| STATE | STATE PROJECT REFERENCE NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| N.C. | U-4711 | 1 | |

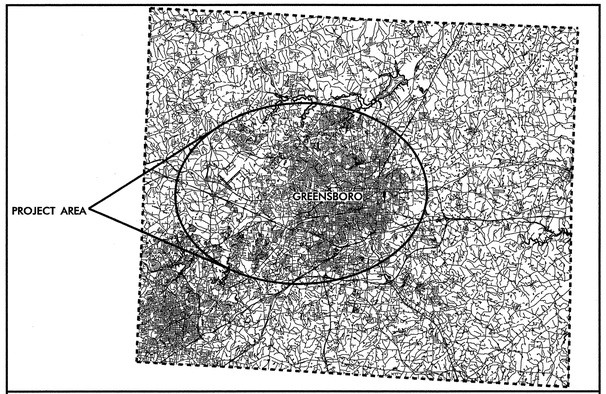
| | | |
|---|---|---|
| 39075.1.1 | | P.E. |
| 39075.3.1 | CMS-0708(13) | CONST. |

# NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

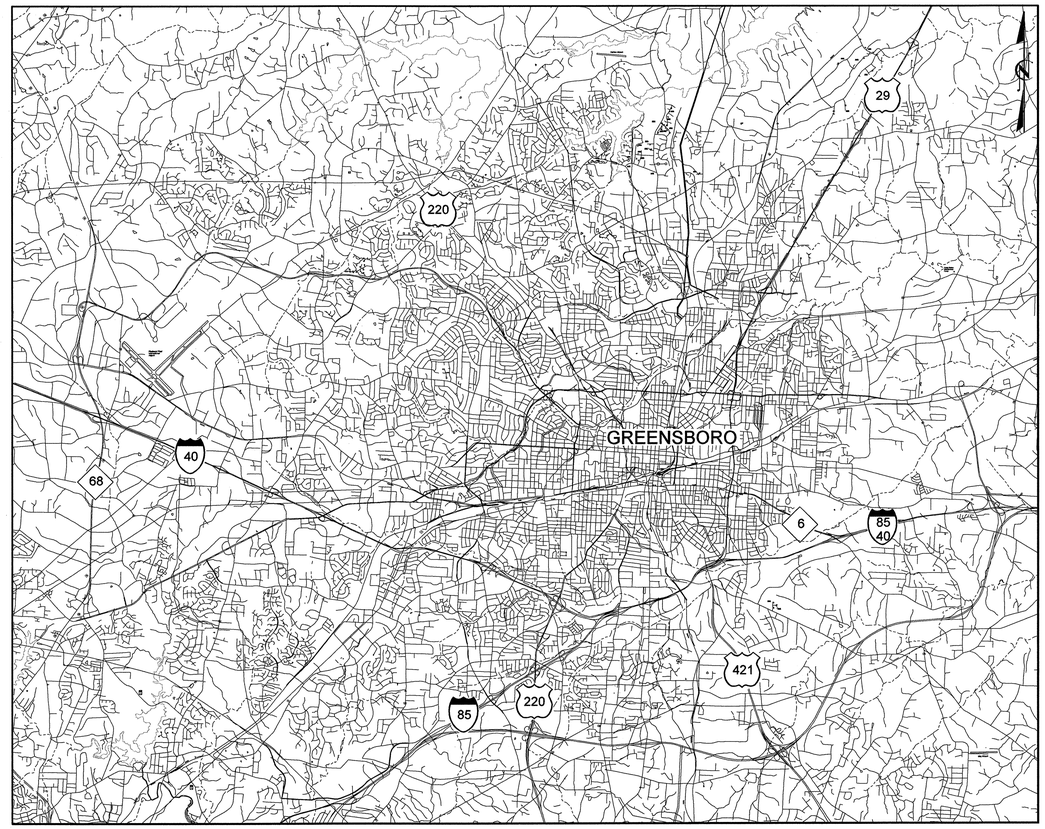
## PLANS FOR PROPOSED IMPROVEMENTS

## GREENSBORO

### COMPUTERIZED TRAFFIC SIGNAL SYSTEM
### DETAILS, QUANTITIES, AND COMMUNICATIONS CABLE AND CONDUIT ROUTING PLANS




VICINITY MAP
NOT TO SCALE




***FINAL PLANS***

**VOLUME 3 OF 5**

**CONTRACT: C201859**

**TIP PROJECT: U-4711**

2/27/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-4711 | 1A |

# NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED IMPROVEMENTS

## GREENSBORO

COMPUTERIZED TRAFFIC SIGNAL SYSTEM

COMMUNICATIONS CABLE AND CONDUIT ROUTING PLANS

## LEGEND

| | |
|---|---|
| FO | NEW FIBER OPTIC COMMUNICATIONS CABLE |
| EXI | EXISTING COMMUNICATIONS CABLE |
| FO LLI | NEW FIBER OPTIC COMMUNICATIONS CABLE AND LOOP LEAD-IN CABLE |
| LLI | NEW LOOP LEAD-IN CABLE |
| | NEW AERIAL GUY ASSEMBLY |
| | NEW CONDUIT |
| | EXISTING CONDUIT |
| DD | NEW DIRECTIONAL DRILLED CONDUIT |
| B&J | NEW BORED AND JACKED CONDUIT |
| | NEW JUNCTION BOX |
| | EXISTING JUNCTION BOX |
| MH | EXISTING MANHOLE |
| | NEW WOOD POLE |
| | EXISTING WOOD POLE |
| S | NEW SPLICE ENCLOSURE |
| S | EXISTING SPLICE ENCLOSURE |
| | NEW METAL POLE |
| | EXISTING METAL POLE |
| | EXISTING MAST ARM METAL POLE |
| | NEW CCTV CAMERA ASSEMBLY |
| | EXISTING CCTV CAMERA ASSEMBLY |
| | NEW STANDARD GUY ASSEMBLY |
| | NEW SIDEWALK GUY ASSEMBLY |
| | NEW CABLE STORAGE RACKS (SNOW SHOES) |
| | NEW WIRELESS TRANSCEIVER AND ANTENNA |
| | NEW BASE MOUNTED EQUIPMENT CABINET (CONTROLLER, CCTV OR COMMUNICATIONS HUB) |
| | EXISTING BASE MOUNTED EQUIPMENT CABINET (CONTROLLER OR CCTV) |
| | NEW POLE MOUNTED EQUIPMENT CABINET (CONTROLLER OR CCTV) |
| | EXISTING POLE MOUNTED EQUIPMENT CABINET (CONTROLLER OR CCTV) |
| S | EXISTING SPLICE CABINET |
| S | NEW SPLICE CABINET |
| | NEW MICROWAVE VEHICLE DETECTOR |
| | NEW SYSTEM DETECTOR |
| | EXISTING SYSTEM DETECTOR |
| | NEW WIRELESS ACCESS POINT |
| XX-XXXX | SIGNAL INVENTORY NUMBER |
| SP | SIGNAL POLE |
| M | NEW CITY MIS DEPARTMENT REQUESTED MATERIAL |

## INDEX OF SHEETS


| SHEET NUMBER | DESCRIPTION |
|---|---|
| 1 | TITLE SHEET |
| 1A | LEGEND, INDEX OF SHEETS, ROADWAY STANDARD DRAWINGS |
| 1B | CONSTRUCTION NOTES |
| 371-595 | CABLE ROUTING SHEETS |


## ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS"- ROADWAY DESIGN UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JULY 2006 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

| STD. NUMBER | DESCRIPTION |
|---|---|
| 1700.01 | ELECTRICAL SERVICE OPTIONS |
| 1700.02 | ELECTRICAL SERVICE GROUNDING |
| 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 |
| 1751.01 | CONTROLLERS AND CABINETS |
| 848.01 | CONCRETE SIDEWALK |

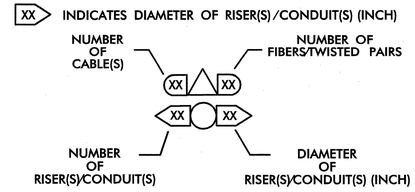
## CONSTRUCTION NOTE SYMBOLOGY KEY

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)




## VOLUME 3 OF 5


PLANS PREPARED BY:

Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh, NC 27636
(919) 677-2000


SEAL

NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/28/08 DATE

CONTRACT: C201859

TIP PROJECT: U-4711

2/27/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-4711 | 1B |

- 1 INSTALL SMFO CABLE
- 2 INSTALL PLENUM RATED FIBER OPTIC CABLE
- 3 INSTALL FIBER OPTIC DROP CABLE
- 4 INSTALL TRACER WIRE
- 5 REUSE NCDOT SMFO CABLE
- 6 REUSE GDOT SMFO CABLE

- 1 TRENCH
- 2 INSTALL PVC CONDUIT
- 3 INSTALL RIGID, GALVANIZED STEEL CONDUIT
- 4 INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
- 5 INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC CABLE SEAL
- 6 INSTALL OUTER-DUCT POLYETHYLENE CONDUIT
- 7 INSTALL POLYETHYLENE CONDUIT
- 8 DIRECTIONAL DRILL CONDUIT
- 9 BORE AND JACK CONDUIT
- 10 INSTALL CABLE(S) IN EXISTING CONDUIT
- 11 INSTALL CABLE(S) IN NEW CONDUIT
- 12 INSTALL CABLE(S) IN EXISTING RISER
- 13 INSTALL CABLE(S) IN NEW RISER
- 14 INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE
- 15 INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
- 16 INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
- 17 INSTALL NEW CONDUIT INTO EXISTING POLE MOUNTED CABINET
- 18 INSTALL NEW RISER INTO EXISTING POLE MOUNTED CABINET
- 19 REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING

- 1 INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET
- 2 INSTALL UNDERGROUND SPLICE ENCLOSURE
- 3 INSTALL AERIAL SPLICE ENCLOSURE
- 4 INSTALL POLE MOUNTED SPLICE CABINET
- 5 INSTALL BASE MOUNTED SPLICE CABINET
- 6 REMOVE EXISTING SPLICE CABINET
- 7 INSTALL TERMINAL SPLICE BOX
- 8 MODIFY EXISTING SPLICE ENCLOSURE

- 1 INSTALL CABINET FOUNDATION
- 2 REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER
- 3 MODIFY EXISTING CABINET FOUNDATION
- 4 INSTALL NEW 333 COMMUNICATION CABINET
- 5 INSTALL NEW 332 BASE MOUNTED CABINET
- 6 INSTALL NEW 336S CABINET
- 7 INSTALL CCTV CAMERA ASSEMBLY
- 8 INSTALL CCTV CAMERA WOOD POLE
- 9 INSTALL CCTV METAL POLE AND FOUNDATION
- 10 INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX
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- 20 INSTALL MESSENGER CABLE
- 21 REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE
- 22 REMOVE EXISTING COMMUNICATIONS CABLE
- 23 INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE
- 24 INSTALL DELINEATOR MARKER
- 25 STORE 30 FEET OF EACH COMMUNICATIONS CABLE
- 26 STORE 100 FEET OF EACH COMMUNICATIONS CABLE
- 27 LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE
- 28 LASH CABLE(S) TO EXISTING MESSENGER CABLE
- 29 LASH CABLE(S) TO NEW MESSENGER CABLE
- 30 INSTALL NEW ELECTRICAL SERVICE
- 31 MODIFY EXISTING ELECTRICAL SERVICE
- 32 INSTALL NEW CONTROLLER
- 33 INSTALL EXISTING CABLE IN NEW CABINET
- 34 INSTALL GENERATOR POWER INLET BOX
- 35 INSTALL LOCAL GIGABIT ETHERNET SWITCH
- 36 INSTALL UNIFIED CABLE
- 37 INSTALL POLE MOUNTED EQUIPMENT CABINET
- 38 INSTALL UNI-DIRECTIONAL YAGI ANTENNA
- 39 INSTALL OMNI-DIRECTIONAL ANTENNA
- 40 INSTALL RADIO TRANSCEIVER
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- 42 INSTALL SYSTEM LOOP AMPLIFIER
- 43 INSTALL SYSTEM LOOP LEAD-IN CABLE
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- 45 INSTALL WIRELESS ACCESS POINT
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- 47 INSTALL CODEC
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- 50 INSTALL ANTENNA CABLE
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- 56 INSTALL MICROWAVE VEHICLE DETECTOR
- 57 INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT
- 58 INSTALL WIRELESS ACCESS POINT POWER CABLE


PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000


0 NONE

Traffic Engineering and Safety Systems Branch
Transportation Systems
750 Greenfield Pkwy., Garner, NC 27529

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CONSTRUCTION NOTES

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

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2/20/2008
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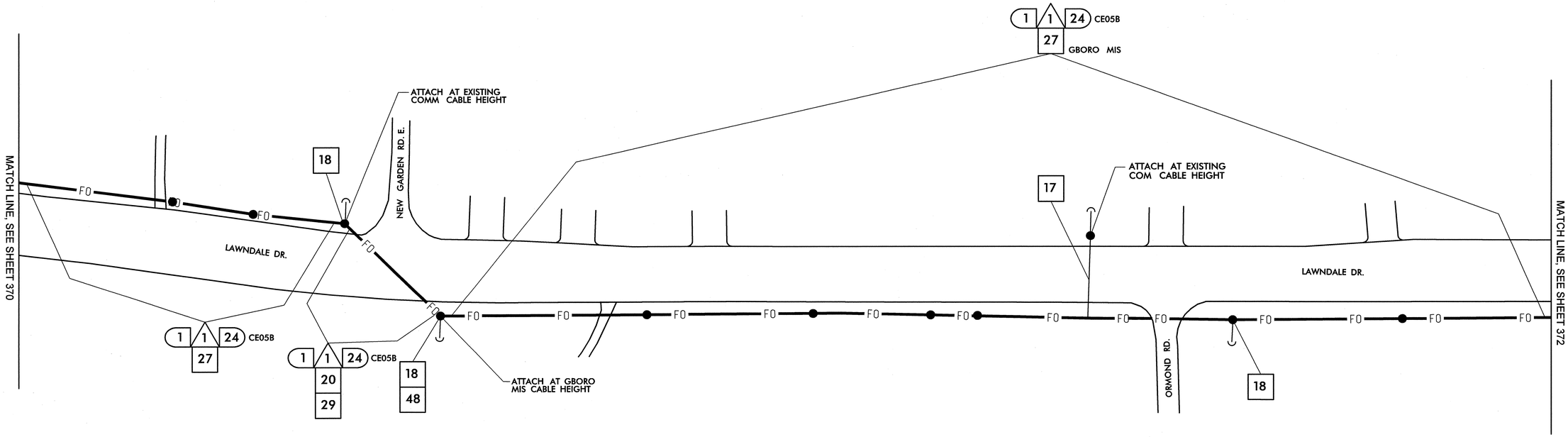
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-4711 | 371 |

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NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000


750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/20/08 DATE

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2/20/2008
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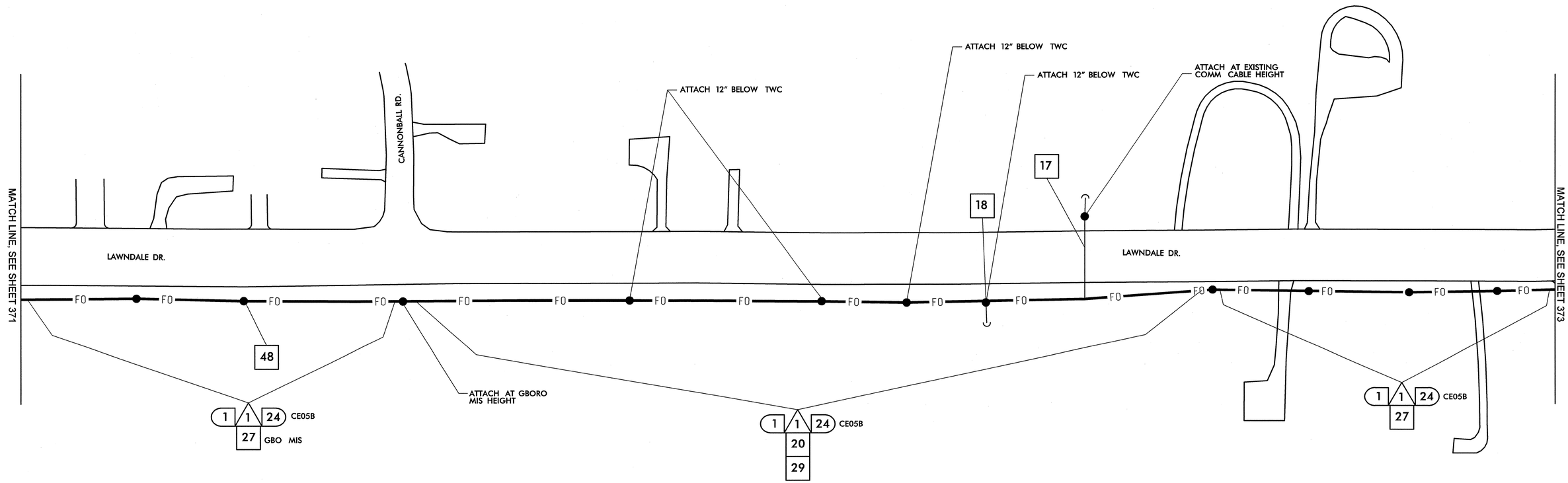
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-4711 | 372 |

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PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000


Traffic Engineering and Safety Systems Branch
Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

| | |
|---|---|
| PLAN DATE: FEBRUARY, 2008 | REVIEWED BY: K.W. SMITH |
| PREPARED BY: K.D. VANPATTEN | REVIEWED BY: M.W. DUNZO |

| REVISIONS | INIT. | DATE |
|---|---|---|
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/20/08 DATE

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2/20/2008
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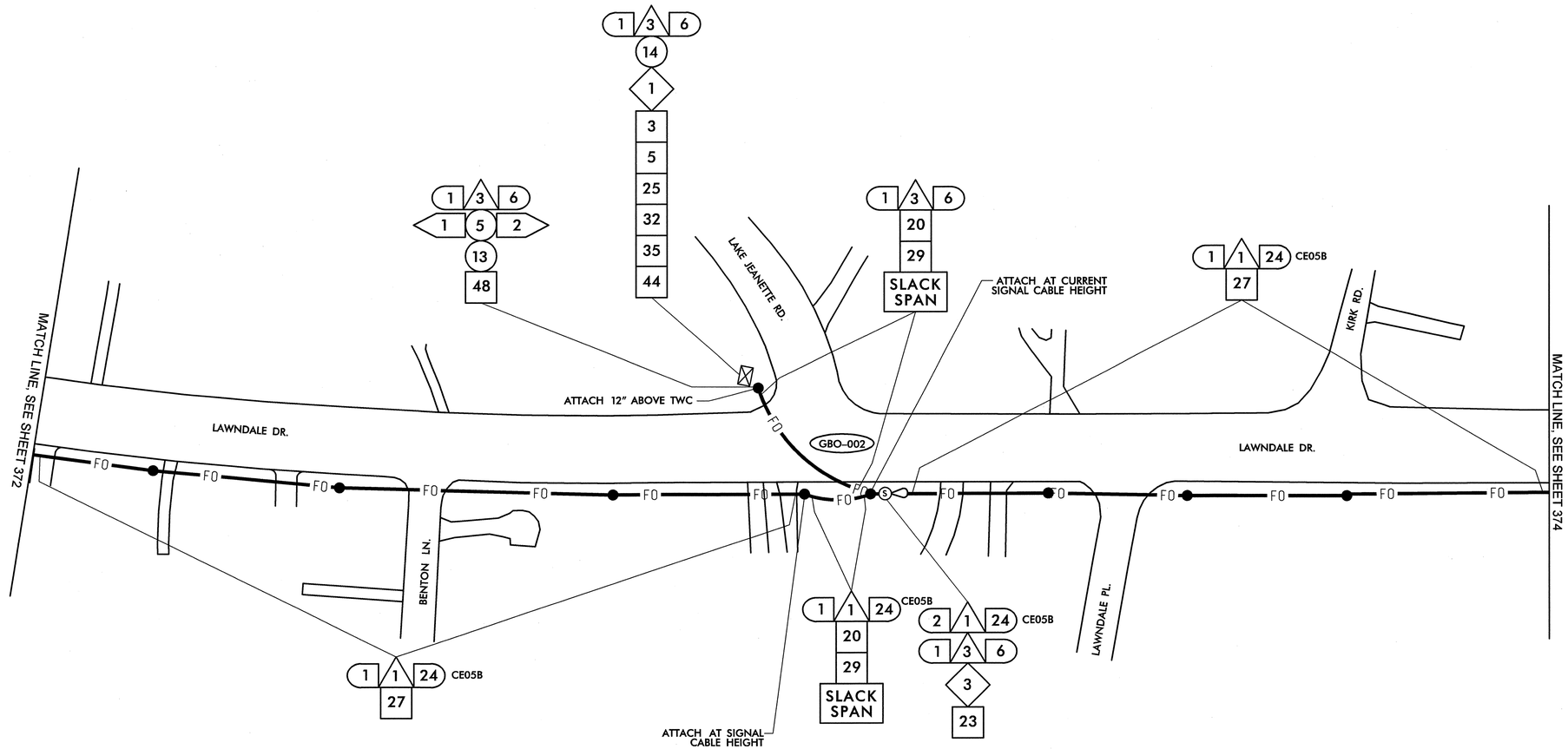


| | |
|---|---|
| 1 | INSTALL SMFO CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE |
| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
| 6 | REUSE GDOT SMFO CABLE |
| 1 | TRENCH |
| 2 | INSTALL PVC CONDUIT |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT |
| 7 | INSTALL POLYETHYLENE CONDUIT |
| 8 | DIRECTIONAL DRILL CONDUIT |
| 9 | BORE AND JACK CONDUIT |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT |
| 12 | INSTALL CABLE(S) IN EXISTING RISER |
| 13 | INSTALL CABLE(S) IN NEW RISER |
| 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE |
| 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET |
| 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET |
| 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING |
| 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET |
| 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE |
| 3 | INSTALL AERIAL SPLICE ENCLOSURE |
| 4 | INSTALL POLE MOUNTED SPLICE CABINET |
| 5 | INSTALL BASE MOUNTED SPLICE CABINET |
| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
| 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX |
| 12 | INSTALL OVERSIZED JUNCTION BOX |
| 13 | INSTALL STANDARD JUNCTION BOX |
| 14 | REMOVE EXISTING JUNCTION BOX |
| 15 | INSTALL WOOD POLE |
| 16 | REMOVE EXISTING WOOD POLE |
| 17 | INSTALL AERIAL GUY ASSEMBLY |
| 18 | INSTALL STANDARD GUY ASSEMBLY |
| 19 | INSTALL SIDEWALK GUY ASSEMBLY |
| 20 | INSTALL MESSENGER CABLE |
| 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE |
| 22 | REMOVE EXISTING COMMUNICATIONS CABLE |
| 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE |
| 24 | INSTALL DELINEATOR MARKER |
| 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE |
| 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 30 | INSTALL NEW ELECTRICAL SERVICE |
| 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 32 | INSTALL NEW CONTROLLER |
| 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 34 | INSTALL GENERATOR POWER INLET BOX |
| 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 36 | INSTALL UNIFIED CABLE |
| 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 40 | INSTALL RADIO TRANSCEIVER |
| 41 | INSTALL SYSTEM LOOP |
| 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 44 | INSTALL LOCAL LOOP AMPLIFIER |
| 45 | INSTALL CITY WI-FI ANTENNA |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH |
| 47 | INSTALL CODEC |
| 48 | BOND MESSENGER CABLE TO POLE GROUND |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION |
| 50 | INSTALL ANTENNA CABLE |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT |
| 53 | INSTALL DSL ETHERNET SWITCH |
| 54 | INSTALL ETHERNET CABLE |
| 55 | INSTALL TERMINAL SERVER |
| 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
| 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

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SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 — GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 — REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN — REVIEWED BY: M.W. DUNZO

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE — DATE 2/20/08

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2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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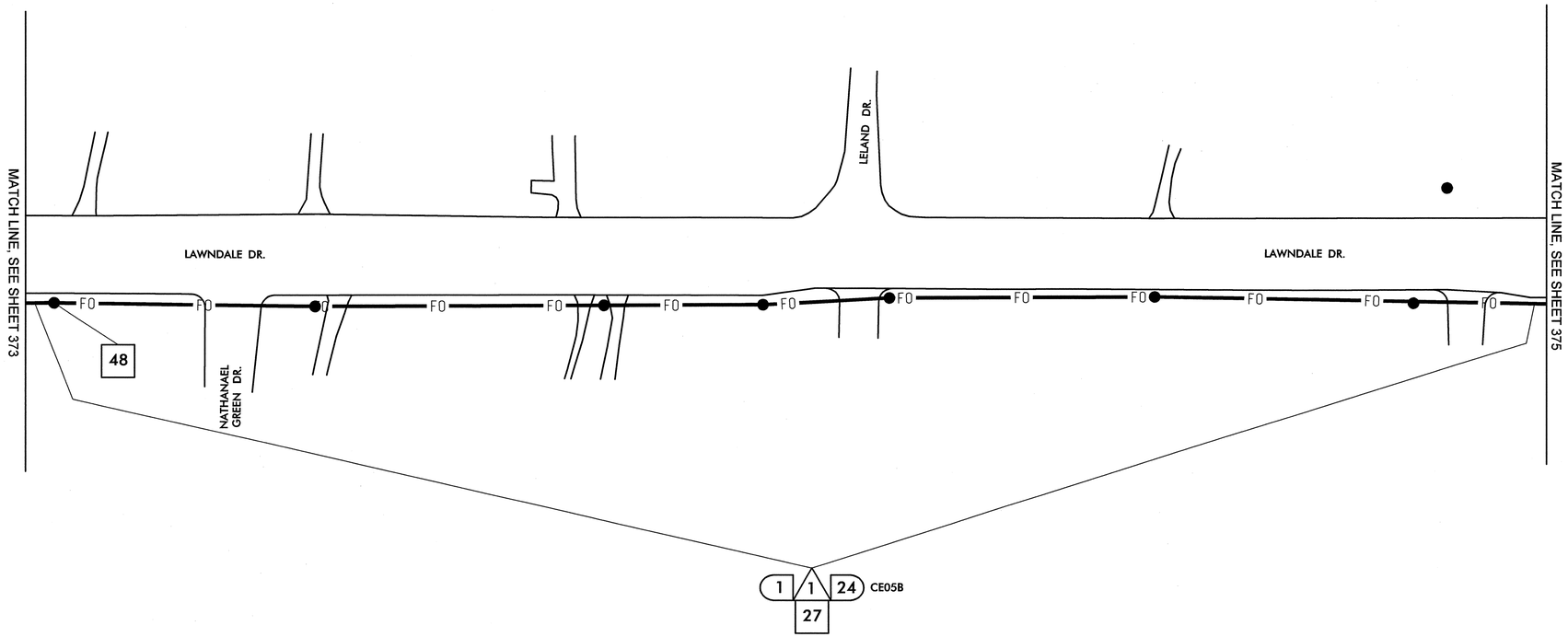
| U-4711 | 374 |

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| 1 | INSTALL SMFO CABLE |
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| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
| 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX |
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| 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 34 | INSTALL GENERATOR POWER INLET BOX |
| 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 36 | INSTALL UNIFIED CABLE |
| 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 40 | INSTALL RADIO TRANSCEIVER |
| 41 | INSTALL SYSTEM LOOP |
| 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 44 | INSTALL LOCAL LOOP AMPLIFIER |
| 45 | INSTALL CITY WI-FI ANTENNA |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH |
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| 50 | INSTALL ANTENNA CABLE |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT |
| 53 | INSTALL DSL ETHERNET SWITCH |
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## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/12/08 DATE

CADD Filename: ...\Sht0374.dgn

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| PROJECT REFERENCE NO. | SHEET NO. |
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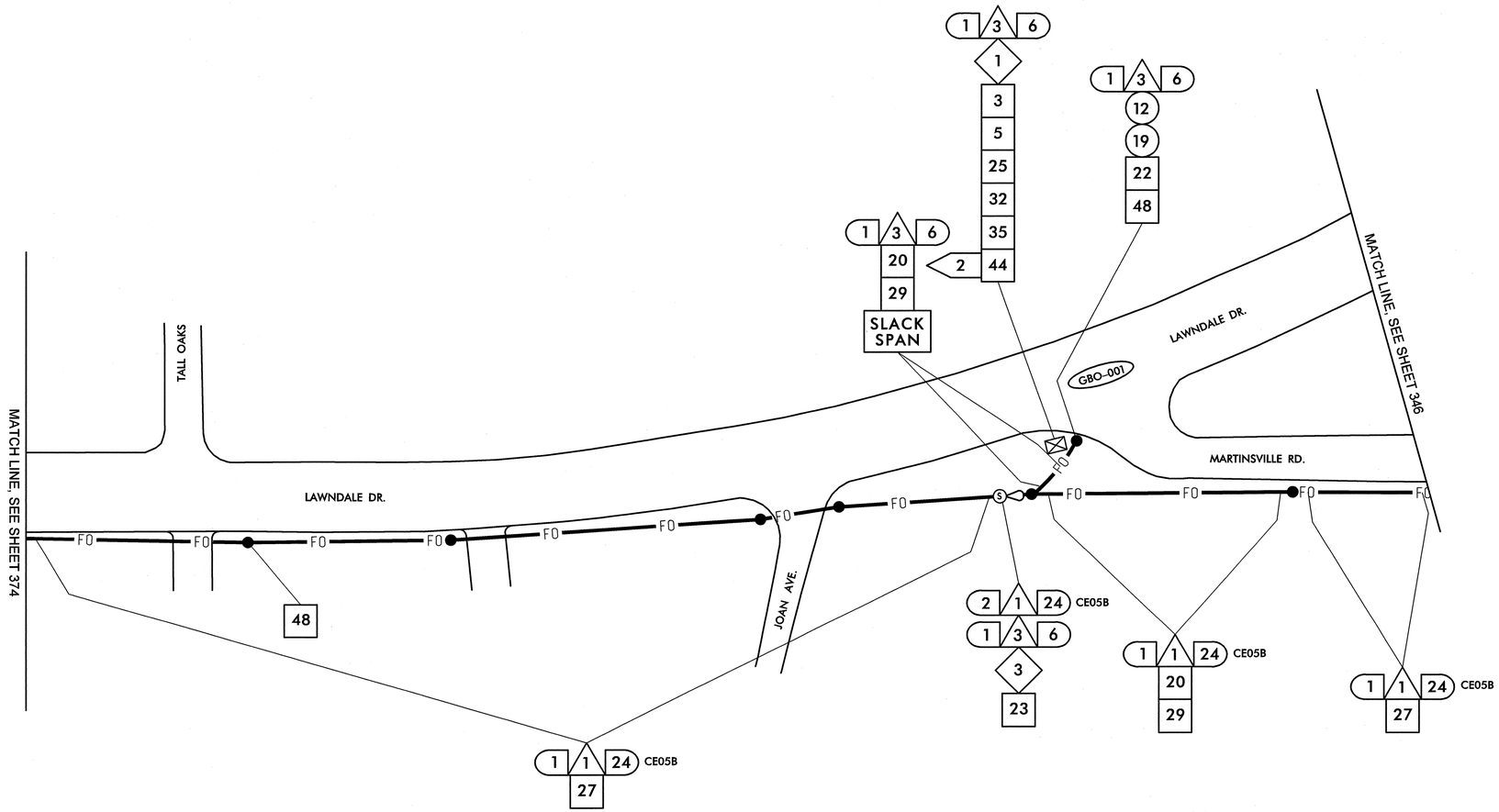
| U-4711 | 375 |




| | | | | | |
|---|---|---|---|---|---|
| 1 | INSTALL SMFO CABLE | 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE | 6 | INSTALL NEW 336S CABINET |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE | 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 3 | INSTALL FIBER OPTIC DROP CABLE | 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 8 | INSTALL CCTV CAMERA WOOD POLE |
| 4 | INSTALL TRACER WIRE | 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET | 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 5 | REUSE NCDOT SMFO CABLE | 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET | 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
| 6 | REUSE GDOT SMFO CABLE | 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING | 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX |
| 1 | TRENCH | 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET | 12 | INSTALL OVERSIZED JUNCTION BOX |
| 2 | INSTALL PVC CONDUIT | 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE | 13 | INSTALL STANDARD JUNCTION BOX |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT | 3 | INSTALL AERIAL SPLICE ENCLOSURE | 14 | REMOVE EXISTING JUNCTION BOX |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD | 4 | INSTALL POLE MOUNTED SPLICE CABINET | 15 | INSTALL WOOD POLE |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING | 5 | INSTALL BASE MOUNTED SPLICE CABINET | 16 | REMOVE EXISTING WOOD POLE |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT | 6 | REMOVE EXISTING SPLICE CABINET | 17 | INSTALL AERIAL GUY ASSEMBLY |
| 7 | INSTALL POLYETHYLENE CONDUIT | 7 | INSTALL TERMINAL SPLICE BOX | 18 | INSTALL STANDARD GUY ASSEMBLY |
| 8 | DIRECTIONAL DRILL CONDUIT | 8 | MODIFY EXISTING SPLICE ENCLOSURE | 19 | INSTALL SIDEWALK GUY ASSEMBLY |
| 9 | BORE AND JACK CONDUIT | 1 | INSTALL CABINET FOUNDATION | 20 | INSTALL MESSENGER CABLE |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT | 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER | 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT | 3 | MODIFY EXISTING CABINET FOUNDATION | 22 | REMOVE EXISTING COMMUNICATIONS CABLE |
| 12 | INSTALL CABLE(S) IN EXISTING RISER | 4 | INSTALL NEW 333 COMMUNICATION CABINET | 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE |
| 13 | INSTALL CABLE(S) IN NEW RISER | 5 | INSTALL NEW 332 BASE MOUNTED CABINET | 24 | INSTALL DELINEATOR MARKER |
| | | | | 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE |

| | | | | | |
|---|---|---|---|---|---|
| 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE | 44 | INSTALL LOCAL LOOP AMPLIFIER | 53 | INSTALL DSL ETHERNET SWITCH |
| 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE | 45 | INSTALL CITY WI-FI ANTENNA | 54 | INSTALL ETHERNET CABLE |
| 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE | 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH | 55 | INSTALL TERMINAL SERVER |
| 29 | LASH CABLE(S) TO NEW MESSENGER CABLE | 47 | INSTALL CODEC | 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
| 30 | INSTALL NEW ELECTRICAL SERVICE | 48 | BOND MESSENGER CABLE TO POLE GROUND | 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 31 | MODIFY EXISTING ELECTRICAL SERVICE | 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION | 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |
| 32 | INSTALL NEW CONTROLLER | 50 | INSTALL ANTENNA CABLE | | |
| 33 | INSTALL EXISTING CABLE IN NEW CABINET | 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT | | |
| 34 | INSTALL GENERATOR POWER INLET BOX | 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT | | |
| 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH | | | | |
| 36 | INSTALL UNIFIED CABLE | | | | |
| 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET | | | | |
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| 39 | INSTALL OMNI-DIRECTIONAL ANTENNA | | | | |
| 40 | INSTALL RADIO TRANSCEIVER | | | | |
| 41 | INSTALL SYSTEM LOOP | | | | |
| 42 | INSTALL SYSTEM LOOP AMPLIFIER | | | | |
| 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE | | | | |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


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## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

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SEAL
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SIGNATURE 2/20/08 DATE

CADD Filename: ...\Sht0375.dgn

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| PROJECT REFERENCE NO. | SHEET NO. |
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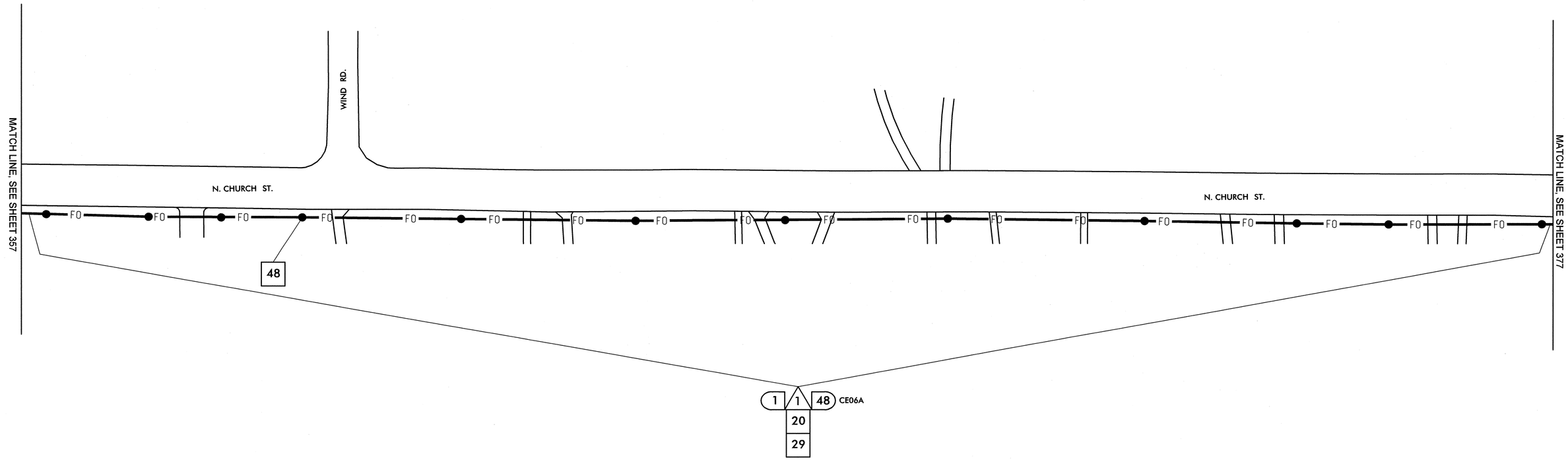
| U-4711 | 376 |

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|---|---|---|---|---|---|---|---|
| 1 | INSTALL SMFO CABLE | 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE | 6 | INSTALL NEW 336S CABINET | 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE | 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 7 | INSTALL CCTV CAMERA ASSEMBLY | 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
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| 6 | REUSE GDOT SMFO CABLE | 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING | 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX | 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 1 | TRENCH | 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET | 12 | INSTALL OVERSIZED JUNCTION BOX | 32 | INSTALL NEW CONTROLLER |
| 2 | INSTALL PVC CONDUIT | 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE | 13 | INSTALL STANDARD JUNCTION BOX | 33 | INSTALL EXISTING CABLE IN NEW CABINET |
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| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING | 5 | INSTALL BASE MOUNTED SPLICE CABINET | 16 | REMOVE EXISTING WOOD POLE | 36 | INSTALL UNIFIED CABLE |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT | 6 | REMOVE EXISTING SPLICE CABINET | 17 | INSTALL AERIAL GUY ASSEMBLY | 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 7 | INSTALL POLYETHYLENE CONDUIT | 7 | INSTALL TERMINAL SPLICE BOX | 18 | INSTALL STANDARD GUY ASSEMBLY | 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 8 | DIRECTIONAL DRILL CONDUIT | 8 | MODIFY EXISTING SPLICE ENCLOSURE | 19 | INSTALL SIDEWALK GUY ASSEMBLY | 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 9 | BORE AND JACK CONDUIT | 1 | INSTALL CABINET FOUNDATION | 20 | INSTALL MESSENGER CABLE | 40 | INSTALL RADIO TRANSCEIVER |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT | 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER | 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE | 41 | INSTALL SYSTEM LOOP |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT | 3 | MODIFY EXISTING CABINET FOUNDATION | 22 | REMOVE EXISTING COMMUNICATIONS CABLE | 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 12 | INSTALL CABLE(S) IN EXISTING RISER | 4 | INSTALL NEW 333 COMMUNICATION CABINET | 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE | 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 13 | INSTALL CABLE(S) IN NEW RISER | 5 | INSTALL NEW 332 BASE MOUNTED CABINET | 24 | INSTALL DELINEATOR MARKER | | |
| | | | | 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE | | |

| | | | | | |
|---|---|---|---|---|---|
| 44 | INSTALL LOCAL LOOP AMPLIFIER | 53 | INSTALL DSL ETHERNET SWITCH | | |
| 45 | INSTALL CITY WI-FI ANTENNA | 54 | INSTALL ETHERNET CABLE | | |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH | 55 | INSTALL TERMINAL SERVER | | |
| 47 | INSTALL CODEC | 56 | INSTALL MICROWAVE VEHICLE DETECTOR | | |
| 48 | BOND MESSENGER CABLE TO POLE GROUND | 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT | | |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION | 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE | | |
| 50 | INSTALL ANTENNA CABLE | | | | |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT | | | | |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT | | | | |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

PLANS PREPARED IN THE OFFICE OF:

Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000

Traffic Engineering and Safety Systems Branch
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/20/08 DATE

CADD Filename: ...\Sht0376.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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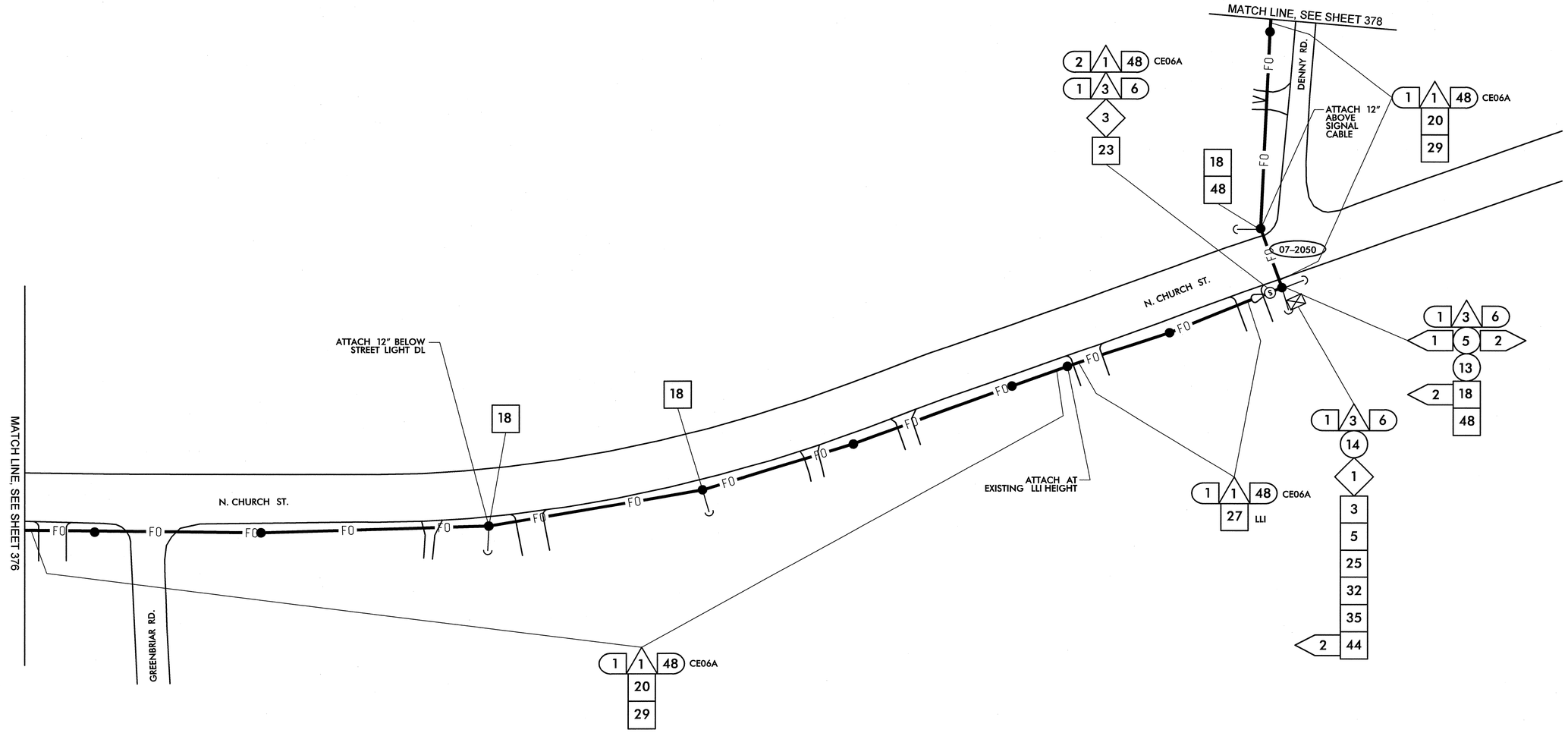
| U-4711 | 377 |




| | | | |
|---|---|---|---|
| 1 | INSTALL SMFO CABLE | 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE | 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 3 | INSTALL FIBER OPTIC DROP CABLE | 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 4 | INSTALL TRACER WIRE | 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET |
| 5 | REUSE NCDOT SMFO CABLE | 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET |
| 6 | REUSE GDOT SMFO CABLE | 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING |
| 1 | TRENCH | 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET |
| 2 | INSTALL PVC CONDUIT | 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT | 3 | INSTALL AERIAL SPLICE ENCLOSURE |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD | 4 | INSTALL POLE MOUNTED SPLICE CABINET |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING | 5 | INSTALL BASE MOUNTED SPLICE CABINET |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT | 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL POLYETHYLENE CONDUIT | 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | DIRECTIONAL DRILL CONDUIT | 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 9 | BORE AND JACK CONDUIT | 1 | INSTALL CABINET FOUNDATION |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT | 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT | 3 | MODIFY EXISTING CABINET FOUNDATION |
| 12 | INSTALL CABLE(S) IN EXISTING RISER | 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 13 | INSTALL CABLE(S) IN NEW RISER | 5 | INSTALL NEW 332 BASE MOUNTED CABINET |

| | | | |
|---|---|---|---|
| 6 | INSTALL NEW 336S CABINET | 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 7 | INSTALL CCTV CAMERA ASSEMBLY | 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 8 | INSTALL CCTV CAMERA WOOD POLE | 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION | 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX | 30 | INSTALL NEW ELECTRICAL SERVICE |
| 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX | 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 12 | INSTALL OVERSIZED JUNCTION BOX | 32 | INSTALL NEW CONTROLLER |
| 13 | INSTALL STANDARD JUNCTION BOX | 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 14 | REMOVE EXISTING JUNCTION BOX | 34 | INSTALL GENERATOR POWER INLET BOX |
| 15 | INSTALL WOOD POLE | 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 16 | REMOVE EXISTING WOOD POLE | 36 | INSTALL UNIFIED CABLE |
| 17 | INSTALL AERIAL GUY ASSEMBLY | 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 18 | INSTALL STANDARD GUY ASSEMBLY | 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 19 | INSTALL SIDEWALK GUY ASSEMBLY | 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 20 | INSTALL MESSENGER CABLE | 40 | INSTALL RADIO TRANSCEIVER |
| 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE | 41 | INSTALL SYSTEM LOOP |
| 22 | REMOVE EXISTING COMMUNICATIONS CABLE | 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE | 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 24 | INSTALL DELINEATOR MARKER | | |
| 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE | | |

| | | | |
|---|---|---|---|
| 44 | INSTALL LOCAL LOOP AMPLIFIER | 53 | INSTALL DSL ETHERNET SWITCH |
| 45 | INSTALL CITY WI-FI ANTENNA | 54 | INSTALL ETHERNET CABLE |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH | 55 | INSTALL TERMINAL SERVER |
| 47 | INSTALL CODEC | 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
| 48 | BOND MESSENGER CABLE TO POLE GROUND | 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION | 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |
| 50 | INSTALL ANTENNA CABLE | | |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT | | |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT | | |

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GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

PLANS PREPARED IN THE OFFICE OF:

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(919) 677-2000

750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2-20-08 DATE

CADD Filename: ...\Sht0377.dgn

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| PROJECT REFERENCE NO. | SHEET NO. |
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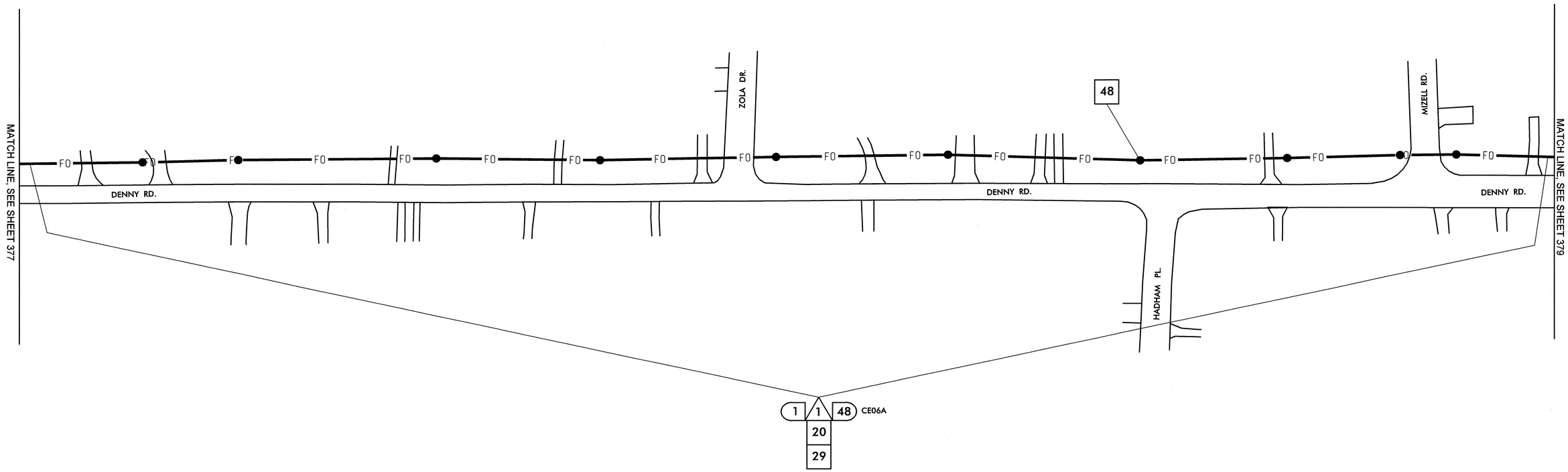
| U-4711 | 378 |




| | |
|---|---|
| 1 | INSTALL SMFO CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE |
| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
| 6 | REUSE GDOT SMFO CABLE |
| 1 | TRENCH |
| 2 | INSTALL PVC CONDUIT |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT |
| 7 | INSTALL POLYETHYLENE CONDUIT |
| 8 | DIRECTIONAL DRILL CONDUIT |
| 9 | BORE AND JACK CONDUIT |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT |
| 12 | INSTALL CABLE(S) IN EXISTING RISER |
| 13 | INSTALL CABLE(S) IN NEW RISER |
| 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE |
| 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET |
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| 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING |
| 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET |
| 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE |
| 3 | INSTALL AERIAL SPLICE ENCLOSURE |
| 4 | INSTALL POLE MOUNTED SPLICE CABINET |
| 5 | INSTALL BASE MOUNTED SPLICE CABINET |
| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
| 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX |
| 12 | INSTALL OVERSIZED JUNCTION BOX |
| 13 | INSTALL STANDARD JUNCTION BOX |
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| 18 | INSTALL STANDARD GUY ASSEMBLY |
| 19 | INSTALL SIDEWALK GUY ASSEMBLY |
| 20 | INSTALL MESSENGER CABLE |
| 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE |
| 22 | REMOVE EXISTING COMMUNICATIONS CABLE |
| 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE |
| 24 | INSTALL DELINEATOR MARKER |
| 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE |
| 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
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| 40 | INSTALL RADIO TRANSCEIVER |
| 41 | INSTALL SYSTEM LOOP |
| 42 | INSTALL SYSTEM LOOP AMPLIFIER |
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| 45 | INSTALL CITY WI-FI ANTENNA |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH |
| 47 | INSTALL CODEC |
| 48 | BOND MESSENGER CABLE TO POLE GROUND |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION |
| 50 | INSTALL ANTENNA CABLE |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT |
| 53 | INSTALL DSL ETHERNET SWITCH |
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| 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

PLANS PREPARED IN THE OFFICE OF:

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P.O. Box 33068
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Traffic Engineering and Safety Systems Branch
Intelligent Transportation Systems
DIVISION OF HIGHWAYS
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH
PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/20/08 DATE

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| PROJECT REFERENCE NO. | SHEET NO. |
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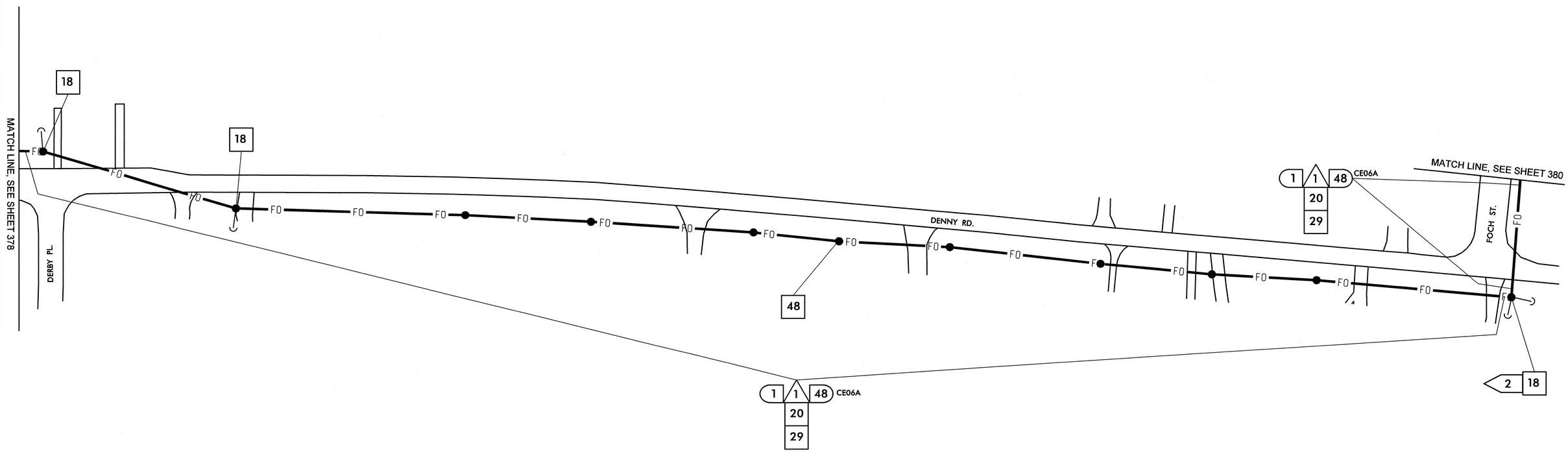
| U-4711 | 379 |

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|---|---|
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| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
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Institute for Transportation
Traffic Engineering and Safety System Branch
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750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 — GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 — REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN — REVIEWED BY: M.W. DUNZO

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE — DATE 2/20/08

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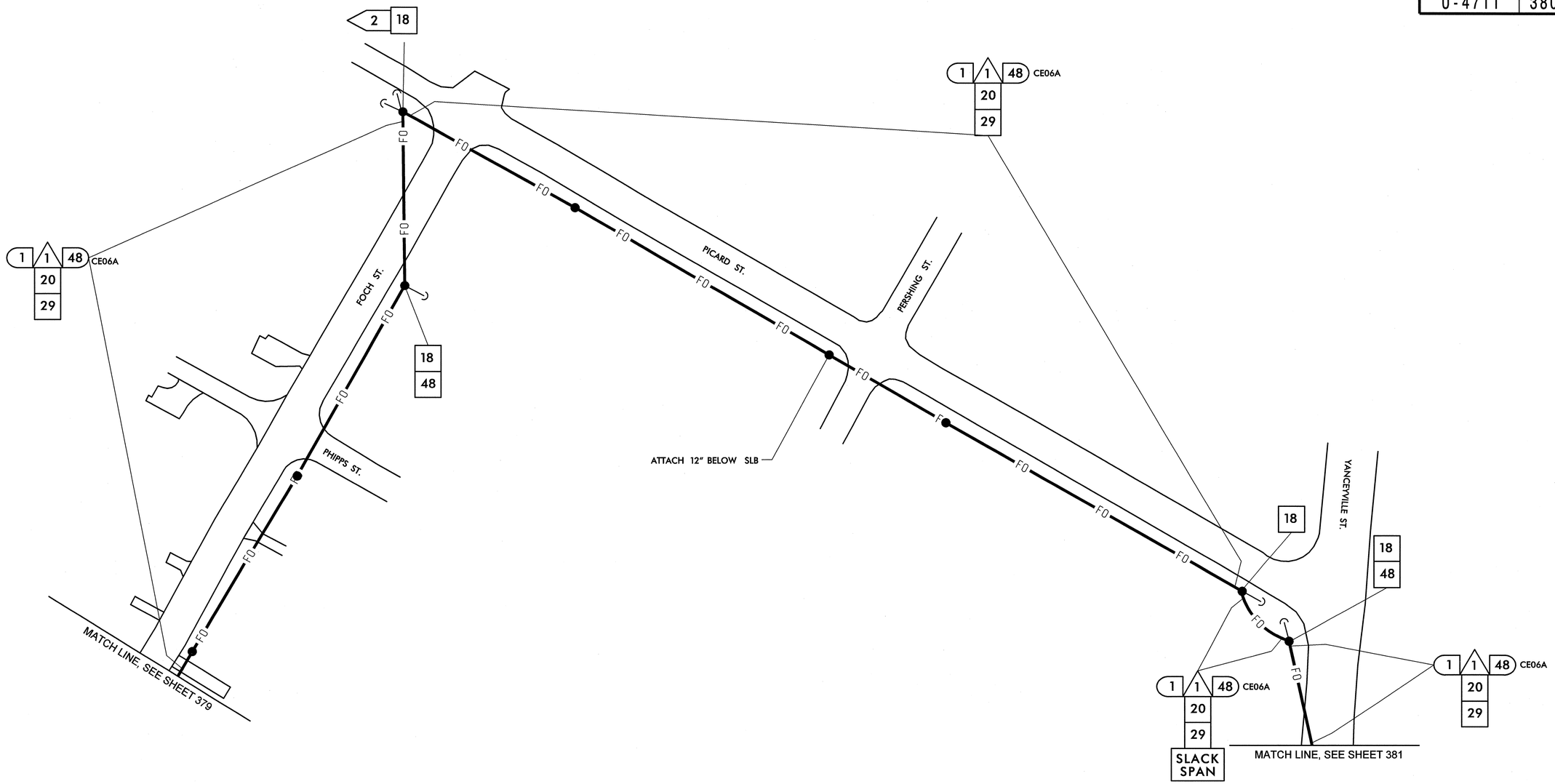
| U-4711 | 380 |

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|---|---|
| 1 | INSTALL SMFO CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE |
| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
| 6 | REUSE GDOT SMFO CABLE |
| 1 | TRENCH |
| 2 | INSTALL PVC CONDUIT |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT |
| 7 | INSTALL POLYETHYLENE CONDUIT |
| 8 | DIRECTIONAL DRILL CONDUIT |
| 9 | BORE AND JACK CONDUIT |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT |
| 12 | INSTALL CABLE(S) IN EXISTING RISER |
| 13 | INSTALL CABLE(S) IN NEW RISER |
| 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE |
| 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET |
| 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET |
| 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING |
| 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET |
| 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE |
| 3 | INSTALL AERIAL SPLICE ENCLOSURE |
| 4 | INSTALL POLE MOUNTED SPLICE CABINET |
| 5 | INSTALL BASE MOUNTED SPLICE CABINET |
| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
| 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX |
| 12 | INSTALL OVERSIZED JUNCTION BOX |
| 13 | INSTALL STANDARD JUNCTION BOX |
| 14 | REMOVE EXISTING JUNCTION BOX |
| 15 | INSTALL WOOD POLE |
| 16 | REMOVE EXISTING WOOD POLE |
| 17 | INSTALL AERIAL GUY ASSEMBLY |
| 18 | INSTALL STANDARD GUY ASSEMBLY |
| 19 | INSTALL SIDEWALK GUY ASSEMBLY |
| 20 | INSTALL MESSENGER CABLE |
| 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE |
| 22 | REMOVE EXISTING COMMUNICATIONS CABLE |
| 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE |
| 24 | INSTALL DELINEATOR MARKER |
| 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE |
| 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 30 | INSTALL NEW ELECTRICAL SERVICE |
| 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 32 | INSTALL NEW CONTROLLER |
| 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 34 | INSTALL GENERATOR POWER INLET BOX |
| 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 36 | INSTALL UNIFIED CABLE |
| 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 40 | INSTALL RADIO TRANSCEIVER |
| 41 | INSTALL SYSTEM LOOP |
| 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 44 | INSTALL LOCAL LOOP AMPLIFIER |
| 45 | INSTALL CITY WI-FI ANTENNA |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH |
| 47 | INSTALL CODEC |
| 48 | BOND MESSENGER CABLE TO POLE GROUND |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION |
| 50 | INSTALL ANTENNA CABLE |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT |
| 53 | INSTALL DSL ETHERNET SWITCH |
| 54 | INSTALL ETHERNET CABLE |
| 55 | INSTALL TERMINAL SERVER |
| 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
| 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
P.O. Box 33068
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(919) 677-2000



Traffic Engineering and Safety Systems Branch
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Pkwy., Garner, NC 27529


SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/20/08 DATE

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| PROJECT REFERENCE NO. | SHEET NO. |
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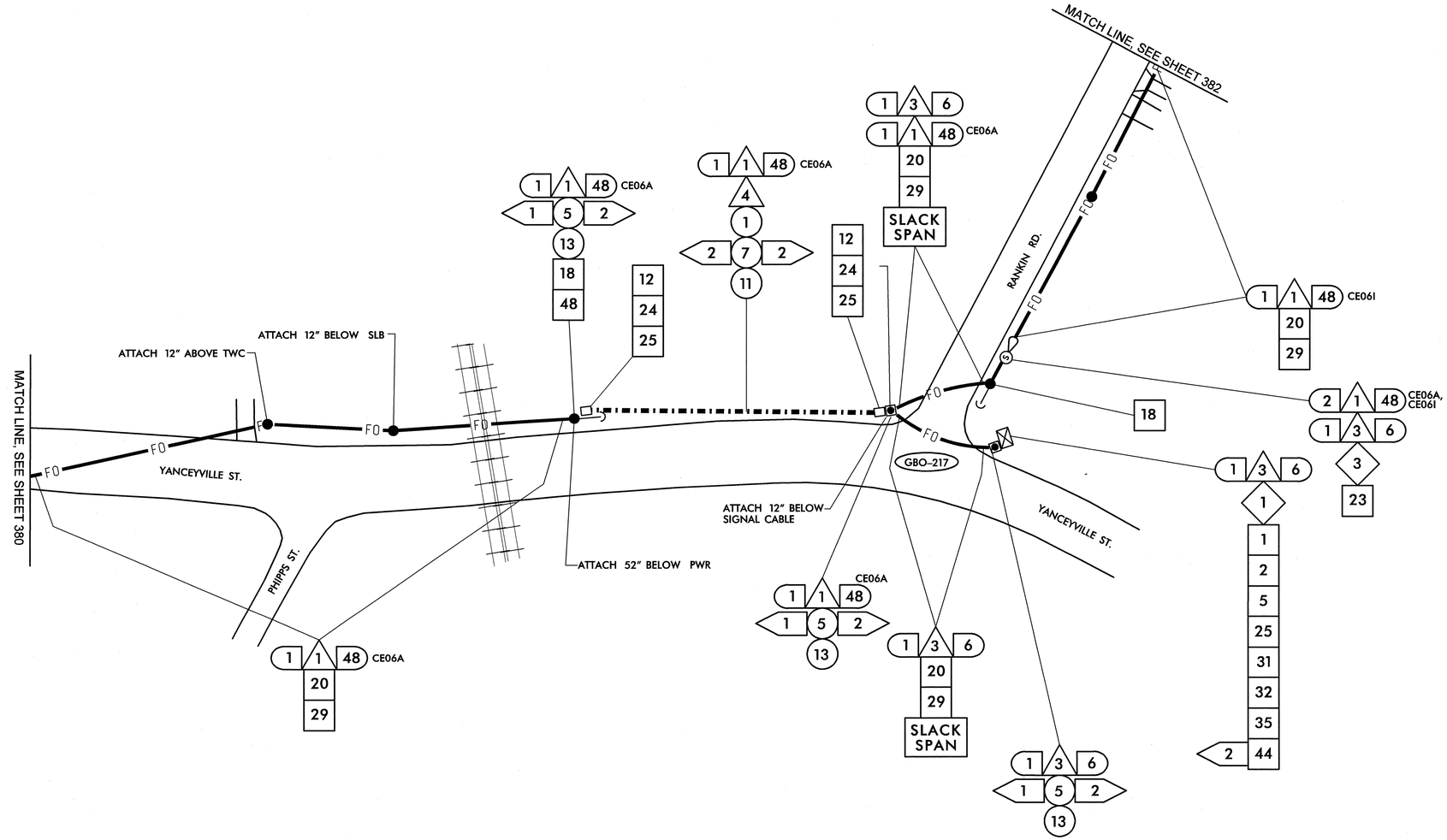
| U-4711 | 381 |

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|---|---|---|---|---|---|---|---|
| 1 | INSTALL SMFO CABLE | 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE | 6 | INSTALL NEW 336S CABINET | 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE | 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 7 | INSTALL CCTV CAMERA ASSEMBLY | 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE | 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 8 | INSTALL CCTV CAMERA WOOD POLE | 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 4 | INSTALL TRACER WIRE | 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET | 9 | INSTALL CCTV METAL POLE AND FOUNDATION | 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 5 | REUSE NCDOT SMFO CABLE | 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET | 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX | 30 | INSTALL NEW ELECTRICAL SERVICE |
| 6 | REUSE GDOT SMFO CABLE | 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING | 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX | 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 1 | TRENCH | 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET | 12 | INSTALL OVERSIZED JUNCTION BOX | 32 | INSTALL NEW CONTROLLER |
| 2 | INSTALL PVC CONDUIT | 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE | 13 | INSTALL STANDARD JUNCTION BOX | 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT | 3 | INSTALL AERIAL SPLICE ENCLOSURE | 14 | REMOVE EXISTING JUNCTION BOX | 34 | INSTALL GENERATOR POWER INLET BOX |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD | 4 | INSTALL POLE MOUNTED SPLICE CABINET | 15 | INSTALL WOOD POLE | 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING | 5 | INSTALL BASE MOUNTED SPLICE CABINET | 16 | REMOVE EXISTING WOOD POLE | 36 | INSTALL UNIFIED CABLE |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT | 6 | REMOVE EXISTING SPLICE CABINET | 17 | INSTALL AERIAL GUY ASSEMBLY | 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 7 | INSTALL POLYETHYLENE CONDUIT | 7 | INSTALL TERMINAL SPLICE BOX | 18 | INSTALL STANDARD GUY ASSEMBLY | 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 8 | DIRECTIONAL DRILL CONDUIT | 8 | MODIFY EXISTING SPLICE ENCLOSURE | 19 | INSTALL SIDEWALK GUY ASSEMBLY | 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 9 | BORE AND JACK CONDUIT | 1 | INSTALL CABINET FOUNDATION | 20 | INSTALL MESSENGER CABLE | 40 | INSTALL RADIO TRANSCEIVER |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT | 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER | 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE | 41 | INSTALL SYSTEM LOOP |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT | 3 | MODIFY EXISTING CABINET FOUNDATION | 22 | REMOVE EXISTING COMMUNICATIONS CABLE | 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 12 | INSTALL CABLE(S) IN EXISTING RISER | 4 | INSTALL NEW 333 COMMUNICATION CABINET | 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE | 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 13 | INSTALL CABLE(S) IN NEW RISER | 5 | INSTALL NEW 332 BASE MOUNTED CABINET | 24 | INSTALL DELINEATOR MARKER | | |
| | | | | 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE | | |

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|---|---|---|---|---|---|
| 44 | INSTALL LOCAL LOOP AMPLIFIER | 53 | INSTALL DSL ETHERNET SWITCH | | |
| 45 | INSTALL CITY WI-FI ANTENNA | 54 | INSTALL ETHERNET CABLE | | |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH | 55 | INSTALL TERMINAL SERVER | | |
| 47 | INSTALL CODEC | 56 | INSTALL MICROWAVE VEHICLE DETECTOR | | |
| 48 | BOND MESSENGER CABLE TO POLE GROUND | 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT | | |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION | 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE | | |
| 50 | INSTALL ANTENNA CABLE | | | | |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT | | | | |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT | | | | |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

PLANS PREPARED IN THE OFFICE OF:

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P.O. Box 33068
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750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht038I.dgn

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| PROJECT REFERENCE NO. | SHEET NO. |
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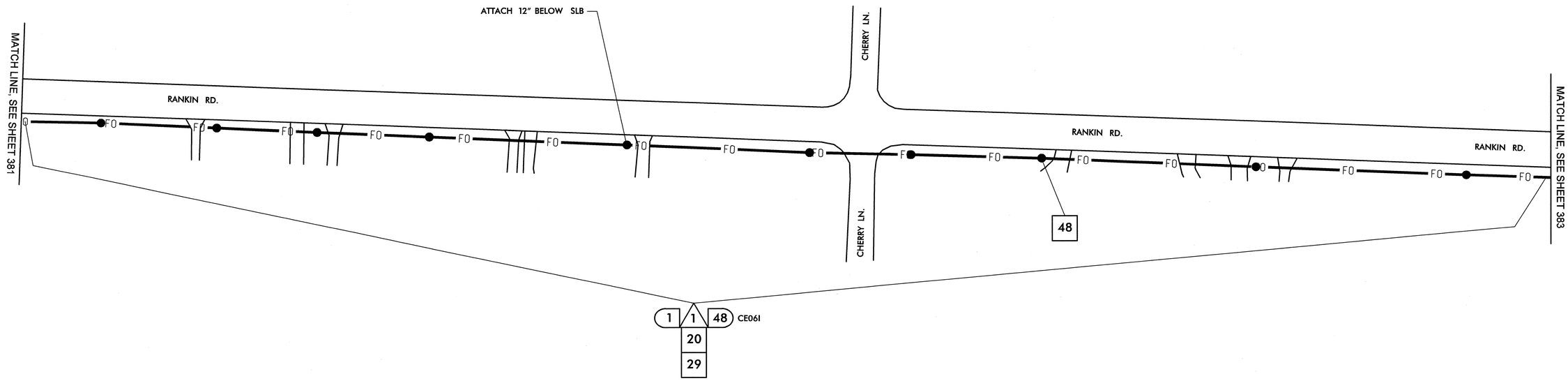
| U-4711 | 382 |

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|---|---|---|---|---|---|---|---|
| 1 | INSTALL SMFO CABLE | 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE | 6 | INSTALL NEW 336S CABINET | 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE | 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 7 | INSTALL CCTV CAMERA ASSEMBLY | 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE | 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 8 | INSTALL CCTV CAMERA WOOD POLE | 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 4 | INSTALL TRACER WIRE | 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET | 9 | INSTALL CCTV METAL POLE AND FOUNDATION | 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 5 | REUSE NCDOT SMFO CABLE | 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET | 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX | 30 | INSTALL NEW ELECTRICAL SERVICE |
| 6 | REUSE GDOT SMFO CABLE | 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING | 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX | 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 1 | TRENCH | 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET | 12 | INSTALL OVERSIZED JUNCTION BOX | 32 | INSTALL NEW CONTROLLER |
| 2 | INSTALL PVC CONDUIT | 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE | 13 | INSTALL STANDARD JUNCTION BOX | 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT | 3 | INSTALL AERIAL SPLICE ENCLOSURE | 14 | REMOVE EXISTING JUNCTION BOX | 34 | INSTALL GENERATOR POWER INLET BOX |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD | 4 | INSTALL POLE MOUNTED SPLICE CABINET | 15 | INSTALL WOOD POLE | 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING | 5 | INSTALL BASE MOUNTED SPLICE CABINET | 16 | REMOVE EXISTING WOOD POLE | 36 | INSTALL UNIFIED CABLE |
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| 7 | INSTALL POLYETHYLENE CONDUIT | 7 | INSTALL TERMINAL SPLICE BOX | 18 | INSTALL STANDARD GUY ASSEMBLY | 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
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| 9 | BORE AND JACK CONDUIT | 1 | INSTALL CABINET FOUNDATION | 20 | INSTALL MESSENGER CABLE | 40 | INSTALL RADIO TRANSCEIVER |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT | 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER | 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE | 41 | INSTALL SYSTEM LOOP |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT | 3 | MODIFY EXISTING CABINET FOUNDATION | 22 | REMOVE EXISTING COMMUNICATIONS CABLE | 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 12 | INSTALL CABLE(S) IN EXISTING RISER | 4 | INSTALL NEW 333 COMMUNICATION CABINET | 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE | 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 13 | INSTALL CABLE(S) IN NEW RISER | 5 | INSTALL NEW 332 BASE MOUNTED CABINET | 24 | INSTALL DELINEATOR MARKER | | |
| | | | | 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE | | |

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|---|---|---|---|---|---|
| 44 | INSTALL LOCAL LOOP AMPLIFIER | 53 | INSTALL DSL ETHERNET SWITCH | | |
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| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT | | | | |
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NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


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Traffic Engineering and Safety Systems Branch
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SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

