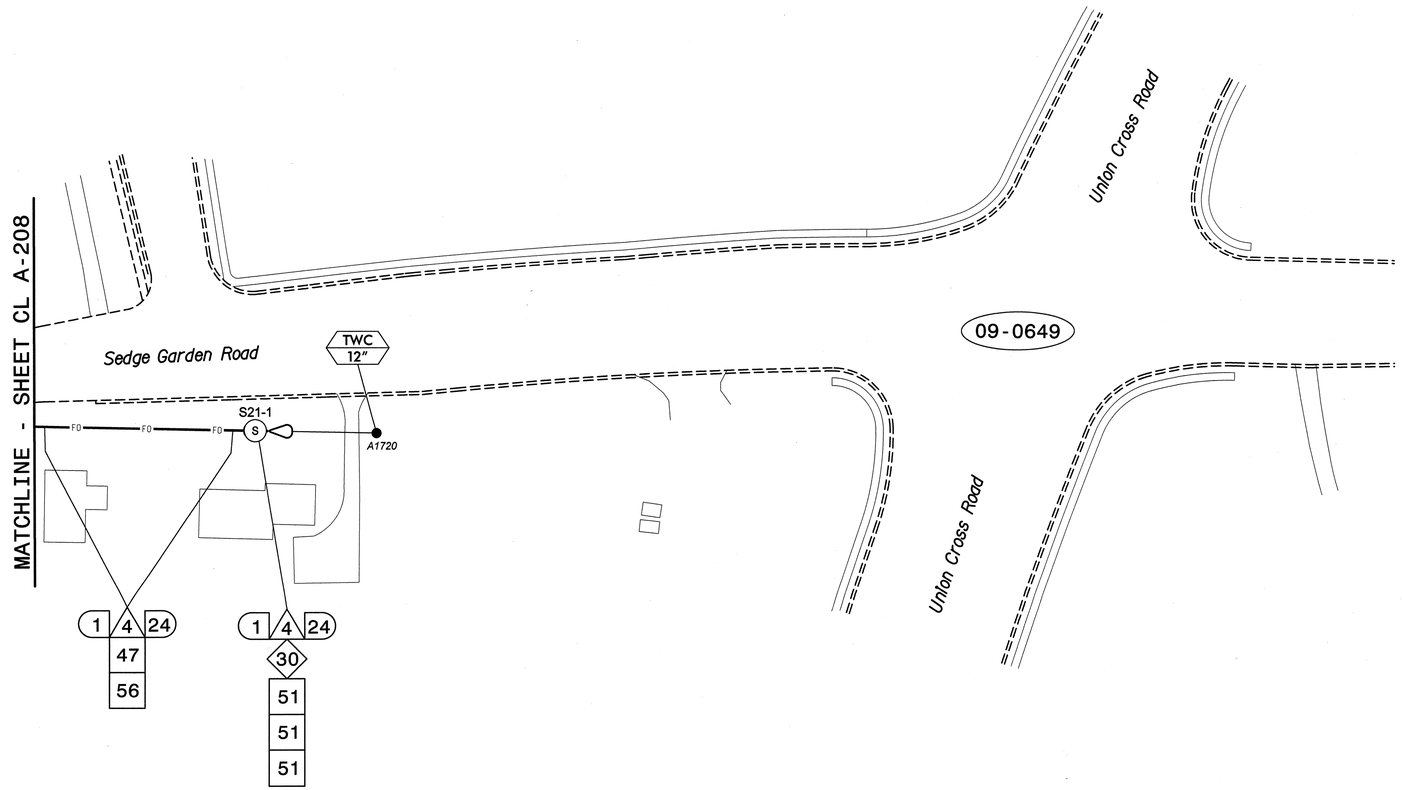
SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022516 LISA M. MOON
SIGNATURE DATE
CADD Filename: CL A-208.dgn

03-JAN-2013 14:09
D:*Transportation*Traffic*Curr*100022712 Winston Salem Sig Sys*CL*Phase A*CL A-208.dgn
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-209



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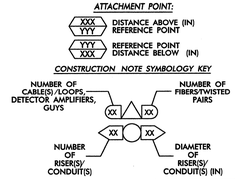

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Prepared for the Offices of:

Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems

750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

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Lisa M. Moon 1-11-13
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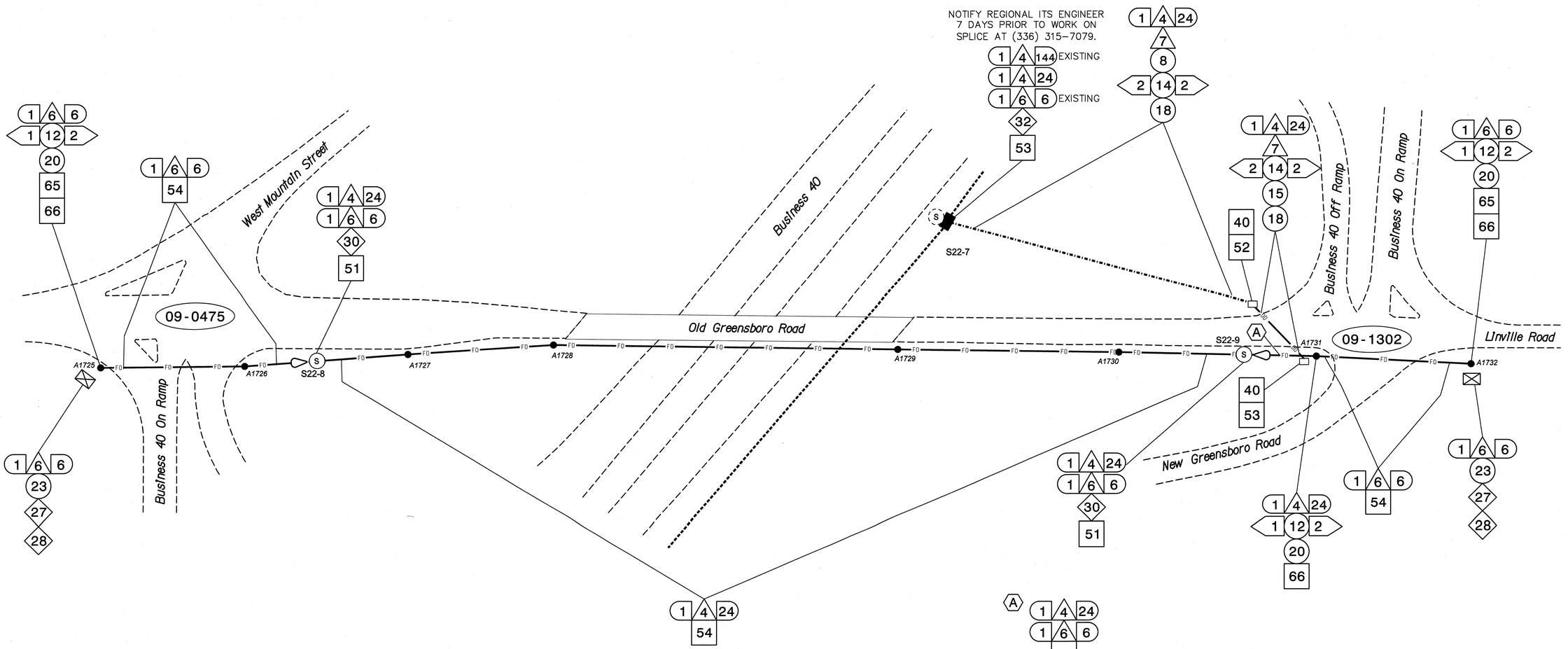

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750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LW Moon

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

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PROJECT REFERENCE NO.	SHEET NO.
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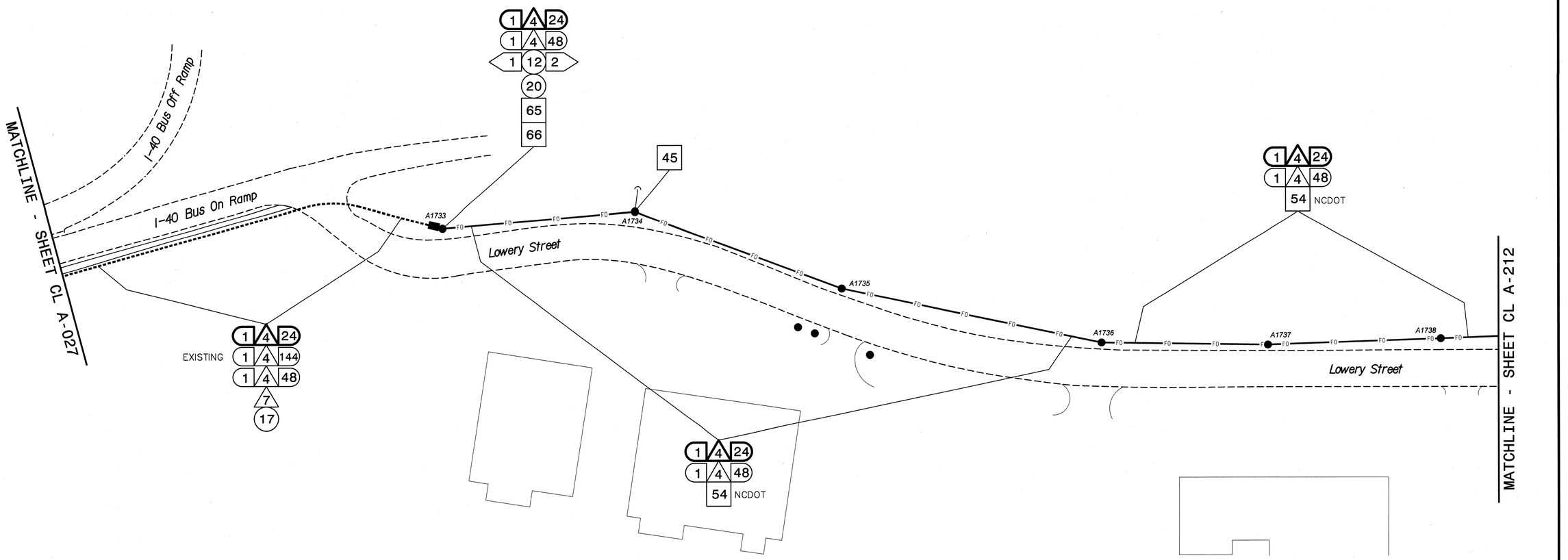

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750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LW Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

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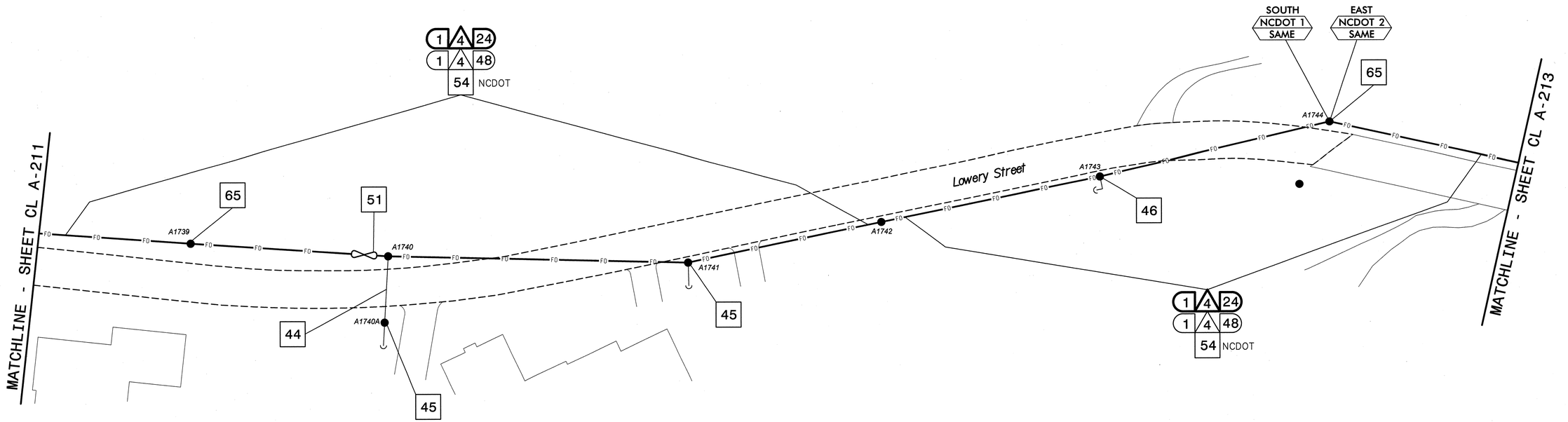

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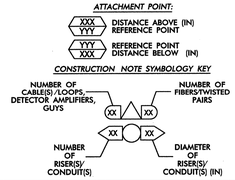

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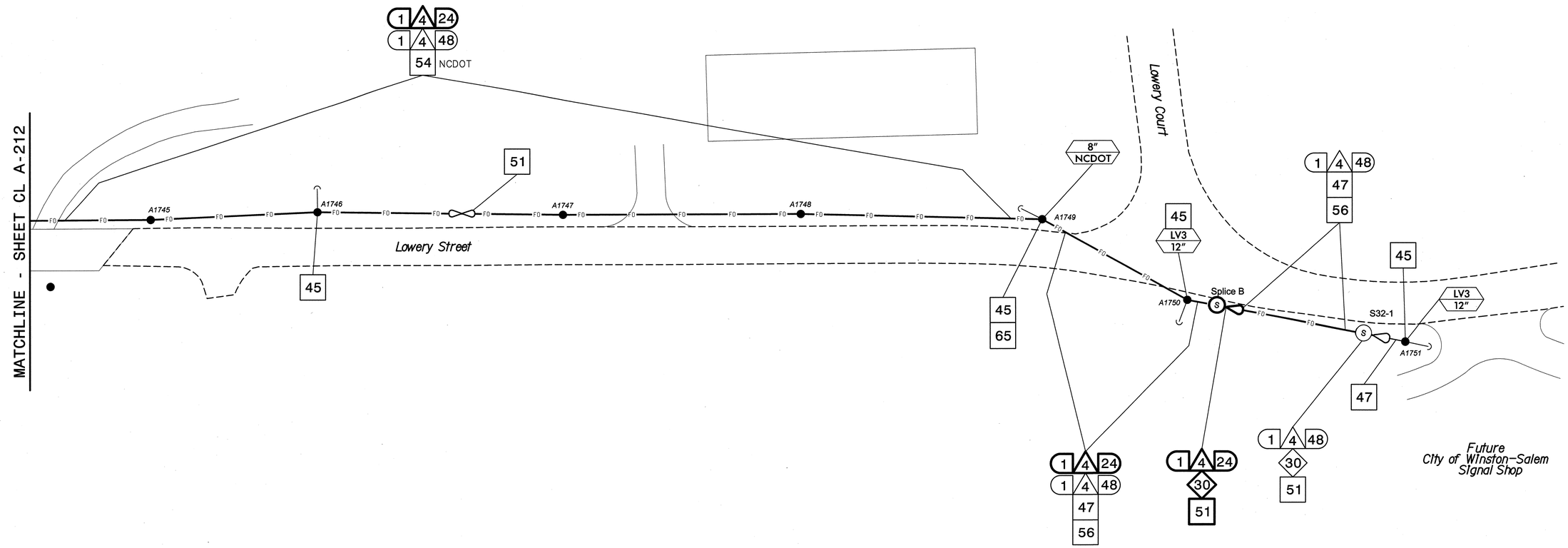

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   - OVERLASH NEW FIBER OPTIC CABLE TO EXISTING COMMUNICATIONS CABLE.
   - ATTACH NEW MESSENGER CABLE 40" BELOW POWER.
   - ATTACH ON FRONT SIDE (FS) OF POLE.
2. SEAL ALL CONDUIT ENDS WITH DUCT AND CONDUIT SEALER, AT ALL JUNCTION BOX/CABINET ENTRANCES.

BOLD CONSTRUCTION NOTES SHOW NEW "IS FIBER" WORK

1	INSTALL REA, PE – 22, SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE	13	INSTALL HEAT SHRINK TUBING RETROFIT KIT	25	INSTALL NEW RISER INTO POLE MOUNTED CABINET	37	INSTALL CCTV WOOD POLE	49	REMOVE EXISTING COMMUNICATIONS CABLE	61	INSTALL UNI-DIRECTIONAL ANTENNA
2	INSTALL REA, PE – 38, (FIGURE – 8) SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE	14	INSTALL HIGH DENSITY POLYETHYLENE CONDUIT	26	INSTALL DIGITAL VIDEO ENCODER	38	INSTALL STANDARD SIZE JUNCTION BOX	50	INSTALL WIRELESS DSL	62	INSTALL 4.9GHZ ETHERNET INTEGRATED RADIO /OMNI-DIRECTIONAL ANTENNA
3	INSTALL CATEGORY 5E CABLE	15	DIRECTIONAL DRILL CONDUIT	27	INSTALL NEW ETHERNET EDGE SWITCH IN CABINET	39	INSTALL SPECIAL-SIZED JUNCTION BOX	51	INSTALL CABLE STORAGE GUIDE(S) [SNOW SHOE(S)] AND STORE 100 FEET OF EACH CABLE	63	INSTALL 900 MHZ ETHERNET RADIO
4	INSTALL SMFO CABLE	16	BORE AND JACK CONDUIT	28	INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET	40	INSTALL OVER-SIZED JUNCTION BOX	52	INSTALL DELINEATOR MARKER	64	INTERCEPT AND REROUTE EXISTING CONDUITS
5	INSTALL COAXIAL ANTENNA CABLE	17	INSTALL CABLE(S) IN EXISTING CONDUIT	29	INSTALL UNDERGROUND SPLICE ENCLOSURE	41	REMOVE EXISTING JUNCTION BOX	53	STORE 50 FEET OF COMMUNICATIONS CABLE (EACH CABLE)	65	BOND MESSENGER TO POLE GROUND
6	INSTALL FIBER-OPTIC DROP CABLE	18	INSTALL CABLE(S) IN NEW CONDUIT	30	INSTALL AERIAL SPLICE ENCLOSURE	42	INSTALL WOOD POLE	54	LASH CABLE(S) TO EXISTING SIGNAL/COMMUNICATIONS CABLE	66	BOND RISER TO POLE GROUND
7	INSTALL TRACER WIRE	19	INSTALL CABLE(S) IN EXISTING RISER(S)	31	INSTALL SPLICE CABINET	43	REMOVE EXISTING WOOD POLE	55	LASH CABLE(S) TO EXISTING MESSENGER CABLE	67	BOND TRACER WIRE TO POLE GROUND
8	INSTALL CONDUIT UNDERGROUND	20	INSTALL CABLE(S) IN NEW RISER(S)	32	MODIFY EXISTING SPLICE ENCLOSURE OR INTERCONNECT CENTER	44	INSTALL AERIAL GUY ASSEMBLY	56	LASH CABLE(S) TO NEW MESSENGER CABLE	68	BOND TRACER WIRE TO EQUIPMENT GROUND BUS
9	INSTALL PVC CONDUIT	21	INSTALL CABLE(S) IN EXISTING CONDUIT STUBOUTS	33	REMOVE EXISTING SPLICE /HUB /CCTV CABINET	45	INSTALL STANDARD GUY ASSEMBLY	57	MODIFY EXISTING ELECTRICAL SERVICE FOR CCTV/HUB	69	REMOVE EXISTING CCTV CAMERA ASSEMBLY
10	INSTALL RIGID, GALVANIZED STEEL CONDUIT	22	INSTALL NEW CONDUIT INTO CABINET BASE (USE EX CONDUIT STUBOUTS WHEN AVAILABLE)	34	INSTALL CABINET FOUNDATION	46	INSTALL SIDEWALK GUY ASSEMBLY	58	INSTALL NEW ELECTRICAL SERVICE FOR CCTV/HUB	70	INSTALL 4.9GHZ FLAT-PANEL ANTENNA
11	INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD	23	INSTALL NEW RISER INTO CABINET BASE (USE EX CONDUIT STUBOUTS WHEN AVAILABLE)	35	REMOVE EXISTING CABINET FOUNDATION	47	INSTALL MESSENGER CABLE	59	INSTALL NEW POLE MOUNTED CCTV CABINET	71	INSTALL HUB CABINET
12	INSTALL RIGID, GALVANIZED STEEL RISER WITH HEAT SHRINK TUBING	24	INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET	36	INSTALL CCTV CAMERA ASSEMBLY	48	REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE	60	INSTALL 4.9GHZ ETHERNET INTEGRATED RADIO /FLAT-PANEL ANTENNA	72	INSTALL MANAGED ETHERNET SWITCH

ATTACHMENT POINT:
XXX DISTANCE ABOVE (IN) REFERENCE POINT
YYY REFERENCE POINT DISTANCE BELOW (IN)

CONSTRUCTION NOTE SYMBOLOGY KEY
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NUMBER OF FIBERS/TWISTED PAIRS
NUMBER OF RISER(S)/ CONDUIT(S)
DIAMETER OF RISER(S)/ CONDUIT(S) (IN)

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

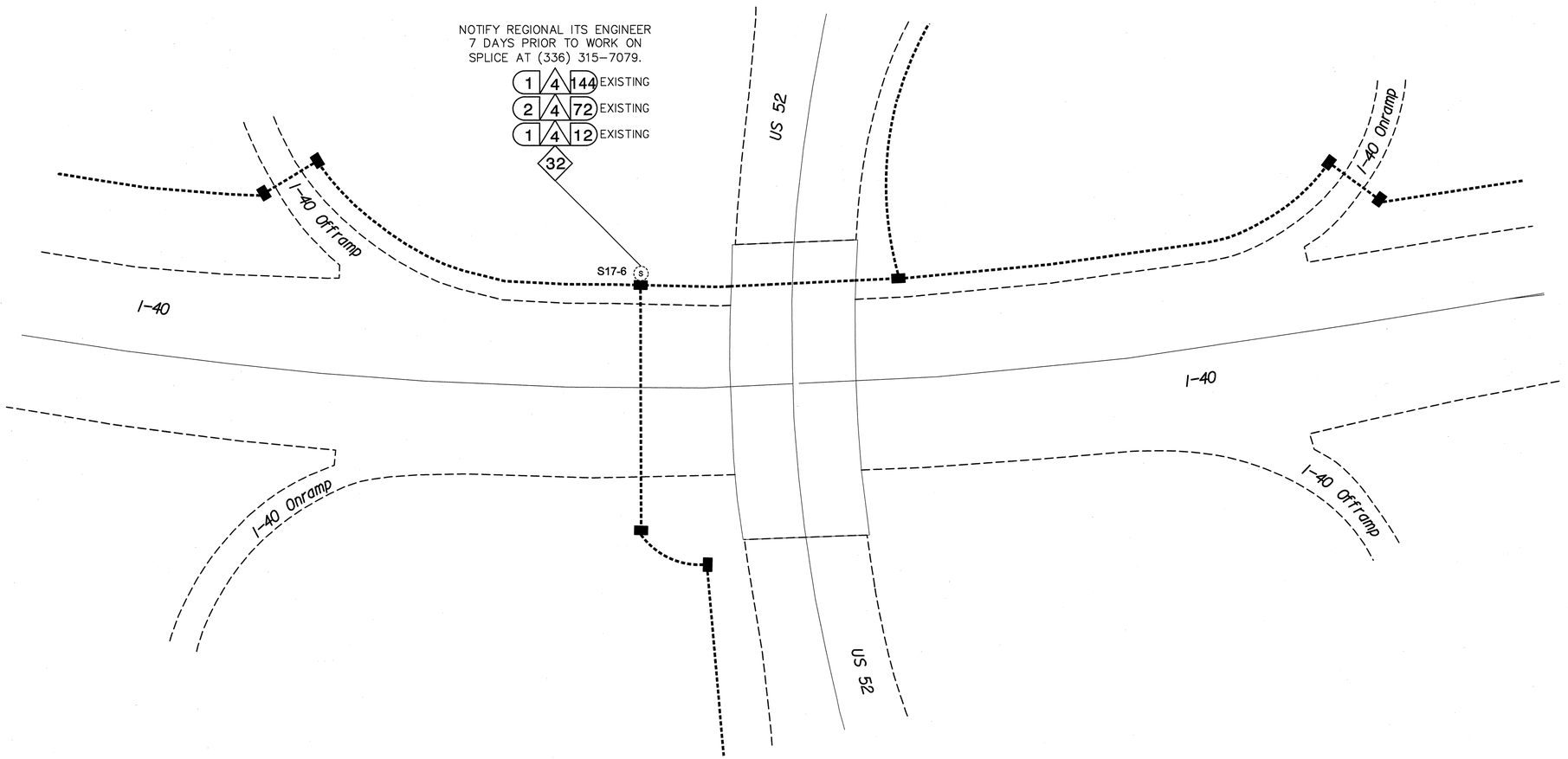
SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE 1-11-13 DATE

CADD Filename: CL A-213.dgn

03-JAN-2013 14:14
D:#Transportation#Traffic#Curr#100022712 Winston Salem Sig Sys#CL#Phase A#CL A-213.dgn
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-214



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ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

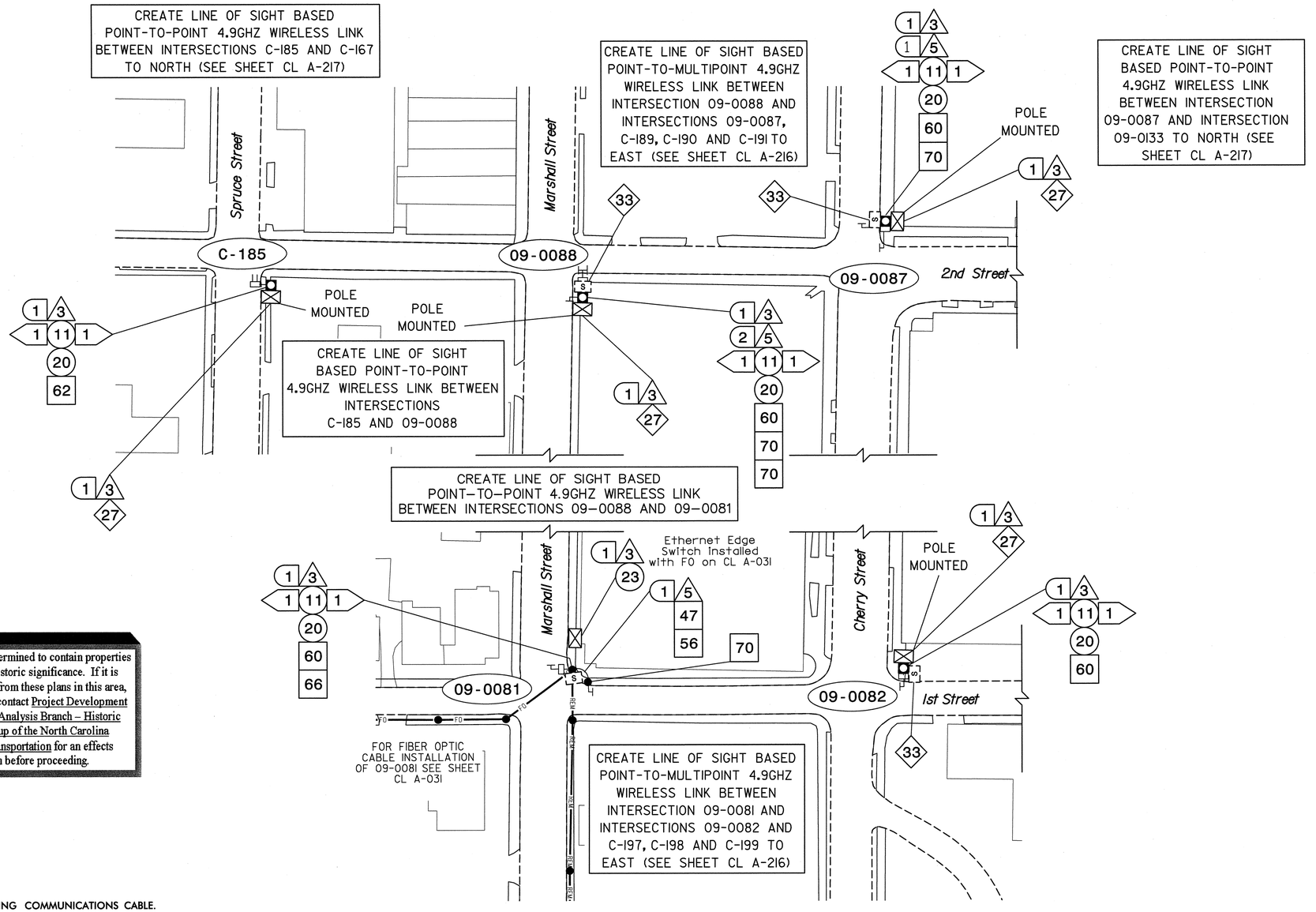
REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE DATE 1-11-13
CADD Filename: CL A-214.dgn

03-JAN-2013 14:18
D:\#Transportation\Traffic\Cur\#100022712 Winston Salem Sig Sys\#CL\#Phase A\#CL A-214.dgn
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-215



This area has been determined to contain properties with documented historic significance. If it is necessary to deviate from these plans in this area, alert the Engineer to contact Project Development and Environmental Analysis Branch – Historic Architecture Group of the North Carolina Department of Transportation for an effects determination before proceeding.

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ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of: Traffic Engineering, Mobility and Safety Unit, State of North Carolina Department of Transportation, Statewide Traffic Engineering and Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

SCALE 0 50 1"=50'

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem
PLAN DATE: January 2013 REVIEWED BY: MB Toth
PREPARED BY: BKS/AJD REVIEWED BY: LW Moon

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029531 ENGINEER STEVEN G. HAYNIE
SIGNATURE 1/4/13 DATE
CADD Filename: CL A-215.dgn

18-JAN-2013 11:47
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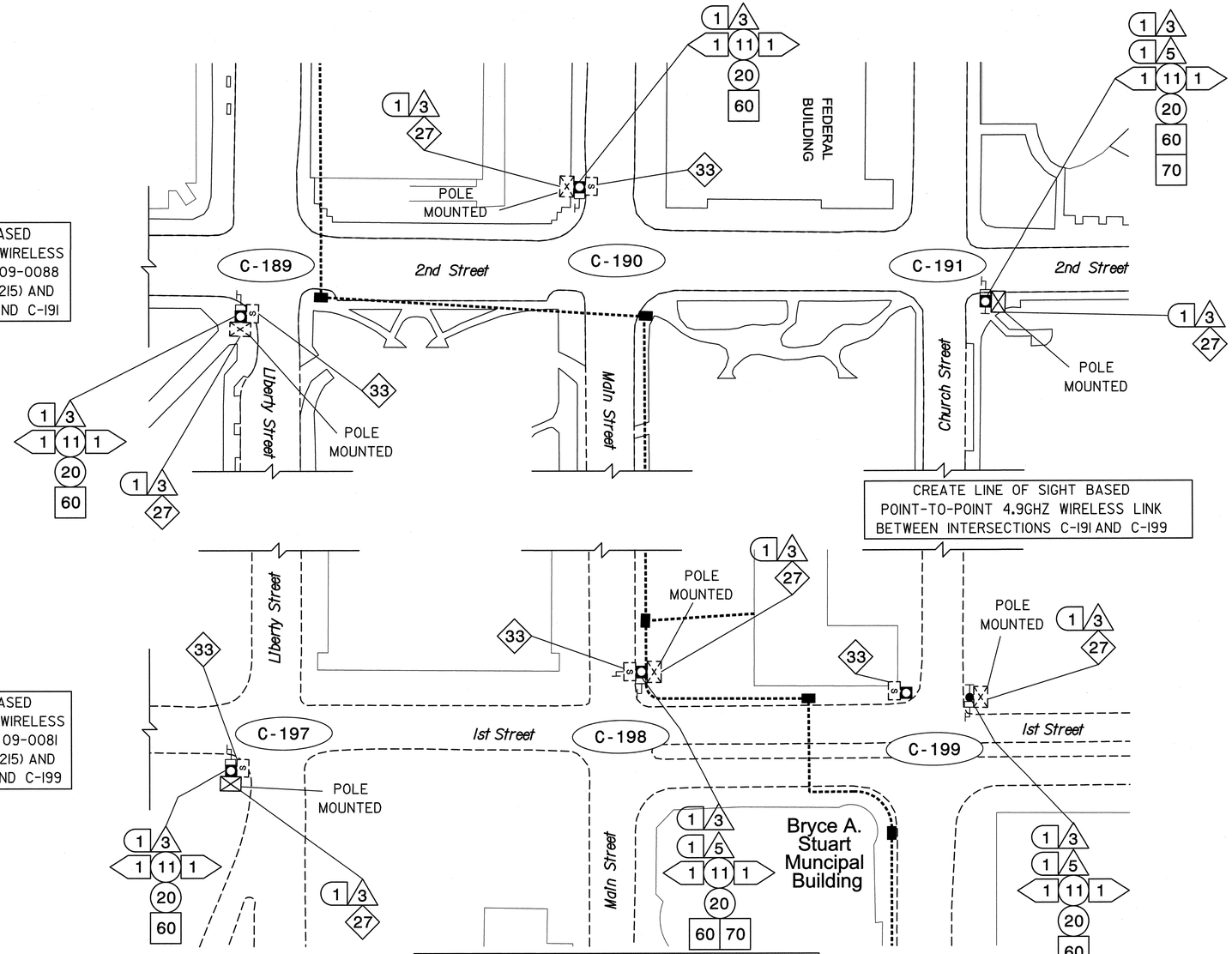
12054

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-216

CREATE LINE OF SIGHT BASED POINT-TO-MULTIPOINT 4.9GHZ WIRELESS LINK BETWEEN INTERSECTION 09-0088 TO WEST (SEE SHEET CL A-215) AND INTERSECTIONS C-189, C-190 AND C-191

CREATE LINE OF SIGHT BASED POINT-TO-MULTIPOINT 4.9GHZ WIRELESS LINK BETWEEN INTERSECTION 09-0081 TO WEST (SEE SHEET CL A-215) AND INTERSECTIONS C-197, C-198 AND C-199



CREATE LINE OF SIGHT BASED POINT-TO-POINT 4.9GHZ WIRELESS LINK BETWEEN INTERSECTIONS C-191 AND C-199

CREATE LINE OF SIGHT BASED POINT-TO-POINT 4.9GHZ WIRELESS LINK BETWEEN INTERSECTIONS C-198 AND 09-0136 TO SOUTH (SEE SHEET CL A-221)

NOTES:
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Prepared for the Offices of:
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION Transportation Mobility and Safety Division Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

SCALE 0 50 1"=50'

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE: January 2013 REVIEWED BY: MB Toth
PREPARED BY: BKS/AJD REVIEWED BY: LM Moon

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029531 ENGINEER STEVEN G. HAVNE
SIGNATURE / DATE 1/4/13

CADD Filename: CL A-216.dgn

18-JAN-2013 11:47
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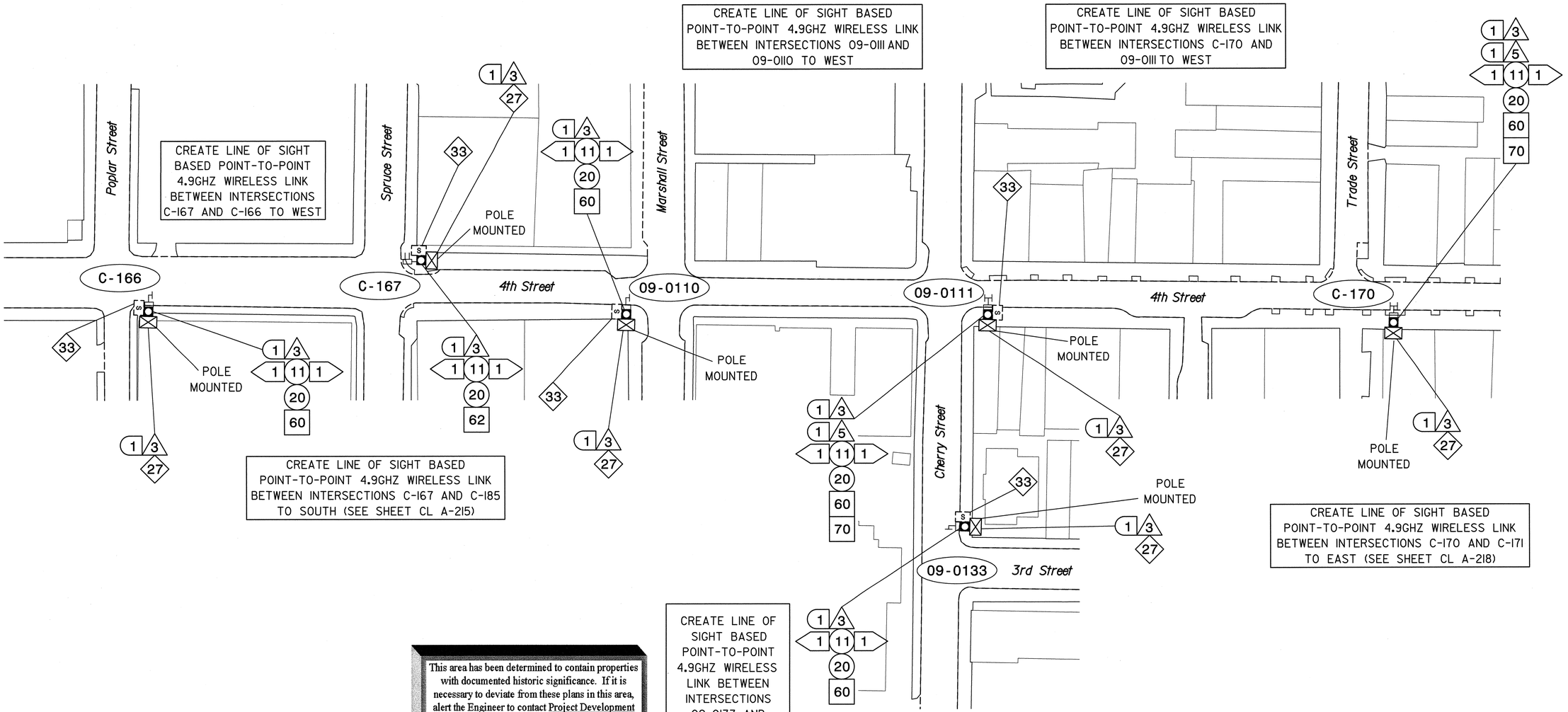
12054

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-217



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NOTES:
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   - ATTACH ON FRONT SIDE (FS) OF POLE.
2. SEAL ALL CONDUIT ENDS WITH DUCT AND CONDUIT SEALER, AT ALL JUNCTION BOX/CABINET ENTRANCES.