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| PREPARED BY: K.D. VANPATTEN | | REVIEWED BY: M.W. DUNZO | |
| REVISIONS | | INIT. | DATE |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO
SIGNATURE DATE 2/20/08
CADD Filename ...\Sht0382.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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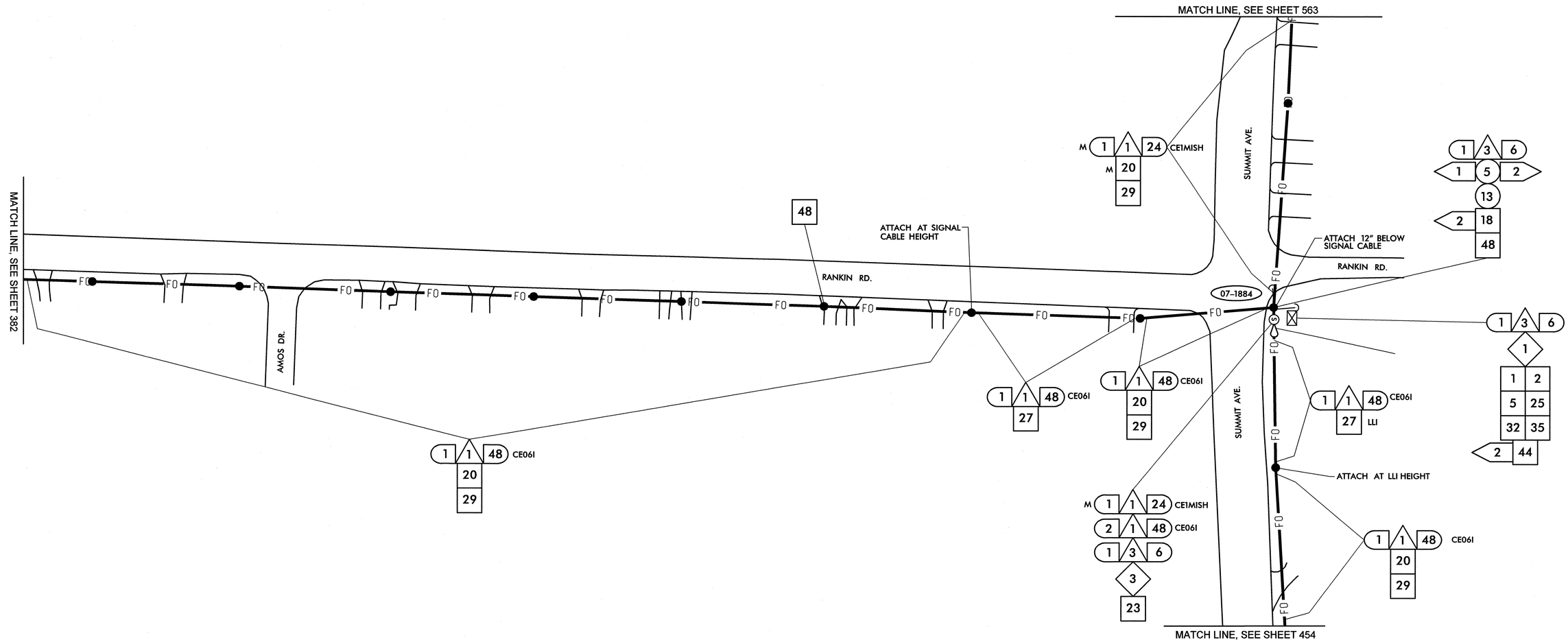
| U-4711 | 383 |

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|---|---|---|---|---|---|---|---|
| 1 | INSTALL SMFO CABLE | 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE | 6 | INSTALL NEW 336S CABINET | 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE | 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 7 | INSTALL CCTV CAMERA ASSEMBLY | 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
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| | | | | 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE | | |

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|---|---|---|---|
| 44 | INSTALL LOCAL LOOP AMPLIFIER | 53 | INSTALL DSL ETHERNET SWITCH |
| 45 | INSTALL CITY WI-FI ANTENNA | 54 | INSTALL ETHERNET CABLE |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH | 55 | INSTALL TERMINAL SERVER |
| 47 | INSTALL CODEC | 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
| 48 | BOND MESSENGER CABLE TO POLE GROUND | 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION | 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |
| 50 | INSTALL ANTENNA CABLE | | |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT | | |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT | | |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000


750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/29/08 DATE

CADD Filename ...\Sht0383m.dgn

2/29/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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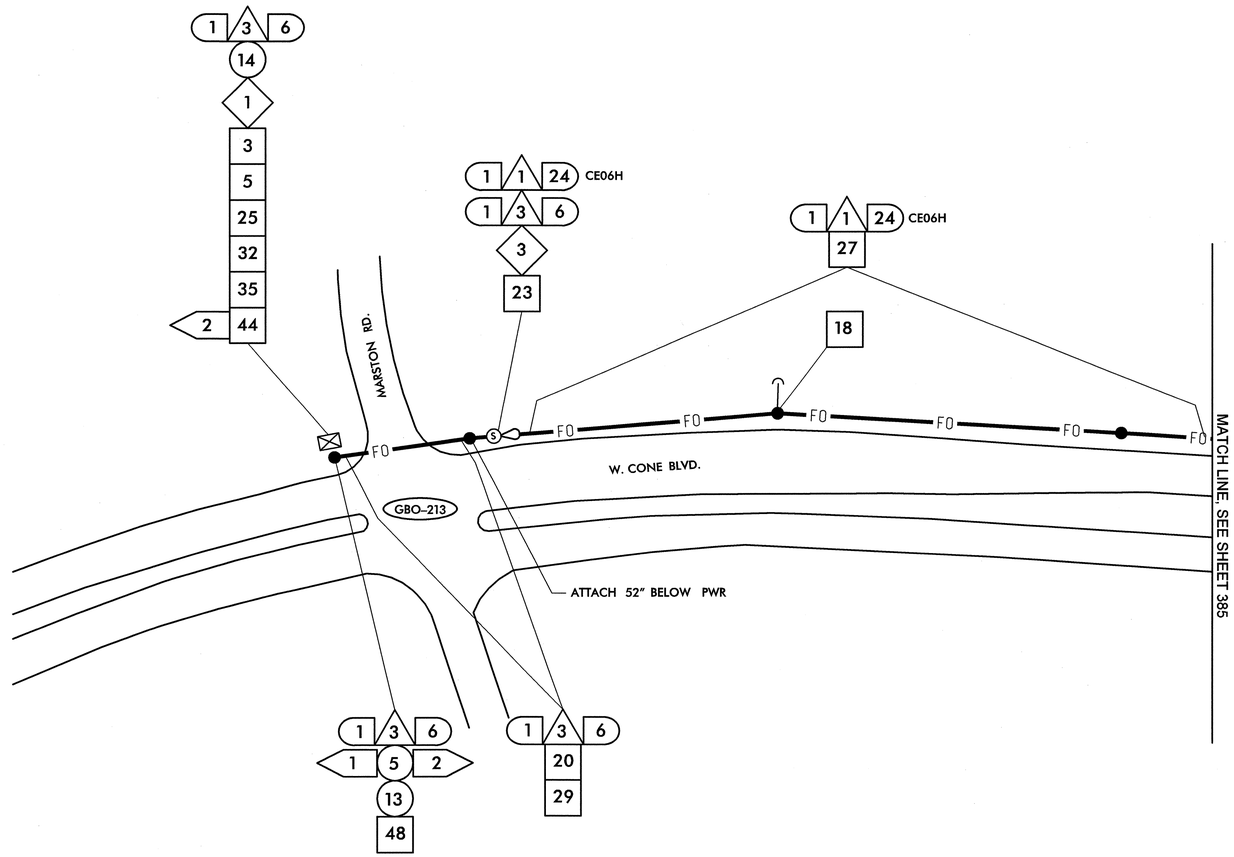
| U-4711 | 384 |




| | |
|---|---|
| 1 | INSTALL SMFO CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE |
| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
| 6 | REUSE GDOT SMFO CABLE |
| 1 | TRENCH |
| 2 | INSTALL PVC CONDUIT |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT |
| 7 | INSTALL POLYETHYLENE CONDUIT |
| 8 | DIRECTIONAL DRILL CONDUIT |
| 9 | BORE AND JACK CONDUIT |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT |
| 12 | INSTALL CABLE(S) IN EXISTING RISER |
| 13 | INSTALL CABLE(S) IN NEW RISER |
| 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE |
| 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET |
| 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET |
| 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING |
| 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET |
| 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE |
| 3 | INSTALL AERIAL SPLICE ENCLOSURE |
| 4 | INSTALL POLE MOUNTED SPLICE CABINET |
| 5 | INSTALL BASE MOUNTED SPLICE CABINET |
| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
| 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX |
| 12 | INSTALL OVERSIZED JUNCTION BOX |
| 13 | INSTALL STANDARD JUNCTION BOX |
| 14 | REMOVE EXISTING JUNCTION BOX |
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| 16 | REMOVE EXISTING WOOD POLE |
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| 19 | INSTALL SIDEWALK GUY ASSEMBLY |
| 20 | INSTALL MESSENGER CABLE |
| 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE |
| 22 | REMOVE EXISTING COMMUNICATIONS CABLE |
| 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE |
| 24 | INSTALL DELINEATOR MARKER |
| 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE |
| 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
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| 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 30 | INSTALL NEW ELECTRICAL SERVICE |
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| 32 | INSTALL NEW CONTROLLER |
| 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 34 | INSTALL GENERATOR POWER INLET BOX |
| 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 36 | INSTALL UNIFIED CABLE |
| 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 40 | INSTALL RADIO TRANSCEIVER |
| 41 | INSTALL SYSTEM LOOP |
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| 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |

NOTE:
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PLANS PREPARED IN THE OFFICE OF:

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SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht0384.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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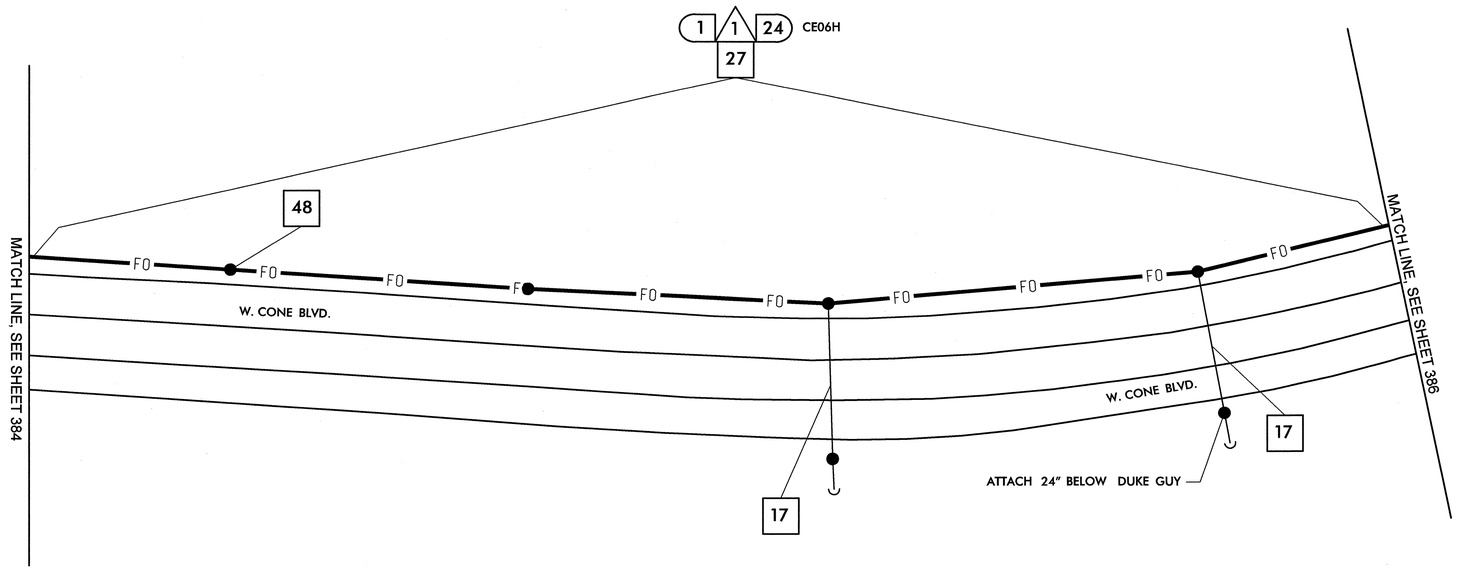
| U-4711 | 385 |

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2. INSTALL PLENUM RATED FIBER OPTIC CABLE
3. INSTALL FIBER OPTIC DROP CABLE
4. INSTALL TRACER WIRE
5. REUSE NCDOT SMFO CABLE
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5. INSTALL BASE MOUNTED SPLICE CABINET
6. REMOVE EXISTING SPLICE CABINET
7. INSTALL TERMINAL SPLICE BOX
8. MODIFY EXISTING SPLICE ENCLOSURE

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NOTE:
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PLANS PREPARED IN THE OFFICE OF:

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Traffic Engineering and Safety Systems Branch
Intelligent Transportation Systems
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/20/08 DATE

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| PROJECT REFERENCE NO. | SHEET NO. |
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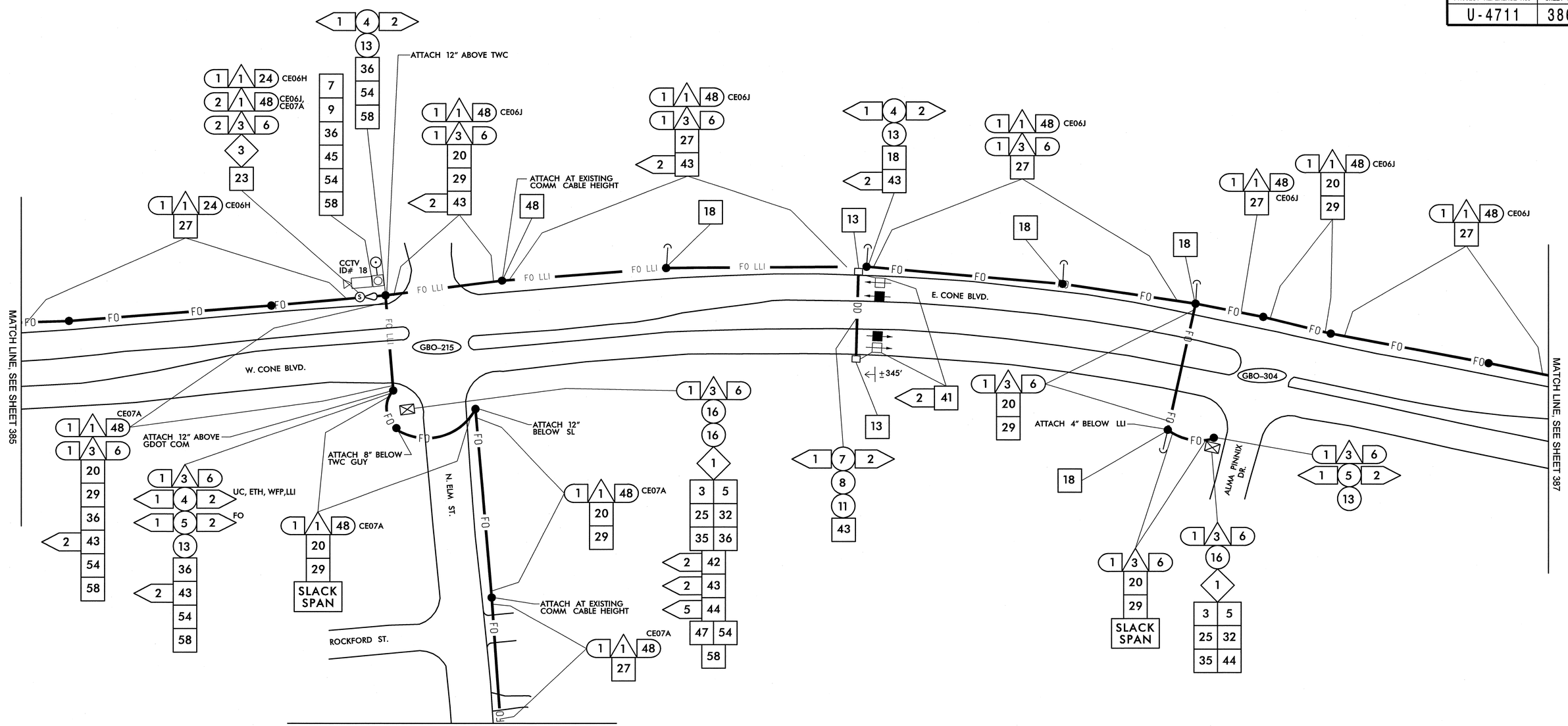
| U-4711 | 386 |

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SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 — GUILFORD COUNTY

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| PLAN DATE: FEBRUARY, 2008 | REVIEWED BY: K.W. SMITH |
| PREPARED BY: K.D. VANPATTEN | REVIEWED BY: M.W. DUNZO |

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE — DATE 2/20/08

CADD Filename: ...\Sht0386.dgn

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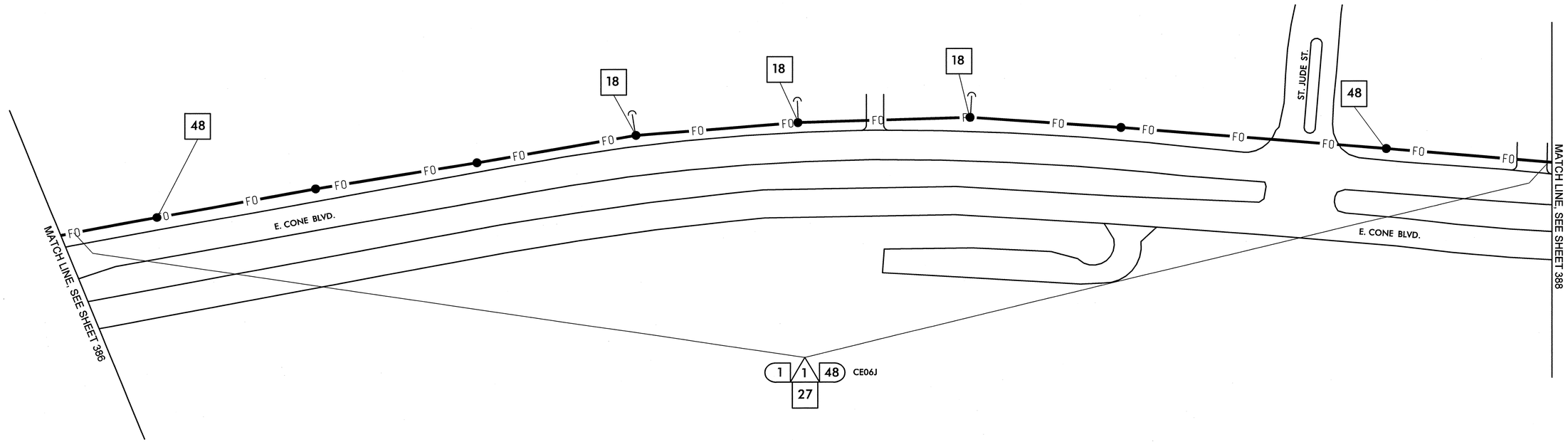
| U-4711 | 387 |

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| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
| 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX |
| 12 | INSTALL OVERSIZED JUNCTION BOX |
| 13 | INSTALL STANDARD JUNCTION BOX |
| 14 | REMOVE EXISTING JUNCTION BOX |
| 15 | INSTALL WOOD POLE |
| 16 | REMOVE EXISTING WOOD POLE |
| 17 | INSTALL AERIAL GUY ASSEMBLY |
| 18 | INSTALL STANDARD GUY ASSEMBLY |
| 19 | INSTALL SIDEWALK GUY ASSEMBLY |
| 20 | INSTALL MESSENGER CABLE |
| 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE |
| 22 | REMOVE EXISTING COMMUNICATIONS CABLE |
| 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE |
| 24 | INSTALL DELINEATOR MARKER |
| 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE |
| 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 30 | INSTALL NEW ELECTRICAL SERVICE |
| 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 32 | INSTALL NEW CONTROLLER |
| 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 34 | INSTALL GENERATOR POWER INLET BOX |
| 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 36 | INSTALL UNIFIED CABLE |
| 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 40 | INSTALL RADIO TRANSCEIVER |
| 41 | INSTALL SYSTEM LOOP |
| 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 44 | INSTALL LOCAL LOOP AMPLIFIER |
| 45 | INSTALL CITY WI-FI ANTENNA |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH |
| 47 | INSTALL CODEC |
| 48 | BOND MESSENGER CABLE TO POLE GROUND |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION |
| 50 | INSTALL ANTENNA CABLE |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT |
| 53 | INSTALL DSL ETHERNET SWITCH |
| 54 | INSTALL ETHERNET CABLE |
| 55 | INSTALL TERMINAL SERVER |
| 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
| 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000


Traffic Engineering and Safety Systems Branch
Intelligent Transportation Systems
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

| | |
|---|---|
| PLAN DATE: FEBRUARY, 2008 | REVIEWED BY: K.W. SMITH |
| PREPARED BY: K.D. VANPATTEN | REVIEWED BY: M.W. DUNZO |

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO
SIGNATURE 2/20/08 DATE
CADD Filename: ...\Sht0387.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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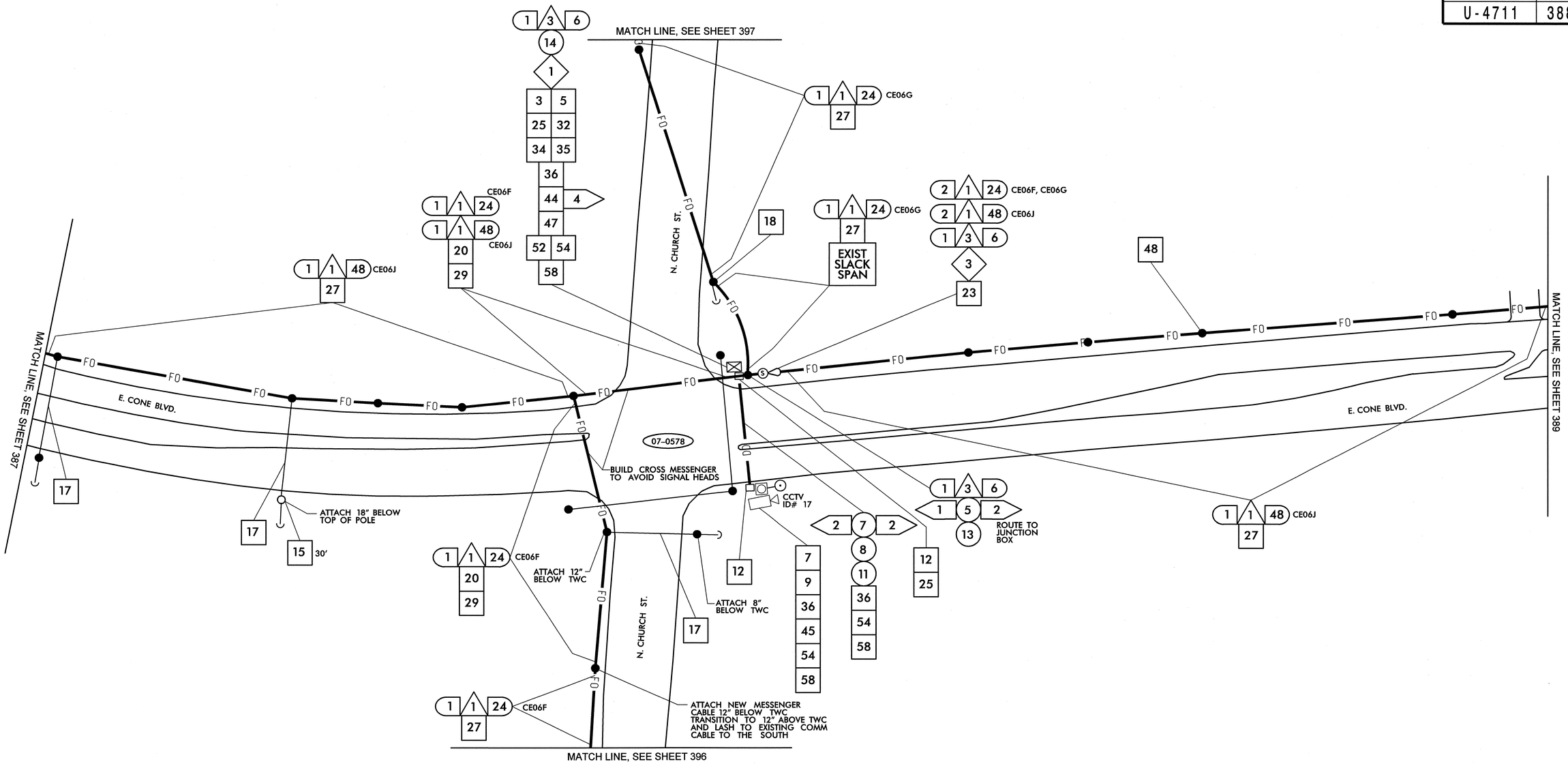
| U-4711 | 388 |




| | |
|---|---|
| 1 | INSTALL SMFO CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE |
| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
| 6 | REUSE GDOT SMFO CABLE |
| 1 | TRENCH |
| 2 | INSTALL PVC CONDUIT |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT |
| 7 | INSTALL POLYETHYLENE CONDUIT |
| 8 | DIRECTIONAL DRILL CONDUIT |
| 9 | BORE AND JACK CONDUIT |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT |
| 12 | INSTALL CABLE(S) IN EXISTING RISER |
| 13 | INSTALL CABLE(S) IN NEW RISER |
| 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE |
| 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET |
| 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET |
| 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING |
| 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET |
| 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE |
| 3 | INSTALL AERIAL SPLICE ENCLOSURE |
| 4 | INSTALL POLE MOUNTED SPLICE CABINET |
| 5 | INSTALL BASE MOUNTED SPLICE CABINET |
| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
| 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX |
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| 15 | INSTALL WOOD POLE |
| 16 | REMOVE EXISTING WOOD POLE |
| 17 | INSTALL AERIAL GUY ASSEMBLY |
| 18 | INSTALL STANDARD GUY ASSEMBLY |
| 19 | INSTALL SIDEWALK GUY ASSEMBLY |
| 20 | INSTALL MESSENGER CABLE |
| 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE |
| 22 | REMOVE EXISTING COMMUNICATIONS CABLE |
| 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE |
| 24 | INSTALL DELINEATOR MARKER |
| 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE |
| 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 30 | INSTALL NEW ELECTRICAL SERVICE |
| 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 32 | INSTALL NEW CONTROLLER |
| 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 34 | INSTALL GENERATOR POWER INLET BOX |
| 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 36 | INSTALL UNIFIED CABLE |
| 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 40 | INSTALL RADIO TRANSCEIVER |
| 41 | INSTALL SYSTEM LOOP |
| 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 44 | INSTALL LOCAL LOOP AMPLIFIER |
| 45 | INSTALL CITY WI-FI ANTENNA |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH |
| 47 | INSTALL CODEC |
| 48 | BOND MESSENGER CABLE TO POLE GROUND |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION |
| 50 | INSTALL ANTENNA CABLE |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT |
| 53 | INSTALL DSL ETHERNET SWITCH |
| 54 | INSTALL ETHERNET CABLE |
| 55 | INSTALL TERMINAL SERVER |
| 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
| 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

PLANS PREPARED IN THE OFFICE OF:

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P.O. Box 33068
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(919) 677-2000

Traffic Engineering and Safety Systems Branch
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 — GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 — REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN — REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE — DATE 2/20/08

CADD Filename: ...\Sht0388.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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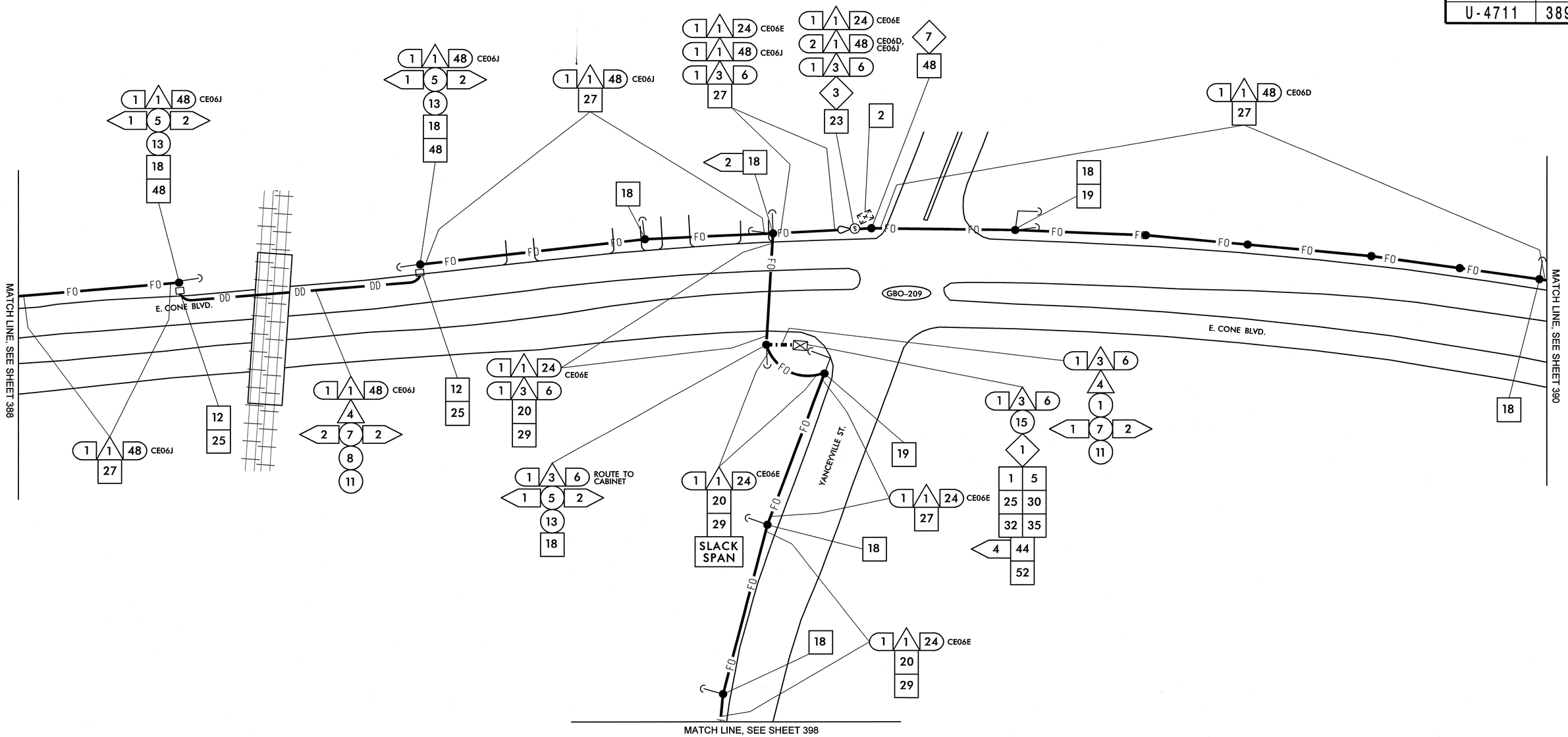
| U-4711 | 389 |




| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | INSTALL SMFO CABLE | 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE | 6 | INSTALL NEW 336S CABINET | 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE | 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 7 | INSTALL CCTV CAMERA ASSEMBLY | 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE | 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 8 | INSTALL CCTV CAMERA WOOD POLE | 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 4 | INSTALL TRACER WIRE | 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET | 9 | INSTALL CCTV METAL POLE AND FOUNDATION | 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 5 | REUSE NCDOT SMFO CABLE | 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET | 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX | 30 | INSTALL NEW ELECTRICAL SERVICE |
| 6 | REUSE GDOT SMFO CABLE | 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING | 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX | 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 1 | TRENCH | 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET | 12 | INSTALL OVERSIZED JUNCTION BOX | 32 | INSTALL NEW CONTROLLER |
| 2 | INSTALL PVC CONDUIT | 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE | 13 | INSTALL STANDARD JUNCTION BOX | 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT | 3 | INSTALL AERIAL SPLICE ENCLOSURE | 14 | REMOVE EXISTING JUNCTION BOX | 34 | INSTALL GENERATOR POWER INLET BOX |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD | 4 | INSTALL POLE MOUNTED SPLICE CABINET | 15 | INSTALL WOOD POLE | 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING | 5 | INSTALL BASE MOUNTED SPLICE CABINET | 16 | REMOVE EXISTING WOOD POLE | 36 | INSTALL UNIFIED CABLE |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT | 6 | REMOVE EXISTING SPLICE CABINET | 17 | INSTALL AERIAL GUY ASSEMBLY | 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 7 | INSTALL POLYETHYLENE CONDUIT | 7 | INSTALL TERMINAL SPLICE BOX | 18 | INSTALL STANDARD GUY ASSEMBLY | 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 8 | DIRECTIONAL DRILL CONDUIT | 8 | MODIFY EXISTING SPLICE ENCLOSURE | 19 | INSTALL SIDEWALK GUY ASSEMBLY | 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 9 | BORE AND JACK CONDUIT | 1 | INSTALL CABINET FOUNDATION | 20 | INSTALL MESSENGER CABLE | 40 | INSTALL RADIO TRANSCEIVER |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT | 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER | 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE | 41 | INSTALL SYSTEM LOOP |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT | 3 | MODIFY EXISTING CABINET FOUNDATION | 22 | REMOVE EXISTING COMMUNICATIONS CABLE | 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 12 | INSTALL CABLE(S) IN EXISTING RISER | 4 | INSTALL NEW 333 COMMUNICATION CABINET | 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE | 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 13 | INSTALL CABLE(S) IN NEW RISER | 5 | INSTALL NEW 332 BASE MOUNTED CABINET | 24 | INSTALL DELINEATOR MARKER | | |
| | | | | 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE | | |

| | | | |
|---|---|---|---|
| 44 | INSTALL LOCAL LOOP AMPLIFIER | 53 | INSTALL DSL ETHERNET SWITCH |
| 45 | INSTALL CITY WI-FI ANTENNA | 54 | INSTALL ETHERNET CABLE |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH | 55 | INSTALL TERMINAL SERVER |
| 47 | INSTALL CODEC | 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
| 48 | BOND MESSENGER CABLE TO POLE GROUND | 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION | 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |
| 50 | INSTALL ANTENNA CABLE | | |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT | | |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT | | |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000



750 Greenfield Pkwy., Garner, NC 27529


SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht0389.dgn

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| PROJECT REFERENCE NO. | SHEET NO. |
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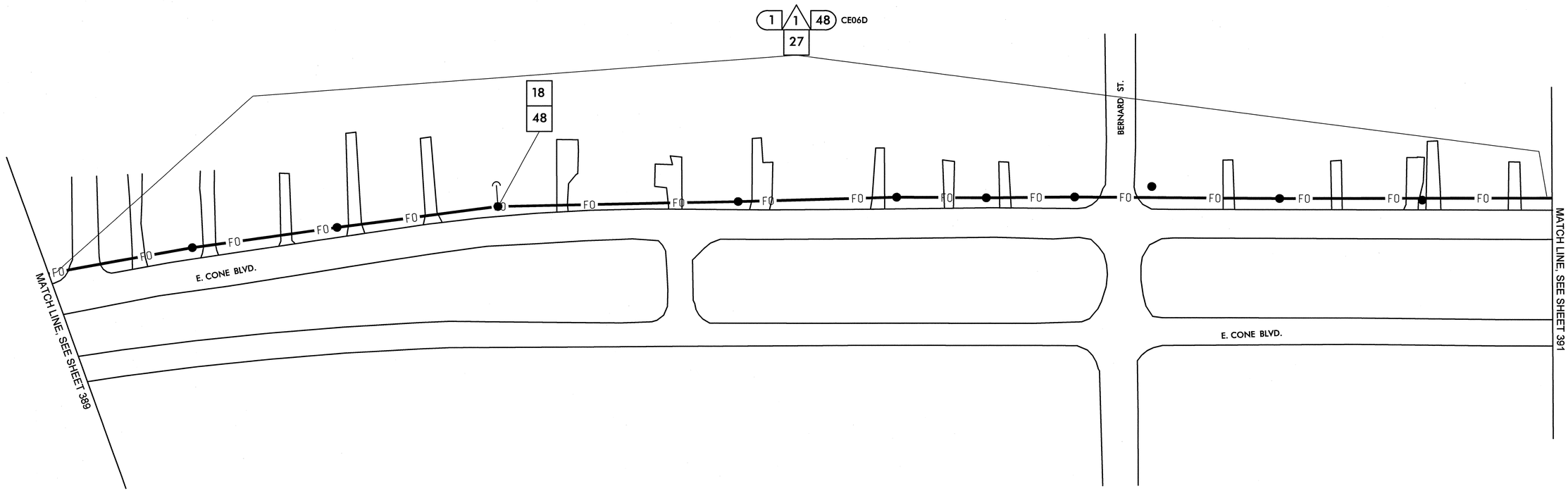
| U-4711 | 390 |




1. INSTALL SMFO CABLE
2. INSTALL PLENUM RATED FIBER OPTIC CABLE
3. INSTALL FIBER OPTIC DROP CABLE
4. INSTALL TRACER WIRE
5. REUSE NCDOT SMFO CABLE
6. REUSE GDOT SMFO CABLE
1. TRENCH
2. INSTALL PVC CONDUIT
3. INSTALL RIGID, GALVANIZED STEEL CONDUIT
4. INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
5. INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING
6. INSTALL OUTER-DUCT POLYETHYLENE CONDUIT
7. INSTALL POLYETHYLENE CONDUIT
8. DIRECTIONAL DRILL CONDUIT
9. BORE AND JACK CONDUIT
10. INSTALL CABLE(S) IN EXISTING CONDUIT
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13. INSTALL CABLE(S) IN NEW RISER
14. INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE
15. INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
16. INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
17. INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET
18. INSTALL NEW RISER INTO POLE MOUNTED CABINET
19. REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING
1. INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET
2. INSTALL UNDERGROUND SPLICE ENCLOSURE
3. INSTALL AERIAL SPLICE ENCLOSURE
4. INSTALL POLE MOUNTED SPLICE CABINET
5. INSTALL BASE MOUNTED SPLICE CABINET
6. REMOVE EXISTING SPLICE CABINET
7. INSTALL TERMINAL SPLICE BOX
8. MODIFY EXISTING SPLICE ENCLOSURE
1. INSTALL CABINET FOUNDATION
2. REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER
3. MODIFY EXISTING CABINET FOUNDATION
4. INSTALL NEW 333 COMMUNICATION CABINET
5. INSTALL NEW 332 BASE MOUNTED CABINET
6. INSTALL NEW 336S CABINET
7. INSTALL CCTV CAMERA ASSEMBLY
8. INSTALL CCTV CAMERA WOOD POLE
9. INSTALL CCTV METAL POLE AND FOUNDATION
10. INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX
11. INSTALL SPECIAL OVERSIZED JUNCTION BOX
12. INSTALL OVERSIZED JUNCTION BOX
13. INSTALL STANDARD JUNCTION BOX
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24. INSTALL DELINEATOR MARKER
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27. LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE
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PLANS PREPARED IN THE OFFICE OF:
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Pacific Engineering and Sales Systems, Inc.
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

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| PLAN DATE: FEBRUARY, 2008 | REVIEWED BY: K.W. SMITH |
| PREPARED BY: K.D. VANPATTEN | REVIEWED BY: M.W. DUNZO |

| REVISIONS | INIT. | DATE |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO
SIGNATURE DATE 2/20/08
CADD Filename: ..\Sht0390.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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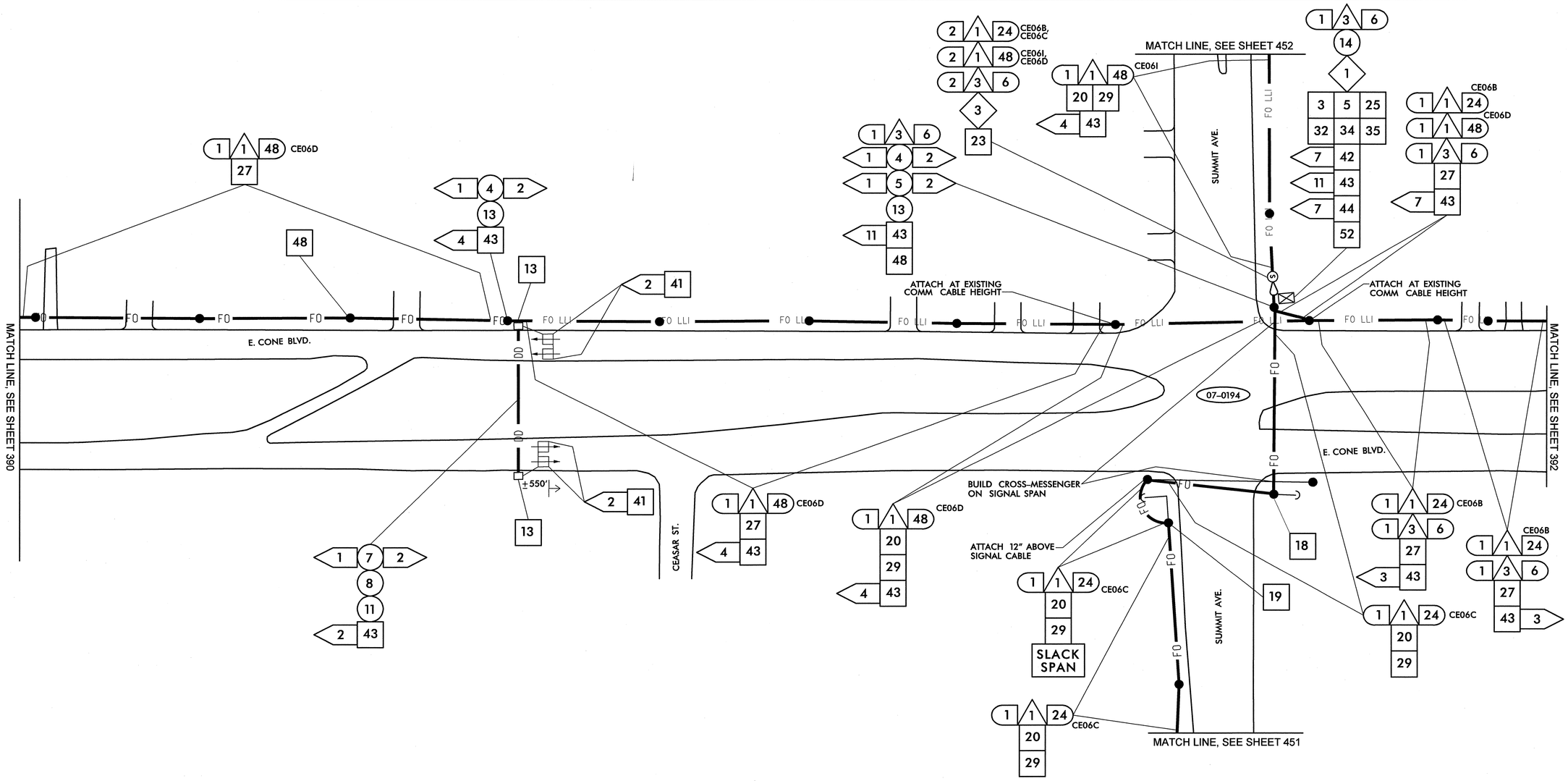
| U-4711 | 391 |




| | | | | | |
|---|---|---|---|---|---|
| 1 INSTALL SMFO CABLE | 14 INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE | 6 INSTALL NEW 336S CABINET | 26 STORE 100 FEET OF EACH COMMUNICATIONS CABLE | 44 INSTALL LOCAL LOOP AMPLIFIER | 53 INSTALL DSL ETHERNET SWITCH |
| 2 INSTALL PLENUM RATED FIBER OPTIC CABLE | 15 INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 7 INSTALL CCTV CAMERA ASSEMBLY | 27 LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE | 45 INSTALL CITY WI-FI ANTENNA | 54 INSTALL ETHERNET CABLE |
| 3 INSTALL FIBER OPTIC DROP CABLE | 16 INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 8 INSTALL CCTV CAMERA WOOD POLE | 28 LASH CABLE(S) TO EXISTING MESSENGER CABLE | 46 INSTALL HUB 10-GIGABIT ETHERNET SWITCH | 55 INSTALL TERMINAL SERVER |
| 4 INSTALL TRACER WIRE | 17 INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET | 9 INSTALL CCTV METAL POLE AND FOUNDATION | 29 LASH CABLE(S) TO NEW MESSENGER CABLE | 47 INSTALL CODEC | 56 INSTALL MICROWAVE VEHICLE DETECTOR |
| 5 REUSE NCDOT SMFO CABLE | 18 INSTALL NEW RISER INTO POLE MOUNTED CABINET | 10 INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX | 30 INSTALL NEW ELECTRICAL SERVICE | 48 BOND MESSENGER CABLE TO POLE GROUND | 57 INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 6 REUSE GDOT SMFO CABLE | 19 REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING | 11 INSTALL SPECIAL OVERSIZED JUNCTION BOX | 31 MODIFY EXISTING ELECTRICAL SERVICE | 49 INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION | 58 INSTALL WIRELESS ACCESS POINT POWER CABLE |
| 1 TRENCH | 1 INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET | 12 INSTALL OVERSIZED JUNCTION BOX | 32 INSTALL NEW CONTROLLER | 50 INSTALL ANTENNA CABLE | |
| 2 INSTALL PVC CONDUIT | 2 INSTALL UNDERGROUND SPLICE ENCLOSURE | 13 INSTALL STANDARD JUNCTION BOX | 33 INSTALL EXISTING CABLE IN NEW CABINET | 51 RECONNECT RAILROAD PREEMPTION EQUIPMENT | |
| 3 INSTALL RIGID, GALVANIZED STEEL CONDUIT | 3 INSTALL AERIAL SPLICE ENCLOSURE | 14 REMOVE EXISTING JUNCTION BOX | 34 INSTALL GENERATOR POWER INLET BOX | 52 RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT | |
| 4 INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD | 4 INSTALL POLE MOUNTED SPLICE CABINET | 15 INSTALL WOOD POLE | 35 INSTALL LOCAL GIGABIT ETHERNET SWITCH | | |
| 5 INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING | 5 INSTALL BASE MOUNTED SPLICE CABINET | 16 REMOVE EXISTING WOOD POLE | 36 INSTALL UNIFIED CABLE | | |
| 6 INSTALL OUTER-DUCT POLYETHYLENE CONDUIT | 6 REMOVE EXISTING SPLICE CABINET | 17 INSTALL AERIAL GUY ASSEMBLY | 37 INSTALL POLE MOUNTED EQUIPMENT CABINET | | |
| 7 INSTALL POLYETHYLENE CONDUIT | 7 INSTALL TERMINAL SPLICE BOX | 18 INSTALL STANDARD GUY ASSEMBLY | 38 INSTALL UNI-DIRECTIONAL YAGI ANTENNA | | |
| 8 DIRECTIONAL DRILL CONDUIT | 8 MODIFY EXISTING SPLICE ENCLOSURE | 19 INSTALL SIDEWALK GUY ASSEMBLY | 39 INSTALL OMNI-DIRECTIONAL ANTENNA | | |
| 9 BORE AND JACK CONDUIT | 1 INSTALL CABINET FOUNDATION | 20 INSTALL MESSENGER CABLE | 40 INSTALL RADIO TRANSCEIVER | | |
| 10 INSTALL CABLE(S) IN EXISTING CONDUIT | 2 REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER | 21 REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE | 41 INSTALL SYSTEM LOOP | | |
| 11 INSTALL CABLE(S) IN NEW CONDUIT | 3 MODIFY EXISTING CABINET FOUNDATION | 22 REMOVE EXISTING COMMUNICATIONS CABLE | 42 INSTALL SYSTEM LOOP AMPLIFIER | | |
| 12 INSTALL CABLE(S) IN EXISTING RISER | 4 INSTALL NEW 333 COMMUNICATION CABINET | 23 INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE | 43 INSTALL SYSTEM LOOP LEAD-IN CABLE | | |
| 13 INSTALL CABLE(S) IN NEW RISER | 5 INSTALL NEW 332 BASE MOUNTED CABINET | 24 INSTALL DELINEATOR MARKER | | | |
| | | 25 STORE 30 FEET OF EACH COMMUNICATIONS CABLE | | | |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000

Traffic Engineering and Safety Systems Branch
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 — GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 — REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN — REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE — DATE 2/20/08

CADD Filename: ...\Sht0391.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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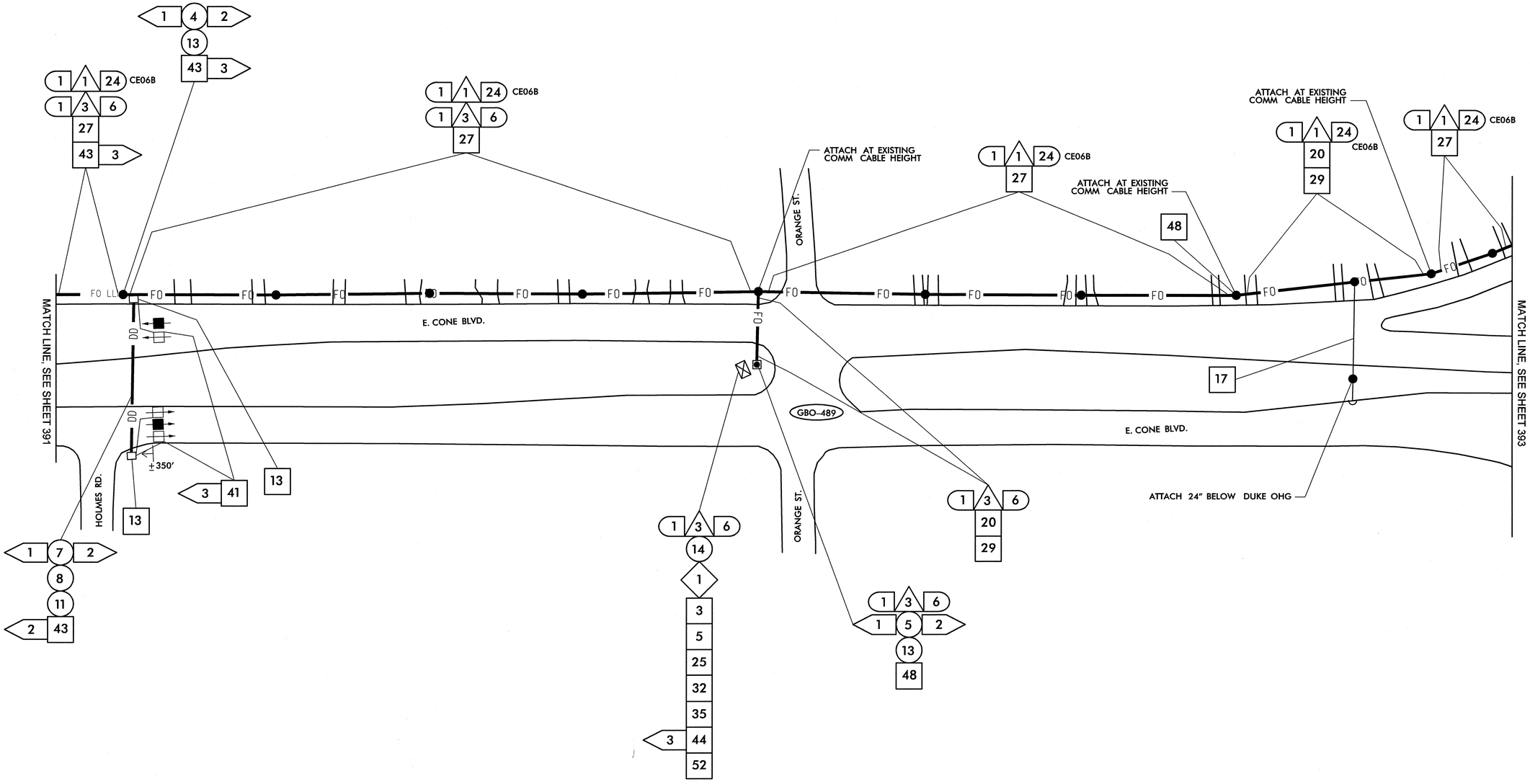
| U-4711 | 392 |

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PLANS PREPARED IN THE OFFICE OF:
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STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY
PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH
PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
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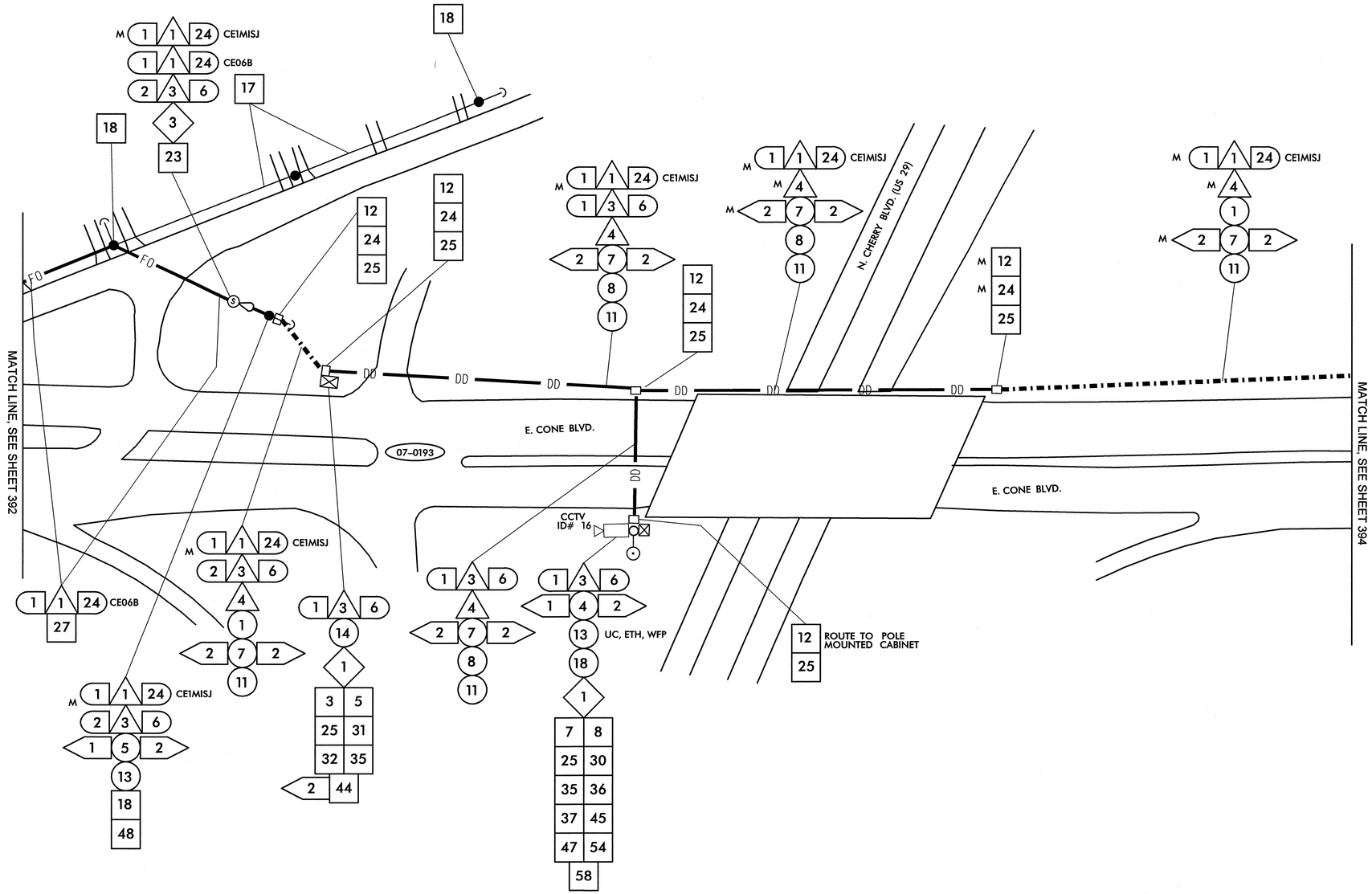
SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO
SIGNATURE DATE 2/20/08
CADD Filename: ...\Sht0392.dgn

2/20/2008
h:\systems\projects\U4462020 (g-boro mts)\SM0392.dgn

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-4711 | 393 |




| | |
|---|---|
| 1 | INSTALL SMFO CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE |
| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
| 6 | REUSE GDOT SMFO CABLE |
| 1 | TRENCH |
| 2 | INSTALL PVC CONDUIT |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT |
| 7 | INSTALL POLYETHYLENE CONDUIT |
| 8 | DIRECTIONAL DRILL CONDUIT |
| 9 | BORE AND JACK CONDUIT |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT |
| 12 | INSTALL CABLE(S) IN EXISTING RISER |
| 13 | INSTALL CABLE(S) IN NEW RISER |
| 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE |
| 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET |
| 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET |
| 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING |
| 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET |
| 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE |
| 3 | INSTALL AERIAL SPLICE ENCLOSURE |
| 4 | INSTALL POLE MOUNTED SPLICE CABINET |
| 5 | INSTALL BASE MOUNTED SPLICE CABINET |
| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
| 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX |
| 12 | INSTALL OVERSIZED JUNCTION BOX |
| 13 | INSTALL STANDARD JUNCTION BOX |
| 14 | REMOVE EXISTING JUNCTION BOX |
| 15 | INSTALL WOOD POLE |
| 16 | REMOVE EXISTING WOOD POLE |
| 17 | INSTALL AERIAL GUY ASSEMBLY |
| 18 | INSTALL STANDARD GUY ASSEMBLY |
| 19 | INSTALL SIDEWALK GUY ASSEMBLY |
| 20 | INSTALL MESSENGER CABLE |
| 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE |
| 22 | REMOVE EXISTING COMMUNICATIONS CABLE |
| 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE |
| 24 | INSTALL DELINEATOR MARKER |
| 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE |
| 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 30 | INSTALL NEW ELECTRICAL SERVICE |
| 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 32 | INSTALL NEW CONTROLLER |
| 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 34 | INSTALL GENERATOR POWER INLET BOX |
| 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 36 | INSTALL UNIFIED CABLE |
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| 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
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| 41 | INSTALL SYSTEM LOOP |
| 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 44 | INSTALL LOCAL LOOP AMPLIFIER |
| 45 | INSTALL CITY WI-FI ANTENNA |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH |
| 47 | INSTALL CODEC |
| 48 | BOND MESSENGER CABLE TO POLE GROUND |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION |
| 50 | INSTALL ANTENNA CABLE |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT |
| 53 | INSTALL DSL ETHERNET SWITCH |
| 54 | INSTALL ETHERNET CABLE |
| 55 | INSTALL TERMINAL SERVER |
| 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
| 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

PLANS PREPARED IN THE OFFICE OF:

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Traffic Engineering and Safety System Branch
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750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

| | | | |
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| PLAN DATE: FEBRUARY, 2008 | | REVIEWED BY: K.W. SMITH | |
| PREPARED BY: K.D. VANPATTEN | | REVIEWED BY: M.W. DUNZO | |
| REVISIONS | | INIT. | DATE |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO
SIGNATURE 2/20/08 DATE

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| PROJECT REFERENCE NO. | SHEET NO. |
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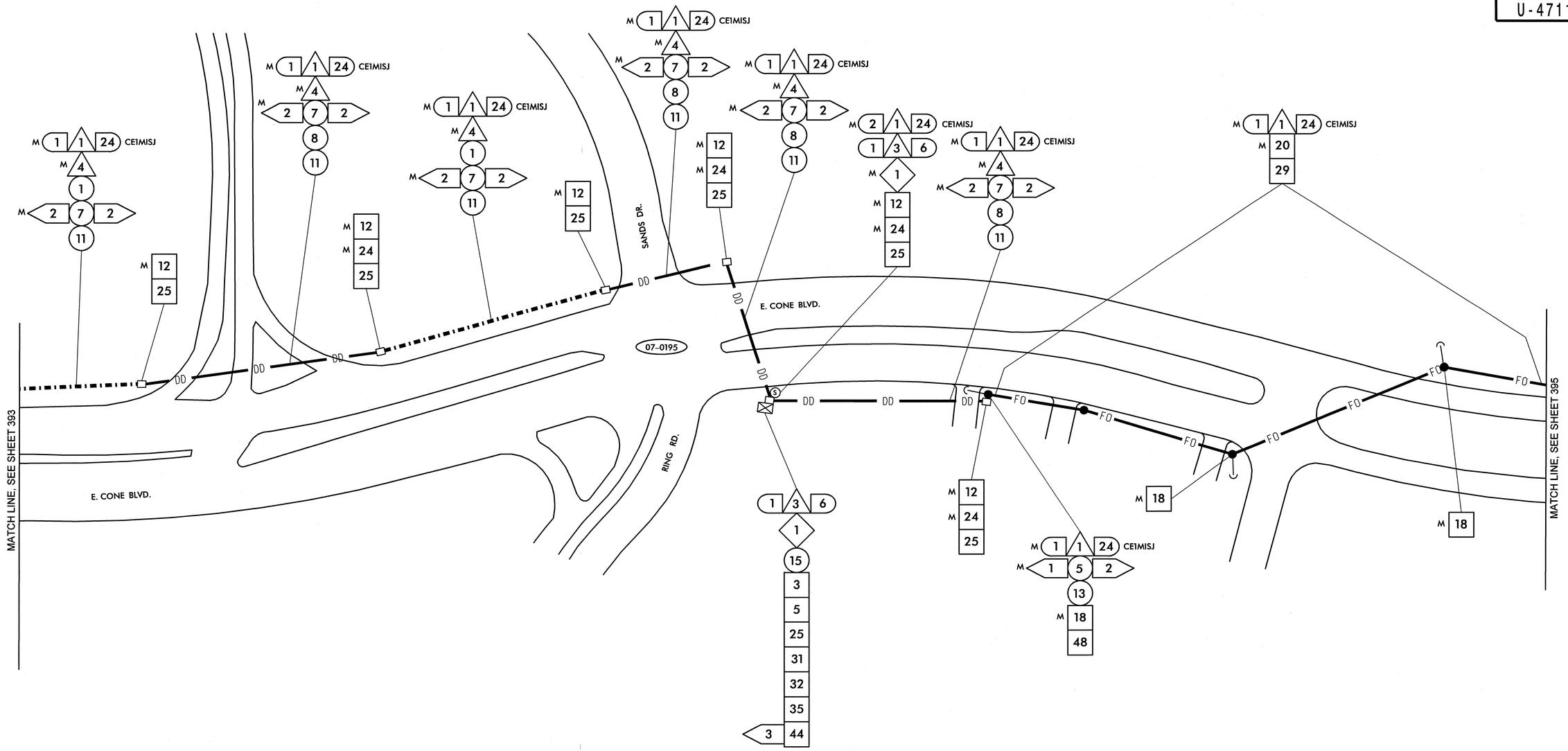
| U-4711 | 394 |

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PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000



750 Greenfield Pkwy., Garner, NC 27529


SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filename ...\Sht0394m.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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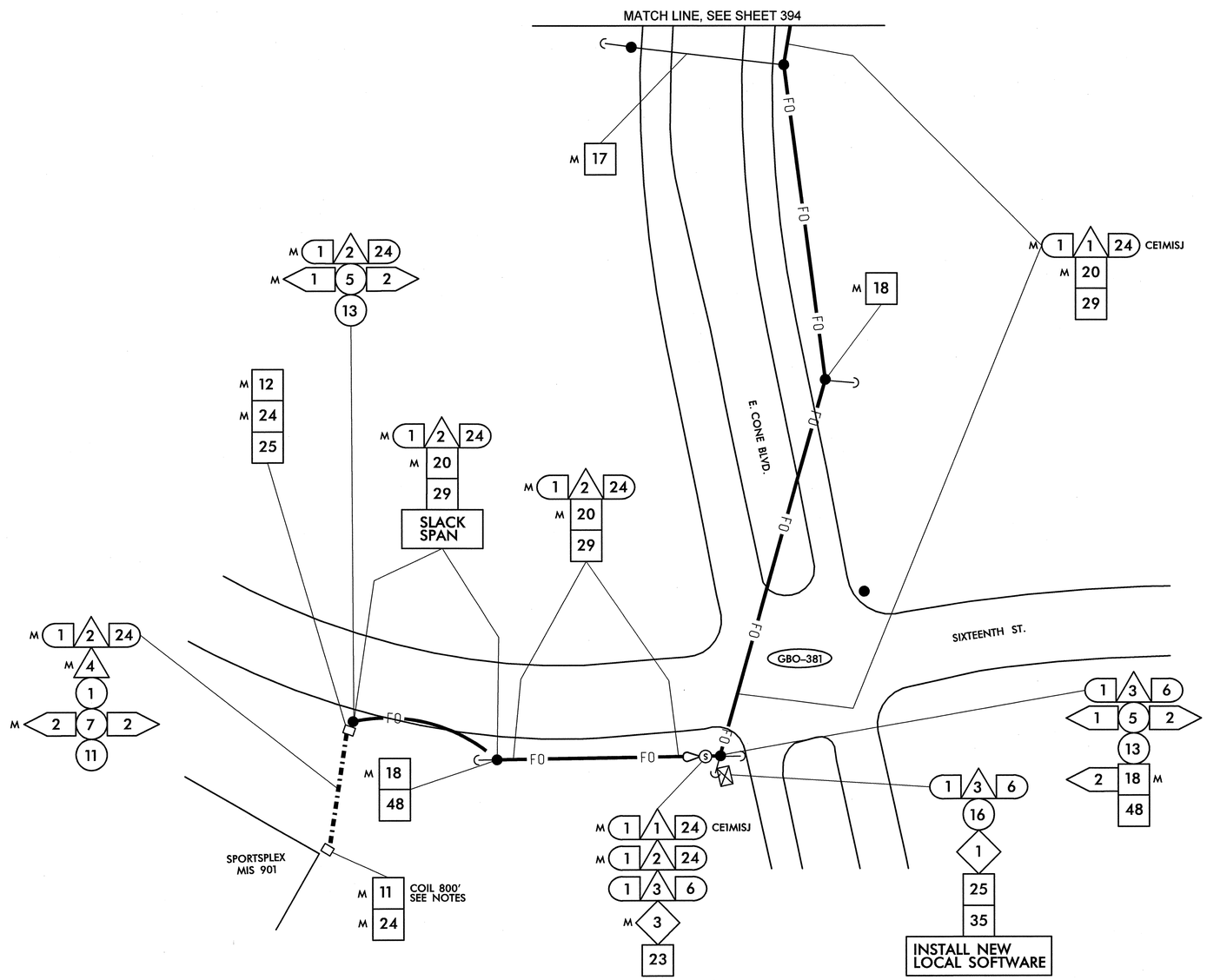
| U-4711 | 395 |




## NOTES (THIS SHEET ONLY)

1. SEE BUILDING ENTRANCE DETAIL FOR ROUTING INTO BUILDING

1. INSTALL SMFO CABLE
2. INSTALL PLENUM RATED FIBER OPTIC CABLE
3. INSTALL FIBER OPTIC DROP CABLE
4. INSTALL TRACER WIRE
5. REUSE NCDOT SMFO CABLE
6. REUSE GDOT SMFO CABLE

1. TRENCH
2. INSTALL PVC CONDUIT
3. INSTALL RIGID, GALVANIZED STEEL CONDUIT
4. INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
5. INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING
6. INSTALL OUTER-DUCT POLYETHYLENE CONDUIT
7. INSTALL POLYETHYLENE CONDUIT
8. DIRECTIONAL DRILL CONDUIT
9. BORE AND JACK CONDUIT
10. INSTALL CABLE(S) IN EXISTING CONDUIT
11. INSTALL CABLE(S) IN NEW CONDUIT
12. INSTALL CABLE(S) IN EXISTING RISER
13. INSTALL CABLE(S) IN NEW RISER
14. INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE
15. INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
16. INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
17. INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET
18. INSTALL NEW RISER INTO POLE MOUNTED CABINET
19. REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING

1. INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET
2. INSTALL UNDERGROUND SPLICE ENCLOSURE
3. INSTALL AERIAL SPLICE ENCLOSURE
4. INSTALL POLE MOUNTED SPLICE CABINET
5. INSTALL BASE MOUNTED SPLICE CABINET
6. REMOVE EXISTING SPLICE CABINET
7. INSTALL TERMINAL SPLICE BOX
8. MODIFY EXISTING SPLICE ENCLOSURE

1. INSTALL CABINET FOUNDATION
2. REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER
3. MODIFY EXISTING CABINET FOUNDATION
4. INSTALL NEW 333 COMMUNICATION CABINET
5. INSTALL NEW 332 BASE MOUNTED CABINET
6. INSTALL NEW 336S CABINET
7. INSTALL CCTV CAMERA ASSEMBLY
8. INSTALL CCTV CAMERA WOOD POLE
9. INSTALL CCTV METAL POLE AND FOUNDATION
10. INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX
11. INSTALL SPECIAL OVERSIZED JUNCTION BOX
12. INSTALL OVERSIZED JUNCTION BOX
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19. INSTALL SIDEWALK GUY ASSEMBLY
20. INSTALL MESSENGER CABLE
21. REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE
22. REMOVE EXISTING COMMUNICATIONS CABLE
23. INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE
24. INSTALL DELINEATOR MARKER
25. STORE 30 FEET OF EACH COMMUNICATIONS CABLE
26. STORE 100 FEET OF EACH COMMUNICATIONS CABLE
27. LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE
28. LASH CABLE(S) TO EXISTING MESSENGER CABLE
29. LASH CABLE(S) TO NEW MESSENGER CABLE
30. INSTALL NEW ELECTRICAL SERVICE
31. MODIFY EXISTING ELECTRICAL SERVICE
32. INSTALL NEW CONTROLLER
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37. INSTALL POLE MOUNTED EQUIPMENT CABINET
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39. INSTALL OMNI-DIRECTIONAL ANTENNA
40. INSTALL RADIO TRANSCEIVER
41. INSTALL SYSTEM LOOP
42. INSTALL SYSTEM LOOP AMPLIFIER
43. INSTALL SYSTEM LOOP LEAD-IN CABLE
44. INSTALL LOCAL LOOP AMPLIFIER
45. INSTALL CITY WI-FI ANTENNA
46. INSTALL HUB 10-GIGABIT ETHERNET SWITCH
47. INSTALL CODEC
48. BOND MESSENGER CABLE TO POLE GROUND
49. INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION
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51. RECONNECT RAILROAD PREEMPTION EQUIPMENT
52. RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT
53. INSTALL DSL ETHERNET SWITCH
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55. INSTALL TERMINAL SERVER
56. INSTALL MICROWAVE VEHICLE DETECTOR
57. INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT
58. INSTALL WIRELESS ACCESS POINT POWER CABLE

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


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# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/20/08 DATE

CADD Filename: ...\Sht0395m.dgn

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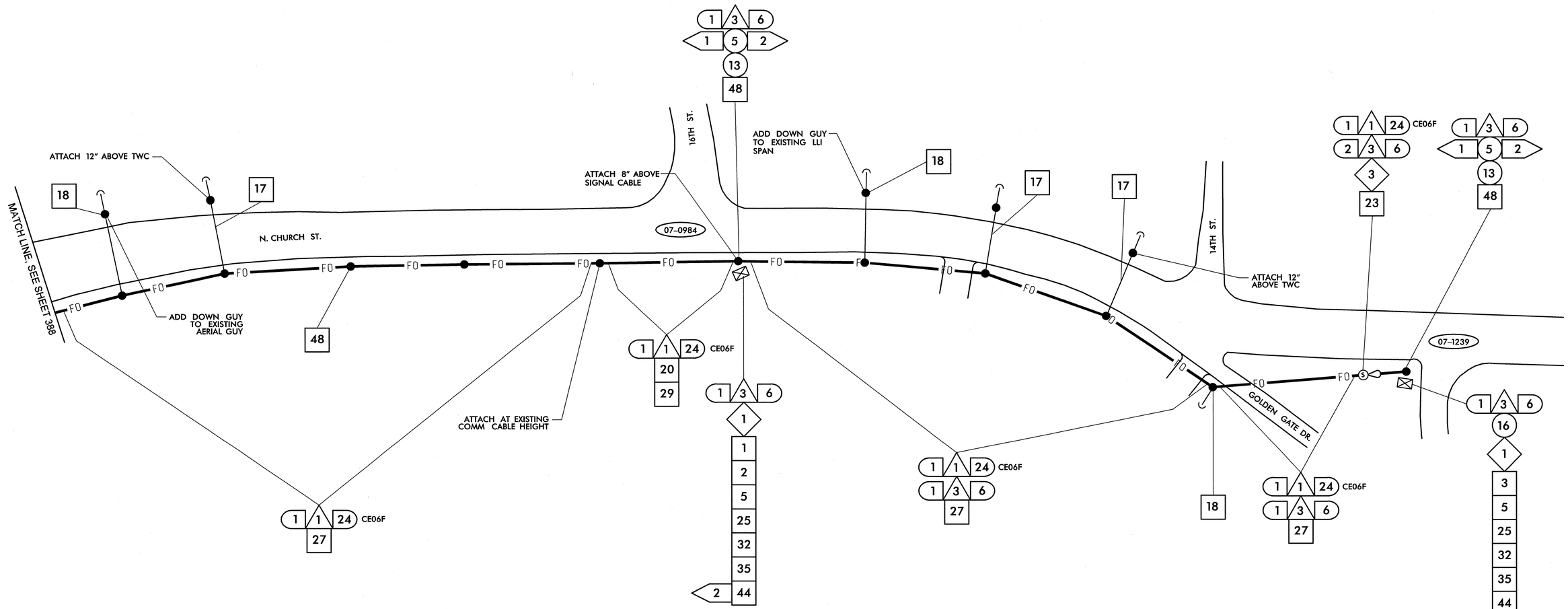
| U-4711 | 396 |




NOTE:
THIS AREA HAS BEEN DETERMINED TO CONTAIN PROPERTIES WITH DOCUMENTED HISTORIC SIGNIFICANCE. IF IT IS NECESSARY TO DEVIATE FROM THESE PLANS IN THIS AREA, PLEASE 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.