BOLD CONSTRUCTION NOTES SHOW NEW "IS FIBER" WORK

1. INSTALL REA, PE – 22, SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE
2. INSTALL REA, PE – 38, (FIGURE – 8) SHIELDED, TWISTED PAIR COMMUNICATIONS CABLE
3. INSTALL CATEGORY 5E CABLE
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6. INSTALL FIBER–OPTIC DROP CABLE
7. INSTALL TRACER WIRE
8. INSTALL CONDUIT UNDERGROUND
9. INSTALL PVC CONDUIT
10. INSTALL RIGID, GALVANIZED STEEL CONDUIT
11. INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
12. INSTALL RIGID, GALVANIZED STEEL RISER WITH HEAT SHRINK TUBING
13. INSTALL HEAT SHRINK TUBING RETROFIT KIT
14. INSTALL HIGH DENSITY POLYETHYLENE CONDUIT
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16. BORE AND JACK CONDUIT
17. INSTALL CABLE(S) IN EXISTING CONDUIT
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23. INSTALL NEW RISER INTO CABINET BASE (USE EX CONDUIT STUBOUTS WHEN AVAILABLE)
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26. INSTALL DIGITAL VIDEO ENCODER
27. INSTALL NEW ETHERNET EDGE SWITCH IN CABINET
28. INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET
29. INSTALL UNDERGROUND SPLICE ENCLOSURE
30. INSTALL AERIAL SPLICE ENCLOSURE
31. INSTALL SPLICE CABINET
32. MODIFY EXISTING SPLICE ENCLOSURE OR INTERCONNECT CENTER
33. REMOVE EXISTING SPLICE /HUB /CCTV CABINET
34. INSTALL CABINET FOUNDATION
35. REMOVE EXISTING CABINET FOUNDATION
36. INSTALL CCTV CAMERA ASSEMBLY
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46. INSTALL SIDEWALK GUY ASSEMBLY
47. INSTALL MESSENGER CABLE
48. REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE
49. REMOVE EXISTING COMMUNICATIONS CABLE
50. INSTALL WIRELESS DSL
51. INSTALL CABLE STORAGE GUIDE(S) [SNOW SHOE(S)] AND STORE 100 FEET OF EACH CABLE
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53. STORE 50 FEET OF COMMUNICATIONS CABLE (EACH CABLE)
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61. INSTALL UNI–DIRECTIONAL ANTENNA
62. INSTALL 4.9GHZ ETHERNET INTEGRATED RADIO /OMNI–DIRECTIONAL ANTENNA
63. INSTALL 900 MHZ ETHERNET RADIO
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71. INSTALL HUB CABINET
72. INSTALL MANAGED ETHERNET SWITCH

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CONSTRUCTION NOTE SYMBOLOGY KEY
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NUMBER OF RISER(S)/ CONDUIT(S)
DIAMETER OF RISER(S)/ CONDUIT(S) (IN)

ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
North Carolina Department of Transportation, Mobility and Safety Division, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

SCALE 0 50 1"=50'

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029531 ENGINEER STEVEN G. HAYNIE
SIGNATURE 1/4/13 DATE
CADD Filename: CL A-217.dgn

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12054

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-218

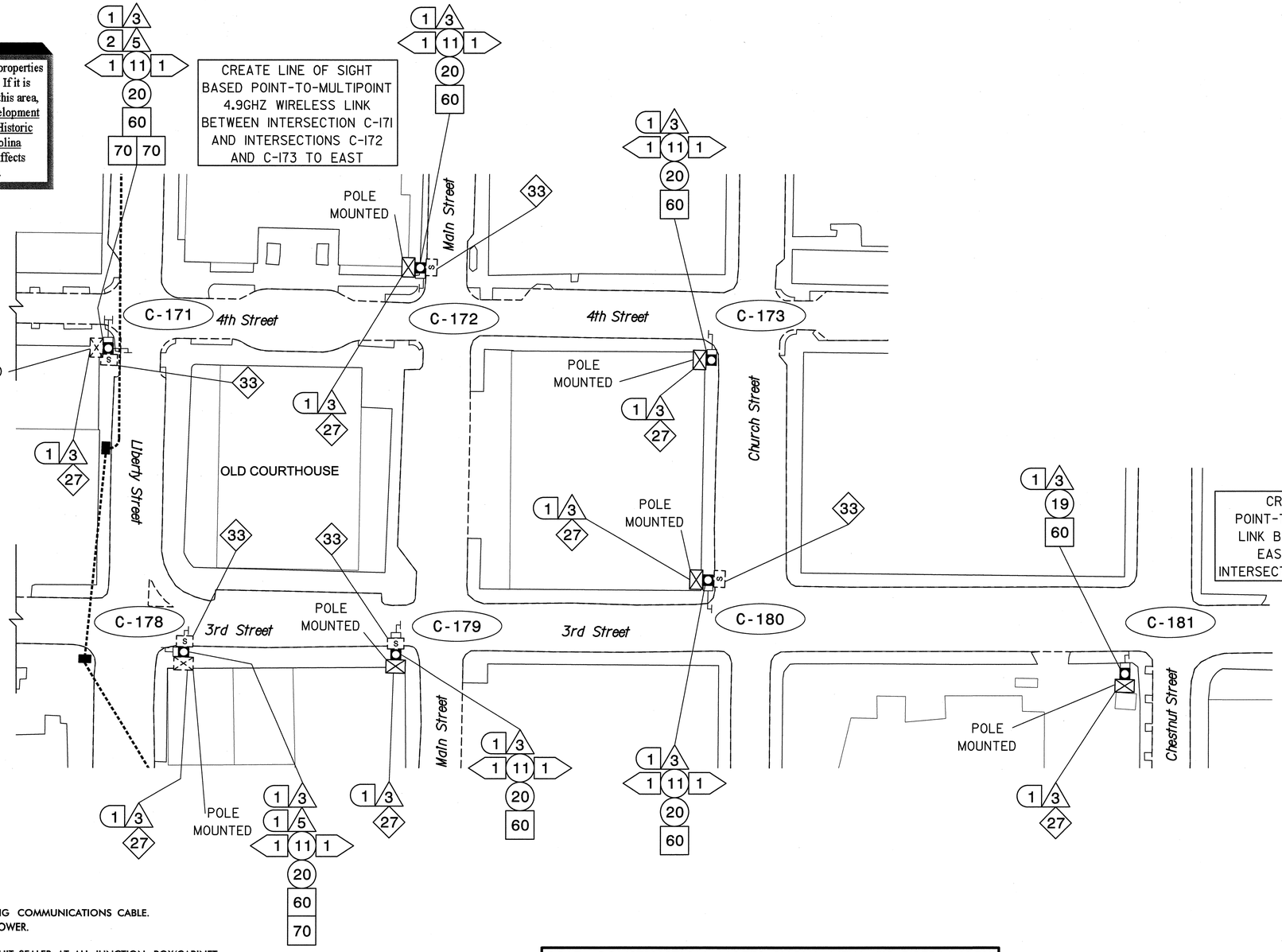
This area has been determined to contain properties with documented historic significance. If it is necessary to deviate from these plans in this area, alert the Engineer to contact Project Development and Environmental Analysis Branch – Historic Architecture Group of the North Carolina Department of Transportation for an effects determination before proceeding.

CREATE LINE OF SIGHT BASED POINT-TO-MULTIPOINT 4.9GHZ WIRELESS LINK BETWEEN INTERSECTION C-171 AND INTERSECTIONS C-172 AND C-173 TO EAST

CREATE LINE OF SIGHT BASED POINT-TO-POINT 4.9GHZ WIRELESS LINK BETWEEN INTERSECTIONS C-171 AND C-170 TO WEST (SEE SHEET CL A-217)

CREATE LINE OF SIGHT BASED POINT-TO-POINT 4.9GHZ WIRELESS LINK BETWEEN INTERSECTIONS C-178 AND C-171 TO NORTH

CREATE LINE OF SIGHT BASED POINT-TO-MULTIPOINT 4.9GHZ WIRELESS LINK BETWEEN INTERSECTION C-182 TO EAST (SEE SHEET CL A-221) AND INTERSECTIONS C-178, C-179, C-180 AND C-181



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(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Woon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029531 ENGINEER STEVEN G. HAYNIE
SIGNATURE 1/11/13 DATE

CADD Filename: CL A-218.dgn

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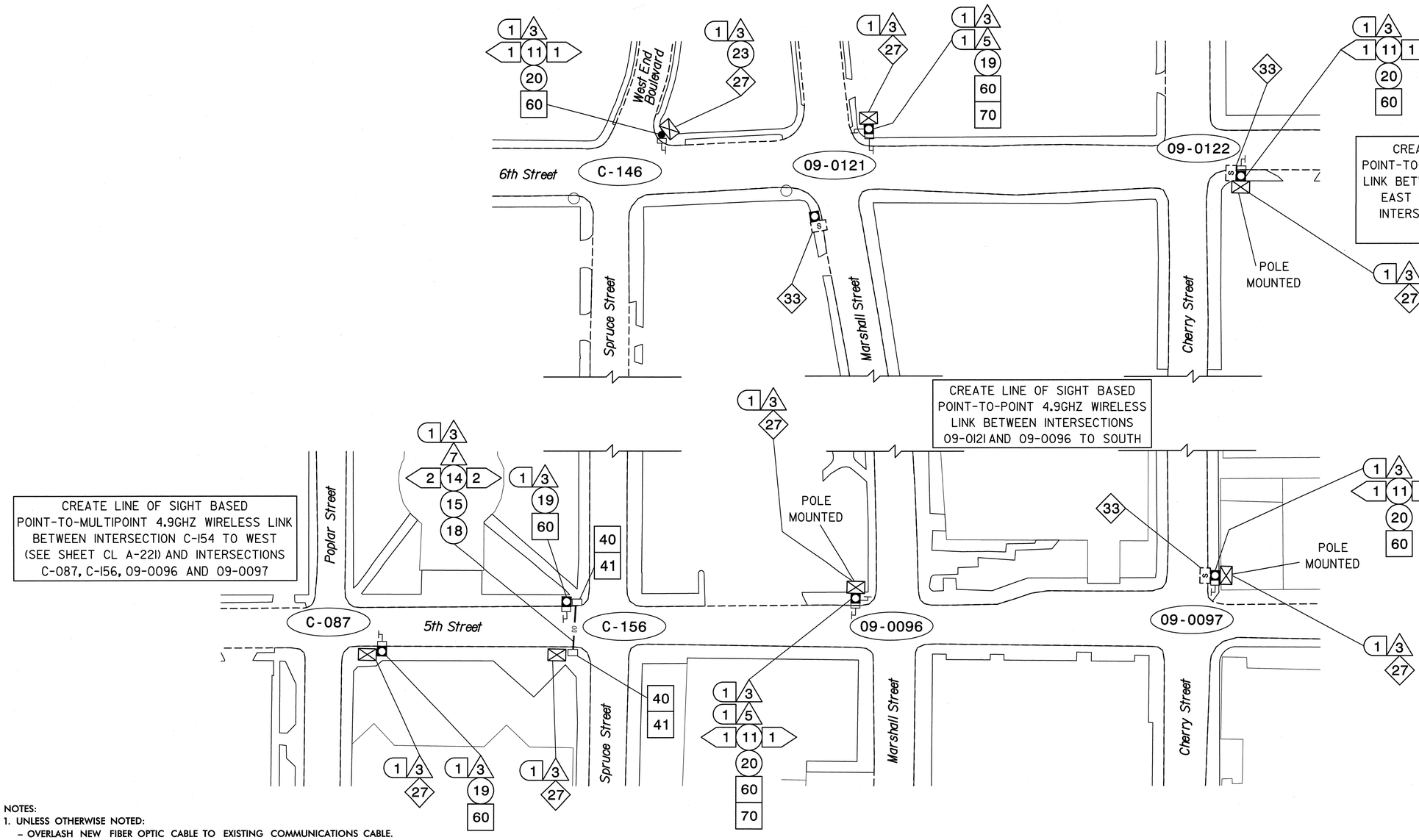
24411

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-219



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ATTACHMENT POINT:
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YYY REFERENCE POINT DISTANCE BELOW (IN) XXX

CONSTRUCTION NOTE SYMBOLOGY KEY
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ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE: January 2013 REVIEWED BY: MB Toth

PREPARED BY: BKS/AJD REVIEWED BY: LW Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL NORTH CAROLINA PROFESSIONAL SEAL 029531 ENGINEER STEVEN G. HAYNIE

SIGNATURE 1/11/13 DATE

CADD Filename: CL A-219.dgn

11-JAN-2013 15:49
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13833

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-220

CREATE LINE OF SIGHT BASED POINT-TO-MULTIPOINT 4.9GHZ WIRELESS LINK BETWEEN INTERSECTION C-150 AND INTERSECTIONS C-149 TO WEST AND C-146, 09-0121, AND 09-0122 TO WEST (SEE SHEET CL A-219)

CREATE LINE OF SIGHT BASED POINT-TO-POINT 4.9GHZ WIRELESS LINK BETWEEN INTERSECTIONS C-151 AND C-150 TO WEST

Ethernet Edge Switch Installed with FO on CL A-046

This area has been determined to contain properties with documented historic significance. If it is necessary to deviate from these plans in this area, alert the Engineer to contact Project Development and Environmental Analysis Branch – Historic Architecture Group of the North Carolina Department of Transportation for an effects determination before proceeding.

FOR FIBER OPTIC CABLE INSTALLATION TO C-151 SEE SHEET CL A-046

CREATE LINE OF SIGHT BASED POINT-TO-POINT 4.9GHZ WIRELESS LINK BETWEEN INTERSECTIONS C-150 AND C-160 TO SOUTH

CREATE LINE OF SIGHT BASED POINT-TO-POINT 4.9GHZ WIRELESS LINK BETWEEN INTERSECTIONS C-160 AND C-159 TO WEST

CREATE LINE OF SIGHT BASED POINT-TO-POINT 4.9GHZ WIRELESS LINK BETWEEN INTERSECTIONS C-151 AND C-161 TO SOUTH

CREATE LINE OF SIGHT BASED POINT-TO-POINT 4.9GHZ WIRELESS LINK BETWEEN INTERSECTIONS C-161 AND C-162 TO EAST

POLE MOUNTED

6th Street
5th Street
Trade Street
Liberty Street
Main Street
Church Street
C-149
C-150
C-151
C-159
C-160
C-161
C-162

NOTES:
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53. STORE 50 FEET OF COMMUNICATIONS CABLE (EACH CABLE)
54. LASH CABLE(S) TO EXISTING SIGNAL/COMMUNICATIONS CABLE
55. LASH CABLE(S) TO EXISTING MESSENGER CABLE
56. LASH CABLE(S) TO NEW MESSENGER CABLE
57. MODIFY EXISTING ELECTRICAL SERVICE FOR CCTV/HUB
58. INSTALL NEW ELECTRICAL SERVICE FOR CCTV/HUB
59. INSTALL NEW POLE MOUNTED CCTV CABINET
60. INSTALL 4.9GHZ ETHERNET INTEGRATED RADIO /FLAT-PANEL ANTENNA
61. INSTALL UNI-DIRECTIONAL ANTENNA
62. INSTALL 4.9GHZ ETHERNET INTEGRATED RADIO /OMNI-DIRECTIONAL ANTENNA
63. INSTALL 900 MHZ ETHERNET RADIO
64. INTERCEPT AND REROUTE EXISTING CONDUITS
65. BOND MESSENGER TO POLE GROUND
66. BOND RISER TO POLE GROUND
67. BOND TRACER WIRE TO POLE GROUND
68. BOND TRACER WIRE TO EQUIPMENT GROUND BUS
69. REMOVE EXISTING CCTV CAMERA ASSEMBLY
70. INSTALL 4.9GHZ FLAT-PANEL ANTENNA
71. INSTALL HUB CABINET
72. INSTALL MANAGED ETHERNET SWITCH

ATTACHMENT POINT:
XXX DISTANCE ABOVE (IN) REFERENCE POINT
YYY REFERENCE POINT DISTANCE BELOW (IN)

CONSTRUCTION NOTE SYMBOLOGY KEY
NUMBER OF CABLE(S)/LOOPS,—DETECTOR AMPLIFIERS, GUYS
NUMBER OF FIBERS/TWISTED PAIRS
NUMBER OF RISER(S)/CONDUIT(S)
DIAMETER OF RISER(S)/CONDUIT(S) (IN)

ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
Traffic Engineering, Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Statewide Intelligent Transportation System
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LM Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029531 ENGINEER STEVEN G. HAYNIE
SIGNATURE DATE 1/11/13

CADD Filename: CL A-220.dgn

18-JAN-2013 11:47
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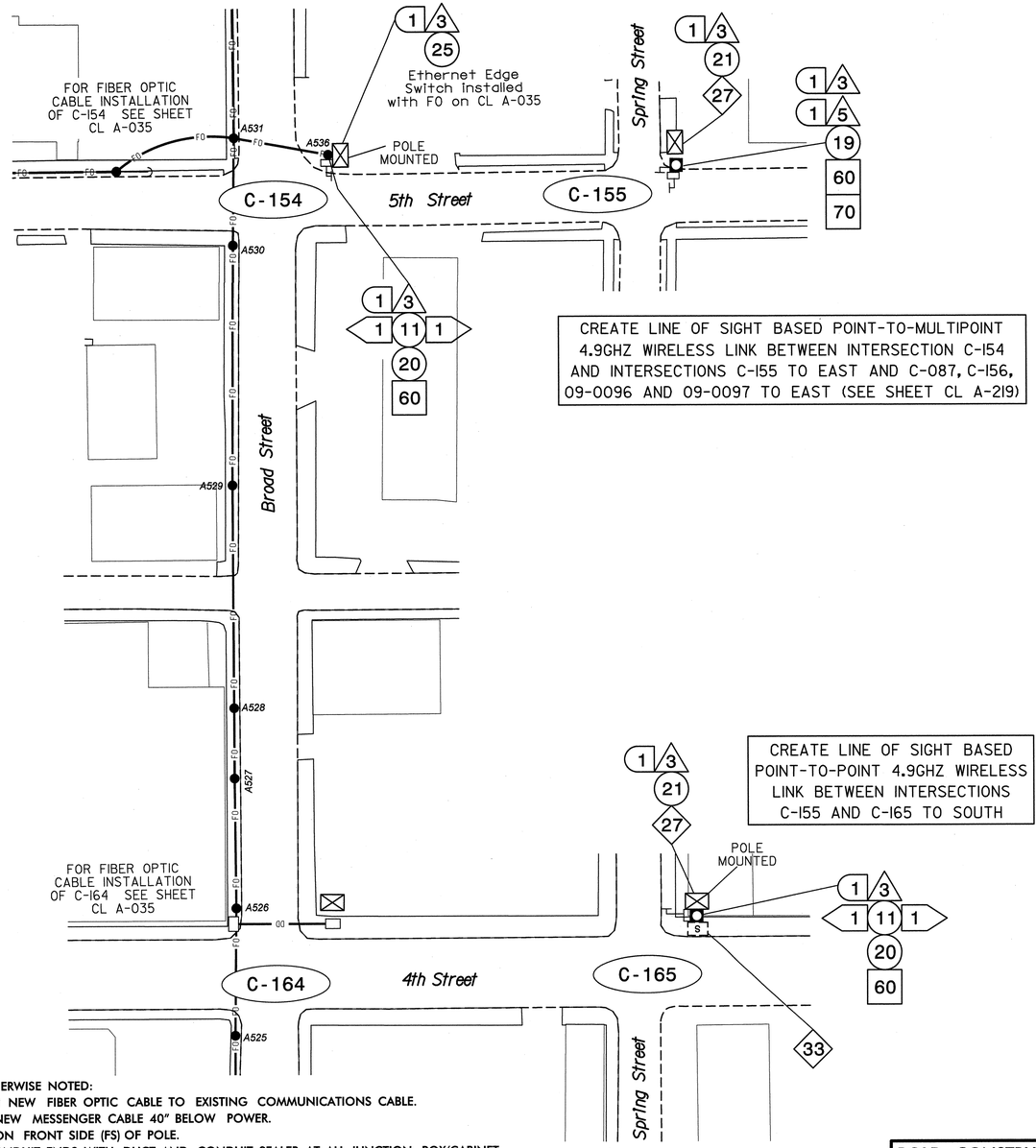
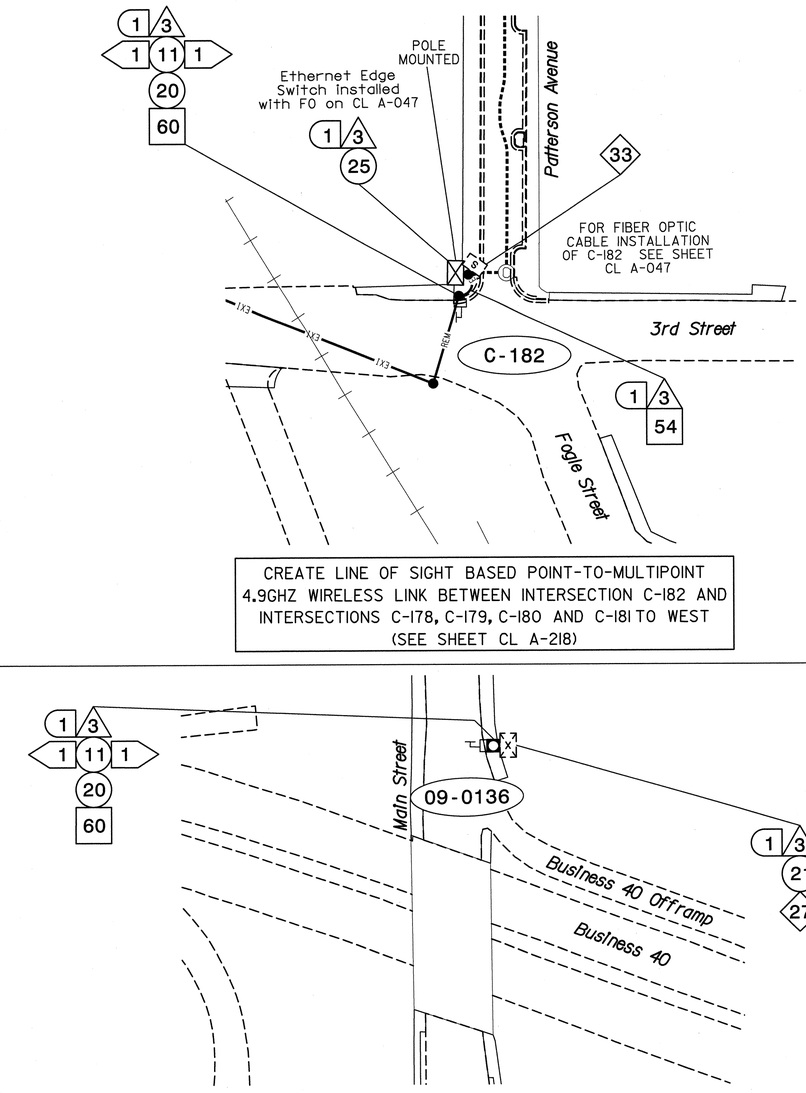
12054

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-221



CREATE LINE OF SIGHT BASED POINT-TO-MULTIPOINT 4.9GHZ WIRELESS LINK BETWEEN INTERSECTION C-154 AND INTERSECTIONS C-155 TO EAST AND C-087, C-156, 09-0096 AND 09-0097 TO EAST (SEE SHEET CL A-219)

CREATE LINE OF SIGHT BASED POINT-TO-POINT 4.9GHZ WIRELESS LINK BETWEEN INTERSECTIONS C-155 AND C-165 TO SOUTH



CREATE LINE OF SIGHT BASED POINT-TO-MULTIPOINT 4.9GHZ WIRELESS LINK BETWEEN INTERSECTION C-182 AND INTERSECTIONS C-178, C-179, C-180 AND C-181 TO WEST (SEE SHEET CL A-218)

CREATE LINE OF SIGHT BASED POINT-TO-POINT 4.9GHZ WIRELESS LINK BETWEEN INTERSECTIONS 09-0136 AND C-198 TO NORTH (SEE SHEET CL A-216)

NOTES:
1. UNLESS OTHERWISE NOTED:
   - OVERLASH NEW FIBER OPTIC CABLE TO EXISTING COMMUNICATIONS CABLE.
   - ATTACH NEW MESSENGER CABLE 40" BELOW POWER.
   - ATTACH ON FRONT SIDE (FS) OF POLE.
2. SEAL ALL CONDUIT ENDS WITH DUCT AND CONDUIT SEALER, AT ALL JUNCTION BOX/CABINET ENTRANCES.

BOLD CONSTRUCTION NOTES SHOW NEW "IS FIBER" WORK

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DIAMETER OF RISER(S)/ CONDUIT(S) (IN)

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(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION — Transportation Mobility and Safety Division — Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LW Moon

REVISIONS	INIT.	DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022516 LISA M. MOON
SIGNATURE DATE 1-11-13
CADD Filename: CL A-221.dgn

18-JAN-2013 13:36
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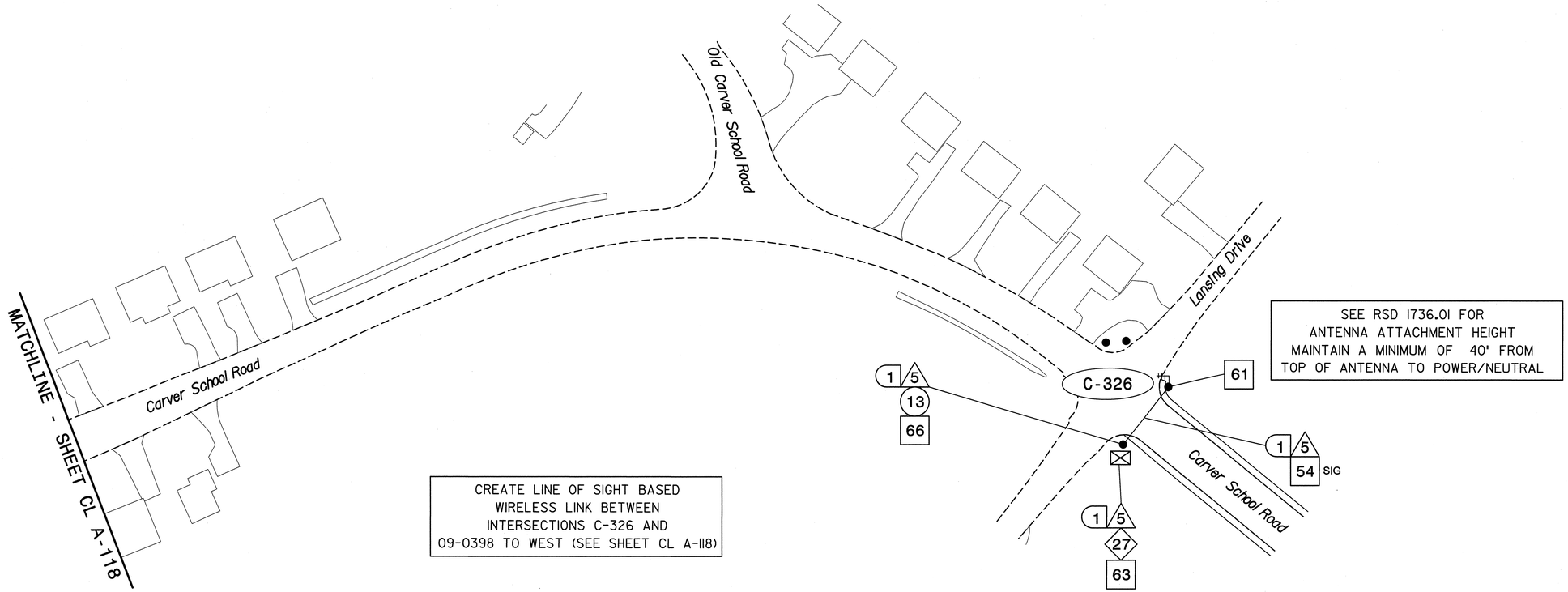
13833

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-222



SEE RSD 1736.01 FOR
ANTENNA ATTACHMENT HEIGHT
MAINTAIN A MINIMUM OF 40" FROM
TOP OF ANTENNA TO POWER/NEUTRAL

CREATE LINE OF SIGHT BASED
WIRELESS LINK BETWEEN
INTERSECTIONS C-326 AND
09-0398 TO WEST (SEE SHEET CL A-118)

NOTES:
1. UNLESS OTHERWISE NOTED:
   – OVERLASH NEW FIBER OPTIC CABLE TO EXISTING COMMUNICATIONS CABLE.
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ATKINS 1616 EAST WILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of: Transportation Mobility and Safety Division, North Carolina Department of Transportation, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

SCALE 0 50 1"=50'

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE: January 2013 REVIEWED BY: MB Toth
PREPARED BY: BKS/AJD REVIEWED BY: LW Moon

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON
SIGNATURE DATE
CADD Filename: CL A-222.dgn

11-JAN-2013 15:43
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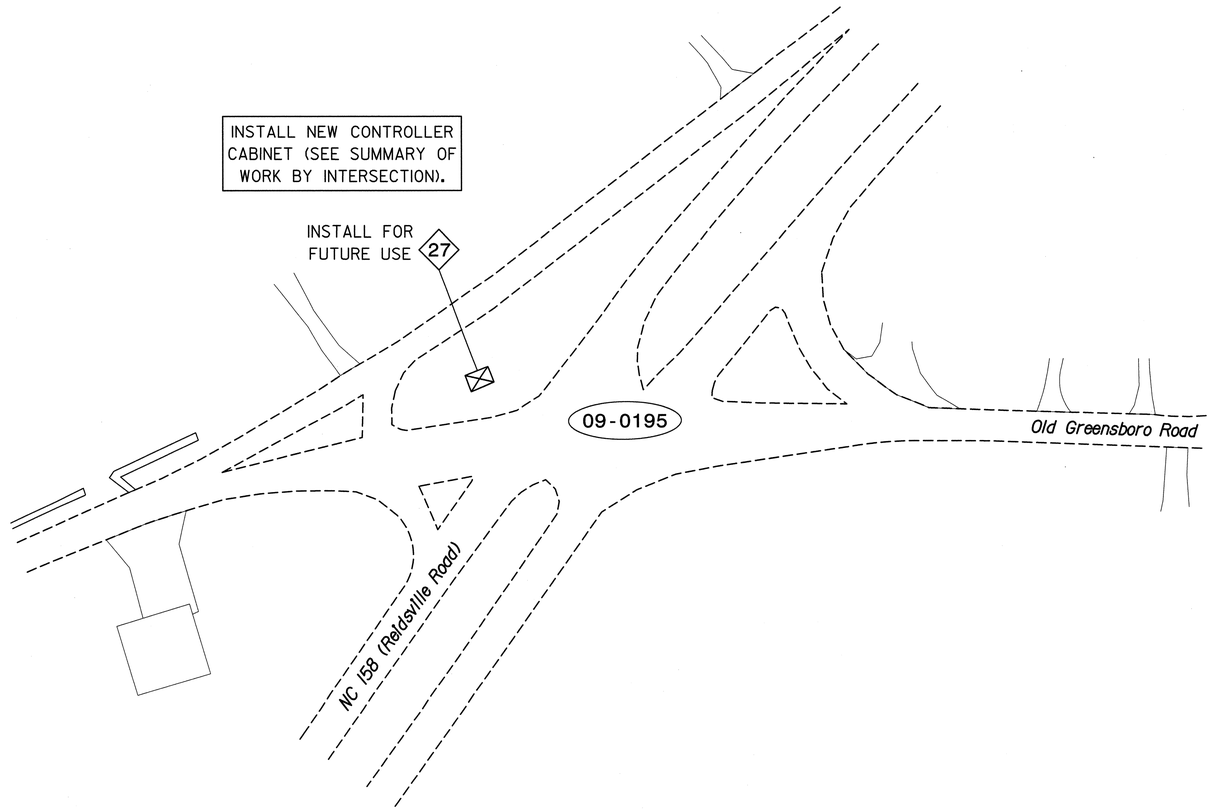
13833

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	CL A-223



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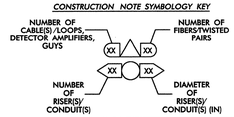
CONSTRUCTION NOTE SYMBOLOGY KEY



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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Cable Layout Plans
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	MB Toth
PREPARED BY:	BKS/AJD	REVIEWED BY:	LW Moon

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER LISA M. MOON

SIGNATURE DATE 1-11-13

CADD Filename: CL A-223.dgn

09-JAN-2013 16:56
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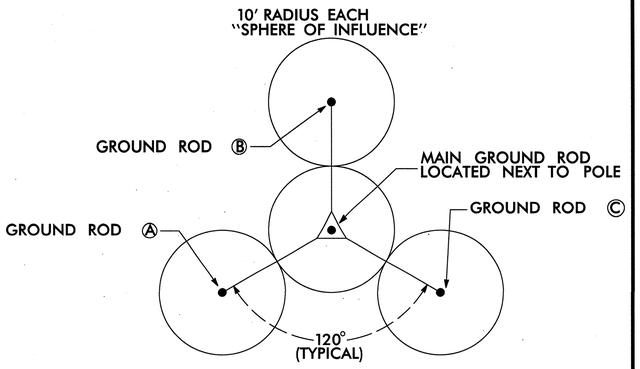
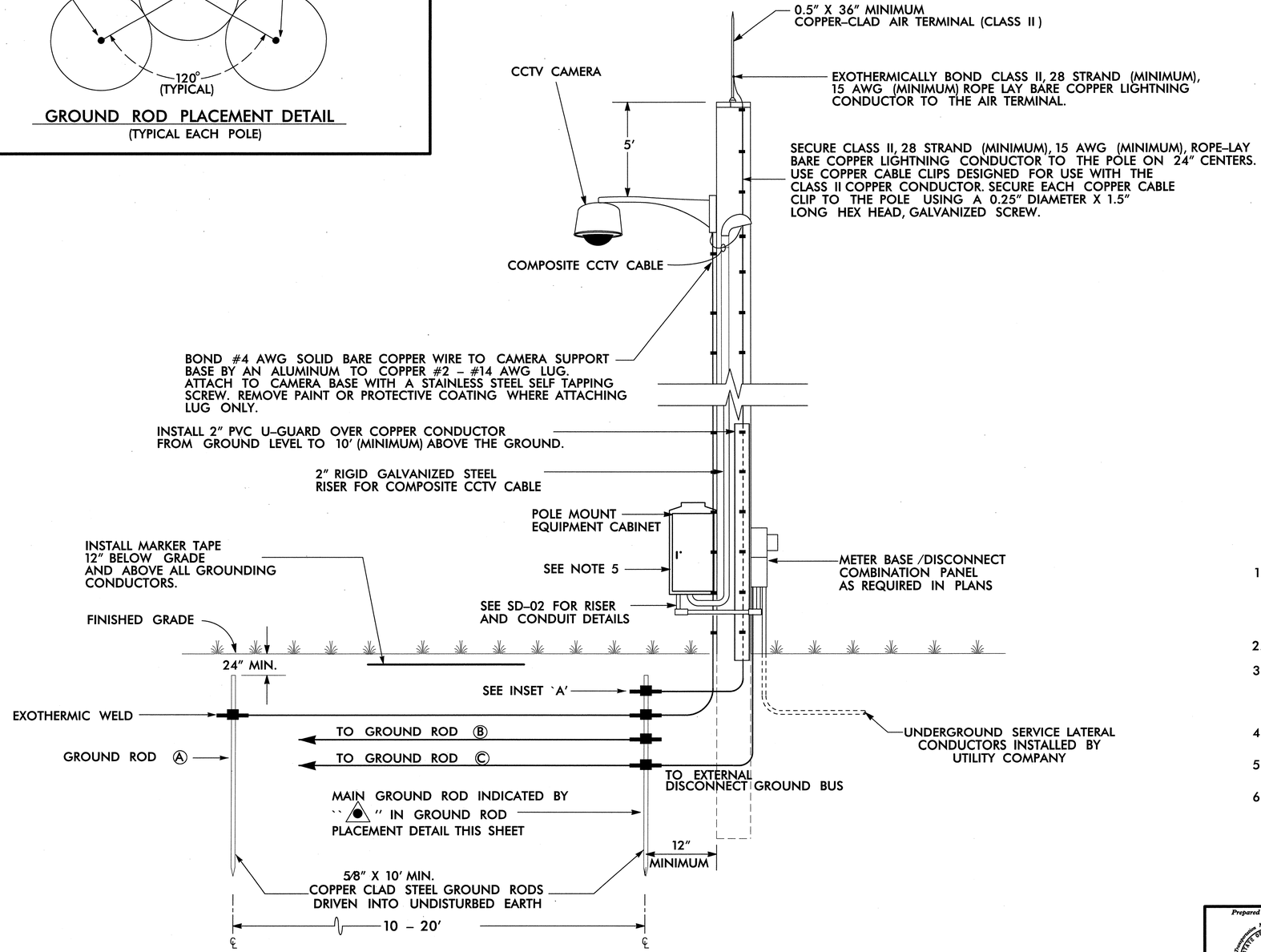
24411



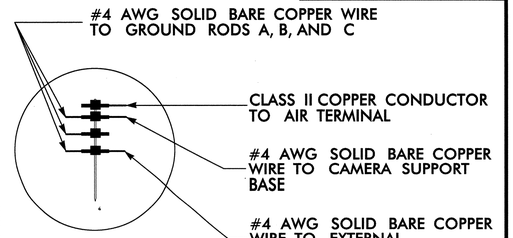
GROUND ROD PLACEMENT DETAIL

(TYPICAL EACH POLE)



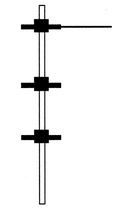
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	SD-01

INSET `A'



ALTERNATE GROUNDING METHOD

IF SPACE IS NOT AVAILABLE TO DRIVE MULTIPLE RODS, DRIVE SECTIONAL GROUND RODS A MINIMUM OF 30'.



JOIN SECTIONAL GROUND RODS BY EXOTHERMIC WELDING CONNECTION

NOTES

1. BOND CLASS II, 28 STRAND (MINIMUM), 15 AWG (MINIMUM) ROPE-LAY BARE COPPER CONDUCTOR TO THE MAIN GROUND ROD BY AN EXOTHERMIC WELD METHOD. MAINTAIN MAXIMUM HORIZONTAL SEPARATION BETWEEN COPPER CONDUCTOR AND RISER.
2. EXOTHERMICALLY WELD ALL CONNECTIONS TO GROUND RODS.
3. THE CONTRACTOR MAY, UPON APPROVAL OF THE ENGINEER, INSTALL A 30' SECTIONAL GROUND ROD FOR INSTANCES WHEN CONDITIONS WILL NOT ALLOW FOR THE INSTALLATION OF THE 3 - RADIAL GROUND RODS.
4. INSTALL MARKER TAPE DIRECTLY ABOVE ALL GROUNDING ELECTRODES AND CONDUCTORS AT A DEPTH OF 12".
5. REMOVE BONDING JUMPER BETWEEN EQUIPMENT CABINET GROUND BUS AND NEUTRAL BUS.
6. SEE SHEET SD-02 FOR RISERS AND CONDUIT DETAILS FOR POLE MOUNTED CCTV CABINETS

ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
Transportation Mobility and Safety Division
North Carolina Department of Transportation
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
CCTV Camera Installation,
Wood Poles U/G Elec. Service
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	October 2012	REVIEWED BY:	HAB
PREPARED BY:	BJS	REVIEWED BY:	JTB

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 19962 ENGINEER HENRY ALFRED BAUGHT III
SIGNATURE DATE
CADD Filename: SD-01.dgn

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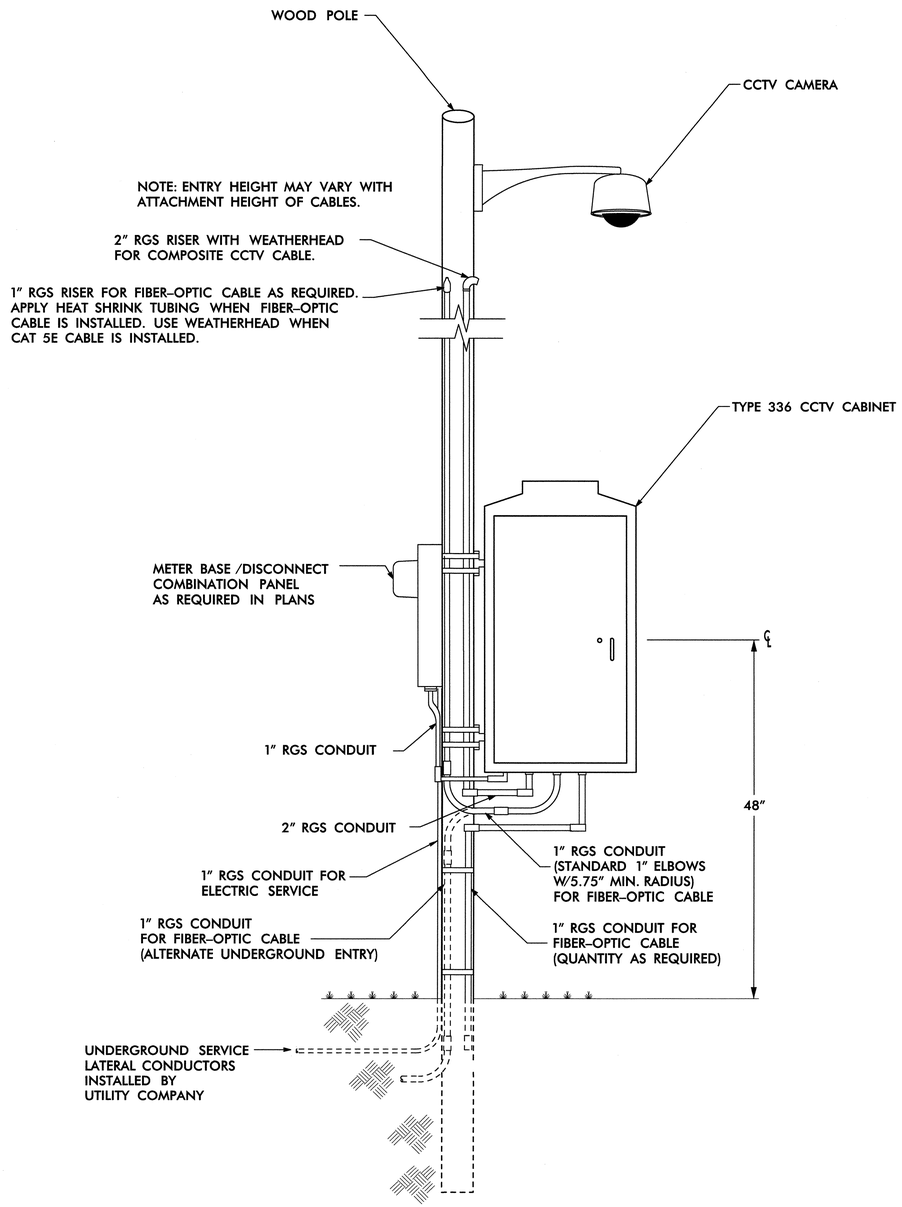
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	SD-02



NOTES

1. BOND CLASS II, 28 STRAND (MINIMUM), 15 AWG (MINIMUM) ROPE-LAY BARE COPPER CONDUCTOR TO THE MAIN GROUND ROD BY AN EXOTHERMIC WELD METHOD. MAINTAIN MAXIMUM HORIZONTAL SEPARATION BETWEEN COPPER CONDUCTOR AND RISER.
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5. REMOVE BONDING JUMPER BETWEEN EQUIPMENT CABINET GROUND BUS AND NEUTRAL BUS.