1. INSTALL SMFO CABLE
2. INSTALL PLENUM RATED FIBER OPTIC CABLE
3. INSTALL FIBER OPTIC DROP CABLE
4. INSTALL TRACER WIRE
5. REUSE NCDOT SMFO CABLE
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NOTE:
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SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 — GUILFORD COUNTY

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| PLAN DATE: FEBRUARY, 2008 | REVIEWED BY: K.W. SMITH |
| PREPARED BY: K.D. VANPATTEN | REVIEWED BY: M.W. DUNZO |

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SEAL 023562 — NORTH CAROLINA PROFESSIONAL ENGINEER MARK DUNZO

SIGNATURE — DATE 2/20/08

CADD Filename: ...\Sht0396.dgn

2/20/2008
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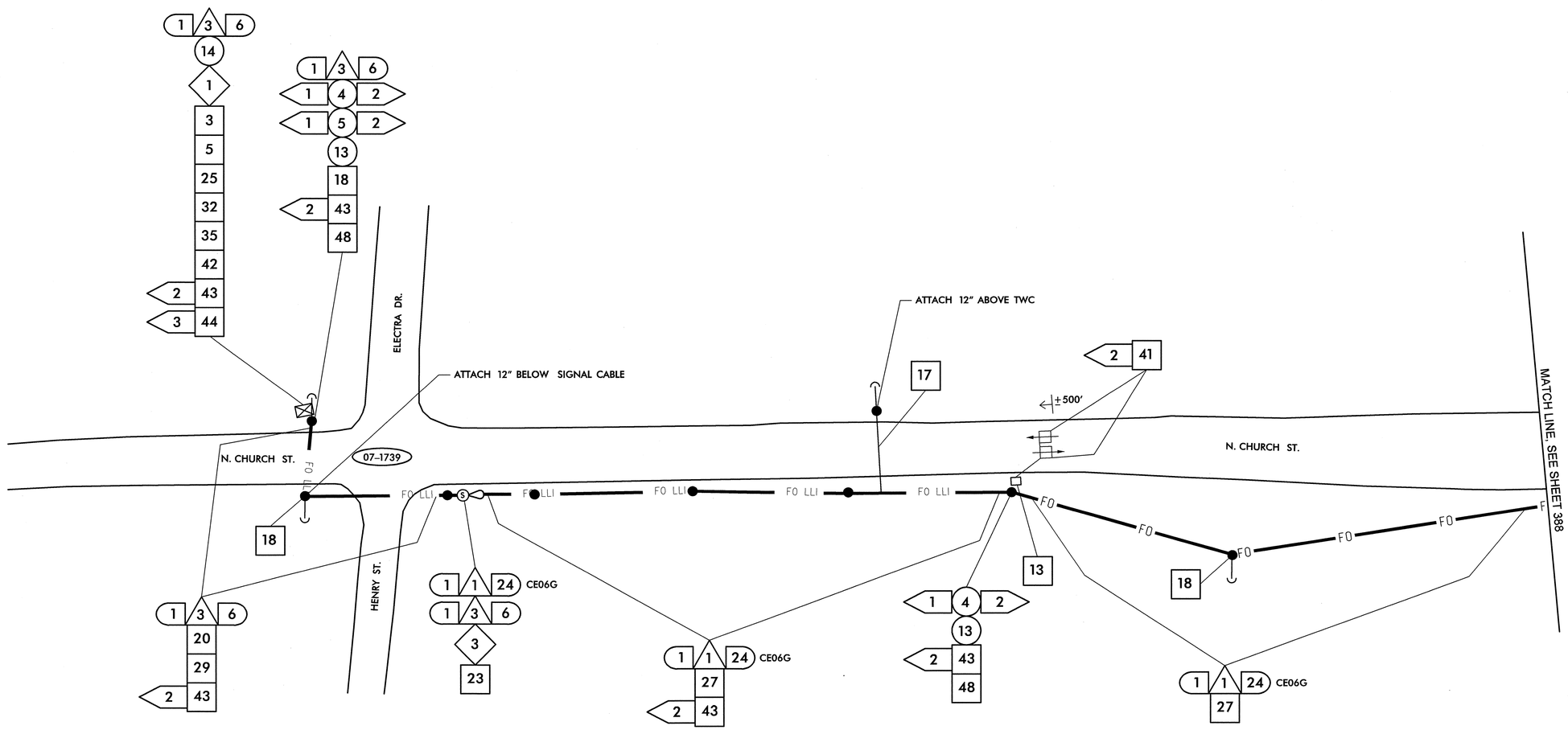
| U-4711 | 397 |




| | |
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| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT |
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| 5 | INSTALL BASE MOUNTED SPLICE CABINET |
| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
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| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
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| 13 | INSTALL STANDARD JUNCTION BOX |
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| 16 | REMOVE EXISTING WOOD POLE |
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| 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 32 | INSTALL NEW CONTROLLER |
| 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 34 | INSTALL GENERATOR POWER INLET BOX |
| 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 36 | INSTALL UNIFIED CABLE |
| 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 40 | INSTALL RADIO TRANSCEIVER |
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NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

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Public Engineering and Safety Systems Branch
Intelligent Transportation Systems
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filenames: ...\Sht0397.dgn

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| PROJECT REFERENCE NO. | SHEET NO. |
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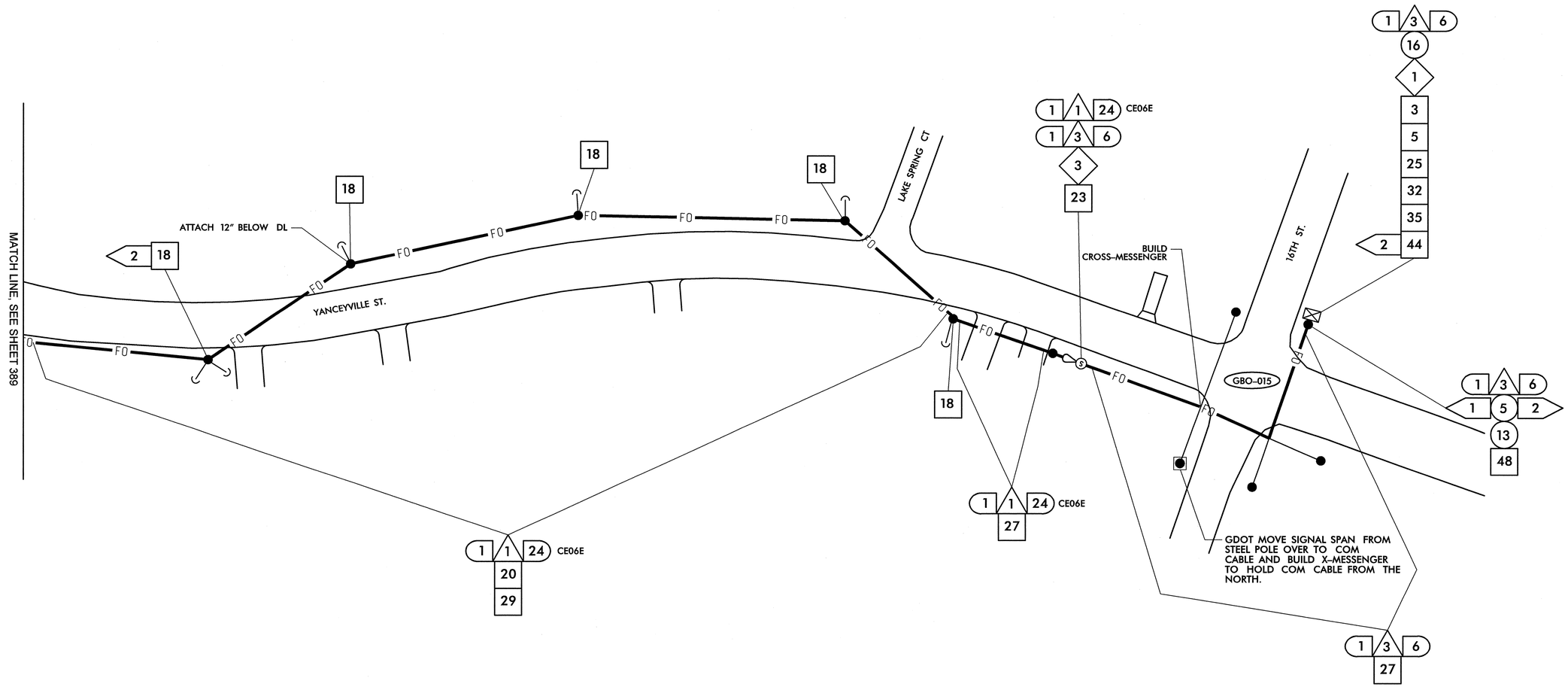
| U-4711 | 398 |




| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | INSTALL SMFO CABLE | 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE | 6 | INSTALL NEW 336S CABINET | 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE | 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 7 | INSTALL CCTV CAMERA ASSEMBLY | 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE | 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 8 | INSTALL CCTV CAMERA WOOD POLE | 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 4 | INSTALL TRACER WIRE | 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET | 9 | INSTALL CCTV METAL POLE AND FOUNDATION | 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 5 | REUSE NCDOT SMFO CABLE | 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET | 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX | 30 | INSTALL NEW ELECTRICAL SERVICE |
| 6 | REUSE GDOT SMFO CABLE | 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING | 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX | 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 1 | TRENCH | 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET | 12 | INSTALL OVERSIZED JUNCTION BOX | 32 | INSTALL NEW CONTROLLER |
| 2 | INSTALL PVC CONDUIT | 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE | 13 | INSTALL STANDARD JUNCTION BOX | 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT | 3 | INSTALL AERIAL SPLICE ENCLOSURE | 14 | REMOVE EXISTING JUNCTION BOX | 34 | INSTALL GENERATOR POWER INLET BOX |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD | 4 | INSTALL POLE MOUNTED SPLICE CABINET | 15 | INSTALL WOOD POLE | 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING | 5 | INSTALL BASE MOUNTED SPLICE CABINET | 16 | REMOVE EXISTING WOOD POLE | 36 | INSTALL UNIFIED CABLE |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT | 6 | REMOVE EXISTING SPLICE CABINET | 17 | INSTALL AERIAL GUY ASSEMBLY | 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
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| 8 | DIRECTIONAL DRILL CONDUIT | 8 | MODIFY EXISTING SPLICE ENCLOSURE | 19 | INSTALL SIDEWALK GUY ASSEMBLY | 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 9 | BORE AND JACK CONDUIT | 1 | INSTALL CABINET FOUNDATION | 20 | INSTALL MESSENGER CABLE | 40 | INSTALL RADIO TRANSCEIVER |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT | 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER | 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE | 41 | INSTALL SYSTEM LOOP |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT | 3 | MODIFY EXISTING CABINET FOUNDATION | 22 | REMOVE EXISTING COMMUNICATIONS CABLE | 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 12 | INSTALL CABLE(S) IN EXISTING RISER | 4 | INSTALL NEW 333 COMMUNICATION CABINET | 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE | 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 13 | INSTALL CABLE(S) IN NEW RISER | 5 | INSTALL NEW 332 BASE MOUNTED CABINET | 24 | INSTALL DELINEATOR MARKER | | |
| | | | | 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE | | |

| | | | | | |
|---|---|---|---|---|---|
| 44 | INSTALL LOCAL LOOP AMPLIFIER | 53 | INSTALL DSL ETHERNET SWITCH | | |
| 45 | INSTALL CITY WI-FI ANTENNA | 54 | INSTALL ETHERNET CABLE | | |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH | 55 | INSTALL TERMINAL SERVER | | |
| 47 | INSTALL CODEC | 56 | INSTALL MICROWAVE VEHICLE DETECTOR | | |
| 48 | BOND MESSENGER CABLE TO POLE GROUND | 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT | | |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION | 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE | | |
| 50 | INSTALL ANTENNA CABLE | | | | |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT | | | | |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT | | | | |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

PLANS PREPARED IN THE OFFICE OF:

Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000

750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

| | | | |
|---|---|---|---|
| PLAN DATE: | FEBRUARY, 2008 | REVIEWED BY: | K.W. SMITH |
| PREPARED BY: | K.D. VANPATTEN | REVIEWED BY: | M.W. DUNZO |

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht0398.dgn

2/20/2008
h:\systems\projects\U4462020 lg-bara mls\SH0398.dgn

| PROJECT REFERENCE NO. | SHEET NO. |
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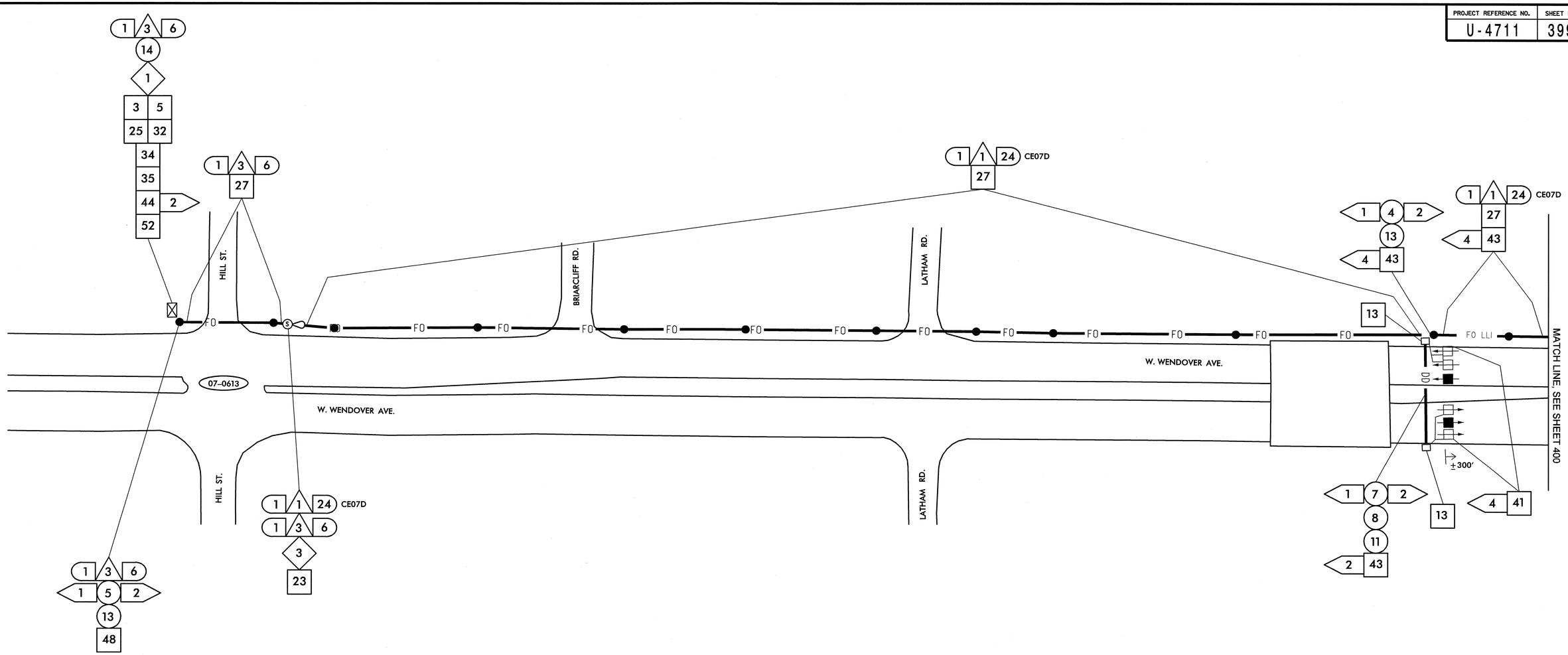
| U-4711 | 399 |




| | | | | | |
|---|---|---|---|---|---|
| 1 | INSTALL SMFO CABLE | 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE | 6 | INSTALL NEW 336S CABINET |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE | 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 3 | INSTALL FIBER OPTIC DROP CABLE | 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 8 | INSTALL CCTV CAMERA WOOD POLE |
| 4 | INSTALL TRACER WIRE | 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET | 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 5 | REUSE NCDOT SMFO CABLE | 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET | 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
| 6 | REUSE GDOT SMFO CABLE | 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING | 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX |
| 1 | TRENCH | 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET | 12 | INSTALL OVERSIZED JUNCTION BOX |
| 2 | INSTALL PVC CONDUIT | 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE | 13 | INSTALL STANDARD JUNCTION BOX |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT | 3 | INSTALL AERIAL SPLICE ENCLOSURE | 14 | REMOVE EXISTING JUNCTION BOX |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD | 4 | INSTALL POLE MOUNTED SPLICE CABINET | 15 | INSTALL WOOD POLE |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING | 5 | INSTALL BASE MOUNTED SPLICE CABINET | 16 | REMOVE EXISTING WOOD POLE |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT | 6 | REMOVE EXISTING SPLICE CABINET | 17 | INSTALL AERIAL GUY ASSEMBLY |
| 7 | INSTALL POLYETHYLENE CONDUIT | 7 | INSTALL TERMINAL SPLICE BOX | 18 | INSTALL STANDARD GUY ASSEMBLY |
| 8 | DIRECTIONAL DRILL CONDUIT | 8 | MODIFY EXISTING SPLICE ENCLOSURE | 19 | INSTALL SIDEWALK GUY ASSEMBLY |
| 9 | BORE AND JACK CONDUIT | 1 | INSTALL CABINET FOUNDATION | 20 | INSTALL MESSENGER CABLE |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT | 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER | 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT | 3 | MODIFY EXISTING CABINET FOUNDATION | 22 | REMOVE EXISTING COMMUNICATIONS CABLE |
| 12 | INSTALL CABLE(S) IN EXISTING RISER | 4 | INSTALL NEW 333 COMMUNICATION CABINET | 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE |
| 13 | INSTALL CABLE(S) IN NEW RISER | 5 | INSTALL NEW 332 BASE MOUNTED CABINET | 24 | INSTALL DELINEATOR MARKER |
| | | | | 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE |

| | | | | | |
|---|---|---|---|---|---|
| 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE | 44 | INSTALL LOCAL LOOP AMPLIFIER | 53 | INSTALL DSL ETHERNET SWITCH |
| 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE | 45 | INSTALL CITY WI-FI ANTENNA | 54 | INSTALL ETHERNET CABLE |
| 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE | 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH | 55 | INSTALL TERMINAL SERVER |
| 29 | LASH CABLE(S) TO NEW MESSENGER CABLE | 47 | INSTALL CODEC | 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
| 30 | INSTALL NEW ELECTRICAL SERVICE | 48 | BOND MESSENGER CABLE TO POLE GROUND | 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 31 | MODIFY EXISTING ELECTRICAL SERVICE | 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION | 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |
| 32 | INSTALL NEW CONTROLLER | 50 | INSTALL ANTENNA CABLE | | |
| 33 | INSTALL EXISTING CABLE IN NEW CABINET | 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT | | |
| 34 | INSTALL GENERATOR POWER INLET BOX | 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT | | |
| 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH | | | | |
| 36 | INSTALL UNIFIED CABLE | | | | |
| 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET | | | | |
| 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA | | | | |
| 39 | INSTALL OMNI-DIRECTIONAL ANTENNA | | | | |
| 40 | INSTALL RADIO TRANSCEIVER | | | | |
| 41 | INSTALL SYSTEM LOOP | | | | |
| 42 | INSTALL SYSTEM LOOP AMPLIFIER | | | | |
| 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE | | | | |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000



Traffic Engineering and Safety Systems Branch
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Pkwy., Garner, NC 27529


SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

| | |
|---|---|
| PLAN DATE: FEBRUARY, 2008 | REVIEWED BY: K.W. SMITH |
| PREPARED BY: K.D. VANPATTEN | REVIEWED BY: M.W. DUNZO |

| REVISIONS | INIT. | DATE |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2-20-08

CADD Filename: ...\Sht0399.dgn

2/20/2008
h:\systems\projects\GII\462020 (g-boro mls)\Sht0399.dgn

| PROJECT REFERENCE NO. | SHEET NO. |
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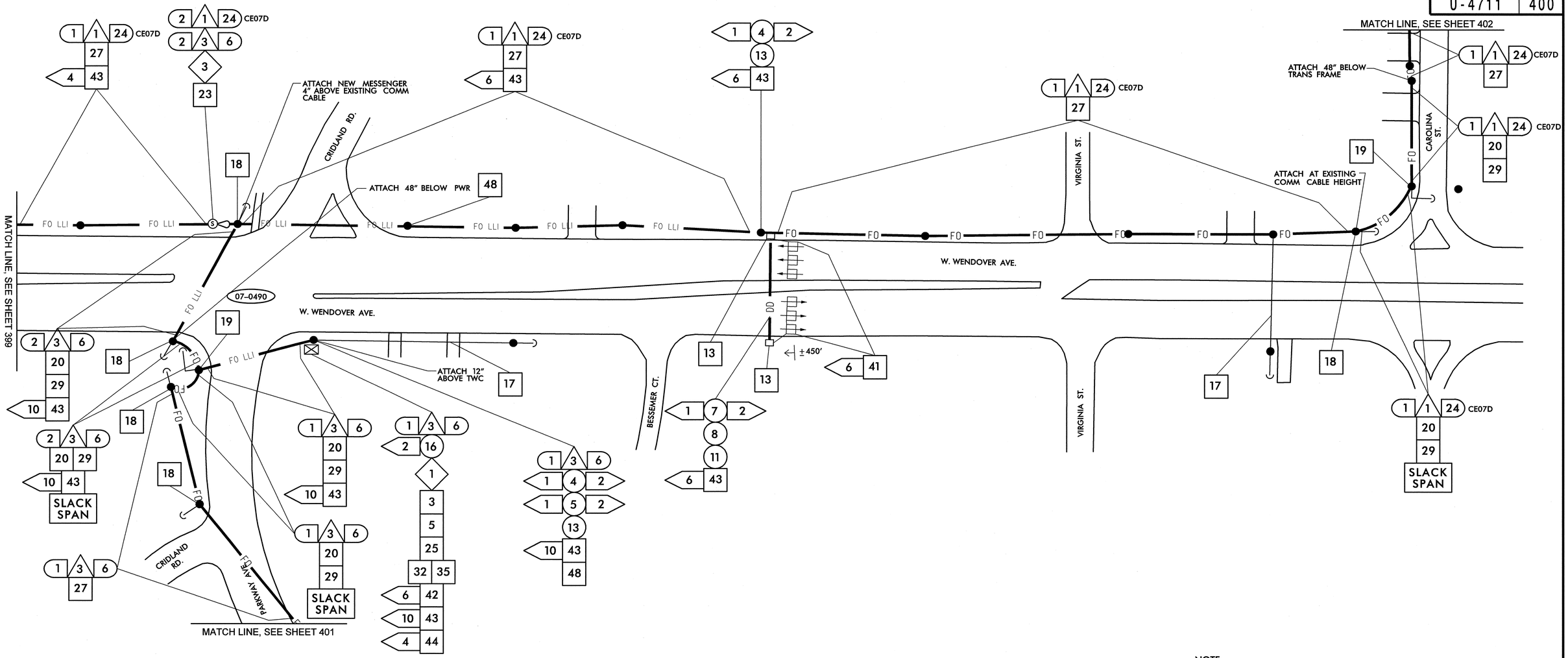
| U-4711 | 400 |




NOTE:
THIS AREA HAS BEEN DETERMINED TO CONTAIN PROPERTIES WITH DOCUMENTED HISTORIC SIGNIFICANCE. IF IT IS NECESSARY TO DEVIATE FROM THESE PLANS IN THIS AREA, PLEASE 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.

1. INSTALL SMFO CABLE
2. INSTALL PLENUM RATED FIBER OPTIC CABLE
3. INSTALL FIBER OPTIC DROP CABLE
4. INSTALL TRACER WIRE
5. REUSE NCDOT SMFO CABLE
6. REUSE GDOT SMFO CABLE

1. TRENCH
2. INSTALL PVC CONDUIT
3. INSTALL RIGID, GALVANIZED STEEL CONDUIT
4. INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
5. INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING
6. INSTALL OUTER-DUCT POLYETHYLENE CONDUIT
7. INSTALL POLYETHYLENE CONDUIT
8. DIRECTIONAL DRILL CONDUIT
9. BORE AND JACK CONDUIT
10. INSTALL CABLE(S) IN EXISTING CONDUIT
11. INSTALL CABLE(S) IN NEW CONDUIT
12. INSTALL CABLE(S) IN EXISTING RISER
13. INSTALL CABLE(S) IN NEW RISER
14. INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE
15. INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
16. INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
17. INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET
18. INSTALL NEW RISER INTO POLE MOUNTED CABINET
19. REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING

1. INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET
2. INSTALL UNDERGROUND SPLICE ENCLOSURE
3. INSTALL AERIAL SPLICE ENCLOSURE
4. INSTALL POLE MOUNTED SPLICE CABINET
5. INSTALL BASE MOUNTED SPLICE CABINET
6. REMOVE EXISTING SPLICE CABINET
7. INSTALL TERMINAL SPLICE BOX
8. MODIFY EXISTING SPLICE ENCLOSURE

1. INSTALL CABINET FOUNDATION
2. REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER
3. MODIFY EXISTING CABINET FOUNDATION
4. INSTALL NEW 333 COMMUNICATION CABINET
5. INSTALL NEW 332 BASE MOUNTED CABINET
6. INSTALL NEW 336S CABINET
7. INSTALL CCTV CAMERA ASSEMBLY
8. INSTALL CCTV CAMERA WOOD POLE
9. INSTALL CCTV METAL POLE AND FOUNDATION
10. INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX
11. INSTALL SPECIAL OVERSIZED JUNCTION BOX
12. INSTALL OVERSIZED JUNCTION BOX
13. INSTALL STANDARD JUNCTION BOX
14. REMOVE EXISTING JUNCTION BOX
15. INSTALL WOOD POLE
16. REMOVE EXISTING WOOD POLE
17. INSTALL AERIAL GUY ASSEMBLY
18. INSTALL STANDARD GUY ASSEMBLY
19. INSTALL SIDEWALK GUY ASSEMBLY
20. INSTALL MESSENGER CABLE
21. REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE
22. REMOVE EXISTING COMMUNICATIONS CABLE
23. INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE
24. INSTALL DELINEATOR MARKER
25. STORE 30 FEET OF EACH COMMUNICATIONS CABLE
26. STORE 100 FEET OF EACH COMMUNICATIONS CABLE
27. LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE
28. LASH CABLE(S) TO EXISTING MESSENGER CABLE
29. LASH CABLE(S) TO NEW MESSENGER CABLE
30. INSTALL NEW ELECTRICAL SERVICE
31. MODIFY EXISTING ELECTRICAL SERVICE
32. INSTALL NEW CONTROLLER
33. INSTALL EXISTING CABLE IN NEW CABINET
34. INSTALL GENERATOR POWER INLET BOX
35. INSTALL LOCAL GIGABIT ETHERNET SWITCH
36. INSTALL UNIFIED CABLE
37. INSTALL POLE MOUNTED EQUIPMENT CABINET
38. INSTALL UNI-DIRECTIONAL YAGI ANTENNA
39. INSTALL OMNI-DIRECTIONAL ANTENNA
40. INSTALL RADIO TRANSCEIVER
41. INSTALL SYSTEM LOOP
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44. INSTALL LOCAL LOOP AMPLIFIER
45. INSTALL CITY WI-FI ANTENNA
46. INSTALL HUB 10-GIGABIT ETHERNET SWITCH
47. INSTALL CODEC
48. BOND MESSENGER CABLE TO POLE GROUND
49. INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION
50. INSTALL ANTENNA CABLE
51. RECONNECT RAILROAD PREEMPTION EQUIPMENT
52. RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT
53. INSTALL DSL ETHERNET SWITCH
54. INSTALL ETHERNET CABLE
55. INSTALL TERMINAL SERVER
56. INSTALL MICROWAVE VEHICLE DETECTOR
57. INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT
58. INSTALL WIRELESS ACCESS POINT POWER CABLE

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


PLANS PREPARED IN THE OFFICE OF:
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P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000



Traffic Engineering and Sales Engineering
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Pkwy., Garner, NC 27529


SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 — GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 — REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN — REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE — DATE 2/21/08

CADD Filename: ...\Sht0400.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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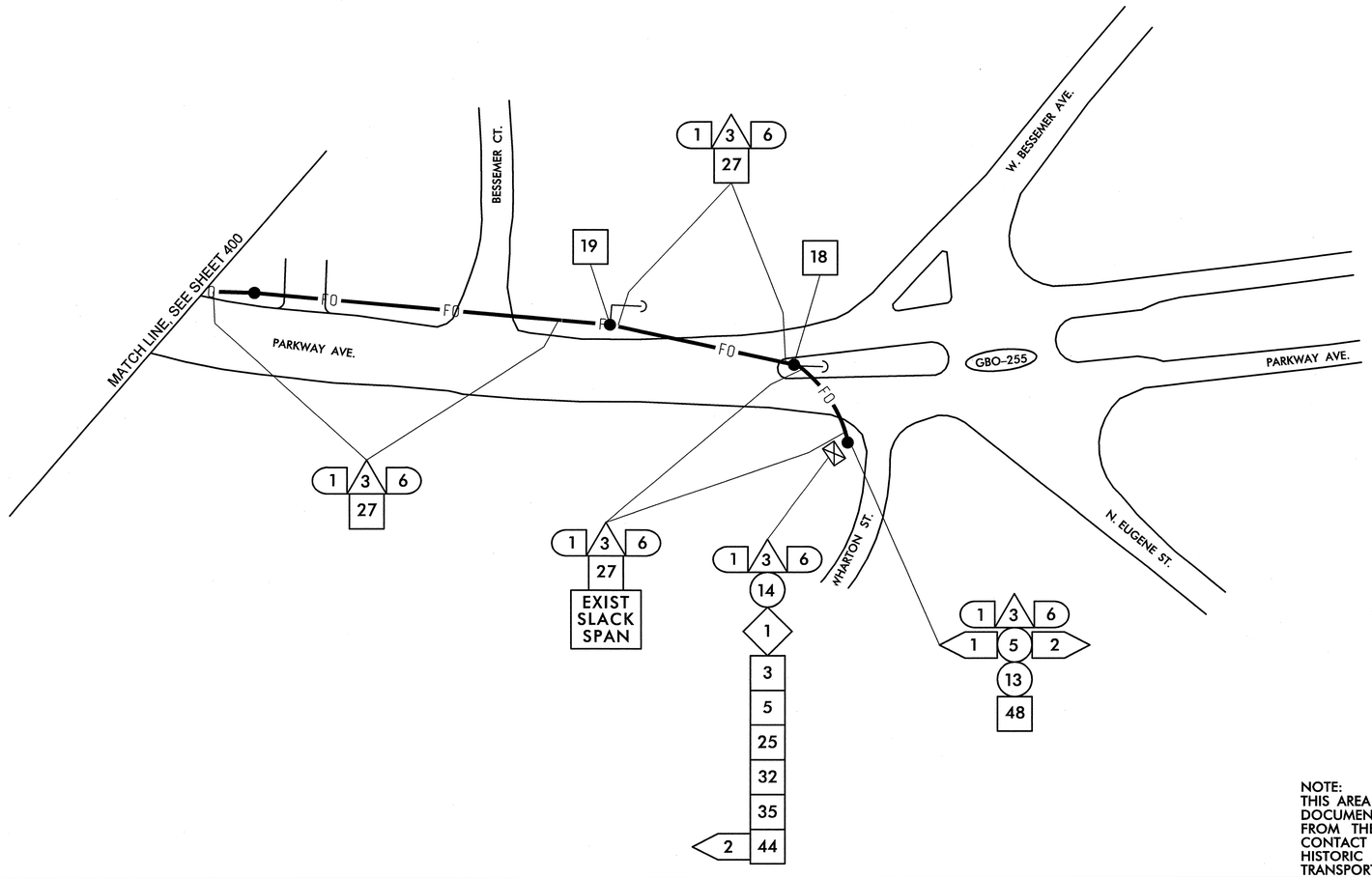
| U-4711 | 401 |

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1. INSTALL SMFO CABLE
2. INSTALL PLENUM RATED FIBER OPTIC CABLE
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1. TRENCH
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3. INSTALL RIGID, GALVANIZED STEEL CONDUIT
4. INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
5. INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING
6. INSTALL OUTER-DUCT POLYETHYLENE CONDUIT
7. INSTALL POLYETHYLENE CONDUIT
8. DIRECTIONAL DRILL CONDUIT
9. BORE AND JACK CONDUIT
10. INSTALL CABLE(S) IN EXISTING CONDUIT
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3. INSTALL AERIAL SPLICE ENCLOSURE
4. INSTALL POLE MOUNTED SPLICE CABINET
5. INSTALL BASE MOUNTED SPLICE CABINET
6. REMOVE EXISTING SPLICE CABINET
7. INSTALL TERMINAL SPLICE BOX
8. MODIFY EXISTING SPLICE ENCLOSURE

1. INSTALL CABINET FOUNDATION
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25. STORE 30 FEET OF EACH COMMUNICATIONS CABLE
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27. LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE
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Traffic Engineering and Safety Systems Branch
Intelligent Transportation Systems
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/20/08 DATE

CADD Filename: ...\Sht0401.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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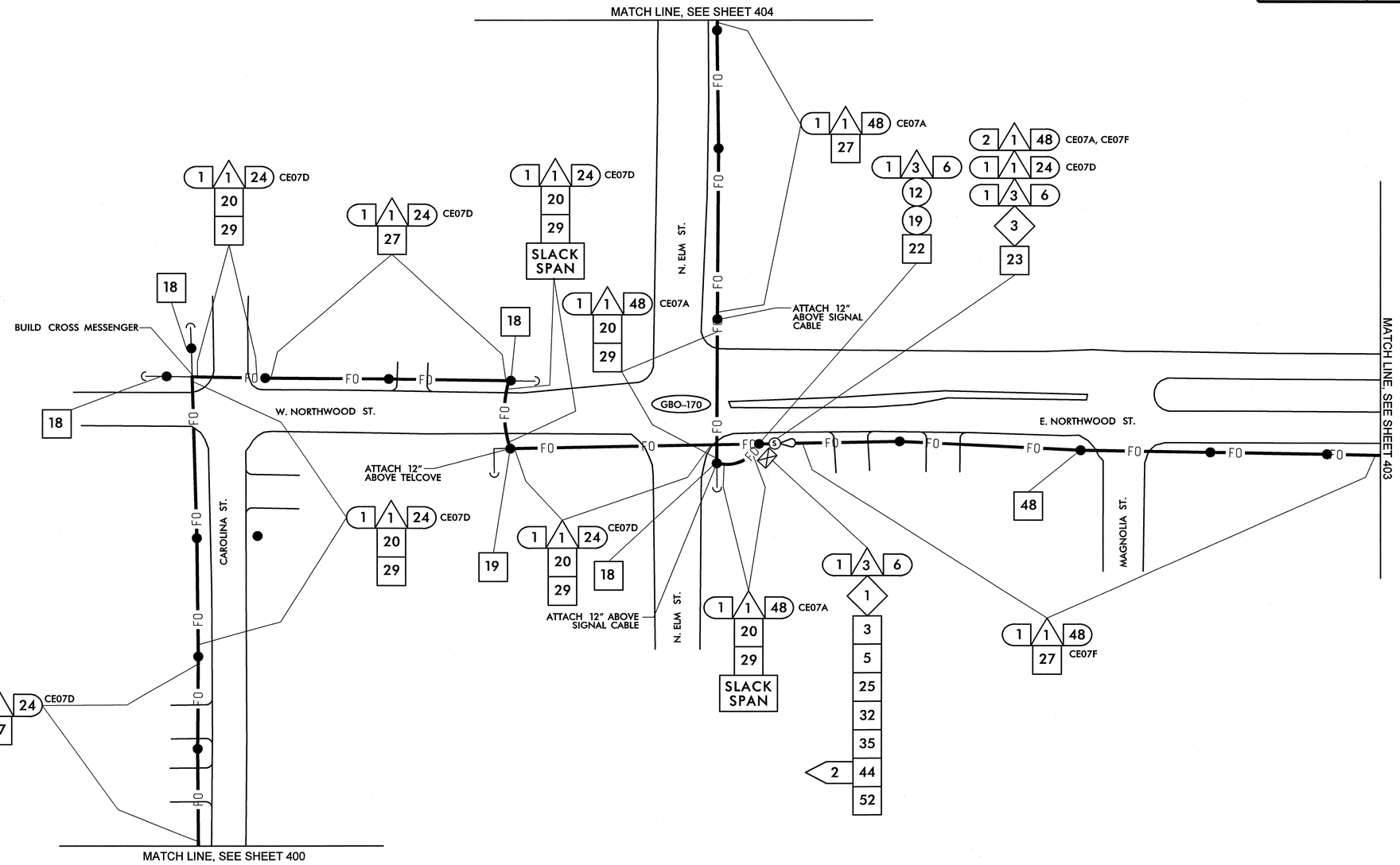
| U-4711 | 402 |




| | |
|---|---|
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| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE |
| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
| 6 | REUSE GDOT SMFO CABLE |
| 1 | TRENCH |
| 2 | INSTALL PVC CONDUIT |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
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| 8 | DIRECTIONAL DRILL CONDUIT |
| 9 | BORE AND JACK CONDUIT |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT |
| 12 | INSTALL CABLE(S) IN EXISTING RISER |
| 13 | INSTALL CABLE(S) IN NEW RISER |
| 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE |
| 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET |
| 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET |
| 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING |
| 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET |
| 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE |
| 3 | INSTALL AERIAL SPLICE ENCLOSURE |
| 4 | INSTALL POLE MOUNTED SPLICE CABINET |
| 5 | INSTALL BASE MOUNTED SPLICE CABINET |
| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
| 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX |
| 12 | INSTALL OVERSIZED JUNCTION BOX |
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| 17 | INSTALL AERIAL GUY ASSEMBLY |
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| 20 | INSTALL MESSENGER CABLE |
| 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE |
| 22 | REMOVE EXISTING COMMUNICATIONS CABLE |
| 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE |
| 24 | INSTALL DELINEATOR MARKER |
| 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE |
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| 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
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| 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 30 | INSTALL NEW ELECTRICAL SERVICE |
| 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 32 | INSTALL NEW CONTROLLER |
| 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 34 | INSTALL GENERATOR POWER INLET BOX |
| 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 36 | INSTALL UNIFIED CABLE |
| 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
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| 40 | INSTALL RADIO TRANSCEIVER |
| 41 | INSTALL SYSTEM LOOP |
| 42 | INSTALL SYSTEM LOOP AMPLIFIER |
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| 45 | INSTALL CITY WI-FI ANTENNA |
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| 47 | INSTALL CODEC |
| 48 | BOND MESSENGER CABLE TO POLE GROUND |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION |
| 50 | INSTALL ANTENNA CABLE |
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NOTE:
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PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
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Traffic Engineering and Safety Systems Branch
Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
750 Greenfield Pkwy., Garner, NC 27529


SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht0402.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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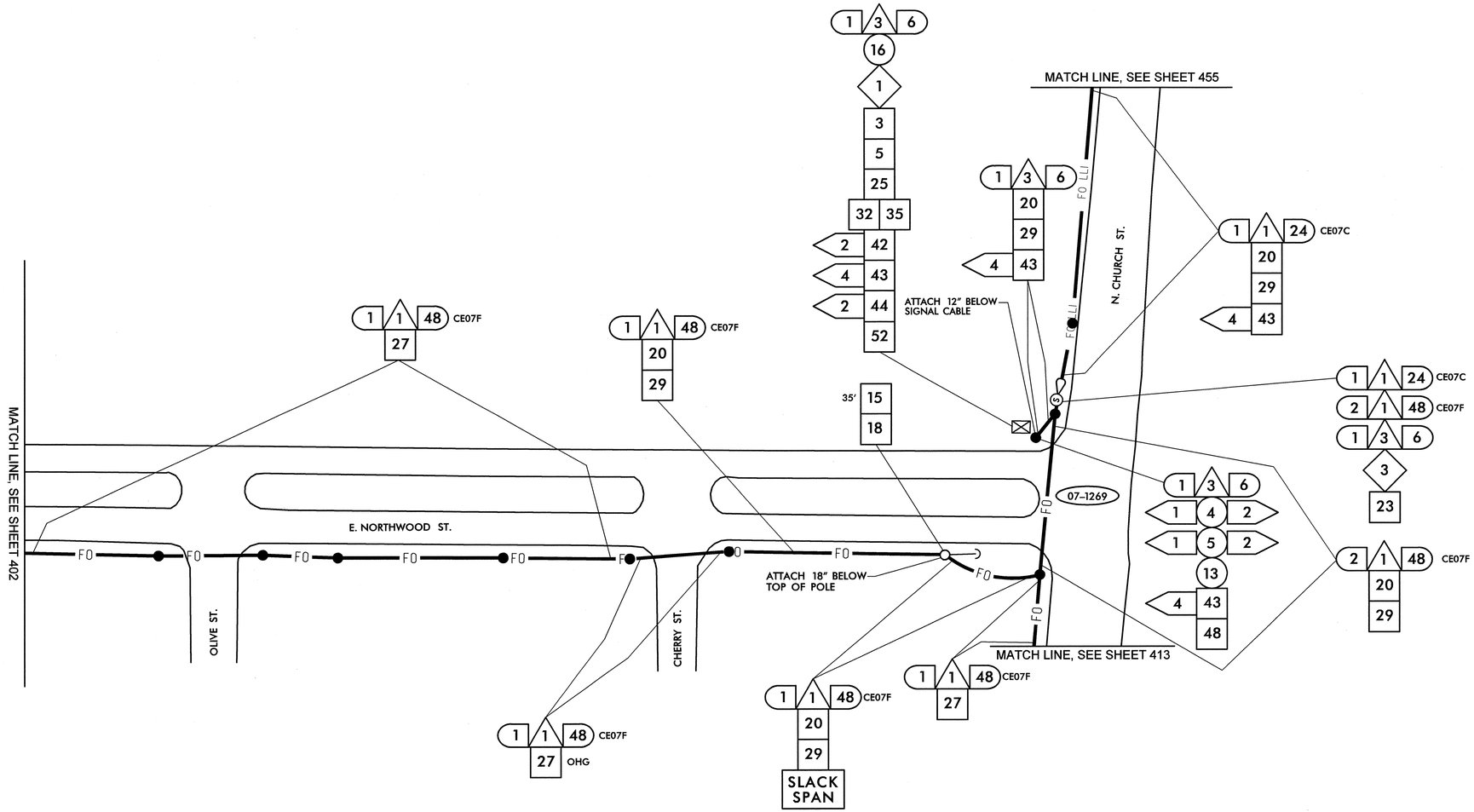
| U-4711 | 403 |




| | |
|---|---|
| 1 | INSTALL SMFO CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE |
| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
| 6 | REUSE GDOT SMFO CABLE |
| 1 | TRENCH |
| 2 | INSTALL PVC CONDUIT |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT |
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| 8 | DIRECTIONAL DRILL CONDUIT |
| 9 | BORE AND JACK CONDUIT |
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| 3 | MODIFY EXISTING CABINET FOUNDATION |
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| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
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| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
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NOTE:
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PLANS PREPARED IN THE OFFICE OF:
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Traffic Engineering and Safety Systems Branch
Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
750 Greenfield Pkwy., Garner, NC 27529

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SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 — GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 — REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN — REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE — DATE 2/20/08

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2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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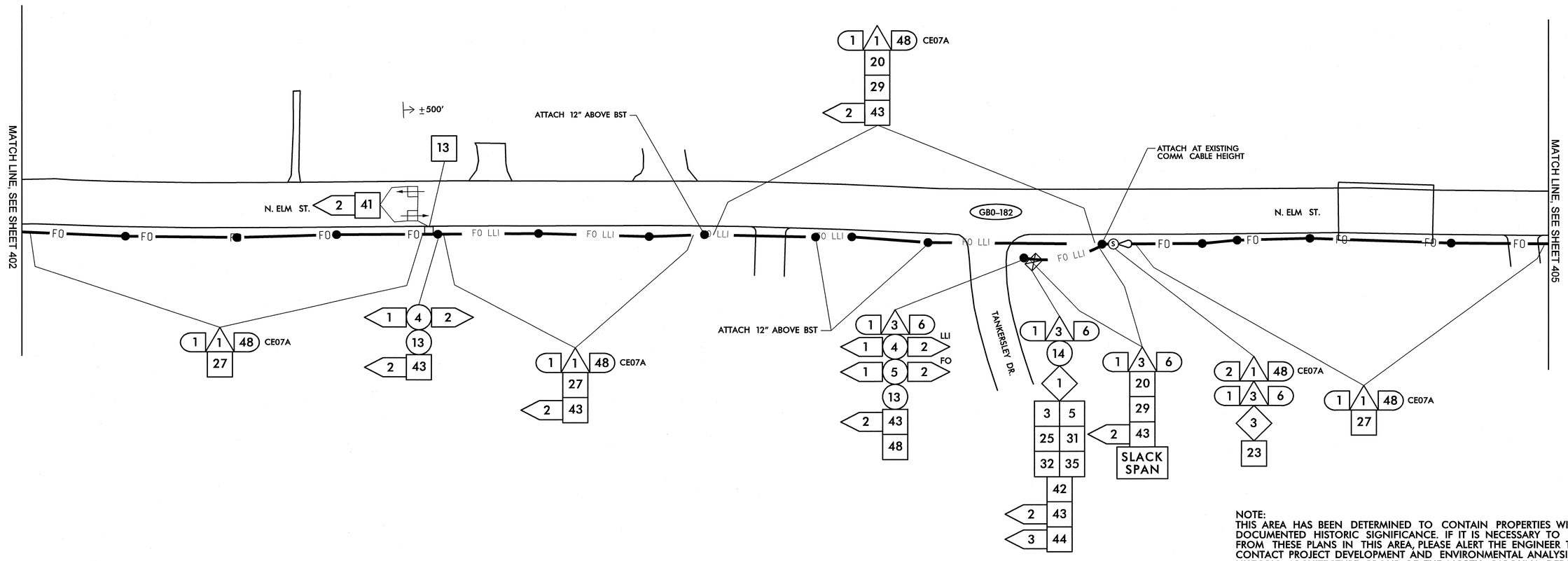
| U-4711 | 404 |




NOTE:
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1. INSTALL SMFO CABLE
2. INSTALL PLENUM RATED FIBER OPTIC CABLE
3. INSTALL FIBER OPTIC DROP CABLE
4. INSTALL TRACER WIRE
5. REUSE NCDOT SMFO CABLE
6. REUSE GDOT SMFO CABLE
1. TRENCH
2. INSTALL PVC CONDUIT
3. INSTALL RIGID, GALVANIZED STEEL CONDUIT
4. INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
5. INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING
6. INSTALL OUTER-DUCT POLYETHYLENE CONDUIT
7. INSTALL POLYETHYLENE CONDUIT
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10. INSTALL CABLE(S) IN EXISTING CONDUIT
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18. INSTALL NEW RISER INTO POLE MOUNTED CABINET
19. REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING
1. INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET
2. INSTALL UNDERGROUND SPLICE ENCLOSURE
3. INSTALL AERIAL SPLICE ENCLOSURE
4. INSTALL POLE MOUNTED SPLICE CABINET
5. INSTALL BASE MOUNTED SPLICE CABINET
6. REMOVE EXISTING SPLICE CABINET
7. INSTALL TERMINAL SPLICE BOX
8. MODIFY EXISTING SPLICE ENCLOSURE
1. INSTALL CABINET FOUNDATION
2. REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER
3. MODIFY EXISTING CABINET FOUNDATION
4. INSTALL NEW 333 COMMUNICATION CABINET
5. INSTALL NEW 332 BASE MOUNTED CABINET
6. INSTALL NEW 336S CABINET
7. INSTALL CCTV CAMERA ASSEMBLY
8. INSTALL CCTV CAMERA WOOD POLE
9. INSTALL CCTV METAL POLE AND FOUNDATION
10. INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX
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SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 — GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 — REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN — REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE — DATE 2/20/08

CADD Filename: ...\Sht0404.dgn

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| PROJECT REFERENCE NO. | SHEET NO. |
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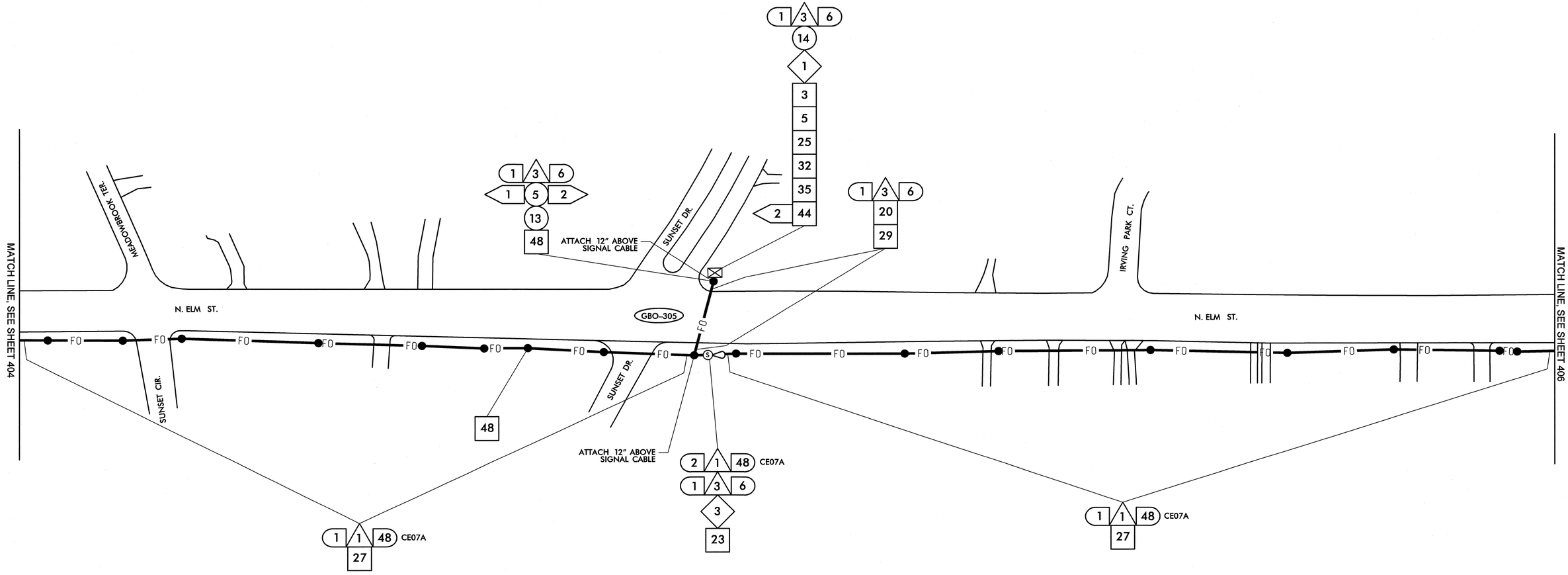
| U-4711 | 405 |

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54. INSTALL ETHERNET CABLE
55. INSTALL TERMINAL SERVER
56. INSTALL MICROWAVE VEHICLE DETECTOR
57. INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT
58. INSTALL WIRELESS ACCESS POINT POWER CABLE

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000



750 Greenfield Pkwy., Garner, NC 27529


SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/29/08 DATE

CADD Filename: ...\Sht0405.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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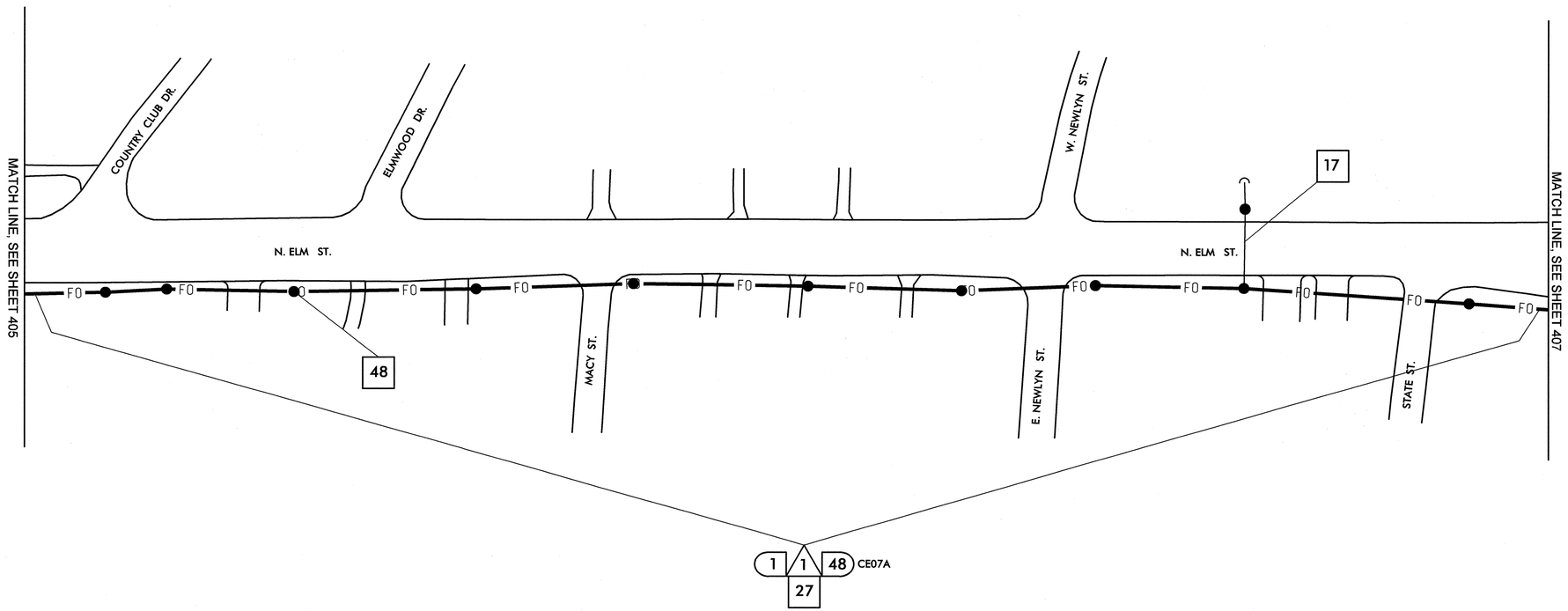
| U-4711 | 406 |




| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | INSTALL SMFO CABLE | 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE | 6 | INSTALL NEW 336S CABINET | 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE | 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 7 | INSTALL CCTV CAMERA ASSEMBLY | 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE | 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 8 | INSTALL CCTV CAMERA WOOD POLE | 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 4 | INSTALL TRACER WIRE | 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET | 9 | INSTALL CCTV METAL POLE AND FOUNDATION | 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 5 | REUSE NCDOT SMFO CABLE | 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET | 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX | 30 | INSTALL NEW ELECTRICAL SERVICE |
| 6 | REUSE GDOT SMFO CABLE | 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING | 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX | 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 1 | TRENCH | 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET | 12 | INSTALL OVERSIZED JUNCTION BOX | 32 | INSTALL NEW CONTROLLER |
| 2 | INSTALL PVC CONDUIT | 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE | 13 | INSTALL STANDARD JUNCTION BOX | 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT | 3 | INSTALL AERIAL SPLICE ENCLOSURE | 14 | REMOVE EXISTING JUNCTION BOX | 34 | INSTALL GENERATOR POWER INLET BOX |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD | 4 | INSTALL POLE MOUNTED SPLICE CABINET | 15 | INSTALL WOOD POLE | 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING | 5 | INSTALL BASE MOUNTED SPLICE CABINET | 16 | REMOVE EXISTING WOOD POLE | 36 | INSTALL UNIFIED CABLE |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT | 6 | REMOVE EXISTING SPLICE CABINET | 17 | INSTALL AERIAL GUY ASSEMBLY | 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 7 | INSTALL POLYETHYLENE CONDUIT | 7 | INSTALL TERMINAL SPLICE BOX | 18 | INSTALL STANDARD GUY ASSEMBLY | 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 8 | DIRECTIONAL DRILL CONDUIT | 8 | MODIFY EXISTING SPLICE ENCLOSURE | 19 | INSTALL SIDEWALK GUY ASSEMBLY | 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 9 | BORE AND JACK CONDUIT | 1 | INSTALL CABINET FOUNDATION | 20 | INSTALL MESSENGER CABLE | 40 | INSTALL RADIO TRANSCEIVER |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT | 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER | 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE | 41 | INSTALL SYSTEM LOOP |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT | 3 | MODIFY EXISTING CABINET FOUNDATION | 22 | REMOVE EXISTING COMMUNICATIONS CABLE | 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 12 | INSTALL CABLE(S) IN EXISTING RISER | 4 | INSTALL NEW 333 COMMUNICATION CABINET | 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE | 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 13 | INSTALL CABLE(S) IN NEW RISER | 5 | INSTALL NEW 332 BASE MOUNTED CABINET | 24 | INSTALL DELINEATOR MARKER | | |
| | | | | 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE | | |

| | | | |
|---|---|---|---|
| 44 | INSTALL LOCAL LOOP AMPLIFIER | 53 | INSTALL DSL ETHERNET SWITCH |
| 45 | INSTALL CITY WI-FI ANTENNA | 54 | INSTALL ETHERNET CABLE |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH | 55 | INSTALL TERMINAL SERVER |
| 47 | INSTALL CODEC | 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
| 48 | BOND MESSENGER CABLE TO POLE GROUND | 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION | 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |
| 50 | INSTALL ANTENNA CABLE | | |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT | | |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT | | |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


PLANS PREPARED IN THE OFFICE OF:
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Traffic Engineering and Safety Systems Branch
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Transportation Mobility & Safety
750 Greenfield Pkwy., Garner, NC 27529


SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

| | |
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| PLAN DATE: FEBRUARY, 2008 | REVIEWED BY: K.W. SMITH |
| PREPARED BY: K.D. VANPATTEN | REVIEWED BY: M.W. DUNZO |

| REVISIONS | INIT. | DATE |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

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| PROJECT REFERENCE NO. | SHEET NO. |
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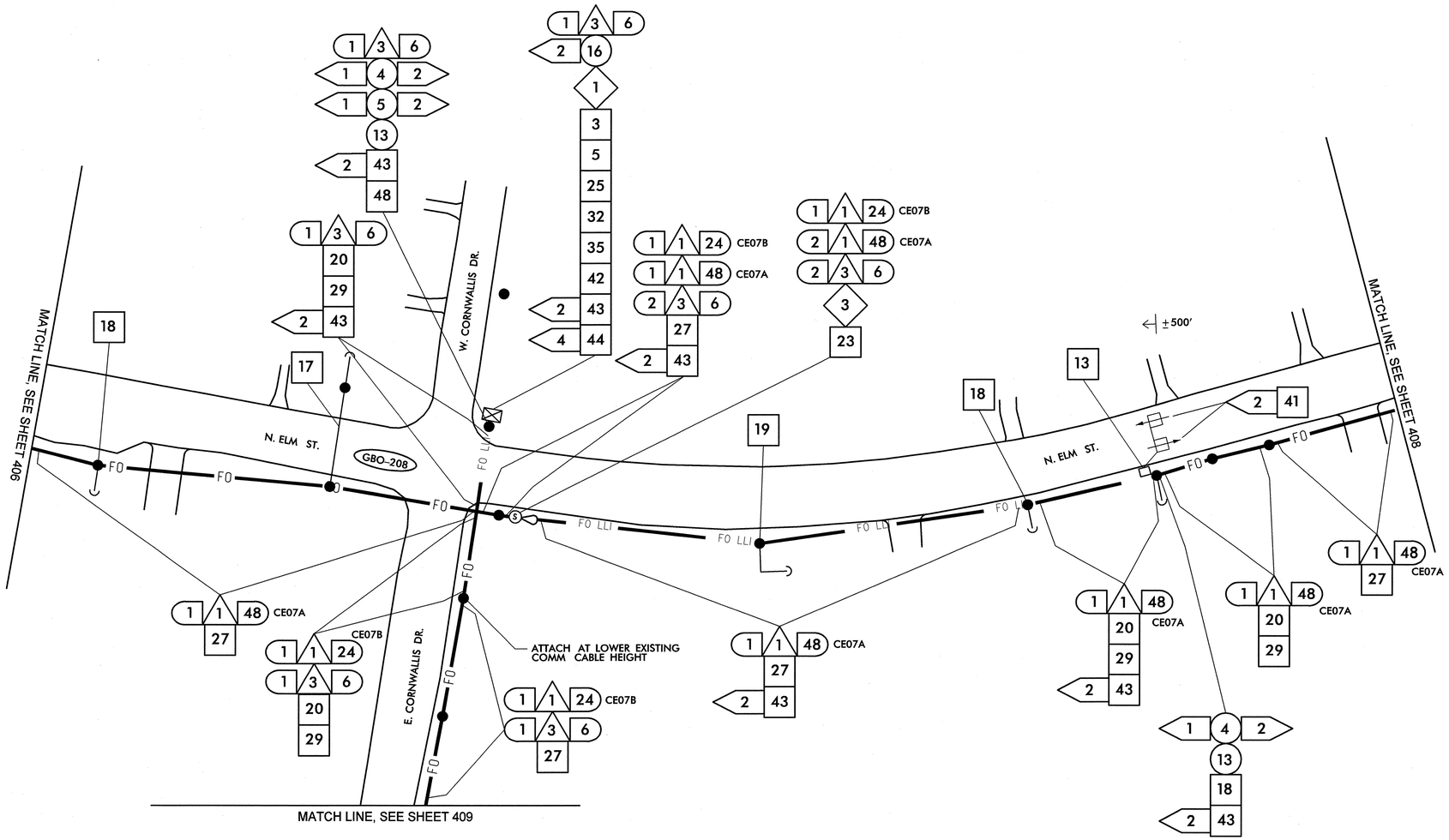
| U-4711 | 407 |




| | | | |
|---|---|---|---|
| 1 | INSTALL SMFO CABLE | 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE | 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 3 | INSTALL FIBER OPTIC DROP CABLE | 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 4 | INSTALL TRACER WIRE | 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET |
| 5 | REUSE NCDOT SMFO CABLE | 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET |
| 6 | REUSE GDOT SMFO CABLE | 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING |
| 1 | TRENCH | 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET |
| 2 | INSTALL PVC CONDUIT | 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT | 3 | INSTALL AERIAL SPLICE ENCLOSURE |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD | 4 | INSTALL POLE MOUNTED SPLICE CABINET |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING | 5 | INSTALL BASE MOUNTED SPLICE CABINET |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT | 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL POLYETHYLENE CONDUIT | 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | DIRECTIONAL DRILL CONDUIT | 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 9 | BORE AND JACK CONDUIT | 1 | INSTALL CABINET FOUNDATION |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT | 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT | 3 | MODIFY EXISTING CABINET FOUNDATION |
| 12 | INSTALL CABLE(S) IN EXISTING RISER | 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 13 | INSTALL CABLE(S) IN NEW RISER | 5 | INSTALL NEW 332 BASE MOUNTED CABINET |

| | | | |
|---|---|---|---|
| 6 | INSTALL NEW 336S CABINET | 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 7 | INSTALL CCTV CAMERA ASSEMBLY | 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 8 | INSTALL CCTV CAMERA WOOD POLE | 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION | 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX | 30 | INSTALL NEW ELECTRICAL SERVICE |
| 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX | 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 12 | INSTALL OVERSIZED JUNCTION BOX | 32 | INSTALL NEW CONTROLLER |
| 13 | INSTALL STANDARD JUNCTION BOX | 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 14 | REMOVE EXISTING JUNCTION BOX | 34 | INSTALL GENERATOR POWER INLET BOX |
| 15 | INSTALL WOOD POLE | 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 16 | REMOVE EXISTING WOOD POLE | 36 | INSTALL UNIFIED CABLE |
| 17 | INSTALL AERIAL GUY ASSEMBLY | 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 18 | INSTALL STANDARD GUY ASSEMBLY | 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 19 | INSTALL SIDEWALK GUY ASSEMBLY | 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 20 | INSTALL MESSENGER CABLE | 40 | INSTALL RADIO TRANSCEIVER |
| 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE | 41 | INSTALL SYSTEM LOOP |
| 22 | REMOVE EXISTING COMMUNICATIONS CABLE | 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE | 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 24 | INSTALL DELINEATOR MARKER | | |
| 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE | | |

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| 44 | INSTALL LOCAL LOOP AMPLIFIER | 53 | INSTALL DSL ETHERNET SWITCH |
| 45 | INSTALL CITY WI-FI ANTENNA | 54 | INSTALL ETHERNET CABLE |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH | 55 | INSTALL TERMINAL SERVER |
| 47 | INSTALL CODEC | 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
| 48 | BOND MESSENGER CABLE TO POLE GROUND | 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION | 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |
| 50 | INSTALL ANTENNA CABLE | | |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT | | |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT | | |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


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Traffic Engineering and Safety Systems Branch
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
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SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/20/08 DATE

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| PROJECT REFERENCE NO. | SHEET NO. |
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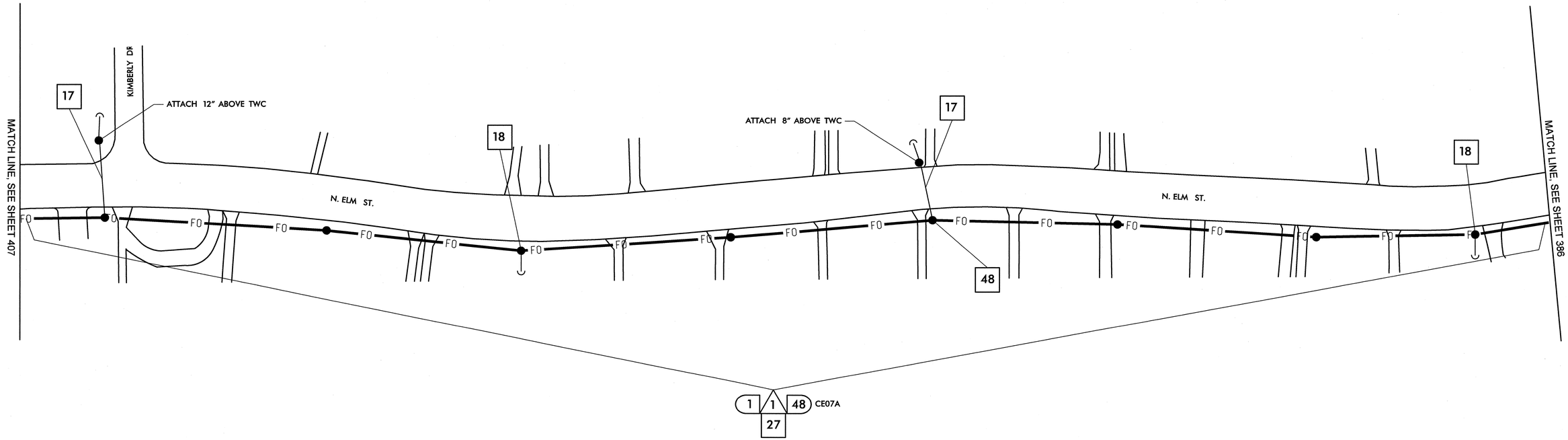
| U-4711 | 408 |




1. INSTALL SMFO CABLE
2. INSTALL PLENUM RATED FIBER OPTIC CABLE
3. INSTALL FIBER OPTIC DROP CABLE
4. INSTALL TRACER WIRE
5. REUSE NCDOT SMFO CABLE
6. REUSE GDOT SMFO CABLE
1. TRENCH
2. INSTALL PVC CONDUIT
3. INSTALL RIGID, GALVANIZED STEEL CONDUIT
4. INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
5. INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING
6. INSTALL OUTER-DUCT POLYETHYLENE CONDUIT
7. INSTALL POLYETHYLENE CONDUIT
8. DIRECTIONAL DRILL CONDUIT
9. BORE AND JACK CONDUIT
10. INSTALL CABLE(S) IN EXISTING CONDUIT
11. INSTALL CABLE(S) IN NEW CONDUIT
12. INSTALL CABLE(S) IN EXISTING RISER
13. INSTALL CABLE(S) IN NEW RISER
14. INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE
15. INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
16. INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
17. INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET
18. INSTALL NEW RISER INTO POLE MOUNTED CABINET
19. REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING
1. INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET
2. INSTALL UNDERGROUND SPLICE ENCLOSURE
3. INSTALL AERIAL SPLICE ENCLOSURE
4. INSTALL POLE MOUNTED SPLICE CABINET
5. INSTALL BASE MOUNTED SPLICE CABINET
6. REMOVE EXISTING SPLICE CABINET
7. INSTALL TERMINAL SPLICE BOX
8. MODIFY EXISTING SPLICE ENCLOSURE
1. INSTALL CABINET FOUNDATION
2. REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER
3. MODIFY EXISTING CABINET FOUNDATION
4. INSTALL NEW 333 COMMUNICATION CABINET
5. INSTALL NEW 332 BASE MOUNTED CABINET
6. INSTALL NEW 336S CABINET
7. INSTALL CCTV CAMERA ASSEMBLY
8. INSTALL CCTV CAMERA WOOD POLE
9. INSTALL CCTV METAL POLE AND FOUNDATION
10. INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX
11. INSTALL SPECIAL OVERSIZED JUNCTION BOX
12. INSTALL OVERSIZED JUNCTION BOX
13. INSTALL STANDARD JUNCTION BOX
14. REMOVE EXISTING JUNCTION BOX
15. INSTALL WOOD POLE
16. REMOVE EXISTING WOOD POLE
17. INSTALL AERIAL GUY ASSEMBLY
18. INSTALL STANDARD GUY ASSEMBLY
19. INSTALL SIDEWALK GUY ASSEMBLY
20. INSTALL MESSENGER CABLE
21. REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE
22. REMOVE EXISTING COMMUNICATIONS CABLE
23. INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE
24. INSTALL DELINEATOR MARKER
25. STORE 30 FEET OF EACH COMMUNICATIONS CABLE
26. STORE 100 FEET OF EACH COMMUNICATIONS CABLE
27. LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE
28. LASH CABLE(S) TO EXISTING MESSENGER CABLE
29. LASH CABLE(S) TO NEW MESSENGER CABLE
30. INSTALL NEW ELECTRICAL SERVICE
31. MODIFY EXISTING ELECTRICAL SERVICE
32. INSTALL NEW CONTROLLER
33. INSTALL EXISTING CABLE IN NEW CABINET
34. INSTALL GENERATOR POWER INLET BOX
35. INSTALL LOCAL GIGABIT ETHERNET SWITCH
36. INSTALL UNIFIED CABLE
37. INSTALL POLE MOUNTED EQUIPMENT CABINET
38. INSTALL UNI-DIRECTIONAL YAGI ANTENNA
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40. INSTALL RADIO TRANSCEIVER
41. INSTALL SYSTEM LOOP
42. INSTALL SYSTEM LOOP AMPLIFIER
43. INSTALL SYSTEM LOOP LEAD-IN CABLE
44. INSTALL LOCAL LOOP AMPLIFIER
45. INSTALL CITY WI-FI ANTENNA
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47. INSTALL CODEC
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht0408.dgn

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| PROJECT REFERENCE NO. | SHEET NO. |
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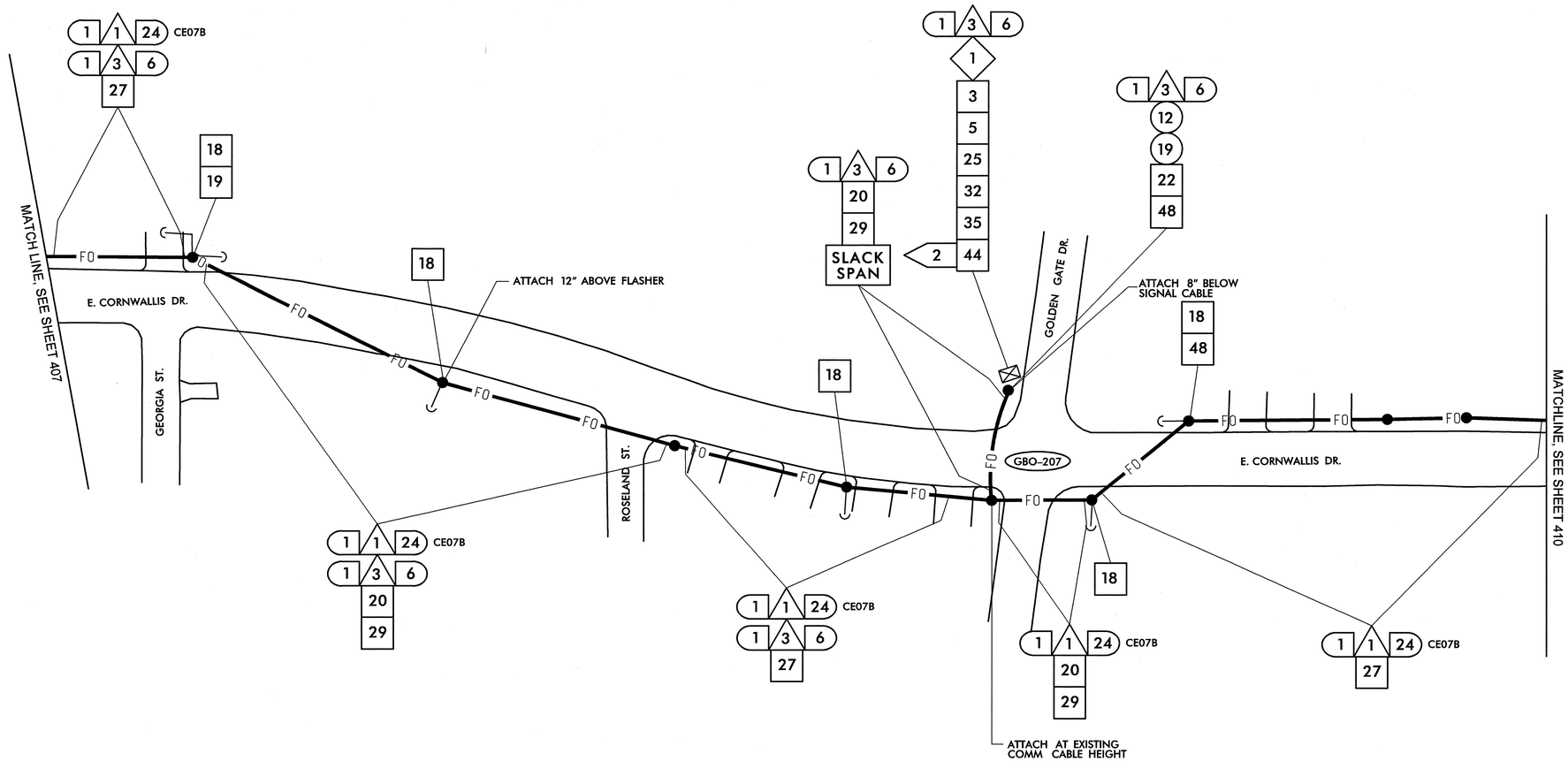
| U-4711 | 409 |