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Integrated Mobility Division
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System CCTV Riser and Conduit Details, Pole-Mounted Cabinet Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	October 2012	REVIEWED BY:	HAB
PREPARED BY:	BJS	REVIEWED BY:	JTB

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 19962 ENGINEER HENRY ALFRED BADGETT III

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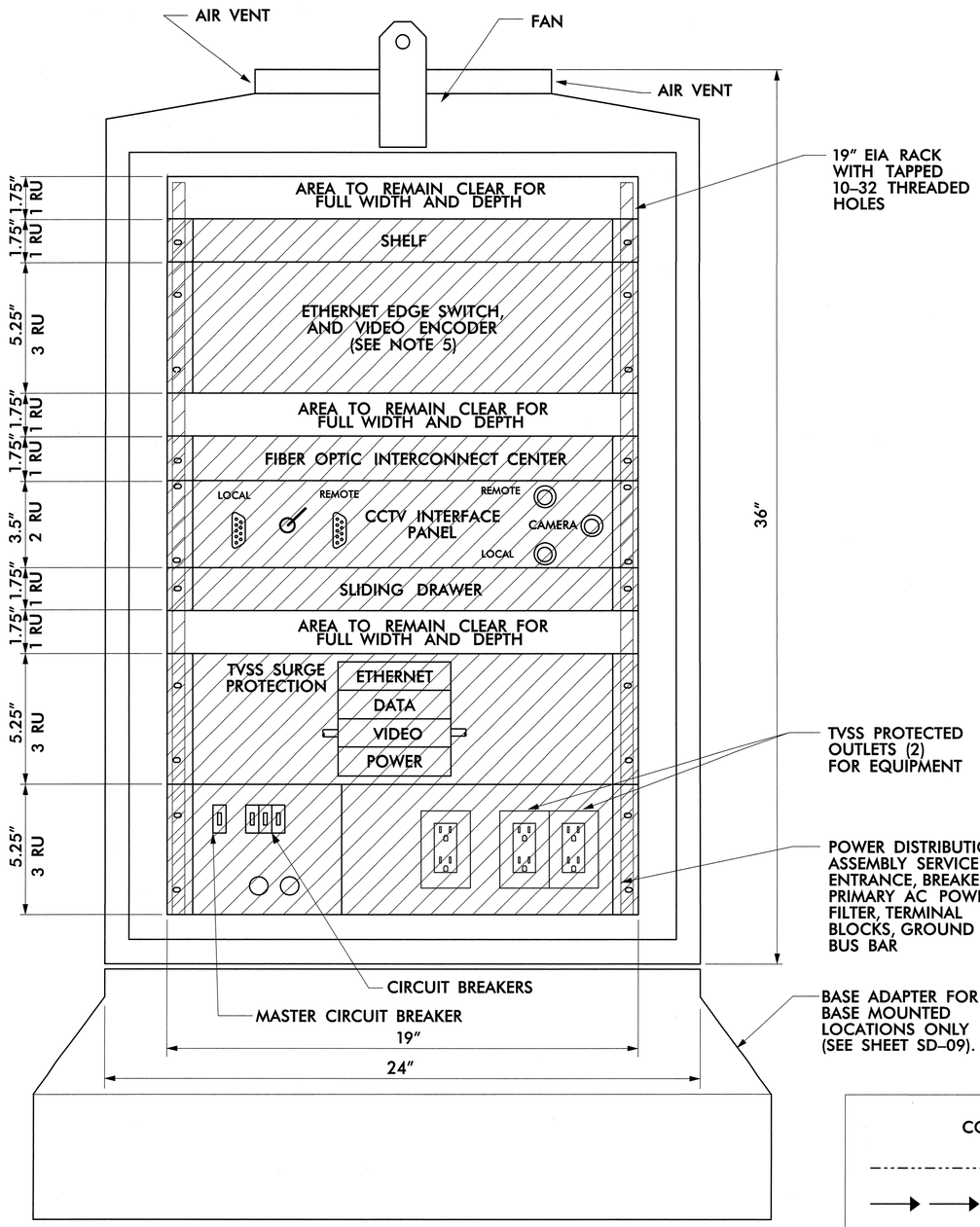
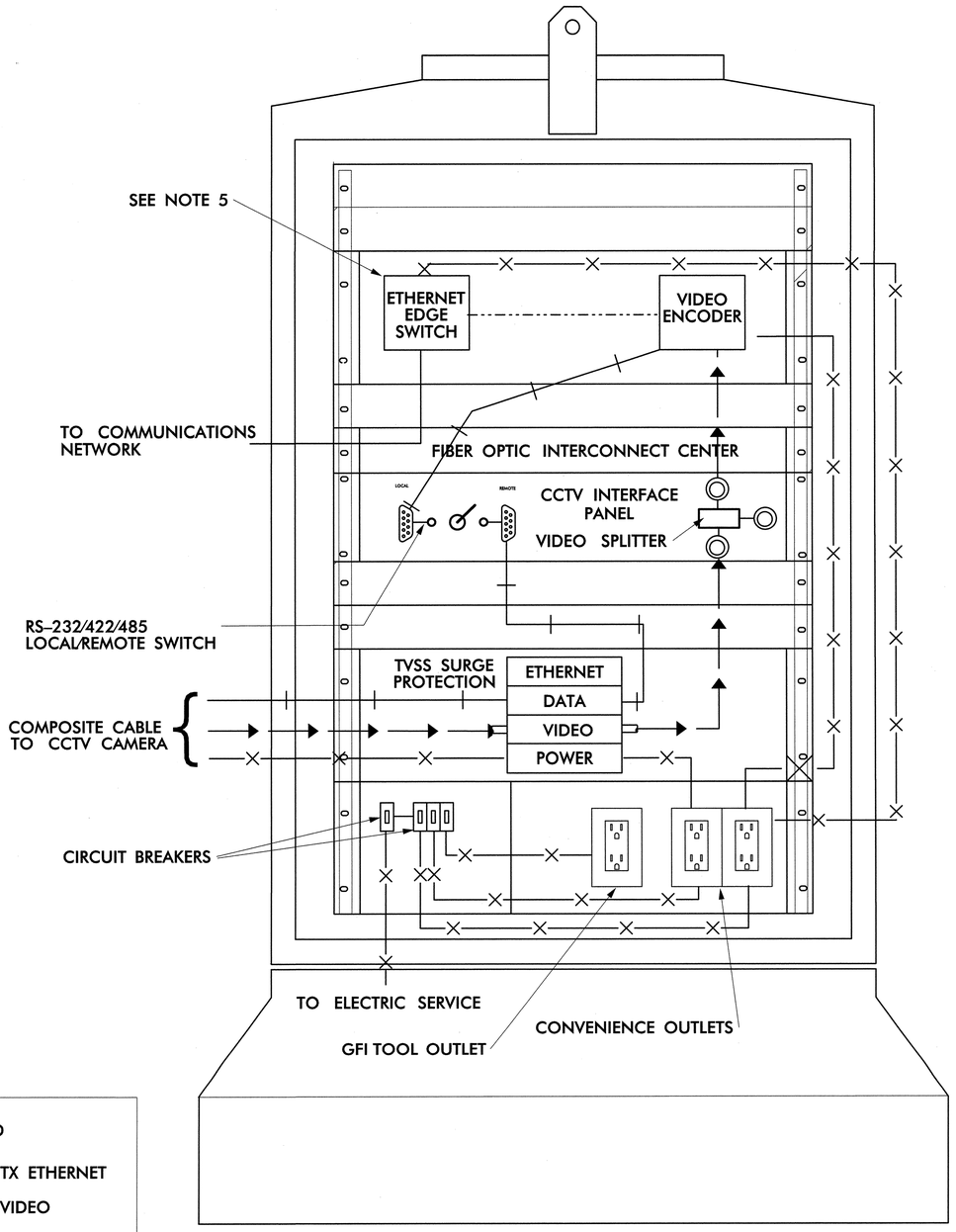
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	SD-03



FRONT VIEW



CABINET WIRING VIEW

CONNECTION LEGEND

- 100 BASE TX ETHERNET
- ANALOG VIDEO
- ELECTRICAL POWER
- RS-232/422/485

NOTES

1. ALL DIMENSIONS AND SCALE ARE APPROXIMATE.
2. CABINETS WILL BE CALTRANS TYPE 336
3. CONDUIT ENTRANCES SHALL BE IN BOTTOM OF CABINET.
4. THERE WILL BE FRONT AND REAR DOORS. BOTH DOORS SHALL HAVE THE HINGE-SIDE NEXT TO THE POLE WHEN POLE MOUNTED.
5. INSTALL ETHERNET EDGE SWITCH WHEN SHOWN IN PLANS.

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of: Transportation Mobility and Safety Division, State of North Carolina, Department of Transportation, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
CCTV Cabinet Assembly Layout
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	October 2012	REVIEWED BY:	HAB
PREPARED BY:	BJS	REVIEWED BY:	JTB

REVISIONS	INIT.	DATE

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NORTH CAROLINA PROFESSIONAL SEAL 19962 ENGINEER HENRY ALFRED BADGETT, III

H. Alfred Badgett 1/11/13
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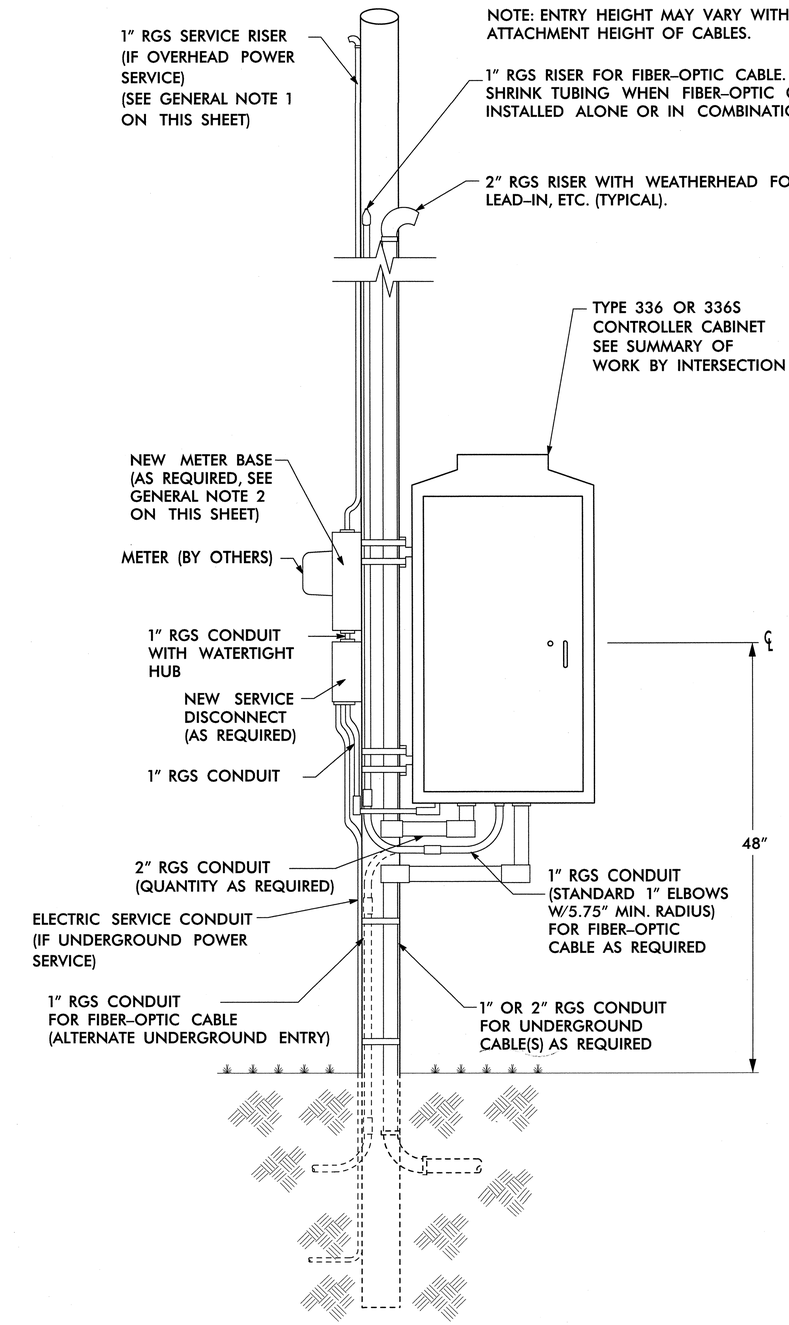
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	SD-04

POLE–MOUNTED SIGNAL CABINET DETAIL

WOOD POLE



GENERAL NOTES

1. 40" SHALL BE MAINTAINED BETWEEN POWER SERVICE RISER WEATHERHEAD AND COMMUNICATIONS.
2. INSTALL NEW COMBINATION METER BASE /DISCONNECT IN LIEU OF SEPARATE METER AND DISCONNECT WHEN CALLED FOR IN PLANS.
3. INSTALL DISCONNECT WHEN CALLED FOR IN PLANS.
4. MAINTAIN ELECTRIC SERVICE METER IN SAME LOCATION OVER EXISTING CABLE ENTRY HOLE. FURNISH AND INSTALL NEW SERVICE DISCONNECT WHEN CALLED FOR IN PLANS.

CENTRAL BUSINESS DISTRICT (CBD) NOTES:

1. UTILIZE EXISTING ELECTRIC SERVICE AND SIGNAL WIRING CONDUITS FROM CABINET INTO METAL POLE. DO NOT DRILL NEW HOLES INTO METAL POLE.
2. MAINTAIN EXTERNAL ELECTRICAL SERVICE OUTLETS ON POLE. RELOCATE ONLY TO INSTALL SERVICE DISCONNECT WHEN APPROVED BY THE ENGINEER.
3. USE TYPE 336A AND 336S CABINETS IN CBD WHEN CALLED FOR IN SUMMARY OF WORK BY INTERSECTION (VOLUME III).

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Signal Cabinet Detail, Pole-Mounted
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	HAB
PREPARED BY:	BJS	REVIEWED BY:	JTB

REVISIONS	INIT.	DATE

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NORTH CAROLINA PROFESSIONAL SEAL 19962 ENGINEER ALFRED BADGETT III

H. Alfred Badgett 1/11/13
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PROJECT REFERENCE NO.	SHEET NO.
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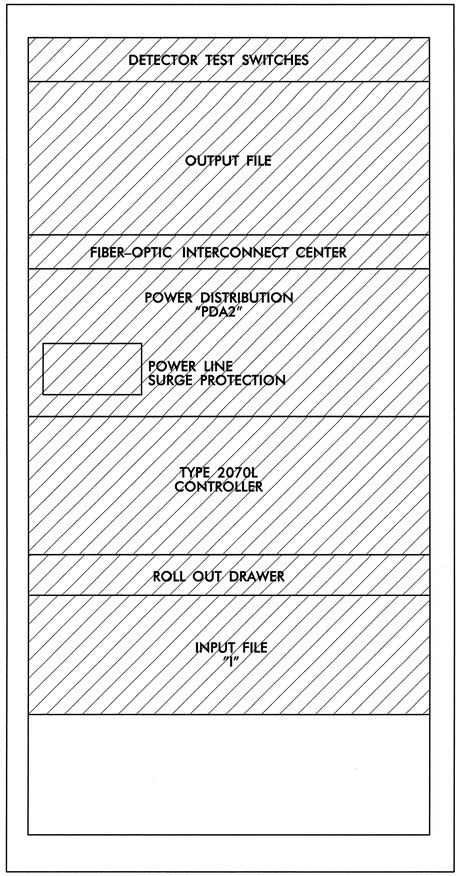
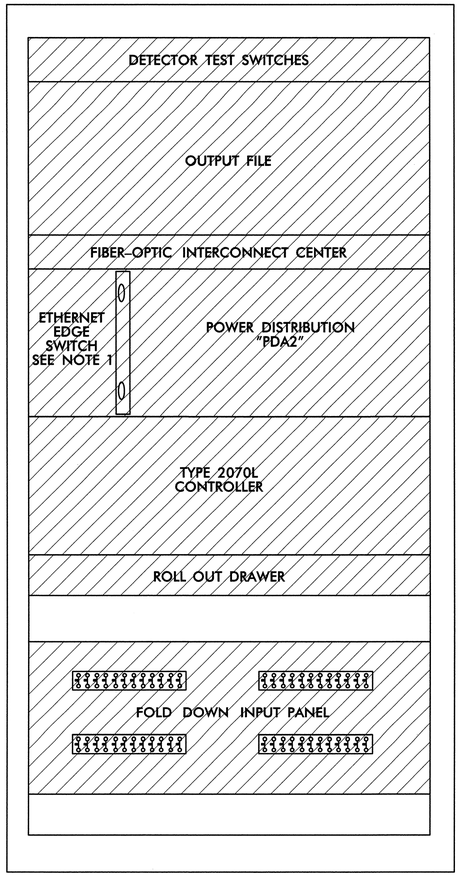
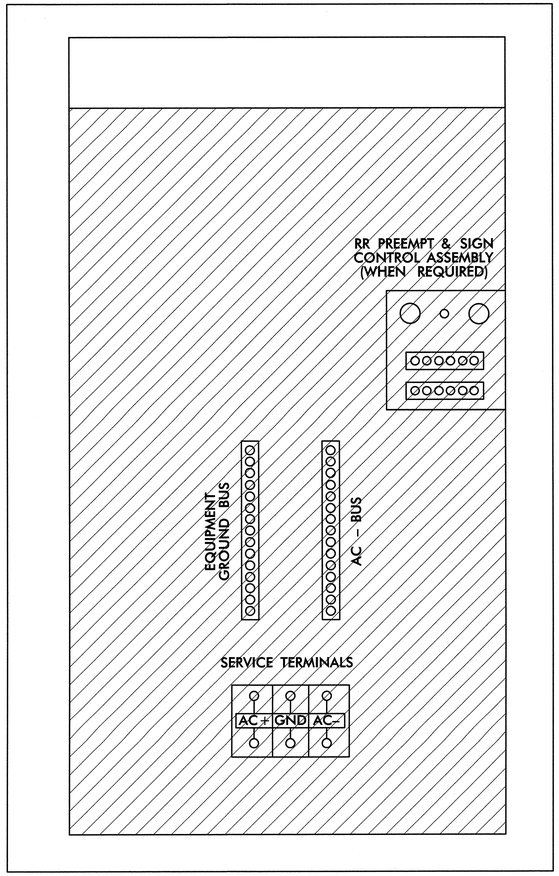


TRAFFIC SIGNAL CABINET
FRONT VIEW



TRAFFIC SIGNAL CABINET
REAR VIEW



TRAFFIC SIGNAL CABINET
RIGHT SIDE VIEW

NOTES:

1. SHELF OR RACK MOUNT ETHERNET EDGE SWITCH.
2. DEPENDING UPON EXACT EQUIPMENT AND CABINET SIZE, CONFIGURE THE TYPE 336 CABINETS TO ENSURE ANY EXTRA SPACE IS AT THE BOTTOM OF THE CABINET.

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Reconfigured Pole-Mounted
336A and 336S Cabinets
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	October 2012	REVIEWED BY:	HAB
PREPARED BY:	BJS	REVIEWED BY:	JTB

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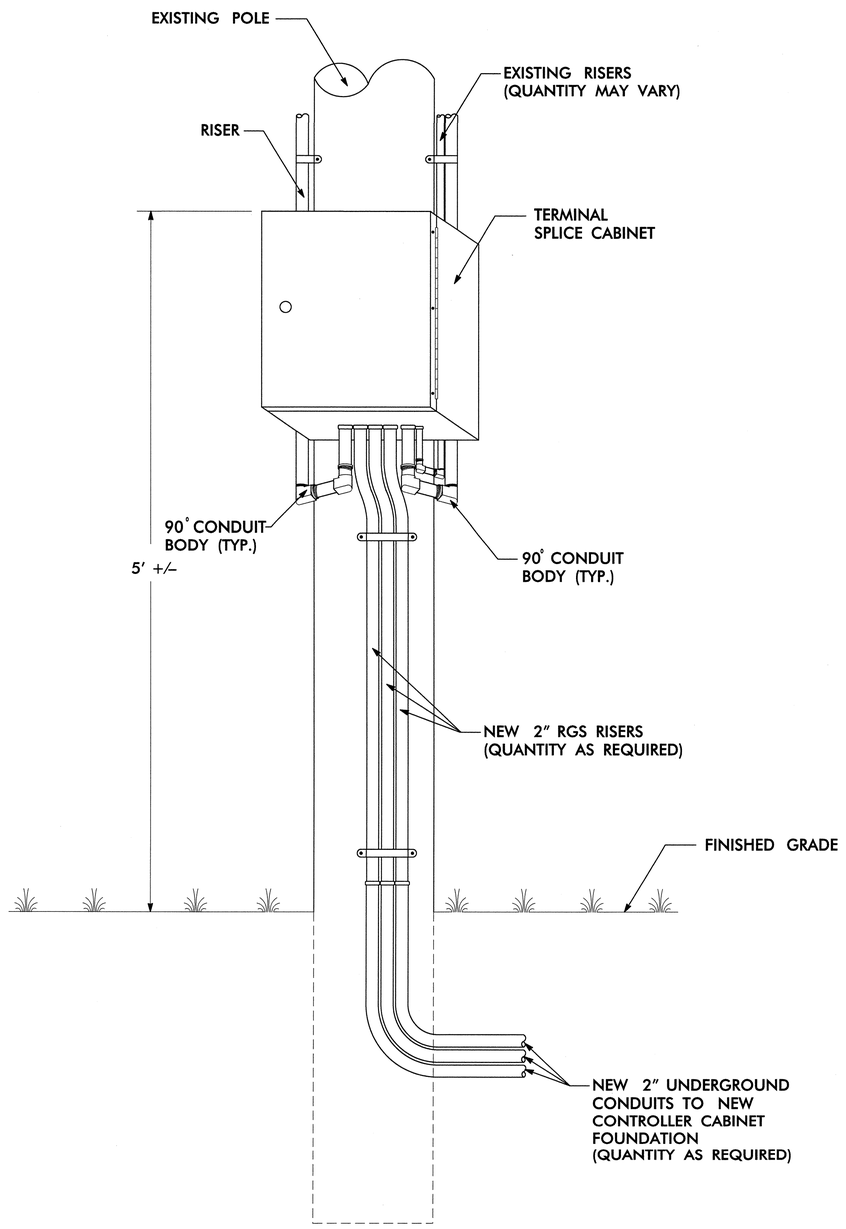
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	SD-06

TERMINAL SPLICE CABINET DETAIL



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Prepared for the Offices of:
Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Terminal Splice
Cabinet Detail
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	October 2012	REVIEWED BY:	HAB
PREPARED BY:	BJS	REVIEWED BY:	JTB

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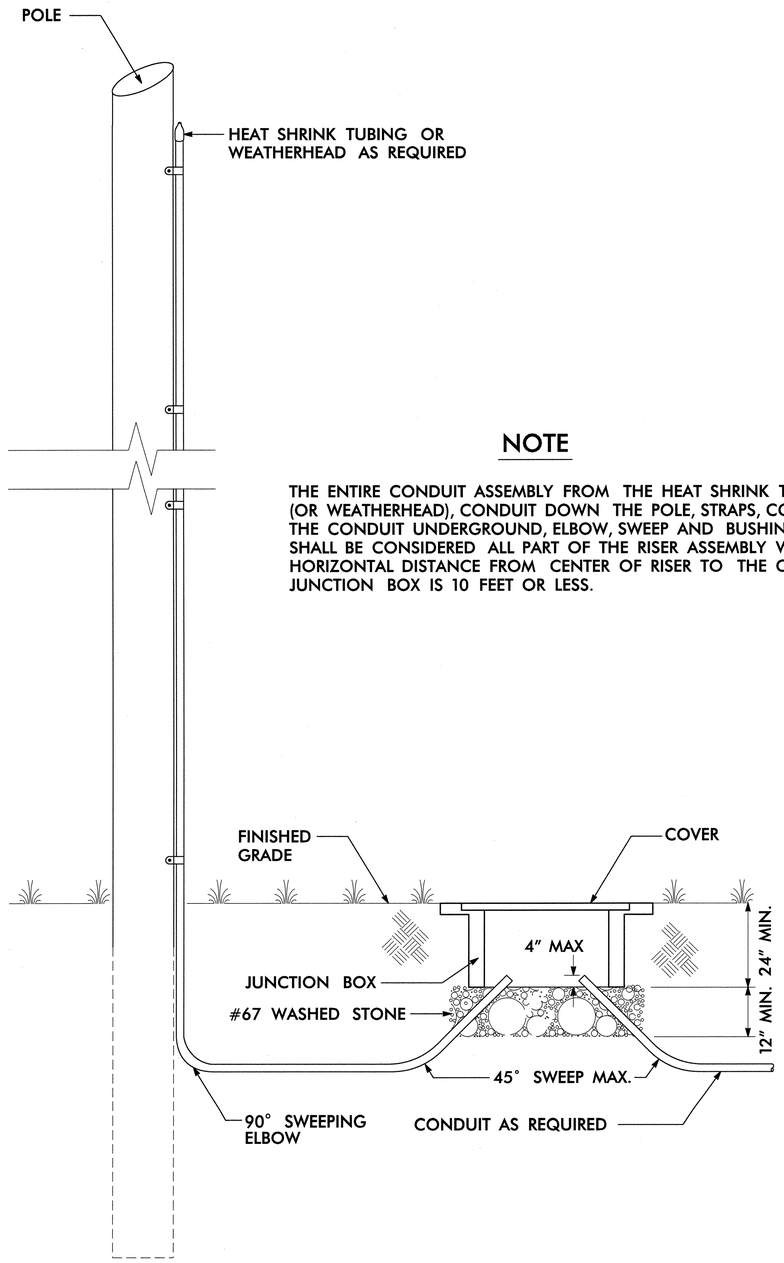
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	SD-07

TYPICAL RISER DETAILS

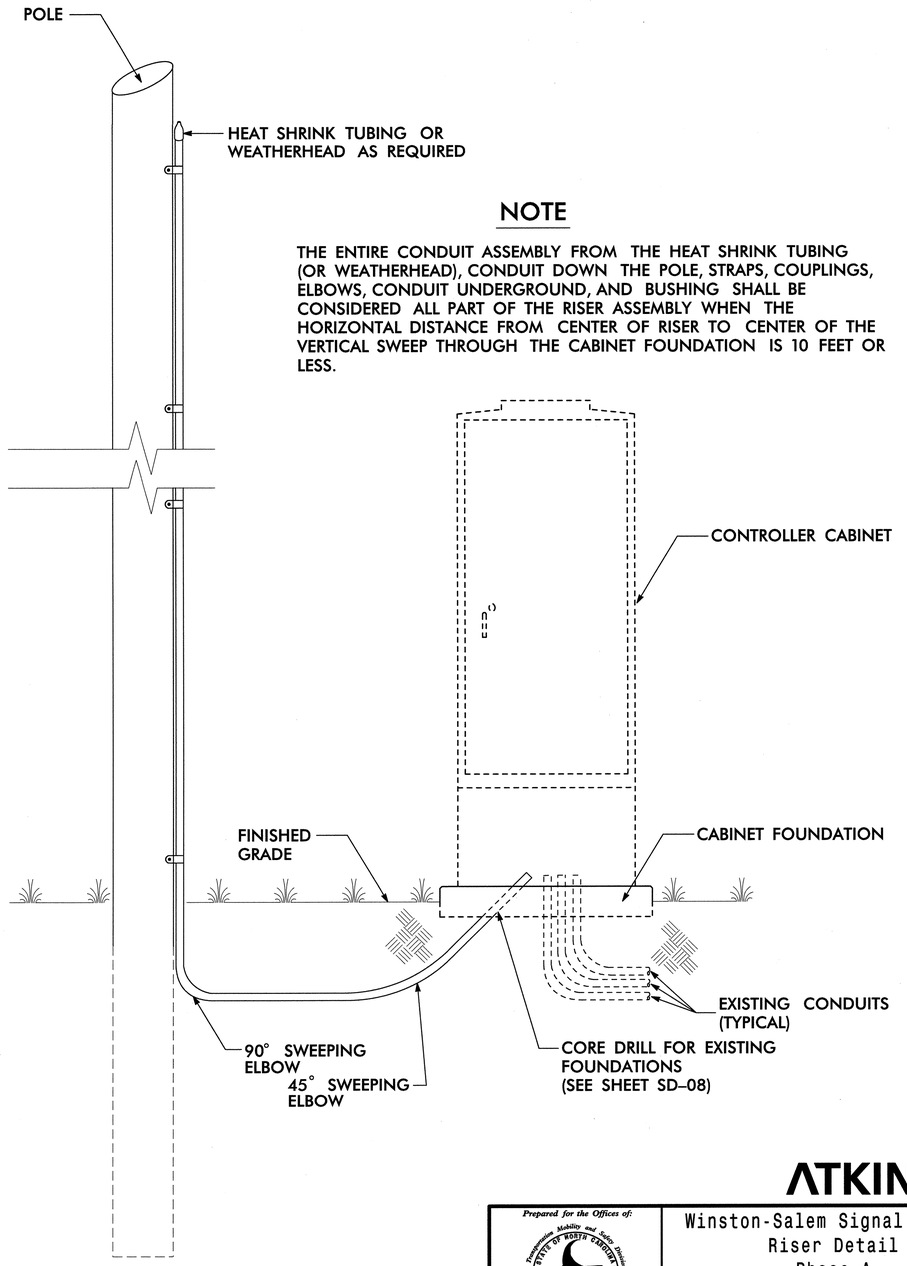
RISER TO JUNCTION BOX



NOTE

THE ENTIRE CONDUIT ASSEMBLY FROM THE HEAT SHRINK TUBING (OR WEATHERHEAD), CONDUIT DOWN THE POLE, STRAPS, COUPLINGS, THE CONDUIT UNDERGROUND, ELBOW, SWEEP AND BUSHING SHALL BE CONSIDERED ALL PART OF THE RISER ASSEMBLY WHEN THE HORIZONTAL DISTANCE FROM CENTER OF RISER TO THE CENTER OF JUNCTION BOX IS 10 FEET OR LESS.

RISER TO CABINET FOUNDATION



NOTE

THE ENTIRE CONDUIT ASSEMBLY FROM THE HEAT SHRINK TUBING (OR WEATHERHEAD), CONDUIT DOWN THE POLE, STRAPS, COUPLINGS, ELBOWS, CONDUIT UNDERGROUND, AND BUSHING SHALL BE CONSIDERED ALL PART OF THE RISER ASSEMBLY WHEN THE HORIZONTAL DISTANCE FROM CENTER OF RISER TO CENTER OF THE VERTICAL SWEEP THROUGH THE CABINET FOUNDATION IS 10 FEET OR LESS.

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
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Prepared for the Offices of:
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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Riser Detail
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	October 2012	REVIEWED BY:	HAB
PREPARED BY:	BJS	REVIEWED BY:	JTB

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NORTH CAROLINA PROFESSIONAL SEAL 19962 ENGINEER HENRY ALFRED BADGETT III

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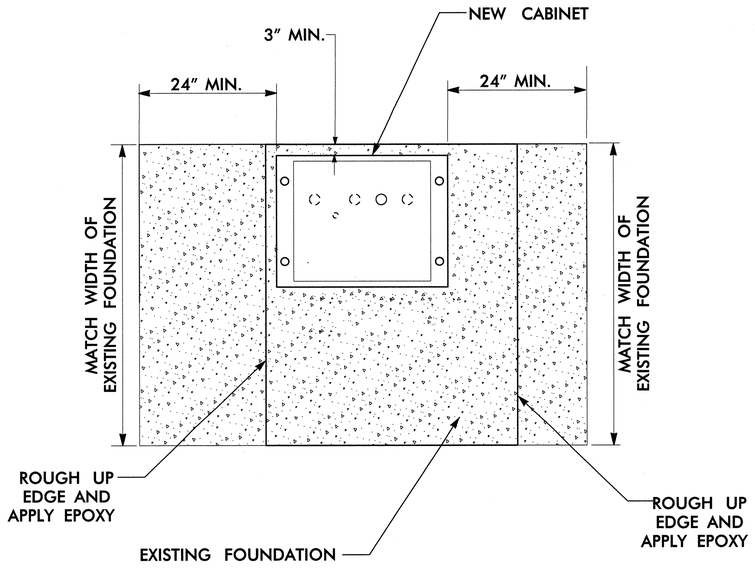
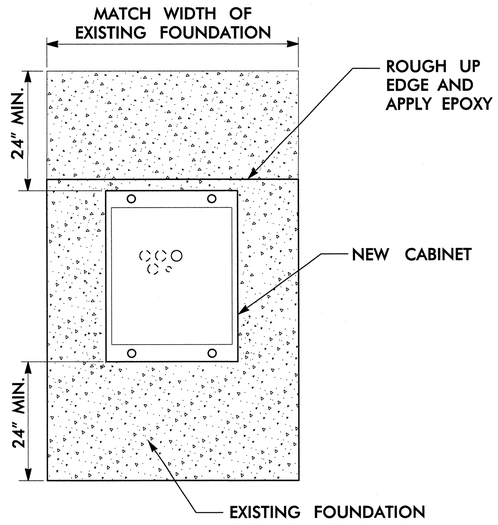
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	SD-08

TYPICAL FOUNDATION MODIFICATIONS





FOUNDATION EXTENSION	LENGTH OF DOWEL
>16"	18"
>6' AND ≤16"	11"
=6"	8"

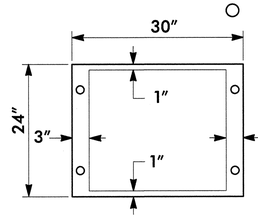
NOTES

FOR FOUNDATION MODIFICATIONS:

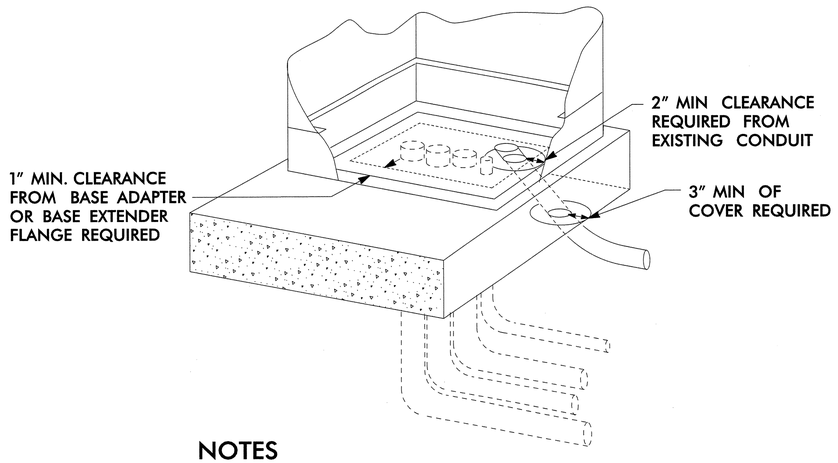
A. MAINTENANCE TECHNICIAN PADS SHALL BE ADDED TO THE FOUNDATION TO PROVIDE A MINIMUM PAD AREA THAT EXTENDS 24" FROM THE FRONT AND BACK OF THE CABINET, AND MATCHES THE WIDTH OF THE EXISTING FOUNDATION.
B. EXCAVATE THE GROUND AROUND THE EXISTING FOUNDATION TO A DEPTH SUFFICIENT TO EXPOSE A MINIMUM OF 4" OF THE FOUNDATION BELOW EXISTING GRADE.
C. ROUGH THE SIDES OF THE EXISTING FOUNDATION FROM THE TOP TO A POINT FOUR INCHES BELOW GRADE BY MEANS OF A CHISEL OR OTHER METHOD APPROVED BY THE ENGINEER.
D. WASH THE SIDES OF THE FOUNDATION WITH WATER PRESSURIZED AT 50 PSI AND THOROUGHLY DRY WITH COMPRESSED AIR.
E. DRILL HOLES APPROXIMATELY 6" DEEP ON 12-INCH CENTERS INTO THE EXISTING FOUNDATION. INSTALL #4 DOWELS AND EPOXY INTO PLACE. DOWELS SHALL BE THE LENGTH SHOWN IN THE TABLE ABOVE.
F. FORM THE SIDES OF THE MODIFIED FOUNDATION TO A MINIMUM DEPTH OF 4" BELOW GRADE.
G. POSITION FORMS SO THAT ALL EXISTING EXPOSED FOUNDATION SURFACES AT OR ABOVE GRADE LEVEL WILL BE MATCHED.
H. APPLY A COATING OF APPROVED EPOXY BONDING AGENT TO ALL EXPOSED ROUGHENED CONCRETE SURFACES AS RECOMMENDED BY THE MANUFACTURER.
I. PROVIDE A ONE INCH CHAMFER ON ALL NEW OUTSIDE EDGES.
J. USE CONCRETE TO INSTALL THE MAINTENANCE TECHNICIAN PAD.
K. WHERE CABINETS ARE RELOCATED OR ROTATED ON EXISTING FOUNDATION, CUT OFF ANY EXISTING CABINET MOUNTING BOLTS AND GRIND FLUSH WITH THE PAD SURFACE.

LEGEND

EXISTING CONDUIT/RISER
PROPOSED CONDUIT/RISER



CORE DRILLING REQUIREMENTS



NOTES

FOR CORE DRILLING:

A. A MINIMUM OF 3" OF COVER SHALL BE MAINTAINED BETWEEN NEW CONDUIT AND EDGE OF EXISTING FOUNDATION.
B. MINIMUM CLEARANCES OF 1" FROM THE FLANGE OF THE BASE ADAPTER AND 2" FROM EXISTING CONDUITS SHALL BE MAINTAINED.
C. AVOID DAMAGING EXISTING CONDUIT, CONDUCTORS, AND ANCHOR BOLTS. CONTRACTOR SHALL REPAIR SUCH DAMAGES.
D. WHERE APPROVED BY THE ENGINEER, EXISTING FOUNDATION MAY BE CHIPPED INSTEAD OF DRILLED FOR CONDUIT ENTRANCE.
E. BOND NEW METALLIC CONDUIT TO THE CABINET GROUNDING SYSTEM.
F. AFTER INSTALLATION OF CONDUIT, PLACE GROUT TO SEAL AROUND CONDUIT, AND RETURN EXISTING FOUNDATION TO NORMAL APPEARANCE.

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Foundation Modification
Detail
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	October 2012	REVIEWED BY:	HAB
PREPARED BY:	BJS	REVIEWED BY:	JTB

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 19962 ENGINEER HENRY ALFRED BADGETT III

H Alfred Badgett 1/11/13
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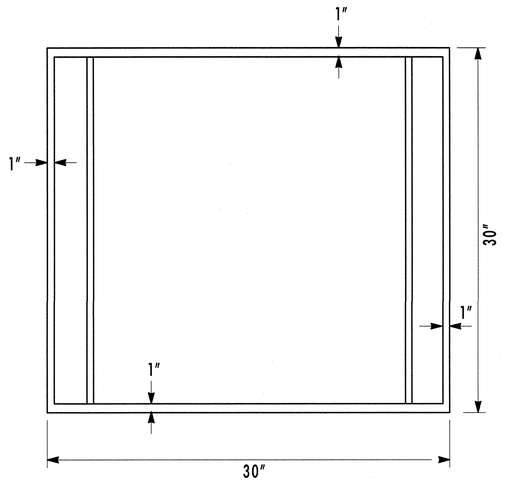
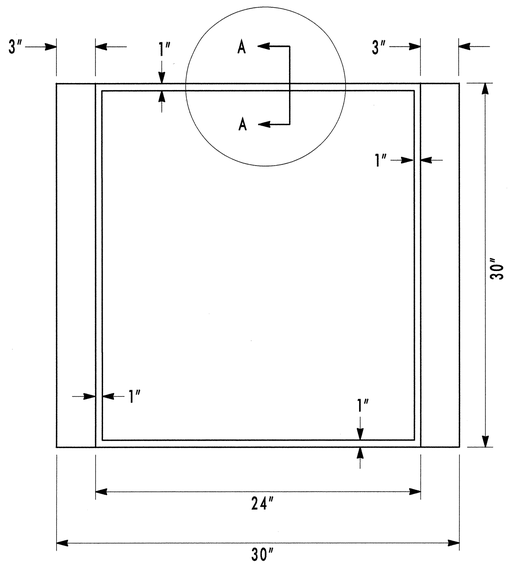
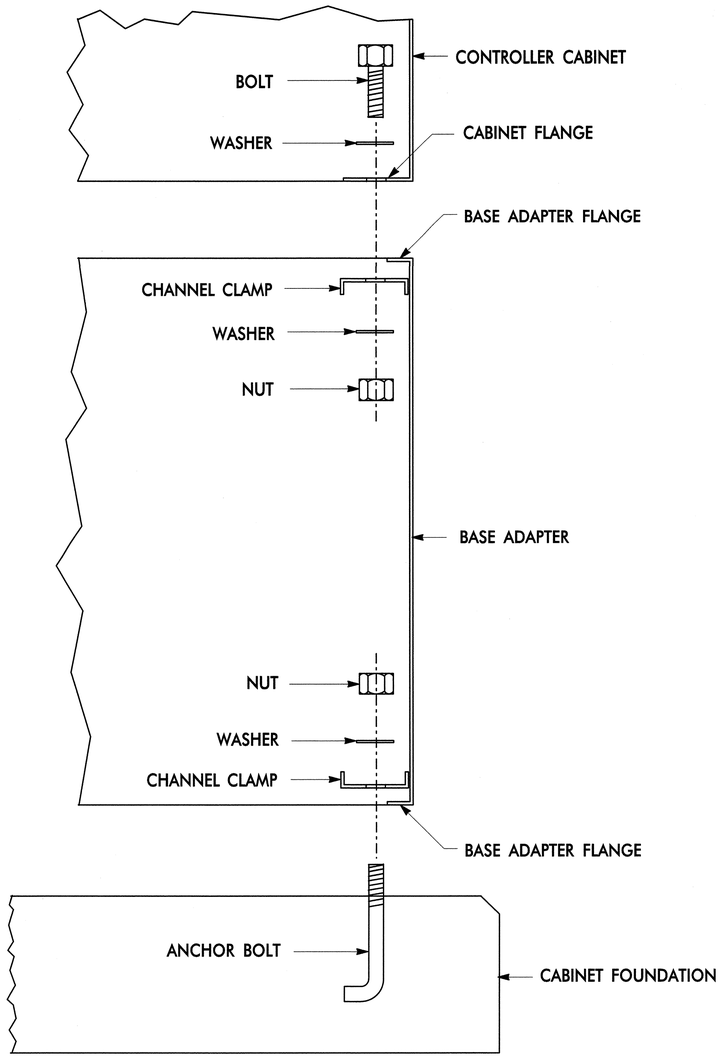
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	SD-09



BOTTOM VIEW



TOP VIEW



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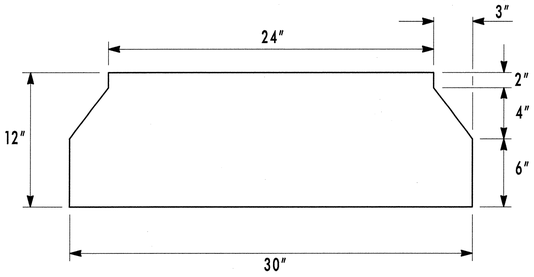
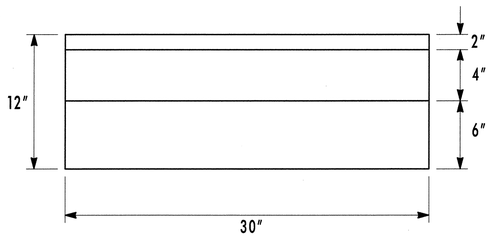
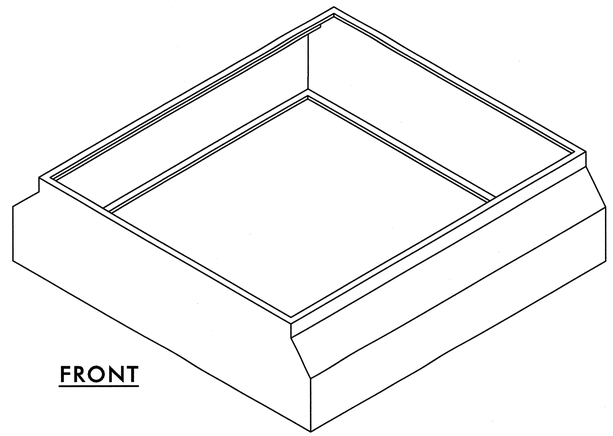


FRONT VIEW



RIGHT SIDE VIEW

BASE ADAPTER



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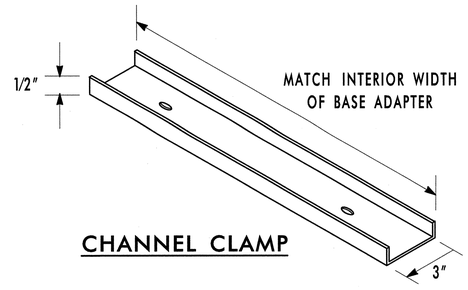

CHANNEL CLAMP

NOTES FOR BASE ADAPTER

1. FURNISH BASE ADAPTERS WITH FLANGES BOTH TOP AND BOTTOM SIZED AS SHOWN.
2. DRILL HOLES IN CHANNEL CLAMP TO MATCH ANCHOR BOLTS AND CABINET FLANGE BOLT HOLES.
3. APPLY CONTINUOUS, CLEAR, FLEXIBLE, WATERPROOF SEALANT TO TOP AND BOTTOM FLANGES TO SEAL TOP CONNECTION WITH THE CABINET AND BOTTOM CONNECTION WITH THE CABINET FOUNDATION.

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
Transportation Mobility and Safety Division
North Carolina Department of Transportation
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Base Adapter Detail
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	October 2012	REVIEWED BY:	HAB
PREPARED BY:	BJS	REVIEWED BY:	JTB

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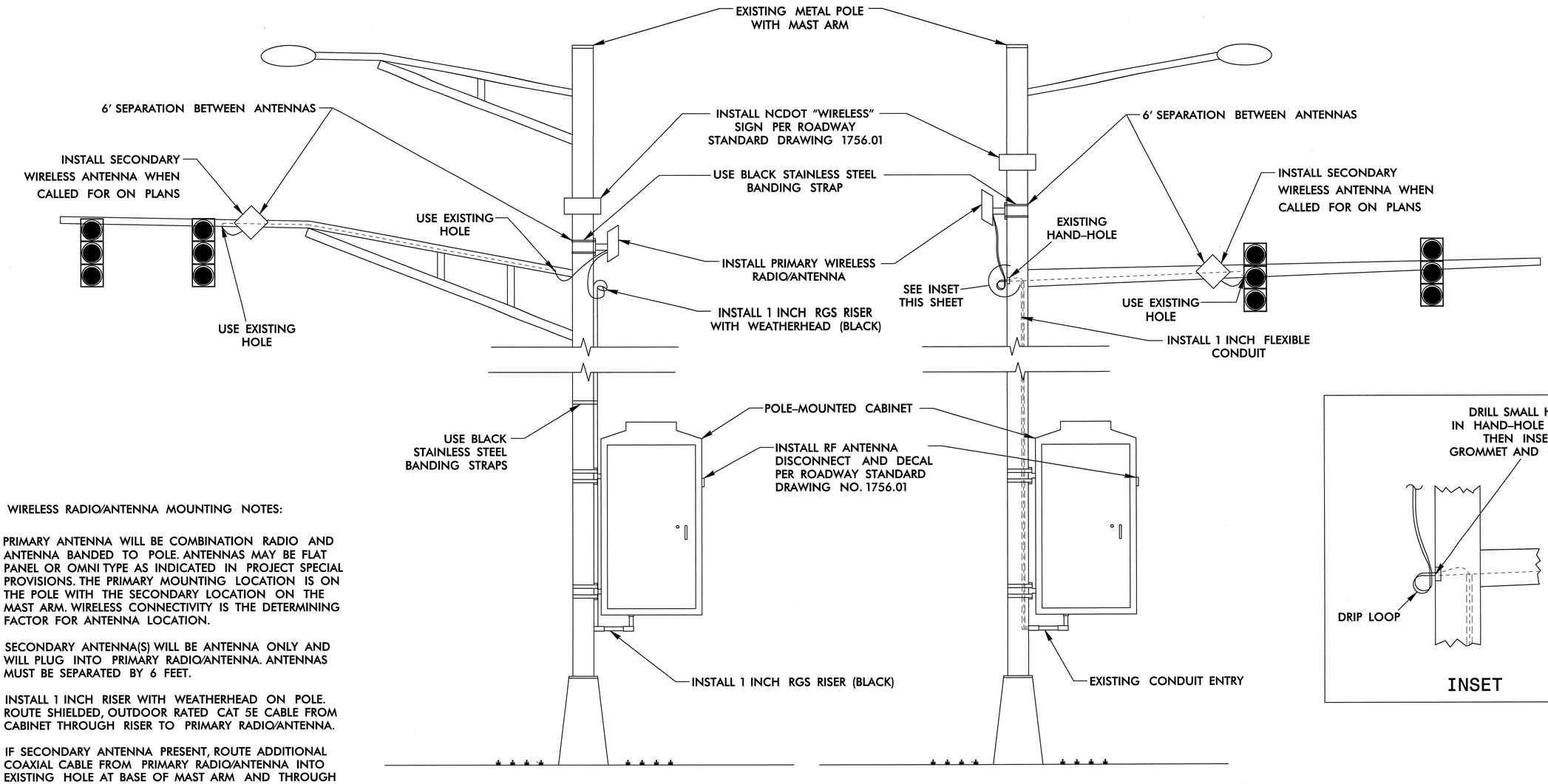
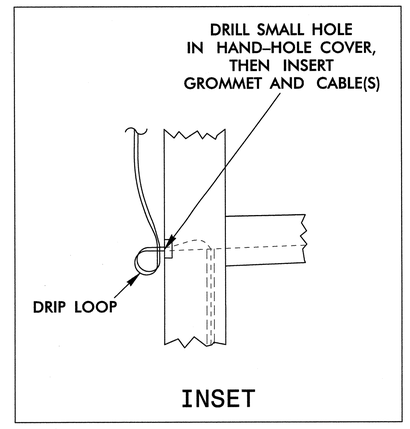
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	SD-10



TRUSS MAST ARM
POLE MOUNTING

MONOTUBE MAST ARM
POLE MOUNTING



INSET

WIRELESS RADIO/ANTENNA MOUNTING NOTES:

1. PRIMARY ANTENNA WILL BE COMBINATION RADIO AND ANTENNA BANDED TO POLE. ANTENNAS MAY BE FLAT PANEL OR OMNI TYPE AS INDICATED IN PROJECT SPECIAL PROVISIONS. THE PRIMARY MOUNTING LOCATION IS ON THE POLE WITH THE SECONDARY LOCATION ON THE MAST ARM. WIRELESS CONNECTIVITY IS THE DETERMINING FACTOR FOR ANTENNA LOCATION.
2. SECONDARY ANTENNA(S) WILL BE ANTENNA ONLY AND WILL PLUG INTO PRIMARY RADIO/ANTENNA. ANTENNAS MUST BE SEPARATED BY 6 FEET.
3. INSTALL 1 INCH RISER WITH WEATHERHEAD ON POLE. ROUTE SHIELDED, OUTDOOR RATED CAT 5E CABLE FROM CABINET THROUGH RISER TO PRIMARY RADIO/ANTENNA.
4. IF SECONDARY ANTENNA PRESENT, ROUTE ADDITIONAL COAXIAL CABLE FROM PRIMARY RADIO/ANTENNA INTO EXISTING HOLE AT BASE OF MAST ARM AND THROUGH EXISTING HOLE IN MAST ARM TO SECONDARY ANTENNA.
5. CAT 5E CABLE PROVIDES COMMUNICATION TO/FROM ETHERNET SWITCH AND RADIO/ANTENNA THROUGH THE POWER OVER ETHERNET (POE) SUPPLY.
6. ENSURE ANTENNA OR "WIRELESS" SIGN DO NOT INTERFERE WITH BANNER BRACKETS ON POLE.
7. IF MONOTUBE MAST ARM, ROUTE SHIELDED, OUTDOOR RATED CAT 5E CABLE FROM CABINET THROUGH FLEXIBLE CONDUIT AND OUT DRILLED HOLE IN HAND-HOLE COVER NEAR MAST ARM TO PRIMARY RADIO/ANTENNA. IF SECONDARY ANTENNA PRESENT, ROUTE ADDITIONAL COAXIAL CABLE FROM PRIMARY RADIO/ANTENNA BACK INTO POLE AND INTO MASTARM AND THROUGH EXISTING HOLE IN MAST ARM TO SECONDARY ANTENNA.

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
International Mobility and Safety Division
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
CBD Antenna Mounting Detail
(1 of 2)
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	HAB
PREPARED BY:	BJS	REVIEWED BY:	JTB

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029531 ENGINEER STEVEN G. HAYNIE
SIGNATURE 1/11/13 DATE

CADD Filename: SD-10.dgn

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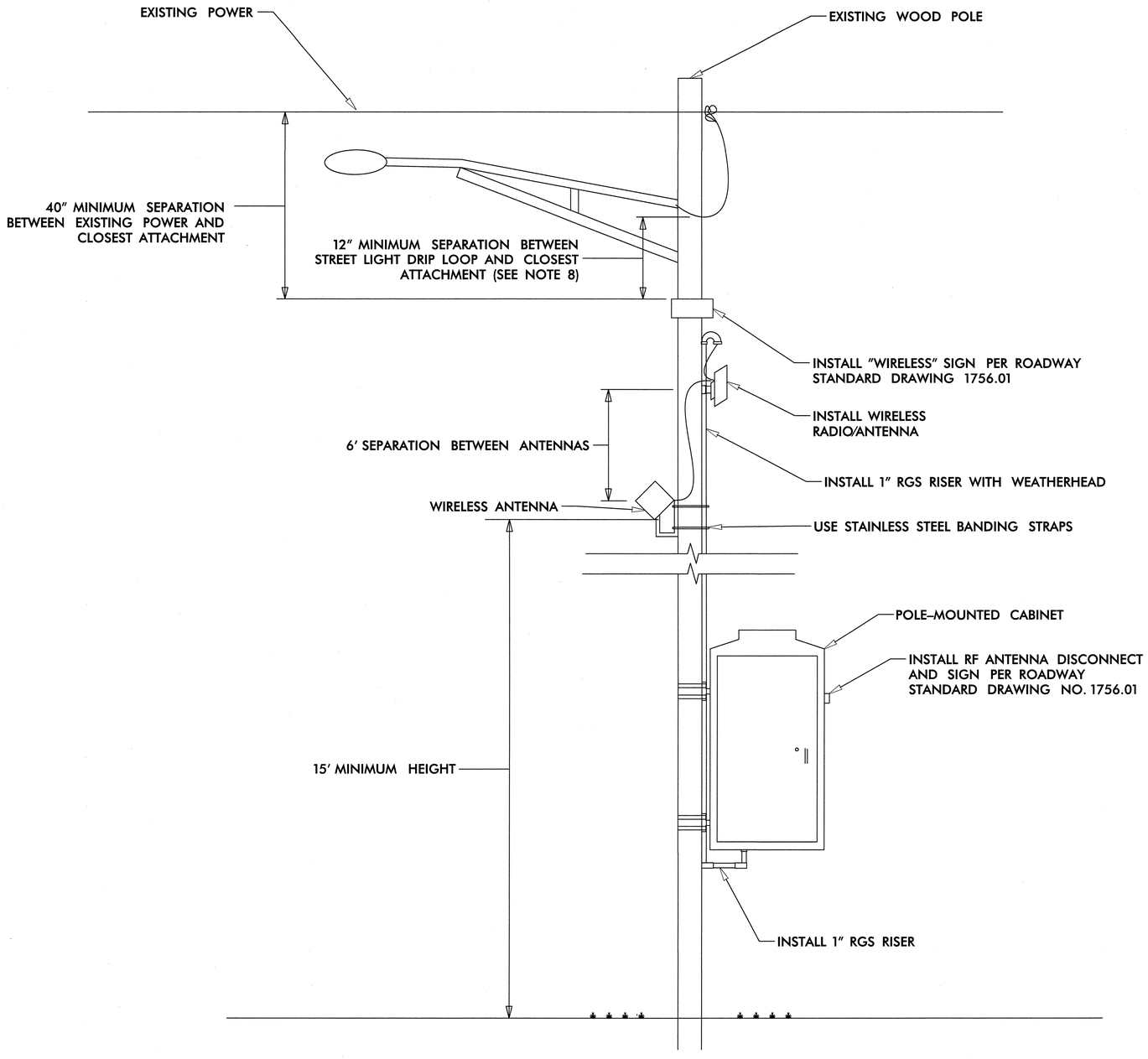
12054

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	SD-11



WIRELESS RADIO/ANTENNA MOUNTING NOTES:

1. PRIMARY ANTENNA WILL BE COMBINATION RADIO AND ANTENNA. ANTENNAS MAY BE FLAT PANEL OR OMNI TYPE AS INDICATED IN PROJECT SPECIAL PROVISIONS.
2. SECONDARY ANTENNA(S) WILL BE ANTENNA ONLY AND WILL PLUG INTO PRIMARY RADIO/ANTENNA.
3. MOUNT PRIMARY ANTENNA TO RISER THAT IS STRAPPED TO POLE. MOUNT SECONDARY ANTENNA(S) TO BRACKET THAT IS STRAPPED TO POLE.
4. ROUTE SHIELDED OUTDOOR RATED CAT 5E CABLE FROM CABINET THROUGH 1" RISER AND OUT WEATHER HEAD TO PRIMARY RADIO/ANTENNA.
5. IF SECONDARY ANTENNA PRESENT, ROUTE ADDITIONAL COAXIAL CABLE FROM PRIMARY RADIO/ANTENNA TO SECONDARY ANTENNA.
6. CAT 5E CABLE PROVIDES COMMUNICATION TO/FROM ETHERNET SWITCH AND RADIO/ANTENNA THROUGH THE POWER OVER ETHERNET (POE) SUPPLY.
7. COMPLY WITH NESC CLEARANCE REQUIREMENTS. MAINTAIN 12" CLEARANCE BETWEEN NON-POWER ATTACHMENTS (COMMUNICATIONS CABLES, CATV, ETC.) AND THE TOP OF NEW RISER, SIGN, AND ANTENNAS.
8. IF STREET LIGHT BRACKET IS NOT EFFECTIVELY GROUNDED, THE MINIMUM CLEARANCE REQUIREMENT IS INCREASED TO 40" BELOW DRIP LOOP.

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
Transportation Mobility and Safety Division
NC DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
CBD Antenna Mounting Detail
Phase A
(2 of 2)

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	HAB
PREPARED BY:	BJS	REVIEWED BY:	JTB

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029531 ENGINEER STEVEN G. HAYNE
SIGNATURE 1/11/13 DATE
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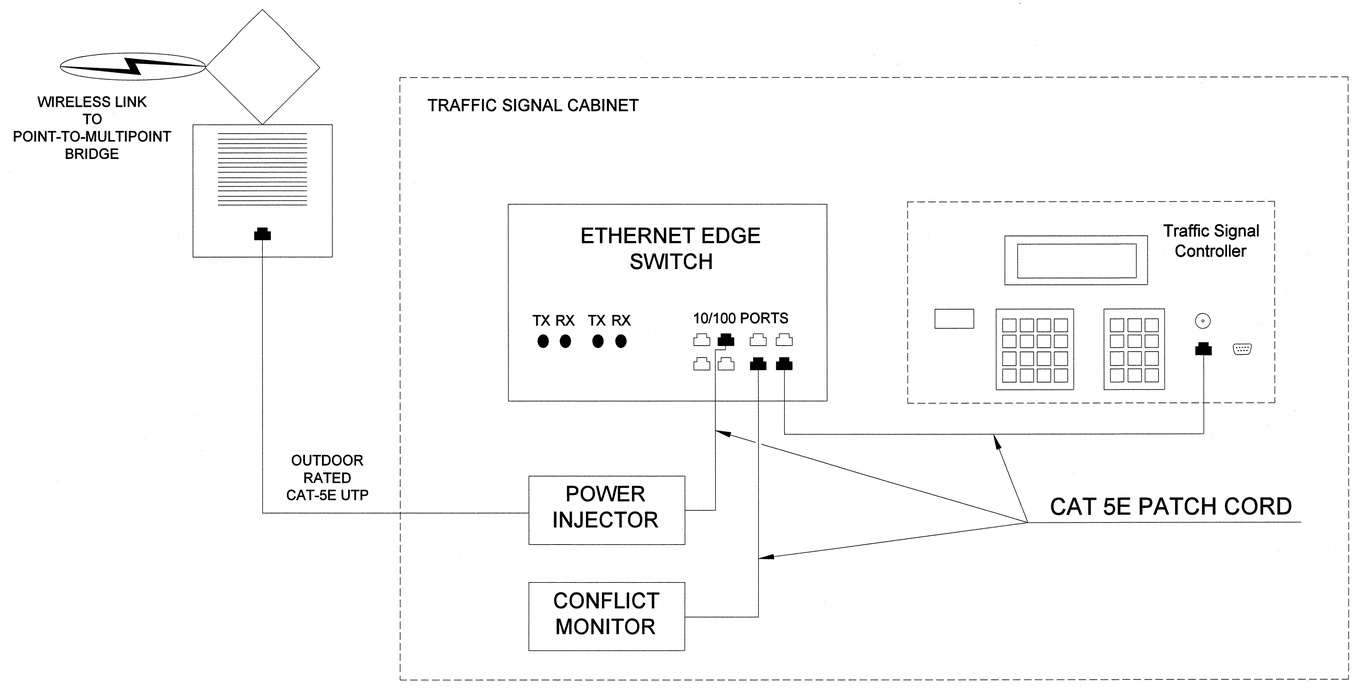
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	SD-12

TYPICAL WIRELESS CABINET DETAIL TYPE 1



NOTES:
1. THIS DRAWING REPRESENTS ONLY A TYPICAL SITE OVERVIEW OF THE SUB-SYSTEM LEVEL COMPONENTS. THIS DRAWING IS NOT INTENDED TO SHOW ALL DEVICES OR COMBINATION OF DEVICES IN THE SYSTEM. BASED ON SITE CONFIGURATIONS, EACH SITE MAY CONTAIN ONE OR MORE DEVICES OR COMPONENTS NOT SHOWN ON THIS DETAIL.
2. THE CONTRACTOR SHALL CONFIGURE EACH WIRELESS BRIDGE AS A POINT-TO-POINT, POINT-TO-MULTIPOINT, OR REPEATER SITE AS SHOWN ON THE PLANS.
3. THE CONTRACTOR SHALL INSTALL THE APPROPRIATE ANTENNA TYPE BASED ON THE SITE CONFIGURATION AS LISTED IN THE PROJECT SPECIAL PROVISIONS.
4. THE CONTACTOR SHALL ENSURE THAT ALL EQUIPMENT IS PROPERLY GROUNDED AS PER THE EQUIPMENT MANUFACTURER SPECIFICATIONS.

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of: Transportation Mobility and Safety Division, State of North Carolina Department of Transportation, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
CBD Wireless Cabinet Detail
Phase A
(1 of 2)

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	HAB
PREPARED BY:	BJS	REVIEWED BY:	JTB

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029531 ENGINEER STEVEN G. HAYME

SIGNATURE 1/11/13 DATE

CADD Filename: SD-12.dgn

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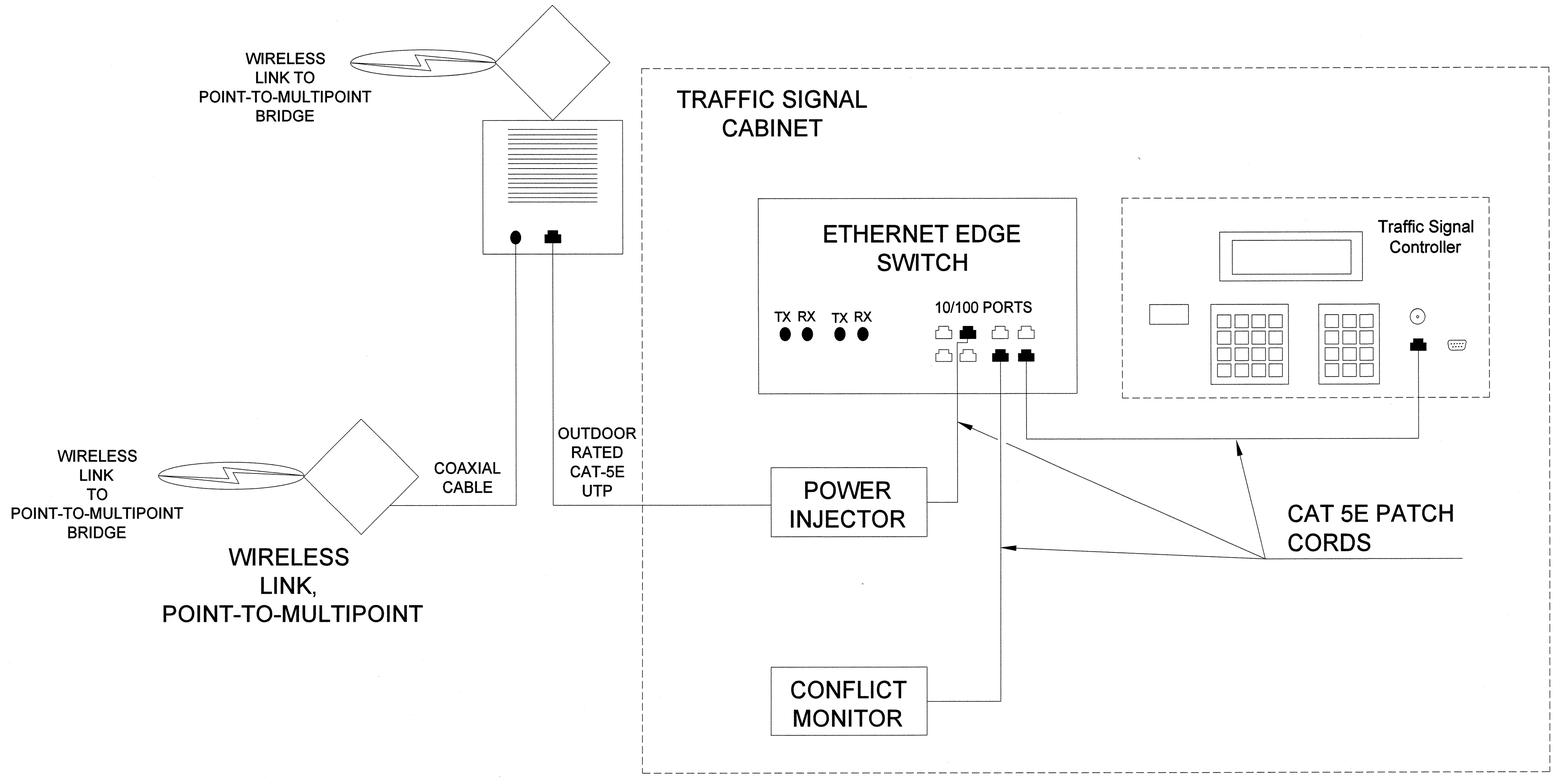
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	SD-13

WIRELESS
LINK,
POINT-TO-MULTIPOINT

TYPICAL WIRELESS
CABINET DETAIL TYPE 2



WIRELESS
LINK,
POINT-TO-MULTIPOINT

NOTES:
1. THIS DRAWING REPRESENTS ONLY A TYPICAL SITE OVERVIEW OF THE SUB-SYSTEM LEVEL COMPONENTS. THIS DRAWING IS NOT INTENDED TO SHOW ALL DEVICES OR COMBINATION OF DEVICES IN THE SYSTEM. BASED ON SITE CONFIGURATIONS, EACH SITE MAY CONTAIN ONE OR MORE DEVICES OR COMPONENTS NOT SHOWN ON THIS DETAIL.
2. THE CONTRACTOR SHALL CONFIGURE EACH WIRELESS BRIDGE AS A P2P, P2MP OR REPEATER SITE AS SHOWN ON THE PLANS.
3. CONTRACTOR SHALL INSTALL THE APPROPRIATE ANTENNA TYPE BASED ON THE SITE CONFIGURATION AS LISTED IN THE PROJECT SPECIAL PROVISIONS.
4. THE CONTACTOR SHALL ENSURE THAT ALL EQUIPMENT IS PROPERLY GROUNDED AS PER THE EQUIPMENT MANUFACTURER SPECIFICATIONS.

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
CBD Wireless Cabinet Detail
Phase A
(2 of 2)

Division 09 Forsyth County Winston-Salem

PLAN DATE:	October 2012	REVIEWED BY:	HAB
PREPARED BY:	BJS	REVIEWED BY:	JTB

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 029531 ENGINEER STEVEN G. HAYNIE
SIGNATURE 1/11/13 DATE

CADD Filename: SD-13.dgn

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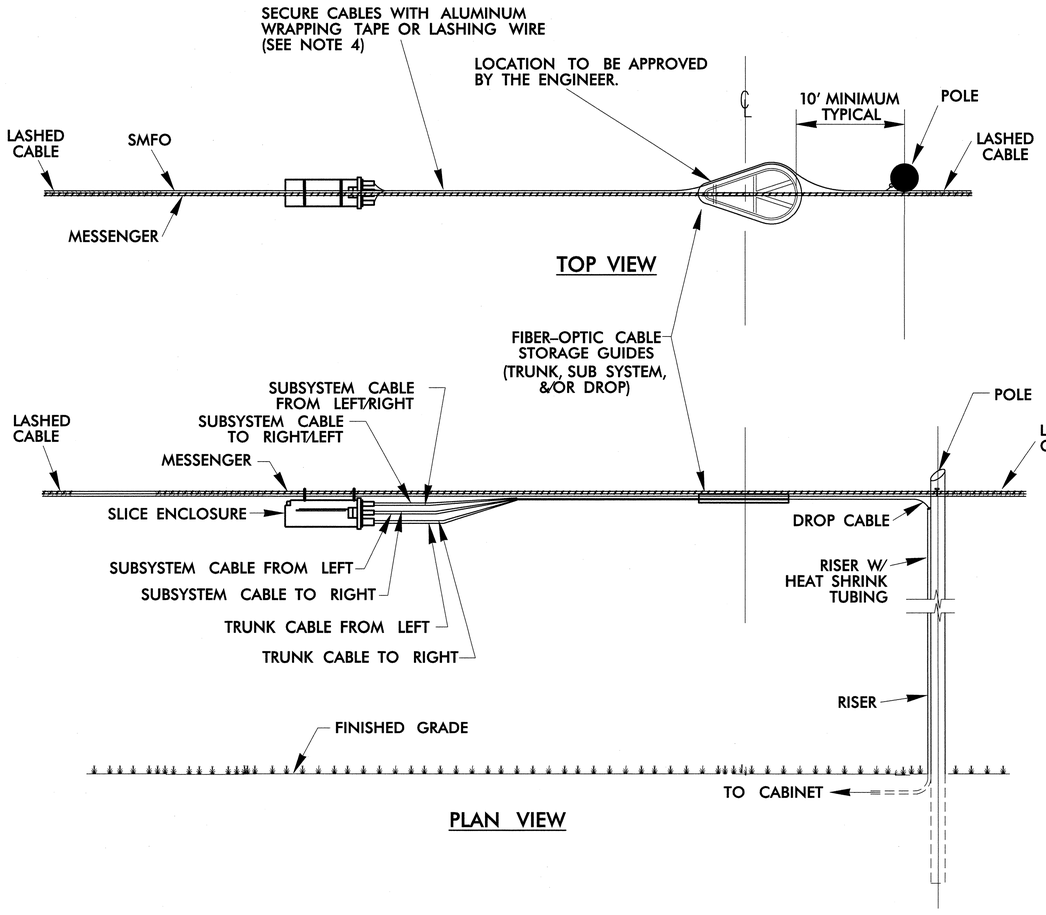
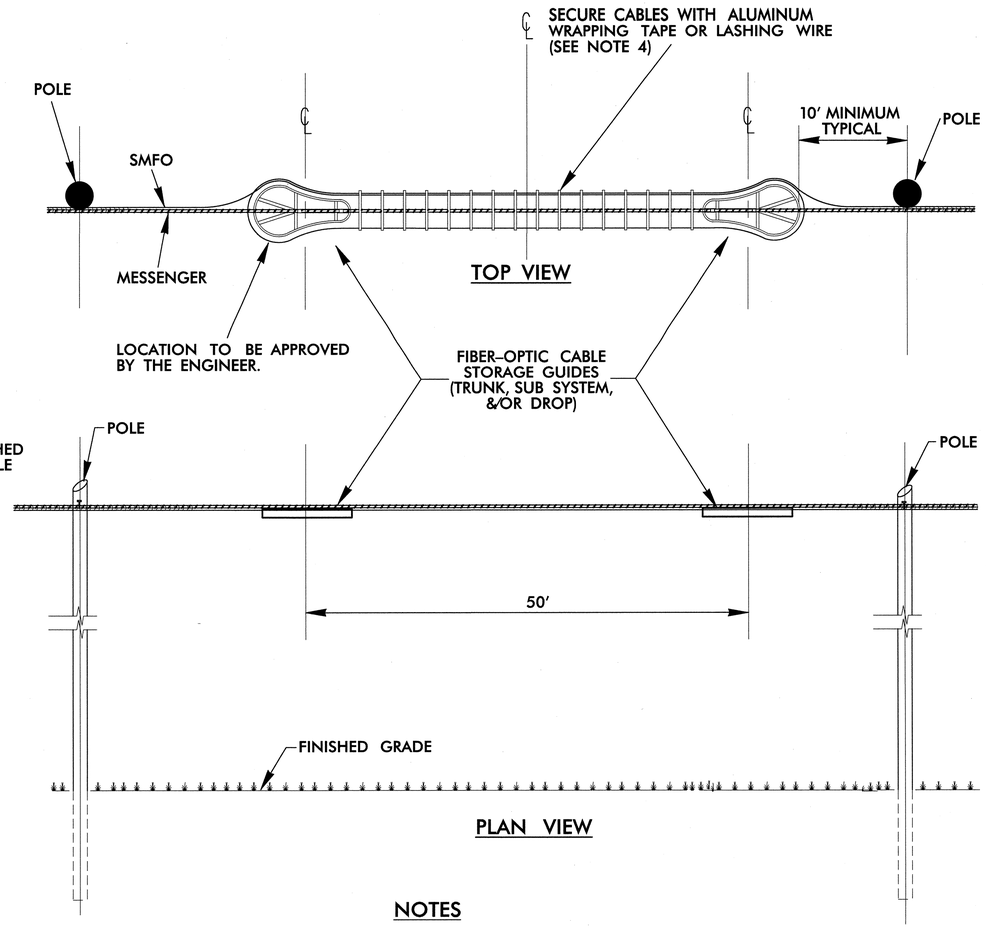
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	SD-14

SPLICE ENCLOSURE WITH STORAGE TYP. DETAIL



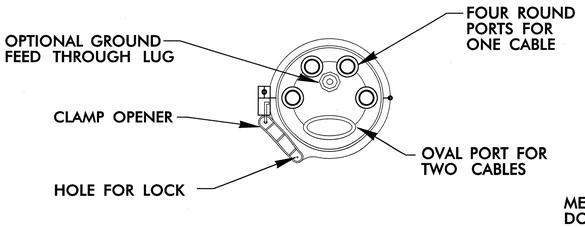
SPARE CABLE STORAGE TYP. DETAIL



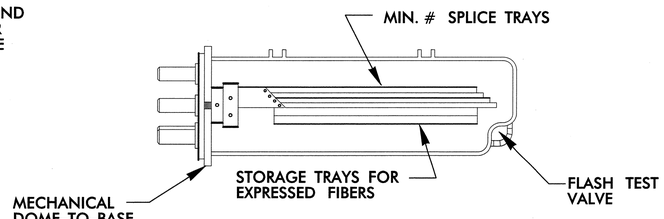
NOTES

1. SPARE FIBER–OPTIC CABLE SHALL NOT BE STORED OVER ROADWAYS OR DRIVEWAYS.
2. STORE 100' OF SPARE FIBER–OPTIC CABLE WHERE SHOWN ON PLANS.
3. FIBER–OPTIC CABLE STORAGE GUIDE MATERIAL AND SIZE SHALL BE AS INDICATED IN THE PROJECT SPECIAL PROVISIONS.
4. 0.05" THICK BY 0.3" WIDE ALUMINUM WRAPPING TAPE (FOUR TURNS MINIMUM) AT 6" ON CENTER OR .061" LASHING WIRE WITH ONE 360 DEGREE SPIRAL PER FOOT.
5. FOR SPLICE ENCLOSURES:
   A) APPLY A HEAT SOURCE, AS RECOMMENDED BY THE MANUFACTURER, TO SHRINK THE HEAT SHRINKABLE TUBING TO PROVIDE A SECURE FIT AROUND THE CABLES AND PORTS.
   B) PERFORM A PRESSURIZATION FLASH TEST UPON CONCLUSION OF THE SPLICING AND PRIOR TO THE FINAL PLACEMENT OF THE ENCLOSURE.