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|---|---|---|---|---|---|---|---|
| 1 | INSTALL SMFO CABLE | 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE | 6 | INSTALL NEW 336S CABINET | 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
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| 5 | REUSE NCDOT SMFO CABLE | 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET | 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX | 30 | INSTALL NEW ELECTRICAL SERVICE |
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| 1 | TRENCH | 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET | 12 | INSTALL OVERSIZED JUNCTION BOX | 32 | INSTALL NEW CONTROLLER |
| 2 | INSTALL PVC CONDUIT | 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE | 13 | INSTALL STANDARD JUNCTION BOX | 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT | 3 | INSTALL AERIAL SPLICE ENCLOSURE | 14 | REMOVE EXISTING JUNCTION BOX | 34 | INSTALL GENERATOR POWER INLET BOX |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD | 4 | INSTALL POLE MOUNTED SPLICE CABINET | 15 | INSTALL WOOD POLE | 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING | 5 | INSTALL BASE MOUNTED SPLICE CABINET | 16 | REMOVE EXISTING WOOD POLE | 36 | INSTALL UNIFIED CABLE |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT | 6 | REMOVE EXISTING SPLICE CABINET | 17 | INSTALL AERIAL GUY ASSEMBLY | 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 7 | INSTALL POLYETHYLENE CONDUIT | 7 | INSTALL TERMINAL SPLICE BOX | 18 | INSTALL STANDARD GUY ASSEMBLY | 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 8 | DIRECTIONAL DRILL CONDUIT | 8 | MODIFY EXISTING SPLICE ENCLOSURE | 19 | INSTALL SIDEWALK GUY ASSEMBLY | 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 9 | BORE AND JACK CONDUIT | 1 | INSTALL CABINET FOUNDATION | 20 | INSTALL MESSENGER CABLE | 40 | INSTALL RADIO TRANSCEIVER |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT | 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER | 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE | 41 | INSTALL SYSTEM LOOP |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT | 3 | MODIFY EXISTING CABINET FOUNDATION | 22 | REMOVE EXISTING COMMUNICATIONS CABLE | 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 12 | INSTALL CABLE(S) IN EXISTING RISER | 4 | INSTALL NEW 333 COMMUNICATION CABINET | 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE | 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 13 | INSTALL CABLE(S) IN NEW RISER | 5 | INSTALL NEW 332 BASE MOUNTED CABINET | 24 | INSTALL DELINEATOR MARKER | | |
| | | | | 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE | | |

| | | | | | |
|---|---|---|---|---|---|
| 44 | INSTALL LOCAL LOOP AMPLIFIER | 53 | INSTALL DSL ETHERNET SWITCH | | |
| 45 | INSTALL CITY WI-FI ANTENNA | 54 | INSTALL ETHERNET CABLE | | |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH | 55 | INSTALL TERMINAL SERVER | | |
| 47 | INSTALL CODEC | 56 | INSTALL MICROWAVE VEHICLE DETECTOR | | |
| 48 | BOND MESSENGER CABLE TO POLE GROUND | 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT | | |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION | 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE | | |
| 50 | INSTALL ANTENNA CABLE | | | | |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT | | | | |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT | | | | |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000



Traffic Engineering and Safety Systems Branch
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Pkwy., Garner, NC 27529


SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 — GUILFORD COUNTY

| | |
|---|---|
| PLAN DATE: FEBRUARY, 2008 | REVIEWED BY: K.W. SMITH |
| PREPARED BY: K.D. VANPATTEN | REVIEWED BY: M.W. DUNZO |

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE — DATE 2/20/08

CADD Filename: ...\Sht0409.dgn

2/20/2008
f:\systems\projects\011462020 (g-boro mts)\Sht0409.dgn

| PROJECT REFERENCE NO. | SHEET NO. |
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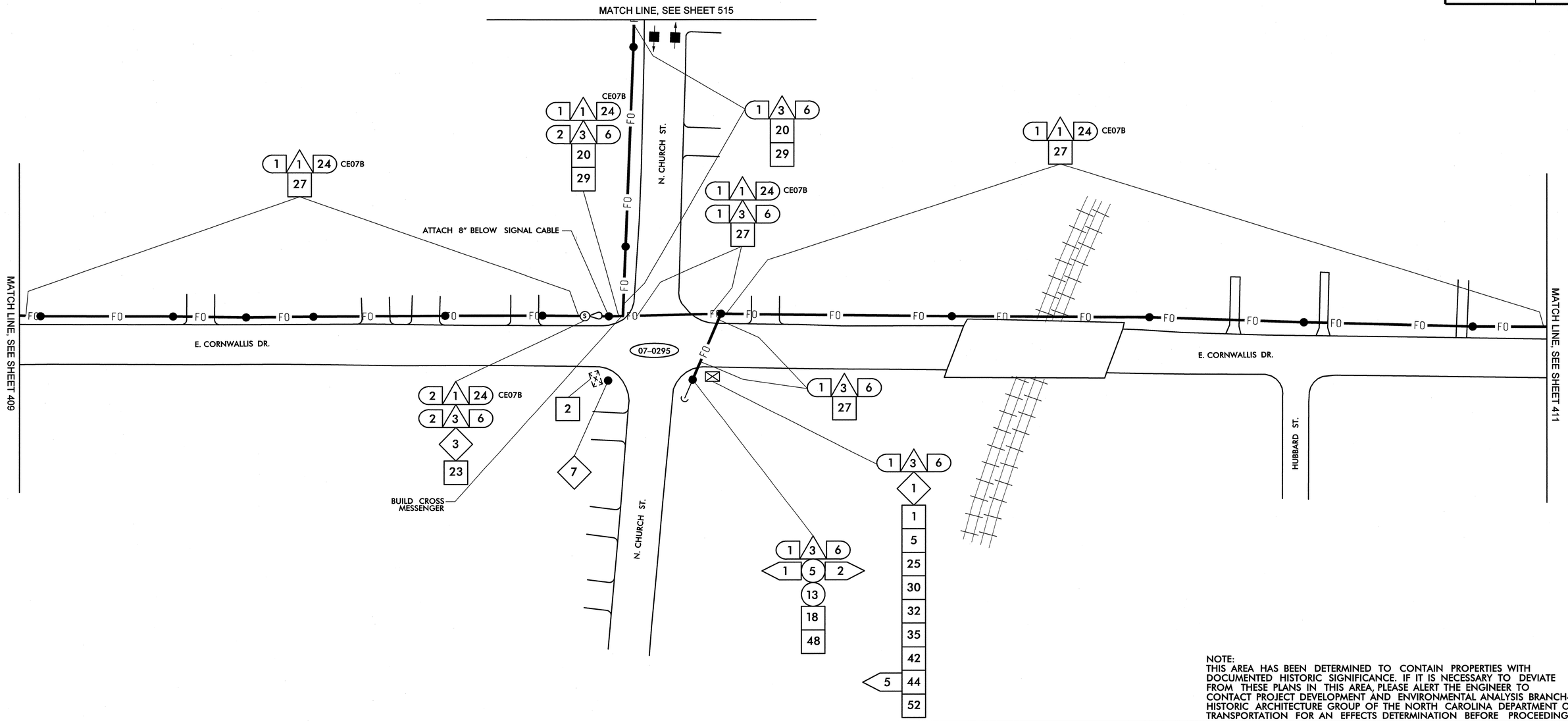
| U-4711 | 410 |

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| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | INSTALL SMFO CABLE | 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE | 6 | INSTALL NEW 336S CABINET | 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE | 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 7 | INSTALL CCTV CAMERA ASSEMBLY | 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE | 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 8 | INSTALL CCTV CAMERA WOOD POLE | 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 4 | INSTALL TRACER WIRE | 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET | 9 | INSTALL CCTV METAL POLE AND FOUNDATION | 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 5 | REUSE NCDOT SMFO CABLE | 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET | 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX | 30 | INSTALL NEW ELECTRICAL SERVICE |
| 6 | REUSE GDOT SMFO CABLE | 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING | 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX | 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 1 | TRENCH | 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET | 12 | INSTALL OVERSIZED JUNCTION BOX | 32 | INSTALL NEW CONTROLLER |
| 2 | INSTALL PVC CONDUIT | 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE | 13 | INSTALL STANDARD JUNCTION BOX | 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT | 3 | INSTALL AERIAL SPLICE ENCLOSURE | 14 | REMOVE EXISTING JUNCTION BOX | 34 | INSTALL GENERATOR POWER INLET BOX |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD | 4 | INSTALL POLE MOUNTED SPLICE CABINET | 15 | INSTALL WOOD POLE | 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING | 5 | INSTALL BASE MOUNTED SPLICE CABINET | 16 | REMOVE EXISTING WOOD POLE | 36 | INSTALL UNIFIED CABLE |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT | 6 | REMOVE EXISTING SPLICE CABINET | 17 | INSTALL AERIAL GUY ASSEMBLY | 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 7 | INSTALL POLYETHYLENE CONDUIT | 7 | INSTALL TERMINAL SPLICE BOX | 18 | INSTALL STANDARD GUY ASSEMBLY | 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 8 | DIRECTIONAL DRILL CONDUIT | 8 | MODIFY EXISTING SPLICE ENCLOSURE | 19 | INSTALL SIDEWALK GUY ASSEMBLY | 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 9 | BORE AND JACK CONDUIT | 1 | INSTALL CABINET FOUNDATION | 20 | INSTALL MESSENGER CABLE | 40 | INSTALL RADIO TRANSCEIVER |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT | 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER | 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE | 41 | INSTALL SYSTEM LOOP |
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| 13 | INSTALL CABLE(S) IN NEW RISER | 5 | INSTALL NEW 332 BASE MOUNTED CABINET | 24 | INSTALL DELINEATOR MARKER | | |
| | | | | 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE | | |

| | | | | | |
|---|---|---|---|---|---|
| 44 | INSTALL LOCAL LOOP AMPLIFIER | 53 | INSTALL DSL ETHERNET SWITCH | | |
| 45 | INSTALL CITY WI-FI ANTENNA | 54 | INSTALL ETHERNET CABLE | | |
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| 47 | INSTALL CODEC | 56 | INSTALL MICROWAVE VEHICLE DETECTOR | | |
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| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT | | | | |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT | | | | |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

PLANS PREPARED IN THE OFFICE OF:

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P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000

750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/20/08 DATE

CADD Filename: ...\Sht0410.dgn

2/20/2008
f:\systems\projects\01\462020 (g-bora mlsn)\Sht0410.dgn

| PROJECT REFERENCE NO. | SHEET NO. |
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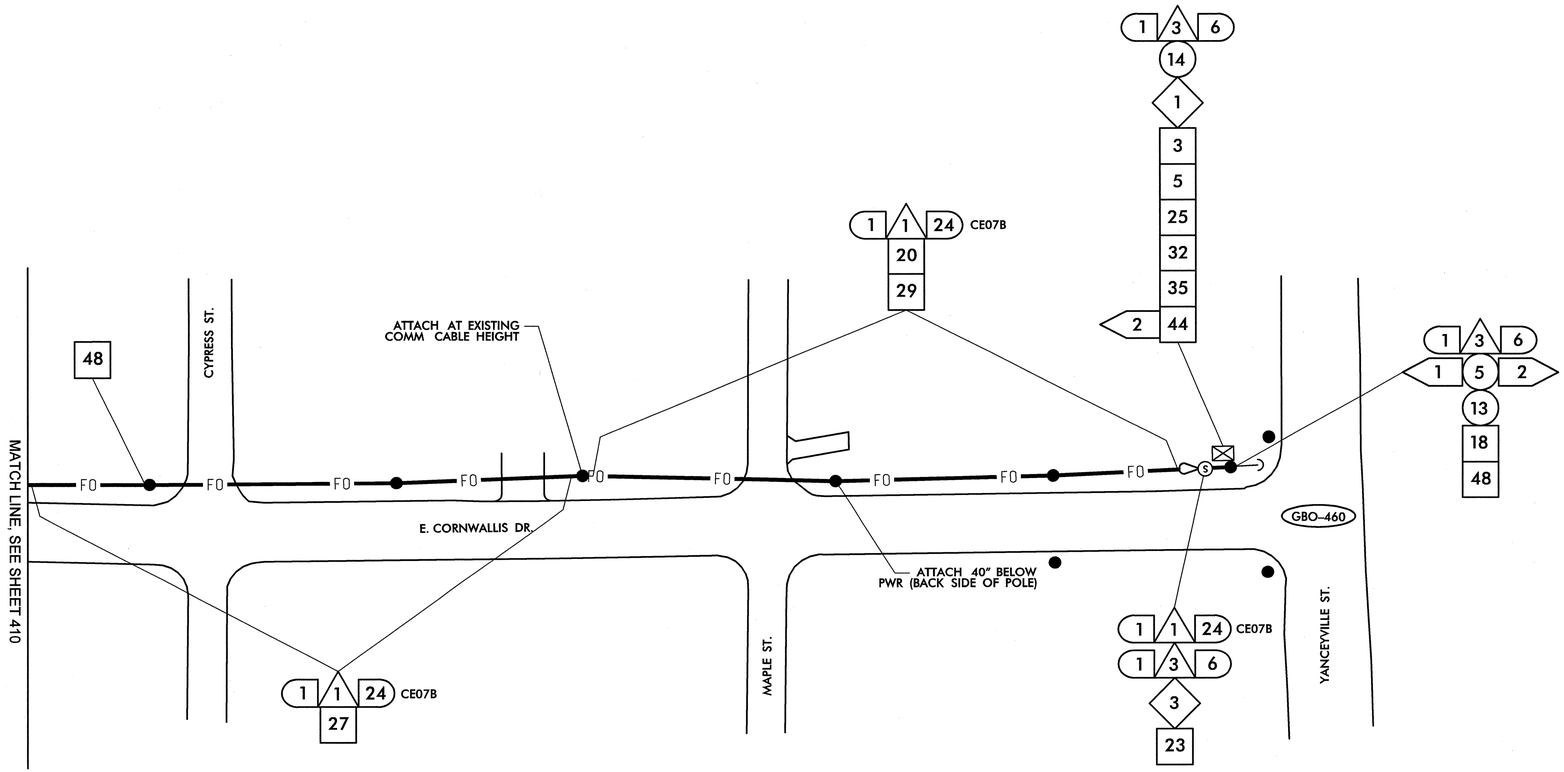
| U-4711 | 411 |

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1. INSTALL SMFO CABLE
2. INSTALL PLENUM RATED FIBER OPTIC CABLE
3. INSTALL FIBER OPTIC DROP CABLE
4. INSTALL TRACER WIRE
5. REUSE NCDOT SMFO CABLE
6. REUSE GDOT SMFO CABLE

1. TRENCH
2. INSTALL PVC CONDUIT
3. INSTALL RIGID, GALVANIZED STEEL CONDUIT
4. INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
5. INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING
6. INSTALL OUTER-DUCT POLYETHYLENE CONDUIT
7. INSTALL POLYETHYLENE CONDUIT
8. DIRECTIONAL DRILL CONDUIT
9. BORE AND JACK CONDUIT
10. INSTALL CABLE(S) IN EXISTING CONDUIT
11. INSTALL CABLE(S) IN NEW CONDUIT
12. INSTALL CABLE(S) IN EXISTING RISER
13. INSTALL CABLE(S) IN NEW RISER
14. INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE
15. INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
16. INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
17. INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET
18. INSTALL NEW RISER INTO POLE MOUNTED CABINET
19. REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING

1. INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET
2. INSTALL UNDERGROUND SPLICE ENCLOSURE
3. INSTALL AERIAL SPLICE ENCLOSURE
4. INSTALL POLE MOUNTED SPLICE CABINET
5. INSTALL BASE MOUNTED SPLICE CABINET
6. REMOVE EXISTING SPLICE CABINET
7. INSTALL TERMINAL SPLICE BOX
8. MODIFY EXISTING SPLICE ENCLOSURE

1. INSTALL CABINET FOUNDATION
2. REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER
3. MODIFY EXISTING CABINET FOUNDATION
4. INSTALL NEW 333 COMMUNICATION CABINET
5. INSTALL NEW 332 BASE MOUNTED CABINET
6. INSTALL NEW 336S CABINET
7. INSTALL CCTV CAMERA ASSEMBLY
8. INSTALL CCTV CAMERA WOOD POLE
9. INSTALL CCTV METAL POLE AND FOUNDATION
10. INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX
11. INSTALL SPECIAL OVERSIZED JUNCTION BOX
12. INSTALL OVERSIZED JUNCTION BOX
13. INSTALL STANDARD JUNCTION BOX
14. REMOVE EXISTING JUNCTION BOX
15. INSTALL WOOD POLE
16. REMOVE EXISTING WOOD POLE
17. INSTALL AERIAL GUY ASSEMBLY
18. INSTALL STANDARD GUY ASSEMBLY
19. INSTALL SIDEWALK GUY ASSEMBLY
20. INSTALL MESSENGER CABLE
21. REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE
22. REMOVE EXISTING COMMUNICATIONS CABLE
23. INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE
24. INSTALL DELINEATOR MARKER
25. STORE 30 FEET OF EACH COMMUNICATIONS CABLE
26. STORE 100 FEET OF EACH COMMUNICATIONS CABLE
27. LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE
28. LASH CABLE(S) TO EXISTING MESSENGER CABLE
29. LASH CABLE(S) TO NEW MESSENGER CABLE
30. INSTALL NEW ELECTRICAL SERVICE
31. MODIFY EXISTING ELECTRICAL SERVICE
32. INSTALL NEW CONTROLLER
33. INSTALL EXISTING CABLE IN NEW CABINET
34. INSTALL GENERATOR POWER INLET BOX
35. INSTALL LOCAL GIGABIT ETHERNET SWITCH
36. INSTALL UNIFIED CABLE
37. INSTALL POLE MOUNTED EQUIPMENT CABINET
38. INSTALL UNI-DIRECTIONAL YAGI ANTENNA
39. INSTALL OMNI-DIRECTIONAL ANTENNA
40. INSTALL RADIO TRANSCEIVER
41. INSTALL SYSTEM LOOP
42. INSTALL SYSTEM LOOP AMPLIFIER
43. INSTALL SYSTEM LOOP LEAD-IN CABLE
44. INSTALL LOCAL LOOP AMPLIFIER
45. INSTALL CITY WI-FI ANTENNA
46. INSTALL HUB 10-GIGABIT ETHERNET SWITCH
47. INSTALL CODEC
48. BOND MESSENGER CABLE TO POLE GROUND
49. INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION
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51. RECONNECT RAILROAD PREEMPTION EQUIPMENT
52. RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT
53. INSTALL DSL ETHERNET SWITCH
54. INSTALL ETHERNET CABLE
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58. INSTALL WIRELESS ACCESS POINT POWER CABLE

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


PLANS PREPARED IN THE OFFICE OF:
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P.O. Box 33068
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(919) 677-2000



Institute for Transportation Research and Education
Institute of North Carolina
Department of Transportation
Intelligent Transportation Systems
750 Greenfield Pkwy., Garner, NC 27529


SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 — GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 — REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN — REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE — DATE 2/20/08

CADD Filename: ...\Sht041l.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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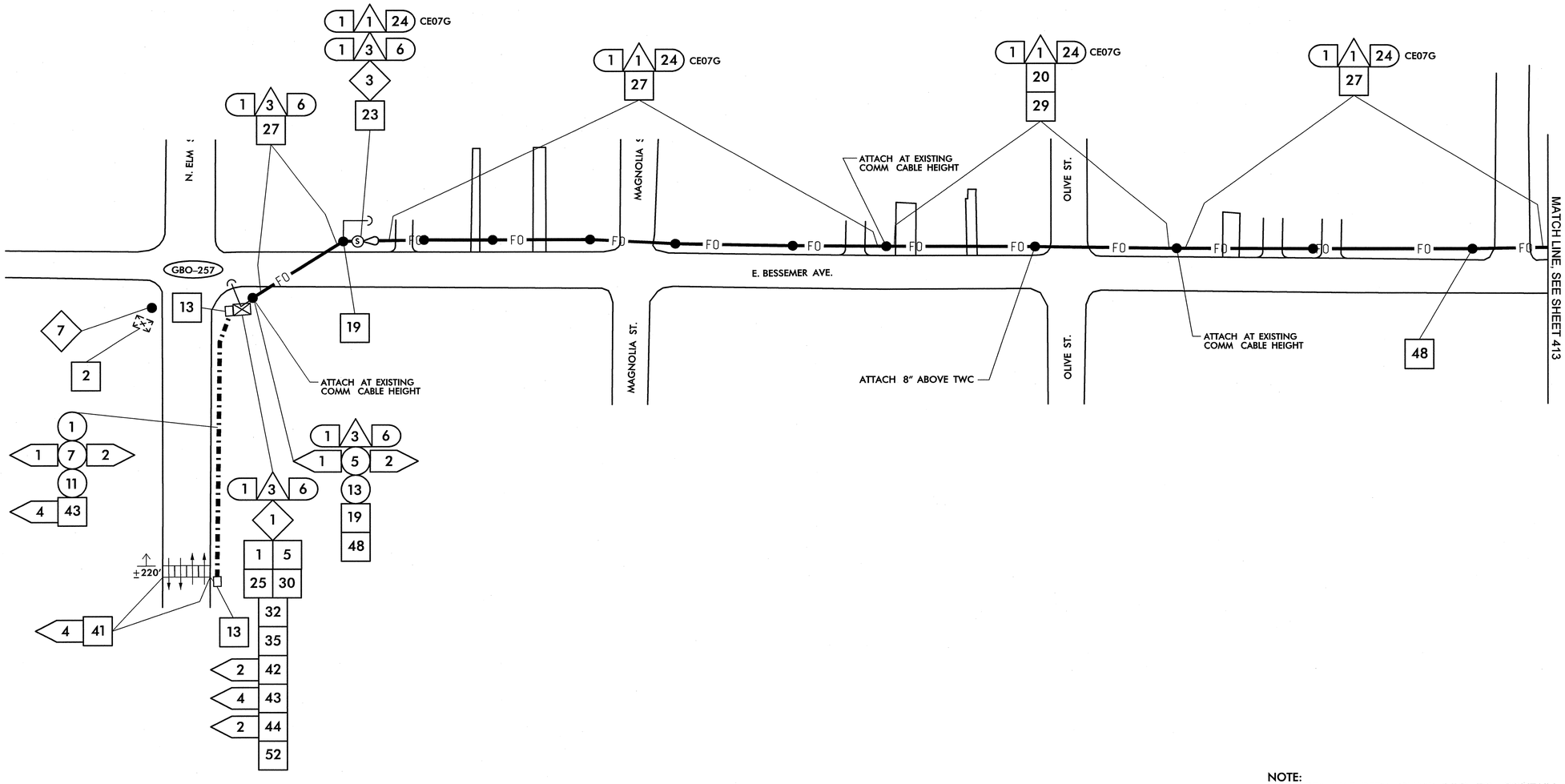
| U-4711 | 412 |

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6. REMOVE EXISTING SPLICE CABINET
7. INSTALL TERMINAL SPLICE BOX
8. MODIFY EXISTING SPLICE ENCLOSURE
1. INSTALL CABINET FOUNDATION
2. REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER
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PLANS PREPARED IN THE OFFICE OF:
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Traffic Engineering and Safety Systems Branch
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DEPARTMENT OF TRANSPORTATION
Transportation Mobility & Safety
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

| | |
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| PLAN DATE: FEBRUARY, 2008 | REVIEWED BY: K.W. SMITH |
| PREPARED BY: K.D. VANPATTEN | REVIEWED BY: M.W. DUNZO |

| REVISIONS | INIT. | DATE |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht0412.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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| U-4711 | 413 |

NOTE:
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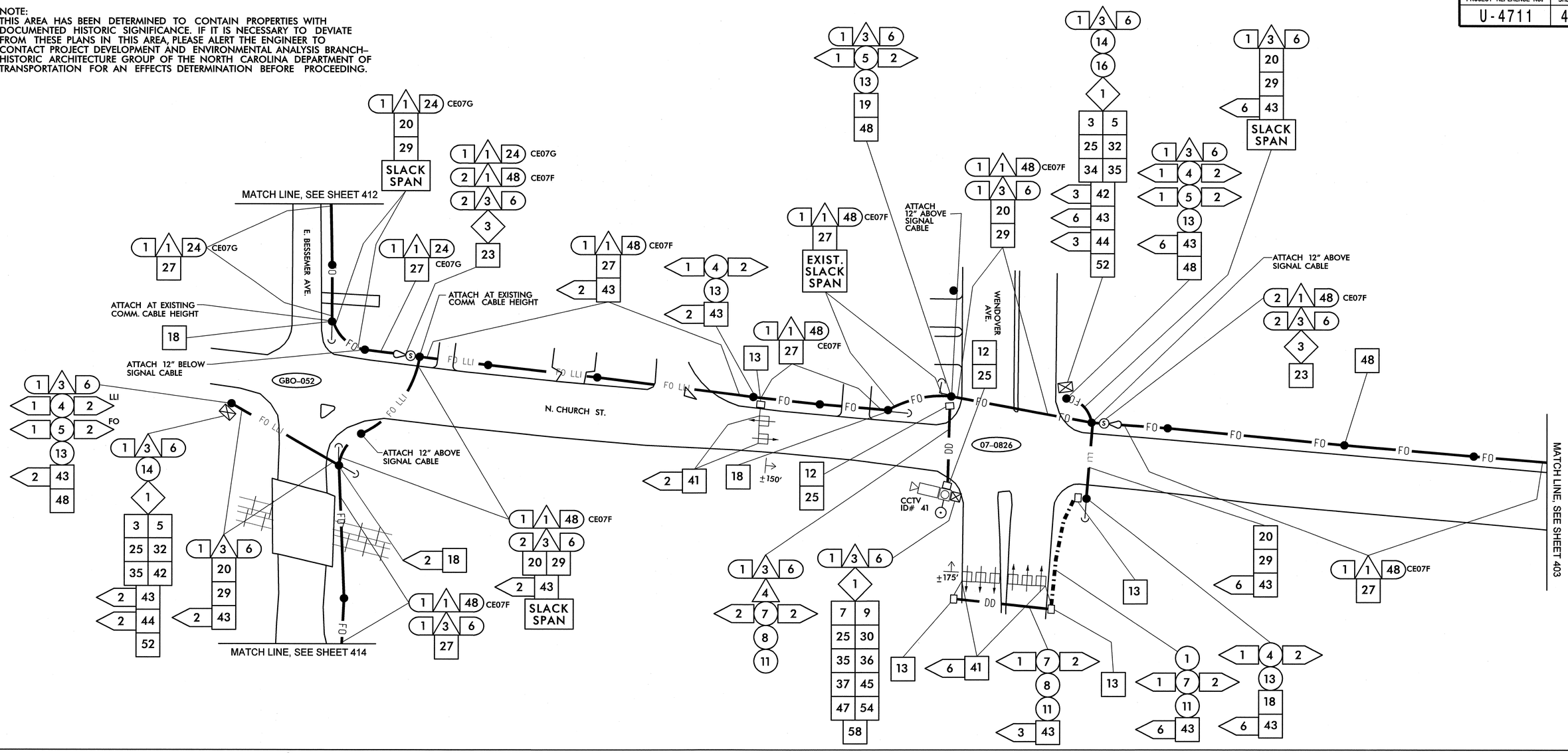


| | |
|---|---|
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| 3 | INSTALL FIBER OPTIC DROP CABLE |
| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
| 6 | REUSE GDOT SMFO CABLE |
| 1 | TRENCH |
| 2 | INSTALL PVC CONDUIT |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT |
| 7 | INSTALL POLYETHYLENE CONDUIT |
| 8 | DIRECTIONAL DRILL CONDUIT |
| 9 | BORE AND JACK CONDUIT |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT |
| 12 | INSTALL CABLE(S) IN EXISTING RISER |
| 13 | INSTALL CABLE(S) IN NEW RISER |
| 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE |
| 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET |
| 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET |
| 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING |
| 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET |
| 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE |
| 3 | INSTALL AERIAL SPLICE ENCLOSURE |
| 4 | INSTALL POLE MOUNTED SPLICE CABINET |
| 5 | INSTALL BASE MOUNTED SPLICE CABINET |
| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
| 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX |
| 12 | INSTALL OVERSIZED JUNCTION BOX |
| 13 | INSTALL STANDARD JUNCTION BOX |
| 14 | REMOVE EXISTING JUNCTION BOX |
| 15 | INSTALL WOOD POLE |
| 16 | REMOVE EXISTING WOOD POLE |
| 17 | INSTALL AERIAL GUY ASSEMBLY |
| 18 | INSTALL STANDARD GUY ASSEMBLY |
| 19 | INSTALL SIDEWALK GUY ASSEMBLY |
| 20 | INSTALL MESSENGER CABLE |
| 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE |
| 22 | REMOVE EXISTING COMMUNICATIONS CABLE |
| 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE |
| 24 | INSTALL DELINEATOR MARKER |
| 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE |
| 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 30 | INSTALL NEW ELECTRICAL SERVICE |
| 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 32 | INSTALL NEW CONTROLLER |
| 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 34 | INSTALL GENERATOR POWER INLET BOX |
| 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 36 | INSTALL UNIFIED CABLE |
| 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 40 | INSTALL RADIO TRANSCEIVER |
| 41 | INSTALL SYSTEM LOOP |
| 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 44 | INSTALL LOCAL LOOP AMPLIFIER |
| 45 | INSTALL CITY WI-FI ANTENNA |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH |
| 47 | INSTALL CODEC |
| 48 | BOND MESSENGER CABLE TO POLE GROUND |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION |
| 50 | INSTALL ANTENNA CABLE |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT |
| 53 | INSTALL DSL ETHERNET SWITCH |
| 54 | INSTALL ETHERNET CABLE |
| 55 | INSTALL TERMINAL SERVER |
| 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
| 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000


Traffic Engineering and Safety Systems Branch
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH
PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/29/08

CADD Filename: ...\Sht0413.dgn

2/29/2008
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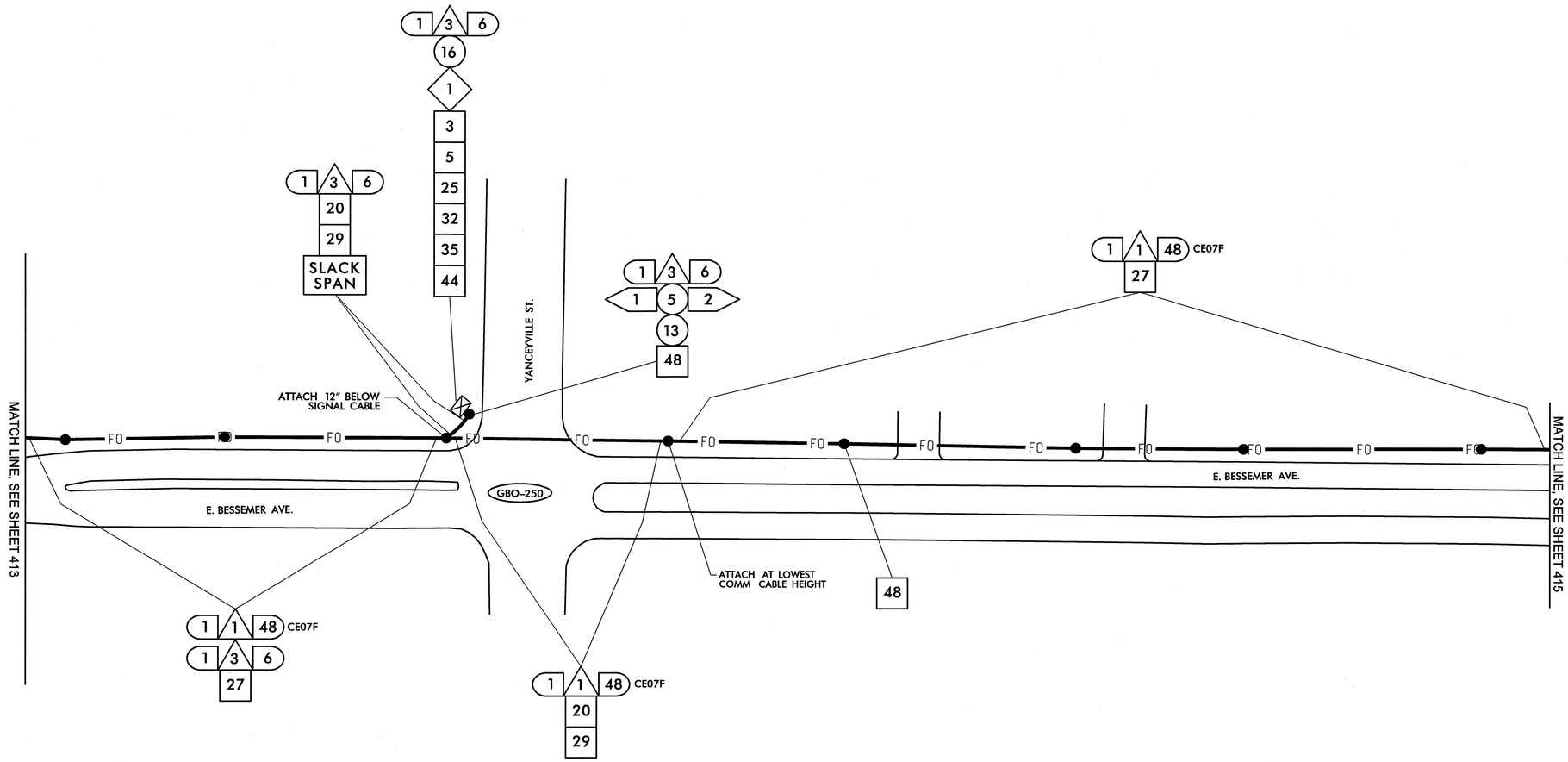
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-4711 | 414 |




NOTE:
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1. INSTALL SMFO CABLE
2. INSTALL PLENUM RATED FIBER OPTIC CABLE
3. INSTALL FIBER OPTIC DROP CABLE
4. INSTALL TRACER WIRE
5. REUSE NCDOT SMFO CABLE
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1. TRENCH
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5. INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING
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5. INSTALL BASE MOUNTED SPLICE CABINET
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7. INSTALL TERMINAL SPLICE BOX
8. MODIFY EXISTING SPLICE ENCLOSURE

1. INSTALL CABINET FOUNDATION
2. REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER
3. MODIFY EXISTING CABINET FOUNDATION
4. INSTALL NEW 333 COMMUNICATION CABINET
5. INSTALL NEW 332 BASE MOUNTED CABINET
6. INSTALL NEW 336S CABINET
7. INSTALL CCTV CAMERA ASSEMBLY
8. INSTALL CCTV CAMERA WOOD POLE
9. INSTALL CCTV METAL POLE AND FOUNDATION
10. INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX
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58. INSTALL WIRELESS ACCESS POINT POWER CABLE

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

PLANS PREPARED IN THE OFFICE OF:


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P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000


Traffic Engineering and Safety Systems Branch
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Pkwy., Garner, NC 27529

N

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

| | |
|---|---|
| PLAN DATE: FEBRUARY, 2008 | REVIEWED BY: K.W. SMITH |
| PREPARED BY: K.D. VANPATTEN | REVIEWED BY: M.W. DUNZO |

| REVISIONS | INIT. | DATE |
|---|---|---|
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht0414.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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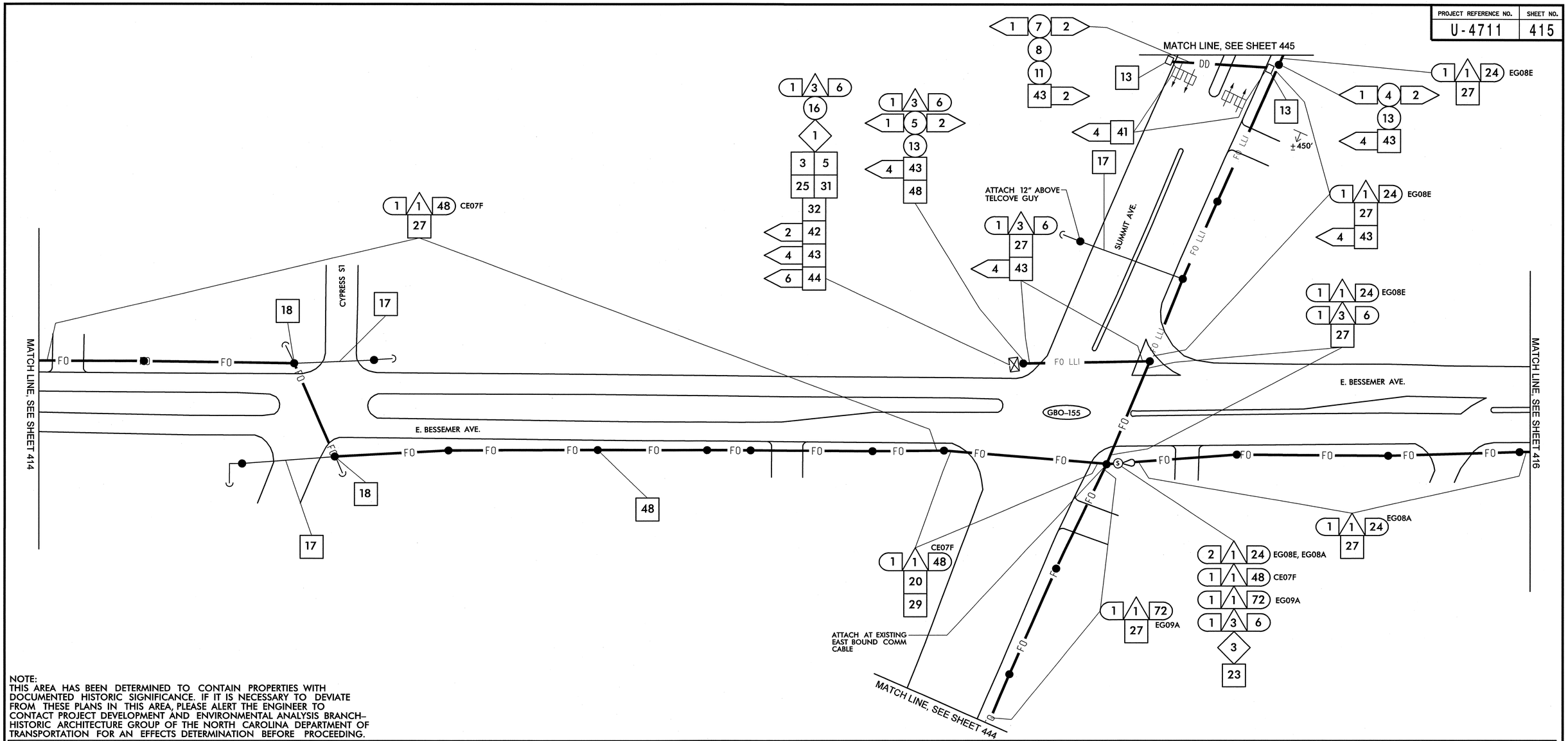
| U-4711 | 415 |

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4. INSTALL TRACER WIRE
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6. REUSE GDOT SMFO CABLE

1. TRENCH
2. INSTALL PVC CONDUIT
3. INSTALL RIGID, GALVANIZED STEEL CONDUIT
4. INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
5. INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING
6. INSTALL OUTER-DUCT POLYETHYLENE CONDUIT
7. INSTALL POLYETHYLENE CONDUIT
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10. INSTALL CABLE(S) IN EXISTING CONDUIT
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14. INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE
15. INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
16. INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
17. INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET
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19. REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING

1. INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET
2. INSTALL UNDERGROUND SPLICE ENCLOSURE
3. INSTALL AERIAL SPLICE ENCLOSURE
4. INSTALL POLE MOUNTED SPLICE CABINET
5. INSTALL BASE MOUNTED SPLICE CABINET
6. REMOVE EXISTING SPLICE CABINET
7. INSTALL TERMINAL SPLICE BOX
8. MODIFY EXISTING SPLICE ENCLOSURE

1. INSTALL CABINET FOUNDATION
2. REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER
3. MODIFY EXISTING CABINET FOUNDATION
4. INSTALL NEW 333 COMMUNICATION CABINET
5. INSTALL NEW 332 BASE MOUNTED CABINET
6. INSTALL NEW 336S CABINET
7. INSTALL CCTV CAMERA ASSEMBLY
8. INSTALL CCTV CAMERA WOOD POLE
9. INSTALL CCTV METAL POLE AND FOUNDATION
10. INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX
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14. REMOVE EXISTING JUNCTION BOX
15. INSTALL WOOD POLE
16. REMOVE EXISTING WOOD POLE
17. INSTALL AERIAL GUY ASSEMBLY
18. INSTALL STANDARD GUY ASSEMBLY
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22. REMOVE EXISTING COMMUNICATIONS CABLE
23. INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE
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27. LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE
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36. INSTALL UNIFIED CABLE
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GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

PLANS PREPARED IN THE OFFICE OF:
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Traffic Engineering and Safety Systems Branch
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 — GUILFORD COUNTY

| | |
|---|---|
| PLAN DATE: FEBRUARY, 2008 | REVIEWED BY: K.W. SMITH |
| PREPARED BY: K.D. VANPATTEN | REVIEWED BY: M.W. DUNZO |

| REVISIONS | INIT. | DATE |
|---|---|---|
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO
SIGNATURE — DATE 2/20/08
CADD Filename: ...\Sht0415m.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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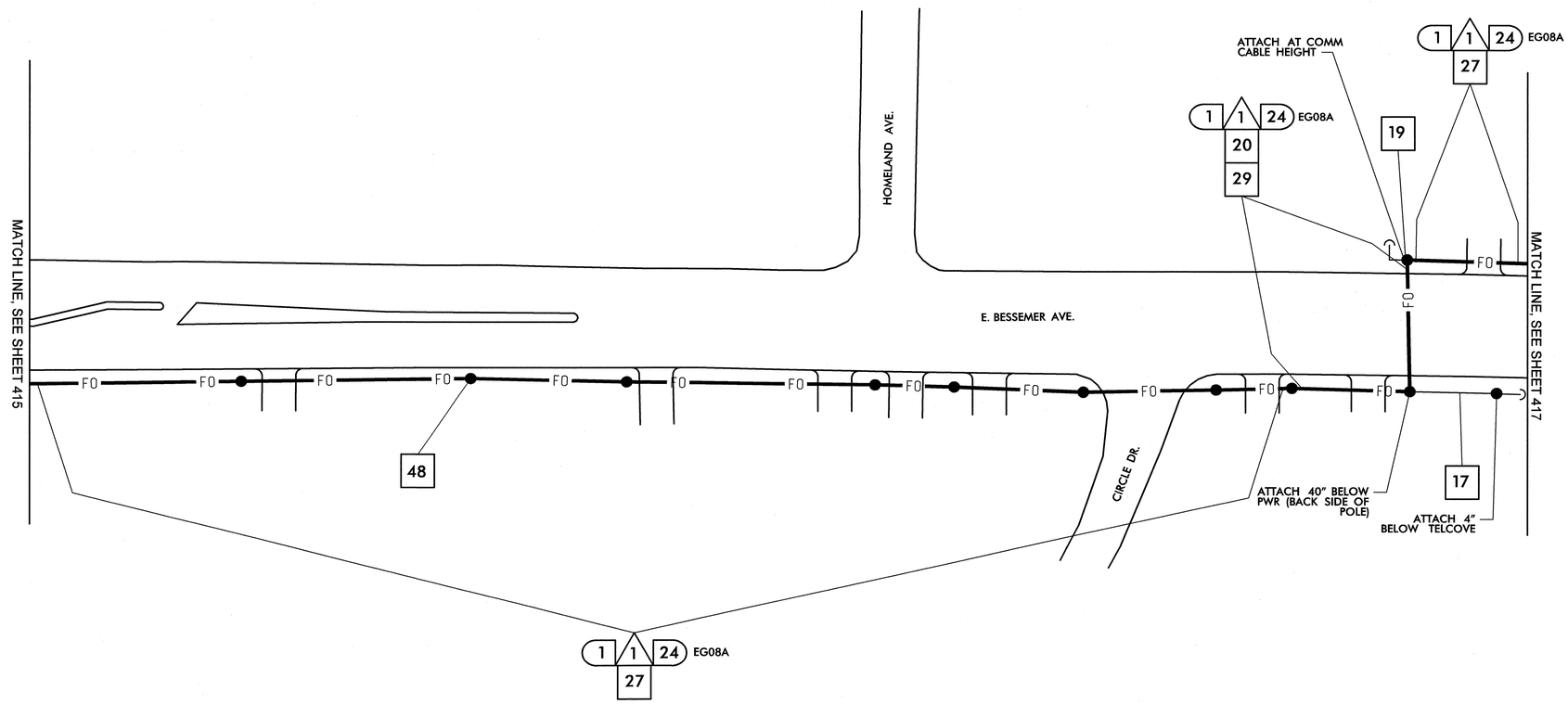
| U-4711 | 416 |

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|---|---|---|---|---|---|---|---|
| 1 | INSTALL SMFO CABLE | 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE | 6 | INSTALL NEW 336S CABINET | 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE | 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 7 | INSTALL CCTV CAMERA ASSEMBLY | 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE | 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 8 | INSTALL CCTV CAMERA WOOD POLE | 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 4 | INSTALL TRACER WIRE | 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET | 9 | INSTALL CCTV METAL POLE AND FOUNDATION | 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 5 | REUSE NCDOT SMFO CABLE | 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET | 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX | 30 | INSTALL NEW ELECTRICAL SERVICE |
| 6 | REUSE GDOT SMFO CABLE | 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING | 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX | 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 1 | TRENCH | 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET | 12 | INSTALL OVERSIZED JUNCTION BOX | 32 | INSTALL NEW CONTROLLER |
| 2 | INSTALL PVC CONDUIT | 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE | 13 | INSTALL STANDARD JUNCTION BOX | 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT | 3 | INSTALL AERIAL SPLICE ENCLOSURE | 14 | REMOVE EXISTING JUNCTION BOX | 34 | INSTALL GENERATOR POWER INLET BOX |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD | 4 | INSTALL POLE MOUNTED SPLICE CABINET | 15 | INSTALL WOOD POLE | 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING | 5 | INSTALL BASE MOUNTED SPLICE CABINET | 16 | REMOVE EXISTING WOOD POLE | 36 | INSTALL UNIFIED CABLE |
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| 9 | BORE AND JACK CONDUIT | 1 | INSTALL CABINET FOUNDATION | 20 | INSTALL MESSENGER CABLE | 40 | INSTALL RADIO TRANSCEIVER |
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| 13 | INSTALL CABLE(S) IN NEW RISER | 5 | INSTALL NEW 332 BASE MOUNTED CABINET | 24 | INSTALL DELINEATOR MARKER | | |
| | | | | 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE | | |

| | | | |
|---|---|---|---|
| 44 | INSTALL LOCAL LOOP AMPLIFIER | 53 | INSTALL DSL ETHERNET SWITCH |
| 45 | INSTALL CITY WI-FI ANTENNA | 54 | INSTALL ETHERNET CABLE |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH | 55 | INSTALL TERMINAL SERVER |
| 47 | INSTALL CODEC | 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
| 48 | BOND MESSENGER CABLE TO POLE GROUND | 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION | 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |
| 50 | INSTALL ANTENNA CABLE | | |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT | | |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT | | |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

PLANS PREPARED IN THE OFFICE OF:

Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000

750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

| | | | |
|---|---|---|---|
| PLAN DATE: | FEBRUARY, 2008 | REVIEWED BY: | K.W. SMITH |
| PREPARED BY: | K.D. VANPATTEN | REVIEWED BY: | M.W. DUNZO |

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht0416.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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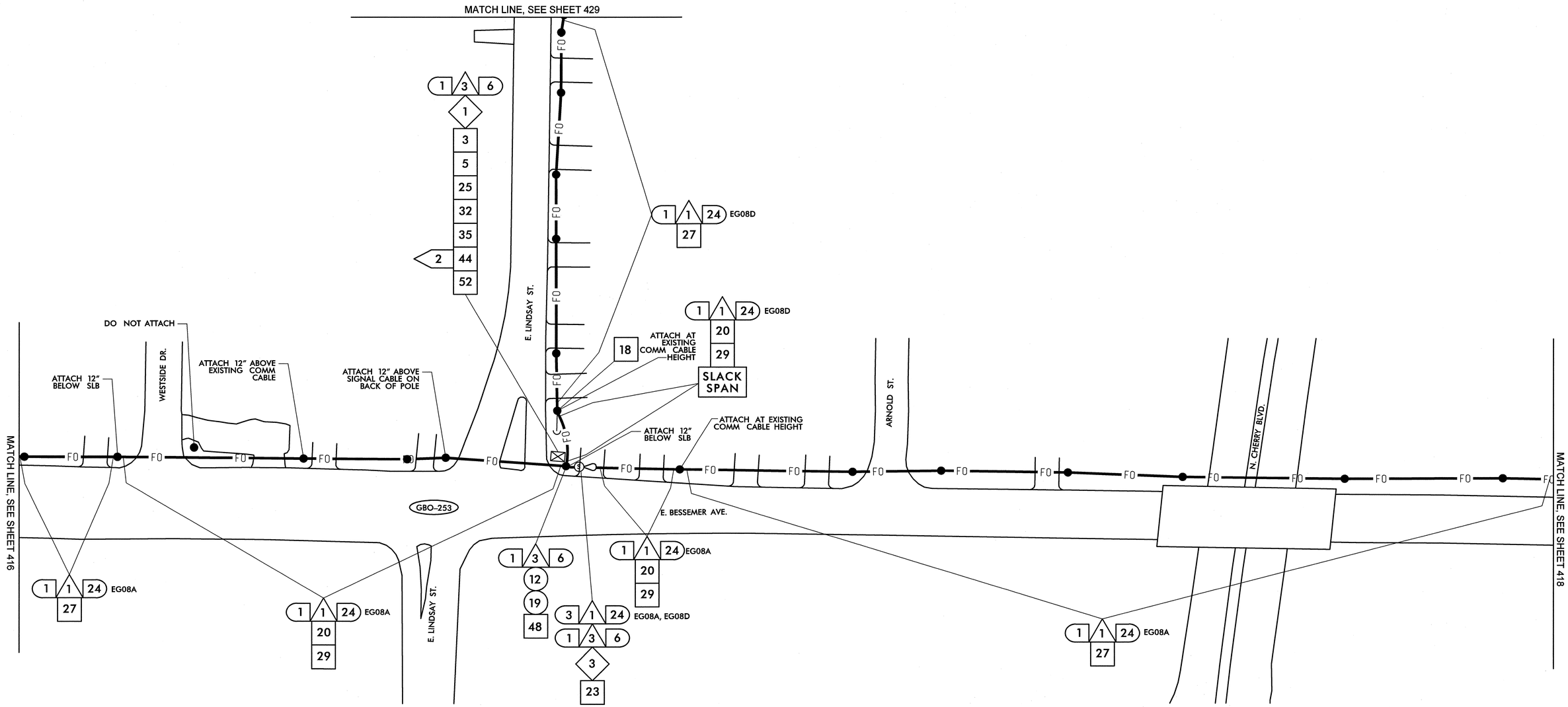
| U-4711 | 417 |




1. INSTALL SMFO CABLE
2. INSTALL PLENUM RATED FIBER OPTIC CABLE
3. INSTALL FIBER OPTIC DROP CABLE
4. INSTALL TRACER WIRE
5. REUSE NCDOT SMFO CABLE
6. REUSE GDOT SMFO CABLE

1. TRENCH
2. INSTALL PVC CONDUIT
3. INSTALL RIGID, GALVANIZED STEEL CONDUIT
4. INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
5. INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING
6. INSTALL OUTER-DUCT POLYETHYLENE CONDUIT
7. INSTALL POLYETHYLENE CONDUIT
8. DIRECTIONAL DRILL CONDUIT
9. BORE AND JACK CONDUIT
10. INSTALL CABLE(S) IN EXISTING CONDUIT
11. INSTALL CABLE(S) IN NEW CONDUIT
12. INSTALL CABLE(S) IN EXISTING RISER
13. INSTALL CABLE(S) IN NEW RISER
14. INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE
15. INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
16. INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
17. INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET
18. INSTALL NEW RISER INTO POLE MOUNTED CABINET
19. REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING

1. INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET
2. INSTALL UNDERGROUND SPLICE ENCLOSURE
3. INSTALL AERIAL SPLICE ENCLOSURE
4. INSTALL POLE MOUNTED SPLICE CABINET
5. INSTALL BASE MOUNTED SPLICE CABINET
6. REMOVE EXISTING SPLICE CABINET
7. INSTALL TERMINAL SPLICE BOX
8. MODIFY EXISTING SPLICE ENCLOSURE

1. INSTALL CABINET FOUNDATION
2. REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER
3. MODIFY EXISTING CABINET FOUNDATION
4. INSTALL NEW 333 COMMUNICATION CABINET
5. INSTALL NEW 332 BASE MOUNTED CABINET
6. INSTALL NEW 336S CABINET
7. INSTALL CCTV CAMERA ASSEMBLY
8. INSTALL CCTV CAMERA WOOD POLE
9. INSTALL CCTV METAL POLE AND FOUNDATION
10. INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX
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22. REMOVE EXISTING COMMUNICATIONS CABLE
23. INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE
24. INSTALL DELINEATOR MARKER
25. STORE 30 FEET OF EACH COMMUNICATIONS CABLE
26. STORE 100 FEET OF EACH COMMUNICATIONS CABLE
27. LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE
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58. INSTALL WIRELESS ACCESS POINT POWER CABLE

NOTE:
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PLANS PREPARED IN THE OFFICE OF:
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Traffic Engineering and Safety Systems Branch
Intelligent Transportation Systems
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY
PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH
PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO
SIGNATURE 2/20/08 DATE
CADD Filename: ...\Sht0417.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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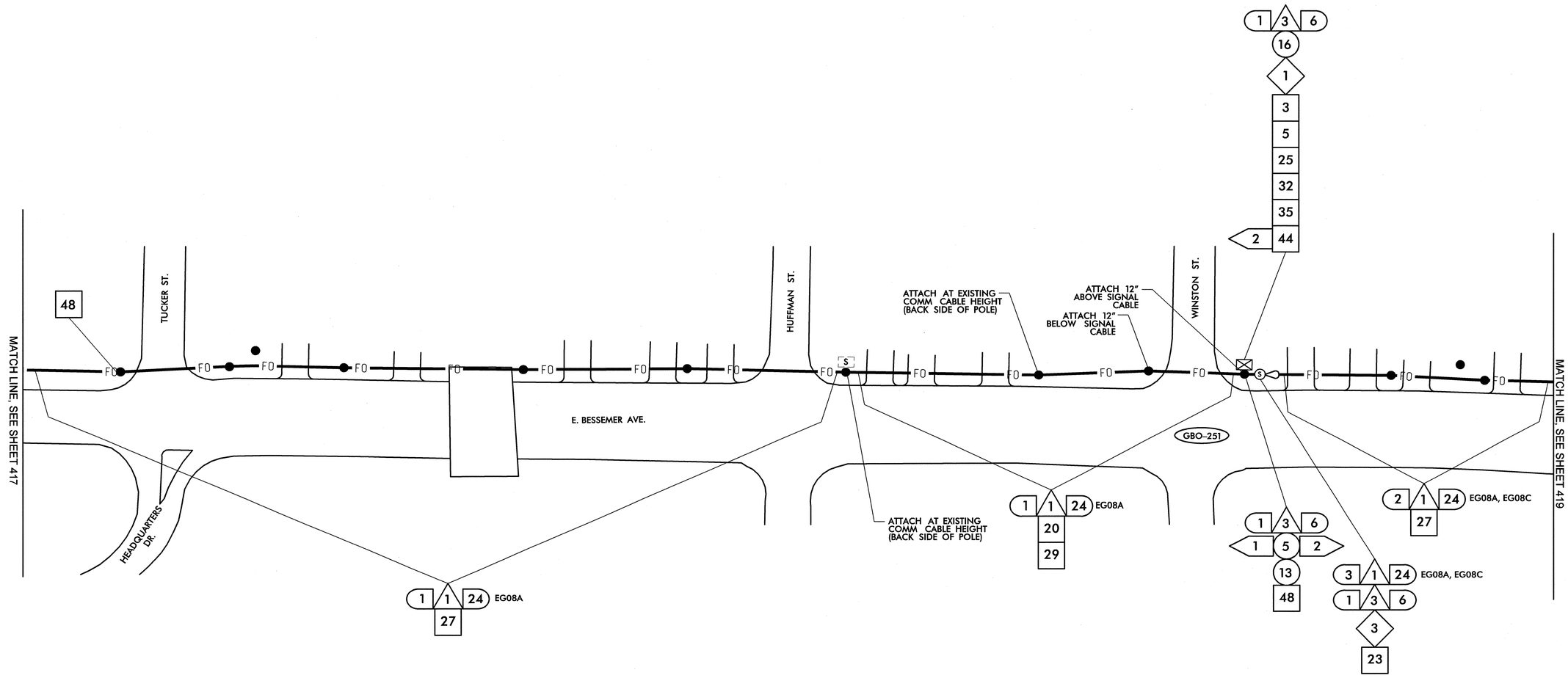
| U-4711 | 418 |

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| 1 | INSTALL SMFO CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
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| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
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| 2 | INSTALL PVC CONDUIT |
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| 6 | REMOVE EXISTING SPLICE CABINET |
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| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
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| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
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NOTE:
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PLANS PREPARED IN THE OFFICE OF:
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Traffic Engineering and Safety Systems Branch
Intelligent Transportation Systems
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/20/08 DATE

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| PROJECT REFERENCE NO. | SHEET NO. |
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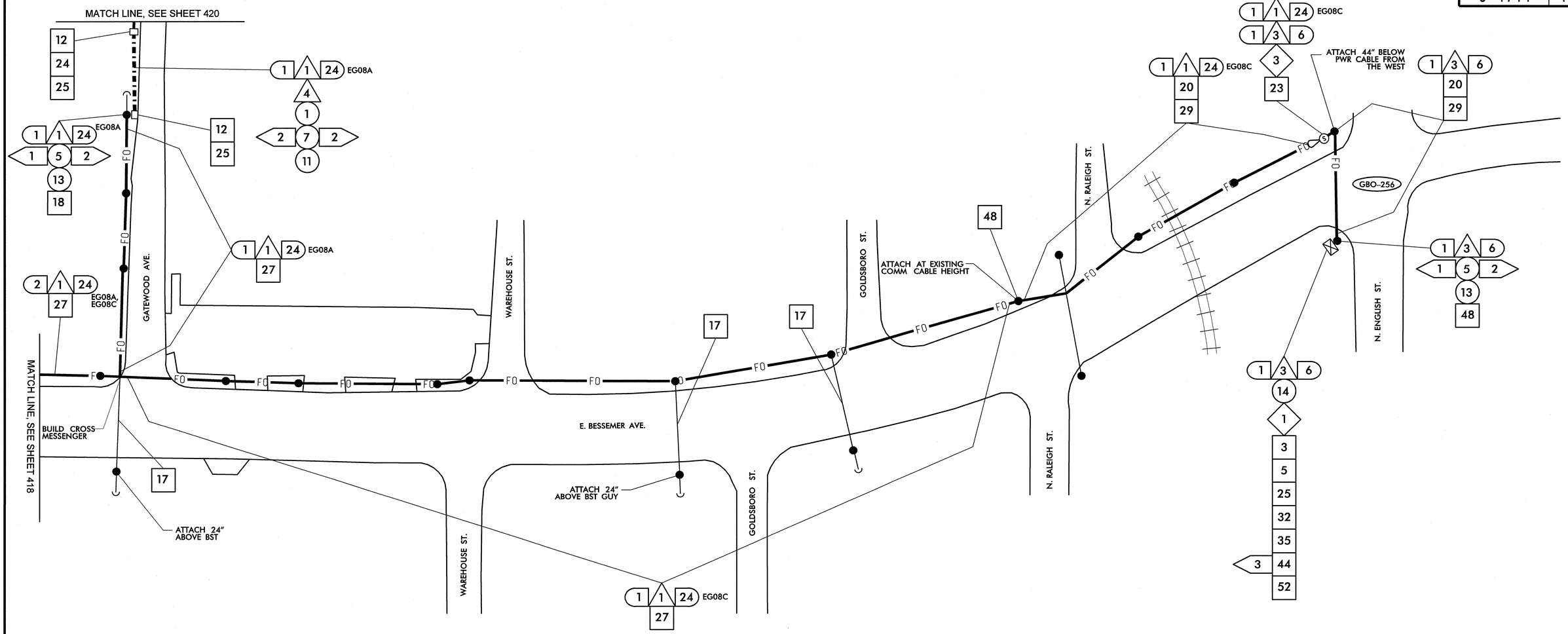
| U-4711 | 419 |

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# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

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SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 023562 MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht0419.dgn

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| PROJECT REFERENCE NO. | SHEET NO. |
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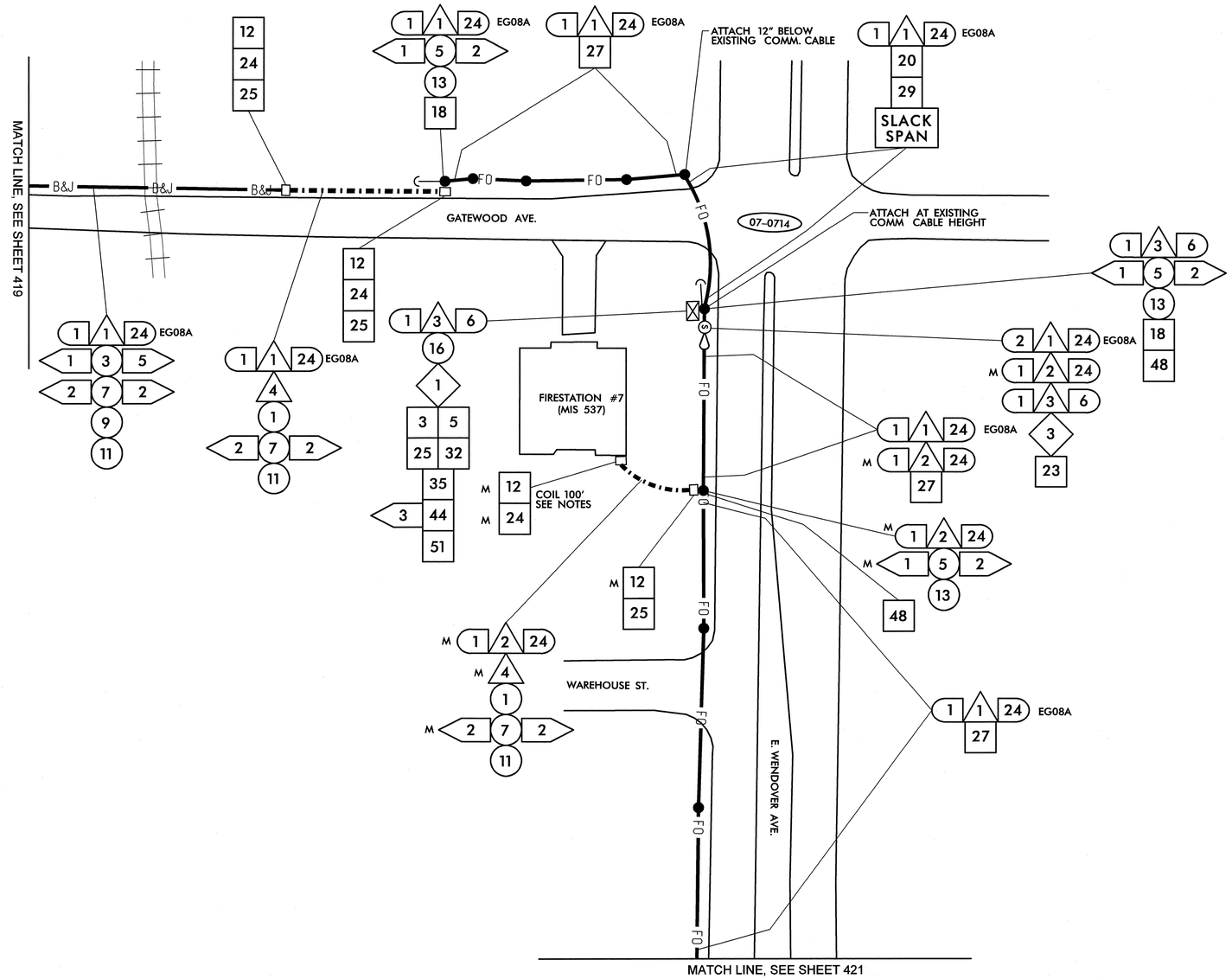
| U-4711 | 420 |




## NOTES (THIS SHEET ONLY)

1. SEE BUILDING ENTRANCE DETAIL FOR ROUTING INTO BUILDING

| | |
|---|---|
| 1 | INSTALL SMFO CABLE |
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| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
| 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX |
| 12 | INSTALL OVERSIZED JUNCTION BOX |
| 13 | INSTALL STANDARD JUNCTION BOX |
| 14 | REMOVE EXISTING JUNCTION BOX |
| 15 | INSTALL WOOD POLE |
| 16 | REMOVE EXISTING WOOD POLE |
| 17 | INSTALL AERIAL GUY ASSEMBLY |
| 18 | INSTALL STANDARD GUY ASSEMBLY |
| 19 | INSTALL SIDEWALK GUY ASSEMBLY |
| 20 | INSTALL MESSENGER CABLE |
| 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE |
| 22 | REMOVE EXISTING COMMUNICATIONS CABLE |
| 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE |
| 24 | INSTALL DELINEATOR MARKER |
| 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE |
| 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 30 | INSTALL NEW ELECTRICAL SERVICE |
| 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 32 | INSTALL NEW CONTROLLER |
| 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 34 | INSTALL GENERATOR POWER INLET BOX |
| 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 36 | INSTALL UNIFIED CABLE |
| 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
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| 40 | INSTALL RADIO TRANSCEIVER |
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| 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
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| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH |
| 47 | INSTALL CODEC |
| 48 | BOND MESSENGER CABLE TO POLE GROUND |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION |
| 50 | INSTALL ANTENNA CABLE |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT |
| 53 | INSTALL DSL ETHERNET SWITCH |
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| 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

PLANS PREPARED IN THE OFFICE OF:

Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000

750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 — GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 — REVIEWED BY: K.W. SMITH
PREPARED BY: K.D. VANPATTEN — REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE — DATE 2/20/08

CADD Filename: ...\Sht0420m.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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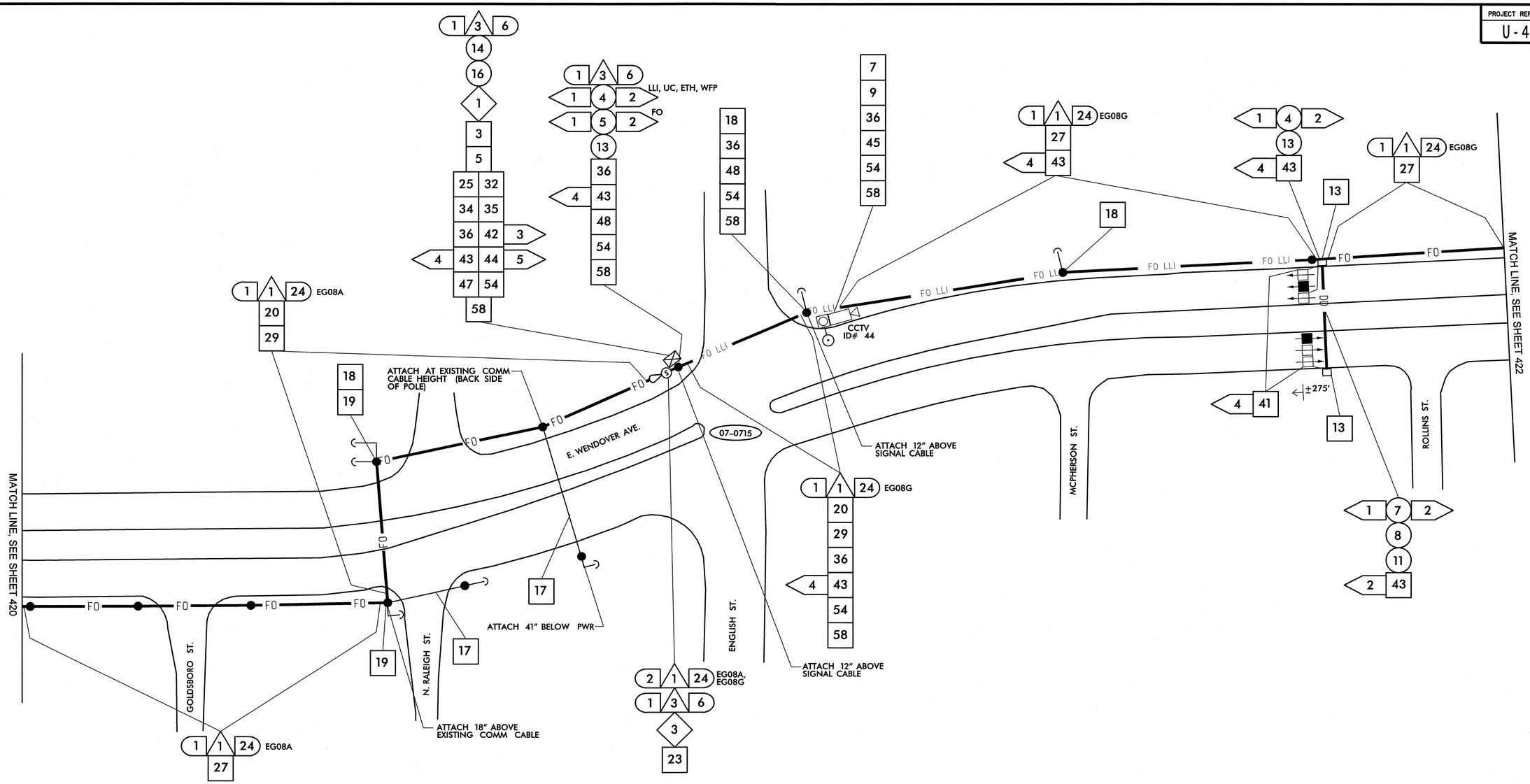
| U-4711 | 421 |




| | |
|---|---|
| 1 | INSTALL SMFO CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE |
| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
| 6 | REUSE GDOT SMFO CABLE |
| 1 | TRENCH |
| 2 | INSTALL PVC CONDUIT |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT |
| 7 | INSTALL POLYETHYLENE CONDUIT |
| 8 | DIRECTIONAL DRILL CONDUIT |
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| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT |
| 12 | INSTALL CABLE(S) IN EXISTING RISER |
| 13 | INSTALL CABLE(S) IN NEW RISER |
| 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE |
| 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
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| 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET |
| 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET |
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| 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE |
| 3 | INSTALL AERIAL SPLICE ENCLOSURE |
| 4 | INSTALL POLE MOUNTED SPLICE CABINET |
| 5 | INSTALL BASE MOUNTED SPLICE CABINET |
| 6 | REMOVE EXISTING SPLICE CABINET |
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| 1 | INSTALL CABINET FOUNDATION |
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PLANS PREPARED IN THE OFFICE OF:

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(919) 677-2000

750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 — GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 — REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN — REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
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SEAL — NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE — DATE 2/20/08

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2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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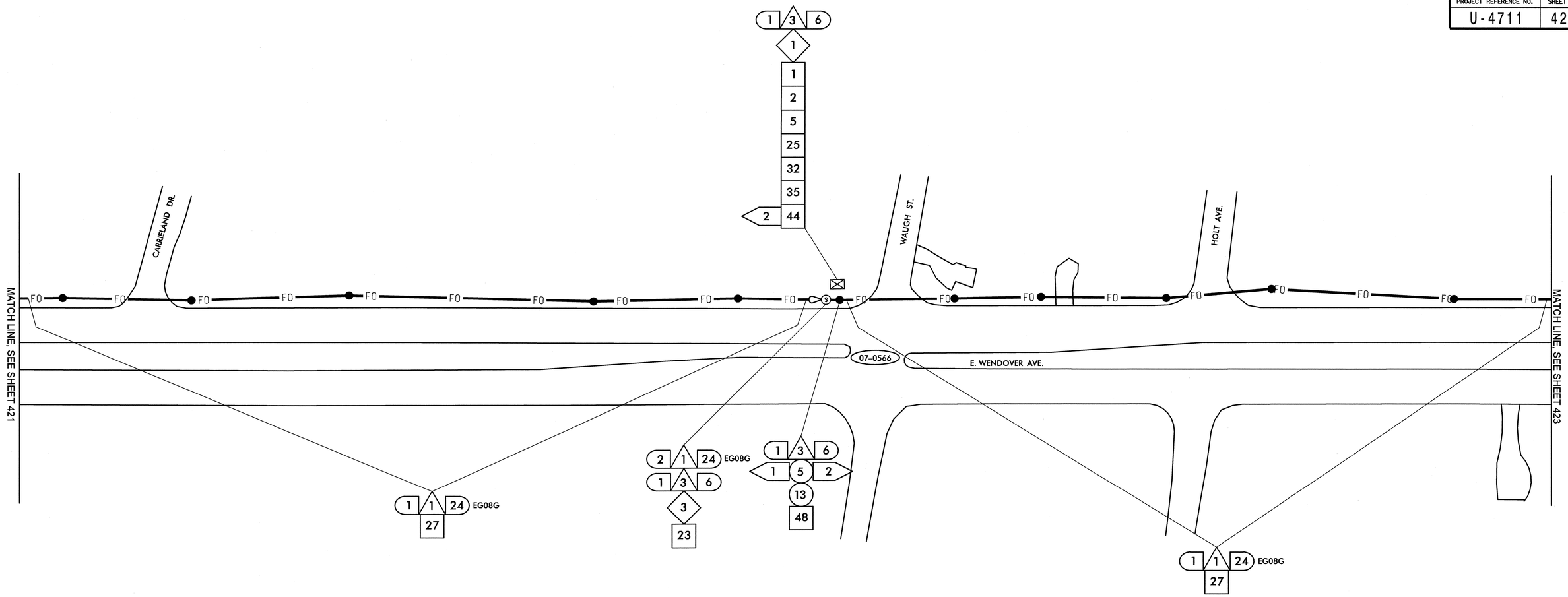
| U-4711 | 422 |




1. INSTALL SMFO CABLE
2. INSTALL PLENUM RATED FIBER OPTIC CABLE
3. INSTALL FIBER OPTIC DROP CABLE
4. INSTALL TRACER WIRE
5. REUSE NCDOT SMFO CABLE
6. REUSE GDOT SMFO CABLE

1. TRENCH
2. INSTALL PVC CONDUIT
3. INSTALL RIGID, GALVANIZED STEEL CONDUIT
4. INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
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15. INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
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19. REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING

1. INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET
2. INSTALL UNDERGROUND SPLICE ENCLOSURE
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4. INSTALL POLE MOUNTED SPLICE CABINET
5. INSTALL BASE MOUNTED SPLICE CABINET
6. REMOVE EXISTING SPLICE CABINET
7. INSTALL TERMINAL SPLICE BOX
8. MODIFY EXISTING SPLICE ENCLOSURE