SPLICE ENCLOSURE DETAILS



FRONT VIEW



SIDE VIEW

ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of: Transportation Mobility and Safety Division, North Carolina Department of Transportation, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Aerial Fiber-Optic Cable
Storage & Splice Enclosures
Phase A

Division 09 | Forsyth County | Winston-Salem
PLAN DATE: January 2013 | REVIEWED BY: HAB
PREPARED BY: BJS | REVIEWED BY: JTB

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 19962 ENGINEER HENRY ALFRED BADGETT, III
SIGNATURE DATE 1/11/13
CADD Filename: SD-14.dgn

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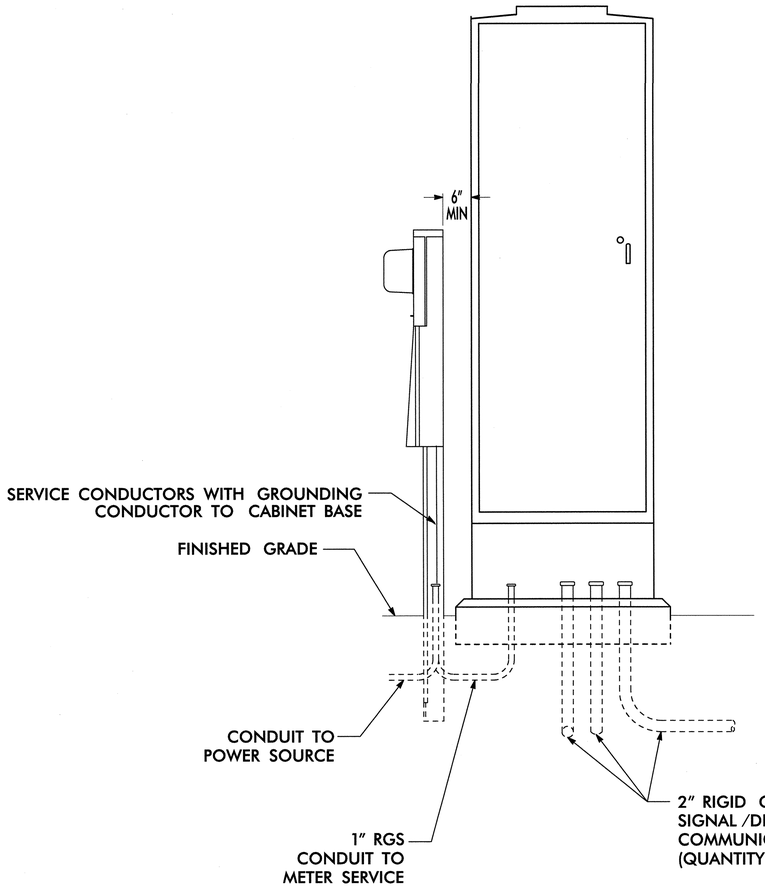
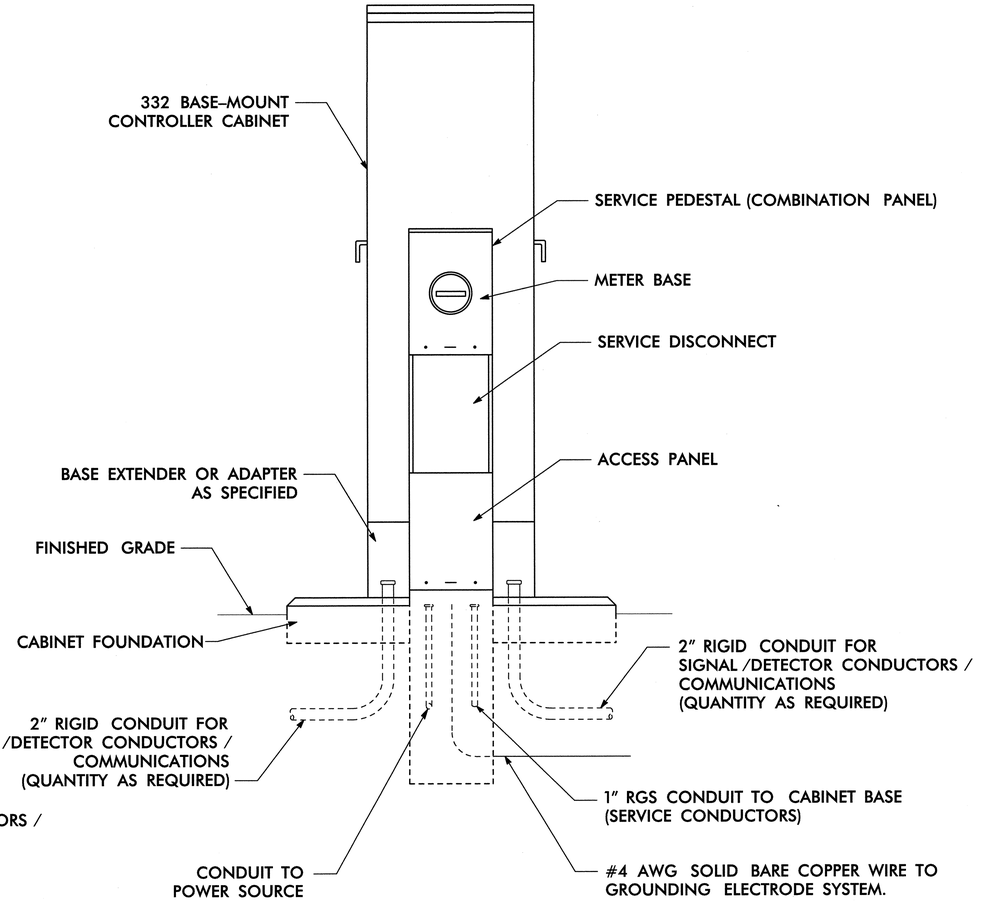
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	SD-15

GROUND MOUNTED ELECTRICAL SERVICE DETAIL





NOTES

1. TEST GROUNDING SYSTEM USING AN APPROVED METHOD IN ACCORDANCE WITH SPECIAL PROVISIONS. INSTALL GROUND RODS AS DIRECTED BY THE ENGINEER TO MEET THIS REQUIREMENT.
2. REMOVE ANY EXISTING GROUND RODS IN CONCRETE CABINET FOUNDATION BY CUTTING OFF FLUSH WITH FOUNDATION SURFACE.
3. REMOVE BONDING JUMPER IN EQUIPMENT CABINET IF INSTALLED BETWEEN AC NEUTRAL AND EQUIPMENT GROUND.
4. BOND ALL RIGID GALVANIZED STEEL CONDUITS ENTERING THE CABINET TO "EQUIPMENT GROUND".
5. INSTALL RIGID GALVANIZED STEEL CONDUIT (MINIMUM 1") BETWEEN DISCONNECT AND CABINET.
6. SERVICE DISCONNECT GROUND BUS BAR SHALL PROVIDE FOR 2 #4 AWG CONNECTIONS.
7. IF CONDITIONS REQUIRE SERVICE PEDESTAL TO BE INSTALLED IN FRONT OR REAR OF CABINET, MAINTAIN SUFFICIENT CLEARANCE FOR DOOR TO FULLY OPEN.

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of: Transportation Mobility and Safety Division, North Carolina Department of Transportation, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Ground Mounted Electrical
Service Detail
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	October 2012	REVIEWED BY:	HAB
PREPARED BY:	BJS	REVIEWED BY:	JTB

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 19962 ENGINEER HENRY ALFRED BADGETT, III

SIGNATURE DATE

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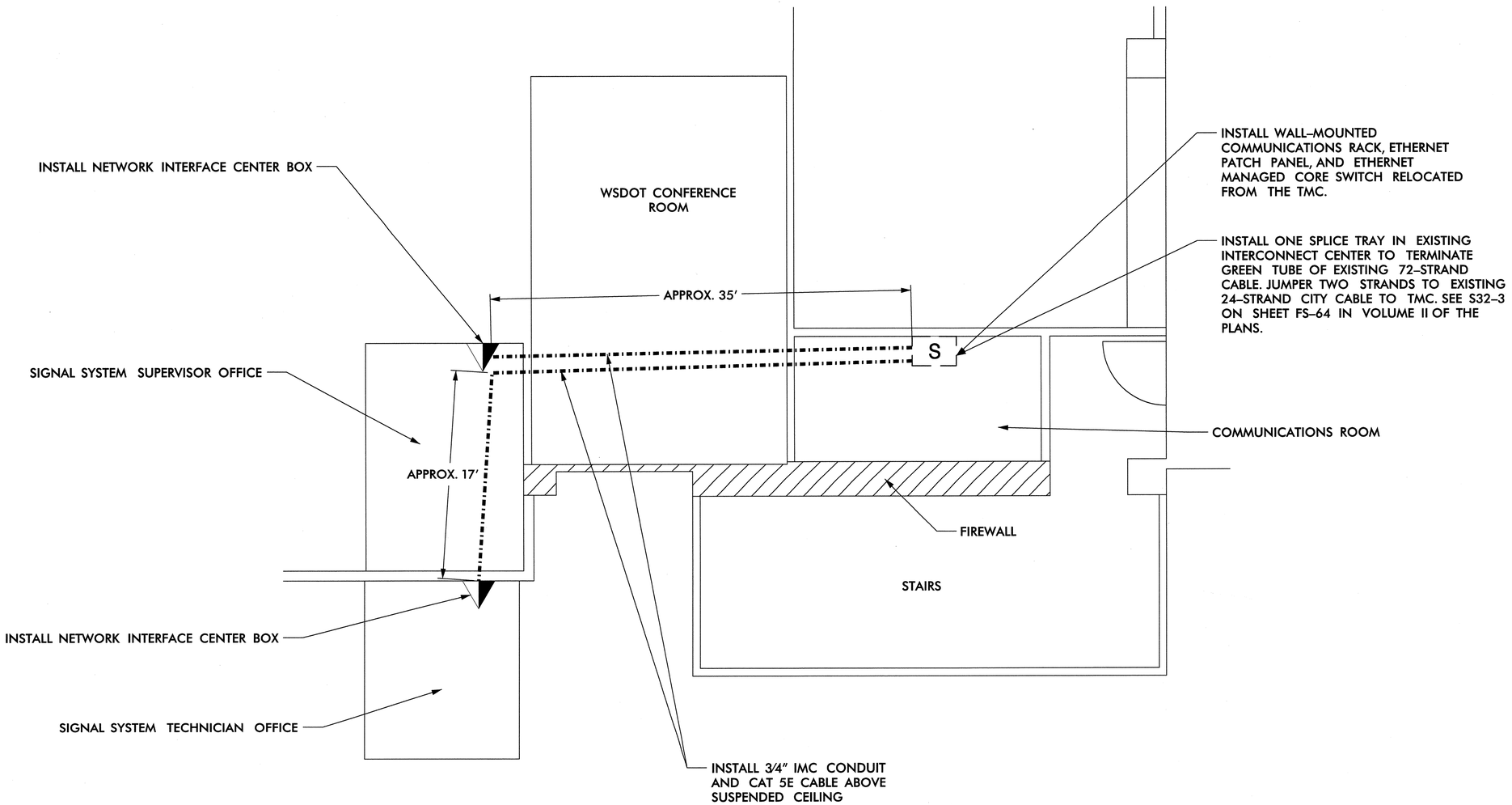
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	SD-16



PLAN VIEW

THIRD FLOOR
BRYCE A. STUART BUILDING

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Integrated Mobility Division
750 Greenfield Parkway, Garner, NC 27529

N.T.S.

Winston-Salem Signal System
Bryce Stuart Building
Modifications
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	October 2012	REVIEWED BY:	HAB
PREPARED BY:	BJS	REVIEWED BY:	JTB

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 19962 ENGINEER HENRY ALFRED BADGETT, III
SIGNATURE DATE 1/11/13
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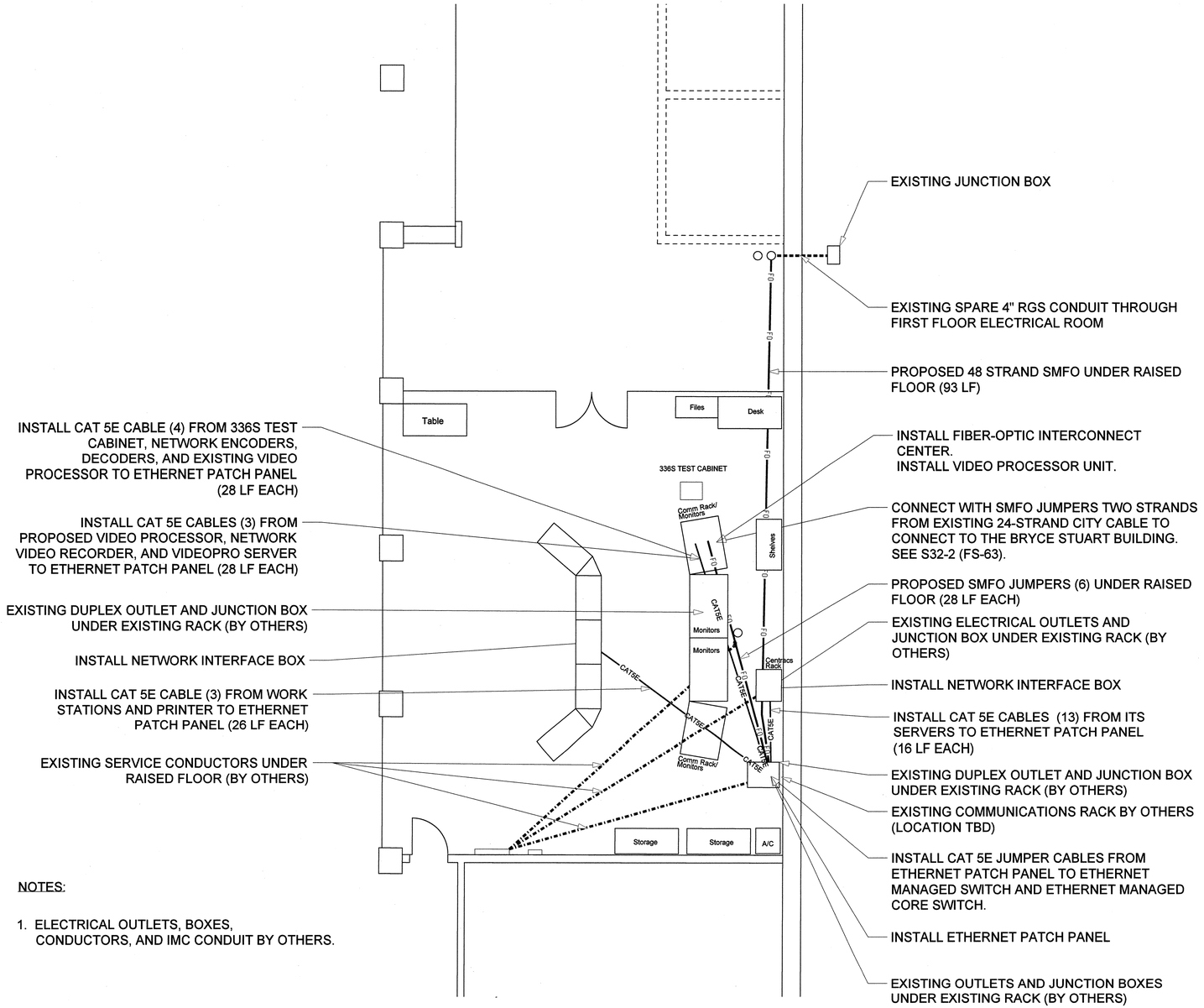
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	SD-17

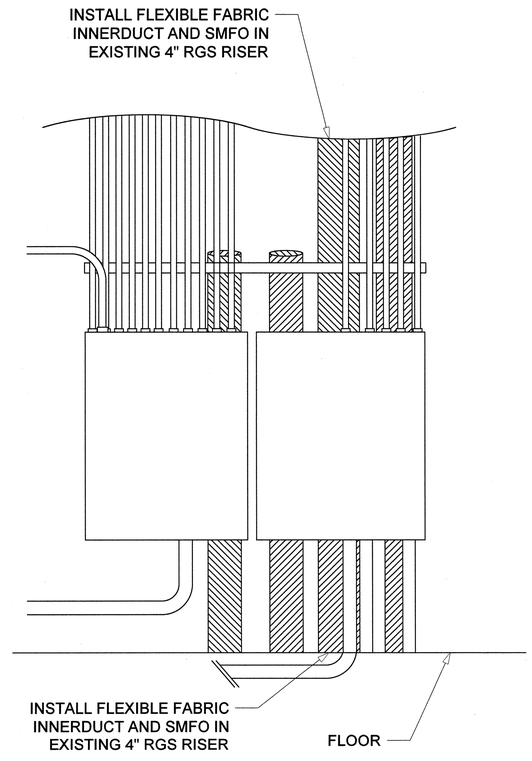


NOTES:

1. ELECTRICAL OUTLETS, BOXES, CONDUCTORS, AND IMC CONDUIT BY OTHERS.

PLAN VIEW

CLARK CAMPBELL TRANSPORTATION CENTER (TMC) 2ND FLOOR



ELEVATION VIEW

1ST FLOOR ELECTRICAL ROOM

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of: Transportation Mobility and Safety Division, North Carolina Department of Transportation, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
TMC Modifications
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	HAB
PREPARED BY:	BJS	REVIEWED BY:	JTB

REVISIONS	INIT.	DATE

N.T.S.

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 19962 ENGINEER HENRY ALFRED BADGETT, III

H Alfred Badgett 11/1/13
SIGNATURE DATE

CADD Filename: SD-17.dgn

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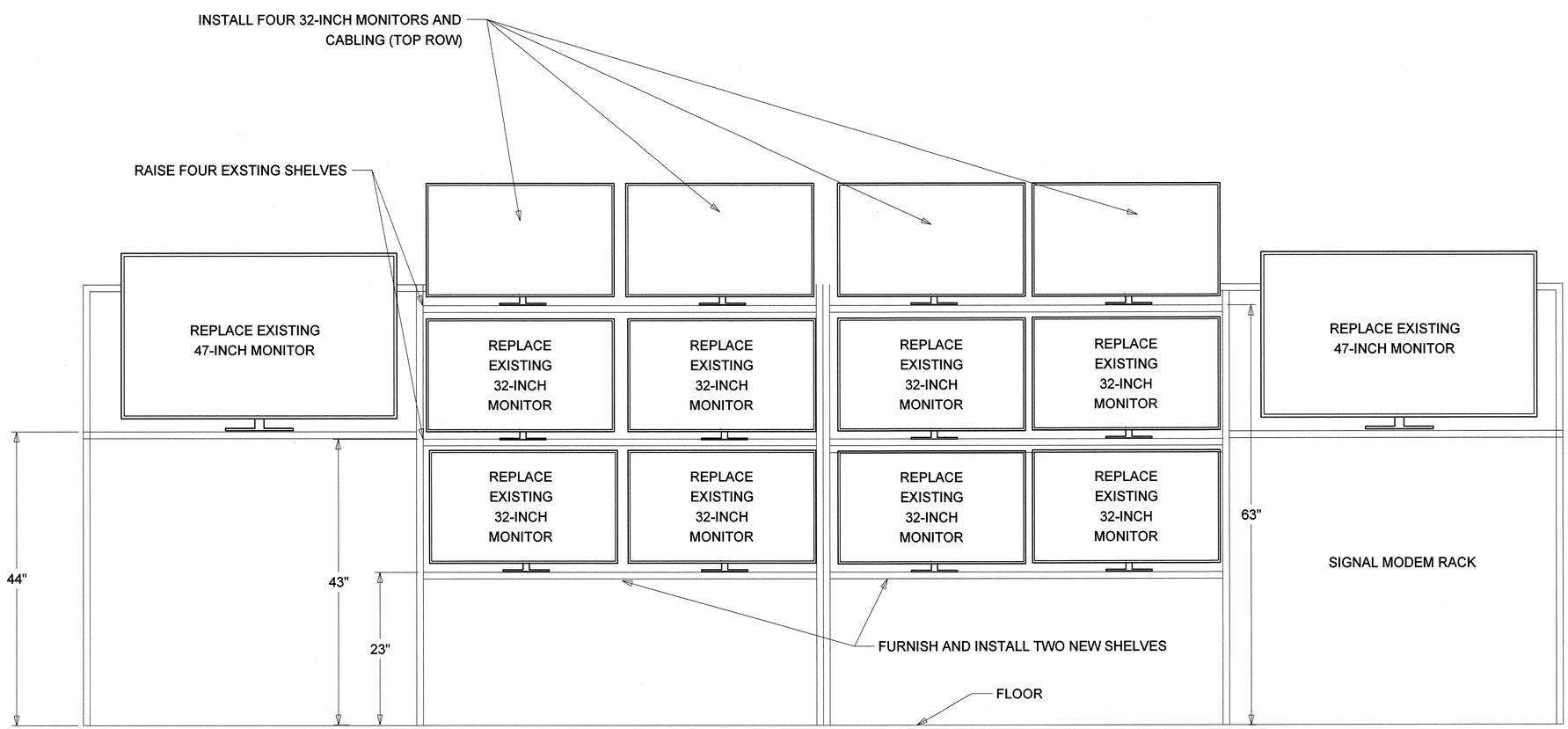
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	SD-18



NOTES:

1. RAISE EXISTING SHELVES FOR 32-INCH MONITORS TO BE REPLACED.
2. INSTALL TWO NEW SHELVES, FOUR NEW 32-INCH MONITORS, EIGHT NEW 32-INCH MONITORS TO REPLACE THE EIGHT EXISTING 32-INCH MONITORS, TWO NEW 47-INCH MONITORS TO REPLACE THE TWO EXISTING 47-INCH MONITORS, AND ALL ASSOCIATED CABLING.
3. NEW SHELVES MUST MATCH EXISTING SHELVES (SAME MANUFACTURER, STYLE, MATERIAL, COLOR, AND FINISH).
4. EXISTING MONITORS THAT ARE TO BE REMOVED AND REPLACED ARE TO BE DELIVERED TO THE CITY OF WINSTON-SALEM FOR DISPOSAL.

ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
TMC Monitor Wall Modifications
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	October 2012	REVIEWED BY:	HAB
PREPARED BY:	BJS	REVIEWED BY:	JTB

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 19962 ENGINEER HENRY ALFRED BADGETT III

Henry Alfred Badgett 11/1/13
SIGNATURE DATE

CADD Filename: SD-18.dgn

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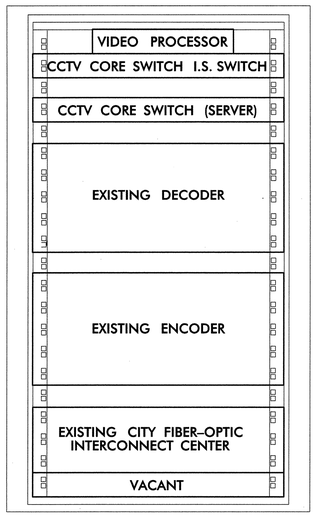
12054

PROJECT REFERENCE NO.	SHEET NO.
C-5224A	SD-19

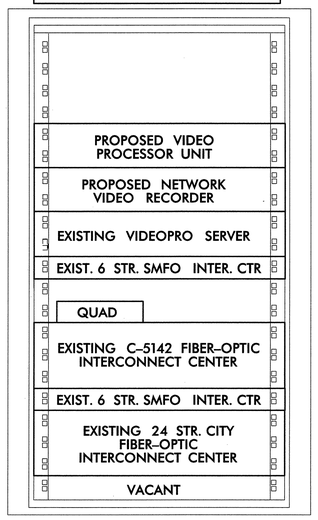
CONDITIONS AT THE TIME THAT CONSTRUCTION ENDS ON C–5142 AND BEGINS ON C–5224A

EXISTING VIDEO RACK (LEFT)
UNDER LEFT SIDE OF MONITOR RACK

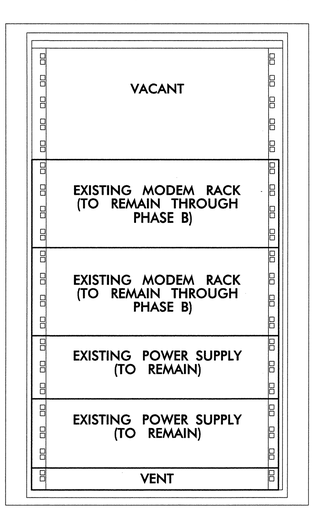


EXISTING VIDEO RACK (RIGHT)
UNDER LEFT SIDE OF MONITOR RACK

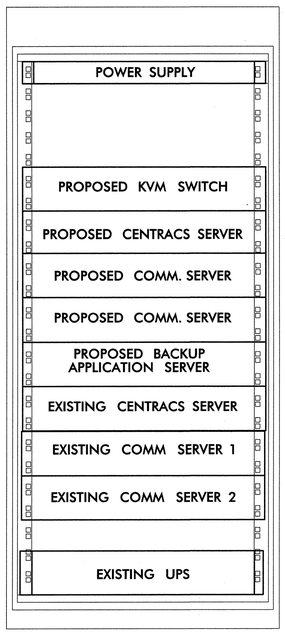
EXISTING ETHERNET LAN EXTENDER MEDIA CONVERTERS



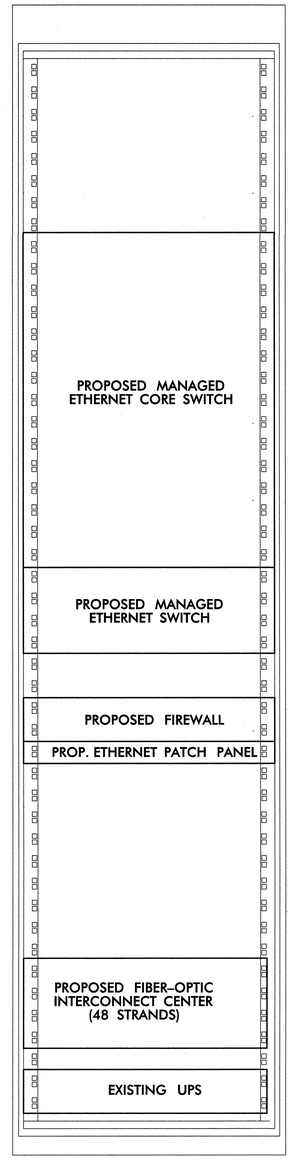
EXISTING SIGNAL SYSTEM RACK
UNDER RIGHT SIDE OF MONITOR RACK



EXISTING CENTRACS SERVER RACK



EXISTING COMMUNICATIONS RACK
(INSTALLED BY OTHERS)



ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
NCDOT Transportation Mobility and Safety Division, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
TMC Rack Layouts
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	HAB
PREPARED BY:	BJS	REVIEWED BY:	JTB

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 19992 ENGINEER HENRY ALFRED BADGETT III
SIGNATURE DATE
CADD Filename: SD-19.dgn

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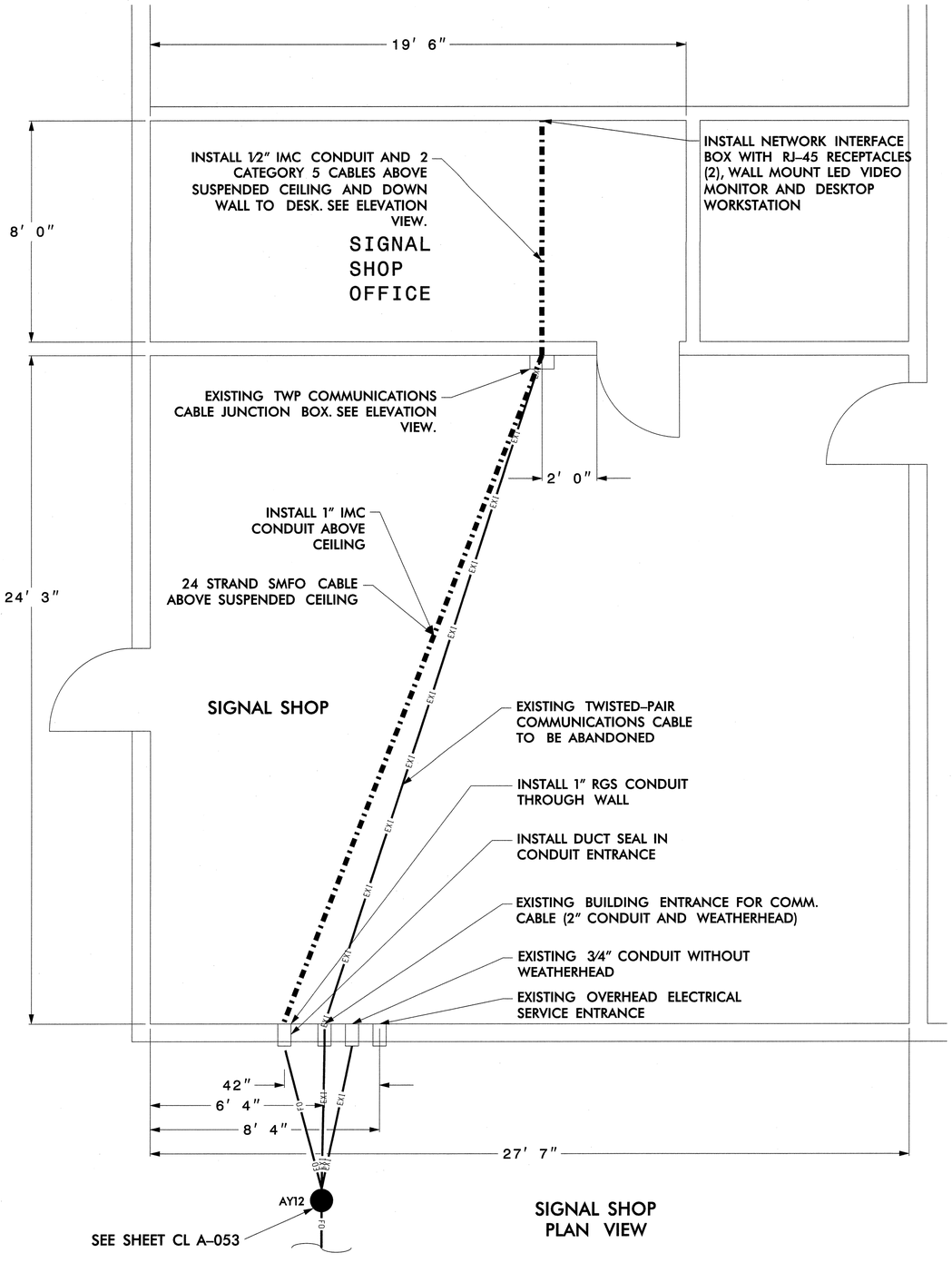
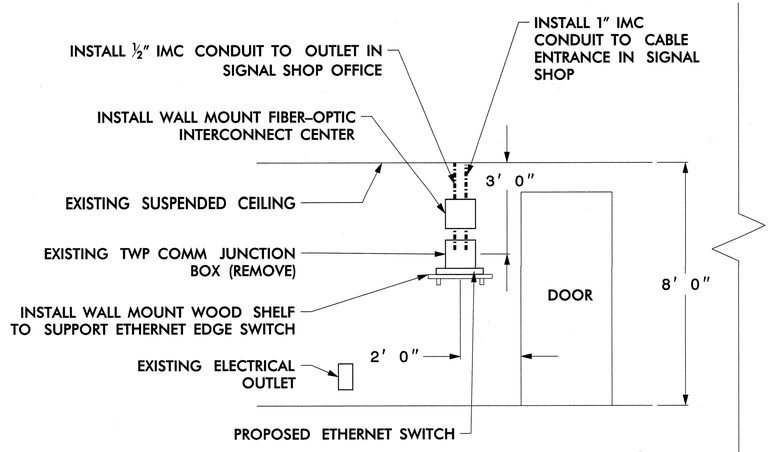
12054

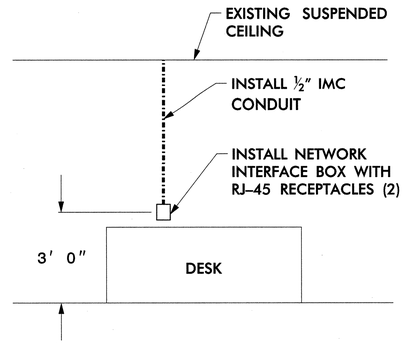
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	SD-20



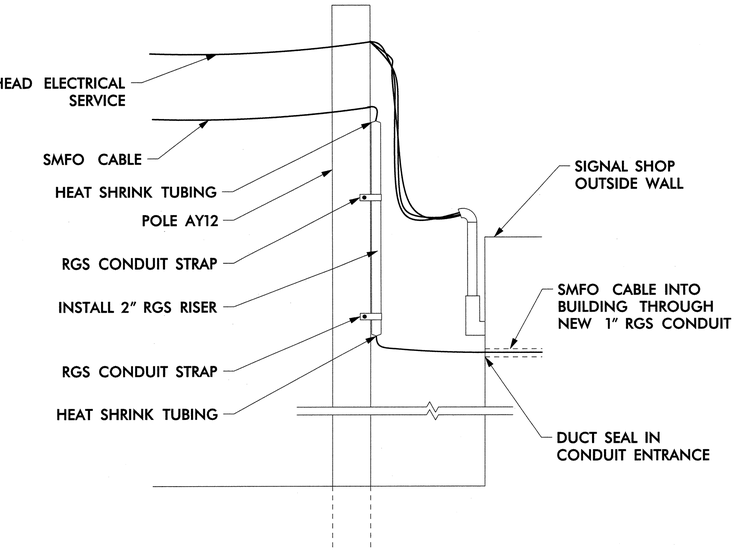
SIGNAL SHOP
PLAN VIEW



SIGNAL SHOP OFFICE
EAST WALL ELEVATION



SIGNAL SHOP OFFICE
EAST WALL ELEVATION



CABLE BUILDING ENTRANCE
ELEVATION VIEW

NOTES:

1. INSTALL NEW 1" RGS CONDUIT FOR CABLE ENTRANCE INTO BUILDING. MAINTAIN 42" SEPARATION FROM ELECTRICAL SERVICE ENTRANCE.
2. INSTALL 1" IMC CONDUIT ABOVE SUSPENDED CEILING FROM CABLE ENTRANCE OF BUILDING TO FO INTERCONNECT CENTER.
3. REMOVE EXISTING TWP COMMUNICATIONS CABLE JUNCTION BOX. INSTALL FIBER-OPTIC WALL MOUNT INTERCONNECT CENTER AND TERMINATE SMFO CABLE.
4. BELOW INTERCONNECT CENTER INSTALL WALL MOUNT SHELF AND INSTALL ETHERNET EDGE SWITCH ON SHELF.
5. INSTALL NETWORK INTERFACE BOX WITH RJ-45 RECEPTACLES (2) ON END OF CONDUIT RISER IN OFFICE.
6. TERMINATE CAT. 5 ETHERNET CABLES WITH CONNECTORS IN SIGNAL SHOP AND IN OFFICE.

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of: Transportation Mobility and Safety Division, North Carolina Department of Transportation, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Signal Shop Modifications
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	HAB
PREPARED BY:	BJS	REVIEWED BY:	JTB

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 19962 ENGINEER HENRY ALFRED BADGETT III
SIGNATURE 1/15/13 DATE

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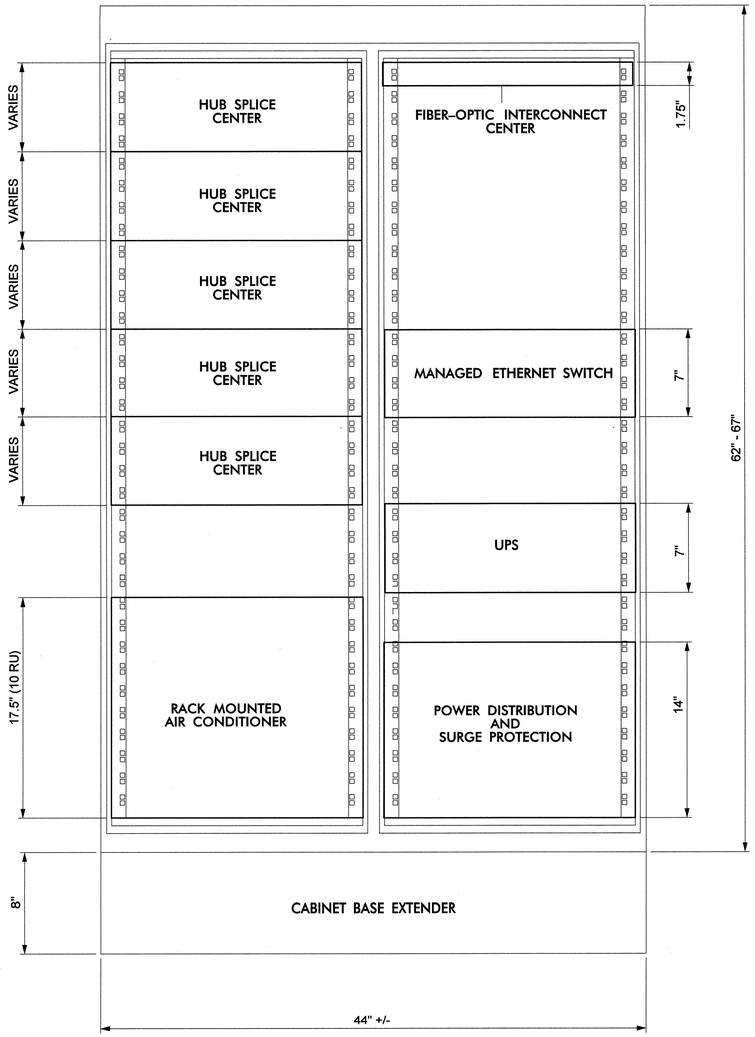
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	SD-21



ITS HUB CABINETS

ITS HUB A			SWITCH PORTS	
UNITS	DESCRIPTION	HUB QTY	TOTAL	WITH OPTICS
EA	GIGABIT ETHERNET ROUTING SWITCH	1	48	36
EA	GIGABIT INTERFACE CONVERTER (GBIC) - LZ	2		
EA	INTERCONNECT CENTER (PHASE A)	1		
EA	HUB SPLICE CENTER (48-FIBER) (PHASE A)	2		

ITS HUB B			SWITCH PORTS	
UNITS	DESCRIPTION	HUB QTY	TOTAL	WITH OPTICS
EA	GIGABIT ETHERNET ROUTING SWITCH	1	48	36
EA	GIGABIT INTERFACE CONVERTER (GBIC) - LZ	2		
EA	INTERCONNECT CENTER (PHASE A)	1		
EA	HUB SPLICE CENTER (48-FIBER) (PHASE A)	1		
EA	HUB SPLICE CENTER (72-FIBER) (PHASE A)	1		

ITS HUB C			SWITCH PORTS	
UNITS	DESCRIPTION	HUB QTY	TOTAL	WITH OPTICS
EA	GIGABIT ETHERNET ROUTING SWITCH	1	48	30
EA	GIGABIT INTERFACE CONVERTER (GBIC) - LZ	2		
EA	INTERCONNECT CENTER (PHASE A)	1		
EA	HUB SPLICE CENTER (36-FIBER) (PHASE A)	1		
EA	HUB SPLICE CENTER (48-FIBER) (PHASE A)	2		

ITS HUB D			SWITCH PORTS	
UNITS	DESCRIPTION	HUB QTY	TOTAL	WITH OPTICS
EA	GIGABIT ETHERNET ROUTING SWITCH	1	48	30
EA	GIGABIT INTERFACE CONVERTER (GBIC) - LZ	2		
EA	HUB SPLICE CENTER (48-FIBER) (PHASE A)	2		
EA	HUB SPLICE CENTER (36-FIBER) (BY OTHERS)	2		

IS HUB CABINETS

IS HUB A		
UNITS	DESCRIPTION	HUB QTY
EA	IS HUB SPLICE CENTER (24-FIBER) (PHASE A)	2
EA	IS HUB SPLICE CENTER (96-FIBER) (PHASE A)	1
EA	IS HUB SPLICE CENTER 144-FIBER) (PHASE A)	2

IS HUB B		
UNITS	DESCRIPTION	HUB QTY
EA	IS HUB SPLICE CENTER (24-FIBER) (PHASE A)	1
EA	IS HUB SPLICE CENTER 144-FIBER) (PHASE A)	2

NOTES:

1. CABINET IS TYPE 333.
2. ALL DIMENSIONS ARE APPROXIMATE.
3. THE HUB CABINET SHALL BE A MINIMUM 62"H X 44"W (+/-) X 30"D.
4. CONDUIT ENTRANCES ARE IN BOTTOM OF CABINET UNDER UPS.
5. MINIMUM OF THREE (3) TOTAL OUTLETS: TWO (2) SURGE PROTECTED AND ONE (1) GFCI PROTECTED.
6. SURGE PROTECTION PANEL SHALL BE MOUNTED BEHIND THE POWER DISTRIBUTION PANEL.
7. FRONT DOOR SHALL HAVE A VENT WITH FILTER ALIGNING WITH AIR CONDITIONER INTAKE.
8. INSTALL A/C DRAIN LINE.
9. INSTALL MANAGED ETHERNET SWITCH AND GBICS FOR BOTH C-5224A AND C-5224B AS SHOWN IN THE C-5224A PLANS. THE COST OF THE GBICS IS INCLUDED IN THE COST OF MANAGED ETHERNET SWITCH.