1. INSTALL CABINET FOUNDATION
2. REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER
3. MODIFY EXISTING CABINET FOUNDATION
4. INSTALL NEW 333 COMMUNICATION CABINET
5. INSTALL NEW 332 BASE MOUNTED CABINET
6. INSTALL NEW 336S CABINET
7. INSTALL CCTV CAMERA ASSEMBLY
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22. REMOVE EXISTING COMMUNICATIONS CABLE
23. INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE
24. INSTALL DELINEATOR MARKER
25. STORE 30 FEET OF EACH COMMUNICATIONS CABLE
26. STORE 100 FEET OF EACH COMMUNICATIONS CABLE
27. LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE
28. LASH CABLE(S) TO EXISTING MESSENGER CABLE
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30. INSTALL NEW ELECTRICAL SERVICE
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NOTE:
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PLANS PREPARED IN THE OFFICE OF:
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P.O. Box 33068
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Traffic Engineering and Safety Systems Branch
Intelligent Transportation Systems
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
750 Greenfield Pkwy., Garner, NC 27529

N
SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 — GUILFORD COUNTY

| | |
|---|---|
| PLAN DATE: FEBRUARY, 2008 | REVIEWED BY: K.W. SMITH |
| PREPARED BY: K.D. VANPATTEN | REVIEWED BY: M.W. DUNZO |

| REVISIONS | INIT. | DATE |
|---|---|---|
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO
SIGNATURE — DATE 2/20/08

CADD Filename: ...\Sht0422.dgn

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| PROJECT REFERENCE NO. | SHEET NO. |
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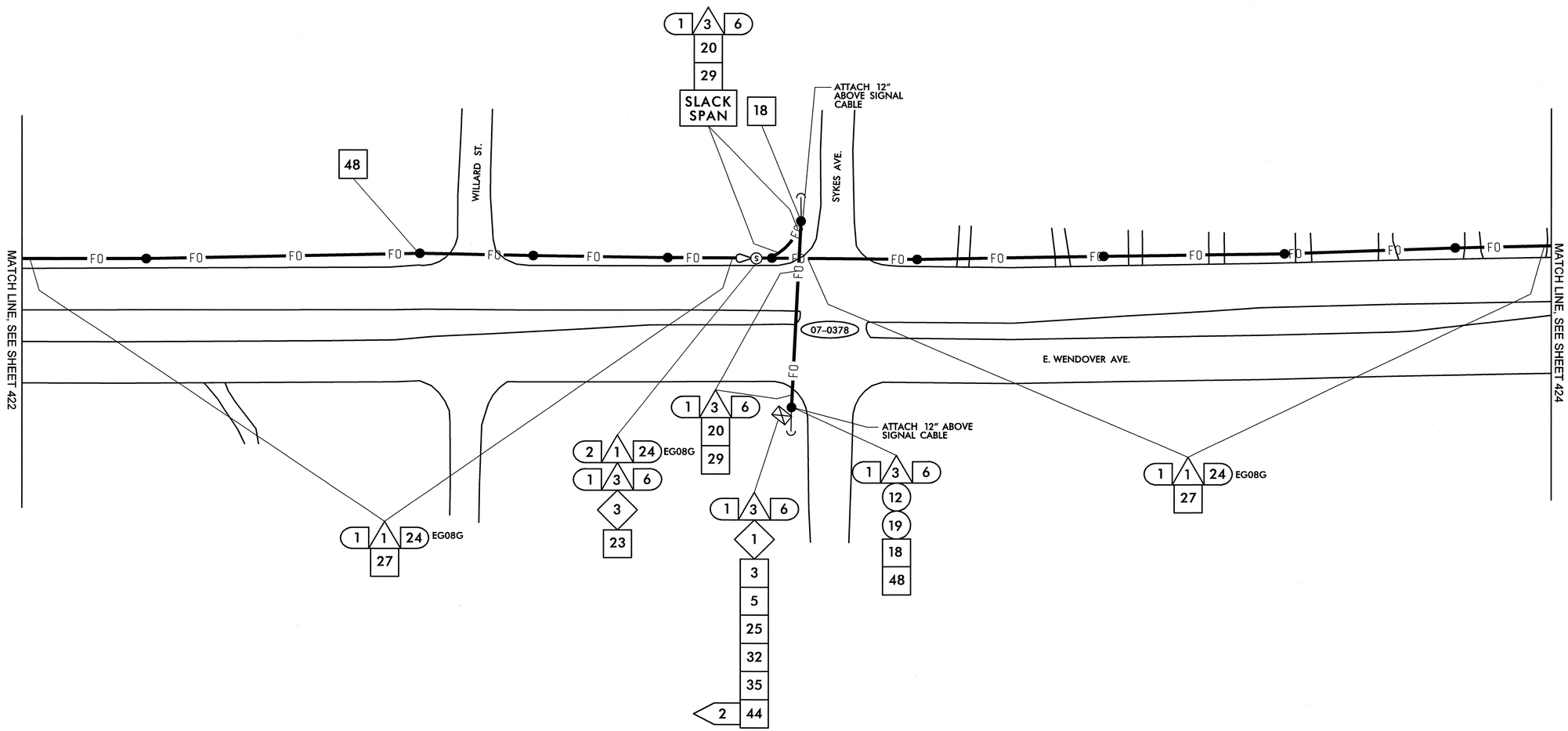
| U-4711 | 423 |

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SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

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| PLAN DATE: FEBRUARY, 2008 | | REVIEWED BY: K.W. SMITH | |
| PREPARED BY: K.D. VANPATTEN | | REVIEWED BY: M.W. DUNZO | |
| REVISIONS | | INIT. | DATE |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht0423.dgn

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| PROJECT REFERENCE NO. | SHEET NO. |
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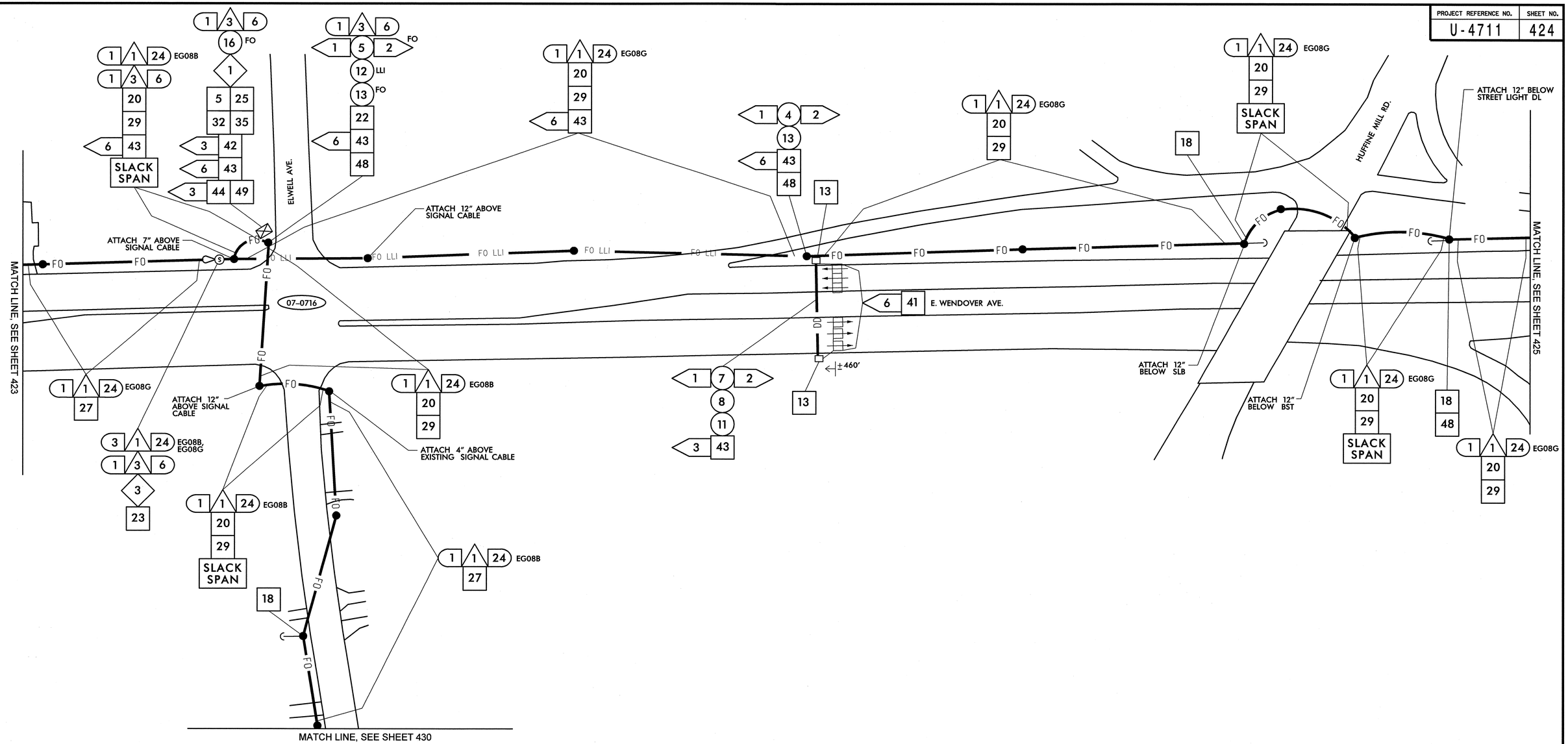
| U-4711 | 424 |




| | |
|---|---|
| 1 | INSTALL SMFO CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE |
| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
| 6 | REUSE GDOT SMFO CABLE |
| 1 | TRENCH |
| 2 | INSTALL PVC CONDUIT |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT |
| 7 | INSTALL POLYETHYLENE CONDUIT |
| 8 | DIRECTIONAL DRILL CONDUIT |
| 9 | BORE AND JACK CONDUIT |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT |
| 12 | INSTALL CABLE(S) IN EXISTING RISER |
| 13 | INSTALL CABLE(S) IN NEW RISER |
| 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE |
| 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET |
| 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET |
| 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING |
| 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET |
| 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE |
| 3 | INSTALL AERIAL SPLICE ENCLOSURE |
| 4 | INSTALL POLE MOUNTED SPLICE CABINET |
| 5 | INSTALL BASE MOUNTED SPLICE CABINET |
| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
| 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX |
| 12 | INSTALL OVERSIZED JUNCTION BOX |
| 13 | INSTALL STANDARD JUNCTION BOX |
| 14 | REMOVE EXISTING JUNCTION BOX |
| 15 | INSTALL WOOD POLE |
| 16 | REMOVE EXISTING WOOD POLE |
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| 18 | INSTALL STANDARD GUY ASSEMBLY |
| 19 | INSTALL SIDEWALK GUY ASSEMBLY |
| 20 | INSTALL MESSENGER CABLE |
| 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE |
| 22 | REMOVE EXISTING COMMUNICATIONS CABLE |
| 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE |
| 24 | INSTALL DELINEATOR MARKER |
| 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE |
| 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 30 | INSTALL NEW ELECTRICAL SERVICE |
| 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 32 | INSTALL NEW CONTROLLER |
| 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 34 | INSTALL GENERATOR POWER INLET BOX |
| 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 36 | INSTALL UNIFIED CABLE |
| 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 40 | INSTALL RADIO TRANSCEIVER |
| 41 | INSTALL SYSTEM LOOP |
| 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 44 | INSTALL LOCAL LOOP AMPLIFIER |
| 45 | INSTALL CITY WI-FI ANTENNA |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH |
| 47 | INSTALL CODEC |
| 48 | BOND MESSENGER CABLE TO POLE GROUND |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION |
| 50 | INSTALL ANTENNA CABLE |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT |
| 53 | INSTALL DSL ETHERNET SWITCH |
| 54 | INSTALL ETHERNET CABLE |
| 55 | INSTALL TERMINAL SERVER |
| 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
| 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000



Department of Transportation
750 Greenfield Pkwy., Garner, NC 27529


SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht0424.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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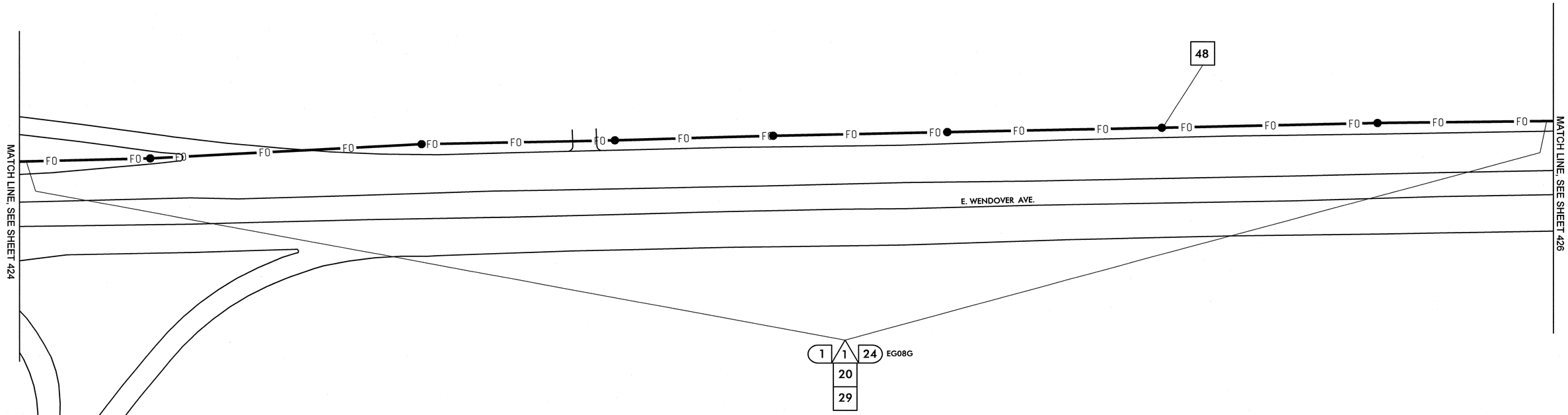
| U-4711 | 425 |

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| 1 | INSTALL SMFO CABLE |
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| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
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| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
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NOTE:
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PLANS PREPARED IN THE OFFICE OF:
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P.O. Box 33068
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750 Greenfield Pkwy., Garner, NC 27529


SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

| | |
|---|---|
| PLAN DATE: FEBRUARY, 2008 | REVIEWED BY: K.W. SMITH |
| PREPARED BY: K.D. VANPATTEN | REVIEWED BY: M.W. DUNZO |

| REVISIONS | INIT. | DATE |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht0425.dgn

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| PROJECT REFERENCE NO. | SHEET NO. |
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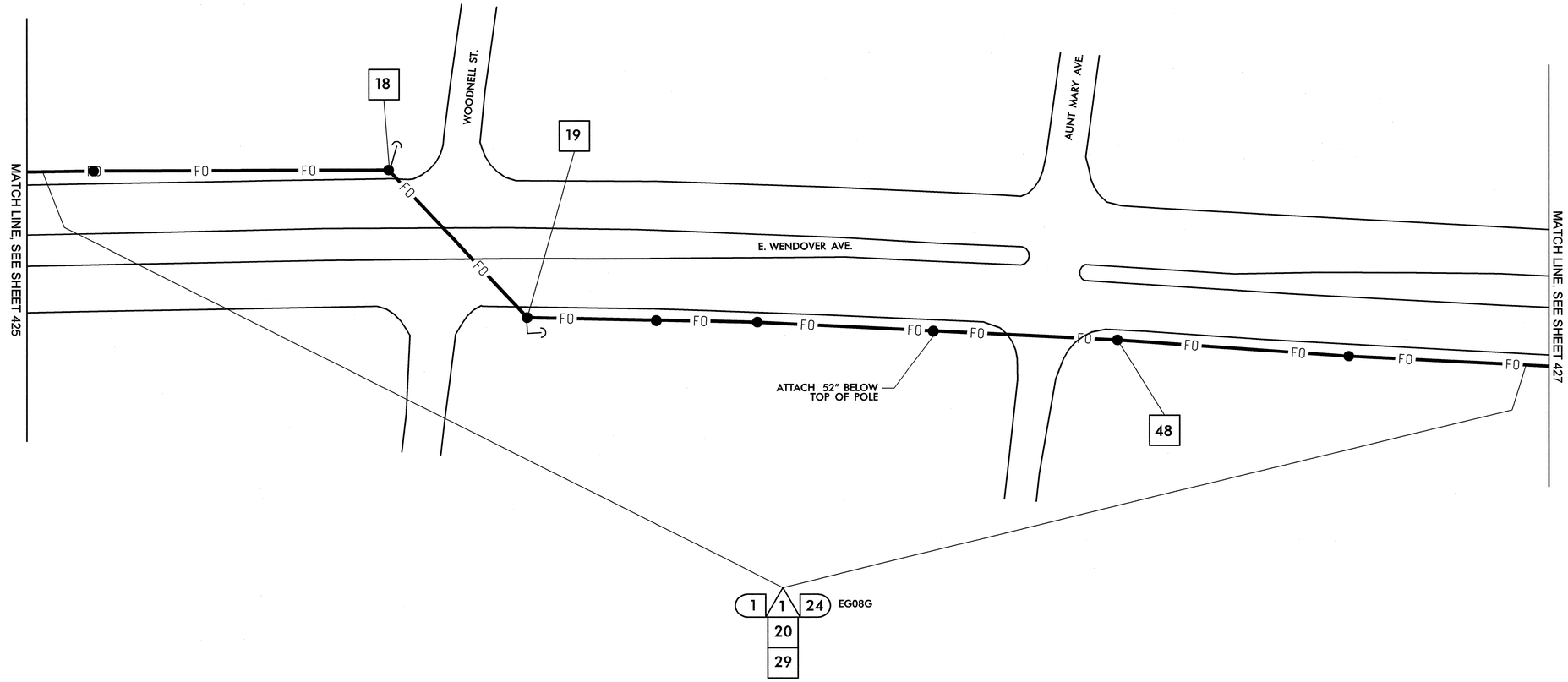
| U-4711 | 426 |




1. INSTALL SMFO CABLE
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3. INSTALL FIBER OPTIC DROP CABLE
4. INSTALL TRACER WIRE
5. REUSE NCDOT SMFO CABLE
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1. TRENCH
2. INSTALL PVC CONDUIT
3. INSTALL RIGID, GALVANIZED STEEL CONDUIT
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7. INSTALL POLYETHYLENE CONDUIT
8. DIRECTIONAL DRILL CONDUIT
9. BORE AND JACK CONDUIT
10. INSTALL CABLE(S) IN EXISTING CONDUIT
11. INSTALL CABLE(S) IN NEW CONDUIT
12. INSTALL CABLE(S) IN EXISTING RISER
13. INSTALL CABLE(S) IN NEW RISER
14. INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE
15. INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
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17. INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET
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1. INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET
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5. INSTALL BASE MOUNTED SPLICE CABINET
6. REMOVE EXISTING SPLICE CABINET
7. INSTALL TERMINAL SPLICE BOX
8. MODIFY EXISTING SPLICE ENCLOSURE
1. INSTALL CABINET FOUNDATION
2. REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER
3. MODIFY EXISTING CABINET FOUNDATION
4. INSTALL NEW 333 COMMUNICATION CABINET
5. INSTALL NEW 332 BASE MOUNTED CABINET
6. INSTALL NEW 336S CABINET
7. INSTALL CCTV CAMERA ASSEMBLY
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9. INSTALL CCTV METAL POLE AND FOUNDATION
10. INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX
11. INSTALL SPECIAL OVERSIZED JUNCTION BOX
12. INSTALL OVERSIZED JUNCTION BOX
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22. REMOVE EXISTING COMMUNICATIONS CABLE
23. INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE
24. INSTALL DELINEATOR MARKER
25. STORE 30 FEET OF EACH COMMUNICATIONS CABLE
26. STORE 100 FEET OF EACH COMMUNICATIONS CABLE
27. LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE
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Intelligent Transportation Systems
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

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| PLAN DATE: FEBRUARY, 2008 | REVIEWED BY: K.W. SMITH |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO
SIGNATURE 2/20/08 DATE
CADD Filename: ...\Sht0426.dgn

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| PROJECT REFERENCE NO. | SHEET NO. |
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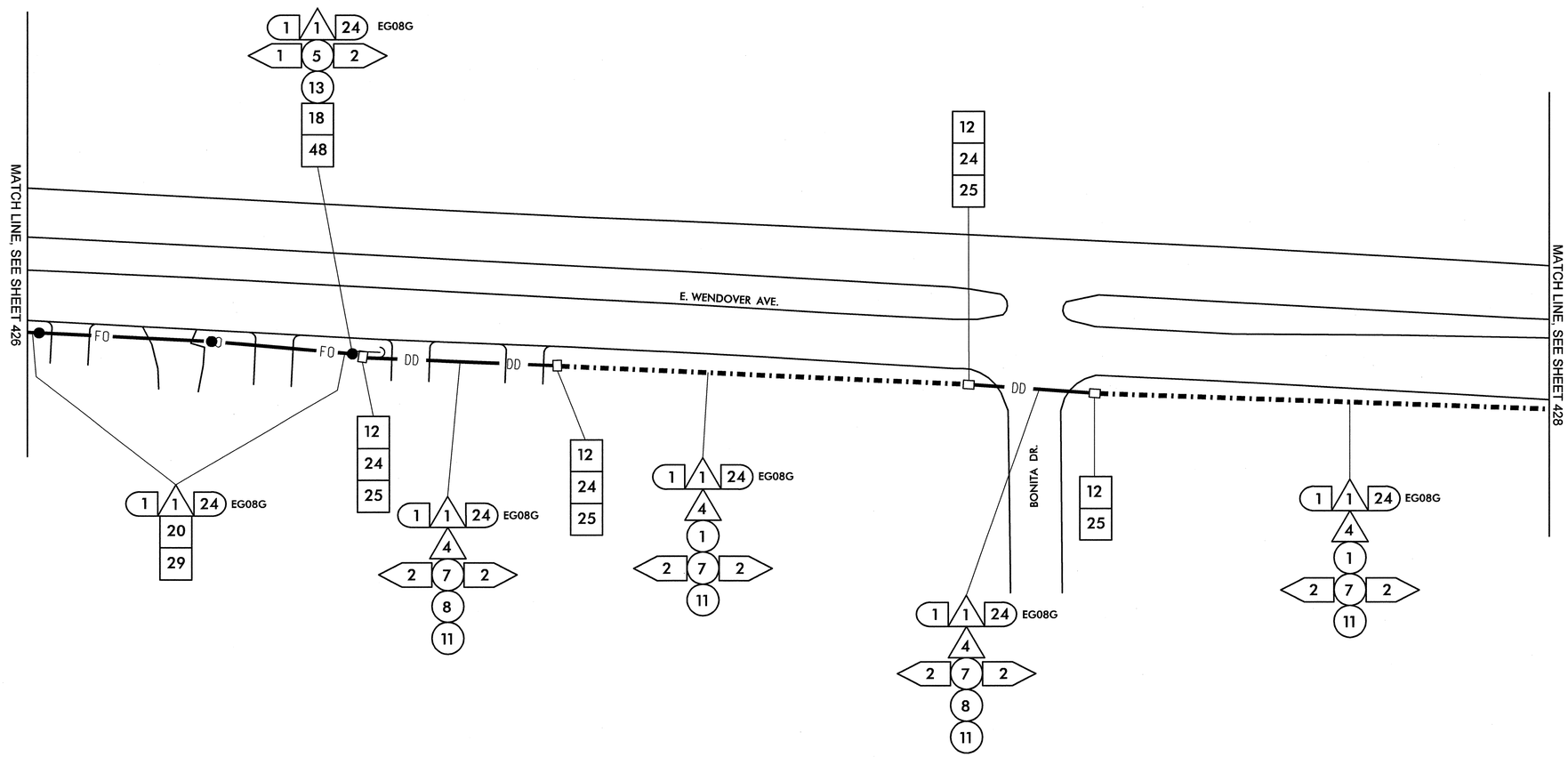
| U-4711 | 427 |

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|---|---|---|---|---|---|
| 1 | INSTALL SMFO CABLE | 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE | 6 | INSTALL NEW 336S CABINET |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE | 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 7 | INSTALL CCTV CAMERA ASSEMBLY |
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| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT | 3 | INSTALL AERIAL SPLICE ENCLOSURE | 14 | REMOVE EXISTING JUNCTION BOX |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD | 4 | INSTALL POLE MOUNTED SPLICE CABINET | 15 | INSTALL WOOD POLE |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING | 5 | INSTALL BASE MOUNTED SPLICE CABINET | 16 | REMOVE EXISTING WOOD POLE |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT | 6 | REMOVE EXISTING SPLICE CABINET | 17 | INSTALL AERIAL GUY ASSEMBLY |
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| 29 | LASH CABLE(S) TO NEW MESSENGER CABLE | 47 | INSTALL CODEC | 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
| 30 | INSTALL NEW ELECTRICAL SERVICE | 48 | BOND MESSENGER CABLE TO POLE GROUND | 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 31 | MODIFY EXISTING ELECTRICAL SERVICE | 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION | 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |
| 32 | INSTALL NEW CONTROLLER | 50 | INSTALL ANTENNA CABLE | | |
| 33 | INSTALL EXISTING CABLE IN NEW CABINET | 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT | | |
| 34 | INSTALL GENERATOR POWER INLET BOX | 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT | | |
| 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH | | | | |
| 36 | INSTALL UNIFIED CABLE | | | | |
| 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET | | | | |
| 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA | | | | |
| 39 | INSTALL OMNI-DIRECTIONAL ANTENNA | | | | |
| 40 | INSTALL RADIO TRANSCEIVER | | | | |
| 41 | INSTALL SYSTEM LOOP | | | | |
| 42 | INSTALL SYSTEM LOOP AMPLIFIER | | | | |
| 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE | | | | |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000



Traffic Engineering and Safety Systems Branch
Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
750 Greenfield Pkwy., Garner, NC 27529


N

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

| | |
|---|---|
| PLAN DATE: FEBRUARY, 2008 | REVIEWED BY: K.W. SMITH |
| PREPARED BY: K.D. VANPATTEN | REVIEWED BY: M.W. DUNZO |

| REVISIONS | INIT. | DATE |
|---|---|---|
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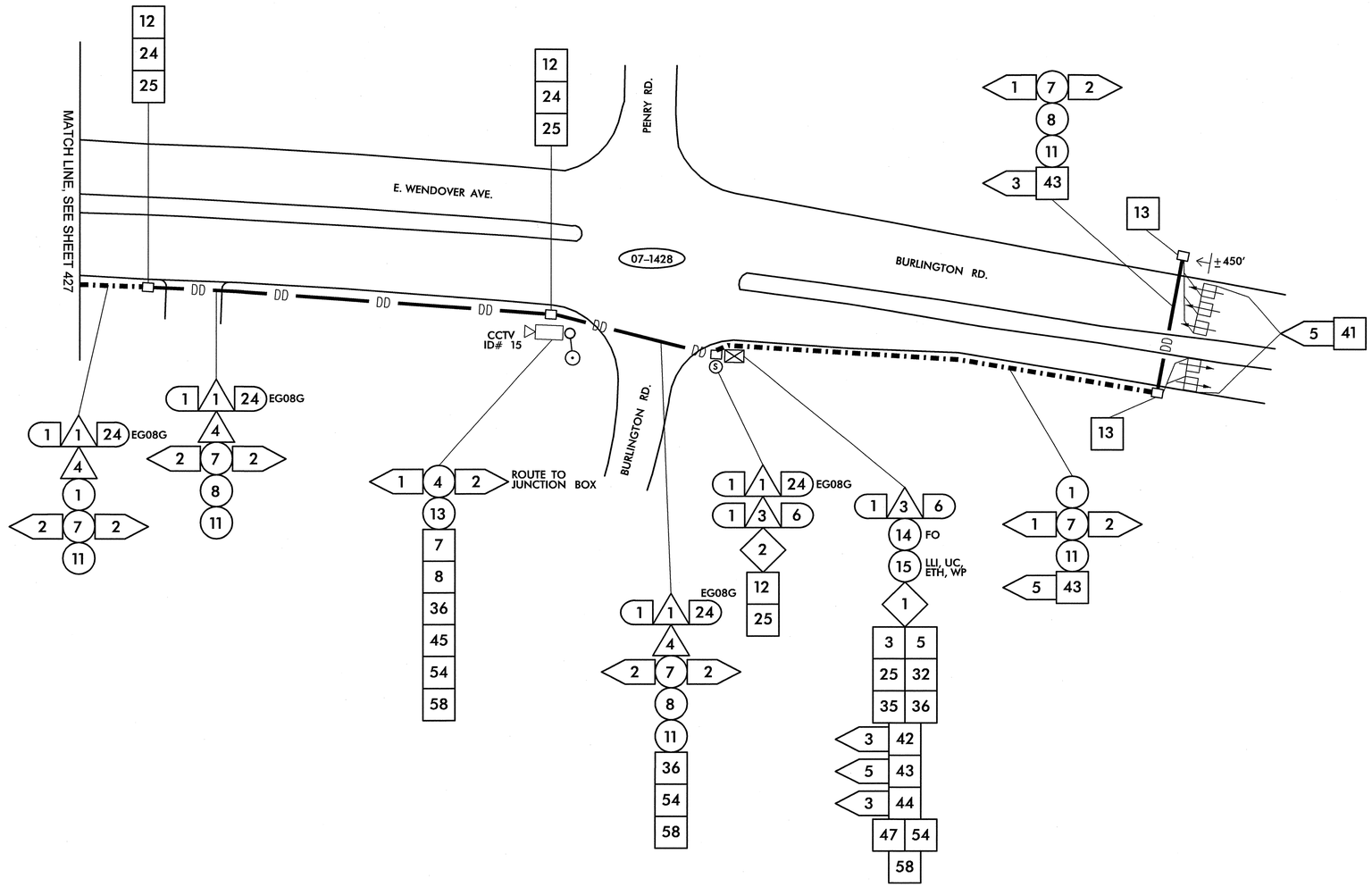
SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht0427.dgn

2/20/2008
f:\systems\projects\U14452020 lg-boro mlsh\SN0427.dgn

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-4711 | 428 |




| | |
|---|---|
| 1 | INSTALL SMFO CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE |
| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
| 6 | REUSE GDOT SMFO CABLE |
| 1 | TRENCH |
| 2 | INSTALL PVC CONDUIT |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT |
| 7 | INSTALL POLYETHYLENE CONDUIT |
| 8 | DIRECTIONAL DRILL CONDUIT |
| 9 | BORE AND JACK CONDUIT |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT |
| 12 | INSTALL CABLE(S) IN EXISTING RISER |
| 13 | INSTALL CABLE(S) IN NEW RISER |
| 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE |
| 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET |
| 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET |
| 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING |
| 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET |
| 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE |
| 3 | INSTALL AERIAL SPLICE ENCLOSURE |
| 4 | INSTALL POLE MOUNTED SPLICE CABINET |
| 5 | INSTALL BASE MOUNTED SPLICE CABINET |
| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
| 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX |
| 12 | INSTALL OVERSIZED JUNCTION BOX |
| 13 | INSTALL STANDARD JUNCTION BOX |
| 14 | REMOVE EXISTING JUNCTION BOX |
| 15 | INSTALL WOOD POLE |
| 16 | REMOVE EXISTING WOOD POLE |
| 17 | INSTALL AERIAL GUY ASSEMBLY |
| 18 | INSTALL STANDARD GUY ASSEMBLY |
| 19 | INSTALL SIDEWALK GUY ASSEMBLY |
| 20 | INSTALL MESSENGER CABLE |
| 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE |
| 22 | REMOVE EXISTING COMMUNICATIONS CABLE |
| 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE |
| 24 | INSTALL DELINEATOR MARKER |
| 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE |
| 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 30 | INSTALL NEW ELECTRICAL SERVICE |
| 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 32 | INSTALL NEW CONTROLLER |
| 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 34 | INSTALL GENERATOR POWER INLET BOX |
| 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 36 | INSTALL UNIFIED CABLE |
| 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 40 | INSTALL RADIO TRANSCEIVER |
| 41 | INSTALL SYSTEM LOOP |
| 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 44 | INSTALL LOCAL LOOP AMPLIFIER |
| 45 | INSTALL CITY WI-FI ANTENNA |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH |
| 47 | INSTALL CODEC |
| 48 | BOND MESSENGER CABLE TO POLE GROUND |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION |
| 50 | INSTALL ANTENNA CABLE |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT |
| 53 | INSTALL DSL ETHERNET SWITCH |
| 54 | INSTALL ETHERNET CABLE |
| 55 | INSTALL TERMINAL SERVER |
| 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
| 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |

NOTE:
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PLANS PREPARED IN THE OFFICE OF:

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(919) 677-2000

750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH
PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht0428.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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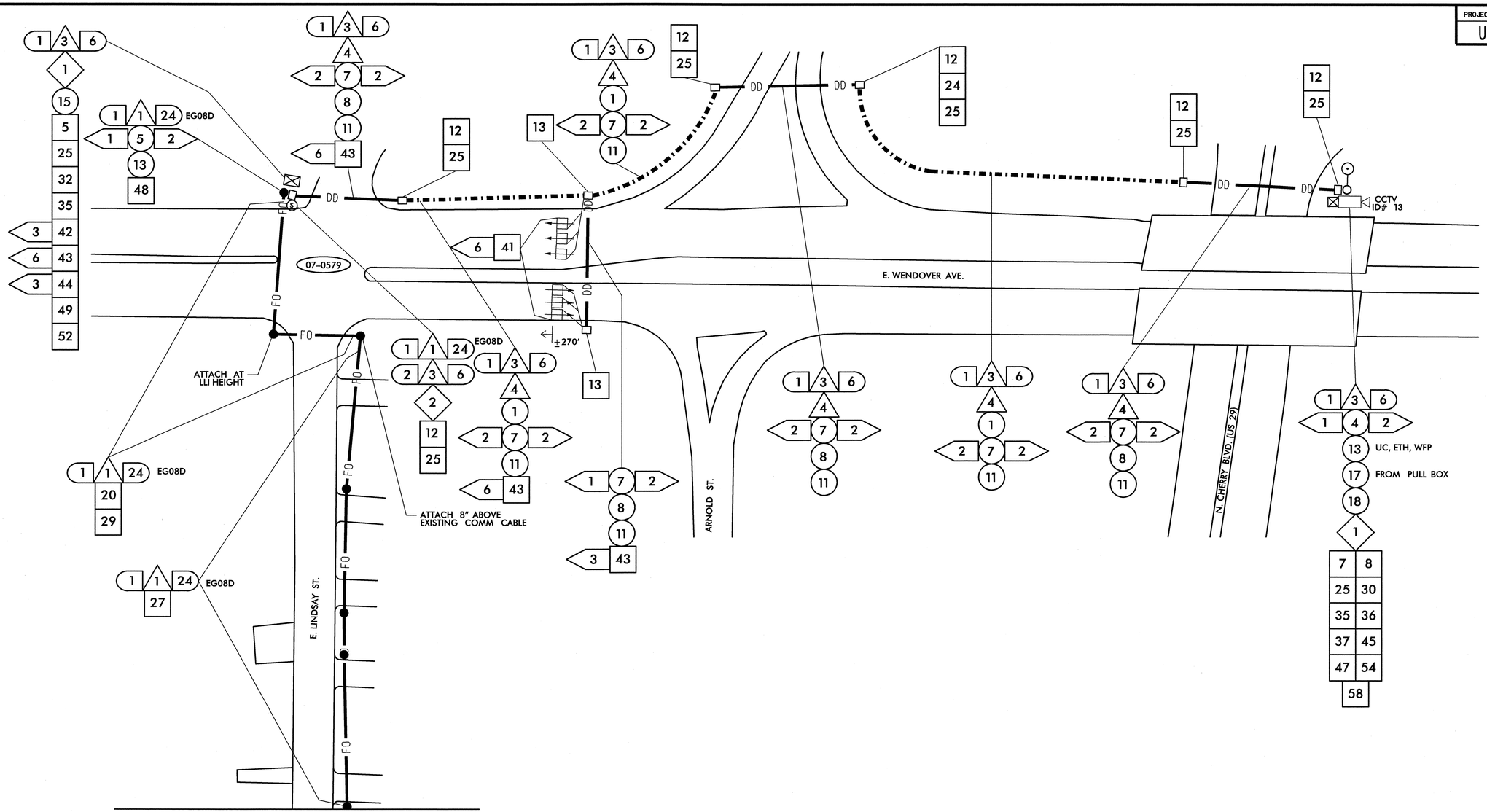
| U-4711 | 429 |




| | |
|---|---|
| 1 | INSTALL SMFO CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE |
| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
| 6 | REUSE GDOT SMFO CABLE |
| 1 | TRENCH |
| 2 | INSTALL PVC CONDUIT |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT |
| 7 | INSTALL POLYETHYLENE CONDUIT |
| 8 | DIRECTIONAL DRILL CONDUIT |
| 9 | BORE AND JACK CONDUIT |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT |
| 12 | INSTALL CABLE(S) IN EXISTING RISER |
| 13 | INSTALL CABLE(S) IN NEW RISER |
| 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE |
| 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET |
| 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET |
| 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING |
| 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET |
| 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE |
| 3 | INSTALL AERIAL SPLICE ENCLOSURE |
| 4 | INSTALL POLE MOUNTED SPLICE CABINET |
| 5 | INSTALL BASE MOUNTED SPLICE CABINET |
| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
| 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX |
| 12 | INSTALL OVERSIZED JUNCTION BOX |
| 13 | INSTALL STANDARD JUNCTION BOX |
| 14 | REMOVE EXISTING JUNCTION BOX |
| 15 | INSTALL WOOD POLE |
| 16 | REMOVE EXISTING WOOD POLE |
| 17 | INSTALL AERIAL GUY ASSEMBLY |
| 18 | INSTALL STANDARD GUY ASSEMBLY |
| 19 | INSTALL SIDEWALK GUY ASSEMBLY |
| 20 | INSTALL MESSENGER CABLE |
| 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE |
| 22 | REMOVE EXISTING COMMUNICATIONS CABLE |
| 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE |
| 24 | INSTALL DELINEATOR MARKER |
| 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE |
| 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 30 | INSTALL NEW ELECTRICAL SERVICE |
| 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 32 | INSTALL NEW CONTROLLER |
| 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 34 | INSTALL GENERATOR POWER INLET BOX |
| 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 36 | INSTALL UNIFIED CABLE |
| 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 40 | INSTALL RADIO TRANSCEIVER |
| 41 | INSTALL SYSTEM LOOP |
| 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 44 | INSTALL LOCAL LOOP AMPLIFIER |
| 45 | INSTALL CITY WI-FI ANTENNA |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH |
| 47 | INSTALL CODEC |
| 48 | BOND MESSENGER CABLE TO POLE GROUND |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION |
| 50 | INSTALL ANTENNA CABLE |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT |
| 53 | INSTALL DSL ETHERNET SWITCH |
| 54 | INSTALL ETHERNET CABLE |
| 55 | INSTALL TERMINAL SERVER |
| 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
| 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

PLANS PREPARED IN THE OFFICE OF:

Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000

Intelligent Transportation Systems, Traffic Engineering and Safety Systems Branch
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 — GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 — REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN — REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE — DATE 2/20/08

CADD Filename: ...\Sht0429.dgn

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| PROJECT REFERENCE NO. | SHEET NO. |
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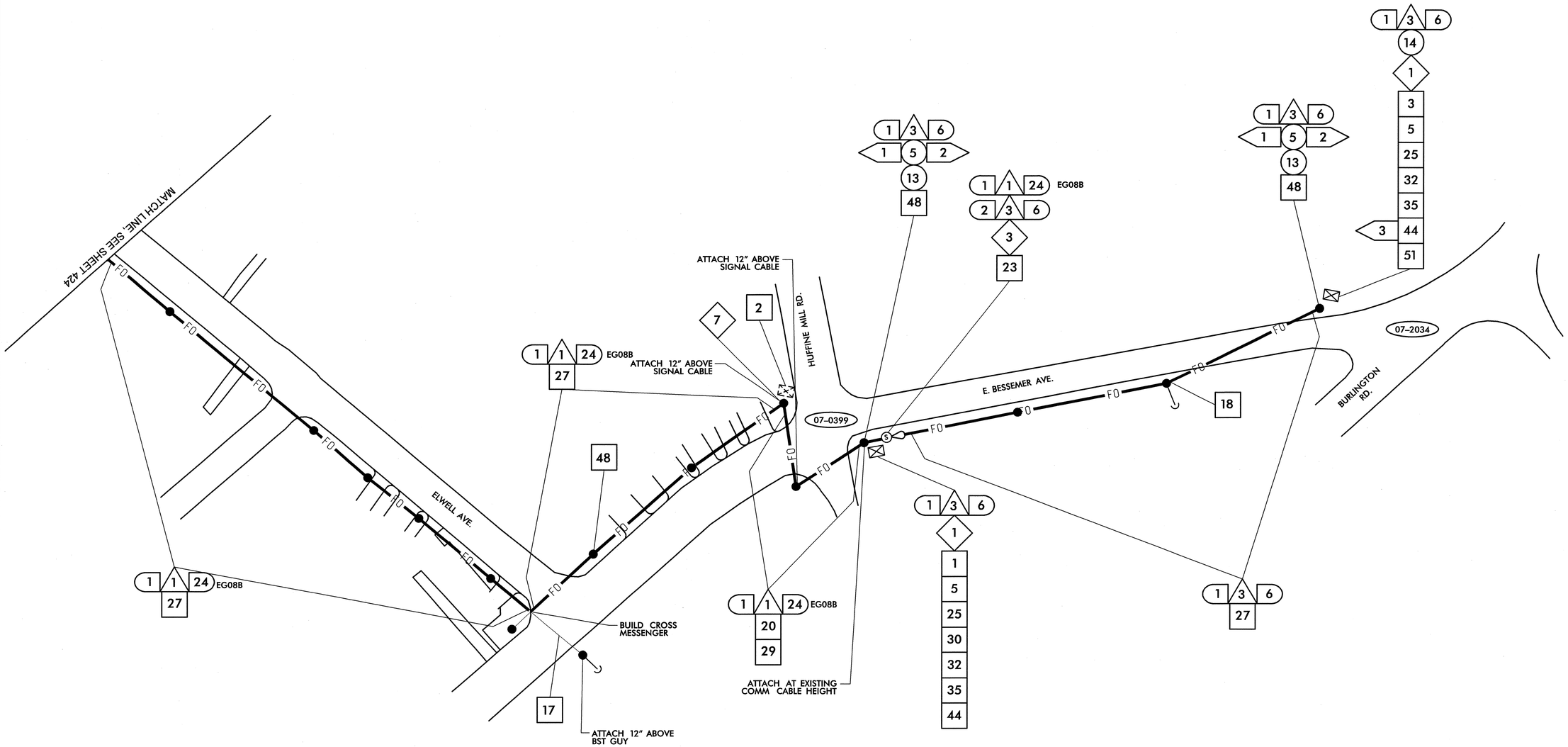
| U-4711 | 430 |




| | | | | | |
|---|---|---|---|---|---|
| 1 | INSTALL SMFO CABLE | 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE | 6 | INSTALL NEW 336S CABINET |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE | 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 3 | INSTALL FIBER OPTIC DROP CABLE | 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 8 | INSTALL CCTV CAMERA WOOD POLE |
| 4 | INSTALL TRACER WIRE | 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET | 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 5 | REUSE NCDOT SMFO CABLE | 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET | 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
| 6 | REUSE GDOT SMFO CABLE | 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING | 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX |
| 1 | TRENCH | 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET | 12 | INSTALL OVERSIZED JUNCTION BOX |
| 2 | INSTALL PVC CONDUIT | 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE | 13 | INSTALL STANDARD JUNCTION BOX |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT | 3 | INSTALL AERIAL SPLICE ENCLOSURE | 14 | REMOVE EXISTING JUNCTION BOX |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD | 4 | INSTALL POLE MOUNTED SPLICE CABINET | 15 | INSTALL WOOD POLE |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING | 5 | INSTALL BASE MOUNTED SPLICE CABINET | 16 | REMOVE EXISTING WOOD POLE |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT | 6 | REMOVE EXISTING SPLICE CABINET | 17 | INSTALL AERIAL GUY ASSEMBLY |
| 7 | INSTALL POLYETHYLENE CONDUIT | 7 | INSTALL TERMINAL SPLICE BOX | 18 | INSTALL STANDARD GUY ASSEMBLY |
| 8 | DIRECTIONAL DRILL CONDUIT | 8 | MODIFY EXISTING SPLICE ENCLOSURE | 19 | INSTALL SIDEWALK GUY ASSEMBLY |
| 9 | BORE AND JACK CONDUIT | 1 | INSTALL CABINET FOUNDATION | 20 | INSTALL MESSENGER CABLE |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT | 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER | 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT | 3 | MODIFY EXISTING CABINET FOUNDATION | 22 | REMOVE EXISTING COMMUNICATIONS CABLE |
| 12 | INSTALL CABLE(S) IN EXISTING RISER | 4 | INSTALL NEW 333 COMMUNICATION CABINET | 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE |
| 13 | INSTALL CABLE(S) IN NEW RISER | 5 | INSTALL NEW 332 BASE MOUNTED CABINET | 24 | INSTALL DELINEATOR MARKER |
| | | | | 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE |

| | | | | | |
|---|---|---|---|---|---|
| 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE | 44 | INSTALL LOCAL LOOP AMPLIFIER | 53 | INSTALL DSL ETHERNET SWITCH |
| 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE | 45 | INSTALL CITY WI-FI ANTENNA | 54 | INSTALL ETHERNET CABLE |
| 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE | 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH | 55 | INSTALL TERMINAL SERVER |
| 29 | LASH CABLE(S) TO NEW MESSENGER CABLE | 47 | INSTALL CODEC | 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
| 30 | INSTALL NEW ELECTRICAL SERVICE | 48 | BOND MESSENGER CABLE TO POLE GROUND | 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 31 | MODIFY EXISTING ELECTRICAL SERVICE | 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION | 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |
| 32 | INSTALL NEW CONTROLLER | 50 | INSTALL ANTENNA CABLE | | |
| 33 | INSTALL EXISTING CABLE IN NEW CABINET | 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT | | |
| 34 | INSTALL GENERATOR POWER INLET BOX | 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT | | |
| 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH | | | | |
| 36 | INSTALL UNIFIED CABLE | | | | |
| 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET | | | | |
| 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA | | | | |
| 39 | INSTALL OMNI-DIRECTIONAL ANTENNA | | | | |
| 40 | INSTALL RADIO TRANSCEIVER | | | | |
| 41 | INSTALL SYSTEM LOOP | | | | |
| 42 | INSTALL SYSTEM LOOP AMPLIFIER | | | | |
| 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE | | | | |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


PLANS PREPARED IN THE OFFICE OF:
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Traffic Engineering and Safety Systems Branch
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
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SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/29/08 DATE

CADD Filename: ...\Sht0430.dgn

2/29/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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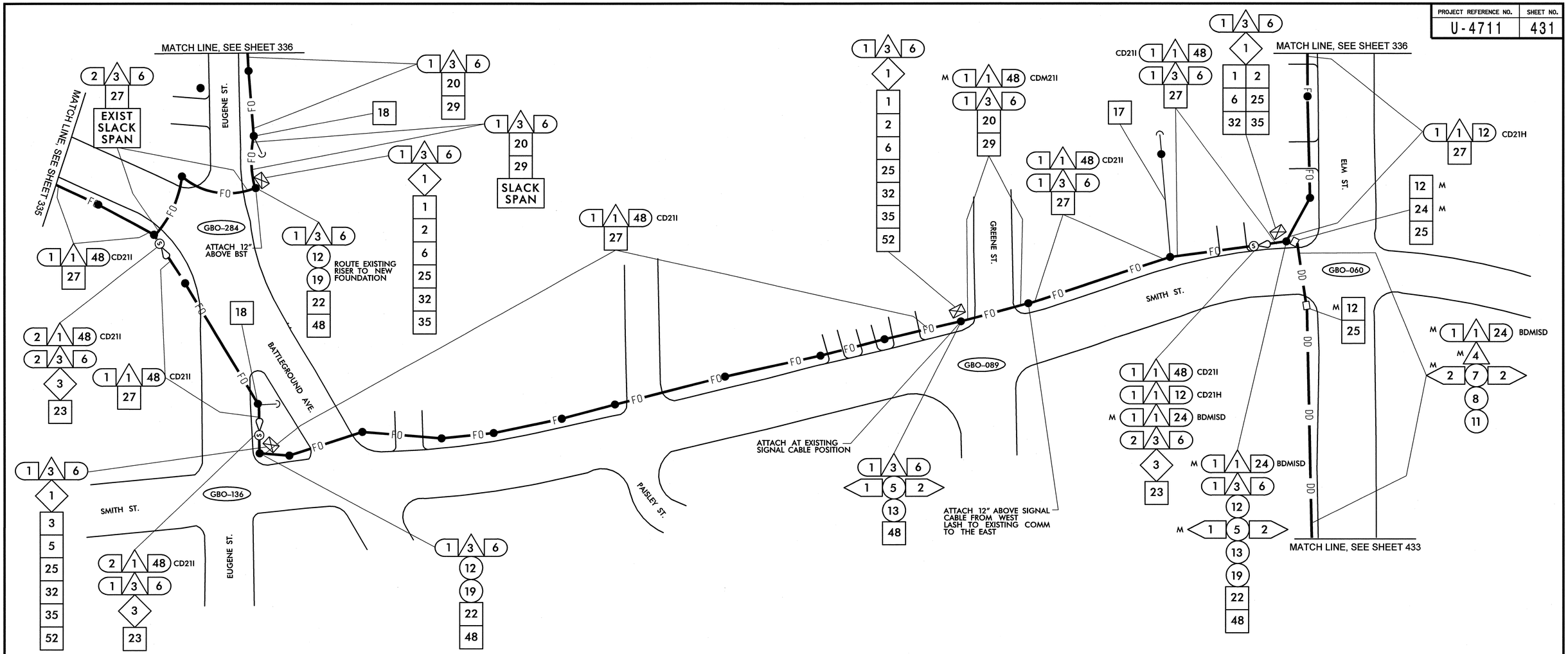
| U-4711 | 431 |




NOTE:
THIS AREA HAS BEEN DETERMINED TO CONTAIN PROPERTIES WITH DOCUMENTED HISTORIC SIGNIFICANCE. IF IT IS NECESSARY TO DEVIATE FROM THESE PLANS IN THIS AREA, PLEASE 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.

1. INSTALL SMFO CABLE
2. INSTALL PLENUM RATED FIBER OPTIC CABLE
3. INSTALL FIBER OPTIC DROP CABLE
4. INSTALL TRACER WIRE
5. REUSE NCDOT SMFO CABLE
6. REUSE GDOT SMFO CABLE

1. TRENCH
2. INSTALL PVC CONDUIT
3. INSTALL RIGID, GALVANIZED STEEL CONDUIT
4. INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
5. INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING
6. INSTALL OUTER-DUCT POLYETHYLENE CONDUIT
7. INSTALL POLYETHYLENE CONDUIT
8. DIRECTIONAL DRILL CONDUIT
9. BORE AND JACK CONDUIT
10. INSTALL CABLE(S) IN EXISTING CONDUIT
11. INSTALL CABLE(S) IN NEW CONDUIT
12. INSTALL CABLE(S) IN EXISTING RISER
13. INSTALL CABLE(S) IN NEW RISER
14. INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE
15. INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
16. INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
17. INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET
18. INSTALL NEW RISER INTO POLE MOUNTED CABINET
19. REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING

1. INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET
2. INSTALL UNDERGROUND SPLICE ENCLOSURE
3. INSTALL AERIAL SPLICE ENCLOSURE
4. INSTALL POLE MOUNTED SPLICE CABINET
5. INSTALL BASE MOUNTED SPLICE CABINET
6. REMOVE EXISTING SPLICE CABINET
7. INSTALL TERMINAL SPLICE BOX
8. MODIFY EXISTING SPLICE ENCLOSURE

1. INSTALL CABINET FOUNDATION
2. REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER
3. MODIFY EXISTING CABINET FOUNDATION
4. INSTALL NEW 333 COMMUNICATION CABINET
5. INSTALL NEW 332 BASE MOUNTED CABINET
6. INSTALL NEW 336S CABINET
7. INSTALL CCTV CAMERA ASSEMBLY
8. INSTALL CCTV CAMERA WOOD POLE
9. INSTALL CCTV METAL POLE AND FOUNDATION
10. INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX
11. INSTALL SPECIAL OVERSIZED JUNCTION BOX
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22. REMOVE EXISTING COMMUNICATIONS CABLE
23. INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE
24. INSTALL DELINEATOR MARKER
25. STORE 30 FEET OF EACH COMMUNICATIONS CABLE
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27. LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE
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30. INSTALL NEW ELECTRICAL SERVICE
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32. INSTALL NEW CONTROLLER
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PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000


Traffic Engineering and Safety Systems Branch
Intelligent Transportation Systems
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 — GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 — REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN — REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNLO

SIGNATURE — DATE 2/26/08

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2/20/2008
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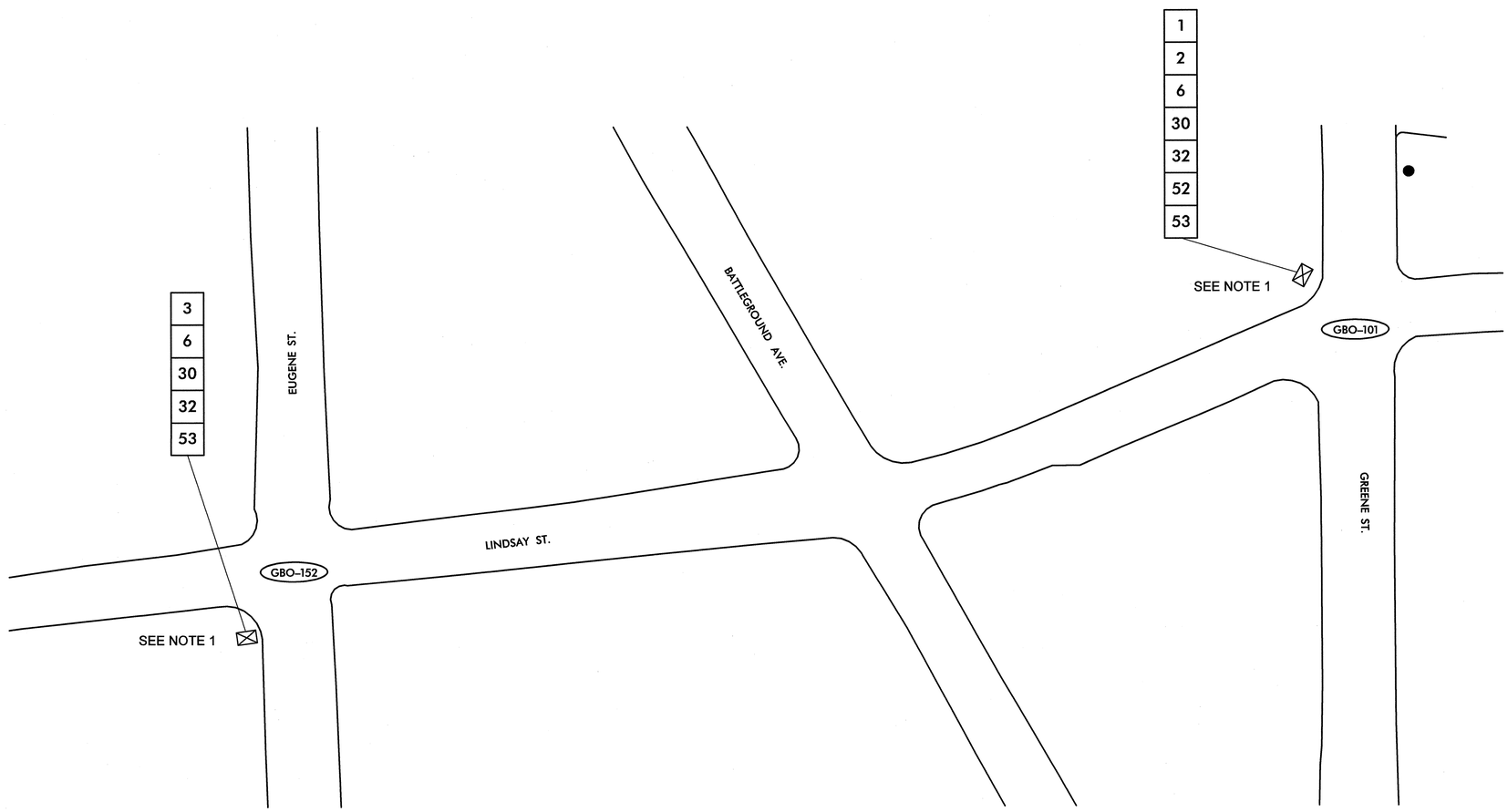
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-4711 | 432 |




NOTES (THIS PAGE ONLY):
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| 1 | INSTALL SMFO CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE |
| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
| 6 | REUSE GDOT SMFO CABLE |
| 1 | TRENCH |
| 2 | INSTALL PVC CONDUIT |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT |
| 7 | INSTALL POLYETHYLENE CONDUIT |
| 8 | DIRECTIONAL DRILL CONDUIT |
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PLANS PREPARED IN THE OFFICE OF:
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P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000



750 Greenfield Pkwy., Garner, NC 27529


SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 — GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 — REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN — REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE — DATE 2/20/08

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2/20/2008
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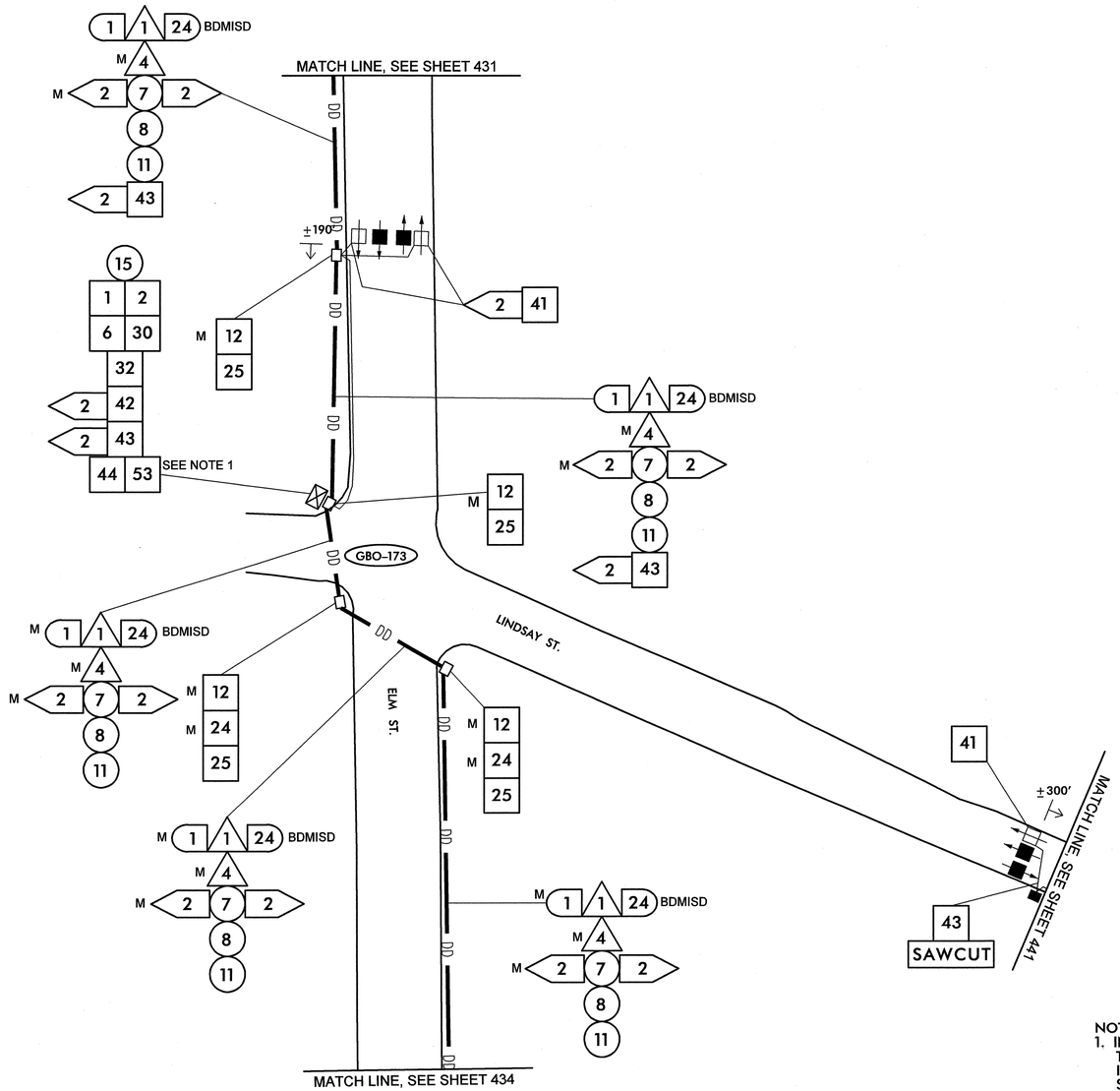
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-4711 | 433 |

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Public Authority of North Carolina Department of Transportation
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

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| PLAN DATE: FEBRUARY, 2008 | REVIEWED BY: K.W. SMITH |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO
SIGNATURE 2/29/08 DATE
CADD Filename: ...\Sht0433m.dgn

2/29/2008
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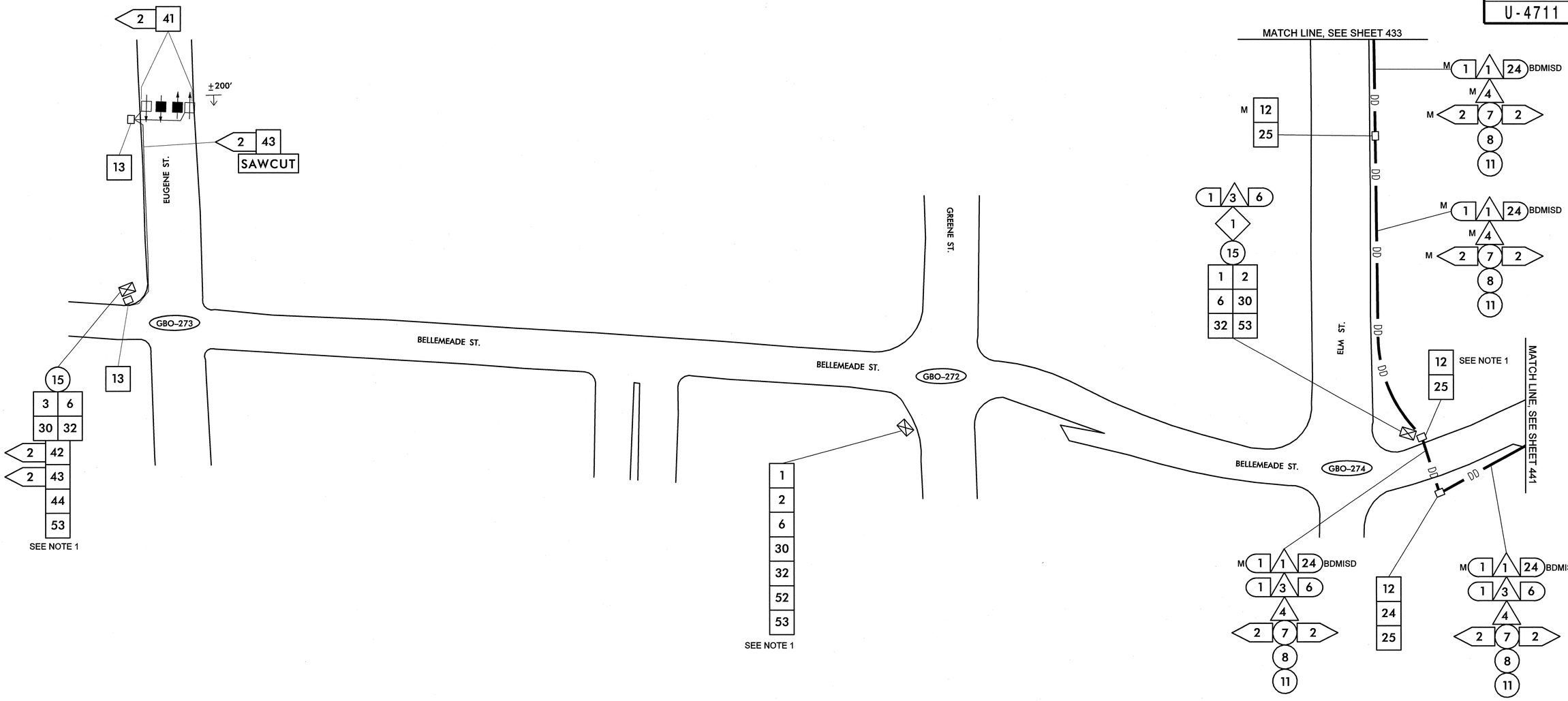
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-4711 | 434 |

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| 45 | INSTALL CITY WI-FI ANTENNA |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH |
| 47 | INSTALL CODEC |
| 48 | BOND MESSENGER CABLE TO POLE GROUND |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION |
| 50 | INSTALL ANTENNA CABLE |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT |
| 53 | INSTALL DSL ETHERNET SWITCH |
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| 55 | INSTALL TERMINAL SERVER |
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| 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000


Transportation Mobility and Safety Division
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/29/08 DATE

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2/29/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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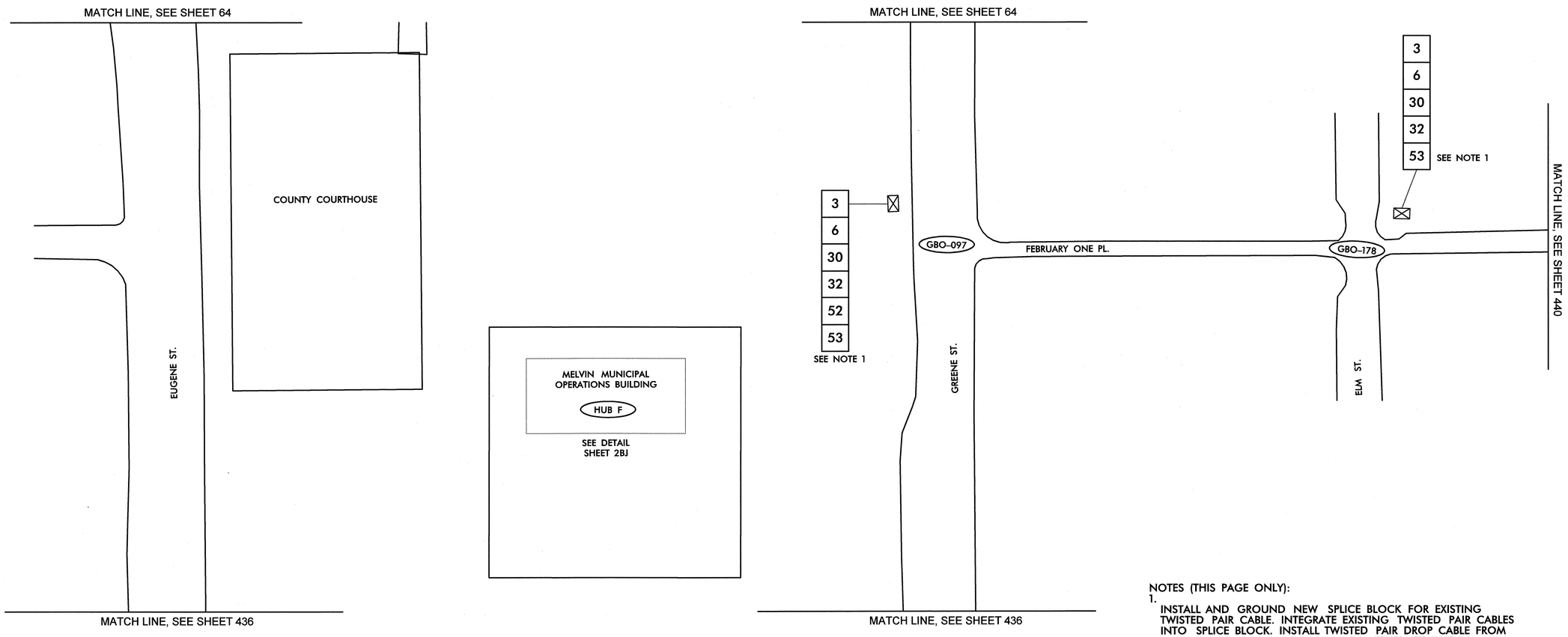
| U-4711 | 435 |




NOTES (THIS PAGE ONLY):

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2. THIS AREA HAS BEEN DETERMINED TO CONTAIN PROPERTIES WITH DOCUMENTED HISTORIC SIGNIFICANCE. IF IT IS NECESSARY TO DEVIATE FROM THESE PLANS IN THIS AREA, PLEASE 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.