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION Transportation Mobility and Safety Division Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Hub Cabinet Detail
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	HAB
PREPARED BY:	BJS	REVIEWED BY:	JTB

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 19962 ENGINEER HENRY ALFRED BADGETT III
SIGNATURE 1/11/13 DATE

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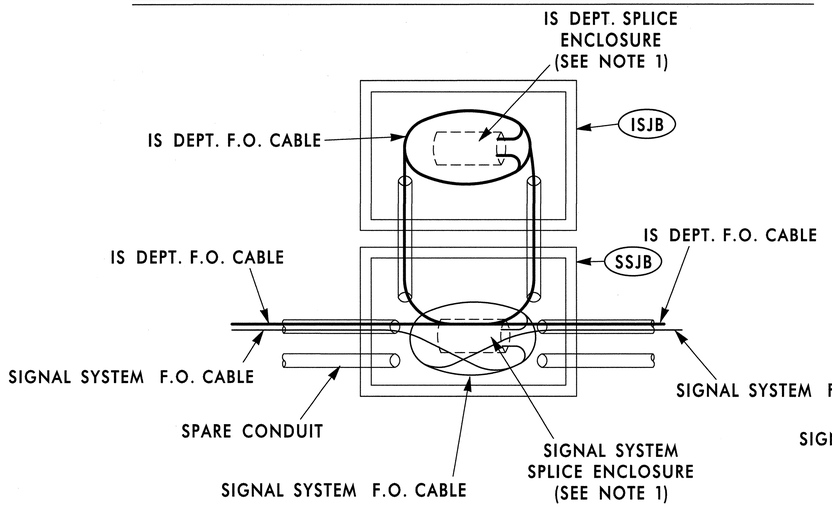
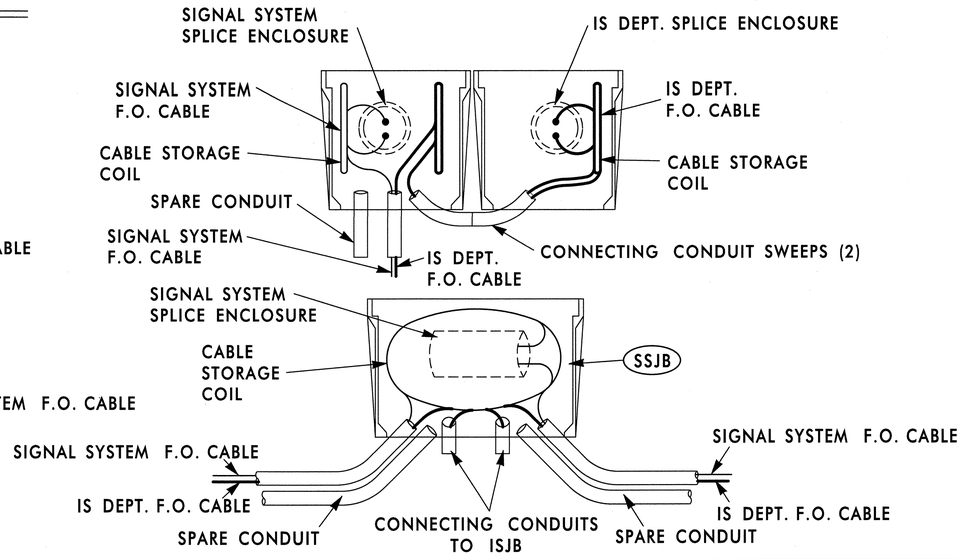
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	SD-22

INSTALLATION TOP VIEW (WITHOUT COVER)



SIDE VIEW



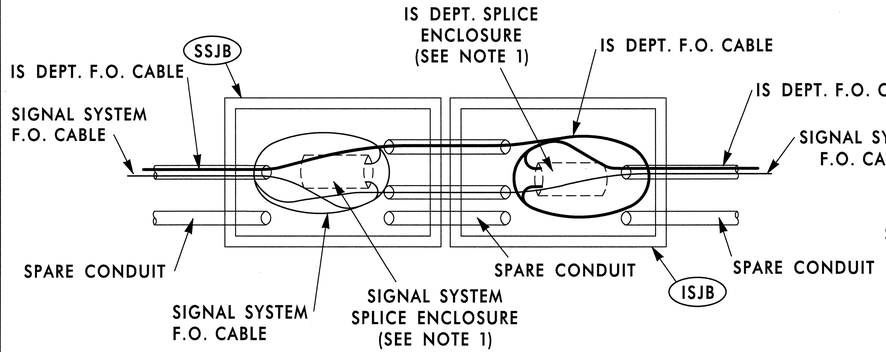
NOTES:

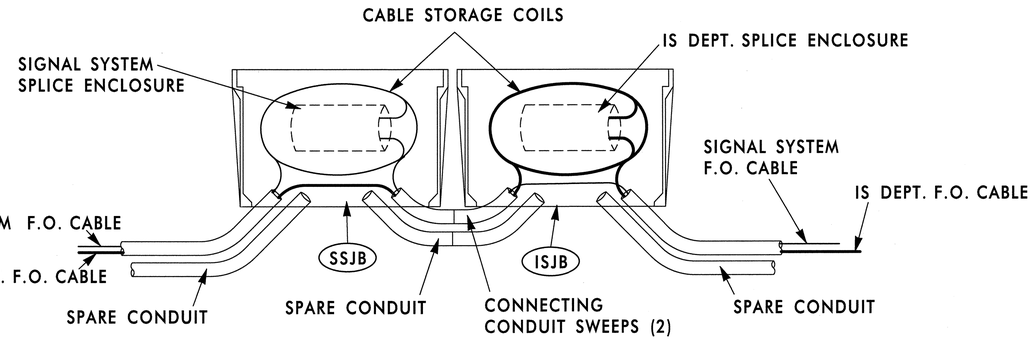
1. THE SPLICE ENCLOSURES SHOWN ARE PROPOSED OR FUTURE SPLICE ENCLOSURES. COIL THE FIBER OPTIC CABLE IN JUNCTION BOX FOR FUTURE SPLICE ENCLOSURE.
2. THE NUMBER OF CABLES IN EACH JUNCTION BOX ARE FOR ILLUSTRATIVE PURPOSES ONLY. ACTUAL NUMBER OF CABLES MAY VARY DEPENDING ON LOCATION.

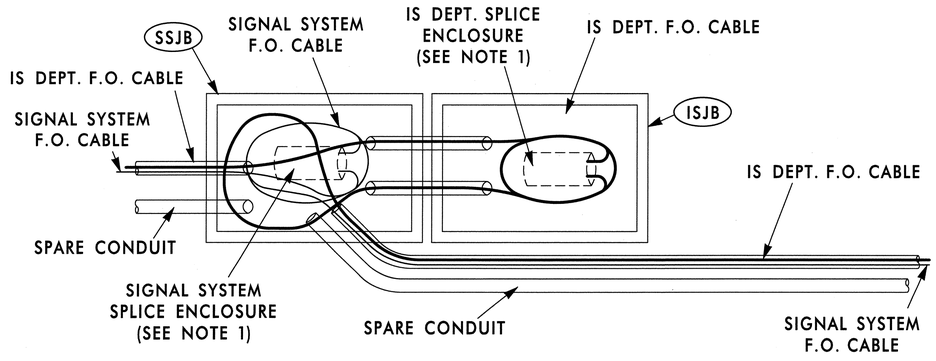
LEGEND:

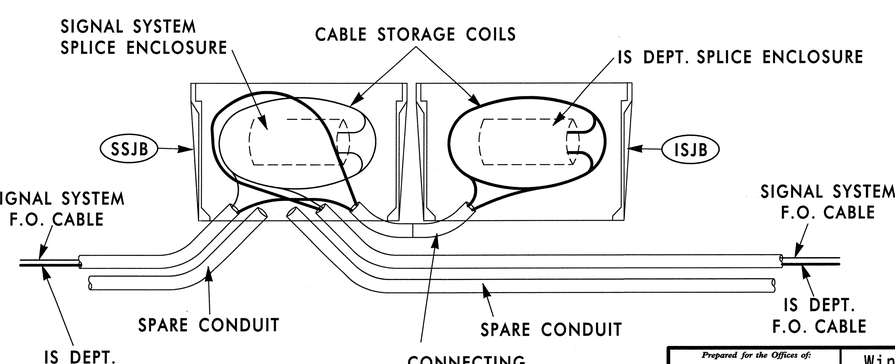
SIGNAL SYSTEM JUNCTION BOX (SSJB)

IS JUNCTION BOX (ISJB)









ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of: North Carolina Department of Transportation, Mobility and Safety Division, Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System Junction Box Placement Detail Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE: January 2013 REVIEWED BY: HAB

PREPARED BY: BJS REVIEWED BY: JTB

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 19962 ENGINEER HENRY ALFRED BADGETT III
SIGNATURE DATE 1/11/13

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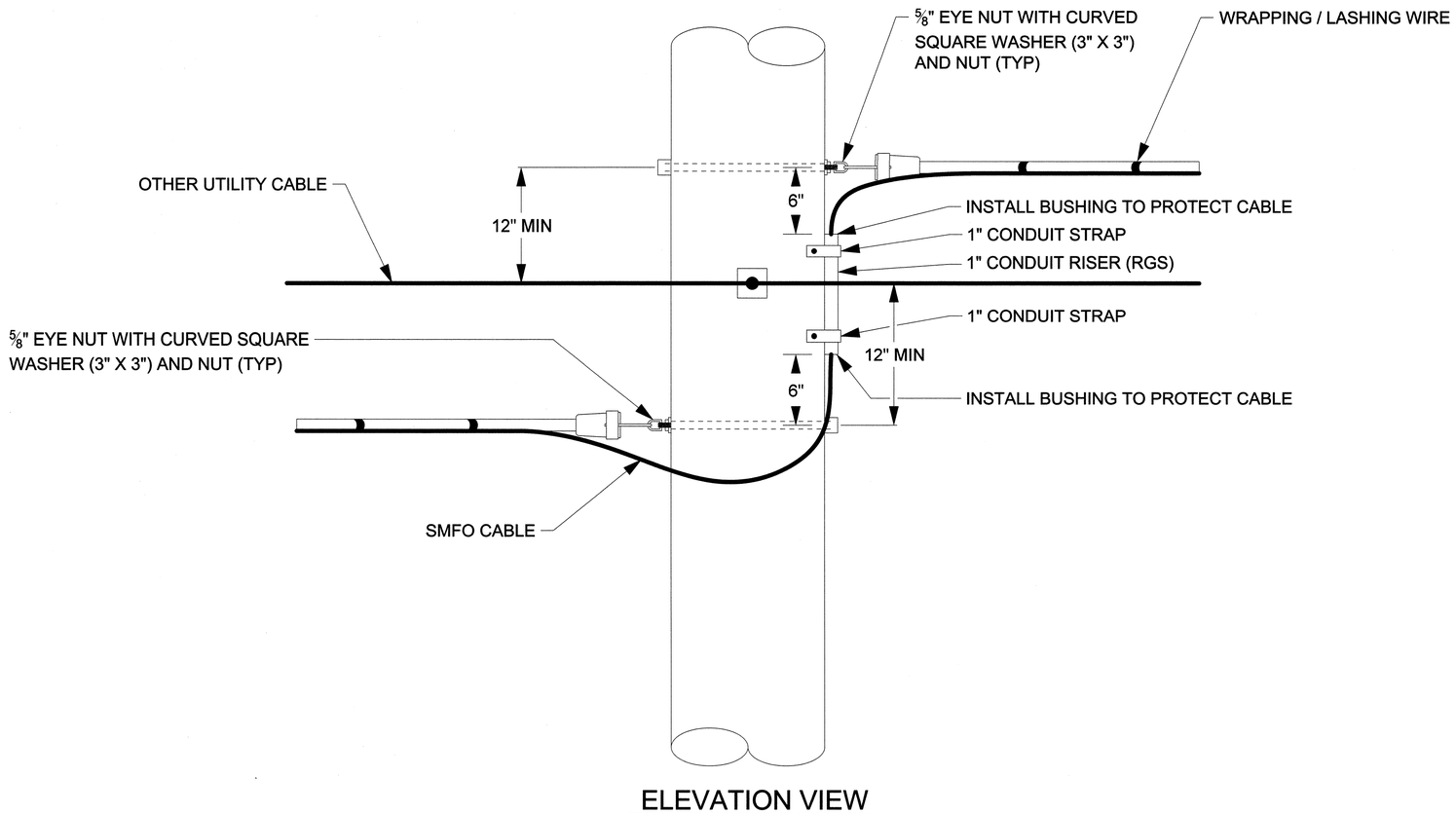
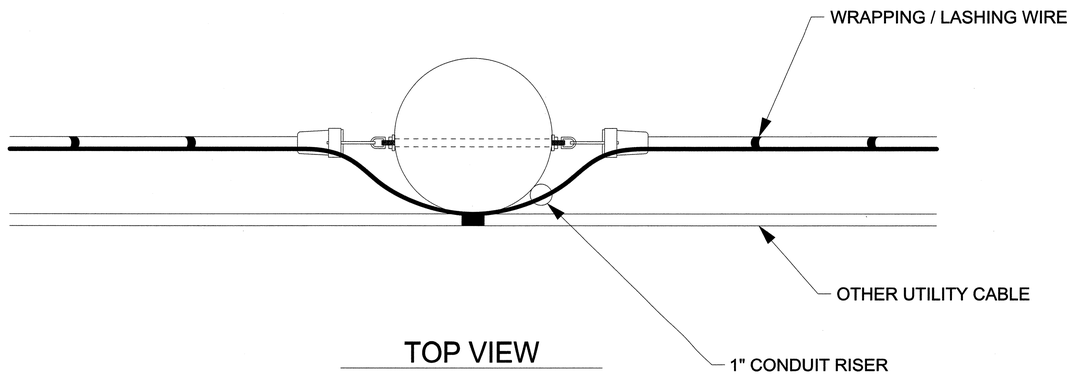
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	SD-23



ELEVATION VIEW



TOP VIEW

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Vertical Adjustment
of SMFO Cable
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	October 2012	REVIEWED BY:	HAB
PREPARED BY:	BJS	REVIEWED BY:	JTB

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 19962 ENGINEER HENRY ALFRED BADGETT III

SIGNATURE DATE 11/1/13

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PROJECT REFERENCE NO.	SHEET NO.
C-5224A	SD-24

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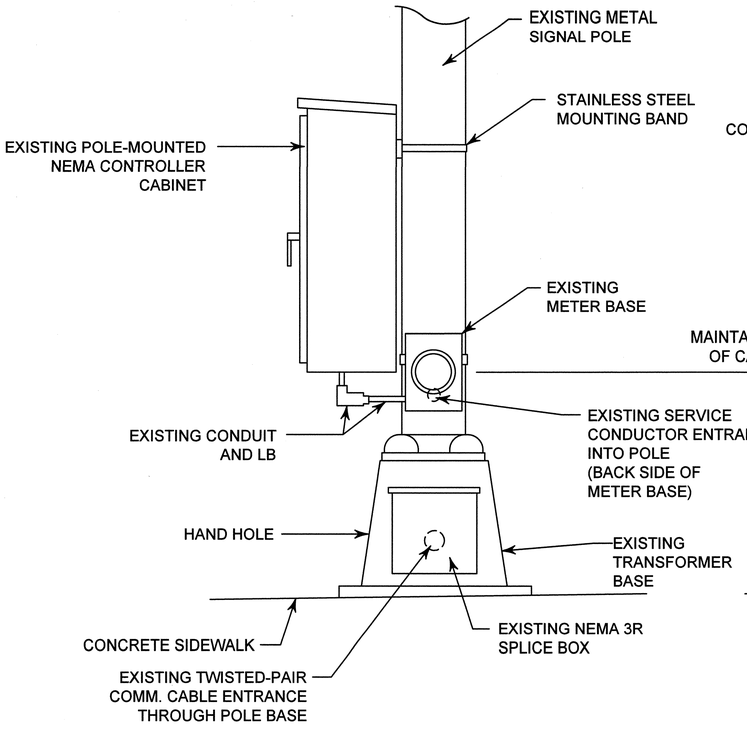

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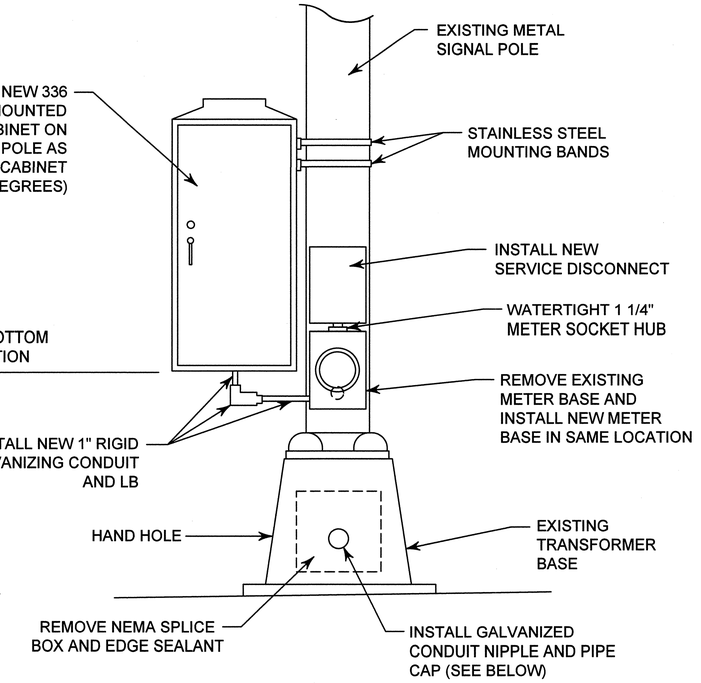
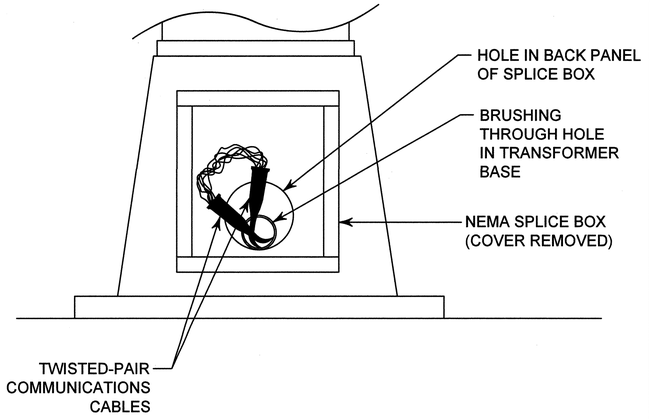
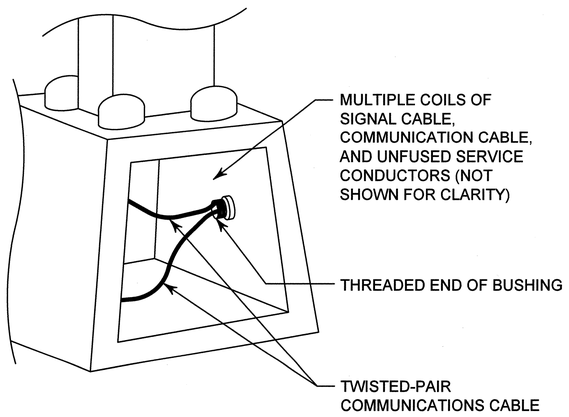


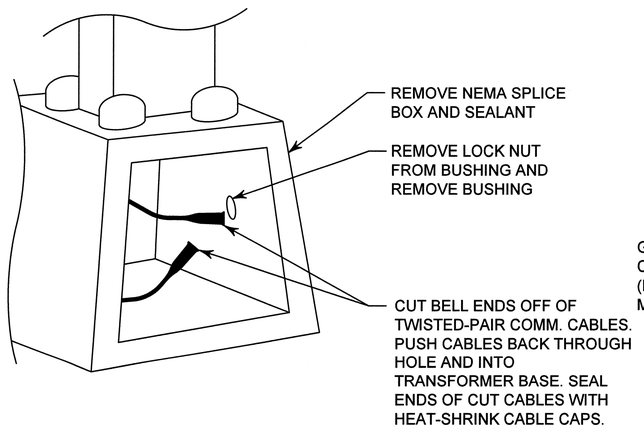


STEP 1
PART 1 OF 2



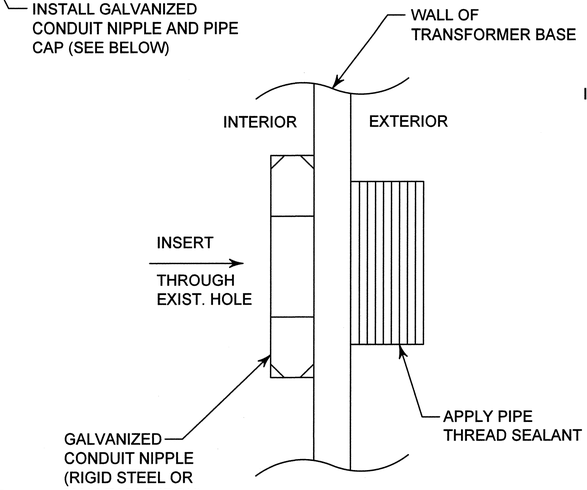
SIDE VIEW OF TRANSFORMER BASE
(HAND HOLE COVER REMOVED)

STEP 1
PART 2 OF 2

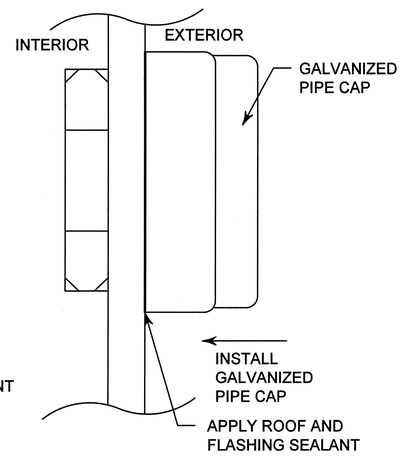


SIDE VIEW OF TRANSFORMER BASE
(HAND HOLE COVER REMOVED)

STEP 3



STEP 4



STEP 5

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System Downtown Electrical Service and Splice Box Details Phase A

Division 09	Forsyth County	Winston-Salem	
PLAN DATE: January 2013	REVIEWED BY:	HAB	
PREPARED BY: BJS	REVIEWED BY:	JTB	

REVISIONS	INIT.	DATE

NTS

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 19962 ENGINEER HENRY ALFRED BADGETT III
SIGNATURE 1/11/13 DATE

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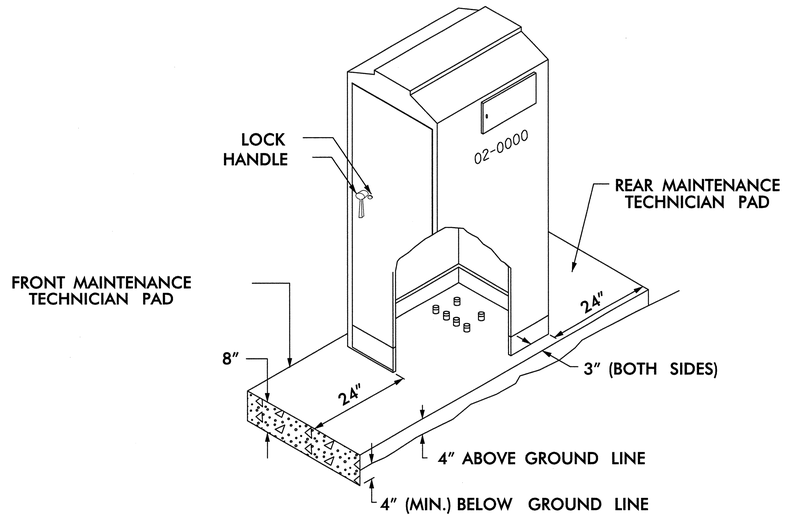
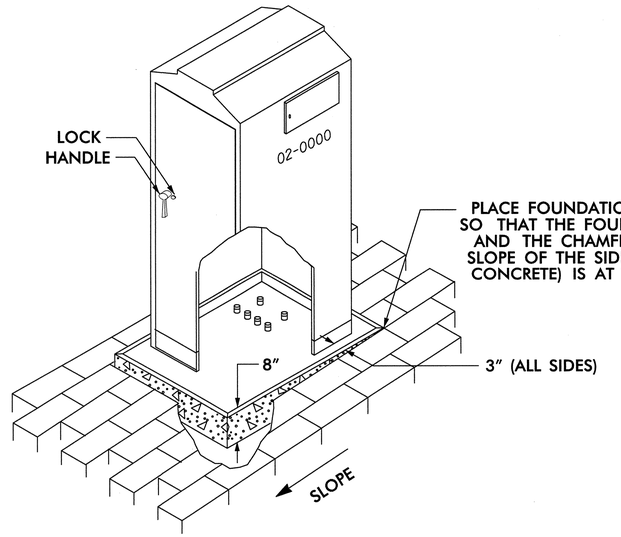
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	SD-25

TYPICAL BASE–MOUNTED CABINET
NEW STANDARD FOUNDATION



TYPICAL BASE–MOUNTED CABINET
NEW FOUNDATION IN SIDEWALK



NOTES

1. STUB OUT SPARE 2″ CONDUIT TO 12″ BEYOND EDGE OF CABINET FOUNDATION.
2. SEAL SPARE CONDUIT WITH REMOVABLE CAP.
3. TOPS OF CONDUIT SHALL BE NO LESS THAN 2″ AND NO MORE THAN 3″ ABOVE FOUNDATION.

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

NTS

Winston-Salem Signal System
Base-Mounted Cabinet
Foundation Details
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	HAB
PREPARED BY:	BJS	REVIEWED BY:	JTB

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 19962 ENGINEER HENRY ALFRED BADGETT III

H Alfred Badgett 1/16/13
SIGNATURE DATE

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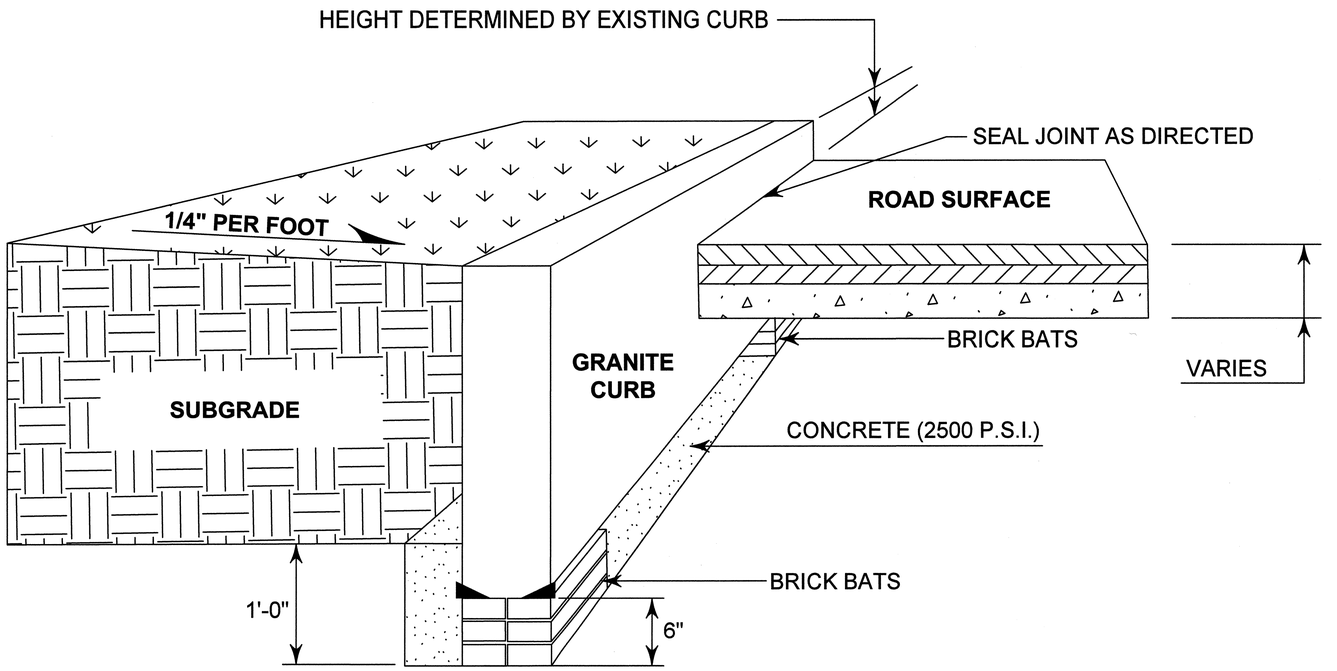
PROJECT REFERENCE NO.	SHEET NO.
C-5224A	SD-26



PROPER INSTALLATION OF GRANITE CURB

NOTE: STOCKPILE EXCESS
GRANITE CURB ON R/W
SAFELY FOR CITY PICKUP

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

Prepared for the Offices of:
Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Parkway, Garner, NC 27529

Winston-Salem Signal System
Granite Curb Installation
Phase A

Division 09 Forsyth County Winston-Salem

PLAN DATE:	January 2013	REVIEWED BY:	HAB
PREPARED BY:	BJS	REVIEWED BY:	JTB

REVISIONS	INIT.	DATE

NTS

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 19962 ENGINEER HENRY ALFRED BADGETT, III

SIGNATURE DATE 1/11/13

CADD Filename: SD-26.dgn

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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

CITY OF WINSTON-SALEM
FORSYTH COUNTY

ROADWAY STANDARD DRAWINGS

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

STD. NO.	TITLE
1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGERS
1165.01	WORK VEHICLE LIGHTING SYSTEMS AND TMA DELINEATION
1180.01	SKINNY-DRUM

INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1 THRU TMP-1A	TITLE SHEET, LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, INDEX OF SHEETS, LEGEND, AND TRAFFIC CONTROL NARRATIVE
TMP-2 THRU TMP-2A	PROJECT NOTES
TMP-3	TYPICAL SIDEWALK CLOSURE & PEDESTRIAN DETOUR
TMP-4	PATTERSON AVENUE AND TRADE STREET UNDERGROUND DUCT KEY SHEET
TMP-5 THRU TMP-7	TRADE STREET AND OAK STREET DETAILS
TMP-8 THRU TMP-12	PATTERSON AVENUE DETAILS
TMP-13	WAUGHTOWN STREET DETAILS
TMP-14	TYPICAL FOR MANHOLE WORK ADJACENT TO OR WITHIN CROSSWALK

TRAFFIC CONTROL NARRATIVE

STEP 1: PERFORM ALL WORK ASSOCIATED WITH THE INSTALLATION OF THE PROPOSED SIGNALS AND TRAFFIC MANAGEMENT SYSTEM AS SHOWN IN THE CONTRACT, CONSTRUCTION PLANS AND/OR SPECIAL PROVISIONS IN ACCORDANCE WITH THE "NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES - JANUARY 2012".

NOTE: ADDRESS ANY SAFETY HAZARDS CONCERNING MOTORISTS AND PEDESTRIANS BEFORE REMOVING TEMPORARY TRAFFIC CONTROL DEVICES AND WORK ZONE WARNING SIGNS. RETURN TRAFFIC TO ITS EXISTING TRAFFIC PATTERN AT THE END OF EACH WORK PERIOD.

NOTE: INSTALL CHANGEABLE MESSAGE SIGNS IN ADVANCE OF THE WORK ZONE AS DIRECTED BY THE ENGINEER.

NOTE: REMOVE ALL TEMPORARY TRAFFIC CONTROL LANE CLOSURE DEVICES AND RETURN TRAFFIC TO ITS EXISTING TRAFFIC PATTERN AT THE END OF EACH WORK PERIOD.

NOTE: WHEN CHANGING OUT CONTROLLER CABINETS, USE A POLICE OFFICER(S) TO DIRECT TRAFFIC THROUGH THE INTERSECTION WHILE TRAFFIC SIGNAL IS NOT IN OPERATION. DO NOT TAKE TRAFFIC SIGNAL OUT OF OPERATION FOR MORE THAN 3 HOURS AT A GIVEN INTERSECTION.

NOTE: CONSTRUCT NEW CONDUIT ENTRANCES INTO EXISTING CONTROLLER CABINET FOUNDATIONS WHILE MAINTAINING THE OPERATIONS OF THE EXISTING TRAFFIC SIGNAL WHEREVER POSSIBLE. WHEN A TRAFFIC SIGNAL MUST BE TAKEN OUT OF OPERATION TO CONSTRUCT A CONDUIT ENTRANCE INTO AN EXISTING CONTROLLER CABINET FOUNDATION AND SUBJECT TO THE ENGINEER'S APPROVAL, USE A POLICE OFFICER(S) TO DIRECT TRAFFIC THROUGH THE INTERSECTION WHILE THE TRAFFIC SIGNAL IS NOT IN OPERATION. DO NOT TAKE A TRAFFIC SIGNAL OUT OF OPERATION WITHOUT THE PRIOR APPROVAL OF THE ENGINEER AND DO NOT TAKE THE TRAFFIC SIGNAL OUT OF OPERATION FOR MORE THAN ONE HOUR AT A GIVEN INTERSECTION. DO NOT TAKE ANY TRAFFIC SIGNAL OUT OF OPERATION TO PERFORM CONTROLLER CABINET CHANGEOUT BETWEEN THE HOURS OF 4:00 PM AND 9:00 AM THE FOLLOWING MORNING.

NOTE: WHEN CONSTRUCTING/REMOVING SIGNAL POLE STRUCTURES OR FOOTINGS ADJACENT TO TRAFFIC OR SIDEWALKS, INSTALL 1" TEMPORARY A36 STEEL PLATES OR ORANGE TREE PROTECTION FENCING AS DIRECTED BY THE ENGINEER. THE CONTRACTOR MAY WORK EACH LOCATION INDEPENDENTLY OR CONCURRENTLY, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. WORK IN A CONTINUOUS MANNER TO PERFORM THE WORK IN THE FOLLOWING SEQUENCE, IN STEPS 'A' THRU 'E'.

A: CLOSE THE APPROPRIATE TRAVEL LANE TO TRAFFIC USING ROADWAY STANDARD DRAWING NO. 1101.02 SHEETS 1, 2 & 3 OF 15.

OR

USING SHEET TMP-3 AS A GUIDE, AND AS DIRECTED BY THE ENGINEER CLOSE THE APPROPRIATE SIDEWALK UTILIZING TYPE III BARRICADES WITH SIGNS ATTACHED.

B: CONSTRUCT PROPOSED OR REMOVE EXISTING STRUCTURE AS SHOWN IN THE CABLE LAYOUT PLANS AND/OR SIGNAL PLANS. PROTECT MOTORISTS AND PEDESTRIANS FROM OPEN EXCAVATIONS OR OTHER HAZARDS POSED BY INCOMPLETE CONSTRUCTION WORK, BY ONE OR A COMBINATION OF THE FOLLOWING METHODS AS APPROVED BY THE ENGINEER:

1) COVER AREA WITH 1" TEMPORARY A36 STEEL PLATES

2) COMPLETELY SURROUND AREA WITH AN ORANGE TREE PROTECTION FENCE

C: OPEN TRAVEL LANE OR SIDEWALK TO EXISTING TRAFFIC PATTERN BY THE END OF EACH WORK PERIOD.

D: WHEN PROPERLY CURED, CLOSE THE APPROPRIATE TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEETS 1, 2 & 3 OF 15;

OR

USING SHEET TMP-3 AS A GUIDE, AND AS DIRECTED BY THE ENGINEER CLOSE THE APPROPRIATE SIDEWALK UTILIZING TYPE III BARRICADES WITH SIGNS ATTACHED;

BACKFILL & PAVE, IF REQUIRED, UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT OR SIDEWALK (SEE CABLE LAYOUT PLANS AND/OR SIGNAL PLANS).

E: OPEN TRAVEL LANE OR SIDEWALK TO EXISTING TRAFFIC PATTERN BY THE END OF THE WORK PERIOD.

NOTE: USE RSD NO. 1101.03, SHEET 8 OF 9 (FLAGGERS), TO TEMPORARILY STOP TRAFFIC WHEN INSTALLING MESSENGER AND CABLE OR REMOVING EXISTING MESSENGER AND CABLE OVER A TWO-LANE, TWO-WAY ROAD. USE RSD 1101.03, SHEET 9 OF 9 (ROLLING ROADBLOCK), TO TEMPORARILY STOP TRAFFIC WHEN INSTALLING MESSENGER AND CABLE OR REMOVING EXISTING MESSENGER AND CABLE OVER A MULTI-LANE ROADWAY.

TRADE STREET BETWEEN 5TH STREET AND 7TH STREET & OAK STREET

NOTE: WHEN INSTALLING PROPOSED COMMUNICATIONS CABLE IN THE EXISTING UNDERGROUND DUCT SYSTEM BENEATH TRADE STREET, 7TH STREET AND OAK STREET:

A. CONTACT RODD RING AT THE CITY OF WINSTON-SALEM DEPARTMENT OF TRANSPORTATION AT (336) 747-6990 A LEAST 10 WORK DAYS IN ADVANCE TO COORDINATE PROPOSED WORK SCHEDULE AND TEMPORARY STREET CLOSURES.

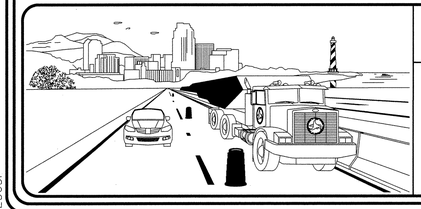
B. THE CITY OF WINSTON-SALEM WILL INSTALL OF TEMPORARY NO PARKING SIGNS AS NEEDED TO PROHIBIT ON-STREET PARKING WITHIN THE BLOCK WHERE WORK IS BEING PERFORMED.

C. USING TEMPORARY LANE CLOSURES, FLAGGERS AND LAW ENFORCEMENT, INSTALL COMMUNICATIONS CABLE IN THE UNDERGROUND DUCT SYSTEM ONE SEGMENT AT A TIME AS SHOWN ON TMP-4 THRU TMP-7.

CONTINUED ON SHEET TMP-01A

PLAN PREPARED FOR N.C.D.O.T. BY:

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326



N.C.D.O.T. WORK ZONE TRAFFIC CONTROL
1561 MAIL SERVICE CENTER (MSC) RALEIGH, NC 27699-1561
750 N. GREENFIELD PARKWAY, GARNER, NC 27529 (DELIVERY)
PHONE: (919) 773-2800 FAX: (919) 771-2745

J. STUART BOURNE, P.E. — *STATE TRAFFIC MANAGEMENT ENGINEER*

JOSEPH ISHAK, P.E. — *TRAFFIC CONTROL PROJECT ENGINEER*

_____ — *TRAFFIC CONTROL PROJECT DESIGN ENGINEER*

_____ — *TRAFFIC CONTROL DESIGN ENGINEER*

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

APPROVED: J. Todd Brooks
DATE: 3/26/13

J. TODD BROOKS, P.E.
TRAFFIC CONTROL PROJECT ENGINEER

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 17586 ENGINEER J. TODD BROOKS

SHEET NO.
TMP-01

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PROJ. REFERENCE NO.	SHEET NO.
C-5224A	TMP-01A

TRAFFIC CONTROL NARRATIVE – CONTINUED

CONTINUED FROM SHEET TMP-01

PATTERSON AVENUE BETWEEN 3RD STREET AND 7TH STREET

NOTE: WHEN INSTALLING AND REMOVING COMMUNICATIONS CABLE FROM THE EXISTING UNDERGROUND DUCT SYSTEM BENEATH PATTERSON AVENUE:

A. CONTACT RODD RING AT THE CITY OF WINSTON-SALEM DEPARTMENT OF TRANSPORTATION AT (336) 747-6990 A LEAST 10 WORK DAYS IN ADVANCE TO COORDINATE PROPOSED WORK SCHEDULE AND TEMPORARY STREET CLOSURES.

B. THE CITY OF WINSTON-SALEM WILL INSTALL OF TEMPORARY NO PARKING SIGNS AS NEEDED TO PROHIBIT ON-STREET PARKING WITHIN THE BLOCK WHERE WORK IS BEING PERFORMED.

C. USING TEMPORARY ROAD CLOSURES, INSTALL/REMOVE COMMUNICATIONS CABLE IN THE UNDERGROUND DUCT ONE BLOCK AT A TIME AS SHOWN ON TMP-4 AND TMP-8 THRU TMP-12. SURROUND ALL OPEN MANHOLES WITH OSHA-COMPLIANT MANHOLE GUARDRAILS. COMPLY WITH ALL OSHA REQUIREMENTS FOR WORKING IN MANHOLES.

D. WHEN WORKING IN A MANHOLE ADJACENT TO A PEDESTRIAN CROSSWALK, MAINTAIN PEDESTRIAN TRAFFIC AS SHOWN IN DETAIL 1 ON TMP-14. WHEN MANHOLE IS LOCATED WITHIN A CROSSWALK, TEMPORARILY CLOSE THE CROSSWALK AND DETOUR PEDESTRIANS TO THE OTHER SIDE OF STREET AS SHOWN IN DETAIL 2 ON TMP-14.

E. ONCE A BLOCK IS TEMPORARILY CLOSED TO TRAFFIC, COMPLETE COMMUNICATIONS INSTALLATION OR REMOVAL WITHIN THAT BLOCK AND REOPEN THE STREET AND CROSSWALKS TO TRAFFIC WITHIN 8 CONSECUTIVE HOURS. THE CONTRACTOR SHALL NOT CLOSE A GIVEN BLOCK MORE THAN TWICE, ONCE FOR CABLE INSTALLATION AND SECOND TIME FOR CABLE REMOVAL.

F. DO NOT CLOSE THE BLOCK BETWEEN 6TH AND 7TH STREETS ON A SUNDAY.

WAUGHTOWN STREET BETWEEN APPROXIMATELY 300' WEST OF THE INTERSECTION OF WAUGHTOWN / FAYETTEVILLE STREETS AND CENTER STREET

NOTE: WHEN REMOVING EXISTING COMMUNICATIONS CABLE FROM THE EXISTING UNDERGROUND DUCT SYSTEM BENEATH PATTERSON AVENUE:

A. CONTACT RODD RING AT THE CITY OF WINSTON-SALEM DEPARTMENT OF TRANSPORTATION AT (336) 747-6990 A LEAST 10 WORK DAYS IN ADVANCE TO COORDINATE PROPOSED WORK SCHEDULE AND TEMPORARY STREET CLOSURES.

B. THE CITY OF WINSTON-SALEM OR UNC SCHOOL OF THE ARTS WILL INSTALL OF TEMPORARY NO PARKING SIGNS AS NEEDED TO PROHIBIT ON-STREET PARKING WITHIN THE BLOCK WHERE WORK IS BEING PERFORMED.

C. USING TEMPORARY LANE CLOSURES AND FLAGGERS, REMOVE EXISTING COMMUNICATIONS CABLE FROM THE UNDERGROUND DUCT AS SHOWN ON TMP-13. SURROUND ALL OPEN MANHOLES WITH OSHA-COMPLIANT MANHOLE GUARDRAILS. COMPLY WITH ALL OSHA REQUIREMENTS FOR WORKING IN MANHOLES.

D. WHEN WORKING IN A MAN-HOLE ADJACENT TO A PEDESTRIAN CROSSWALK, MAINTAIN PEDESTRIAN TRAFFIC AS SHOWN IN DETAIL 1 ON TMP-14. WHEN MAN-HOLE IS LOCATED WITHIN A CROSSWALK, TEMPORARILY CLOSE THE CROSSWALK AND DETOUR PEDESTRIANS TO THE OTHER SIDE OF STREET AS SHOWN IN DETAIL 2 ON TMP-14.

E. COORDINATE WORK SCHEDULE WITH THE UNC SCHOOL OF ARTS TO MINIMIZE DISRUPTIONS TO CAMPUS TRAFFIC AND ACTIVITIES. SCHEDULE WORK AT TIMES WHEN CLASSES ARE NOT IN SESSION WHENEVER POSSIBLE.

STEP 2: UPON COMPLETION OF THE PROJECT, REMOVE ALL TRAFFIC CONTROL DEVICES.

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

APPROVED: DATE: 1/18/13

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 17586 ENGINEER J. TODD BROOKS

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

TRAFFIC CONTROL NARRATIVE CONTINUED

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PROJ. REFERENCE NO.	SHEET NO.
C-5224A	TMP-02

GENERAL NOTES

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 PLANS, OR DIRECTED BY THE ENGINEER.

TIME RESTRICTIONS

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

ROAD NAME	DAY AND TIME RESTRICTIONS
US 52 BUSINESS 40 / US 421 I-40 RAMPS, LOOPS	6:00 AM TO 8:00 PM MONDAY THRU FRIDAY, 8:00 AM TO 8:00 PM SATURDAY, 10:00 AM TO 8:00 PM SUNDAY

DO NOT CLOSE OR NARROW TRAVEL LANES DURING HOLIDAYS, HOLIDAY WEEKENDS AND SPECIAL EVENTS AS FOLLOWS:

ROAD NAME

US 52
BUSINESS 40 / US 421
I-40
RAMPS, LOOPS

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 AM DECEMBER 31ST TO 8:00 PM JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY, THEN UNTIL 8:00 PM THE FOLLOWING TUESDAY.
3. FOR EASTER, BETWEEN THE HOURS OF 6:00 AM THURSDAY AND 8:00 PM MONDAY.
4. FOR MEMORIAL DAY, BETWEEN THE HOURS OF 6:00 AM FRIDAY TO 8:00 PM TUESDAY.
5. FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 6:00 AM THE DAY BEFORE INDEPENDENCE DAY AND 8:00 PM THE DAY AFTER INDEPENDENCE DAY.

   IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY THEN BETWEEN THE HOURS OF 6:00 AM THE THURSDAY BEFORE INDEPENDENCE DAY AND 8:00 PM THE TUESDAY AFTER INDEPENDENCE DAY.
6. FOR LABOR DAY, BETWEEN THE HOURS OF 6:00 AM FRIDAY AND 8:00 PM TUESDAY.
7. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 6:00 AM TUESDAY AND 8:00 PM MONDAY.
8. FOR CHRISTMAS, BETWEEN THE HOURS OF 6:00 AM THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 8:00 PM THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS DAY.

SPECIAL EVENTS

9. FOR THE ACC AND NCAA BASKETBALL TOURNAMENTS, OCCURRING AT GREENSBORO COLISEUM COMPLEX BETWEEN THE HOURS OF 6:00 A.M. THE DAY BEFORE THE START OF THE TOURNAMENT AND 8:00 P.M. THE DAY AFTER THE END OF THE TOURNAMENT.
10. FOR THE HIGH POINT FURNITURE MARKET, BETWEEN THE HOURS OF 6:00 A.M. THE FRIDAY BEFORE THE START OF THE HIGH POINT FURNITURE MARKET AND 8:00 P.M. THE FRIDAY AFTER THE END OF THE HIGH POINT FURNITURE MARKET.
11. FOR CAR RACES AT BOWMAN GRAY STADIUM, FOUR (4) HOURS BEFORE THE START OF THE RACE AND FOUR (4) HOURS AFTER THE END OF THE RACE. (THIS NOTE APPLIES TO US 52 ONLY)
12. FOR FOOTBALL GAMES AND OTHER SPECIAL EVENTS AT WINSTON-SALEM STATE UNIVERSITY, FOUR (4) HOURS BEFORE THE START OF THE GAME AND/OR THE EVENT AND FOUR (4) HOURS AFTER THE END OF THE GAME AND/OR EVENT. (THIS NOTE APPLIES TO US 52 ONLY).

PROJECT NOTES

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

ROAD NAME	DAY AND TIME RESTRICTIONS
ANY ROAD OTHER THAN US 52, BUSINESS 40/US 421, AND I-40.	7:00 AM TO 9:00 AM AND 3:00 PM TO 6:00 PM MONDAY THRU FRIDAY

DO NOT CLOSE OR NARROW TRAVEL LANES DURING HOLIDAYS, HOLIDAY WEEKENDS, AND SPECIAL EVENTS AS FOLLOWS:

ROAD NAME

ANY ROAD OTHER THAN US 52, BUSINESS 40/US 421, AND I-40.

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 7:00 AM DECEMBER 31ST TO 6:00 PM JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY, THEN UNTIL 6:00 PM THE FOLLOWING TUESDAY.
3. FOR EASTER, BETWEEN THE HOURS OF 7:00 AM THURSDAY AND 6:00 PM MONDAY.
4. FOR MEMORIAL DAY, BETWEEN THE HOURS OF 7:00 AM FRIDAY TO 6:00 PM TUESDAY.
5. FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 7:00 AM THE DAY BEFORE INDEPENDENCE DAY AND 6:00 PM THE DAY AFTER INDEPENDENCE DAY.

   IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY THEN BETWEEN THE HOURS OF 7:00 AM THE THURSDAY BEFORE INDEPENDENCE DAY AND 6:00 PM THE TUESDAY AFTER INDEPENDENCE DAY.
6. FOR LABOR DAY, BETWEEN THE HOURS OF 7:00 AM FRIDAY AND 6:00 PM TUESDAY.
7. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 7:00 AM TUESDAY AND 6:00 PM MONDAY.
8. FOR CHRISTMAS, BETWEEN THE HOURS OF 7:00 AM THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 6:00 PM THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS DAY.

SPECIAL EVENTS

9. FOR DASH BASEBALL HOME GAMES AT BB&T BALLPARK, FOUR (4) HOURS BEFORE THE START OF THE GAME AND FOUR (4) HOURS AFTER THE END OF THE GAME. (THIS NOTE ONLY APPLIES TO BROAD STREET AND PETERS CREEK PARKWAY).
10. FOR THE DIXIE CLASSIC FAIR IN WINSTON-SALEM BETWEEN THE HOURS OF 7:00 A.M. THE DAY BEFORE THE START OF THE DIXIE CLASSIC FAIR AND 6:00 P.M. THE DAY AFTER THE END OF THE DIXIE CLASSIC FAIR. (THIS NOTE ONLY APPLIES TO UNIVERSITY PARKWAY, N. CHERRY STREET, REYNOLDS BOULEVARD AND SHOREFAIR DRIVE).
11. FOR WAKE FOREST UNIVERSITY FOOTBALL GAMES OCCURRING AT BB&T FIELD, FOUR (4) HOURS BEFORE THE START OF THE GAME AND FOUR (4) HOURS AFTER THE END OF THE GAME. (THIS NOTE ONLY APPLIES TO UNIVERSITY PARKWAY, N. CHERRY STREET, REYNOLDS BOULEVARD AND SHOREFAIR DRIVE).
12. FOR WAKE FOREST UNIVERSITY BASKETBALL GAMES OCCURRING AT LAWRENCE JOEL VETERANS MEMORIAL COLISEUM, TWO (2) HOURS BEFORE THE START OF THE GAME AND TWO (2) HOURS AFTER THE END OF THE GAME. (THIS NOTE ONLY APPLIES TO UNIVERSITY PARKWAY, N. CHERRY STREET, REYNOLDS BOULEVARD AND SHOREFAIR DRIVE).
13. FOR CAR RACES AT BOWMAN GRAY STADIUM, FOUR (4) HOURS BEFORE THE START OF THE RACE AND FOUR (4) HOURS AFTER THE END OF THE RACE. (THIS NOTE ONLY APPLIES TO RAMS DRIVE AND MARTIN LUTHER KING JR. DR.).
14. FOR FOOTBALL GAMES AND OTHER SPECIAL EVENTS AT WINSTON-SALEM STATE UNIVERSITY, FOUR (4) HOURS BEFORE THE START OF THE GAME AND/OR THE EVENT AND FOUR (4) HOURS AFTER THE END OF THE GAME AND/OR THE EVENT. (THIS NOTE ONLY APPLIES TO RAMS DRIVE AND MARTIN LUTHER KING JR. DR.).
15. FOR AIR SHOW IN WINSTON-SALEM, BETWEEN THE HOURS OF 7:00 A.M. THE FRIDAY BEFORE THE START OF THE SHOW AND 6:00 P.M. THE MONDAY AFTER THE END OF THE SHOW. (THIS NOTE ONLY APPLIES TO LIBERTY STREET).
16. FOR THE HOLIDAY SHOPPING PERIOD AT HANES MALL FROM 7:00 AM ON THE TUESDAY BEFORE THANKSGIVING TO 6:00 PM ON JANUARY 2ND. (THIS NOTE ONLY APPLIES TO HANES MALL BOULEVARD AND STRATFORD ROAD).

C) DO NOT CLOSE OR NARROW TRAVEL LANES OR CLOSE SIDEWALKS OR PEDESTRIAN CROSSINGS WITHIN THE LAWRENCE JOEL MEMORIAL COLISEUM COMPLEX AREA WITHOUT PRIOR APPROVAL OF THE CITY OF WINSTON-SALEM. SUBMIT TO THE CITY FOR REVIEW AND APPROVAL TWO WEEKS IN ADVANCE A SCHEDULE FOR PROPOSED WORK THAT WILL REQUIRE NARROWING OR CLOSING A LANE, ROAD, SIDEWALK OR PEDESTRIAN CROSSING. THE LAWRENCE JOEL COLISEUM COMPLEX AREA IS DEFINED AS THE AREA BOUNDED BY UNIVERSITY PARKWAY, 27TH STREET NW, SHOREFAIR DRIVE AND REYNOLDS BOULEVARD.

D) DO NOT CLOSE OR NARROW TRAVEL LANES OR CLOSE SIDEWALKS OR PEDESTRIAN CROSSINGS WITHIN ½ MILE OF A SCHOOL DURING ARRIVAL AND DISMISSAL HOURS ON A SCHOOL DAY. COORDINATE WITH THE AFFECTED SCHOOL CONCERNING OPERATIONAL HOURS AND SCHOOL DAYS. AS A MINIMUM, DO NOT CLOSE OR NARROW A LANE OR CLOSE A SIDEWALK OR PEDESTRIAN CROSSING DURING HOURS POSTED ON SCHOOL SPEED ZONE SIGNS (WHEN PRESENT).

E) DO NOT STOP TRAFFIC AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS	DURATION AND OPERATION
ANY ROAD	MON. - SUN. 6:00 AM TO 12:00 AM (MIDNIGHT)	20 MINUTES INSTALLING CABLE ACROSS ROAD (USING RSD. 1101.03, SHEETS 8 & 9 OF 9)

F) DO NOT TAKE ANY TRAFFIC SIGNAL OUT OF OPERATION TO PERFORM CONTROLLER CABINET CHANGEOUT BETWEEN THE HOURS OF 4:00 PM AND 9:00 AM THE FOLLOWING MORNING.

LANE AND SHOULDER CLOSURE REQUIREMENTS

G) ON STREETS WHERE POSTED SPEED LIMIT IS 40 MPH OR LESS AND WORK IS ON THE SHOULDER, CLOSE THE SHOULDER USING RSD 1101.04 OR USE A SHOULDER CLOSURE WITH MINOR ENCROACHMENT INTO THE ADJACENT TRAFFIC LANE AS SHOWN IN M.U.T.C.D. FIGURE 6H-6, "SHOULDER WORK WITH MINOR ENCROACHMENT (TA-6)." WHEN USING TA-6, COMPLY WITH THE APPLICATION NOTES ON MUTCD PAGE 6H-16, AND MAINTAIN A MINIMUM OF 10-FT TRAVEL LANE. CLOSE AFFECTED SIDEWALKS AND PEDESTRIAN PATHS. WHERE A 10FT. OR GREATER TRAVEL LANE CANNOT BE MAINTAINED OR AS DIRECTED BY THE ENGINEER, CLOSE THE ADJACENT TRAFFIC LANE USING RSD 1101.02, SHEETS 1 THRU 4 OF 15.

H) 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.

I) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING GREATER THAN 5 FT BUT LESS THAN 15 FT FROM AN OPEN TRAVEL LANE ON A ROADWAY WITH A POSTED SPEED LIMIT OF 45 MPH OR GREATER, CLOSE THE ADJACENT SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.

J) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 5 FT OF AN OPEN TRAVEL LANE ON A ROADWAY WITH A POSTED SPEED LIMIT OF 45 MPH OR GREATER, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

K) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE 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.

L) DO NOT INSTALL MORE THAN ONE LANE CLOSURE IN ANY ONE DIRECTION ON ANY ROADWAY.

SIGNING

M) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE. INSTALL SIGNS IMMEDIATELY PRIOR TO THE BEGINNING OF CONSTRUCTION AND REMOVE OR COVER SIGNS UPON COMPLETION AND DURING INACTIVE PERIODS.

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

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310
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(919) 876-6888 NCBEES #F-0326

APPROVED: J. Todd Brooks DATE: 3/29/13

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 17566 ENGINEER J. TODD BROOKS

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

PROJECT NOTES
(SHEET 1 OF 2)

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PROJECT NOTES

SIGNING - CONT.

O) THE WORD "SIGNAL" OR "UTILITY" MAY BE USED IN LIEU OF "ROAD" ON W20-1 (ROAD WORK AHEAD) SIGNS G20-2a (END ROAD WORK) SIGNS. HOWEVER, DO NOT INTERMIX SIGNS.

P) USE PORTABLE SIGN SUPPORTS IN LIEU OF STATIONARY SIGN SUPPORTS FOR ALL WORKZONE SIGNS UNLESS THE ENGINEER DIRECTS OTHERWISE.

TRAFFIC CONTROL DEVICES

Q) WHEN LANE CLOSURES ARE NOT IN EFFECT. REFER TO SECTIONS 1130 (DRUMS), 1135 (CONES) AND 1180 (SKINNY DRUMS) OF STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES FOR ADDITIONAL REQUIREMENTS.

R) PLACE ADDITIONAL SETS OF THREE DRUMS PERPENDICULAR TO THE EDGE OF TRAVELWAY ON 500 FT CENTERS WHEN UNOPENED LANES ARE CLOSED TO TRAFFIC.

PEDESTRIANS

S) 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.).

T) MAINTAIN REASONABLE AND SAFE PEDESTRIAN ACCESS TO ALL BUSINESSES, SCHOOLS AND DWELLINGS IN AREAS AFFECTED BY CONSTRUCTION AT ALL TIMES.

U) REFER TO MUTCD SECTION 6D.01, "PEDESTRIAN CONSIDERATIONS" AND SECTION 6D.02, "ACCESSIBILITY CONSIDERATIONS" FOR ADDITIONAL REQUIREMENTS AND CONSIDERATIONS FOR MAINTAINING PEDESTRIAN MOBILITY THROUGH WORK AREA.

V) WHEN CONSTRUCTION ACTIVITIES WILL BLOCK PEDESTRIAN ACCESS TO PEDESTRIAN SIGNAL PUSHBUTTONS, NOTIFY THE ENGINEER AT LEAST 24 HOURS IN ADVANCE OF SUCH WORK TO HAVE THE TRAFFIC SIGNAL PLACE ON PEDESTRIAN RECALL.

W) COORDINATE WITH CITY OF WINSTON-SALEM DEPARTMENT OF TRANSPORTATION CONCERNING ANY SPECIAL REQUIREMENTS FOR WORK WITHIN OR ADJACENT TO CITY GREENWAYS AND ANY SPECIAL EVENTS INVOLVING GREENWAYS AT LEAST TWO WEEKS PRIOR TO BEGINNING WORK WITHIN OR ADJACENT TO A CITY GREENWAY.

MISCELLANEOUS

X) LAW ENFORCEMENT MAY BE USED TO MAINTAIN TRAFFIC THROUGH THE WORK AREA AND/OR INTERSECTIONS, AS DIRECTED AND APPROVED IN ADVANCE BY THE ENGINEER, AND SUBJECT TO THE AFOREMENTIONED TIME RESTRICTIONS.

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310
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(919) 876-6888 NCBEES #F-0326

APPROVED: DATE: 2/6/13

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 17606 ENGINEER J. TODD BROOKS

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

PROJECT NOTES
(SHEET 2 OF 2)

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PROJ. REFERENCE NO.	SHEET NO.
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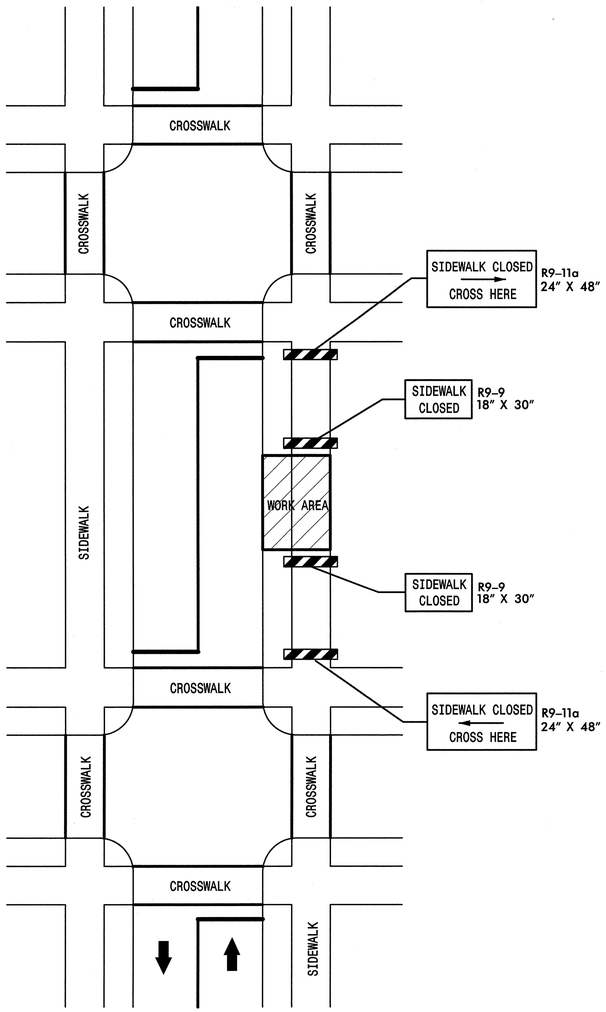

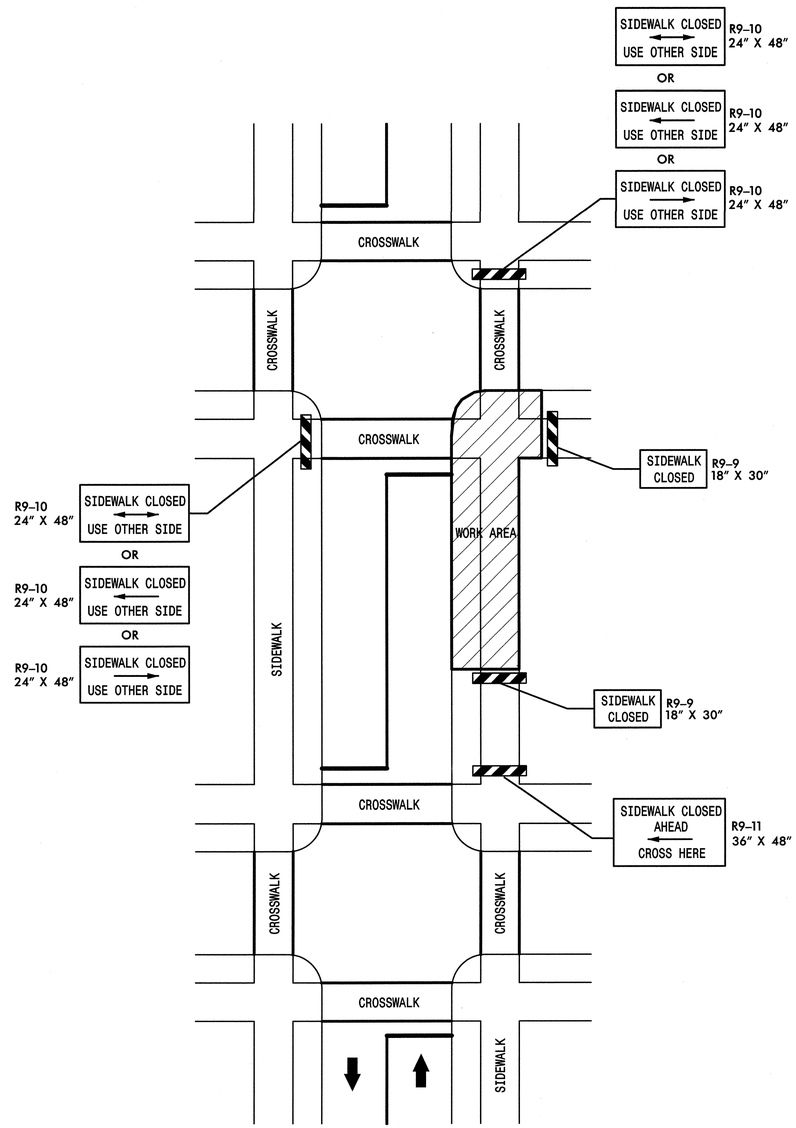

TYPICAL DRAWING FOR
SIDEWALK CLOSURES

LEGEND

▨ — TYPE III BARRICADE

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

APPROVED: DATE: 1/18/13

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 17598 ENGINEER J. TODD BROOKS

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

TYPICAL SIDEWALK CLOSURE AND PEDESTRAIN DETOUR

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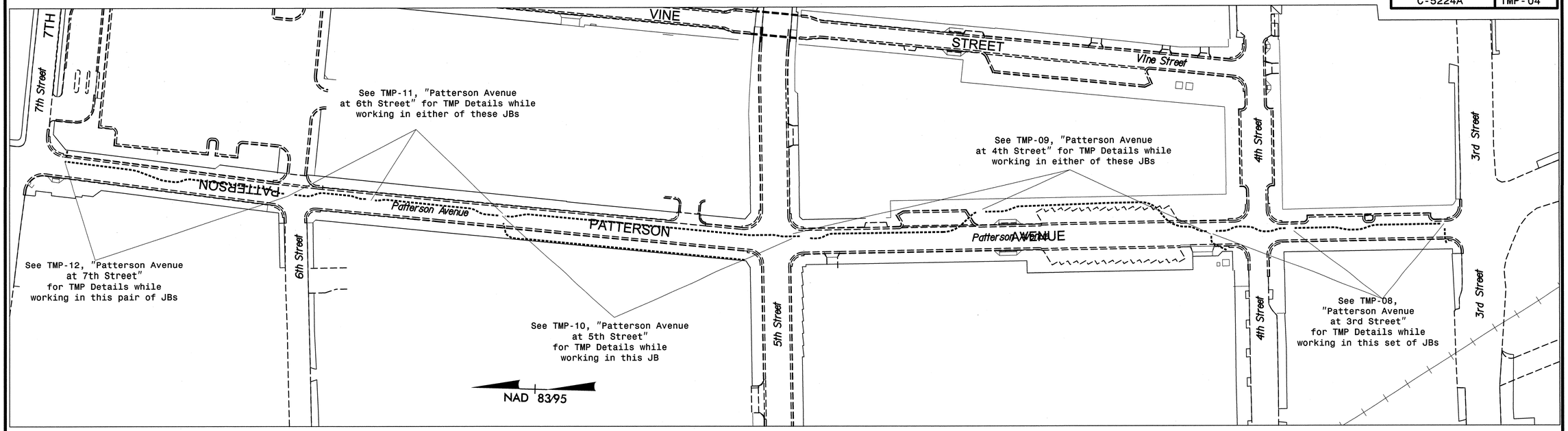

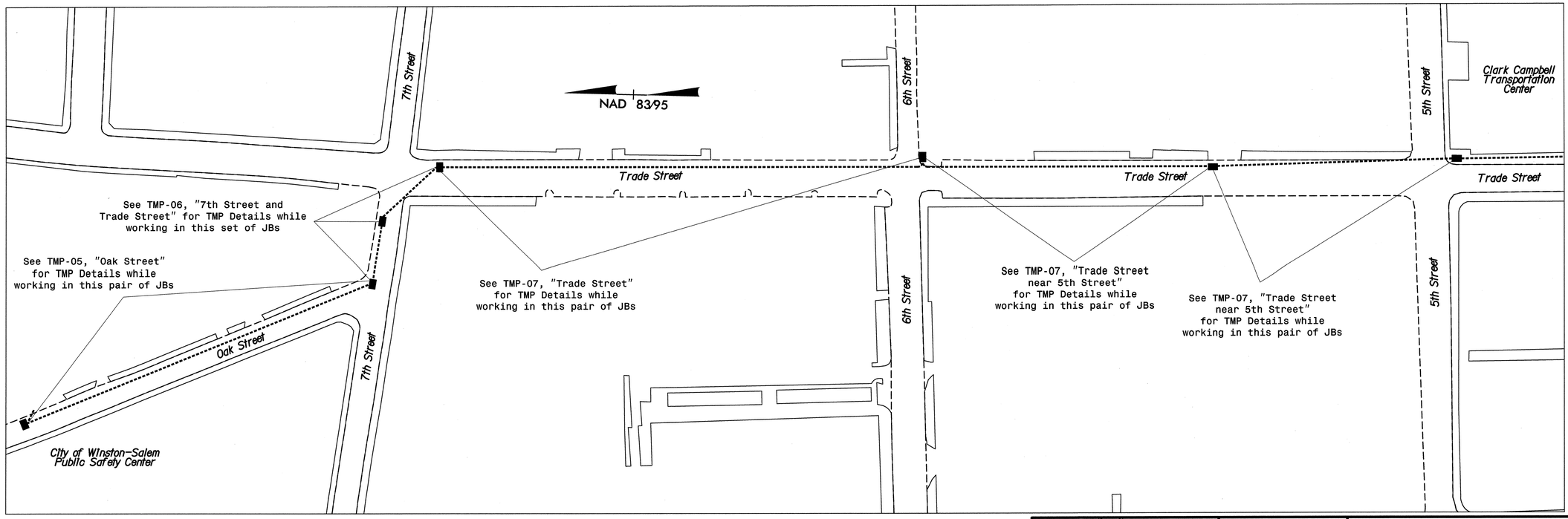

APPROVED: _____ DATE: 1/18/13

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 17586 ENGINEER J. TODD BROOKS

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

PATTERSON AVENUE AND TRADE STREET UNDERGROUND DUCT KEY SHEET

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

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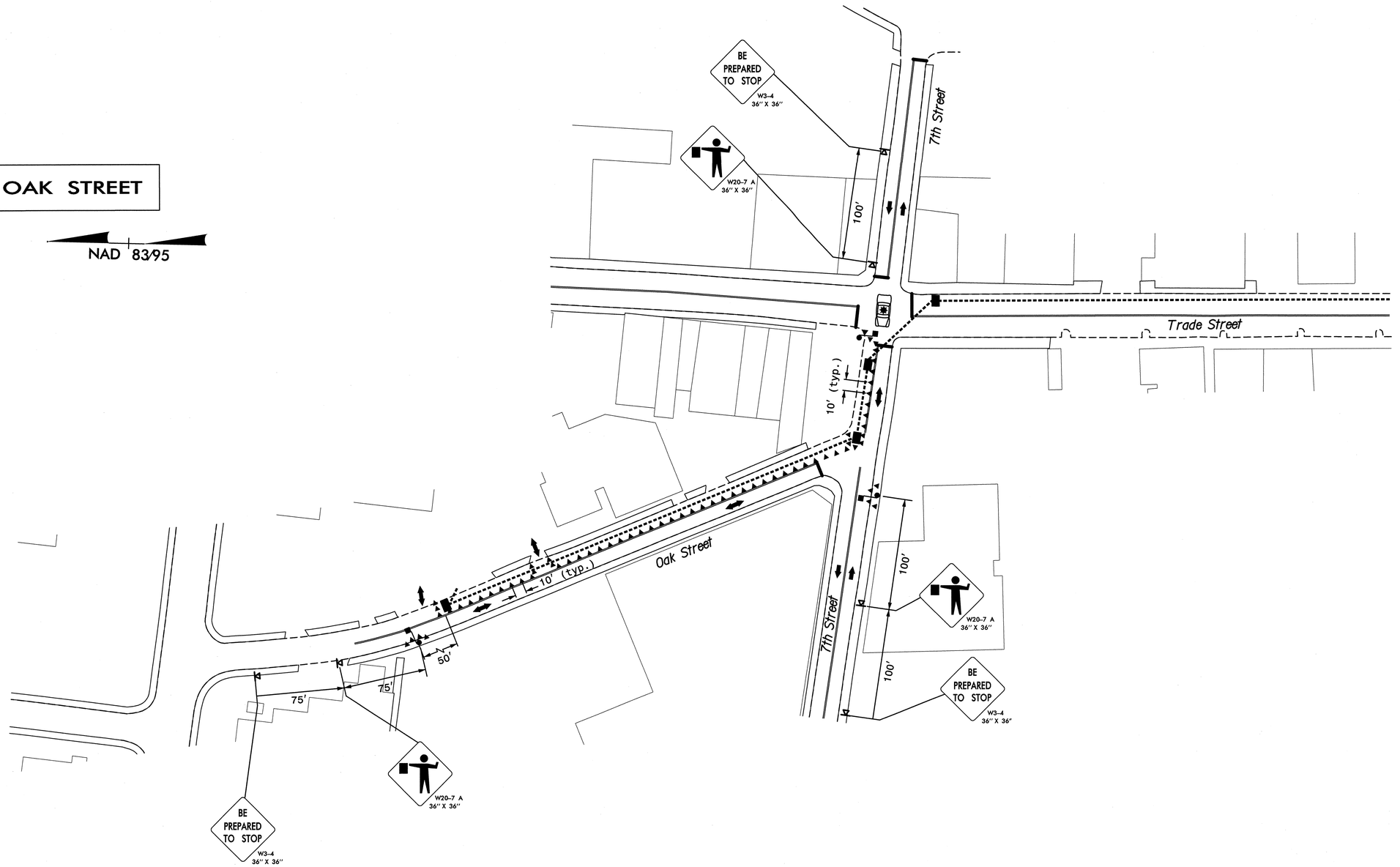

City of Winston-Salem
Public Safety Center

APPROVED: [signature] DATE: 1/18/13

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 17586 ENGINEER J. TODD BROOKS

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

TMP DETAIL

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

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PROJ. REFERENCE NO.	SHEET NO.
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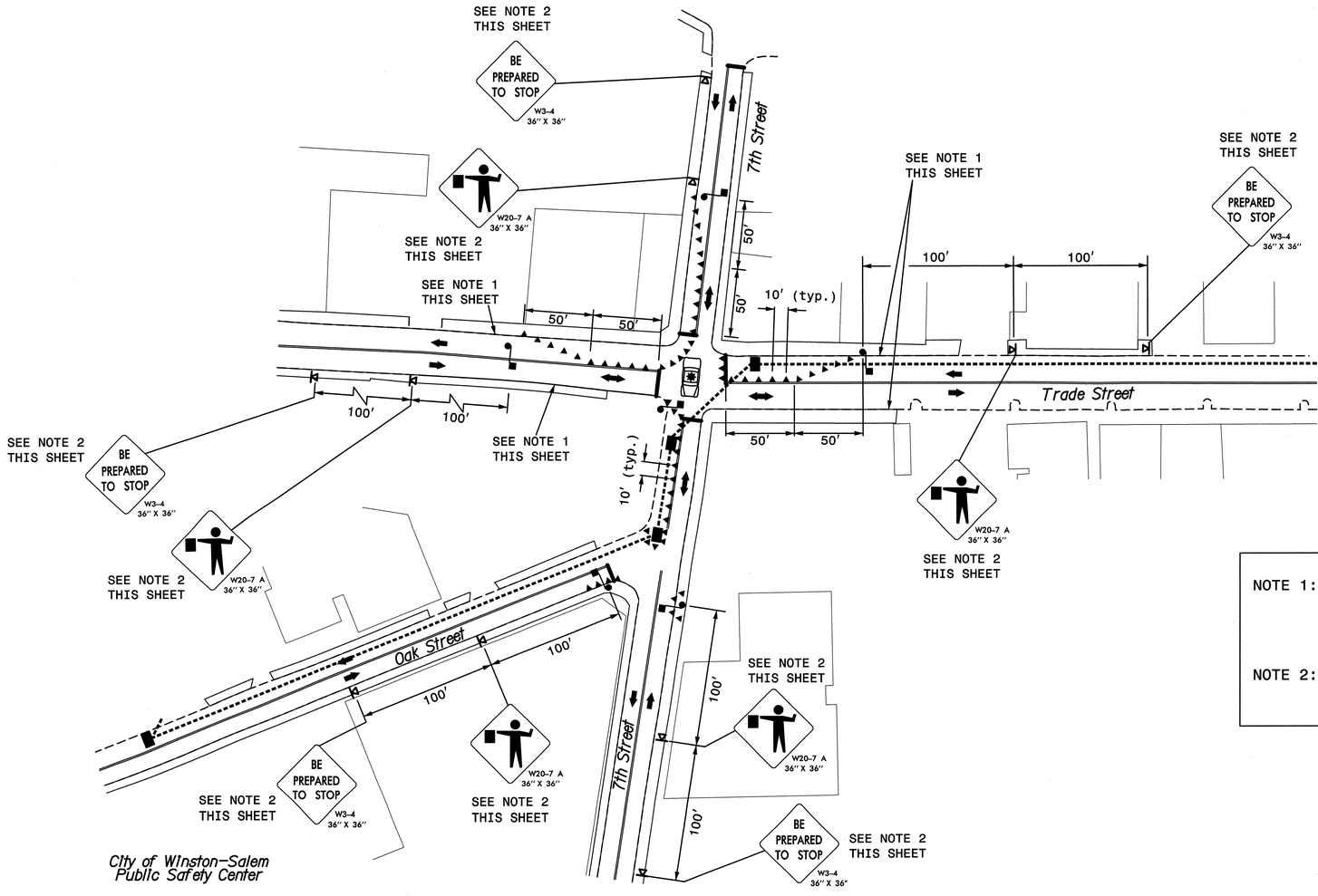
7th STREET AND TRADE STREET



NAD 83/95

NOTE 1: COORDINATE WITH CITY OF WINSTON-SALEM DEPARTMENT OF TRANSPORTATION TO HAVE TEMPORARY NO PARKING SIGNS INSTALLED PRIOR TO ROAD CLOSURE.

NOTE 2: PLACE PORTABLE SIGN STAND SO THAT IT DOES NOT BLOCK SIDEWALK OR POSE A TRIPPING HAZARD.