1. INSTALL SMFO CABLE
2. INSTALL PLENUM RATED FIBER OPTIC CABLE
3. INSTALL FIBER OPTIC DROP CABLE
4. INSTALL TRACER WIRE
5. REUSE NCDOT SMFO CABLE
6. REUSE GDOT SMFO CABLE
1. TRENCH
2. INSTALL PVC CONDUIT
3. INSTALL RIGID, GALVANIZED STEEL CONDUIT
4. INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
5. INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING
6. INSTALL OUTER-DUCT POLYETHYLENE CONDUIT
7. INSTALL POLYETHYLENE CONDUIT
8. DIRECTIONAL DRILL CONDUIT
9. BORE AND JACK CONDUIT
10. INSTALL CABLE(S) IN EXISTING CONDUIT
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13. INSTALL CABLE(S) IN NEW RISER
14. INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE
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19. REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING
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2. INSTALL UNDERGROUND SPLICE ENCLOSURE
3. INSTALL AERIAL SPLICE ENCLOSURE
4. INSTALL POLE MOUNTED SPLICE CABINET
5. INSTALL BASE MOUNTED SPLICE CABINET
6. REMOVE EXISTING SPLICE CABINET
7. INSTALL TERMINAL SPLICE BOX
8. MODIFY EXISTING SPLICE ENCLOSURE
1. INSTALL CABINET FOUNDATION
2. REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER
3. MODIFY EXISTING CABINET FOUNDATION
4. INSTALL NEW 333 COMMUNICATION CABINET
5. INSTALL NEW 332 BASE MOUNTED CABINET
6. INSTALL NEW 336S CABINET
7. INSTALL CCTV CAMERA ASSEMBLY
8. INSTALL CCTV CAMERA WOOD POLE
9. INSTALL CCTV METAL POLE AND FOUNDATION
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SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

| | | | |
|---|---|---|---|
| PLAN DATE: FEBRUARY, 2008 | REVIEWED BY: K.W. SMITH | | |
| PREPARED BY: K.D. VANPATTEN | REVIEWED BY: M.W. DUNZO | | |
| REVISIONS | | INIT. | DATE |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO
SIGNATURE 3/3/08 DATE

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| PROJECT REFERENCE NO. | SHEET NO. |
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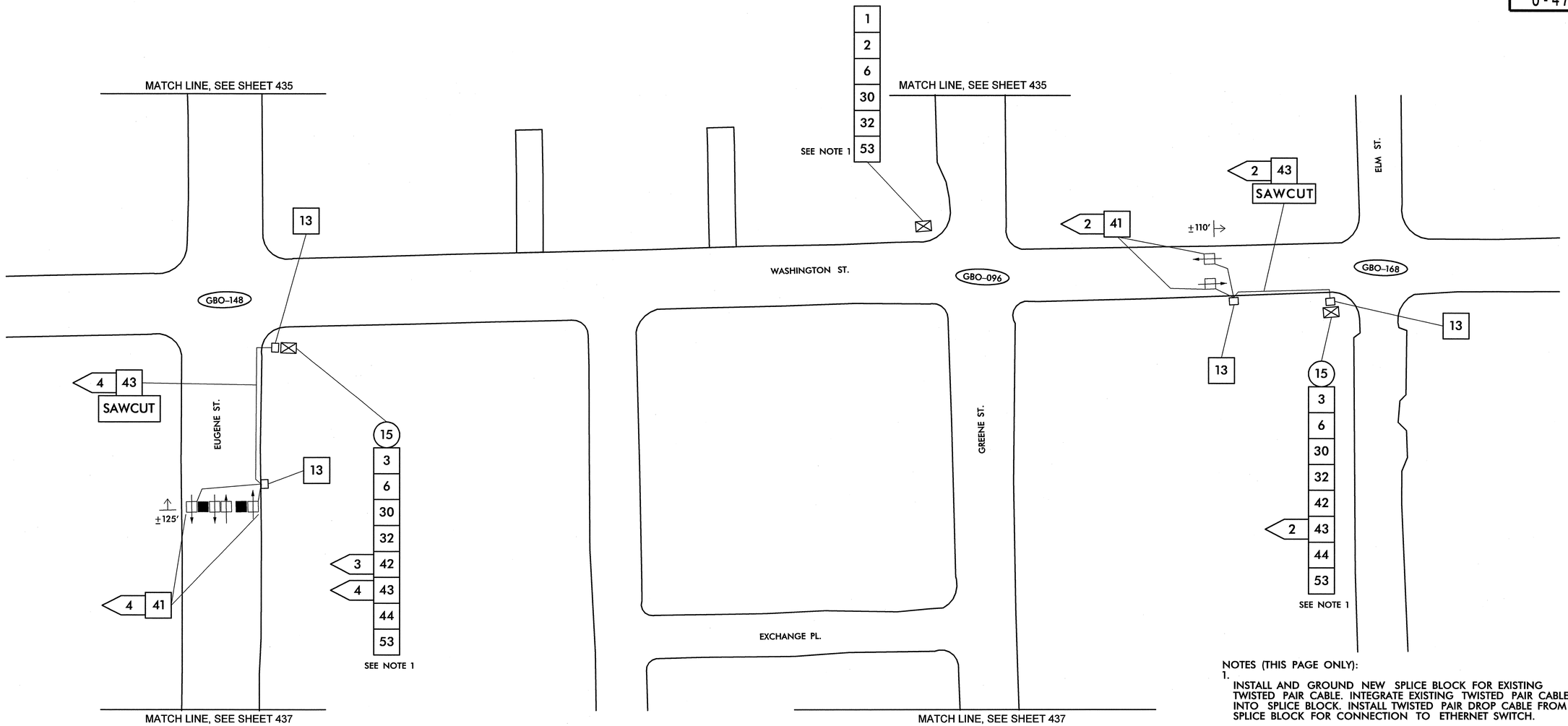
| U-4711 | 436 |

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PLANS PREPARED IN THE OFFICE OF:
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P.O. Box 33068
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Traffic Engineering and Safety Systems Branch
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH
PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO
SIGNATURE 2/20/08 DATE
CADD Filename: ...\Sht0436.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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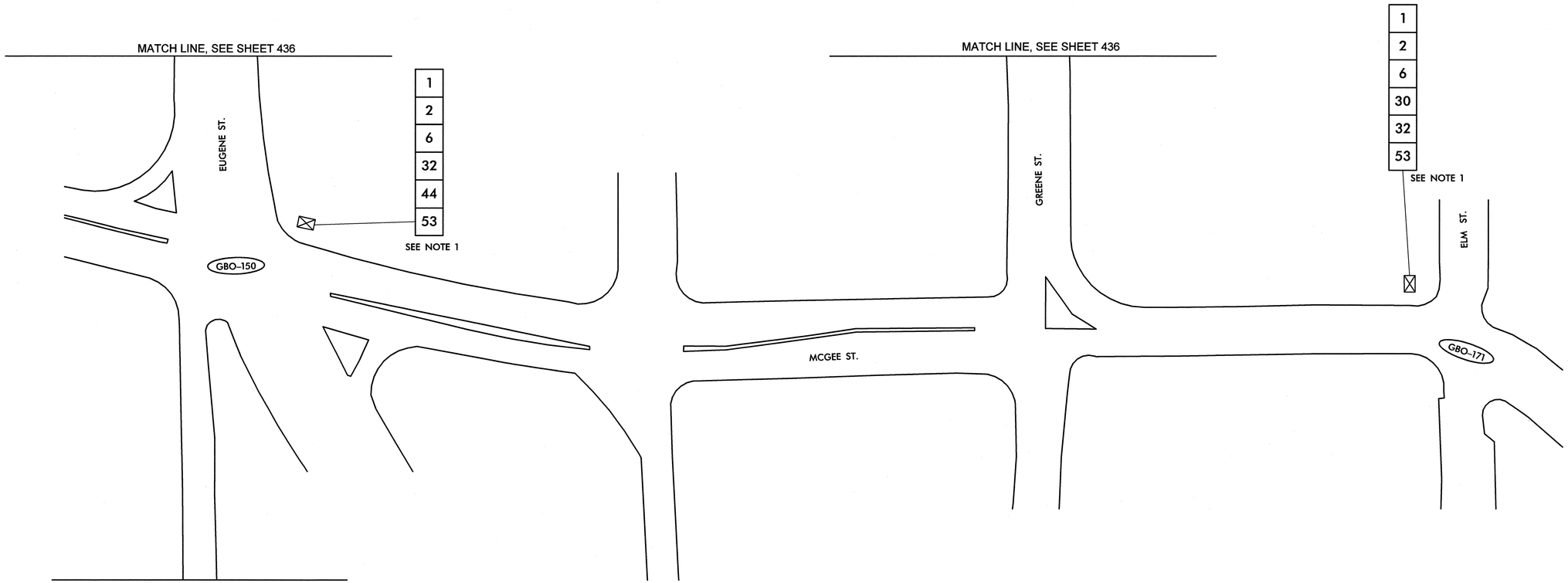
| U-4711 | 437 |

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SIGNATURE DATE 2/20/08

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| PROJECT REFERENCE NO. | SHEET NO. |
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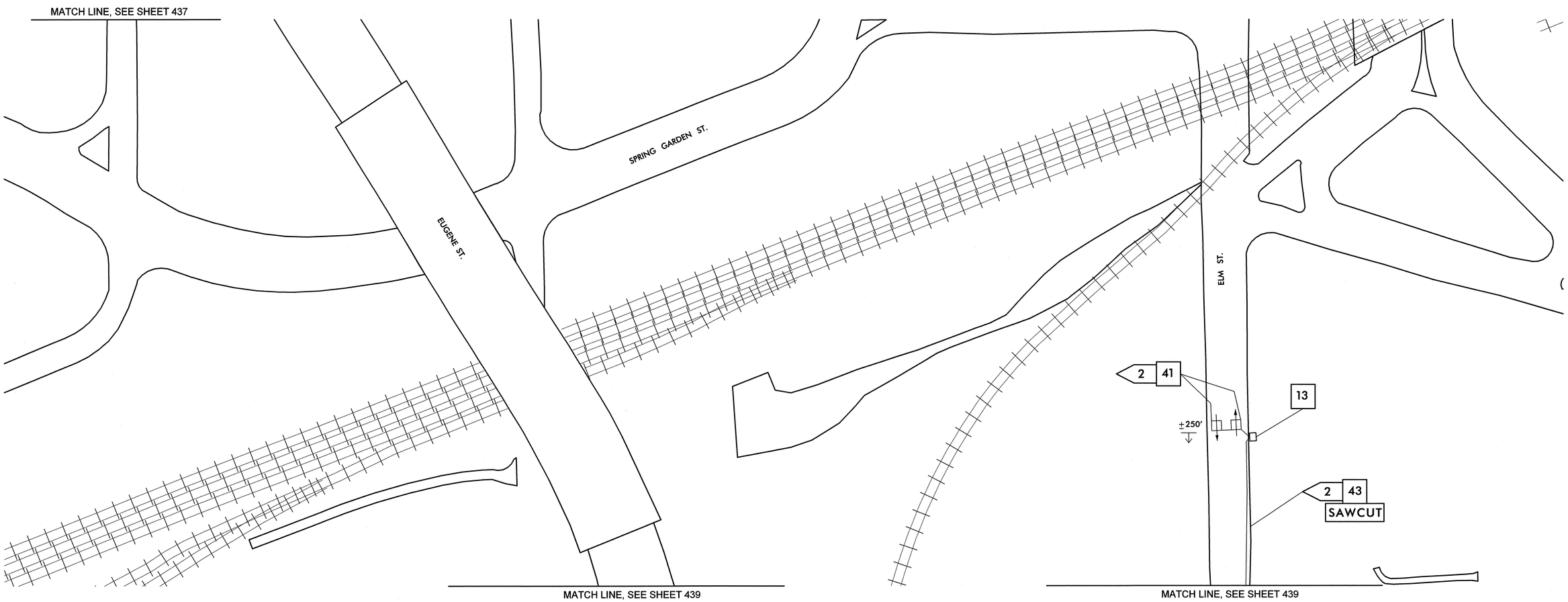
| U-4711 | 438 |

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4. INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
5. INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING
6. INSTALL OUTER-DUCT POLYETHYLENE CONDUIT
7. INSTALL POLYETHYLENE CONDUIT
8. DIRECTIONAL DRILL CONDUIT
9. BORE AND JACK CONDUIT
10. INSTALL CABLE(S) IN EXISTING CONDUIT
11. INSTALL CABLE(S) IN NEW CONDUIT
12. INSTALL CABLE(S) IN EXISTING RISER
13. INSTALL CABLE(S) IN NEW RISER
14. INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE
15. INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
16. INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
17. INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET
18. INSTALL NEW RISER INTO POLE MOUNTED CABINET
19. REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING

1. INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET
2. INSTALL UNDERGROUND SPLICE ENCLOSURE
3. INSTALL AERIAL SPLICE ENCLOSURE
4. INSTALL POLE MOUNTED SPLICE CABINET
5. INSTALL BASE MOUNTED SPLICE CABINET
6. REMOVE EXISTING SPLICE CABINET
7. INSTALL TERMINAL SPLICE BOX
8. MODIFY EXISTING SPLICE ENCLOSURE

1. INSTALL CABINET FOUNDATION
2. REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER
3. MODIFY EXISTING CABINET FOUNDATION
4. INSTALL NEW 333 COMMUNICATION CABINET
5. INSTALL NEW 332 BASE MOUNTED CABINET
6. INSTALL NEW 336S CABINET
7. INSTALL CCTV CAMERA ASSEMBLY
8. INSTALL CCTV CAMERA WOOD POLE
9. INSTALL CCTV METAL POLE AND FOUNDATION
10. INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX
11. INSTALL SPECIAL OVERSIZED JUNCTION BOX
12. INSTALL OVERSIZED JUNCTION BOX
13. INSTALL STANDARD JUNCTION BOX
14. REMOVE EXISTING JUNCTION BOX
15. INSTALL WOOD POLE
16. REMOVE EXISTING WOOD POLE
17. INSTALL AERIAL GUY ASSEMBLY
18. INSTALL STANDARD GUY ASSEMBLY
19. INSTALL SIDEWALK GUY ASSEMBLY
20. INSTALL MESSENGER CABLE
21. REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE
22. REMOVE EXISTING COMMUNICATIONS CABLE
23. INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE
24. INSTALL DELINEATOR MARKER
25. STORE 30 FEET OF EACH COMMUNICATIONS CABLE
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27. LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE
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32. INSTALL NEW CONTROLLER
33. INSTALL EXISTING CABLE IN NEW CABINET
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35. INSTALL LOCAL GIGABIT ETHERNET SWITCH
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48. BOND MESSENGER CABLE TO POLE GROUND
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50. INSTALL ANTENNA CABLE
51. RECONNECT RAILROAD PREEMPTION EQUIPMENT
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58. INSTALL WIRELESS ACCESS POINT POWER CABLE

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000



Traffic Engineering and Safety Systems Branch
Intelligent Transportation Systems
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
750 Greenfield Pkwy., Garner, NC 27529


SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

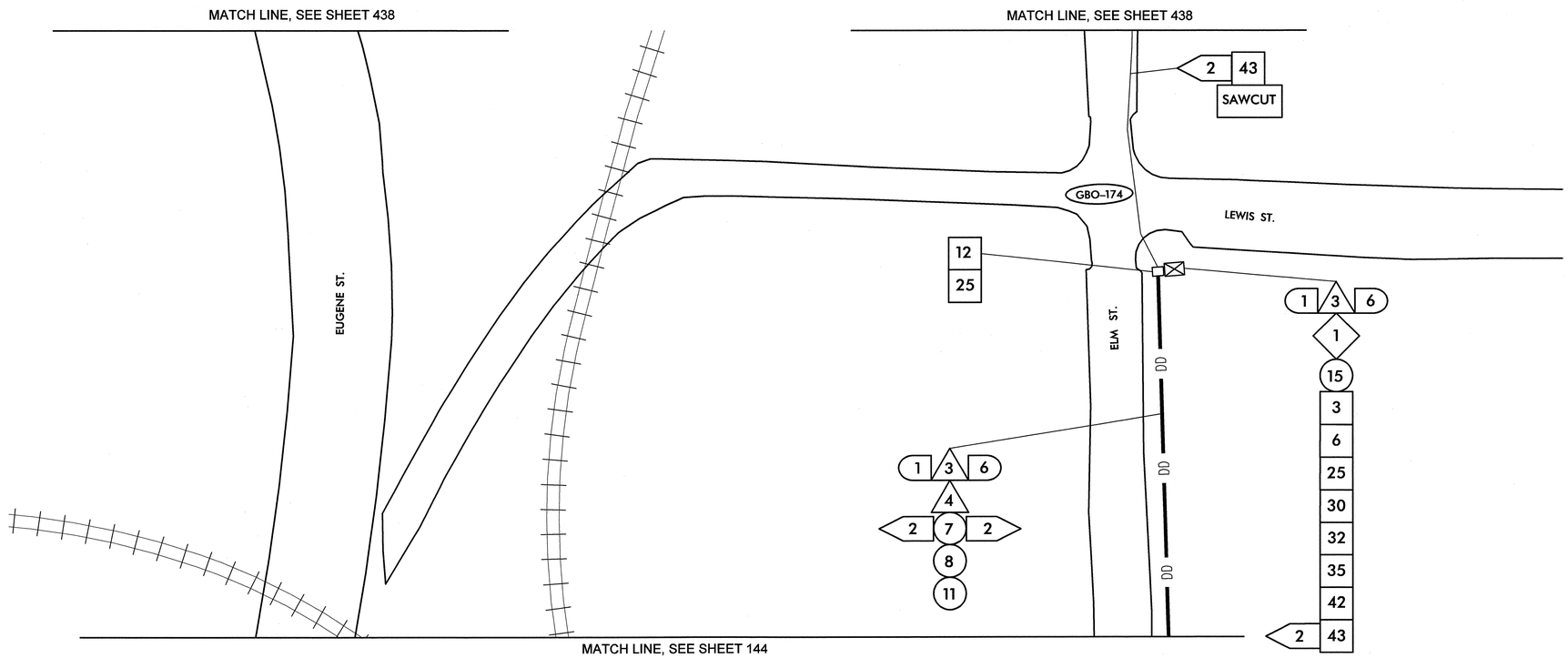
| | |
|---|---|
| PLAN DATE: FEBRUARY, 2008 | REVIEWED BY: K.W. SMITH |
| PREPARED BY: K.D. VANPATTEN | REVIEWED BY: M.W. DUNZO |

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO
SIGNATURE DATE 2/20/08
CADD Filename: ...\Sht0438.dgn

2/20/2008
f:\systems\proj\ects\U4\462020 (g-boro mfs)\SHT0438.dgn

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-4711 | 439 |




NOTES (THIS PAGE ONLY):

1. INSTALL AND GROUND NEW SPLICE BLOCK FOR EXISTING TWISTED PAIR CABLE. INTEGRATE EXISTING TWISTED PAIR CABLES INTO SPLICE BLOCK. INSTALL TWISTED PAIR DROP CABLE FROM SPLICE BLOCK FOR CONNECTION TO ETHERNET SWITCH.
2. THIS AREA HAS BEEN DETERMINED TO CONTAIN PROPERTIES WITH DOCUMENTED HISTORIC SIGNIFICANCE. IF IT IS NECESSARY TO DEVIATE FROM THESE PLANS IN THIS AREA, PLEASE 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.

1. INSTALL SMFO CABLE
2. INSTALL PLENUM RATED FIBER OPTIC CABLE
3. INSTALL FIBER OPTIC DROP CABLE
4. INSTALL TRACER WIRE
5. REUSE NCDOT SMFO CABLE
6. REUSE GDOT SMFO CABLE

1. TRENCH
2. INSTALL PVC CONDUIT
3. INSTALL RIGID, GALVANIZED STEEL CONDUIT
4. INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
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NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000



Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
750 Greenfield Pkwy., Garner, NC 27529


N

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 — GUILFORD COUNTY

| | |
|---|---|
| PLAN DATE: FEBRUARY, 2008 | REVIEWED BY: K.W. SMITH |
| PREPARED BY: K.D. VANPATTEN | REVIEWED BY: M.W. DUNZO |

| REVISIONS | INIT. | DATE |
|---|---|---|
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE — DATE 2/20/08

CADD Filename: ...\Sht0439.dgn

2/20/2008
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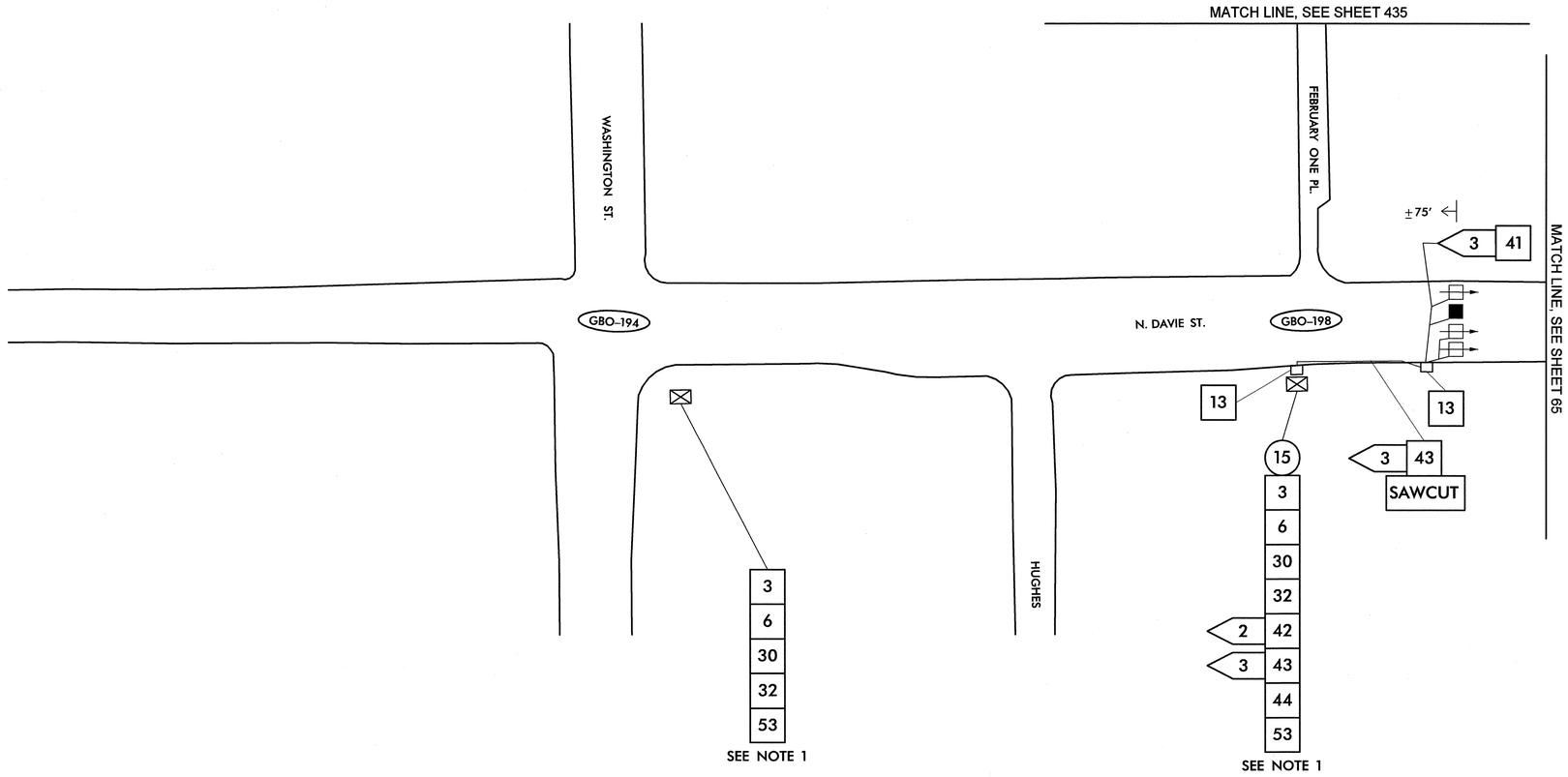
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-4711 | 440 |




NOTES (THIS PAGE ONLY):

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| 1 | TRENCH |
| 2 | INSTALL PVC CONDUIT |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
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| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
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| 24 | INSTALL DELINEATOR MARKER |
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| 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
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NOTE:
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PLANS PREPARED IN THE OFFICE OF:
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Public Engineering and Safety Systems Branch
Intelligent Transportation Systems
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750 Greenfield Pkwy., Garner, NC 27529


SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

| | |
|---|---|
| PLAN DATE: FEBRUARY, 2008 | REVIEWED BY: K.W. SMITH |
| PREPARED BY: K.D. VANPATTEN | REVIEWED BY: M.W. DUNZO |

| REVISIONS | INIT. | DATE |
|---|---|---|
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/20/08 DATE

CADD Filename: ...\Sht0440.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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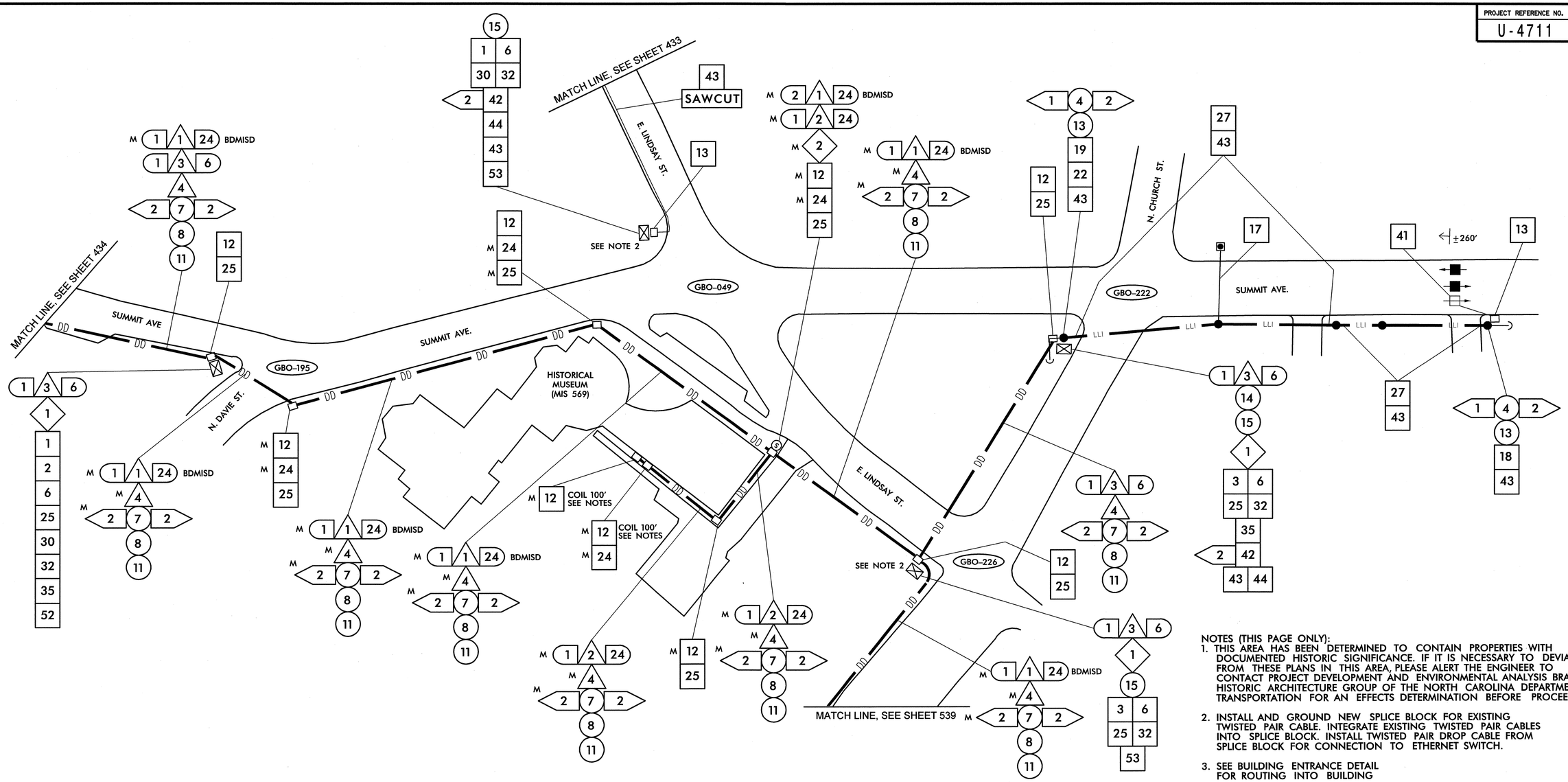
| U-4711 | 441 |

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3. SEE BUILDING ENTRANCE DETAIL FOR ROUTING INTO BUILDING

| | |
|---|---|
| 1 | INSTALL SMFO CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
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| 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE |
| 22 | REMOVE EXISTING COMMUNICATIONS CABLE |
| 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE |
| 24 | INSTALL DELINEATOR MARKER |
| 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE |
| 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 30 | INSTALL NEW ELECTRICAL SERVICE |
| 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 32 | INSTALL NEW CONTROLLER |
| 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 34 | INSTALL GENERATOR POWER INLET BOX |
| 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 36 | INSTALL UNIFIED CABLE |
| 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 40 | INSTALL RADIO TRANSCEIVER |
| 41 | INSTALL SYSTEM LOOP |
| 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
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| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH |
| 47 | INSTALL CODEC |
| 48 | BOND MESSENGER CABLE TO POLE GROUND |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION |
| 50 | INSTALL ANTENNA CABLE |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT |
| 53 | INSTALL DSL ETHERNET SWITCH |
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| 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
| 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

PLANS PREPARED IN THE OFFICE OF:

Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000

Traffic Engineering and Safety Systems Branch
Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 — GUILFORD COUNTY

| | |
|---|---|
| PLAN DATE: FEBRUARY, 2008 | REVIEWED BY: K.W. SMITH |
| PREPARED BY: K.D. VANPATTEN | REVIEWED BY: M.W. DUNZO |

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE — DATE 2/29/08

CADD Filename: ...\Sht044lm.dgn

2/29/2008
f:\systems\projects\U4711\52020 tg-bara mls\SH044lm.dgn

| PROJECT REFERENCE NO. | SHEET NO. |
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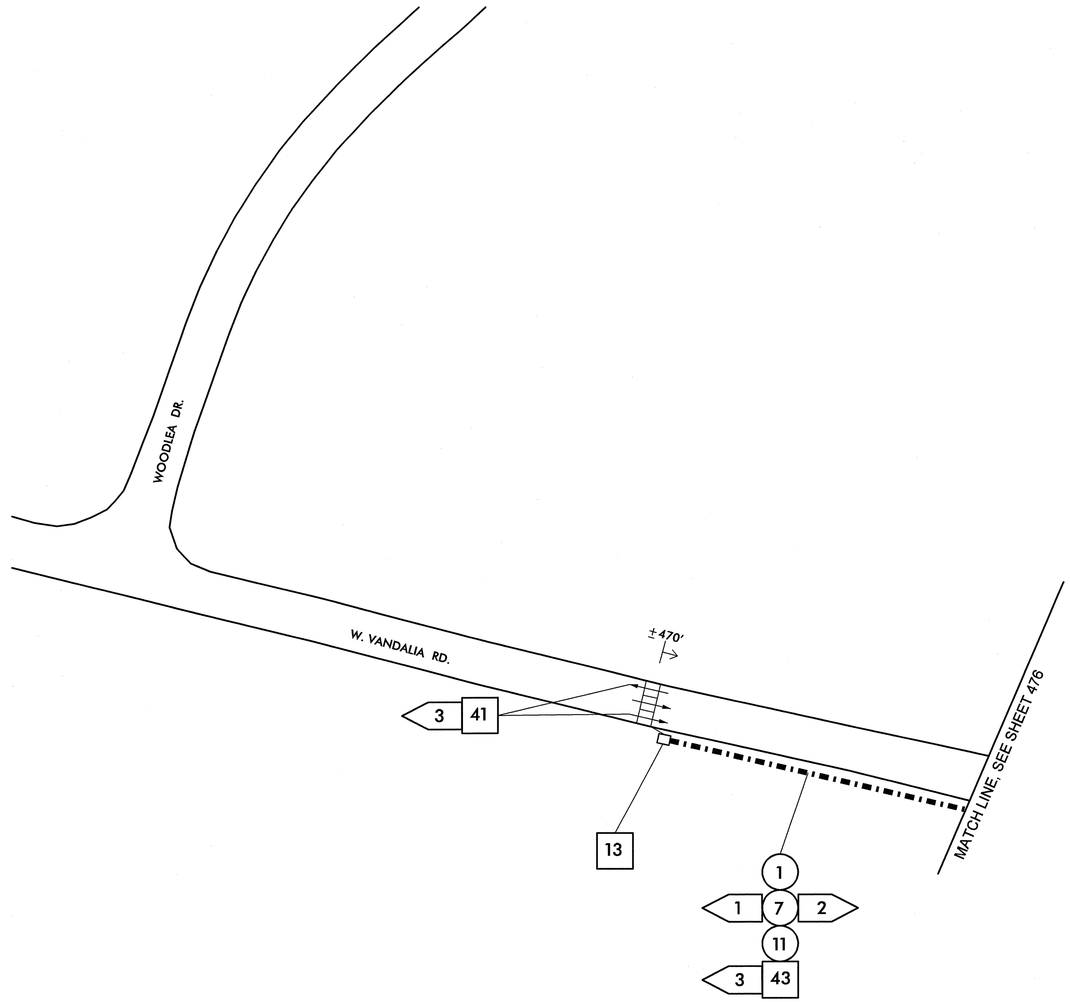
| U-4711 | 442 |




| | |
|---|---|
| 1 | INSTALL SMFO CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE |
| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
| 6 | REUSE GDOT SMFO CABLE |
| 1 | TRENCH |
| 2 | INSTALL PVC CONDUIT |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT |
| 7 | INSTALL POLYETHYLENE CONDUIT |
| 8 | DIRECTIONAL DRILL CONDUIT |
| 9 | BORE AND JACK CONDUIT |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT |
| 12 | INSTALL CABLE(S) IN EXISTING RISER |
| 13 | INSTALL CABLE(S) IN NEW RISER |
| 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE |
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| 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE |
| 3 | INSTALL AERIAL SPLICE ENCLOSURE |
| 4 | INSTALL POLE MOUNTED SPLICE CABINET |
| 5 | INSTALL BASE MOUNTED SPLICE CABINET |
| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
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| 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX |
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(919) 677-2000

750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht0442.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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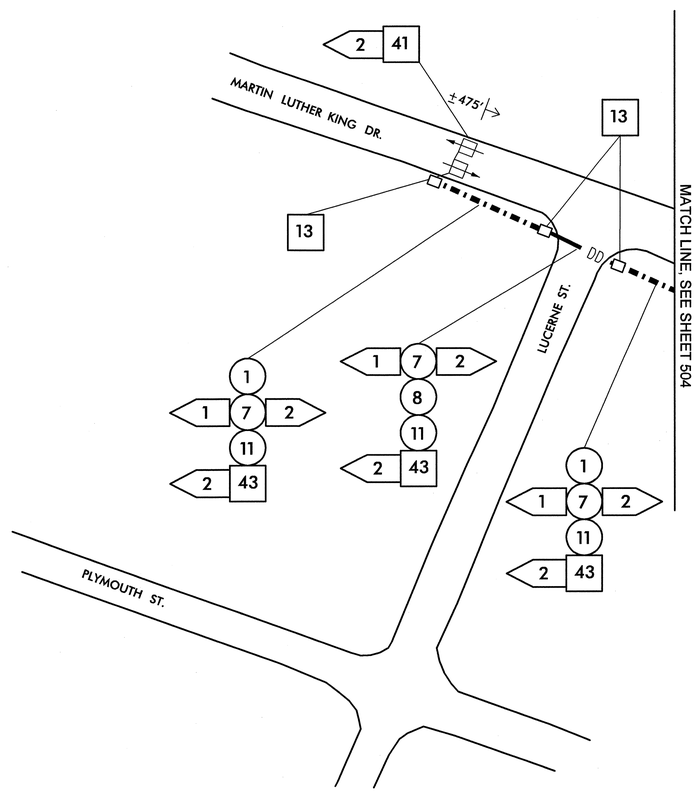
| U-4711 | 443 |

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| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
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| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
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NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

PLANS PREPARED IN THE OFFICE OF:

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P.O. Box 33068
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(919) 677-2000

Traffic Engineering and Safety Systems Branch
Intelligent Transportation Systems
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/26/08

CADD Filename: ...\Sht0443.dgn

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| PROJECT REFERENCE NO. | SHEET NO. |
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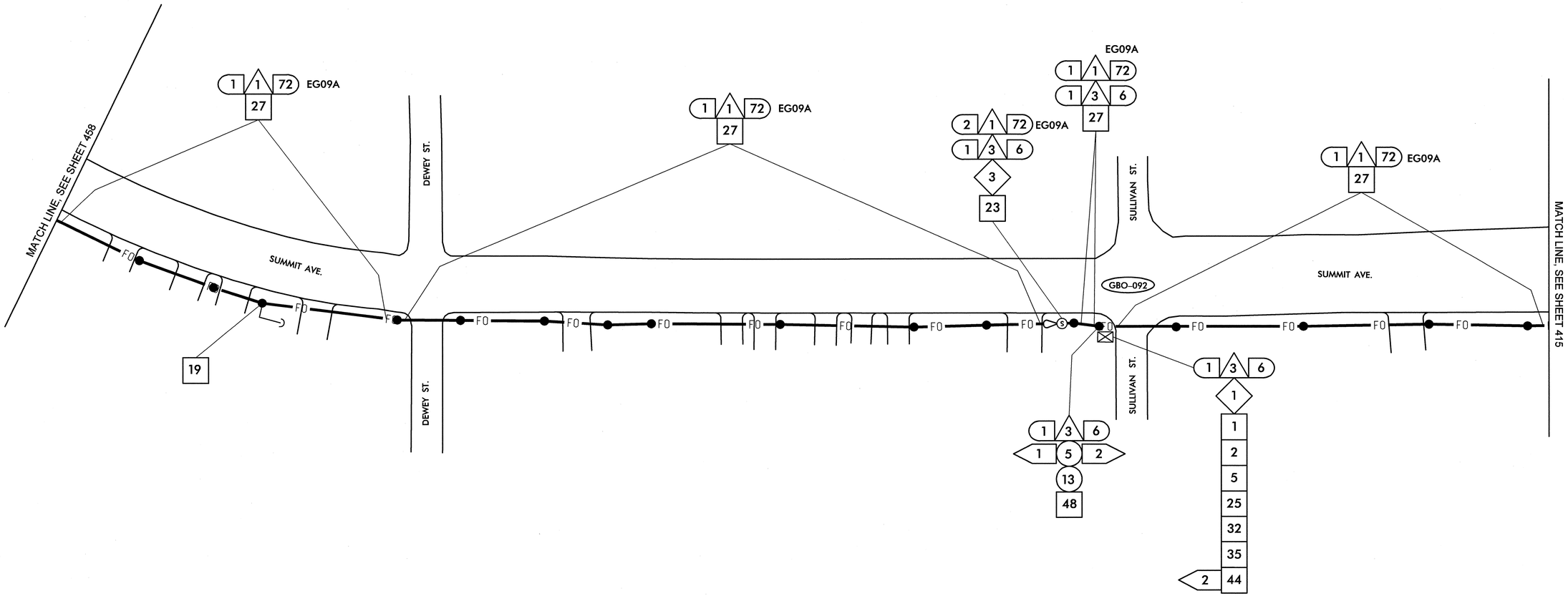
| U-4711 | 444 |




NOTE:
THIS AREA HAS BEEN DETERMINED TO CONTAIN PROPERTIES WITH DOCUMENTED HISTORIC SIGNIFICANCE. IF IT IS NECESSARY TO DEVIATE FROM THESE PLANS IN THIS AREA, PLEASE 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.

1. INSTALL SMFO CABLE
2. INSTALL PLENUM RATED FIBER OPTIC CABLE
3. INSTALL FIBER OPTIC DROP CABLE
4. INSTALL TRACER WIRE
5. REUSE NCDOT SMFO CABLE
6. REUSE GDOT SMFO CABLE

1. TRENCH
2. INSTALL PVC CONDUIT
3. INSTALL RIGID, GALVANIZED STEEL CONDUIT
4. INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
5. INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING
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4. INSTALL POLE MOUNTED SPLICE CABINET
5. INSTALL BASE MOUNTED SPLICE CABINET
6. REMOVE EXISTING SPLICE CABINET
7. INSTALL TERMINAL SPLICE BOX
8. MODIFY EXISTING SPLICE ENCLOSURE

1. INSTALL CABINET FOUNDATION
2. REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER
3. MODIFY EXISTING CABINET FOUNDATION
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5. INSTALL NEW 332 BASE MOUNTED CABINET
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SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

| | |
|---|---|
| PLAN DATE: FEBRUARY, 2008 | REVIEWED BY: K.W. SMITH |
| PREPARED BY: K.D. VANPATTEN | REVIEWED BY: M.W. DUNZO |

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/20/08 DATE

CADD Filename: ...\Sht0444.dgn

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| PROJECT REFERENCE NO. | SHEET NO. |
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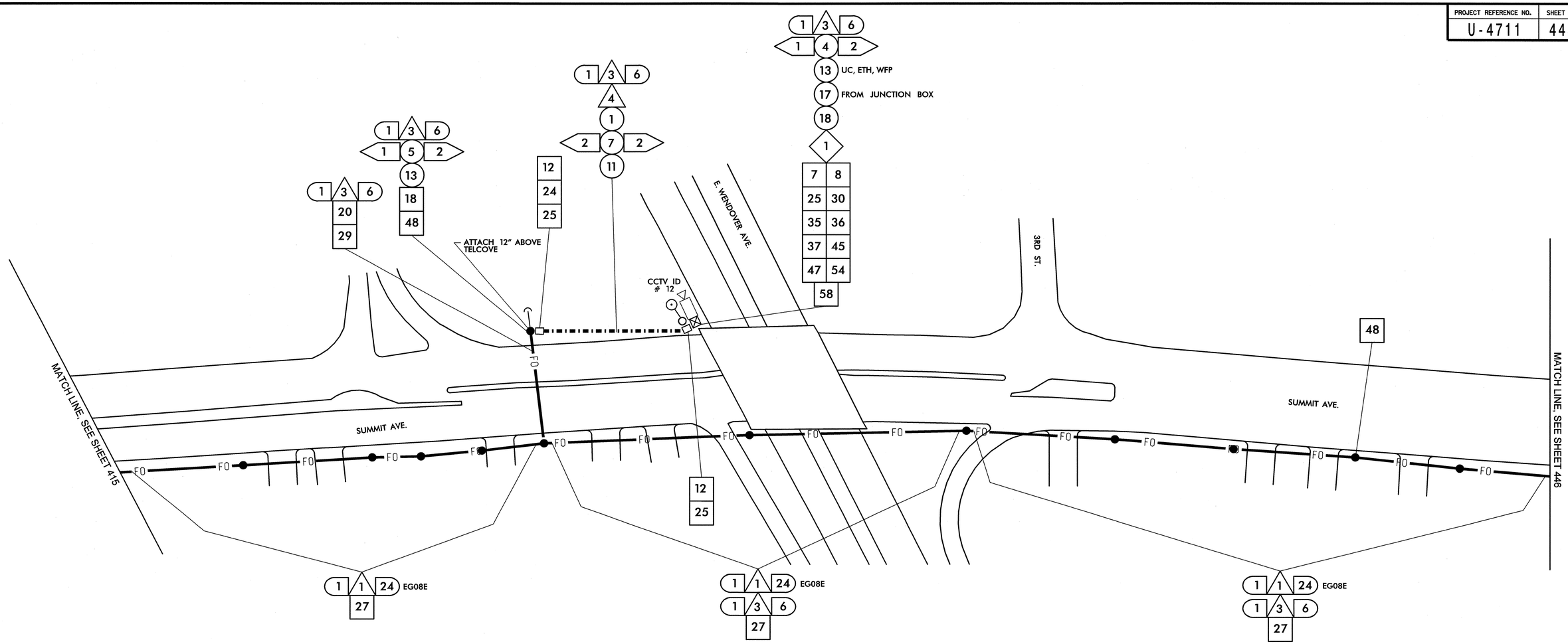
| U-4711 | 445 |

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6. REUSE GDOT SMFO CABLE

1. TRENCH
2. INSTALL PVC CONDUIT
3. INSTALL RIGID, GALVANIZED STEEL CONDUIT
4. INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
5. INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING
6. INSTALL OUTER-DUCT POLYETHYLENE CONDUIT
7. INSTALL POLYETHYLENE CONDUIT
8. DIRECTIONAL DRILL CONDUIT
9. BORE AND JACK CONDUIT
10. INSTALL CABLE(S) IN EXISTING CONDUIT
11. INSTALL CABLE(S) IN NEW CONDUIT
12. INSTALL CABLE(S) IN EXISTING RISER
13. INSTALL CABLE(S) IN NEW RISER
14. INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE
15. INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
16. INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
17. INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET
18. INSTALL NEW RISER INTO POLE MOUNTED CABINET
19. REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING

1. INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET
2. INSTALL UNDERGROUND SPLICE ENCLOSURE
3. INSTALL AERIAL SPLICE ENCLOSURE
4. INSTALL POLE MOUNTED SPLICE CABINET
5. INSTALL BASE MOUNTED SPLICE CABINET
6. REMOVE EXISTING SPLICE CABINET
7. INSTALL TERMINAL SPLICE BOX
8. MODIFY EXISTING SPLICE ENCLOSURE

1. INSTALL CABINET FOUNDATION
2. REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER
3. MODIFY EXISTING CABINET FOUNDATION
4. INSTALL NEW 333 COMMUNICATION CABINET
5. INSTALL NEW 332 BASE MOUNTED CABINET
6. INSTALL NEW 336S CABINET
7. INSTALL CCTV CAMERA ASSEMBLY
8. INSTALL CCTV CAMERA WOOD POLE
9. INSTALL CCTV METAL POLE AND FOUNDATION
10. INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX
11. INSTALL SPECIAL OVERSIZED JUNCTION BOX
12. INSTALL OVERSIZED JUNCTION BOX
13. INSTALL STANDARD JUNCTION BOX
14. REMOVE EXISTING JUNCTION BOX
15. INSTALL WOOD POLE
16. REMOVE EXISTING WOOD POLE
17. INSTALL AERIAL GUY ASSEMBLY
18. INSTALL STANDARD GUY ASSEMBLY
19. INSTALL SIDEWALK GUY ASSEMBLY
20. INSTALL MESSENGER CABLE
21. REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE
22. REMOVE EXISTING COMMUNICATIONS CABLE
23. INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE
24. INSTALL DELINEATOR MARKER
25. STORE 30 FEET OF EACH COMMUNICATIONS CABLE
26. STORE 100 FEET OF EACH COMMUNICATIONS CABLE
27. LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE
28. LASH CABLE(S) TO EXISTING MESSENGER CABLE
29. LASH CABLE(S) TO NEW MESSENGER CABLE
30. INSTALL NEW ELECTRICAL SERVICE
31. MODIFY EXISTING ELECTRICAL SERVICE
32. INSTALL NEW CONTROLLER
33. INSTALL EXISTING CABLE IN NEW CABINET
34. INSTALL GENERATOR POWER INLET BOX
35. INSTALL LOCAL GIGABIT ETHERNET SWITCH
36. INSTALL UNIFIED CABLE
37. INSTALL POLE MOUNTED EQUIPMENT CABINET
38. INSTALL UNI-DIRECTIONAL YAGI ANTENNA
39. INSTALL OMNI-DIRECTIONAL ANTENNA
40. INSTALL RADIO TRANSCEIVER
41. INSTALL SYSTEM LOOP
42. INSTALL SYSTEM LOOP AMPLIFIER
43. INSTALL SYSTEM LOOP LEAD-IN CABLE
44. INSTALL LOCAL LOOP AMPLIFIER
45. INSTALL CITY WI-FI ANTENNA
46. INSTALL HUB 10-GIGABIT ETHERNET SWITCH
47. INSTALL CODEC
48. BOND MESSENGER CABLE TO POLE GROUND
49. INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION
50. INSTALL ANTENNA CABLE
51. RECONNECT RAILROAD PREEMPTION EQUIPMENT
52. RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT
53. INSTALL DSL ETHERNET SWITCH
54. INSTALL ETHERNET CABLE
55. INSTALL TERMINAL SERVER
56. INSTALL MICROWAVE VEHICLE DETECTOR
57. INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT
58. INSTALL WIRELESS ACCESS POINT POWER CABLE

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000



Traffic Engineering and Safety Systems Branch
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Transportation Mobility & Safety
750 Greenfield Pkwy., Garner, NC 27529


SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

| | | | |
|---|---|---|---|
| PLAN DATE: | FEBRUARY, 2008 | REVIEWED BY: | K.W. SMITH |
| PREPARED BY: | K.D. VANPATTEN | REVIEWED BY: | M.W. DUNZO |

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht0445.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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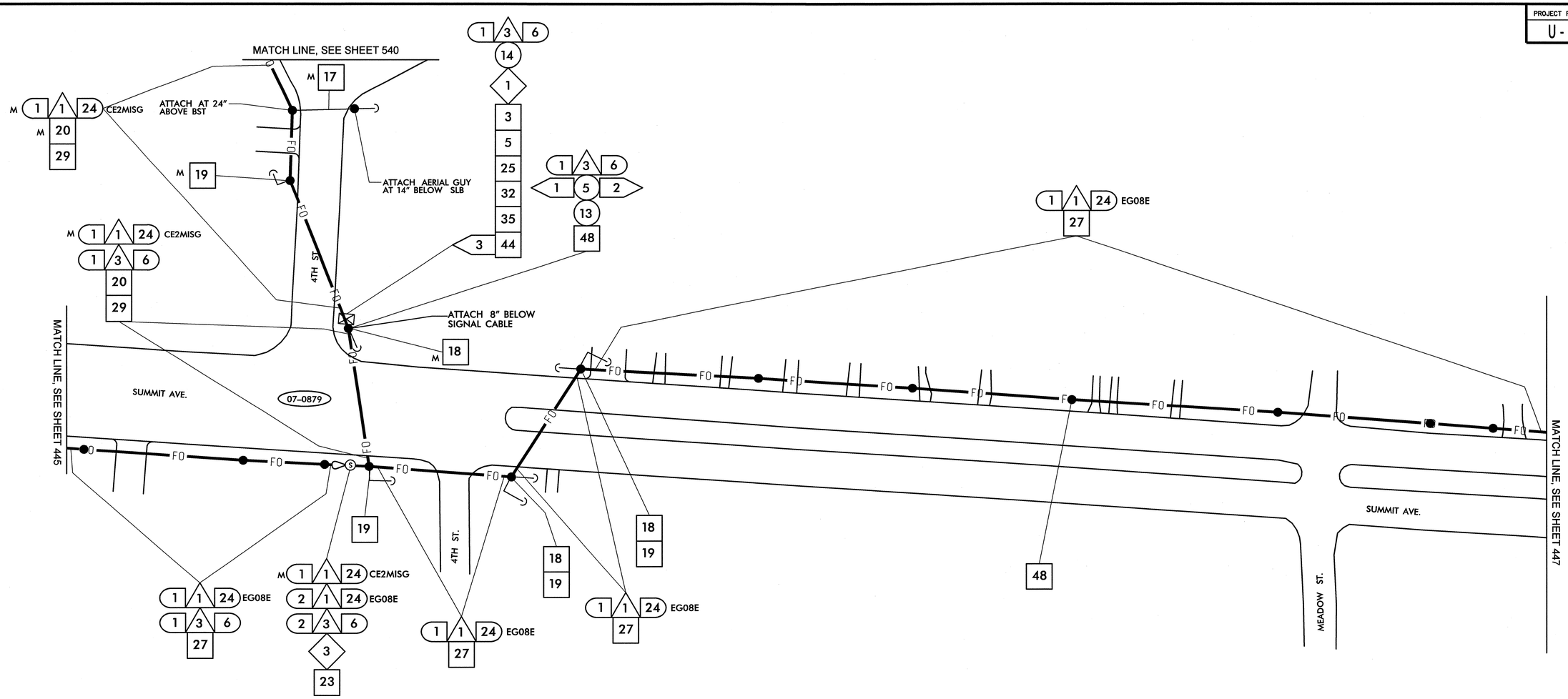
| U-4711 | 446 |




| | |
|---|---|
| 1 | INSTALL SMFO CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE |
| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
| 6 | REUSE GDOT SMFO CABLE |
| 1 | TRENCH |
| 2 | INSTALL PVC CONDUIT |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT |
| 7 | INSTALL POLYETHYLENE CONDUIT |
| 8 | DIRECTIONAL DRILL CONDUIT |
| 9 | BORE AND JACK CONDUIT |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT |
| 12 | INSTALL CABLE(S) IN EXISTING RISER |
| 13 | INSTALL CABLE(S) IN NEW RISER |
| 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE |
| 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET |
| 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET |
| 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING |
| 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET |
| 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE |
| 3 | INSTALL AERIAL SPLICE ENCLOSURE |
| 4 | INSTALL POLE MOUNTED SPLICE CABINET |
| 5 | INSTALL BASE MOUNTED SPLICE CABINET |
| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
| 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX |
| 12 | INSTALL OVERSIZED JUNCTION BOX |
| 13 | INSTALL STANDARD JUNCTION BOX |
| 14 | REMOVE EXISTING JUNCTION BOX |
| 15 | INSTALL WOOD POLE |
| 16 | REMOVE EXISTING WOOD POLE |
| 17 | INSTALL AERIAL GUY ASSEMBLY |
| 18 | INSTALL STANDARD GUY ASSEMBLY |
| 19 | INSTALL SIDEWALK GUY ASSEMBLY |
| 20 | INSTALL MESSENGER CABLE |
| 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE |
| 22 | REMOVE EXISTING COMMUNICATIONS CABLE |
| 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE |
| 24 | INSTALL DELINEATOR MARKER |
| 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE |
| 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 30 | INSTALL NEW ELECTRICAL SERVICE |
| 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 32 | INSTALL NEW CONTROLLER |
| 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 34 | INSTALL GENERATOR POWER INLET BOX |
| 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 36 | INSTALL UNIFIED CABLE |
| 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 40 | INSTALL RADIO TRANSCEIVER |
| 41 | INSTALL SYSTEM LOOP |
| 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 44 | INSTALL LOCAL LOOP AMPLIFIER |
| 45 | INSTALL CITY WI-FI ANTENNA |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH |
| 47 | INSTALL CODEC |
| 48 | BOND MESSENGER CABLE TO POLE GROUND |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION |
| 50 | INSTALL ANTENNA CABLE |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT |
| 53 | INSTALL DSL ETHERNET SWITCH |
| 54 | INSTALL ETHERNET CABLE |
| 55 | INSTALL TERMINAL SERVER |
| 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
| 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |

NOTE:
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PLANS PREPARED IN THE OFFICE OF:
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750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/20/08 DATE

CADD Filename ...\Sht0446m.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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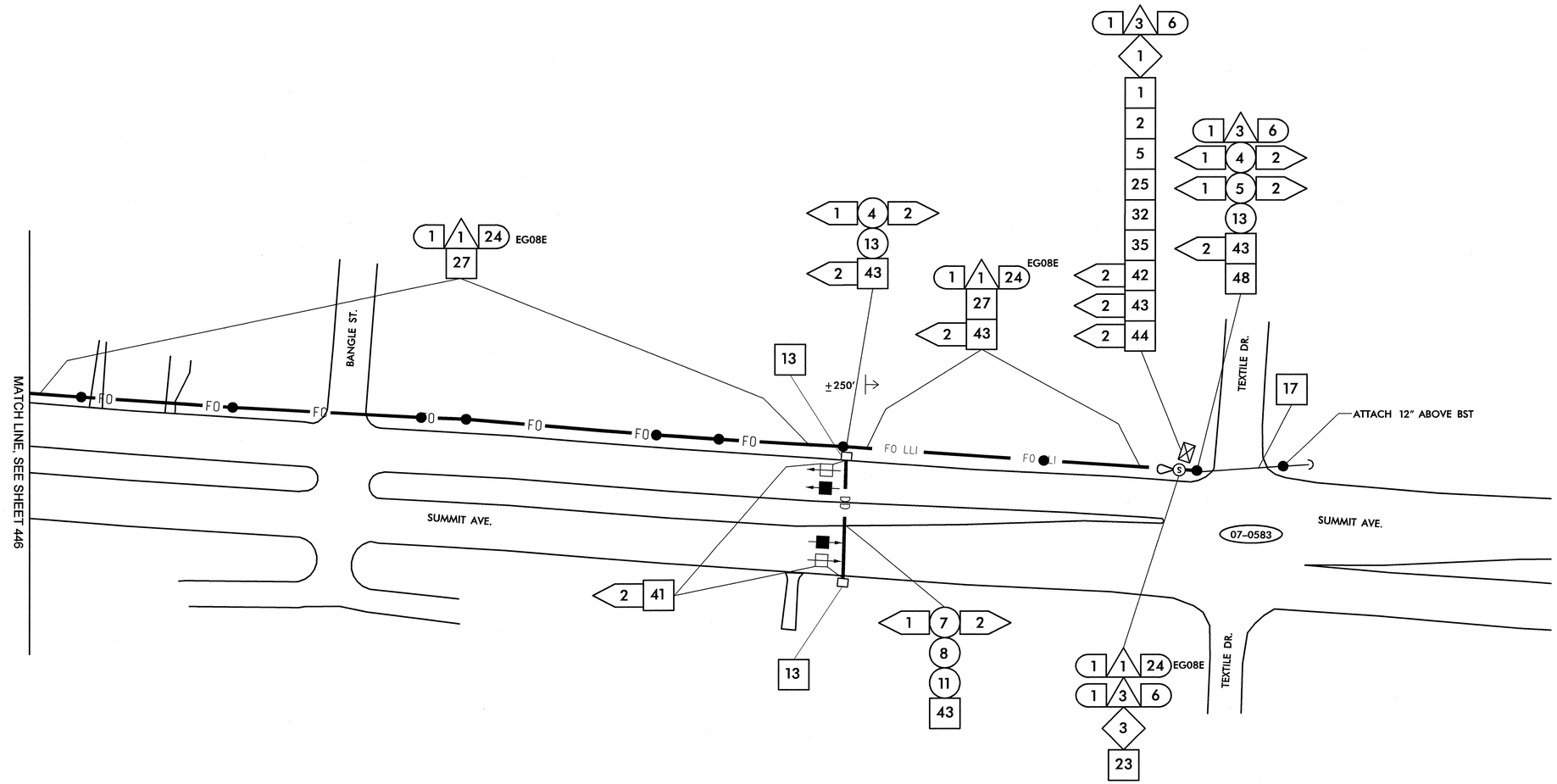
| U-4711 | 447 |




| | | | | | |
|---|---|---|---|---|---|
| 1 | INSTALL SMFO CABLE | 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE | 6 | INSTALL NEW 336S CABINET |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE | 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 3 | INSTALL FIBER OPTIC DROP CABLE | 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 8 | INSTALL CCTV CAMERA WOOD POLE |
| 4 | INSTALL TRACER WIRE | 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET | 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 5 | REUSE NCDOT SMFO CABLE | 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET | 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
| 6 | REUSE GDOT SMFO CABLE | 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING | 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX |
| 1 | TRENCH | 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET | 12 | INSTALL OVERSIZED JUNCTION BOX |
| 2 | INSTALL PVC CONDUIT | 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE | 13 | INSTALL STANDARD JUNCTION BOX |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT | 3 | INSTALL AERIAL SPLICE ENCLOSURE | 14 | REMOVE EXISTING JUNCTION BOX |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD | 4 | INSTALL POLE MOUNTED SPLICE CABINET | 15 | INSTALL WOOD POLE |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING | 5 | INSTALL BASE MOUNTED SPLICE CABINET | 16 | REMOVE EXISTING WOOD POLE |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT | 6 | REMOVE EXISTING SPLICE CABINET | 17 | INSTALL AERIAL GUY ASSEMBLY |
| 7 | INSTALL POLYETHYLENE CONDUIT | 7 | INSTALL TERMINAL SPLICE BOX | 18 | INSTALL STANDARD GUY ASSEMBLY |
| 8 | DIRECTIONAL DRILL CONDUIT | 8 | MODIFY EXISTING SPLICE ENCLOSURE | 19 | INSTALL SIDEWALK GUY ASSEMBLY |
| 9 | BORE AND JACK CONDUIT | 1 | INSTALL CABINET FOUNDATION | 20 | INSTALL MESSENGER CABLE |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT | 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER | 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT | 3 | MODIFY EXISTING CABINET FOUNDATION | 22 | REMOVE EXISTING COMMUNICATIONS CABLE |
| 12 | INSTALL CABLE(S) IN EXISTING RISER | 4 | INSTALL NEW 333 COMMUNICATION CABINET | 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE |
| 13 | INSTALL CABLE(S) IN NEW RISER | 5 | INSTALL NEW 332 BASE MOUNTED CABINET | 24 | INSTALL DELINEATOR MARKER |
| | | | | 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE | 44 | INSTALL LOCAL LOOP AMPLIFIER | 53 | INSTALL DSL ETHERNET SWITCH |
| 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE | 45 | INSTALL CITY WI-FI ANTENNA | 54 | INSTALL ETHERNET CABLE |
| 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE | 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH | 55 | INSTALL TERMINAL SERVER |
| 29 | LASH CABLE(S) TO NEW MESSENGER CABLE | 47 | INSTALL CODEC | 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
| 30 | INSTALL NEW ELECTRICAL SERVICE | 48 | BOND MESSENGER CABLE TO POLE GROUND | 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 31 | MODIFY EXISTING ELECTRICAL SERVICE | 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION | 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |
| 32 | INSTALL NEW CONTROLLER | 50 | INSTALL ANTENNA CABLE | | |
| 33 | INSTALL EXISTING CABLE IN NEW CABINET | 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT | | |
| 34 | INSTALL GENERATOR POWER INLET BOX | 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT | | |
| 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH | | | | |
| 36 | INSTALL UNIFIED CABLE | | | | |
| 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET | | | | |
| 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA | | | | |
| 39 | INSTALL OMNI-DIRECTIONAL ANTENNA | | | | |
| 40 | INSTALL RADIO TRANSCEIVER | | | | |
| 41 | INSTALL SYSTEM LOOP | | | | |
| 42 | INSTALL SYSTEM LOOP AMPLIFIER | | | | |
| 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE | | | | |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


PLANS PREPARED IN THE OFFICE OF:
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Traffic Engineering and Safety Systems Branch
Division of Highways
State of North Carolina
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750 Greenfield Pkwy., Garner, NC 27529


SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH
PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
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| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/20/08 DATE

CADD Filename: ...\Sht0447.dgn

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| PROJECT REFERENCE NO. | SHEET NO. |
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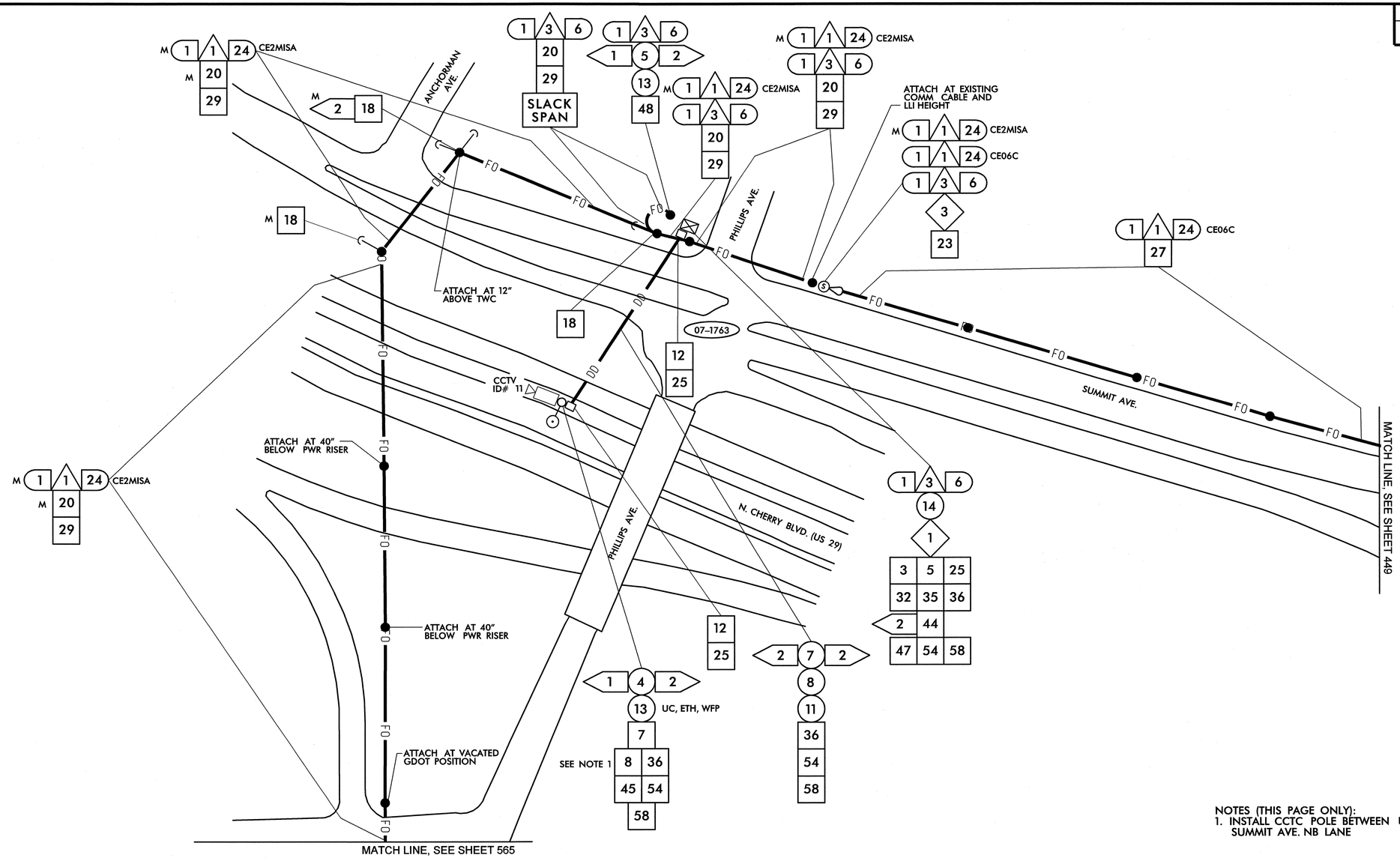
| U-4711 | 448 |




NOTES (THIS PAGE ONLY):
1. INSTALL CCTC POLE BETWEEN US-29 SB LANE AND SUMMIT AVE. NB LANE

| | |
|---|---|
| △1 | INSTALL SMFO CABLE |
| △2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
| △3 | INSTALL FIBER OPTIC DROP CABLE |
| △4 | INSTALL TRACER WIRE |
| △5 | REUSE NCDOT SMFO CABLE |
| △6 | REUSE GDOT SMFO CABLE |
| (1) | TRENCH |
| (2) | INSTALL PVC CONDUIT |
| (3) | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
| (4) | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD |
| (5) | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING |
| (6) | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT |
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| (8) | DIRECTIONAL DRILL CONDUIT |
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| (10) | INSTALL CABLE(S) IN EXISTING CONDUIT |
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| (14) | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE |
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| (16) | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| (17) | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET |
| (18) | INSTALL NEW RISER INTO POLE MOUNTED CABINET |
| (19) | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING |
| ◇1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET |
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| ◇4 | INSTALL POLE MOUNTED SPLICE CABINET |
| ◇5 | INSTALL BASE MOUNTED SPLICE CABINET |
| ◇6 | REMOVE EXISTING SPLICE CABINET |
| ◇7 | INSTALL TERMINAL SPLICE BOX |
| ◇8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
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| 41 | INSTALL SYSTEM LOOP |
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| 44 | INSTALL LOCAL LOOP AMPLIFIER |
| 45 | INSTALL CITY WI-FI ANTENNA |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH |
| 47 | INSTALL CODEC |
| 48 | BOND MESSENGER CABLE TO POLE GROUND |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION |
| 50 | INSTALL ANTENNA CABLE |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT |
| 53 | INSTALL DSL ETHERNET SWITCH |
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| 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000

Traffic Engineering and Safety Systems Branch
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY
PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH
PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO
SIGNATURE 2/25/08 DATE
CADD Filename: ...\Sht0448m.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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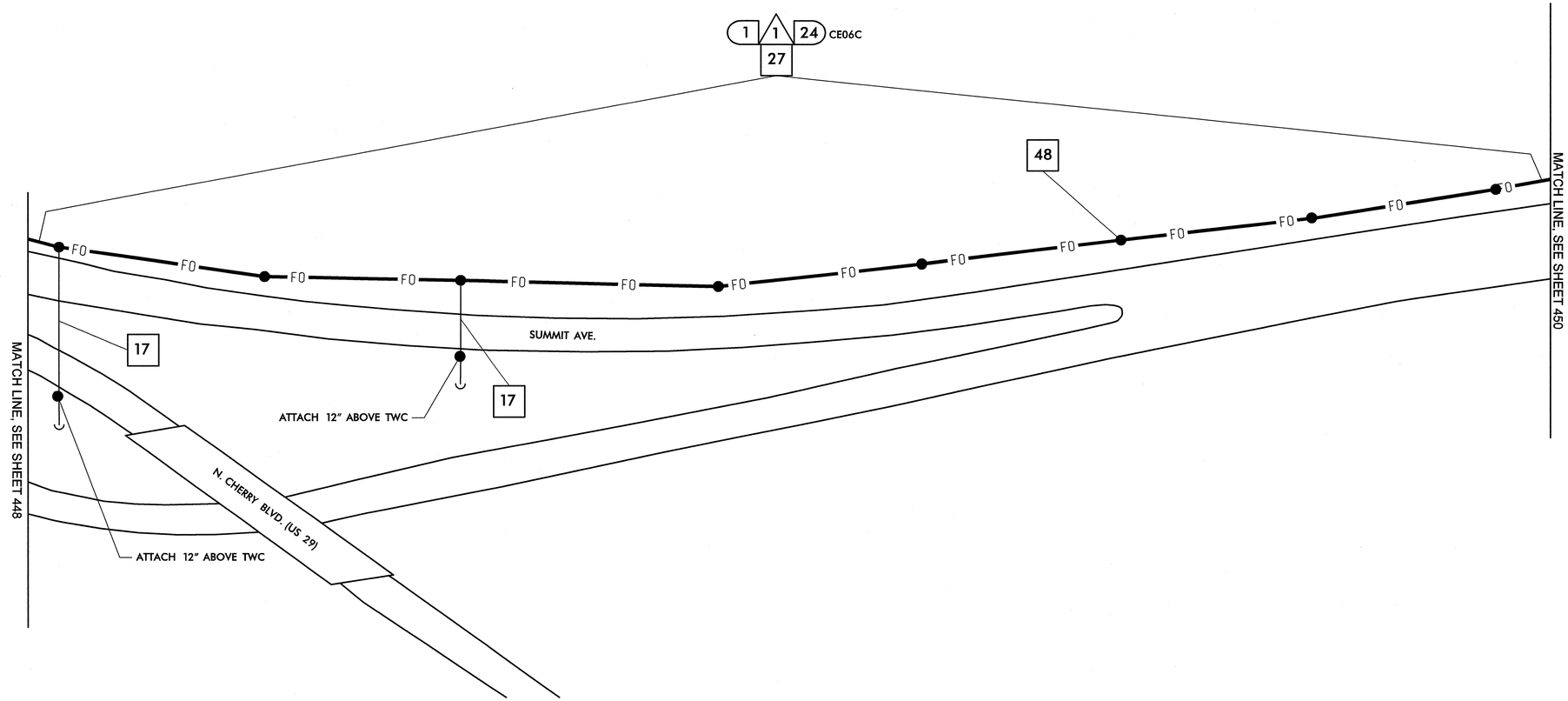
| U-4711 | 449 |




| | |
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| 1 | INSTALL SMFO CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE |
| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
| 6 | REUSE GDOT SMFO CABLE |
| 1 | TRENCH |
| 2 | INSTALL PVC CONDUIT |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT |
| 7 | INSTALL POLYETHYLENE CONDUIT |
| 8 | DIRECTIONAL DRILL CONDUIT |
| 9 | BORE AND JACK CONDUIT |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT |
| 12 | INSTALL CABLE(S) IN EXISTING RISER |
| 13 | INSTALL CABLE(S) IN NEW RISER |
| 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE |
| 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
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| 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET |
| 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING |
| 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET |
| 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE |
| 3 | INSTALL AERIAL SPLICE ENCLOSURE |
| 4 | INSTALL POLE MOUNTED SPLICE CABINET |
| 5 | INSTALL BASE MOUNTED SPLICE CABINET |
| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
| 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX |
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| 36 | INSTALL UNIFIED CABLE |
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Public Engineering and Safety Systems Branch
Intelligent Transportation Systems
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/20/08 DATE

CADD Filename: ...\Sht0449.dgn

2/20/2008
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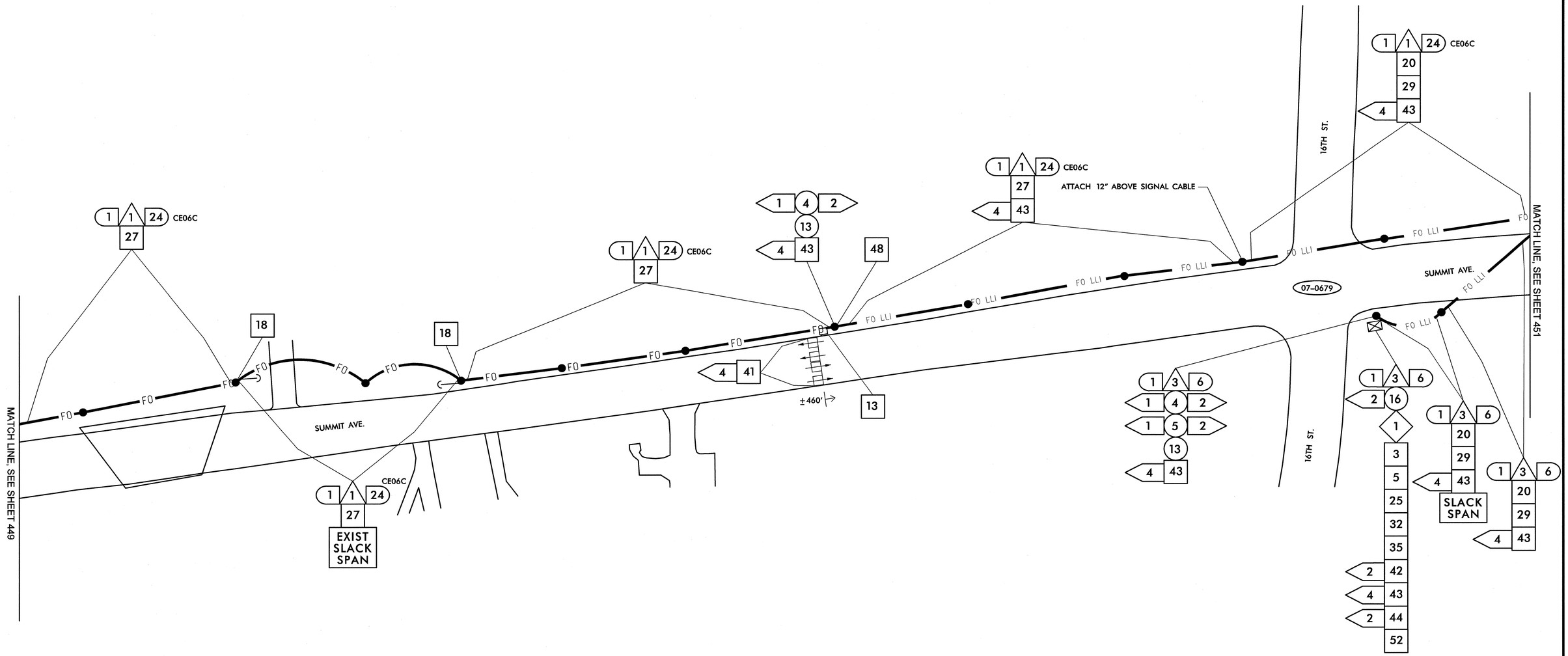
| U-4711 | 450 |

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| 6 | INSTALL NEW 336S CABINET |
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PLANS PREPARED IN THE OFFICE OF:

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Traffic Engineering and Safety Systems Branch
Intelligent Transportation Systems
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH
PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/20/08 DATE

CADD Filename: ...\Sht0450.dgn

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| PROJECT REFERENCE NO. | SHEET NO. |
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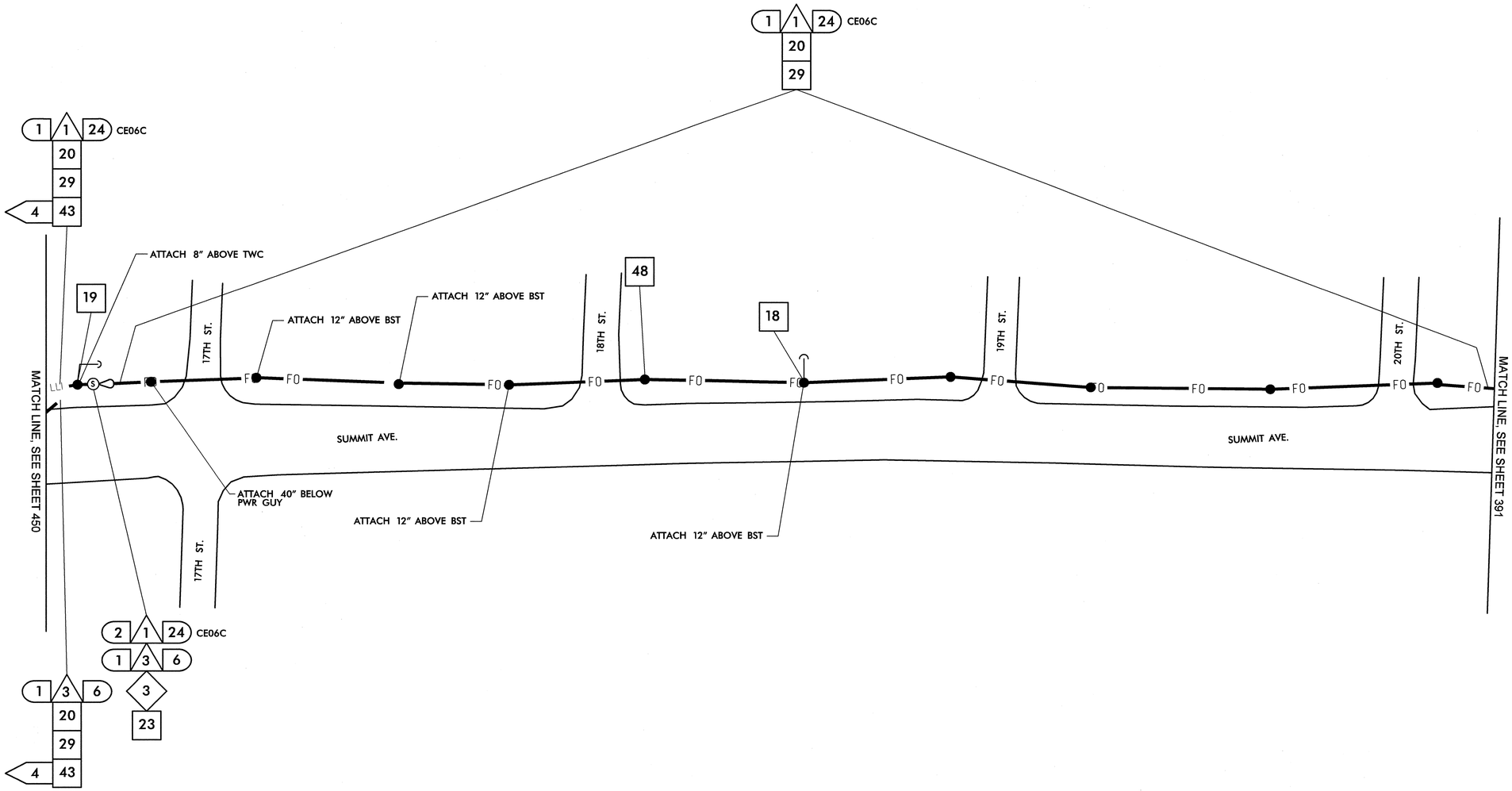
| U-4711 | 451 |