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

APPROVED: DATE: 1/18/13

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 17586 ENGINEER TODD BROOKS

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

TMP DETAIL

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PROJ. REFERENCE NO.	SHEET NO.
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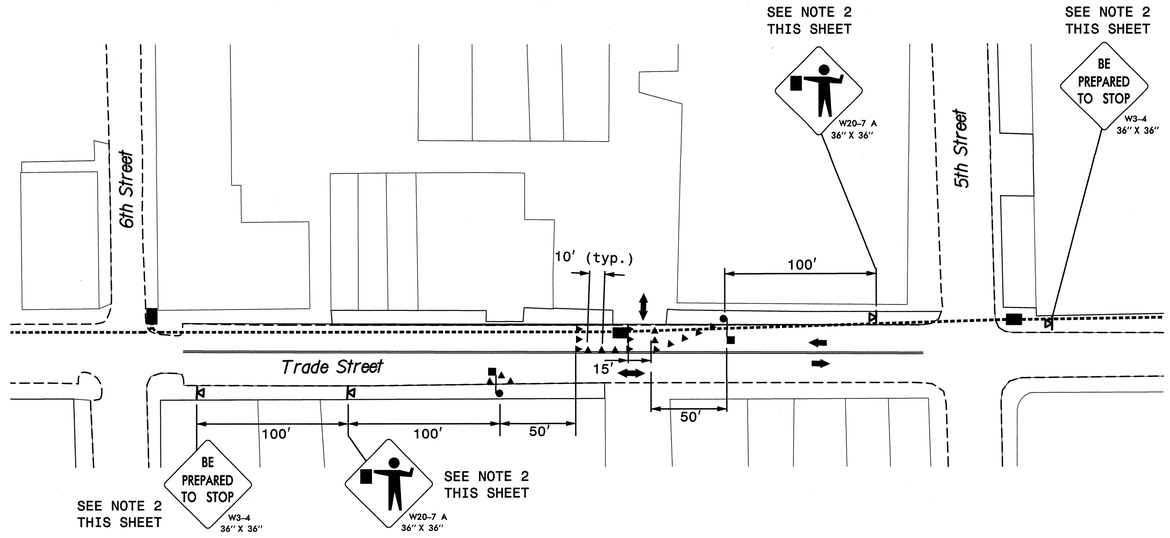
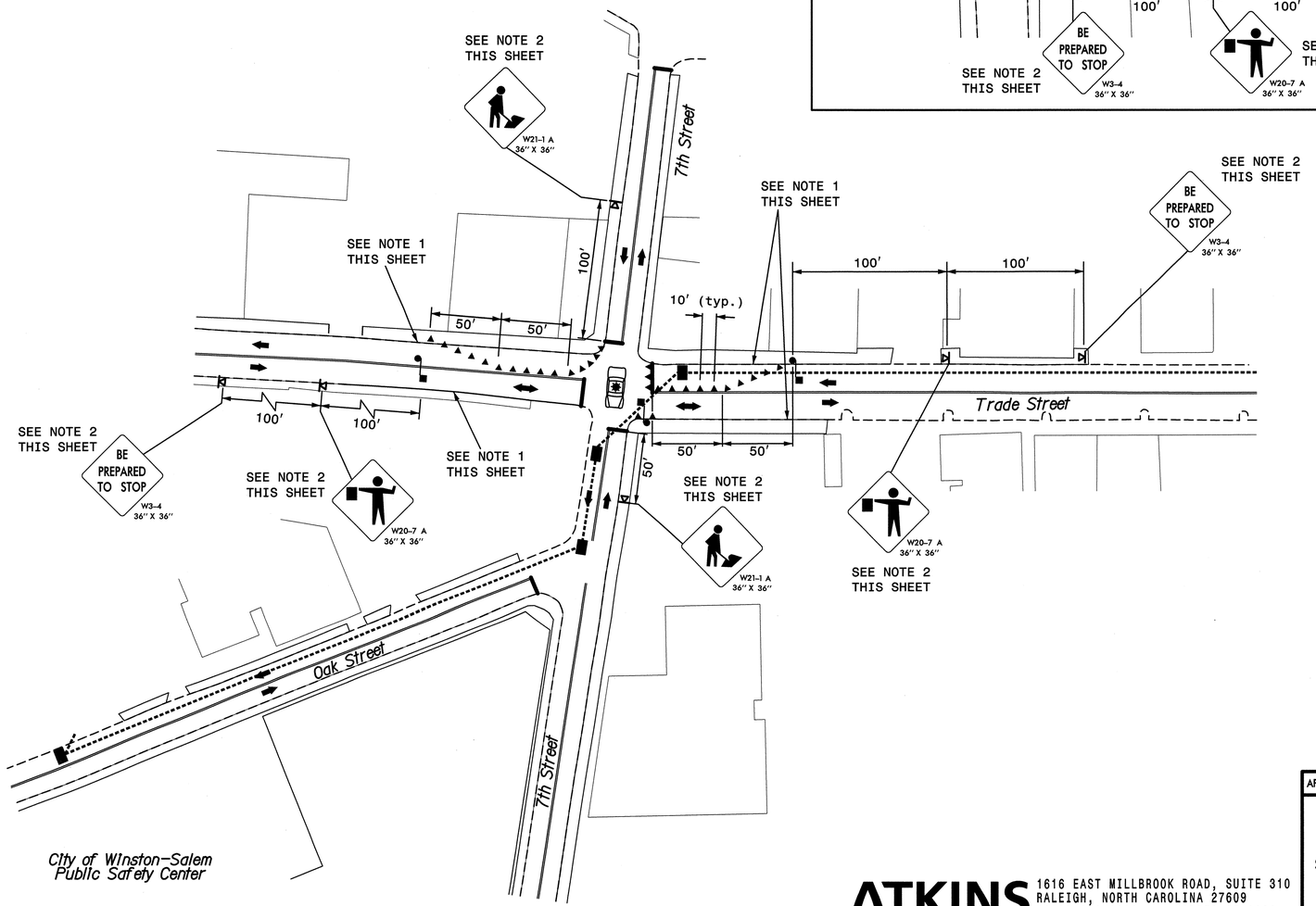
TRADE STREET NEAR 5th STREET

NAD 83/95



TRADE STREET



NAD 83/95

NOTE 1: COORDINATE WITH CITY OF WINSTON-SALEM DEPARTMENT OF TRANSPORTATION TO HAVE TEMPORARY NO PARKING SIGNS INSTALLED PRIOR TO ROAD CLOSURE.

NOTE 2: PLACE PORTABLE SIGN STAND SO THAT IT DOES NOT BLOCK SIDEWALK OR POSE A TRIPPING HAZARD.

APPROVED: _____ DATE: 1/8/13

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 17586 ENGINEER J. TODD BROOKS

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

TMP DETAIL

ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

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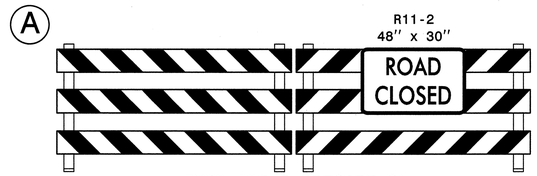
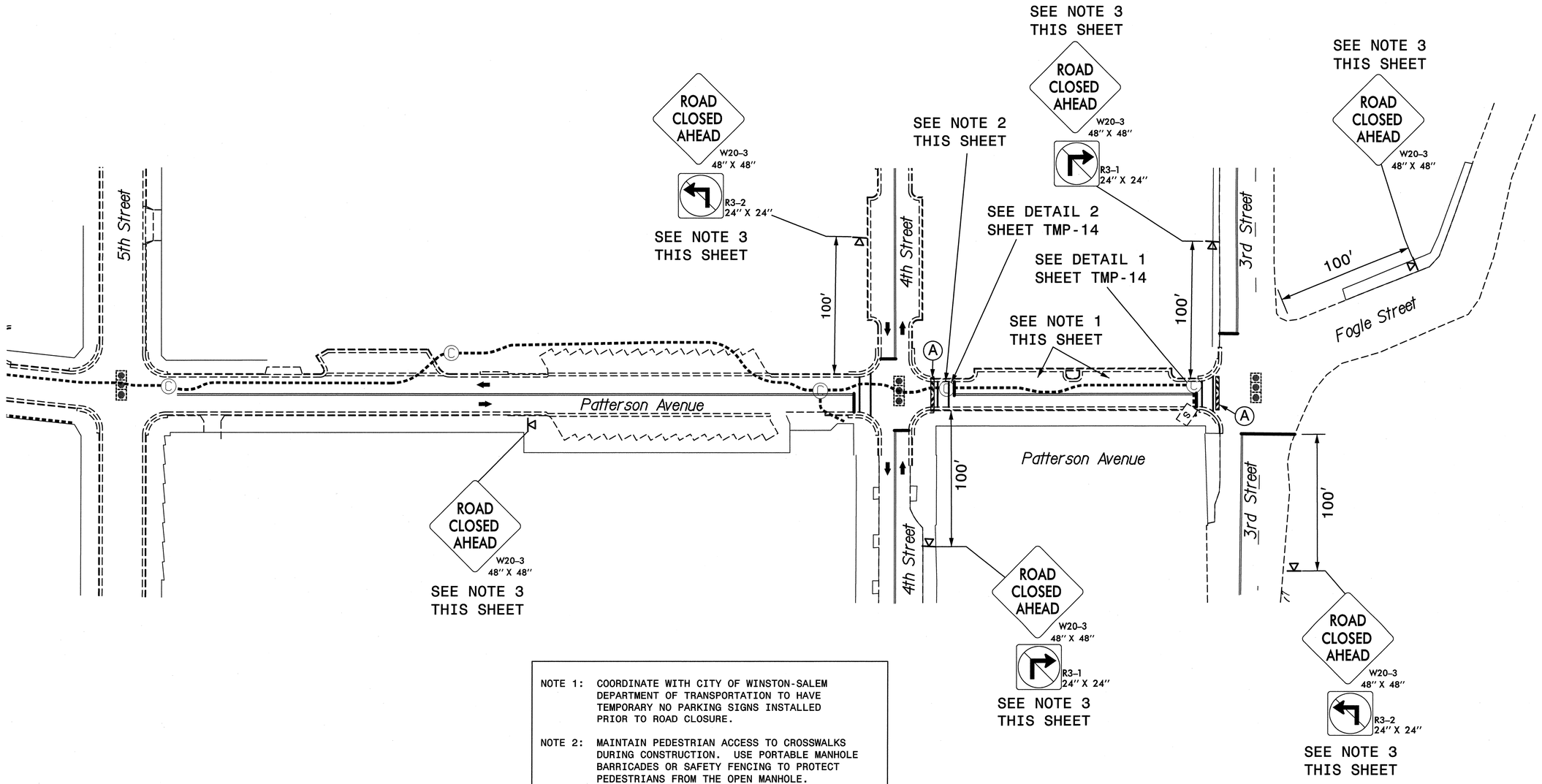
C-5224A	TMP-08



TYPE III BARRICADE(S)

NAD 83/95

PATTERSON AVENUE AT 3RD STREET



NOTE 1: COORDINATE WITH CITY OF WINSTON-SALEM DEPARTMENT OF TRANSPORTATION TO HAVE TEMPORARY NO PARKING SIGNS INSTALLED PRIOR TO ROAD CLOSURE.

NOTE 2: MAINTAIN PEDESTRIAN ACCESS TO CROSSWALKS DURING CONSTRUCTION. USE PORTABLE MANHOLE BARRICADES OR SAFETY FENCING TO PROTECT PEDESTRIANS FROM THE OPEN MANHOLE.

NOTE 3: PLACE PORTABLE SIGN STAND SO THAT IT DOES NOT BLOCK SIDEWALK OR POSE A TRIPPING HAZARD.

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

APPROVED: DATE: 1/8/13

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 17586 ENGINEER TODD BROOKS

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

TMP DETAIL

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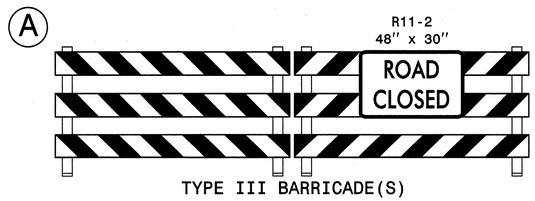
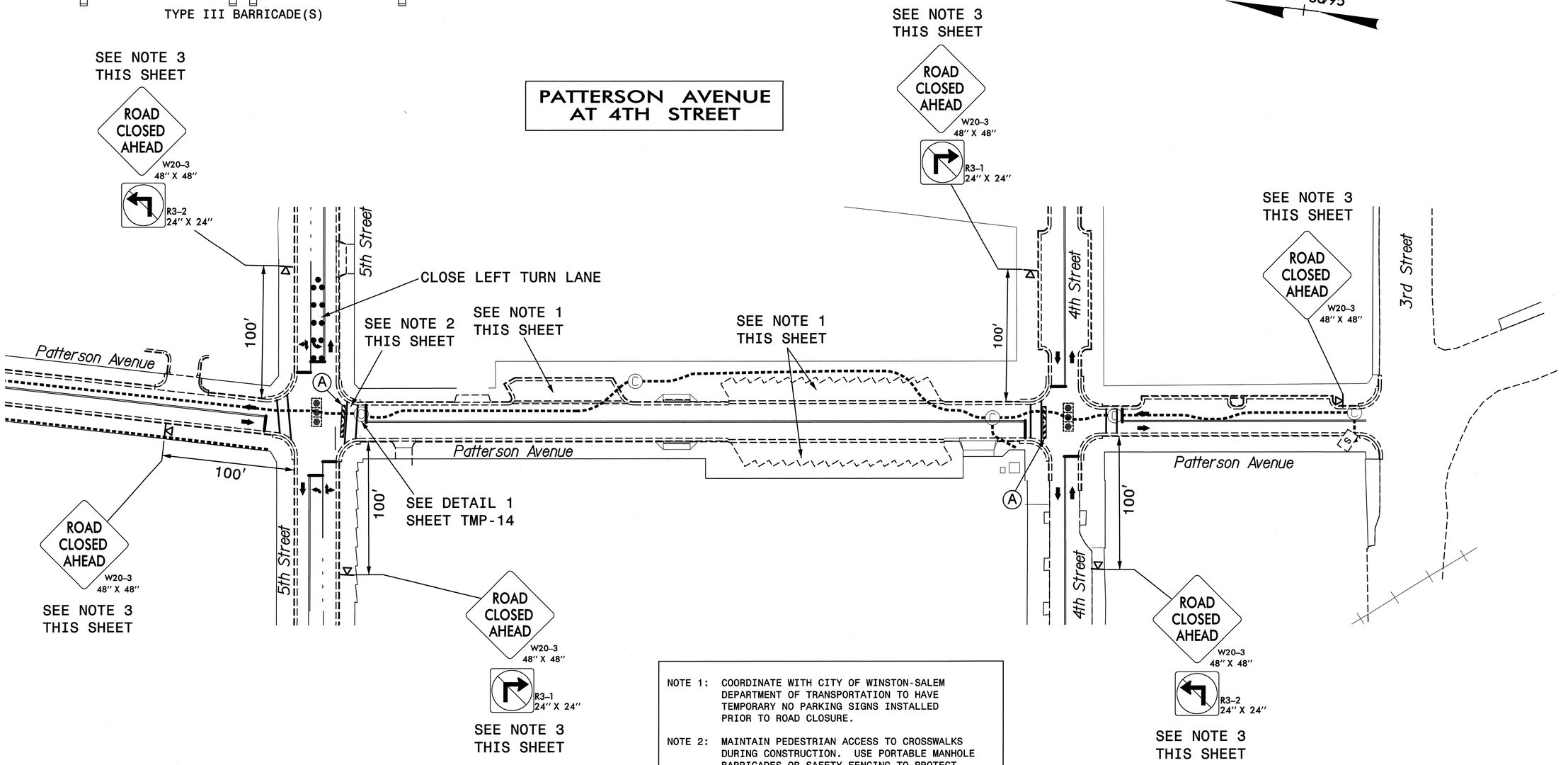


PATTERSON AVENUE AT 4TH STREET

NAD 83/95



NOTE 1: COORDINATE WITH CITY OF WINSTON-SALEM DEPARTMENT OF TRANSPORTATION TO HAVE TEMPORARY NO PARKING SIGNS INSTALLED PRIOR TO ROAD CLOSURE.

NOTE 2: MAINTAIN PEDESTRIAN ACCESS TO CROSSWALKS DURING CONSTRUCTION. USE PORTABLE MANHOLE BARRICADES OR SAFETY FENCING TO PROTECT PEDESTRIANS FROM THE OPEN MANHOLE.

NOTE 3: PLACE PORTABLE SIGN STAND SO THAT IT DOES NOT BLOCK SIDEWALK OR POSE A TRIPPING HAZARD.

APPROVED: _____ DATE: 1/9/13

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 17586 ENGINEER J. TODD BROOKS

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

TMP DETAIL

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

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PROJ. REFERENCE NO.	SHEET NO.
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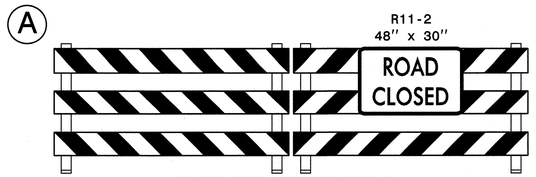
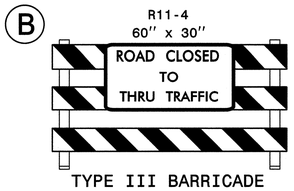
PATTERSON AVENUE AT 5TH STREET

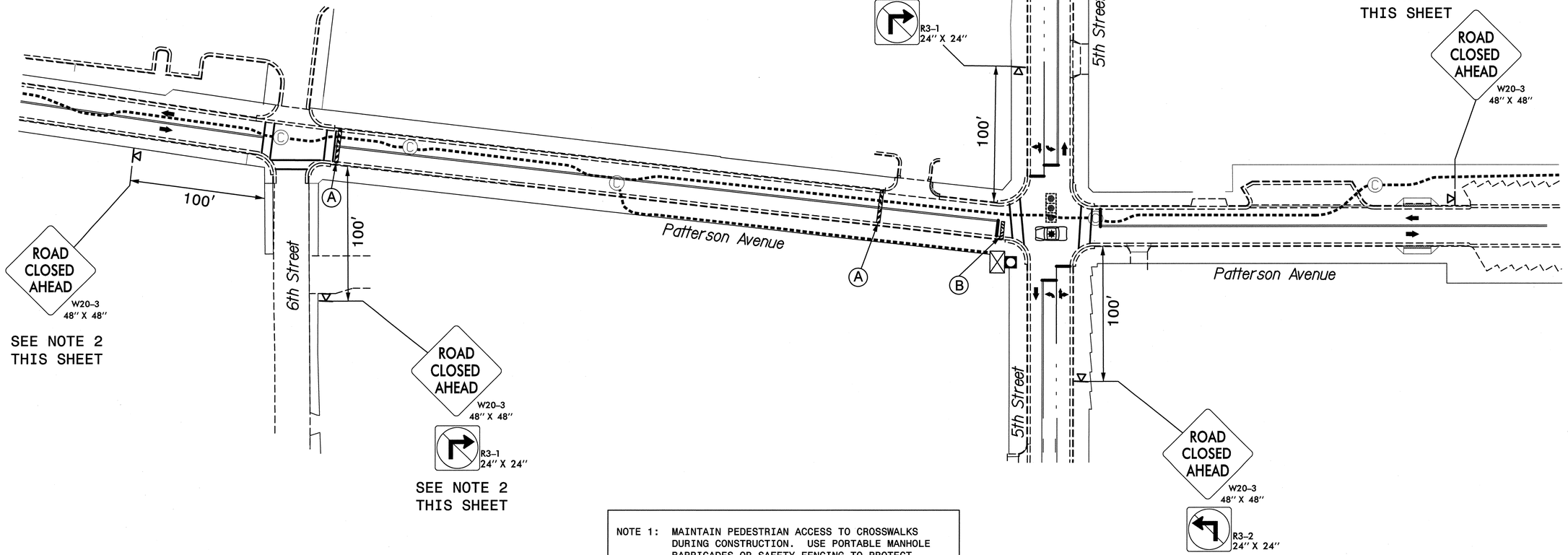
NAD 83/95



TYPE III BARRICADE(S)



TYPE III BARRICADE



NOTE 1: MAINTAIN PEDESTRIAN ACCESS TO CROSSWALKS DURING CONSTRUCTION. USE PORTABLE MANHOLE BARRICADES OR SAFETY FENCING TO PROTECT PEDESTRIANS FROM THE OPEN MANHOLE.

NOTE 2: PLACE PORTABLE SIGN STAND SO THAT IT DOES NOT BLOCK SIDEWALK OR POSE A TRIPPING HAZARD.

APPROVED: _____ DATE: 1/18/13

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 17586 ENGINEER J. TODD BROOKS

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

TMP DETAIL

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

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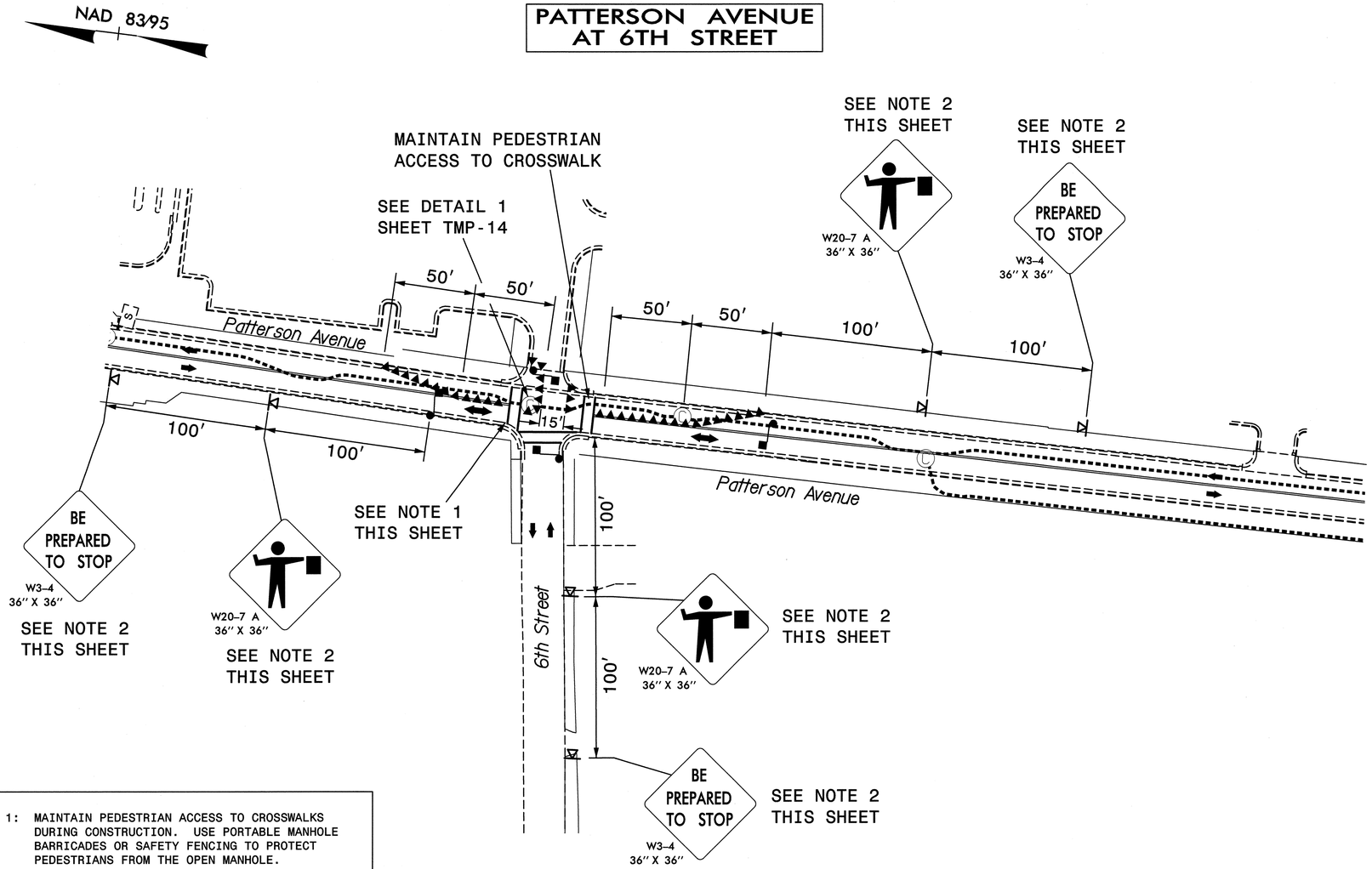
PROJ. REFERENCE NO.	SHEET NO.
C-5224A	TMP-11

PATTERSON AVENUE AT 6TH STREET



NOTE 1: MAINTAIN PEDESTRIAN ACCESS TO CROSSWALKS DURING CONSTRUCTION. USE PORTABLE MANHOLE BARRICADES OR SAFETY FENCING TO PROTECT PEDESTRIANS FROM THE OPEN MANHOLE.

NOTE 2: PLACE PORTABLE SIGN STAND SO THAT IT DOES NOT BLOCK SIDEWALK OR POSE A TRIPPING HAZARD.

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

APPROVED: [signature] DATE: 1/18/13

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 17586 ENGINEER J. TODD BROOKS

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

TMP DETAIL

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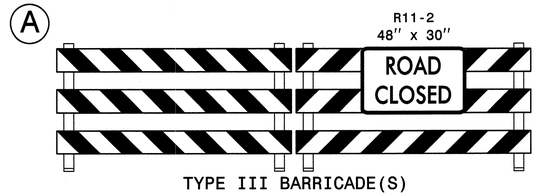
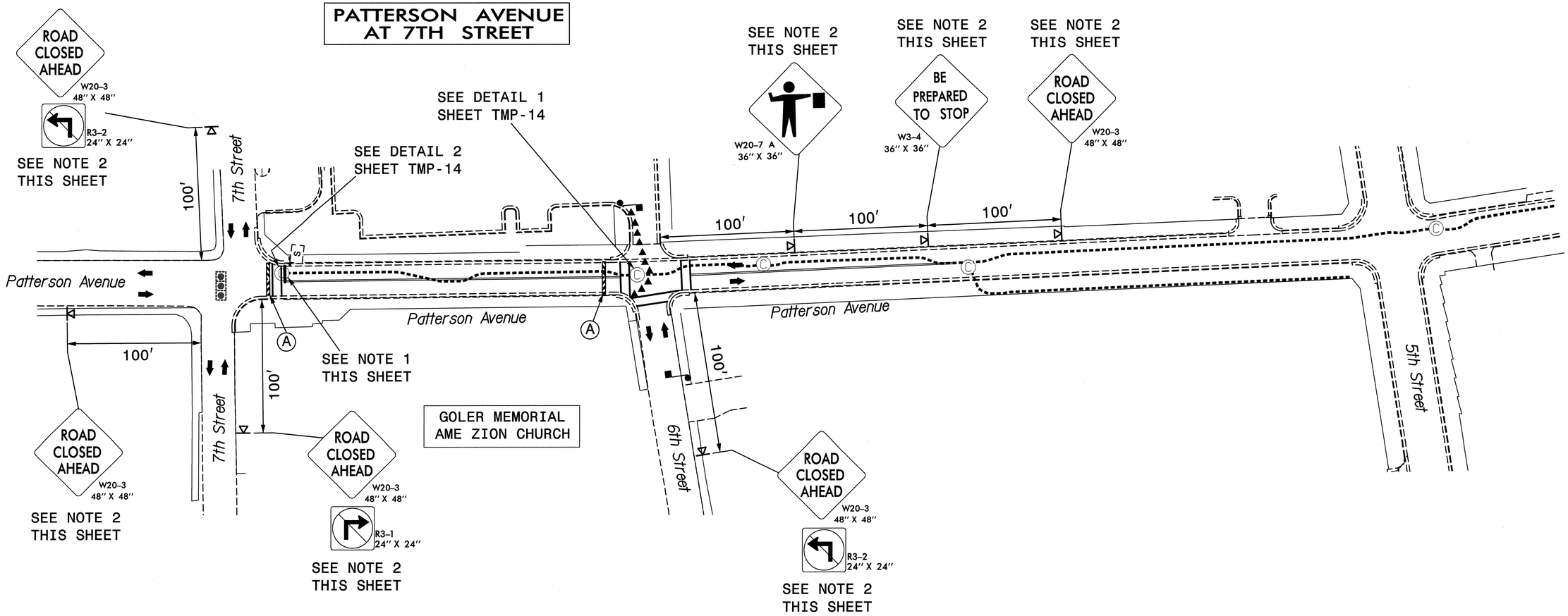


TYPE III BARRICADE(S)

NAD 83/95

PATTERSON AVENUE AT 7TH STREET



NOTE 1: MAINTAIN PEDESTRIAN ACCESS TO CROSSWALKS DURING CONSTRUCTION. USE PORTABLE MANHOLE BARRICADES OR SAFETY FENCING TO PROTECT PEDESTRIANS FROM THE OPEN MANHOLE.

NOTE 2: PLACE PORTABLE SIGN STAND SO THAT IT DOES NOT BLOCK SIDEWALK OR POSE A TRIPPING HAZARD.

APPROVED: _____ DATE: 1/18/13

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 17586 ENGINEER TODD BROOKS

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TMP DETAIL

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310 RALEIGH, NORTH CAROLINA 27609 (919) 876-6888 NCBEES #F-0326

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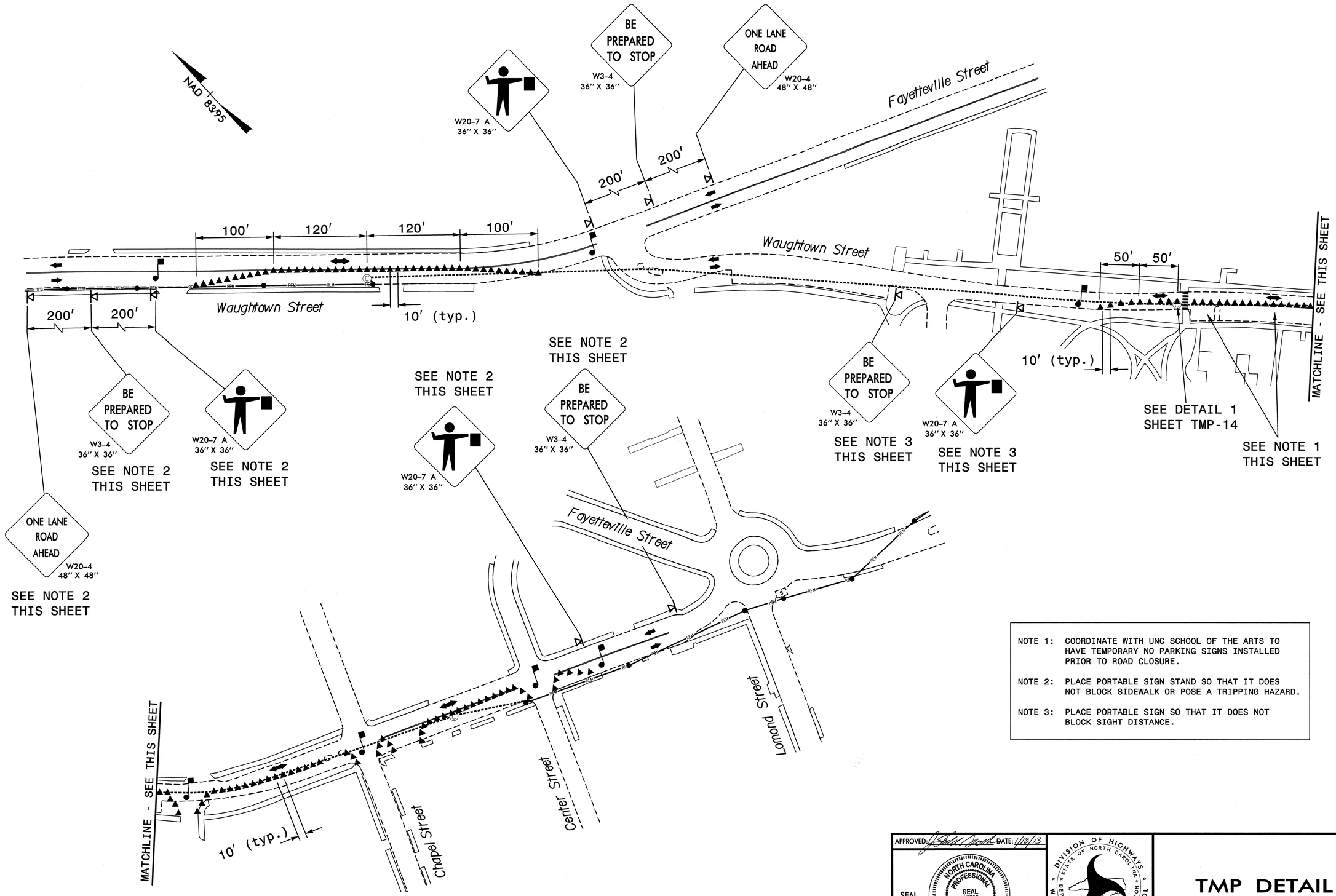
C-5224A	TMP-13



NOTE 1: COORDINATE WITH UNC SCHOOL OF THE ARTS TO HAVE TEMPORARY NO PARKING SIGNS INSTALLED PRIOR TO ROAD CLOSURE.

NOTE 2: PLACE PORTABLE SIGN STAND SO THAT IT DOES NOT BLOCK SIDEWALK OR POSE A TRIPPING HAZARD.

NOTE 3: PLACE PORTABLE SIGN SO THAT IT DOES NOT BLOCK SIGHT DISTANCE.

APPROVED: _____ DATE: 1/8/13

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 17586 ENGINEER TODD BROOKS

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

TMP DETAIL

ATKINS 1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

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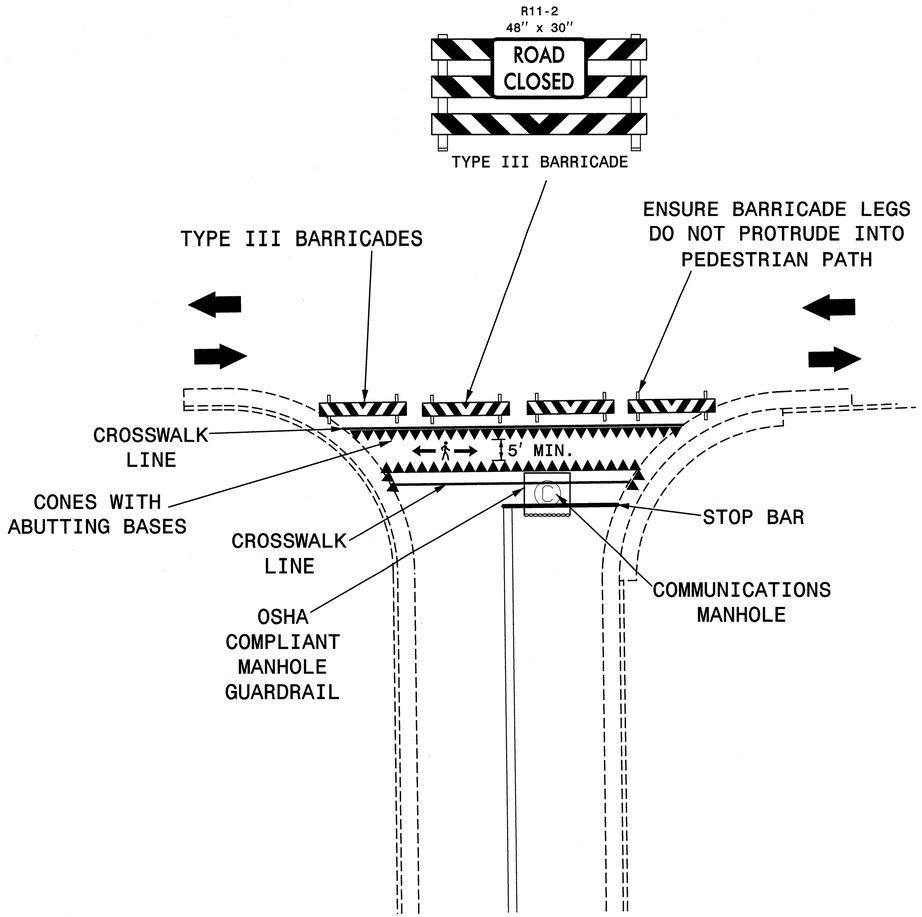
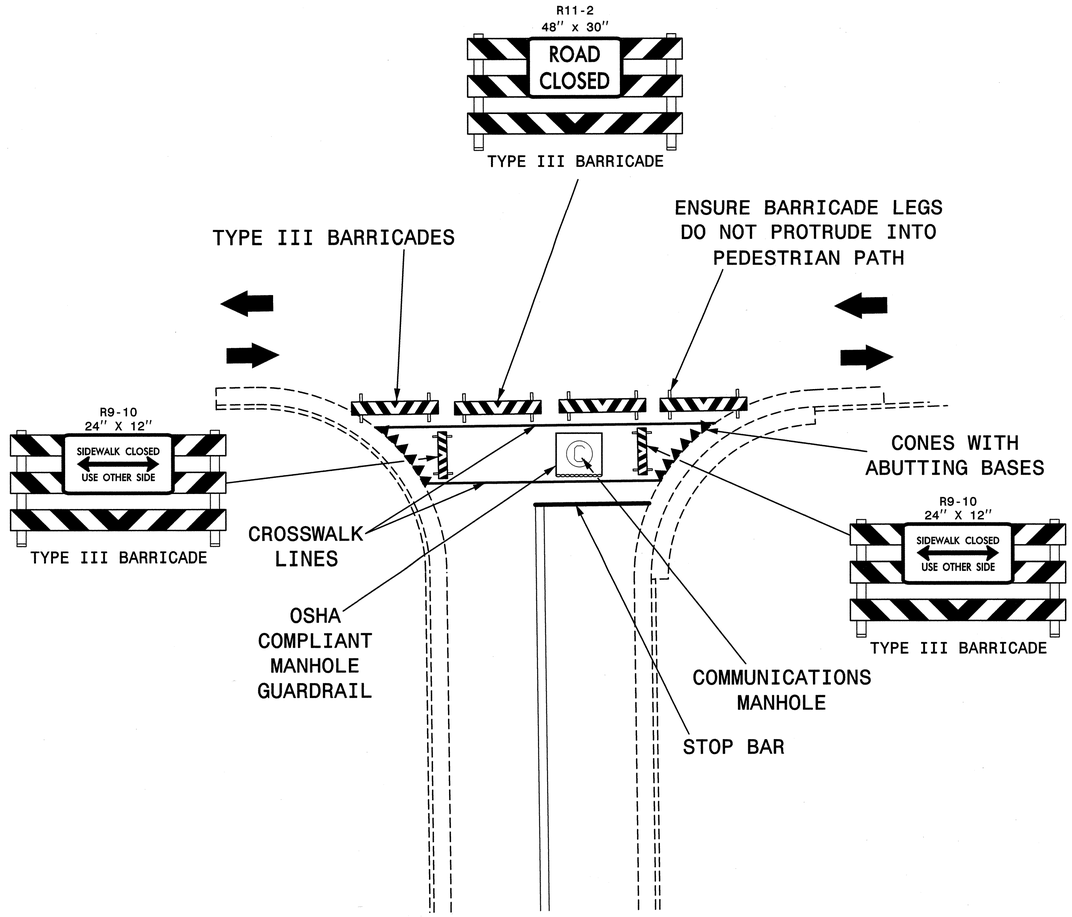


DETAIL 1

DETAIL FOR MAINTAINING PEDESTRIAN CROSSING

MANHOLE ADJACENT TO OR SLIGHTLY ENCROACHING ON EXISTING CROSSWALK



DETAIL 2

DETAIL FOR CROSSWALK CLOSURE AND PEDESTRIAN DETOUR

MANHOLE WITHIN CROSSWALK

ATKINS
1616 EAST MILLBROOK ROAD, SUITE 310
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

APPROVED: DATE: 4/18/13

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 17596 ENGINEER J. TODD BROOKS

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

TYPICAL FOR MANHOLE WORK ADJACENT TO OR WITHIN CROSSWALK

18-JAN-2013 17:18
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