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DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/20/08 DATE

CADD Filename: ...\Sht045l.dgn

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| PROJECT REFERENCE NO. | SHEET NO. |
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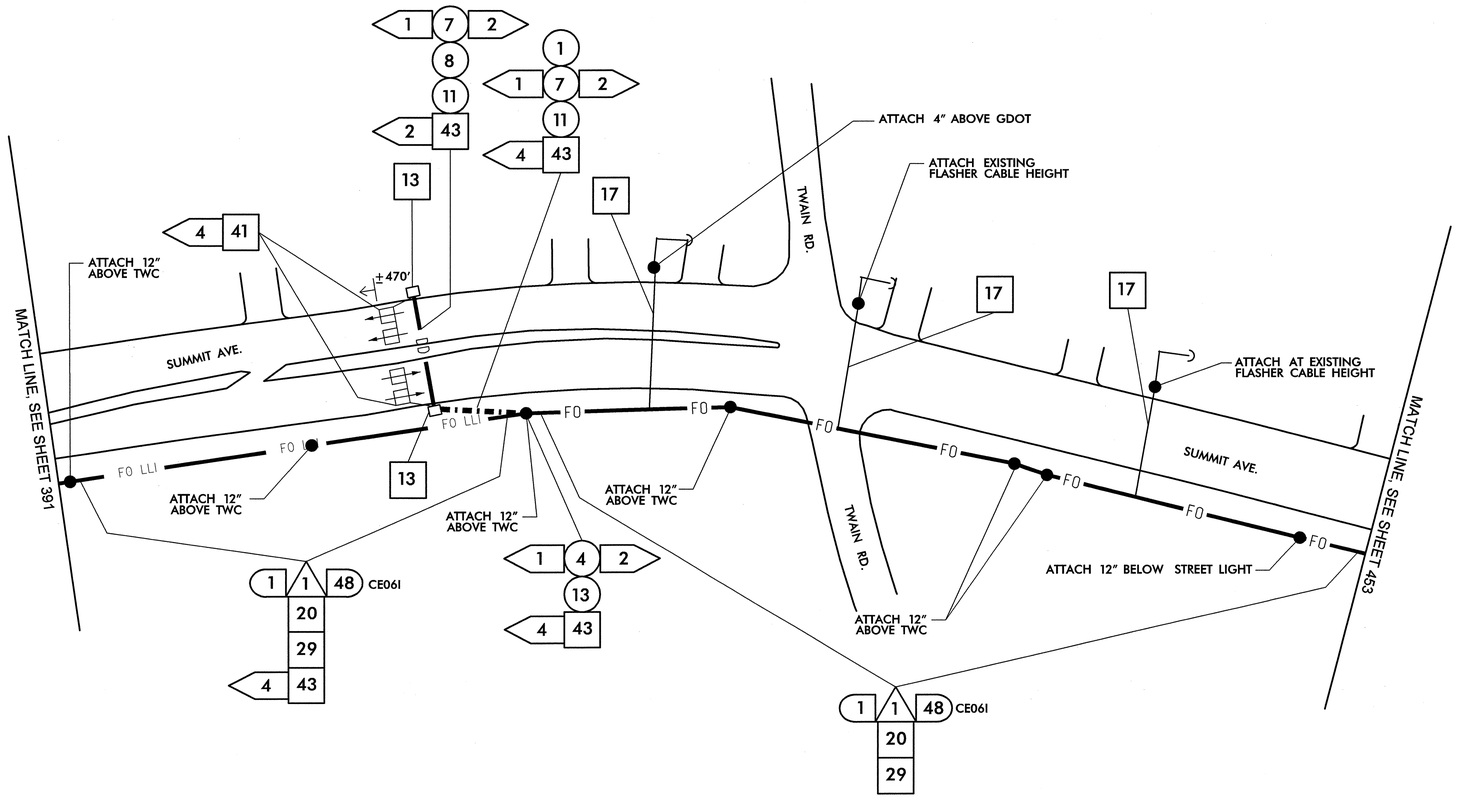
| U-4711 | 452 |

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| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT | 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL POLYETHYLENE CONDUIT | 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | DIRECTIONAL DRILL CONDUIT | 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 9 | BORE AND JACK CONDUIT | 1 | INSTALL CABINET FOUNDATION |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT | 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT | 3 | MODIFY EXISTING CABINET FOUNDATION |
| 12 | INSTALL CABLE(S) IN EXISTING RISER | 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 13 | INSTALL CABLE(S) IN NEW RISER | 5 | INSTALL NEW 332 BASE MOUNTED CABINET |

| | | | |
|---|---|---|---|
| 6 | INSTALL NEW 336S CABINET | 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 7 | INSTALL CCTV CAMERA ASSEMBLY | 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 8 | INSTALL CCTV CAMERA WOOD POLE | 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION | 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX | 30 | INSTALL NEW ELECTRICAL SERVICE |
| 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX | 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 12 | INSTALL OVERSIZED JUNCTION BOX | 32 | INSTALL NEW CONTROLLER |
| 13 | INSTALL STANDARD JUNCTION BOX | 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 14 | REMOVE EXISTING JUNCTION BOX | 34 | INSTALL GENERATOR POWER INLET BOX |
| 15 | INSTALL WOOD POLE | 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 16 | REMOVE EXISTING WOOD POLE | 36 | INSTALL UNIFIED CABLE |
| 17 | INSTALL AERIAL GUY ASSEMBLY | 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 18 | INSTALL STANDARD GUY ASSEMBLY | 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 19 | INSTALL SIDEWALK GUY ASSEMBLY | 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 20 | INSTALL MESSENGER CABLE | 40 | INSTALL RADIO TRANSCEIVER |
| 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE | 41 | INSTALL SYSTEM LOOP |
| 22 | REMOVE EXISTING COMMUNICATIONS CABLE | 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE | 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 24 | INSTALL DELINEATOR MARKER | | |
| 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE | | |

| | | | |
|---|---|---|---|
| 44 | INSTALL LOCAL LOOP AMPLIFIER | 53 | INSTALL DSL ETHERNET SWITCH |
| 45 | INSTALL CITY WI-FI ANTENNA | 54 | INSTALL ETHERNET CABLE |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH | 55 | INSTALL TERMINAL SERVER |
| 47 | INSTALL CODEC | 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
| 48 | BOND MESSENGER CABLE TO POLE GROUND | 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION | 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |
| 50 | INSTALL ANTENNA CABLE | | |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT | | |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT | | |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

PLANS PREPARED IN THE OFFICE OF:

Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000

750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 — GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 — REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN — REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE — DATE 2/20/08

CADD Filename: ...\Sht0452.dgn

2/20/2008
f:\systems\pro\projects\0U462020 (g-boro mts)\Sht0452.dgn

| PROJECT REFERENCE NO. | SHEET NO. |
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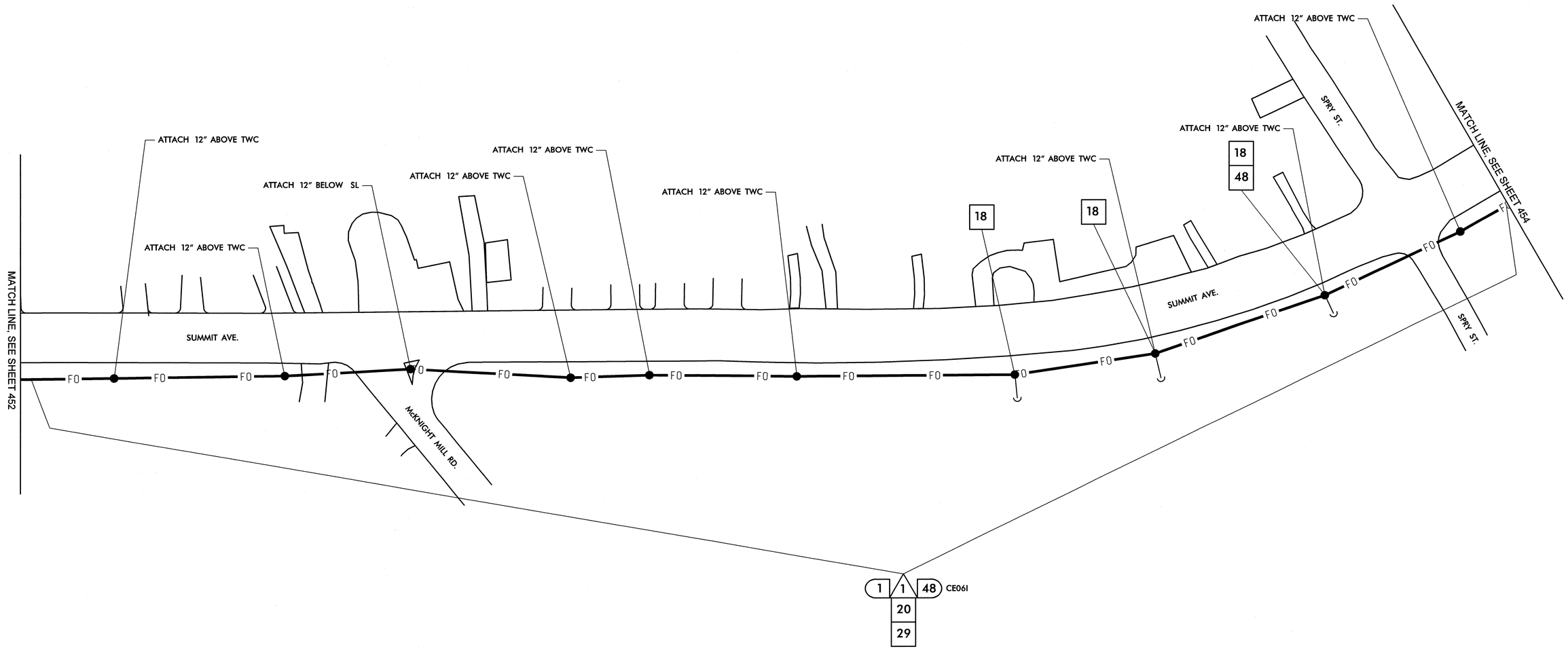
| U-4711 | 453 |




| | |
|---|---|
| 1 | INSTALL SMFO CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE |
| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
| 6 | REUSE GDOT SMFO CABLE |
| 1 | TRENCH |
| 2 | INSTALL PVC CONDUIT |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT |
| 7 | INSTALL POLYETHYLENE CONDUIT |
| 8 | DIRECTIONAL DRILL CONDUIT |
| 9 | BORE AND JACK CONDUIT |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT |
| 12 | INSTALL CABLE(S) IN EXISTING RISER |
| 13 | INSTALL CABLE(S) IN NEW RISER |
| 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE |
| 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET |
| 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET |
| 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING |
| 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET |
| 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE |
| 3 | INSTALL AERIAL SPLICE ENCLOSURE |
| 4 | INSTALL POLE MOUNTED SPLICE CABINET |
| 5 | INSTALL BASE MOUNTED SPLICE CABINET |
| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
| 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX |
| 12 | INSTALL OVERSIZED JUNCTION BOX |
| 13 | INSTALL STANDARD JUNCTION BOX |
| 14 | REMOVE EXISTING JUNCTION BOX |
| 15 | INSTALL WOOD POLE |
| 16 | REMOVE EXISTING WOOD POLE |
| 17 | INSTALL AERIAL GUY ASSEMBLY |
| 18 | INSTALL STANDARD GUY ASSEMBLY |
| 19 | INSTALL SIDEWALK GUY ASSEMBLY |
| 20 | INSTALL MESSENGER CABLE |
| 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE |
| 22 | REMOVE EXISTING COMMUNICATIONS CABLE |
| 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE |
| 24 | INSTALL DELINEATOR MARKER |
| 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE |
| 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 30 | INSTALL NEW ELECTRICAL SERVICE |
| 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 32 | INSTALL NEW CONTROLLER |
| 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 34 | INSTALL GENERATOR POWER INLET BOX |
| 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 36 | INSTALL UNIFIED CABLE |
| 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 40 | INSTALL RADIO TRANSCEIVER |
| 41 | INSTALL SYSTEM LOOP |
| 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 44 | INSTALL LOCAL LOOP AMPLIFIER |
| 45 | INSTALL CITY WI-FI ANTENNA |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH |
| 47 | INSTALL CODEC |
| 48 | BOND MESSENGER CABLE TO POLE GROUND |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION |
| 50 | INSTALL ANTENNA CABLE |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT |
| 53 | INSTALL DSL ETHERNET SWITCH |
| 54 | INSTALL ETHERNET CABLE |
| 55 | INSTALL TERMINAL SERVER |
| 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
| 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


PLANS PREPARED IN THE OFFICE OF:
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P.O. Box 33068
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(919) 677-2000


Traffic Engineering and Safety Systems Branch
Intelligent Transportation Systems
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

| | |
|---|---|
| PLAN DATE: FEBRUARY, 2008 | REVIEWED BY: K.W. SMITH |
| PREPARED BY: K.D. VANPATTEN | REVIEWED BY: M.W. DUNZO |

| REVISIONS | INIT. | DATE |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht0453.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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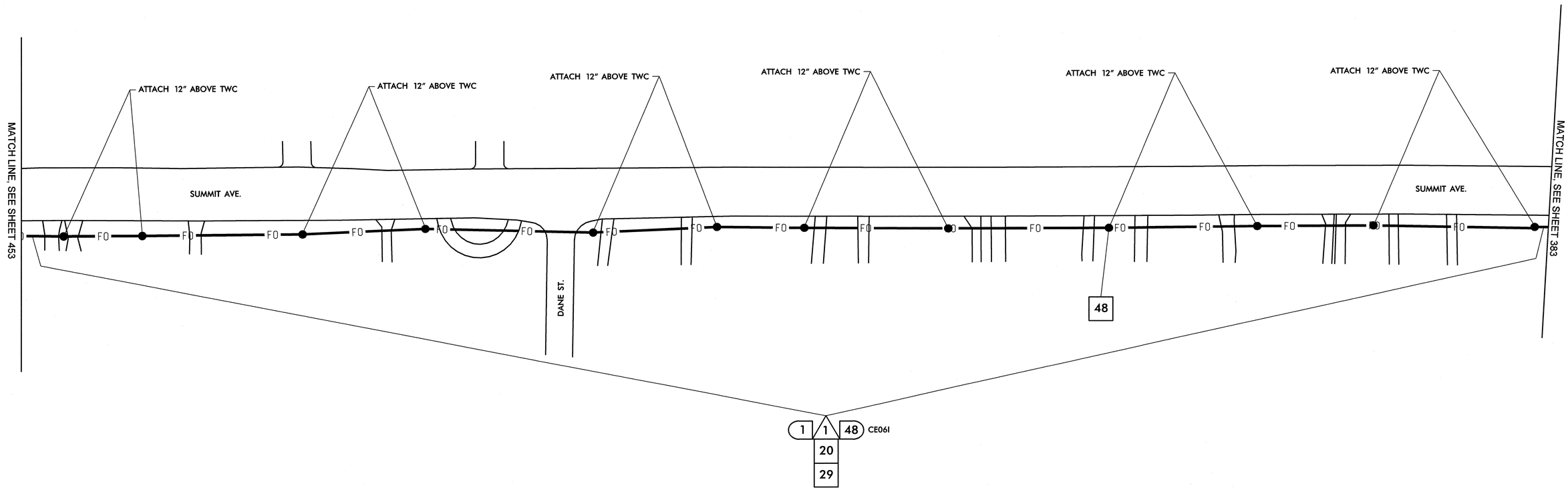
| U-4711 | 454 |




| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | INSTALL SMFO CABLE | 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE | 6 | INSTALL NEW 336S CABINET | 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE | 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 7 | INSTALL CCTV CAMERA ASSEMBLY | 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE | 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 8 | INSTALL CCTV CAMERA WOOD POLE | 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 4 | INSTALL TRACER WIRE | 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET | 9 | INSTALL CCTV METAL POLE AND FOUNDATION | 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 5 | REUSE NCDOT SMFO CABLE | 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET | 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX | 30 | INSTALL NEW ELECTRICAL SERVICE |
| 6 | REUSE GDOT SMFO CABLE | 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING | 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX | 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 1 | TRENCH | 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET | 12 | INSTALL OVERSIZED JUNCTION BOX | 32 | INSTALL NEW CONTROLLER |
| 2 | INSTALL PVC CONDUIT | 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE | 13 | INSTALL STANDARD JUNCTION BOX | 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT | 3 | INSTALL AERIAL SPLICE ENCLOSURE | 14 | REMOVE EXISTING JUNCTION BOX | 34 | INSTALL GENERATOR POWER INLET BOX |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD | 4 | INSTALL POLE MOUNTED SPLICE CABINET | 15 | INSTALL WOOD POLE | 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING | 5 | INSTALL BASE MOUNTED SPLICE CABINET | 16 | REMOVE EXISTING WOOD POLE | 36 | INSTALL UNIFIED CABLE |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT | 6 | REMOVE EXISTING SPLICE CABINET | 17 | INSTALL AERIAL GUY ASSEMBLY | 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 7 | INSTALL POLYETHYLENE CONDUIT | 7 | INSTALL TERMINAL SPLICE BOX | 18 | INSTALL STANDARD GUY ASSEMBLY | 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 8 | DIRECTIONAL DRILL CONDUIT | 8 | MODIFY EXISTING SPLICE ENCLOSURE | 19 | INSTALL SIDEWALK GUY ASSEMBLY | 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 9 | BORE AND JACK CONDUIT | 1 | INSTALL CABINET FOUNDATION | 20 | INSTALL MESSENGER CABLE | 40 | INSTALL RADIO TRANSCEIVER |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT | 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER | 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE | 41 | INSTALL SYSTEM LOOP |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT | 3 | MODIFY EXISTING CABINET FOUNDATION | 22 | REMOVE EXISTING COMMUNICATIONS CABLE | 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 12 | INSTALL CABLE(S) IN EXISTING RISER | 4 | INSTALL NEW 333 COMMUNICATION CABINET | 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE | 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 13 | INSTALL CABLE(S) IN NEW RISER | 5 | INSTALL NEW 332 BASE MOUNTED CABINET | 24 | INSTALL DELINEATOR MARKER | | |
| | | | | 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE | | |

| | | | |
|---|---|---|---|
| 44 | INSTALL LOCAL LOOP AMPLIFIER | 53 | INSTALL DSL ETHERNET SWITCH |
| 45 | INSTALL CITY WI-FI ANTENNA | 54 | INSTALL ETHERNET CABLE |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH | 55 | INSTALL TERMINAL SERVER |
| 47 | INSTALL CODEC | 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
| 48 | BOND MESSENGER CABLE TO POLE GROUND | 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION | 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |
| 50 | INSTALL ANTENNA CABLE | | |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT | | |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT | | |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
P.O. Box 33068
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Public Engineering and Safety Systems Branch
Intelligent Transportation Systems
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

| | | | |
|---|---|---|---|
| PLAN DATE: FEBRUARY, 2008 | | REVIEWED BY: K.W. SMITH | |
| PREPARED BY: K.D. VANPATTEN | | REVIEWED BY: M.W. DUNZO | |
| REVISIONS | | INIT. | DATE |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO
SIGNATURE 2/20/08 DATE
CADD Filename: ...\Sht0454.dgn

2/20/2008
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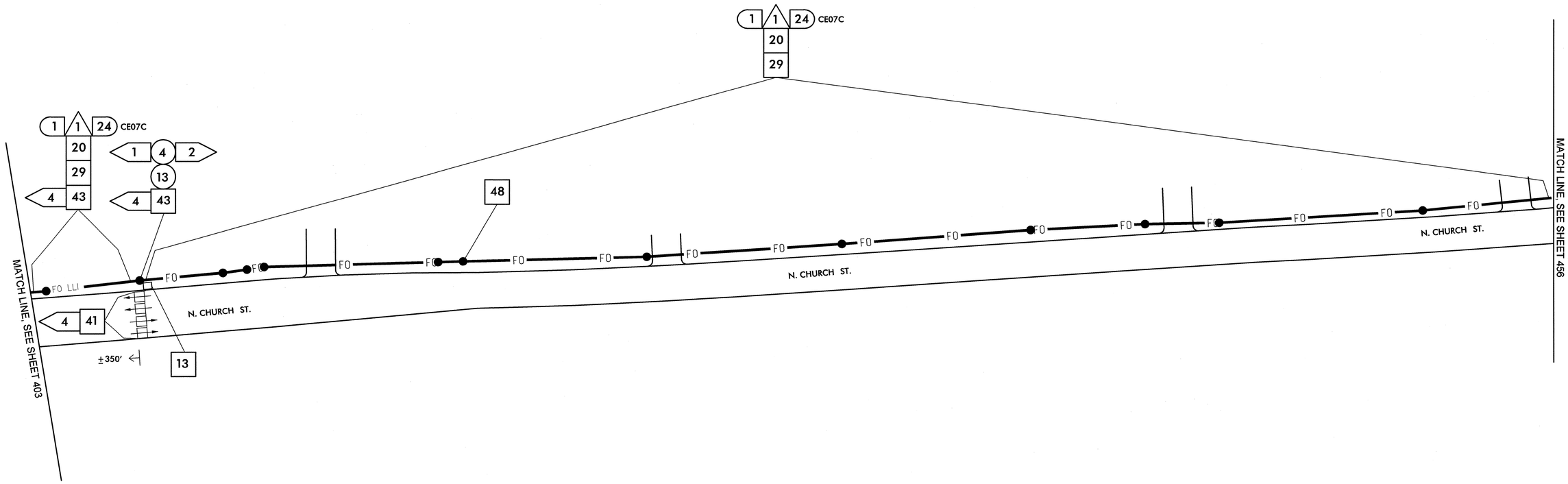
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-4711 | 455 |




| | |
|---|---|
| 1 | INSTALL SMFO CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE |
| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
| 6 | REUSE GDOT SMFO CABLE |
| 1 | TRENCH |
| 2 | INSTALL PVC CONDUIT |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT |
| 7 | INSTALL POLYETHYLENE CONDUIT |
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| 9 | BORE AND JACK CONDUIT |
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| 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE |
| 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET |
| 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET |
| 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING |
| 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET |
| 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE |
| 3 | INSTALL AERIAL SPLICE ENCLOSURE |
| 4 | INSTALL POLE MOUNTED SPLICE CABINET |
| 5 | INSTALL BASE MOUNTED SPLICE CABINET |
| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
| 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX |
| 12 | INSTALL OVERSIZED JUNCTION BOX |
| 13 | INSTALL STANDARD JUNCTION BOX |
| 14 | REMOVE EXISTING JUNCTION BOX |
| 15 | INSTALL WOOD POLE |
| 16 | REMOVE EXISTING WOOD POLE |
| 17 | INSTALL AERIAL GUY ASSEMBLY |
| 18 | INSTALL STANDARD GUY ASSEMBLY |
| 19 | INSTALL SIDEWALK GUY ASSEMBLY |
| 20 | INSTALL MESSENGER CABLE |
| 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE |
| 22 | REMOVE EXISTING COMMUNICATIONS CABLE |
| 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE |
| 24 | INSTALL DELINEATOR MARKER |
| 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE |
| 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
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| 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 30 | INSTALL NEW ELECTRICAL SERVICE |
| 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 32 | INSTALL NEW CONTROLLER |
| 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 34 | INSTALL GENERATOR POWER INLET BOX |
| 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 36 | INSTALL UNIFIED CABLE |
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| 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
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| 48 | BOND MESSENGER CABLE TO POLE GROUND |
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| 50 | INSTALL ANTENNA CABLE |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT |
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NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


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Traffic Engineering and Safety Systems Branch
Intelligent Transportation Systems
INSTITUTE OF TRANSPORTATION RESEARCH AND DEVELOPMENT
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/20/08 DATE

CADD Filename: ...\Sht0455m.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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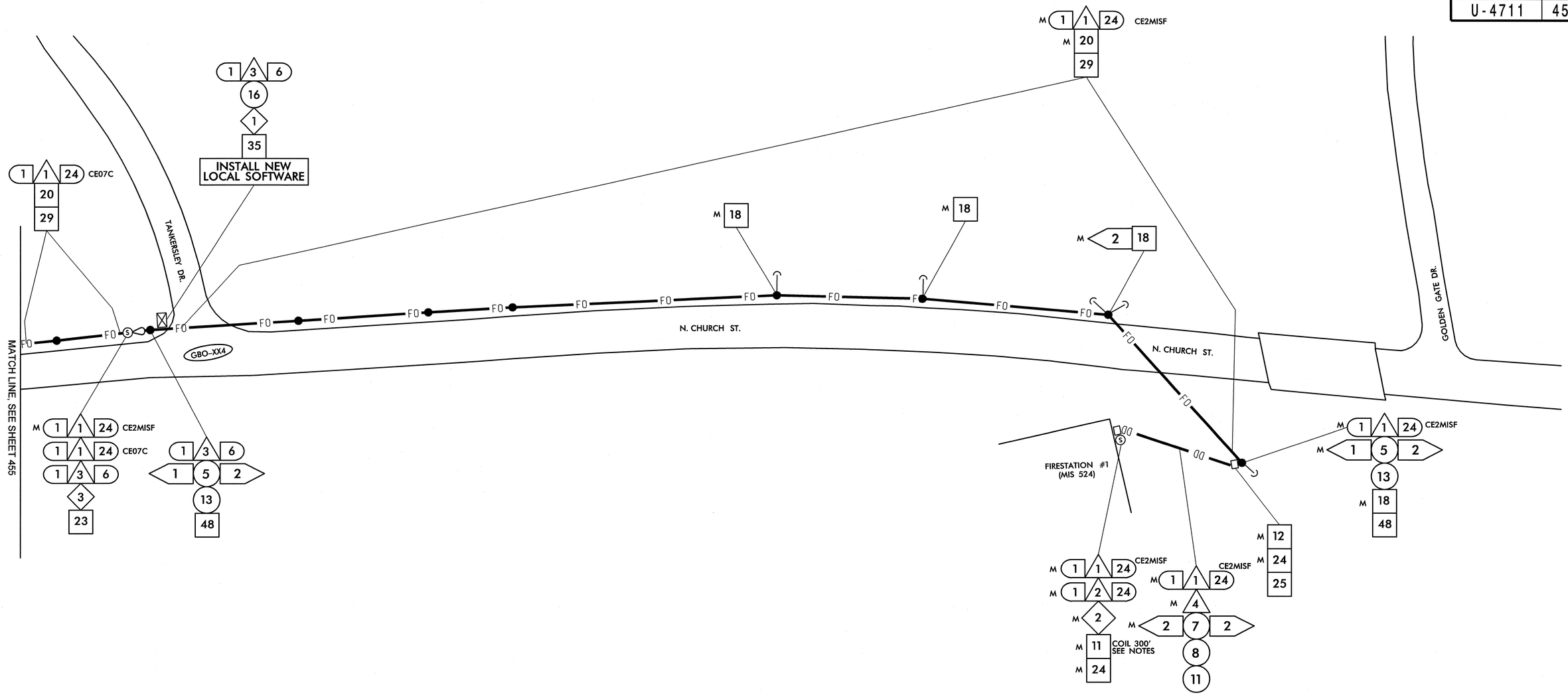
| U-4711 | 456 |




## NOTES (THIS SHEET ONLY)

1. SEE BUILDING ENTRANCE DETAIL FOR ROUTING INTO BUILDING

| | |
|---|---|
| 1 | INSTALL SMFO CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE |
| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
| 6 | REUSE GDOT SMFO CABLE |
| 1 | TRENCH |
| 2 | INSTALL PVC CONDUIT |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT |
| 7 | INSTALL POLYETHYLENE CONDUIT |
| 8 | DIRECTIONAL DRILL CONDUIT |
| 9 | BORE AND JACK CONDUIT |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT |
| 12 | INSTALL CABLE(S) IN EXISTING RISER |
| 13 | INSTALL CABLE(S) IN NEW RISER |
| 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE |
| 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET |
| 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET |
| 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING |
| 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET |
| 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE |
| 3 | INSTALL AERIAL SPLICE ENCLOSURE |
| 4 | INSTALL POLE MOUNTED SPLICE CABINET |
| 5 | INSTALL BASE MOUNTED SPLICE CABINET |
| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
| 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX |
| 12 | INSTALL OVERSIZED JUNCTION BOX |
| 13 | INSTALL STANDARD JUNCTION BOX |
| 14 | REMOVE EXISTING JUNCTION BOX |
| 15 | INSTALL WOOD POLE |
| 16 | REMOVE EXISTING WOOD POLE |
| 17 | INSTALL AERIAL GUY ASSEMBLY |
| 18 | INSTALL STANDARD GUY ASSEMBLY |
| 19 | INSTALL SIDEWALK GUY ASSEMBLY |
| 20 | INSTALL MESSENGER CABLE |
| 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE |
| 22 | REMOVE EXISTING COMMUNICATIONS CABLE |
| 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE |
| 24 | INSTALL DELINEATOR MARKER |
| 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE |
| 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 30 | INSTALL NEW ELECTRICAL SERVICE |
| 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 32 | INSTALL NEW CONTROLLER |
| 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 34 | INSTALL GENERATOR POWER INLET BOX |
| 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 36 | INSTALL UNIFIED CABLE |
| 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 40 | INSTALL RADIO TRANSCEIVER |
| 41 | INSTALL SYSTEM LOOP |
| 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 44 | INSTALL LOCAL LOOP AMPLIFIER |
| 45 | INSTALL CITY WI-FI ANTENNA |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH |
| 47 | INSTALL CODEC |
| 48 | BOND MESSENGER CABLE TO POLE GROUND |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION |
| 50 | INSTALL ANTENNA CABLE |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT |
| 53 | INSTALL DSL ETHERNET SWITCH |
| 54 | INSTALL ETHERNET CABLE |
| 55 | INSTALL TERMINAL SERVER |
| 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
| 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000

Traffic Engineering and Safety Systems Branch
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY
PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH
PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO
SIGNATURE DATE 2/29/08
CADD Filename: ...\Sht0456m.dgn

2/29/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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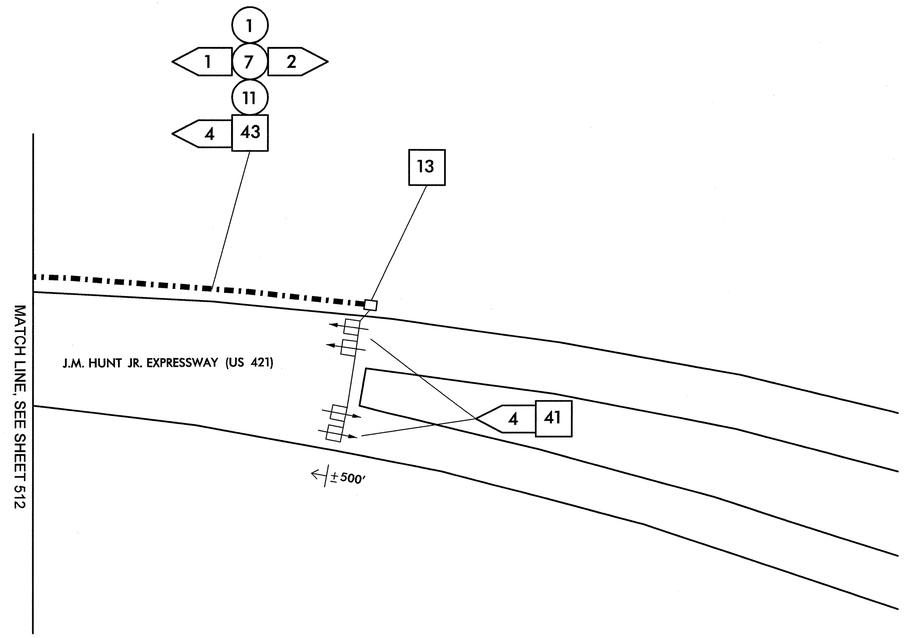
| U-4711 | 457 |

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|---|---|---|---|---|---|---|---|
| 1 | INSTALL SMFO CABLE | 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE | 6 | INSTALL NEW 336S CABINET | 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE | 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 7 | INSTALL CCTV CAMERA ASSEMBLY | 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE | 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 8 | INSTALL CCTV CAMERA WOOD POLE | 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 4 | INSTALL TRACER WIRE | 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET | 9 | INSTALL CCTV METAL POLE AND FOUNDATION | 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 5 | REUSE NCDOT SMFO CABLE | 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET | 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX | 30 | INSTALL NEW ELECTRICAL SERVICE |
| 6 | REUSE GDOT SMFO CABLE | 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING | 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX | 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 1 | TRENCH | 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET | 12 | INSTALL OVERSIZED JUNCTION BOX | 32 | INSTALL NEW CONTROLLER |
| 2 | INSTALL PVC CONDUIT | 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE | 13 | INSTALL STANDARD JUNCTION BOX | 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT | 3 | INSTALL AERIAL SPLICE ENCLOSURE | 14 | REMOVE EXISTING JUNCTION BOX | 34 | INSTALL GENERATOR POWER INLET BOX |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD | 4 | INSTALL POLE MOUNTED SPLICE CABINET | 15 | INSTALL WOOD POLE | 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING | 5 | INSTALL BASE MOUNTED SPLICE CABINET | 16 | REMOVE EXISTING WOOD POLE | 36 | INSTALL UNIFIED CABLE |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT | 6 | REMOVE EXISTING SPLICE CABINET | 17 | INSTALL AERIAL GUY ASSEMBLY | 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 7 | INSTALL POLYETHYLENE CONDUIT | 7 | INSTALL TERMINAL SPLICE BOX | 18 | INSTALL STANDARD GUY ASSEMBLY | 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 8 | DIRECTIONAL DRILL CONDUIT | 8 | MODIFY EXISTING SPLICE ENCLOSURE | 19 | INSTALL SIDEWALK GUY ASSEMBLY | 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 9 | BORE AND JACK CONDUIT | 1 | INSTALL CABINET FOUNDATION | 20 | INSTALL MESSENGER CABLE | 40 | INSTALL RADIO TRANSCEIVER |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT | 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER | 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE | 41 | INSTALL SYSTEM LOOP |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT | 3 | MODIFY EXISTING CABINET FOUNDATION | 22 | REMOVE EXISTING COMMUNICATIONS CABLE | 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 12 | INSTALL CABLE(S) IN EXISTING RISER | 4 | INSTALL NEW 333 COMMUNICATION CABINET | 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE | 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 13 | INSTALL CABLE(S) IN NEW RISER | 5 | INSTALL NEW 332 BASE MOUNTED CABINET | 24 | INSTALL DELINEATOR MARKER | | |
| | | | | 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE | | |

| | | | |
|---|---|---|---|
| 44 | INSTALL LOCAL LOOP AMPLIFIER | 53 | INSTALL DSL ETHERNET SWITCH |
| 45 | INSTALL CITY WI-FI ANTENNA | 54 | INSTALL ETHERNET CABLE |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH | 55 | INSTALL TERMINAL SERVER |
| 47 | INSTALL CODEC | 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
| 48 | BOND MESSENGER CABLE TO POLE GROUND | 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION | 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |
| 50 | INSTALL ANTENNA CABLE | | |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT | | |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT | | |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

PLANS PREPARED IN THE OFFICE OF:

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Pacific Engineering and Safety Systems Branch
Traffic Engineering Branch
Division of Highways
Transportation Building
750 Greenfield Pkwy., Garner, NC 27529

SCALE
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# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

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2/20/2008
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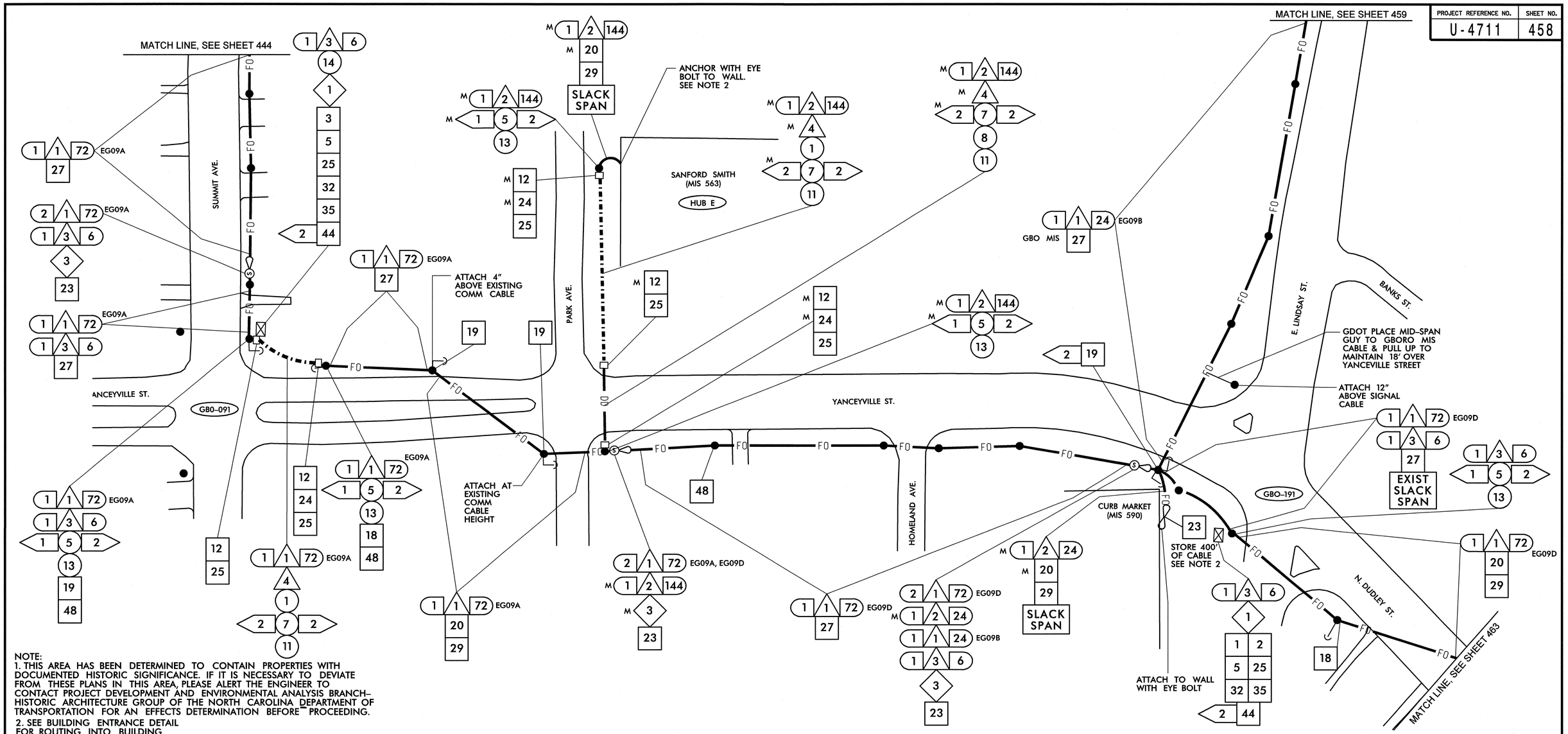
| U-4711 | 458 |




NOTE:
1. THIS AREA HAS BEEN DETERMINED TO CONTAIN PROPERTIES WITH DOCUMENTED HISTORIC SIGNIFICANCE. IF IT IS NECESSARY TO DEVIATE FROM THESE PLANS IN THIS AREA, PLEASE 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.
2. SEE BUILDING ENTRANCE DETAIL FOR ROUTING INTO BUILDING

1. INSTALL SMFO CABLE
2. INSTALL PLENUM RATED FIBER OPTIC CABLE
3. INSTALL FIBER OPTIC DROP CABLE
4. INSTALL TRACER WIRE
5. REUSE NCDOT SMFO CABLE
6. REUSE GDOT SMFO CABLE
1. TRENCH
2. INSTALL PVC CONDUIT
3. INSTALL RIGID, GALVANIZED STEEL CONDUIT
4. INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
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6. INSTALL OUTER-DUCT POLYETHYLENE CONDUIT
7. INSTALL POLYETHYLENE CONDUIT
8. DIRECTIONAL DRILL CONDUIT
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10. INSTALL CABLE(S) IN EXISTING CONDUIT
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17. INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET
18. INSTALL NEW RISER INTO POLE MOUNTED CABINET
19. REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING
1. INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET
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5. INSTALL BASE MOUNTED SPLICE CABINET
6. REMOVE EXISTING SPLICE CABINET
7. INSTALL TERMINAL SPLICE BOX
8. MODIFY EXISTING SPLICE ENCLOSURE
1. INSTALL CABINET FOUNDATION
2. REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER
3. MODIFY EXISTING CABINET FOUNDATION
4. INSTALL NEW 333 COMMUNICATION CABINET
5. INSTALL NEW 332 BASE MOUNTED CABINET
6. INSTALL NEW 336S CABINET
7. INSTALL CCTV CAMERA ASSEMBLY
8. INSTALL CCTV CAMERA WOOD POLE
9. INSTALL CCTV METAL POLE AND FOUNDATION
10. INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX
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13. INSTALL STANDARD JUNCTION BOX
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18. INSTALL STANDARD GUY ASSEMBLY
19. INSTALL SIDEWALK GUY ASSEMBLY
20. INSTALL MESSENGER CABLE
21. REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE
22. REMOVE EXISTING COMMUNICATIONS CABLE
23. INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE
24. INSTALL DELINEATOR MARKER
25. STORE 30 FEET OF EACH COMMUNICATIONS CABLE
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27. LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE
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30. INSTALL NEW ELECTRICAL SERVICE
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SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/20/08 DATE

CADD Filename ...\Sht0458m.dgn

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| PROJECT REFERENCE NO. | SHEET NO. |
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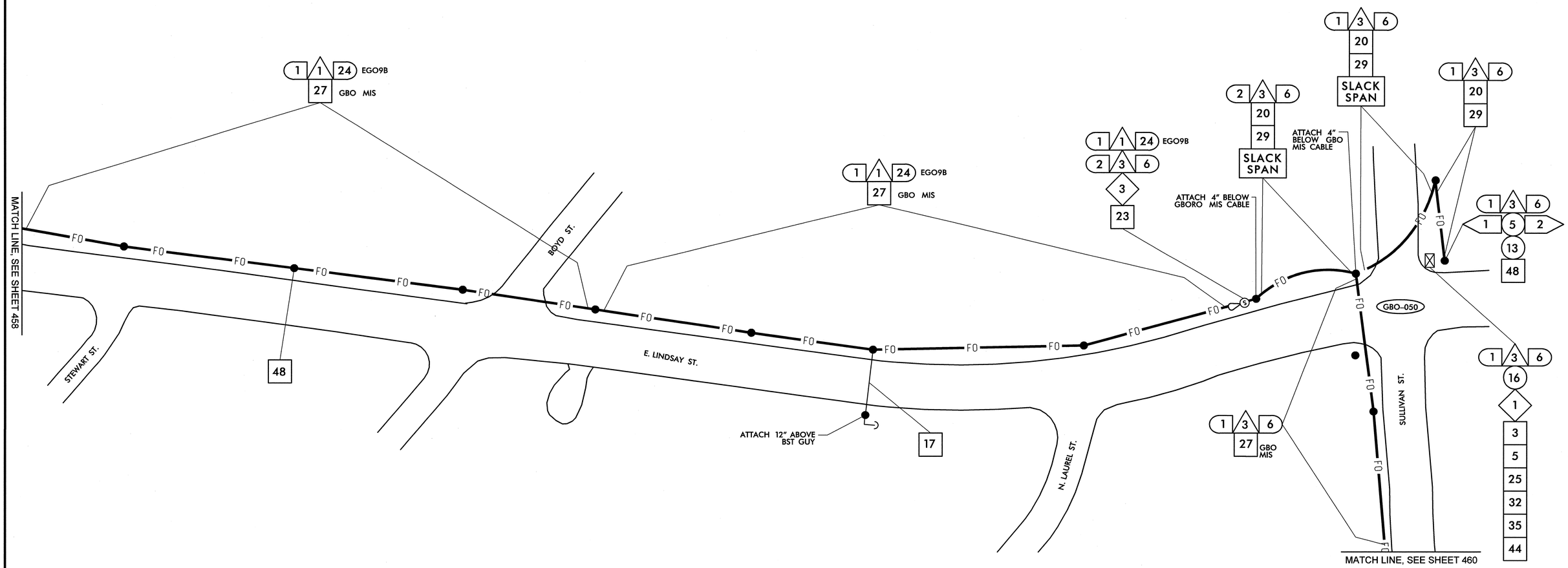
| U-4711 | 459 |




| | |
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| 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE |
| 22 | REMOVE EXISTING COMMUNICATIONS CABLE |
| 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE |
| 24 | INSTALL DELINEATOR MARKER |
| 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE |
| 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 30 | INSTALL NEW ELECTRICAL SERVICE |
| 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 32 | INSTALL NEW CONTROLLER |
| 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 34 | INSTALL GENERATOR POWER INLET BOX |
| 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 36 | INSTALL UNIFIED CABLE |
| 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 40 | INSTALL RADIO TRANSCEIVER |
| 41 | INSTALL SYSTEM LOOP |
| 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 44 | INSTALL LOCAL LOOP AMPLIFIER |
| 45 | INSTALL CITY WI-FI ANTENNA |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH |
| 47 | INSTALL CODEC |
| 48 | BOND MESSENGER CABLE TO POLE GROUND |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION |
| 50 | INSTALL ANTENNA CABLE |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT |
| 53 | INSTALL DSL ETHERNET SWITCH |
| 54 | INSTALL ETHERNET CABLE |
| 55 | INSTALL TERMINAL SERVER |
| 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
| 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

PLANS PREPARED IN THE OFFICE OF:

Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000

Institute of Transportation Engineers
Pedestrian and Safety Research Institute
Intelligent Transportation Systems
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht0459.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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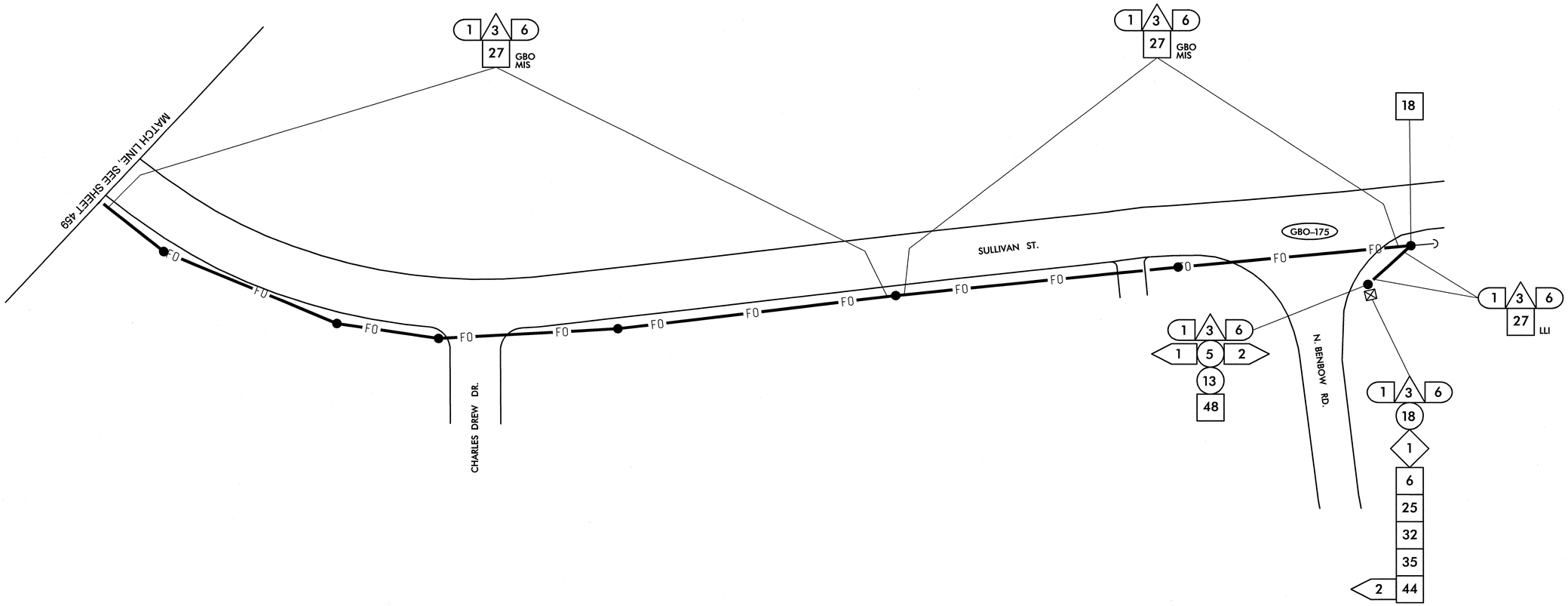
| U-4711 | 460 |




1. INSTALL SMFO CABLE
2. INSTALL PLENUM RATED FIBER OPTIC CABLE
3. INSTALL FIBER OPTIC DROP CABLE
4. INSTALL TRACER WIRE
5. REUSE NCDOT SMFO CABLE
6. REUSE GDOT SMFO CABLE

1. TRENCH
2. INSTALL PVC CONDUIT
3. INSTALL RIGID, GALVANIZED STEEL CONDUIT
4. INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
5. INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING
6. INSTALL OUTER-DUCT POLYETHYLENE CONDUIT
7. INSTALL POLYETHYLENE CONDUIT
8. DIRECTIONAL DRILL CONDUIT
9. BORE AND JACK CONDUIT
10. INSTALL CABLE(S) IN EXISTING CONDUIT
11. INSTALL CABLE(S) IN NEW CONDUIT
12. INSTALL CABLE(S) IN EXISTING RISER
13. INSTALL CABLE(S) IN NEW RISER
14. INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE
15. INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
16. INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
17. INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET
18. INSTALL NEW RISER INTO POLE MOUNTED CABINET
19. REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING

1. INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET
2. INSTALL UNDERGROUND SPLICE ENCLOSURE
3. INSTALL AERIAL SPLICE ENCLOSURE
4. INSTALL POLE MOUNTED SPLICE CABINET
5. INSTALL BASE MOUNTED SPLICE CABINET
6. REMOVE EXISTING SPLICE CABINET
7. INSTALL TERMINAL SPLICE BOX
8. MODIFY EXISTING SPLICE ENCLOSURE

1. INSTALL CABINET FOUNDATION
2. REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER
3. MODIFY EXISTING CABINET FOUNDATION
4. INSTALL NEW 333 COMMUNICATION CABINET
5. INSTALL NEW 332 BASE MOUNTED CABINET
6. INSTALL NEW 336S CABINET
7. INSTALL CCTV CAMERA ASSEMBLY
8. INSTALL CCTV CAMERA WOOD POLE
9. INSTALL CCTV METAL POLE AND FOUNDATION
10. INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX
11. INSTALL SPECIAL OVERSIZED JUNCTION BOX
12. INSTALL OVERSIZED JUNCTION BOX
13. INSTALL STANDARD JUNCTION BOX
14. REMOVE EXISTING JUNCTION BOX
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18. INSTALL STANDARD GUY ASSEMBLY
19. INSTALL SIDEWALK GUY ASSEMBLY
20. INSTALL MESSENGER CABLE
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27. LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE
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NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


PLANS PREPARED IN THE OFFICE OF:
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Traffic Engineering and Safety Systems Branch
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Pkwy., Garner, NC 27529


SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/20/08 DATE

CADD Filename: ...\Sht0460.dgn

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| PROJECT REFERENCE NO. | SHEET NO. |
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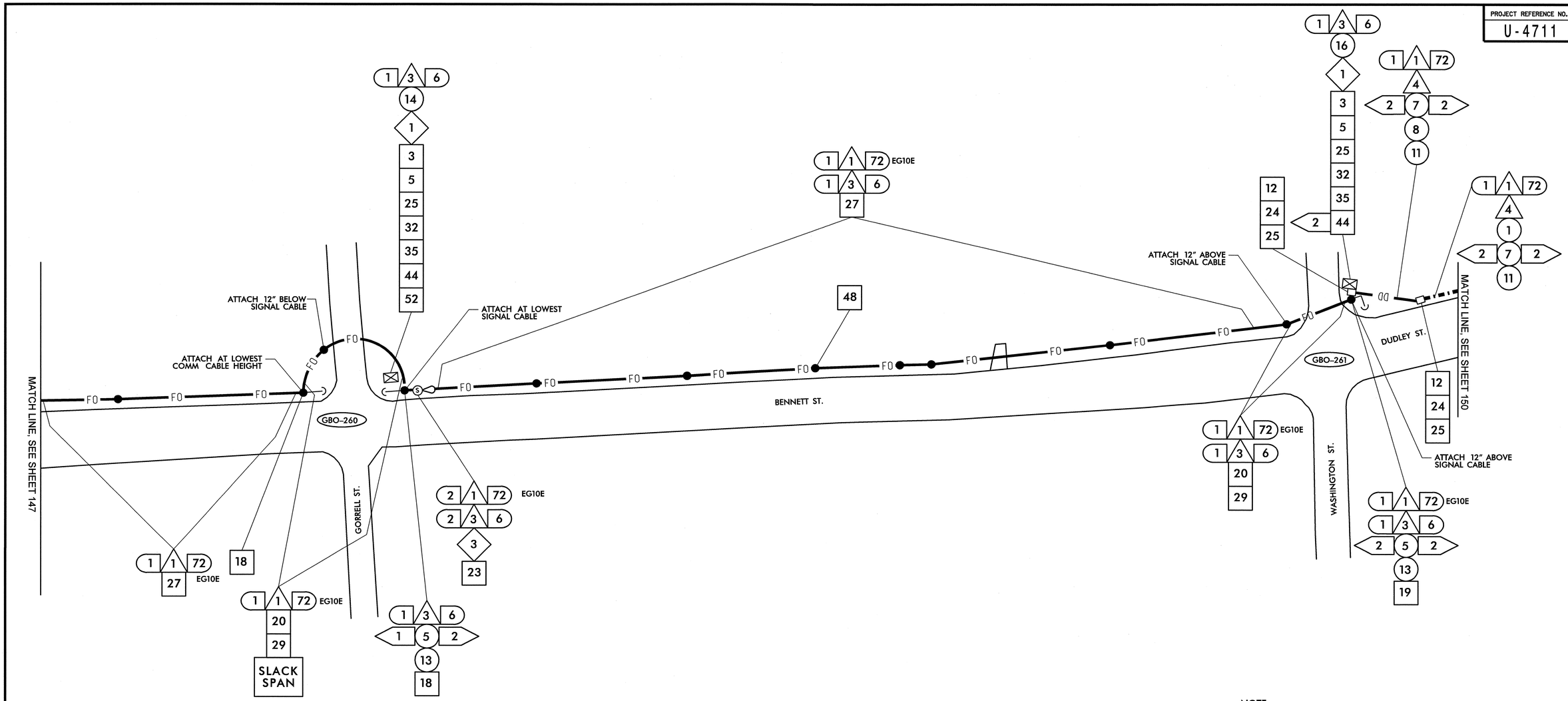
| U-4711 | 461 |




NOTE:
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1. INSTALL SMFO CABLE
2. INSTALL PLENUM RATED FIBER OPTIC CABLE
3. INSTALL FIBER OPTIC DROP CABLE
4. INSTALL TRACER WIRE
5. REUSE NCDOT SMFO CABLE
6. REUSE GDOT SMFO CABLE

1. TRENCH
2. INSTALL PVC CONDUIT
3. INSTALL RIGID, GALVANIZED STEEL CONDUIT
4. INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
5. INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING
6. INSTALL OUTER-DUCT POLYETHYLENE CONDUIT
7. INSTALL POLYETHYLENE CONDUIT
8. DIRECTIONAL DRILL CONDUIT
9. BORE AND JACK CONDUIT
10. INSTALL CABLE(S) IN EXISTING CONDUIT
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1. INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET
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3. INSTALL AERIAL SPLICE ENCLOSURE
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5. INSTALL BASE MOUNTED SPLICE CABINET
6. REMOVE EXISTING SPLICE CABINET
7. INSTALL TERMINAL SPLICE BOX
8. MODIFY EXISTING SPLICE ENCLOSURE

1. INSTALL CABINET FOUNDATION
2. REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER
3. MODIFY EXISTING CABINET FOUNDATION
4. INSTALL NEW 333 COMMUNICATION CABINET
5. INSTALL NEW 332 BASE MOUNTED CABINET
6. INSTALL NEW 336S CABINET
7. INSTALL CCTV CAMERA ASSEMBLY
8. INSTALL CCTV CAMERA WOOD POLE
9. INSTALL CCTV METAL POLE AND FOUNDATION
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20. INSTALL MESSENGER CABLE
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23. INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE
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58. INSTALL WIRELESS ACCESS POINT POWER CABLE

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000


Traffic Engineering and Safety Systems Branch
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht0461.dgn

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| PROJECT REFERENCE NO. | SHEET NO. |
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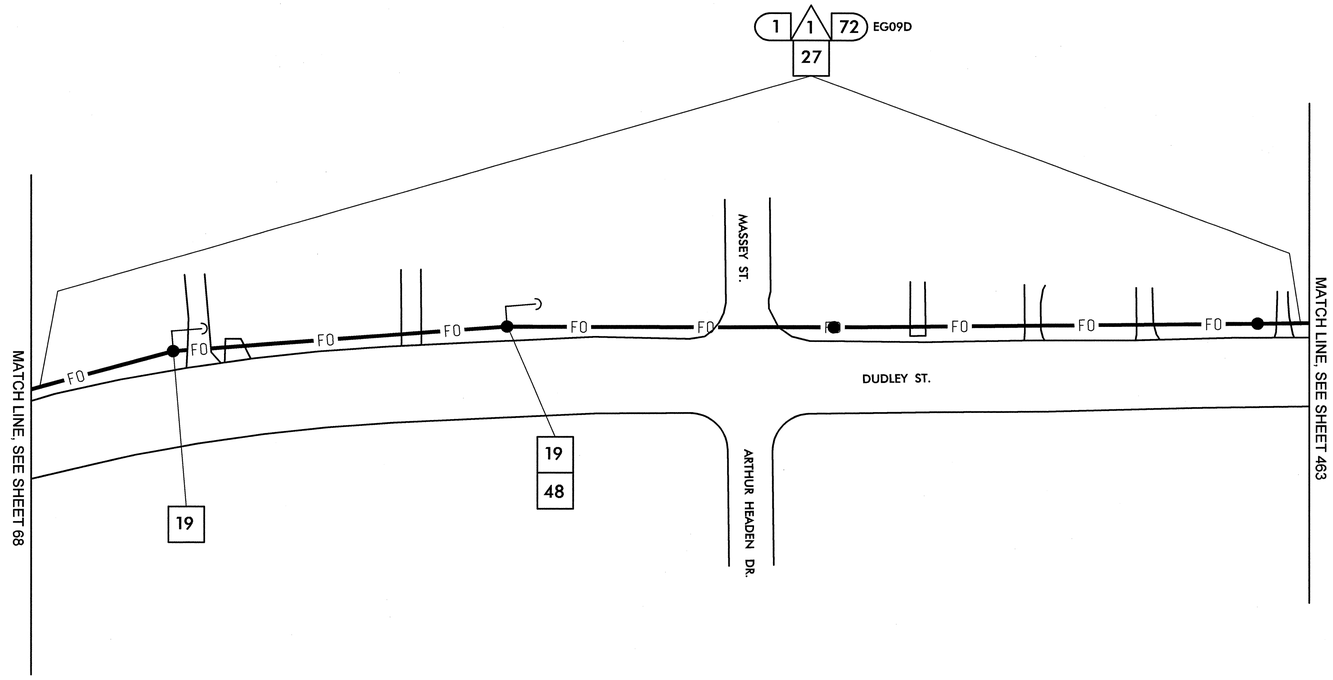
| U-4711 | 462 |

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1. INSTALL SMFO CABLE
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7. INSTALL TERMINAL SPLICE BOX
8. MODIFY EXISTING SPLICE ENCLOSURE

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PLANS PREPARED IN THE OFFICE OF:
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Traffic Engineering and Safety Systems Branch
Intelligent Transportation Systems
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH
PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO
SIGNATURE 2/20/08 DATE
CADD Filename ...\Sht0462m.dgn

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| PROJECT REFERENCE NO. | SHEET NO. |
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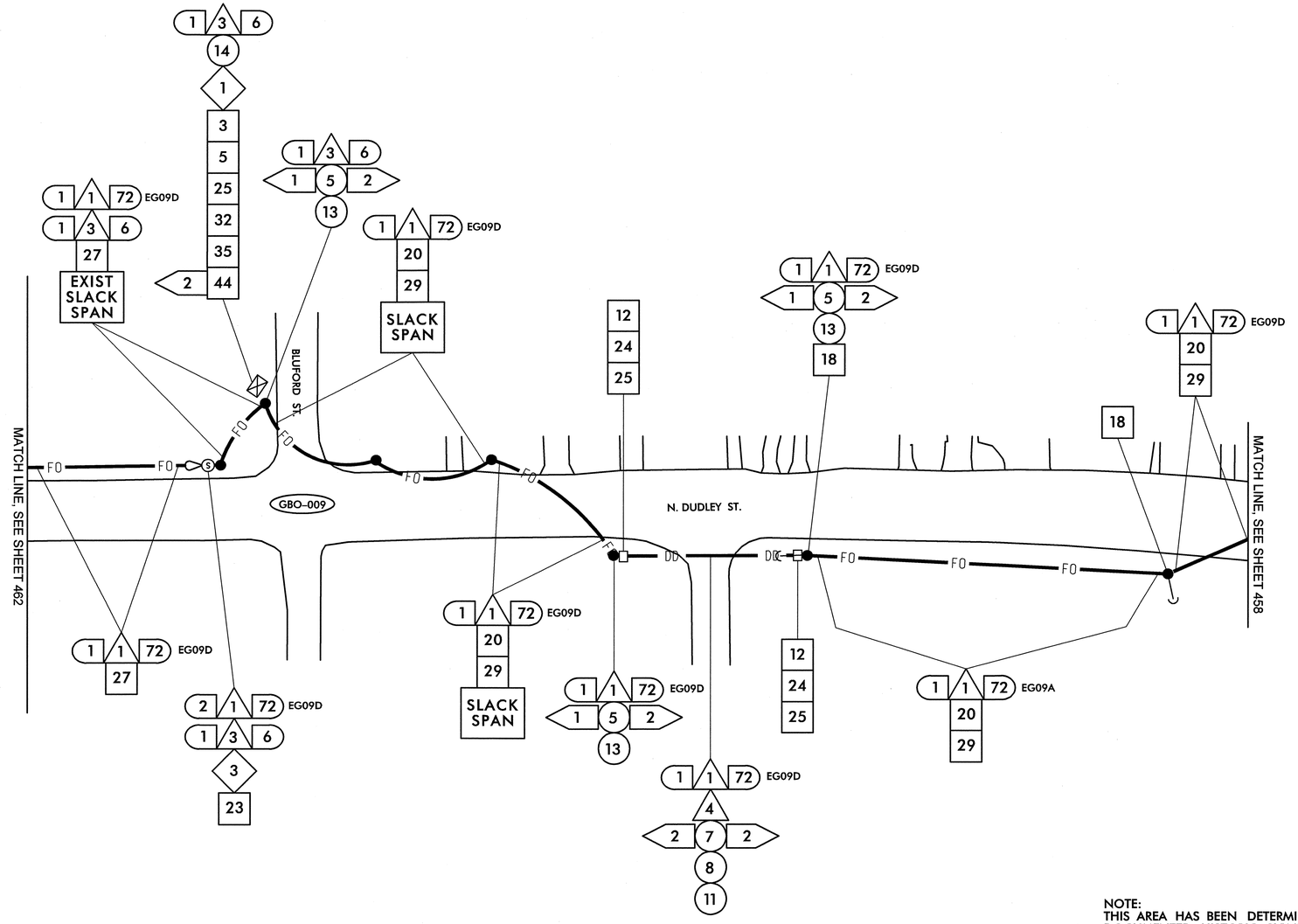
| U-4711 | 463 |

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1. INSTALL SMFO CABLE
2. INSTALL PLENUM RATED FIBER OPTIC CABLE
3. INSTALL FIBER OPTIC DROP CABLE
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8. DIRECTIONAL DRILL CONDUIT
9. BORE AND JACK CONDUIT
10. INSTALL CABLE(S) IN EXISTING CONDUIT
11. INSTALL CABLE(S) IN NEW CONDUIT
12. INSTALL CABLE(S) IN EXISTING RISER
13. INSTALL CABLE(S) IN NEW RISER
14. INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE
15. INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
16. INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
17. INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET
18. INSTALL NEW RISER INTO POLE MOUNTED CABINET
19. REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING
1. INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET
2. INSTALL UNDERGROUND SPLICE ENCLOSURE
3. INSTALL AERIAL SPLICE ENCLOSURE
4. INSTALL POLE MOUNTED SPLICE CABINET
5. INSTALL BASE MOUNTED SPLICE CABINET
6. REMOVE EXISTING SPLICE CABINET
7. INSTALL TERMINAL SPLICE BOX
8. MODIFY EXISTING SPLICE ENCLOSURE
1. INSTALL CABINET FOUNDATION
2. REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER
3. MODIFY EXISTING CABINET FOUNDATION
4. INSTALL NEW 333 COMMUNICATION CABINET
5. INSTALL NEW 332 BASE MOUNTED CABINET
6. INSTALL NEW 336S CABINET
7. INSTALL CCTV CAMERA ASSEMBLY
8. INSTALL CCTV CAMERA WOOD POLE
9. INSTALL CCTV METAL POLE AND FOUNDATION
10. INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX
11. INSTALL SPECIAL OVERSIZED JUNCTION BOX
12. INSTALL OVERSIZED JUNCTION BOX
13. INSTALL STANDARD JUNCTION BOX
14. REMOVE EXISTING JUNCTION BOX
15. INSTALL WOOD POLE
16. REMOVE EXISTING WOOD POLE
17. INSTALL AERIAL GUY ASSEMBLY
18. INSTALL STANDARD GUY ASSEMBLY
19. INSTALL SIDEWALK GUY ASSEMBLY
20. INSTALL MESSENGER CABLE
21. REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE
22. REMOVE EXISTING COMMUNICATIONS CABLE
23. INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE
24. INSTALL DELINEATOR MARKER
25. STORE 30 FEET OF EACH COMMUNICATIONS CABLE
26. STORE 100 FEET OF EACH COMMUNICATIONS CABLE
27. LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE
28. LASH CABLE(S) TO EXISTING MESSENGER CABLE
29. LASH CABLE(S) TO NEW MESSENGER CABLE
30. INSTALL NEW ELECTRICAL SERVICE
31. MODIFY EXISTING ELECTRICAL SERVICE
32. INSTALL NEW CONTROLLER
33. INSTALL EXISTING CABLE IN NEW CABINET
34. INSTALL GENERATOR POWER INLET BOX
35. INSTALL LOCAL GIGABIT ETHERNET SWITCH
36. INSTALL UNIFIED CABLE
37. INSTALL POLE MOUNTED EQUIPMENT CABINET
38. INSTALL UNI-DIRECTIONAL YAGI ANTENNA
39. INSTALL OMNI-DIRECTIONAL ANTENNA
40. INSTALL RADIO TRANSCEIVER
41. INSTALL SYSTEM LOOP
42. INSTALL SYSTEM LOOP AMPLIFIER
43. INSTALL SYSTEM LOOP LEAD-IN CABLE
44. INSTALL LOCAL LOOP AMPLIFIER
45. INSTALL CITY WI-FI ANTENNA
46. INSTALL HUB 10-GIGABIT ETHERNET SWITCH
47. INSTALL CODEC
48. BOND MESSENGER CABLE TO POLE GROUND
49. INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION
50. INSTALL ANTENNA CABLE
51. RECONNECT RAILROAD PREEMPTION EQUIPMENT
52. RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT
53. INSTALL DSL ETHERNET SWITCH
54. INSTALL ETHERNET CABLE
55. INSTALL TERMINAL SERVER
56. INSTALL MICROWAVE VEHICLE DETECTOR
57. INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT
58. INSTALL WIRELESS ACCESS POINT POWER CABLE

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

PLANS PREPARED IN THE OFFICE OF:


Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000


Traffic Engineering and Safety Systems Branch
Intelligent Transportation Systems
DIVISION OF HIGHWAYS, STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

| | | | |
|---|---|---|---|
| PLAN DATE: FEBRUARY, 2008 | | REVIEWED BY: K.W. SMITH | |
| PREPARED BY: K.D. VANPATTEN | | REVIEWED BY: M.W. DUNZO | |
| REVISIONS | | INIT. | DATE |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO
SIGNATURE 2/20/08 DATE

CADD Filename: ...\Sht0463m.dgn

2/20/2008
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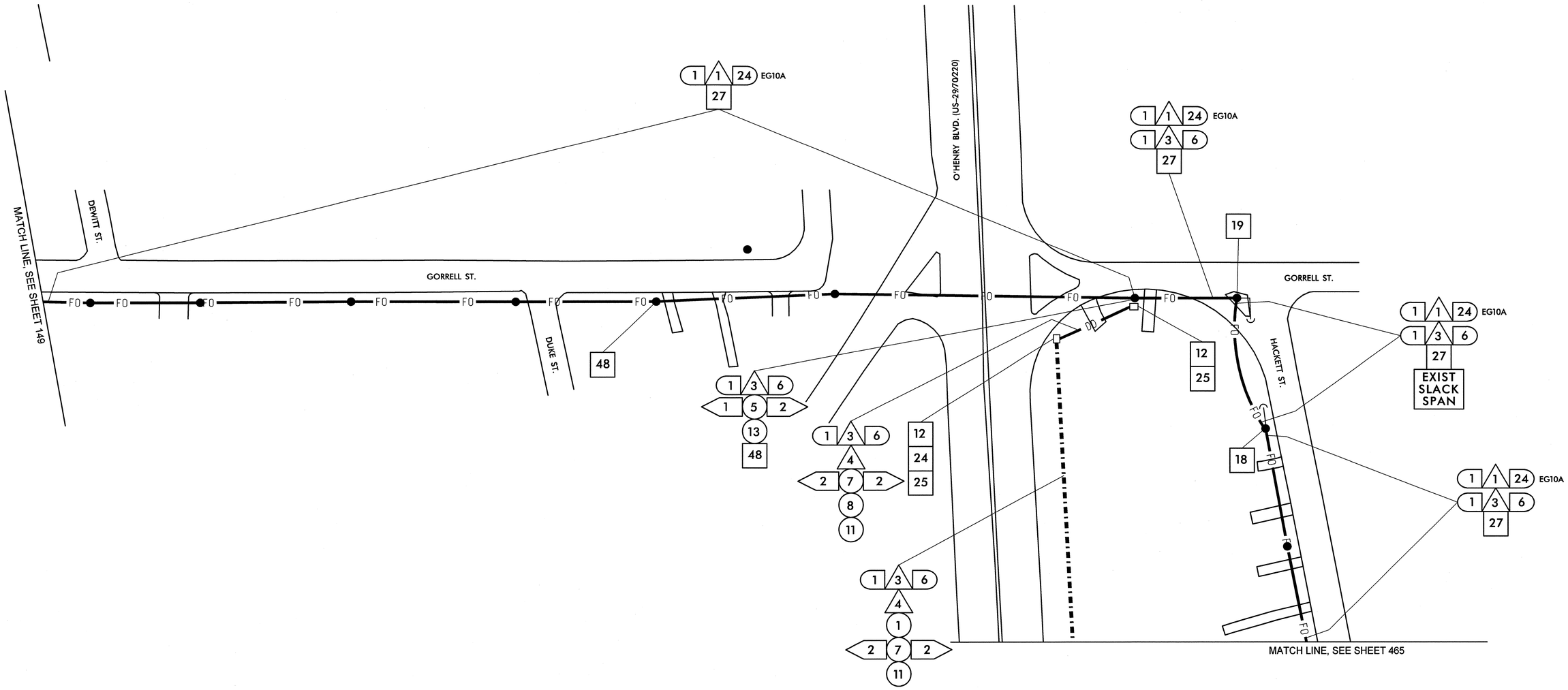
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-4711 | 464 |




| | | | | | |
|---|---|---|---|---|---|
| 1 | INSTALL SMFO CABLE | 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE | 6 | INSTALL NEW 336S CABINET |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE | 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 3 | INSTALL FIBER OPTIC DROP CABLE | 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 8 | INSTALL CCTV CAMERA WOOD POLE |
| 4 | INSTALL TRACER WIRE | 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET | 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 5 | REUSE NCDOT SMFO CABLE | 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET | 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
| 6 | REUSE GDOT SMFO CABLE | 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING | 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX |
| 1 | TRENCH | 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET | 12 | INSTALL OVERSIZED JUNCTION BOX |
| 2 | INSTALL PVC CONDUIT | 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE | 13 | INSTALL STANDARD JUNCTION BOX |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT | 3 | INSTALL AERIAL SPLICE ENCLOSURE | 14 | REMOVE EXISTING JUNCTION BOX |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD | 4 | INSTALL POLE MOUNTED SPLICE CABINET | 15 | INSTALL WOOD POLE |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING | 5 | INSTALL BASE MOUNTED SPLICE CABINET | 16 | REMOVE EXISTING WOOD POLE |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT | 6 | REMOVE EXISTING SPLICE CABINET | 17 | INSTALL AERIAL GUY ASSEMBLY |
| 7 | INSTALL POLYETHYLENE CONDUIT | 7 | INSTALL TERMINAL SPLICE BOX | 18 | INSTALL STANDARD GUY ASSEMBLY |
| 8 | DIRECTIONAL DRILL CONDUIT | 8 | MODIFY EXISTING SPLICE ENCLOSURE | 19 | INSTALL SIDEWALK GUY ASSEMBLY |
| 9 | BORE AND JACK CONDUIT | 1 | INSTALL CABINET FOUNDATION | 20 | INSTALL MESSENGER CABLE |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT | 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER | 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT | 3 | MODIFY EXISTING CABINET FOUNDATION | 22 | REMOVE EXISTING COMMUNICATIONS CABLE |
| 12 | INSTALL CABLE(S) IN EXISTING RISER | 4 | INSTALL NEW 333 COMMUNICATION CABINET | 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE |
| 13 | INSTALL CABLE(S) IN NEW RISER | 5 | INSTALL NEW 332 BASE MOUNTED CABINET | 24 | INSTALL DELINEATOR MARKER |
| | | | | 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE | 44 | INSTALL LOCAL LOOP AMPLIFIER | 53 | INSTALL DSL ETHERNET SWITCH |
| 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE | 45 | INSTALL CITY WI-FI ANTENNA | 54 | INSTALL ETHERNET CABLE |
| 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE | 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH | 55 | INSTALL TERMINAL SERVER |
| 29 | LASH CABLE(S) TO NEW MESSENGER CABLE | 47 | INSTALL CODEC | 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
| 30 | INSTALL NEW ELECTRICAL SERVICE | 48 | BOND MESSENGER CABLE TO POLE GROUND | 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 31 | MODIFY EXISTING ELECTRICAL SERVICE | 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION | 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |
| 32 | INSTALL NEW CONTROLLER | 50 | INSTALL ANTENNA CABLE | | |
| 33 | INSTALL EXISTING CABLE IN NEW CABINET | 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT | | |
| 34 | INSTALL GENERATOR POWER INLET BOX | 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT | | |
| 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH | | | | |
| 36 | INSTALL UNIFIED CABLE | | | | |
| 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET | | | | |
| 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA | | | | |
| 39 | INSTALL OMNI-DIRECTIONAL ANTENNA | | | | |
| 40 | INSTALL RADIO TRANSCEIVER | | | | |
| 41 | INSTALL SYSTEM LOOP | | | | |
| 42 | INSTALL SYSTEM LOOP AMPLIFIER | | | | |
| 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE | | | | |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


PLANS PREPARED IN THE OFFICE OF:
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P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000



750 Greenfield Pkwy., Garner, NC 27529


SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

| | | | |
|---|---|---|---|
| PLAN DATE: FEBRUARY, 2008 | REVIEWED BY: K.W. SMITH | | |
| PREPARED BY: K.D. VANPATTEN | REVIEWED BY: M.W. DUNZO | | |
| REVISIONS | | INIT. | DATE |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO
SIGNATURE DATE 2/20/08
CADD Filename: ...\Sht0464.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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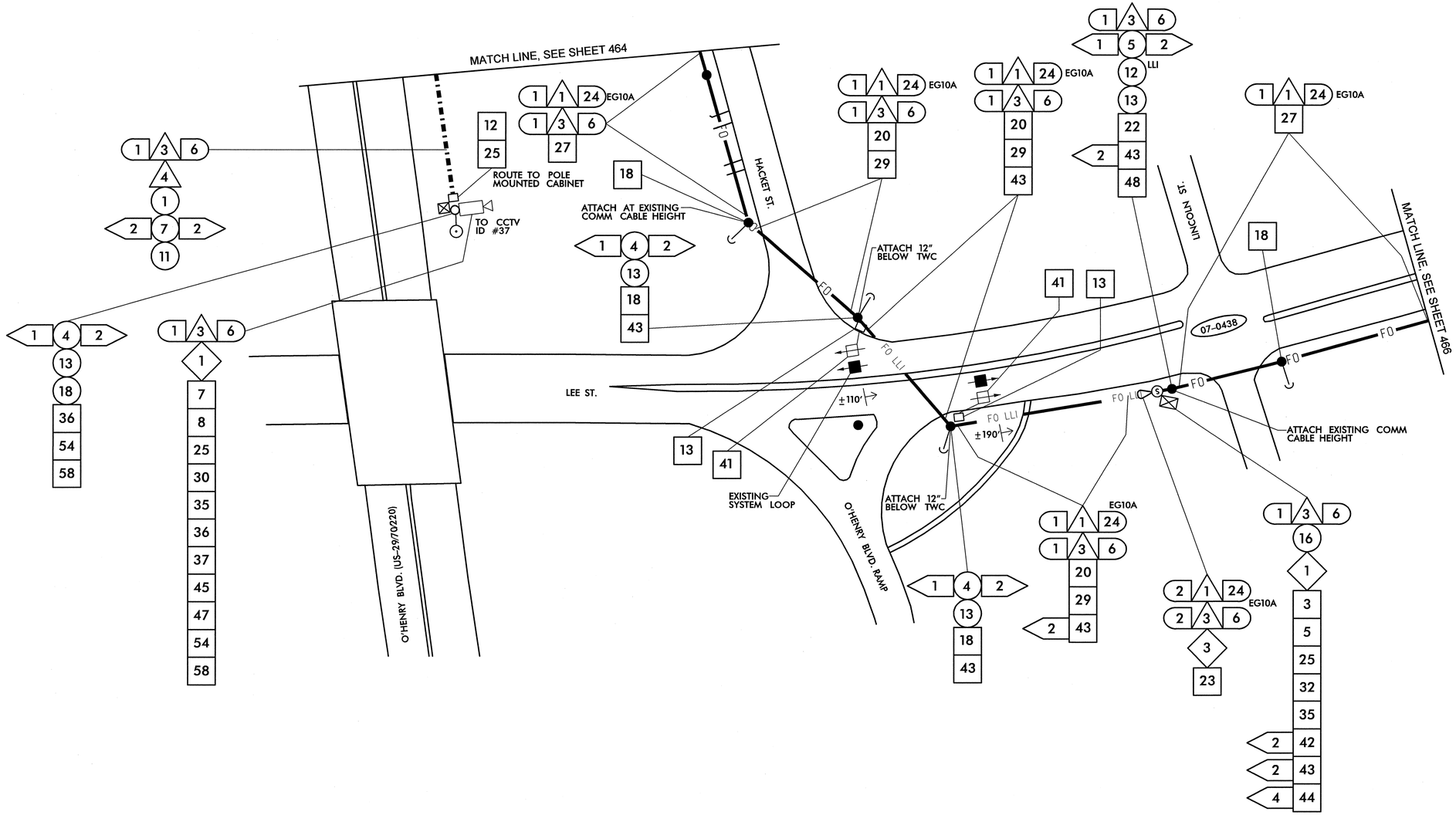
| U-4711 | 465 |

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|---|---|
| 1 | INSTALL SMFO CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE |
| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
| 6 | REUSE GDOT SMFO CABLE |
| 1 | TRENCH |
| 2 | INSTALL PVC CONDUIT |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT |
| 7 | INSTALL POLYETHYLENE CONDUIT |
| 8 | DIRECTIONAL DRILL CONDUIT |
| 9 | BORE AND JACK CONDUIT |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT |
| 12 | INSTALL CABLE(S) IN EXISTING RISER |
| 13 | INSTALL CABLE(S) IN NEW RISER |
| 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE |
| 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET |
| 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET |
| 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING |
| 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET |
| 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE |
| 3 | INSTALL AERIAL SPLICE ENCLOSURE |
| 4 | INSTALL POLE MOUNTED SPLICE CABINET |
| 5 | INSTALL BASE MOUNTED SPLICE CABINET |
| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
| 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX |
| 12 | INSTALL OVERSIZED JUNCTION BOX |
| 13 | INSTALL STANDARD JUNCTION BOX |
| 14 | REMOVE EXISTING JUNCTION BOX |
| 15 | INSTALL WOOD POLE |
| 16 | REMOVE EXISTING WOOD POLE |
| 17 | INSTALL AERIAL GUY ASSEMBLY |
| 18 | INSTALL STANDARD GUY ASSEMBLY |
| 19 | INSTALL SIDEWALK GUY ASSEMBLY |
| 20 | INSTALL MESSENGER CABLE |
| 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE |
| 22 | REMOVE EXISTING COMMUNICATIONS CABLE |
| 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE |
| 24 | INSTALL DELINEATOR MARKER |
| 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE |
| 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 30 | INSTALL NEW ELECTRICAL SERVICE |
| 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 32 | INSTALL NEW CONTROLLER |
| 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 34 | INSTALL GENERATOR POWER INLET BOX |
| 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 36 | INSTALL UNIFIED CABLE |
| 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 40 | INSTALL RADIO TRANSCEIVER |
| 41 | INSTALL SYSTEM LOOP |
| 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 44 | INSTALL LOCAL LOOP AMPLIFIER |
| 45 | INSTALL CITY WI-FI ANTENNA |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH |
| 47 | INSTALL CODEC |
| 48 | BOND MESSENGER CABLE TO POLE GROUND |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION |
| 50 | INSTALL ANTENNA CABLE |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT |
| 53 | INSTALL DSL ETHERNET SWITCH |
| 54 | INSTALL ETHERNET CABLE |
| 55 | INSTALL TERMINAL SERVER |
| 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
| 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

PLANS PREPARED IN THE OFFICE OF:

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750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH
PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht0465.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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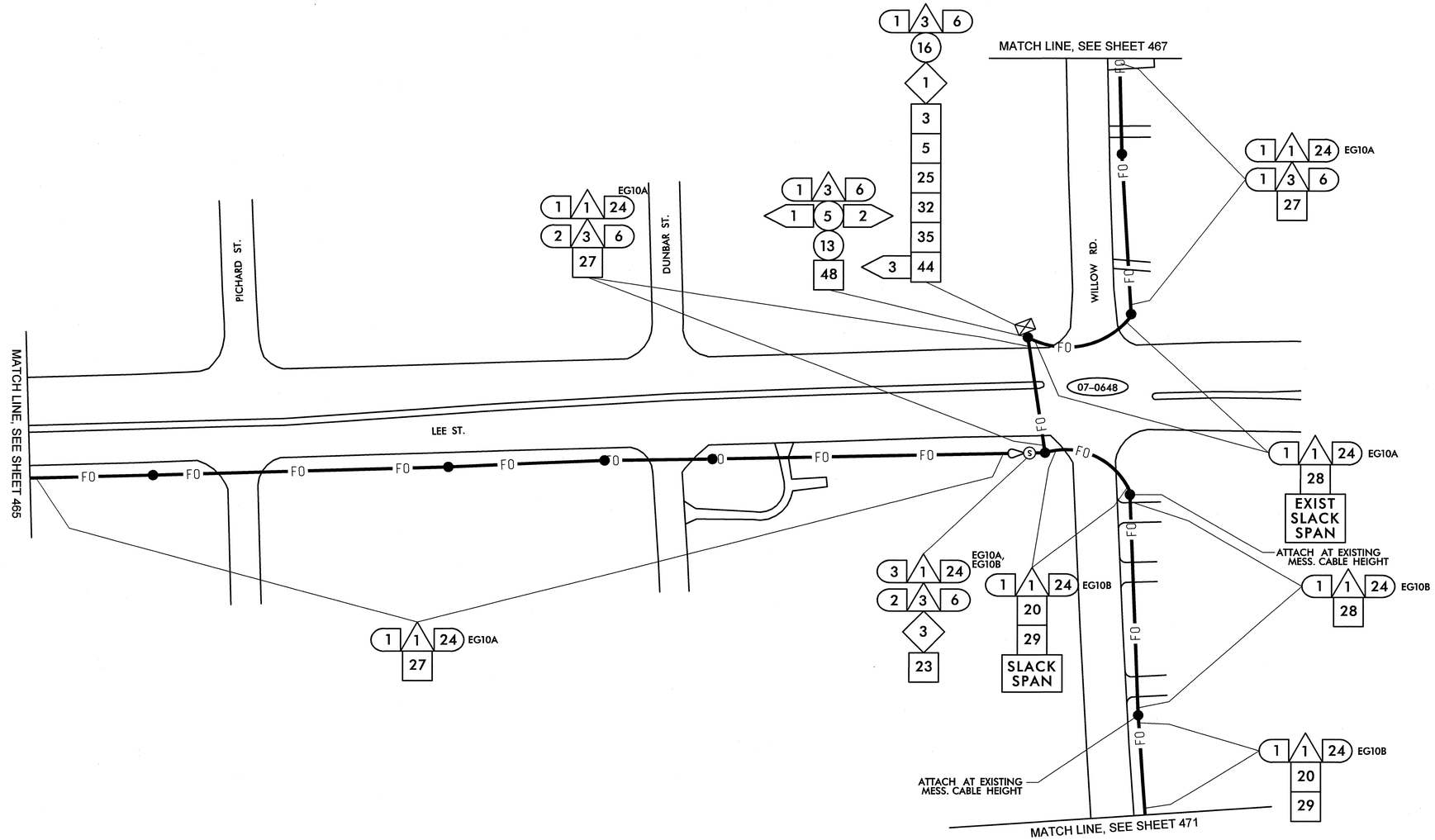
| U-4711 | 466 |

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|---|---|---|---|---|---|---|---|
| 1 | INSTALL SMFO CABLE | 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE | 6 | INSTALL NEW 336S CABINET | 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE | 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 7 | INSTALL CCTV CAMERA ASSEMBLY | 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE | 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 8 | INSTALL CCTV CAMERA WOOD POLE | 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 4 | INSTALL TRACER WIRE | 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET | 9 | INSTALL CCTV METAL POLE AND FOUNDATION | 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 5 | REUSE NCDOT SMFO CABLE | 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET | 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX | 30 | INSTALL NEW ELECTRICAL SERVICE |
| 6 | REUSE GDOT SMFO CABLE | 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING | 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX | 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 1 | TRENCH | 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET | 12 | INSTALL OVERSIZED JUNCTION BOX | 32 | INSTALL NEW CONTROLLER |
| 2 | INSTALL PVC CONDUIT | 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE | 13 | INSTALL STANDARD JUNCTION BOX | 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT | 3 | INSTALL AERIAL SPLICE ENCLOSURE | 14 | REMOVE EXISTING JUNCTION BOX | 34 | INSTALL GENERATOR POWER INLET BOX |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD | 4 | INSTALL POLE MOUNTED SPLICE CABINET | 15 | INSTALL WOOD POLE | 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING | 5 | INSTALL BASE MOUNTED SPLICE CABINET | 16 | REMOVE EXISTING WOOD POLE | 36 | INSTALL UNIFIED CABLE |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT | 6 | REMOVE EXISTING SPLICE CABINET | 17 | INSTALL AERIAL GUY ASSEMBLY | 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 7 | INSTALL POLYETHYLENE CONDUIT | 7 | INSTALL TERMINAL SPLICE BOX | 18 | INSTALL STANDARD GUY ASSEMBLY | 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 8 | DIRECTIONAL DRILL CONDUIT | 8 | MODIFY EXISTING SPLICE ENCLOSURE | 19 | INSTALL SIDEWALK GUY ASSEMBLY | 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 9 | BORE AND JACK CONDUIT | 1 | INSTALL CABINET FOUNDATION | 20 | INSTALL MESSENGER CABLE | 40 | INSTALL RADIO TRANSCEIVER |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT | 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER | 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE | 41 | INSTALL SYSTEM LOOP |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT | 3 | MODIFY EXISTING CABINET FOUNDATION | 22 | REMOVE EXISTING COMMUNICATIONS CABLE | 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 12 | INSTALL CABLE(S) IN EXISTING RISER | 4 | INSTALL NEW 333 COMMUNICATION CABINET | 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE | 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 13 | INSTALL CABLE(S) IN NEW RISER | 5 | INSTALL NEW 332 BASE MOUNTED CABINET | 24 | INSTALL DELINEATOR MARKER | | |
| | | | | 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE | | |

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|---|---|---|---|---|---|
| 44 | INSTALL LOCAL LOOP AMPLIFIER | 53 | INSTALL DSL ETHERNET SWITCH |
| 45 | INSTALL CITY WI-FI ANTENNA | 54 | INSTALL ETHERNET CABLE |
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| 47 | INSTALL CODEC | 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
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| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION | 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |
| 50 | INSTALL ANTENNA CABLE | | |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT | | |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT | | |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

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## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH
PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht0466.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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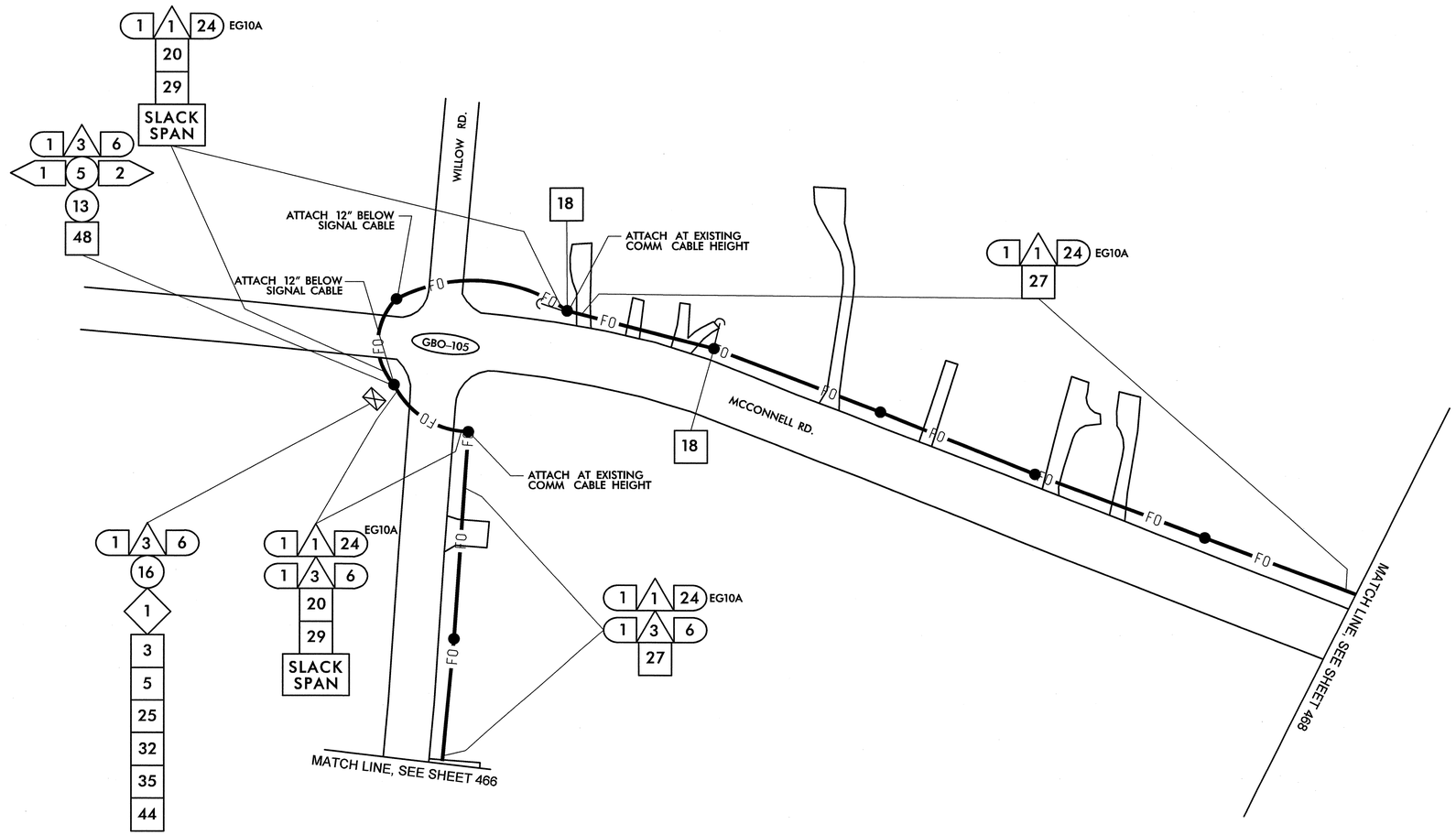


1. INSTALL SMFO CABLE
2. INSTALL PLENUM RATED FIBER OPTIC CABLE
3. INSTALL FIBER OPTIC DROP CABLE
4. INSTALL TRACER WIRE
5. REUSE NCDOT SMFO CABLE
6. REUSE GDOT SMFO CABLE

1. TRENCH
2. INSTALL PVC CONDUIT
3. INSTALL RIGID, GALVANIZED STEEL CONDUIT
4. INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
5. INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING
6. INSTALL OUTER-DUCT POLYETHYLENE CONDUIT
7. INSTALL POLYETHYLENE CONDUIT
8. DIRECTIONAL DRILL CONDUIT
9. BORE AND JACK CONDUIT
10. INSTALL CABLE(S) IN EXISTING CONDUIT
11. INSTALL CABLE(S) IN NEW CONDUIT
12. INSTALL CABLE(S) IN EXISTING RISER
13. INSTALL CABLE(S) IN NEW RISER
14. INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE
15. INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
16. INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
17. INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET
18. INSTALL NEW RISER INTO POLE MOUNTED CABINET
19. REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING

1. INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET
2. INSTALL UNDERGROUND SPLICE ENCLOSURE
3. INSTALL AERIAL SPLICE ENCLOSURE
4. INSTALL POLE MOUNTED SPLICE CABINET
5. INSTALL BASE MOUNTED SPLICE CABINET
6. REMOVE EXISTING SPLICE CABINET
7. INSTALL TERMINAL SPLICE BOX
8. MODIFY EXISTING SPLICE ENCLOSURE

1. INSTALL CABINET FOUNDATION
2. REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER
3. MODIFY EXISTING CABINET FOUNDATION
4. INSTALL NEW 333 COMMUNICATION CABINET
5. INSTALL NEW 332 BASE MOUNTED CABINET
6. INSTALL NEW 336S CABINET
7. INSTALL CCTV CAMERA ASSEMBLY
8. INSTALL CCTV CAMERA WOOD POLE
9. INSTALL CCTV METAL POLE AND FOUNDATION
10. INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX
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19. INSTALL SIDEWALK GUY ASSEMBLY
20. INSTALL MESSENGER CABLE
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NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

PLANS PREPARED IN THE OFFICE OF:

Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000

Traffic Engineering and Safety Systems Branch
Transportation Management Unit
Division of Highways
Department of Transportation
750 Greenfield Pkwy., Garner, NC 27529

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SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

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| PLAN DATE: FEBRUARY, 2008 | REVIEWED BY: K.W. SMITH |
| PREPARED BY: K.D. VANPATTEN | REVIEWED BY: M.W. DUNZO |

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/20/08 DATE

CADD Filename: ...\Sht0467.dgn

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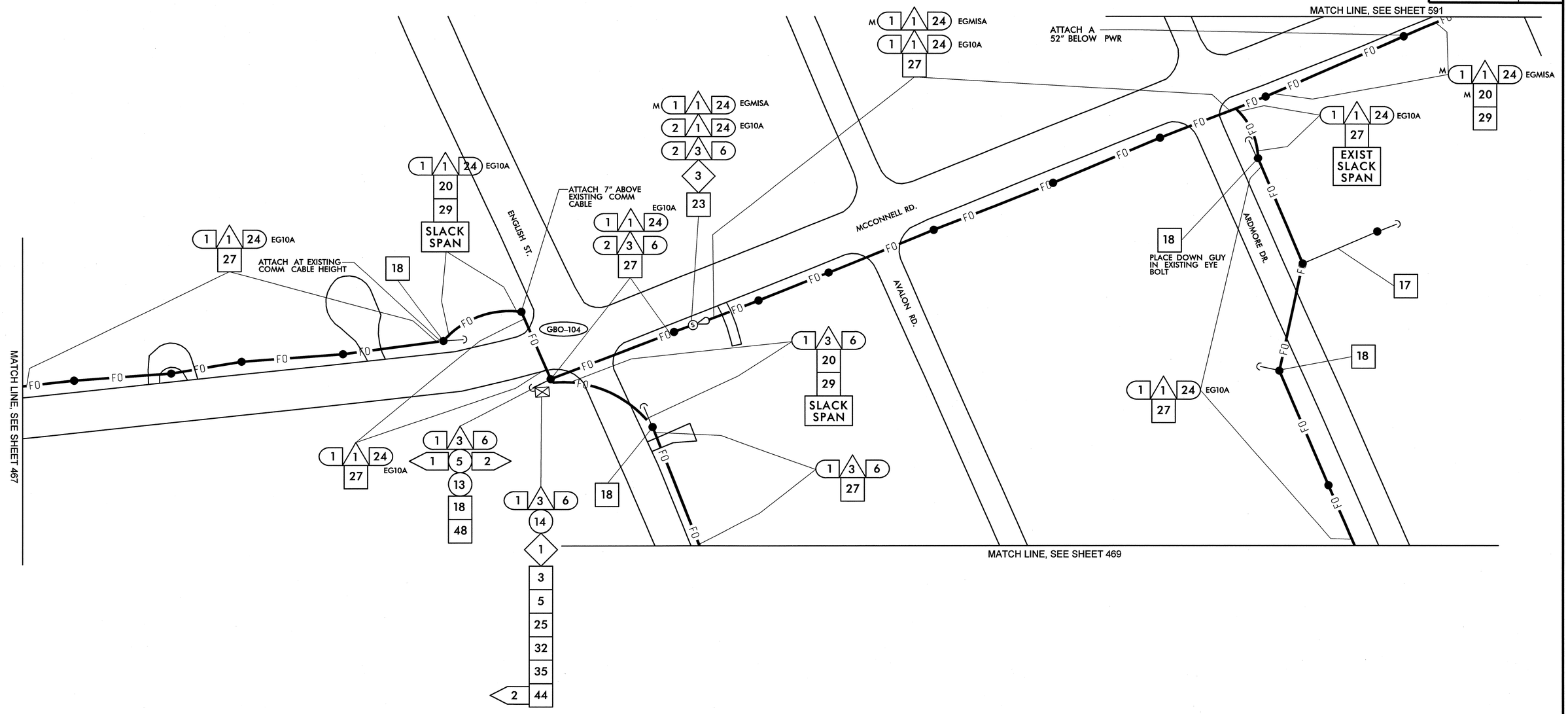
| U-4711 | 468 |

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Traffic Engineering and Safety Systems Branch
Intelligent Transportation Systems
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

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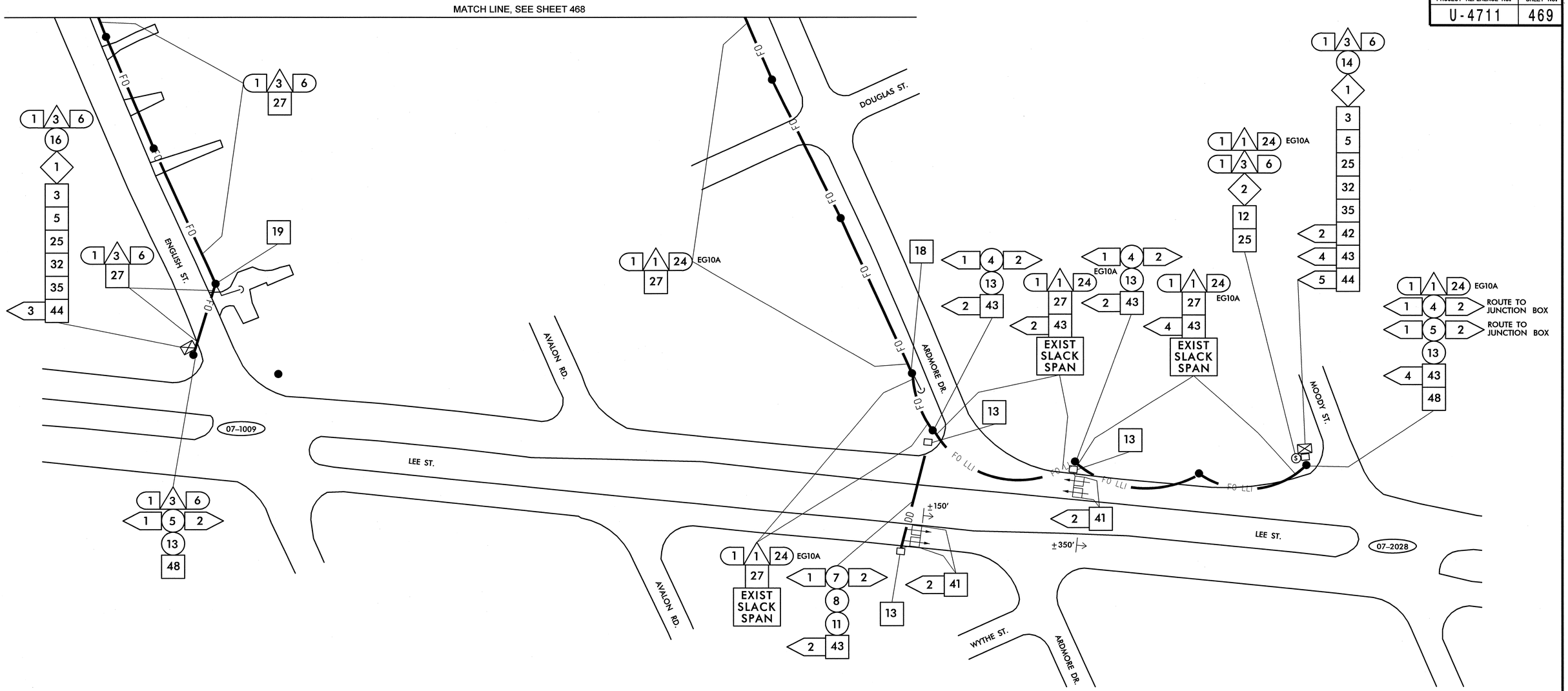


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# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH
PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

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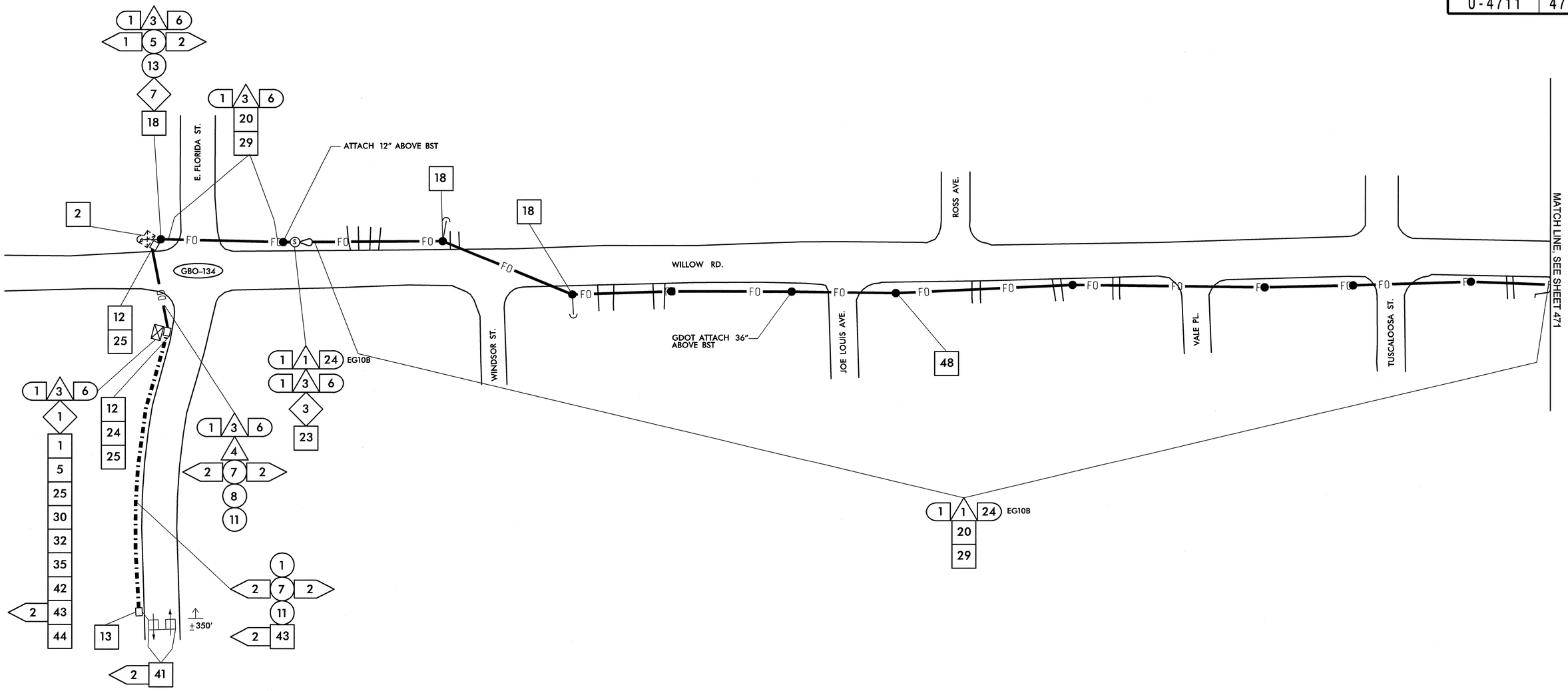
| U-4711 | 470 |

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| 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE |
| 24 | INSTALL DELINEATOR MARKER |
| 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE |
| 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 30 | INSTALL NEW ELECTRICAL SERVICE |
| 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 32 | INSTALL NEW CONTROLLER |
| 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 34 | INSTALL GENERATOR POWER INLET BOX |
| 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 36 | INSTALL UNIFIED CABLE |
| 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 40 | INSTALL RADIO TRANSCEIVER |
| 41 | INSTALL SYSTEM LOOP |
| 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 44 | INSTALL LOCAL LOOP AMPLIFIER |
| 45 | INSTALL CITY WI-FI ANTENNA |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH |
| 47 | INSTALL CODEC |
| 48 | BOND MESSENGER CABLE TO POLE GROUND |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION |
| 50 | INSTALL ANTENNA CABLE |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT |
| 53 | INSTALL DSL ETHERNET SWITCH |
| 54 | INSTALL ETHERNET CABLE |
| 55 | INSTALL TERMINAL SERVER |
| 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
| 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

PLANS PREPARED IN THE OFFICE OF:

Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000

Traffic Engineering and Safety Systems Branch
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filenames ...\Sht0470.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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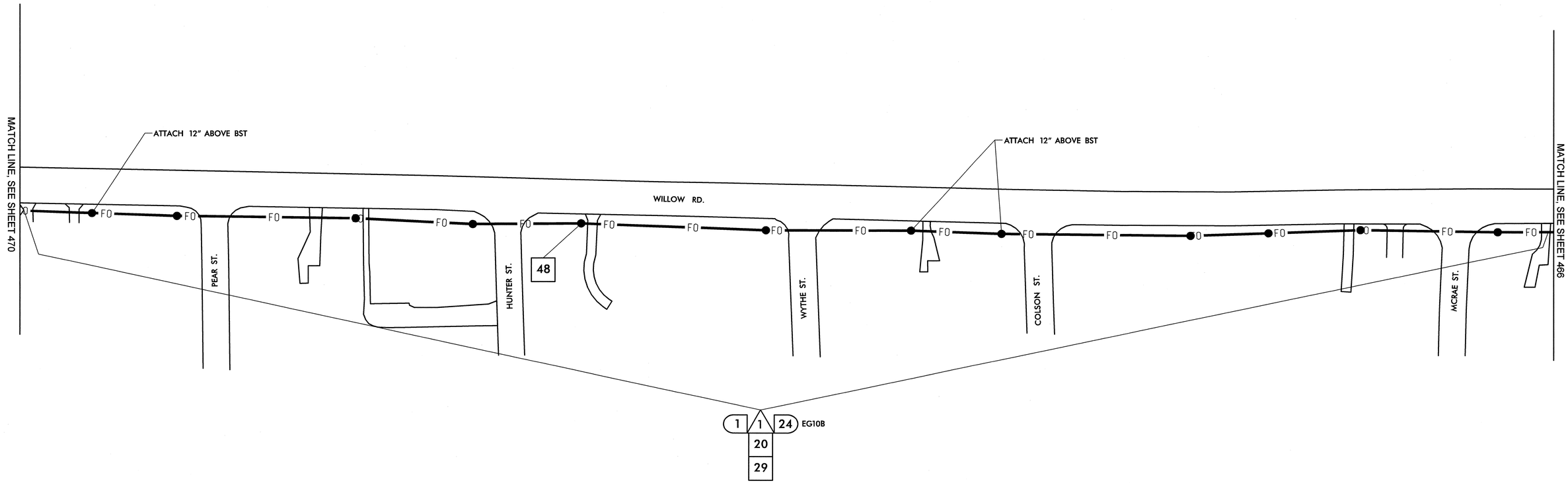
| U-4711 | 471 |

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|---|---|---|---|---|---|---|---|
| 1 | INSTALL SMFO CABLE | 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE | 6 | INSTALL NEW 336S CABINET | 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE | 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 7 | INSTALL CCTV CAMERA ASSEMBLY | 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE | 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 8 | INSTALL CCTV CAMERA WOOD POLE | 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 4 | INSTALL TRACER WIRE | 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET | 9 | INSTALL CCTV METAL POLE AND FOUNDATION | 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 5 | REUSE NCDOT SMFO CABLE | 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET | 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX | 30 | INSTALL NEW ELECTRICAL SERVICE |
| 6 | REUSE GDOT SMFO CABLE | 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING | 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX | 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 1 | TRENCH | 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET | 12 | INSTALL OVERSIZED JUNCTION BOX | 32 | INSTALL NEW CONTROLLER |
| 2 | INSTALL PVC CONDUIT | 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE | 13 | INSTALL STANDARD JUNCTION BOX | 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT | 3 | INSTALL AERIAL SPLICE ENCLOSURE | 14 | REMOVE EXISTING JUNCTION BOX | 34 | INSTALL GENERATOR POWER INLET BOX |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD | 4 | INSTALL POLE MOUNTED SPLICE CABINET | 15 | INSTALL WOOD POLE | 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING | 5 | INSTALL BASE MOUNTED SPLICE CABINET | 16 | REMOVE EXISTING WOOD POLE | 36 | INSTALL UNIFIED CABLE |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT | 6 | REMOVE EXISTING SPLICE CABINET | 17 | INSTALL AERIAL GUY ASSEMBLY | 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 7 | INSTALL POLYETHYLENE CONDUIT | 7 | INSTALL TERMINAL SPLICE BOX | 18 | INSTALL STANDARD GUY ASSEMBLY | 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 8 | DIRECTIONAL DRILL CONDUIT | 8 | MODIFY EXISTING SPLICE ENCLOSURE | 19 | INSTALL SIDEWALK GUY ASSEMBLY | 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 9 | BORE AND JACK CONDUIT | 1 | INSTALL CABINET FOUNDATION | 20 | INSTALL MESSENGER CABLE | 40 | INSTALL RADIO TRANSCEIVER |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT | 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER | 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE | 41 | INSTALL SYSTEM LOOP |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT | 3 | MODIFY EXISTING CABINET FOUNDATION | 22 | REMOVE EXISTING COMMUNICATIONS CABLE | 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 12 | INSTALL CABLE(S) IN EXISTING RISER | 4 | INSTALL NEW 333 COMMUNICATION CABINET | 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE | 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 13 | INSTALL CABLE(S) IN NEW RISER | 5 | INSTALL NEW 332 BASE MOUNTED CABINET | 24 | INSTALL DELINEATOR MARKER | | |
| | | | | 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE | | |

| | | | |
|---|---|---|---|
| 44 | INSTALL LOCAL LOOP AMPLIFIER | 53 | INSTALL DSL ETHERNET SWITCH |
| 45 | INSTALL CITY WI-FI ANTENNA | 54 | INSTALL ETHERNET CABLE |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH | 55 | INSTALL TERMINAL SERVER |
| 47 | INSTALL CODEC | 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
| 48 | BOND MESSENGER CABLE TO POLE GROUND | 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION | 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |
| 50 | INSTALL ANTENNA CABLE | | |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT | | |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT | | |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


PLANS PREPARED IN THE OFFICE OF:
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750 Greenfield Pkwy., Garner, NC 27529


SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht047I.dgn

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| PROJECT REFERENCE NO. | SHEET NO. |
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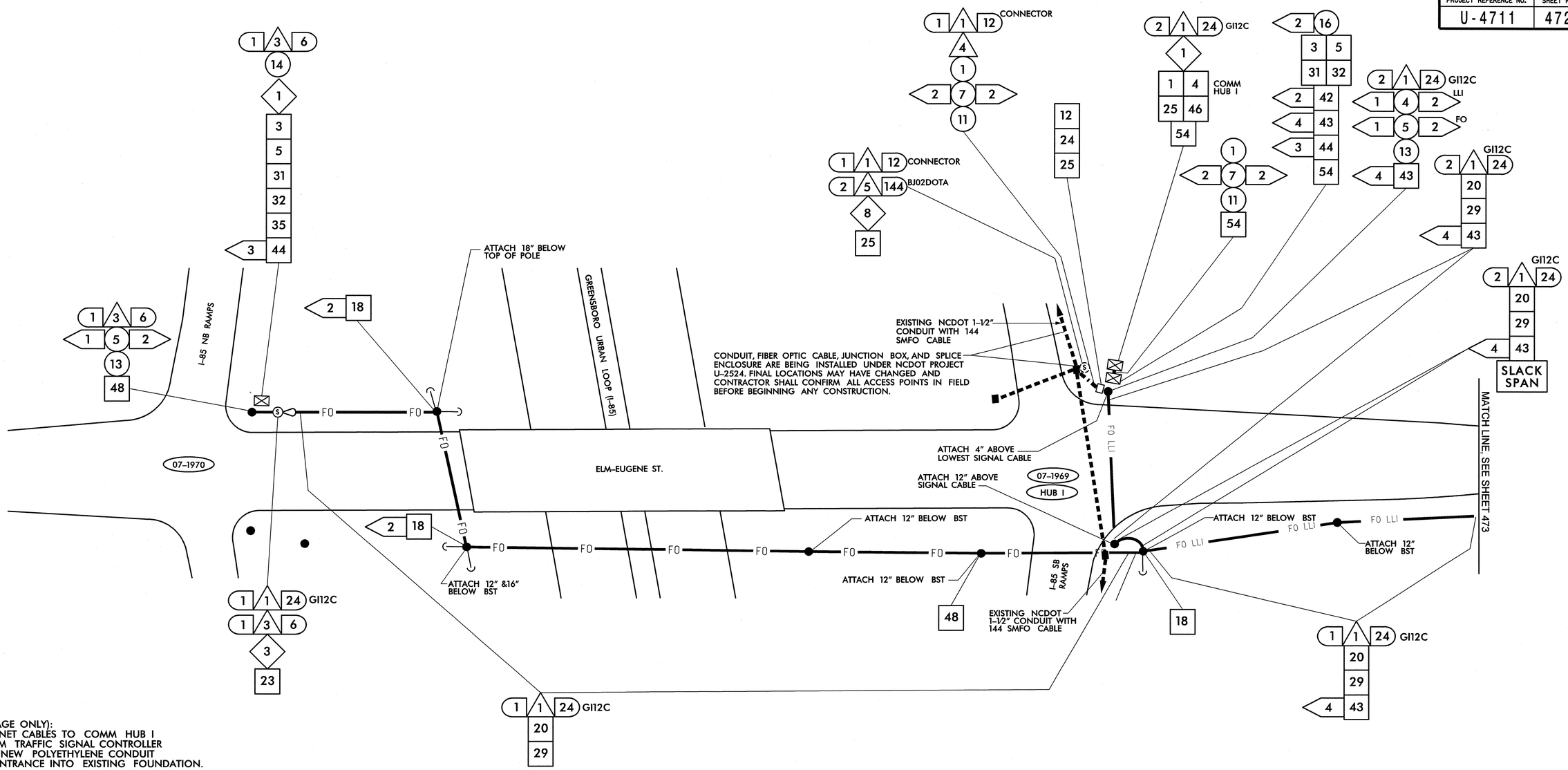
| U-4711 | 472 |




NOTES (THIS PAGE ONLY):
1. ROUTE ETHERNET CABLES TO COMM HUB 1 CABINET FROM TRAFFIC SIGNAL CONTROLLER CABINET VIA NEW POLYETHYLENE CONDUIT AND NEW ENTRANCE INTO EXISTING FOUNDATION.

| | |
|---|---|
| 1 | INSTALL SMFO CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE |
| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
| 6 | REUSE GDOT SMFO CABLE |
| 1 | TRENCH |
| 2 | INSTALL PVC CONDUIT |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT |
| 7 | INSTALL POLYETHYLENE CONDUIT |
| 8 | DIRECTIONAL DRILL CONDUIT |
| 9 | BORE AND JACK CONDUIT |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT |
| 12 | INSTALL CABLE(S) IN EXISTING RISER |
| 13 | INSTALL CABLE(S) IN NEW RISER |
| 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE |
| 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET |
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| 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING |
| 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET |
| 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE |
| 3 | INSTALL AERIAL SPLICE ENCLOSURE |
| 4 | INSTALL POLE MOUNTED SPLICE CABINET |
| 5 | INSTALL BASE MOUNTED SPLICE CABINET |
| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
| 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX |
| 12 | INSTALL OVERSIZED JUNCTION BOX |
| 13 | INSTALL STANDARD JUNCTION BOX |
| 14 | REMOVE EXISTING JUNCTION BOX |
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| 17 | INSTALL AERIAL GUY ASSEMBLY |
| 18 | INSTALL STANDARD GUY ASSEMBLY |
| 19 | INSTALL SIDEWALK GUY ASSEMBLY |
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| 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE |
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| 47 | INSTALL CODEC |
| 48 | BOND MESSENGER CABLE TO POLE GROUND |
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| 50 | INSTALL ANTENNA CABLE |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT |
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| 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
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NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

PLANS PREPARED IN THE OFFICE OF:
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SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 — GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 — REVIEWED BY: K.W. SMITH
PREPARED BY: K.D. VANPATTEN — REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO
SIGNATURE — DATE 2/29/08
CADD Filename: ...\Sht0472.dgn

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| PROJECT REFERENCE NO. | SHEET NO. |
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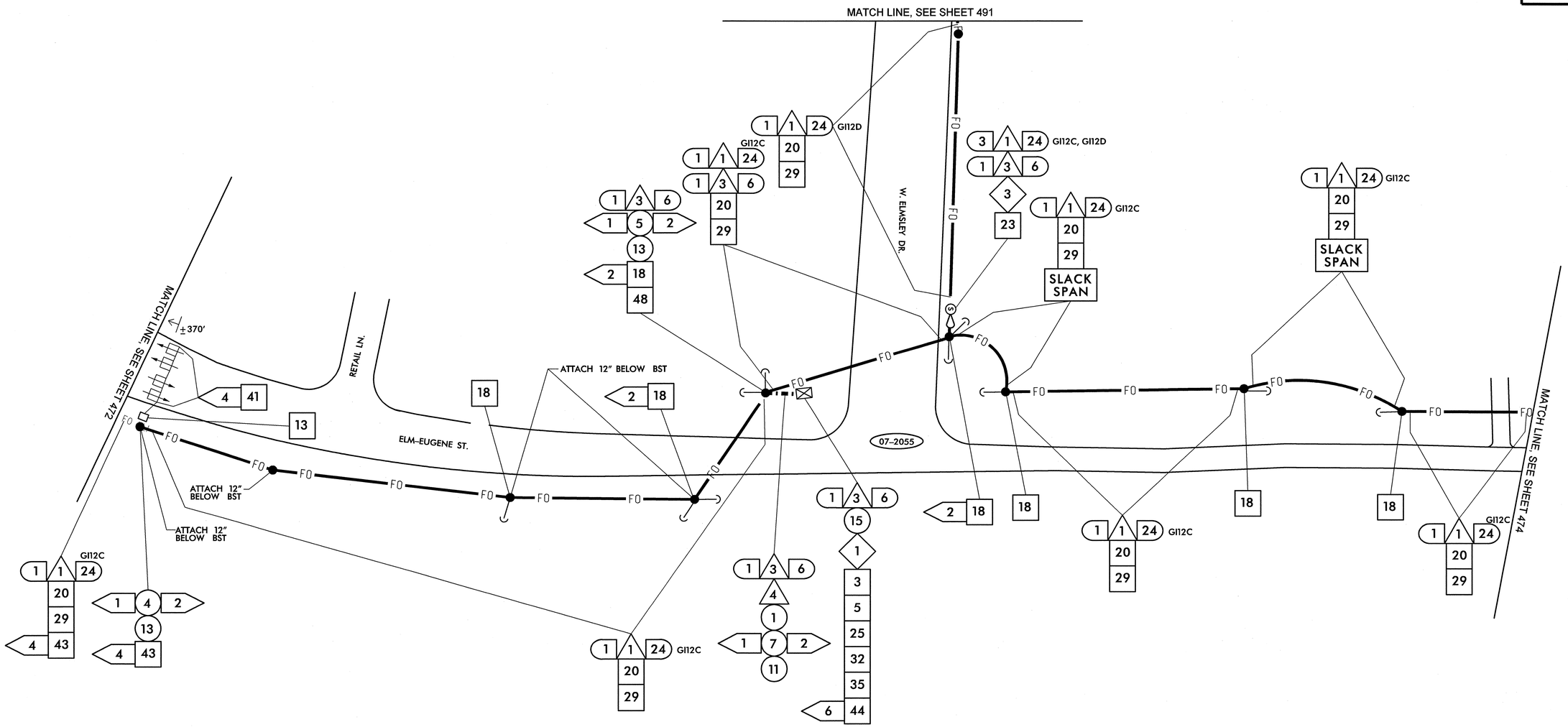


| | |
|---|---|
| 1 | INSTALL SMFO CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
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| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
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Traffic Engineering and Safety Systems Branch
Intelligent Transportation Systems
DIVISION OF HIGHWAYS
DEPARTMENT OF TRANSPORTATION
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH
PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO
SIGNATURE DATE 2/20/08
CADD Filename: ...\Sht0473.dgn

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| PROJECT REFERENCE NO. | SHEET NO. |
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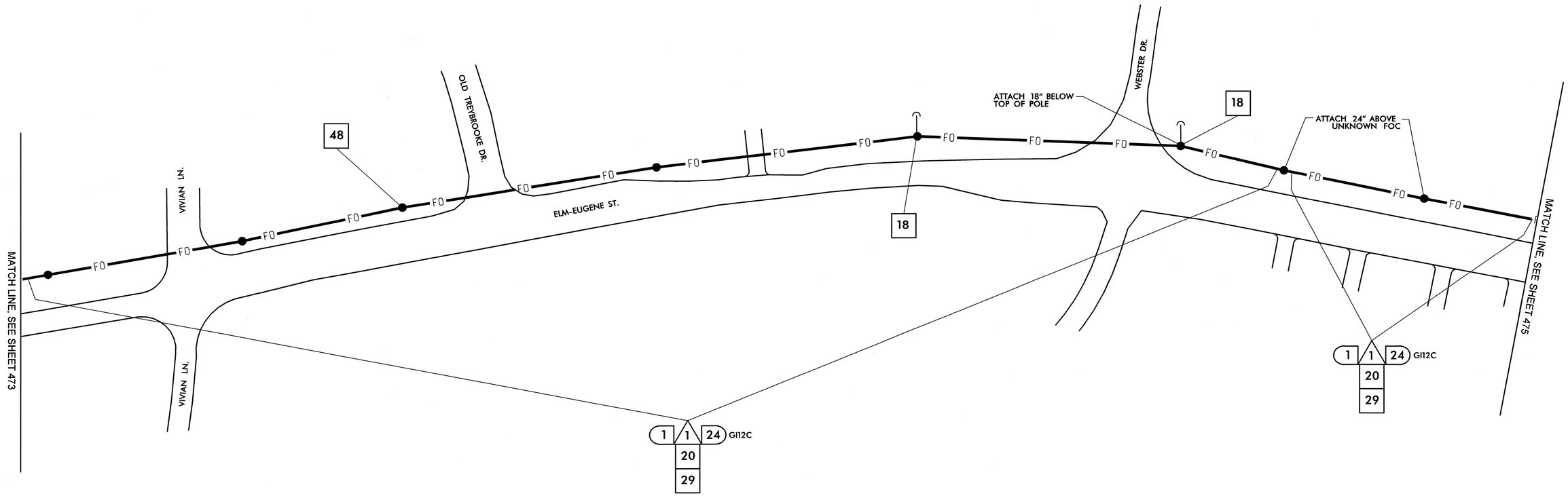
| U-4711 | 474 |

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| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT |
| 7 | INSTALL POLYETHYLENE CONDUIT |
| 8 | DIRECTIONAL DRILL CONDUIT |
| 9 | BORE AND JACK CONDUIT |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT |
| 12 | INSTALL CABLE(S) IN EXISTING RISER |
| 13 | INSTALL CABLE(S) IN NEW RISER |
| 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE |
| 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET |
| 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET |
| 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING |
| 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET |
| 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE |
| 3 | INSTALL AERIAL SPLICE ENCLOSURE |
| 4 | INSTALL POLE MOUNTED SPLICE CABINET |
| 5 | INSTALL BASE MOUNTED SPLICE CABINET |
| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
| 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX |
| 12 | INSTALL OVERSIZED JUNCTION BOX |
| 13 | INSTALL STANDARD JUNCTION BOX |
| 14 | REMOVE EXISTING JUNCTION BOX |
| 15 | INSTALL WOOD POLE |
| 16 | REMOVE EXISTING WOOD POLE |
| 17 | INSTALL AERIAL GUY ASSEMBLY |
| 18 | INSTALL STANDARD GUY ASSEMBLY |
| 19 | INSTALL SIDEWALK GUY ASSEMBLY |
| 20 | INSTALL MESSENGER CABLE |
| 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE |
| 22 | REMOVE EXISTING COMMUNICATIONS CABLE |
| 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE |
| 24 | INSTALL DELINEATOR MARKER |
| 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE |
| 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 30 | INSTALL NEW ELECTRICAL SERVICE |
| 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 32 | INSTALL NEW CONTROLLER |
| 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 34 | INSTALL GENERATOR POWER INLET BOX |
| 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 36 | INSTALL UNIFIED CABLE |
| 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 40 | INSTALL RADIO TRANSCEIVER |
| 41 | INSTALL SYSTEM LOOP |
| 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 44 | INSTALL LOCAL LOOP AMPLIFIER |
| 45 | INSTALL CITY WI-FI ANTENNA |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH |
| 47 | INSTALL CODEC |
| 48 | BOND MESSENGER CABLE TO POLE GROUND |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION |
| 50 | INSTALL ANTENNA CABLE |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT |
| 53 | INSTALL DSL ETHERNET SWITCH |
| 54 | INSTALL ETHERNET CABLE |
| 55 | INSTALL TERMINAL SERVER |
| 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
| 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000


Traffic Engineering and Safety Systems Branch
Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

| | |
|---|---|
| PLAN DATE: FEBRUARY, 2008 | REVIEWED BY: K.W. SMITH |
| PREPARED BY: K.D. VANPATTEN | REVIEWED BY: M.W. DUNZO |

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/20/08 DATE

CADD Filename ...\Sht0474.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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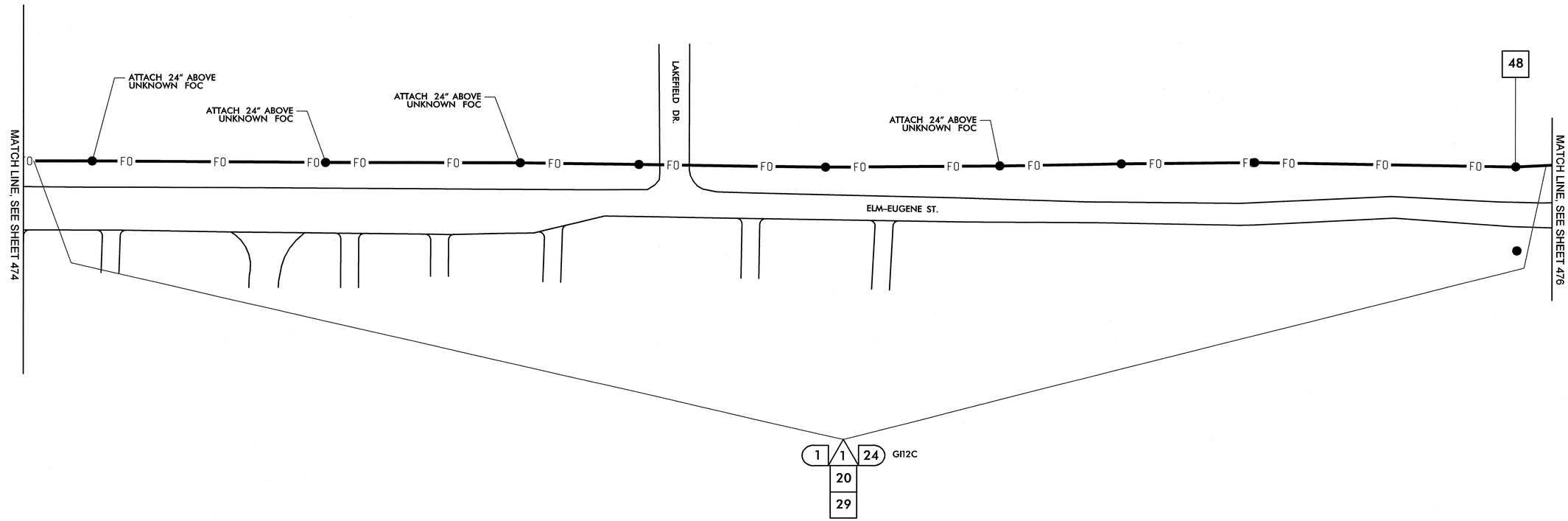
| U-4711 | 475 |




1. INSTALL SMFO CABLE
2. INSTALL PLENUM RATED FIBER OPTIC CABLE
3. INSTALL FIBER OPTIC DROP CABLE
4. INSTALL TRACER WIRE
5. REUSE NCDOT SMFO CABLE
6. REUSE GDOT SMFO CABLE
1. TRENCH
2. INSTALL PVC CONDUIT
3. INSTALL RIGID, GALVANIZED STEEL CONDUIT
4. INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
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7. INSTALL POLYETHYLENE CONDUIT
8. DIRECTIONAL DRILL CONDUIT
9. BORE AND JACK CONDUIT
10. INSTALL CABLE(S) IN EXISTING CONDUIT
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14. INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE
15. INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
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17. INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET
18. INSTALL NEW RISER INTO POLE MOUNTED CABINET
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1. INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET
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5. INSTALL BASE MOUNTED SPLICE CABINET
6. REMOVE EXISTING SPLICE CABINET
7. INSTALL TERMINAL SPLICE BOX
8. MODIFY EXISTING SPLICE ENCLOSURE
1. INSTALL CABINET FOUNDATION
2. REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER
3. MODIFY EXISTING CABINET FOUNDATION
4. INSTALL NEW 333 COMMUNICATION CABINET
5. INSTALL NEW 332 BASE MOUNTED CABINET
6. INSTALL NEW 336S CABINET
7. INSTALL CCTV CAMERA ASSEMBLY
8. INSTALL CCTV CAMERA WOOD POLE
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23. INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE
24. INSTALL DELINEATOR MARKER
25. STORE 30 FEET OF EACH COMMUNICATIONS CABLE
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27. LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE
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44. INSTALL LOCAL LOOP AMPLIFIER
45. INSTALL CITY WI-FI ANTENNA
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47. INSTALL CODEC
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58. INSTALL WIRELESS ACCESS POINT POWER CABLE

**NOTE:**
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PLANS PREPARED IN THE OFFICE OF:

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Traffic Engineering and Safety Systems Branch
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 — GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 — REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN — REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE — DATE 2/20/08

CADD Filename: ...\Sht0475.dgn

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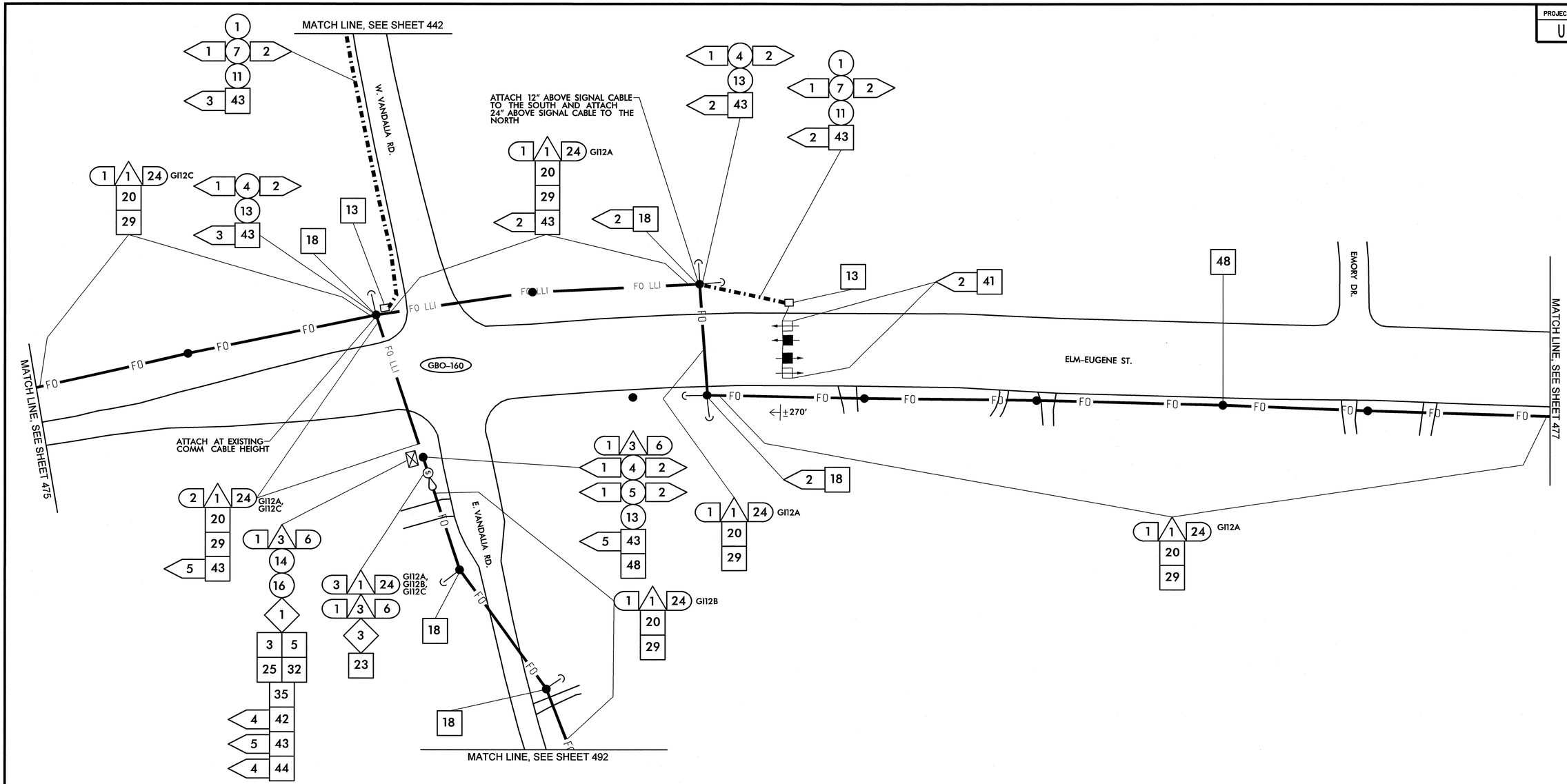
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-4711 | 476 |




| | |
|---|---|
| 1 | INSTALL SMFO CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE |
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| 5 | REUSE NCDOT SMFO CABLE |
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| 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING |
| 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET |
| 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE |
| 3 | INSTALL AERIAL SPLICE ENCLOSURE |
| 4 | INSTALL POLE MOUNTED SPLICE CABINET |
| 5 | INSTALL BASE MOUNTED SPLICE CABINET |
| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
| 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX |
| 12 | INSTALL OVERSIZED JUNCTION BOX |
| 13 | INSTALL STANDARD JUNCTION BOX |
| 14 | REMOVE EXISTING JUNCTION BOX |
| 15 | INSTALL WOOD POLE |
| 16 | REMOVE EXISTING WOOD POLE |
| 17 | INSTALL AERIAL GUY ASSEMBLY |
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| 19 | INSTALL SIDEWALK GUY ASSEMBLY |
| 20 | INSTALL MESSENGER CABLE |
| 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE |
| 22 | REMOVE EXISTING COMMUNICATIONS CABLE |
| 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE |
| 24 | INSTALL DELINEATOR MARKER |
| 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE |
| 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
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| 30 | INSTALL NEW ELECTRICAL SERVICE |
| 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 32 | INSTALL NEW CONTROLLER |
| 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 34 | INSTALL GENERATOR POWER INLET BOX |
| 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 36 | INSTALL UNIFIED CABLE |
| 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 40 | INSTALL RADIO TRANSCEIVER |
| 41 | INSTALL SYSTEM LOOP |
| 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 44 | INSTALL LOCAL LOOP AMPLIFIER |
| 45 | INSTALL CITY WI-FI ANTENNA |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH |
| 47 | INSTALL CODEC |
| 48 | BOND MESSENGER CABLE TO POLE GROUND |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION |
| 50 | INSTALL ANTENNA CABLE |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT |
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| 54 | INSTALL ETHERNET CABLE |
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NOTE:
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PLANS PREPARED IN THE OFFICE OF:

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Public Engineering and Safety Systems Branch
Intelligent Transportation Systems
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 — GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 — REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN — REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE — DATE 2/20/08

CADD Filename: ...\Sht0476.dgn

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| PROJECT REFERENCE NO. | SHEET NO. |
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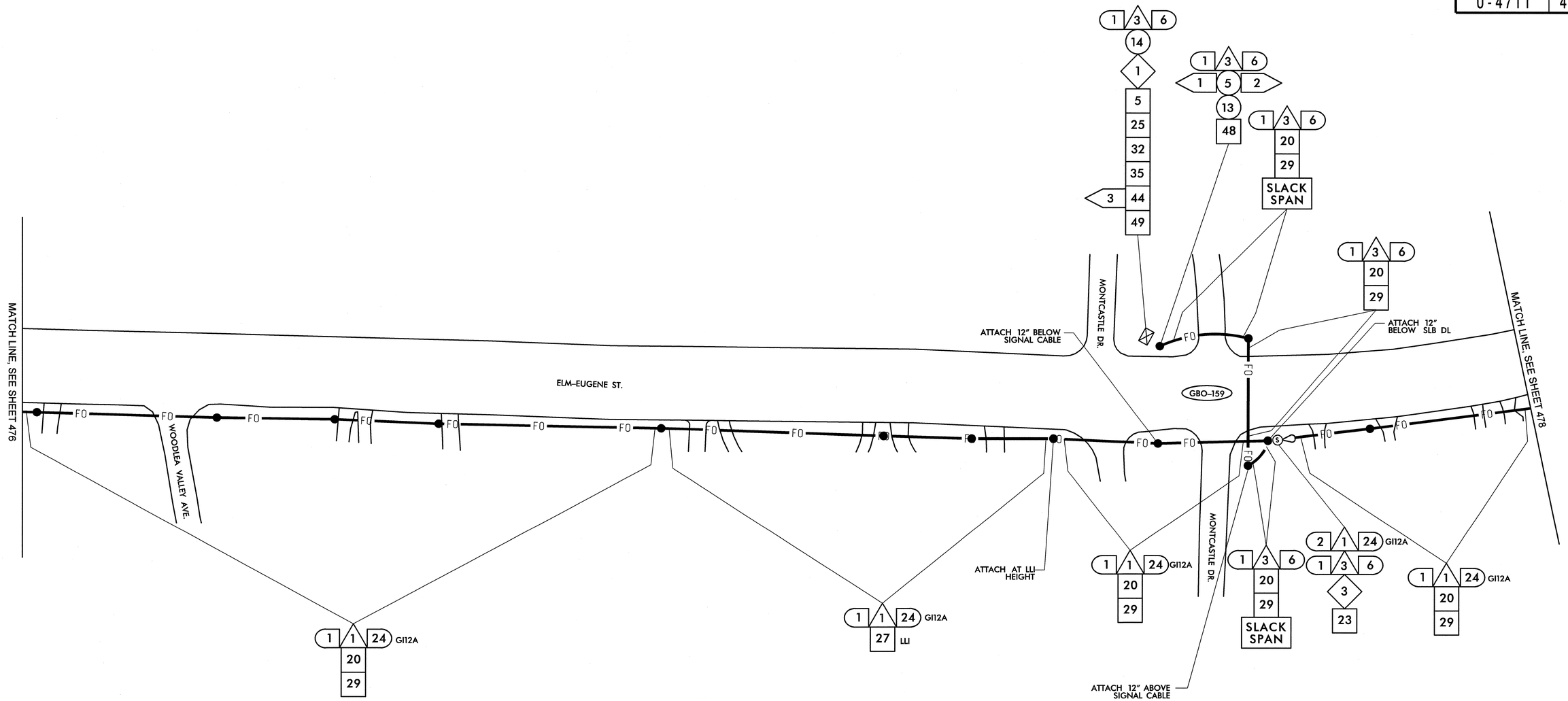
| U-4711 | 477 |




| | | | |
|---|---|---|---|
| 1 INSTALL SMFO CABLE | 14 INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE | 6 INSTALL NEW 336S CABINET | 26 STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 2 INSTALL PLENUM RATED FIBER OPTIC CABLE | 15 INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 7 INSTALL CCTV CAMERA ASSEMBLY | 27 LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
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| 5 REUSE NCDOT SMFO CABLE | 18 INSTALL NEW RISER INTO POLE MOUNTED CABINET | 10 INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX | 30 INSTALL NEW ELECTRICAL SERVICE |
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| 2 INSTALL PVC CONDUIT | 2 INSTALL UNDERGROUND SPLICE ENCLOSURE | 13 INSTALL STANDARD JUNCTION BOX | 33 INSTALL EXISTING CABLE IN NEW CABINET |
| 3 INSTALL RIGID, GALVANIZED STEEL CONDUIT | 3 INSTALL AERIAL SPLICE ENCLOSURE | 14 REMOVE EXISTING JUNCTION BOX | 34 INSTALL GENERATOR POWER INLET BOX |
| 4 INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD | 4 INSTALL POLE MOUNTED SPLICE CABINET | 15 INSTALL WOOD POLE | 35 INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 5 INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING | 5 INSTALL BASE MOUNTED SPLICE CABINET | 16 REMOVE EXISTING WOOD POLE | 36 INSTALL UNIFIED CABLE |
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| 9 BORE AND JACK CONDUIT | 1 INSTALL CABINET FOUNDATION | 20 INSTALL MESSENGER CABLE | 40 INSTALL RADIO TRANSCEIVER |
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PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000



Traffic Engineering and Safety Systems Branch
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Pkwy., Garner, NC 27529


SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht0477.dgn

2/20/2008
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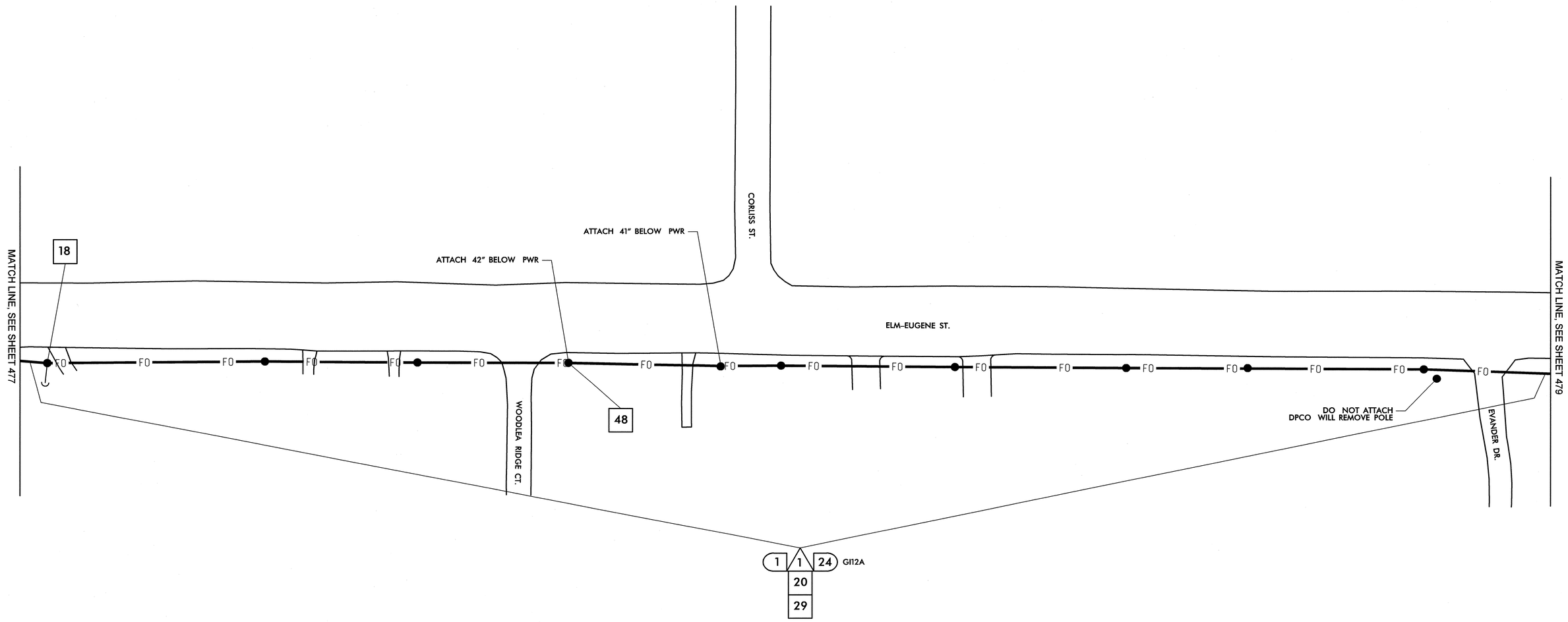
| U-4711 | 478 |




| | |
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| 1 | INSTALL SMFO CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE |
| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
| 6 | REUSE GDOT SMFO CABLE |
| 1 | TRENCH |
| 2 | INSTALL PVC CONDUIT |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD |
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| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT |
| 7 | INSTALL POLYETHYLENE CONDUIT |
| 8 | DIRECTIONAL DRILL CONDUIT |
| 9 | BORE AND JACK CONDUIT |
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| 1 | INSTALL CABINET FOUNDATION |
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| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
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## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

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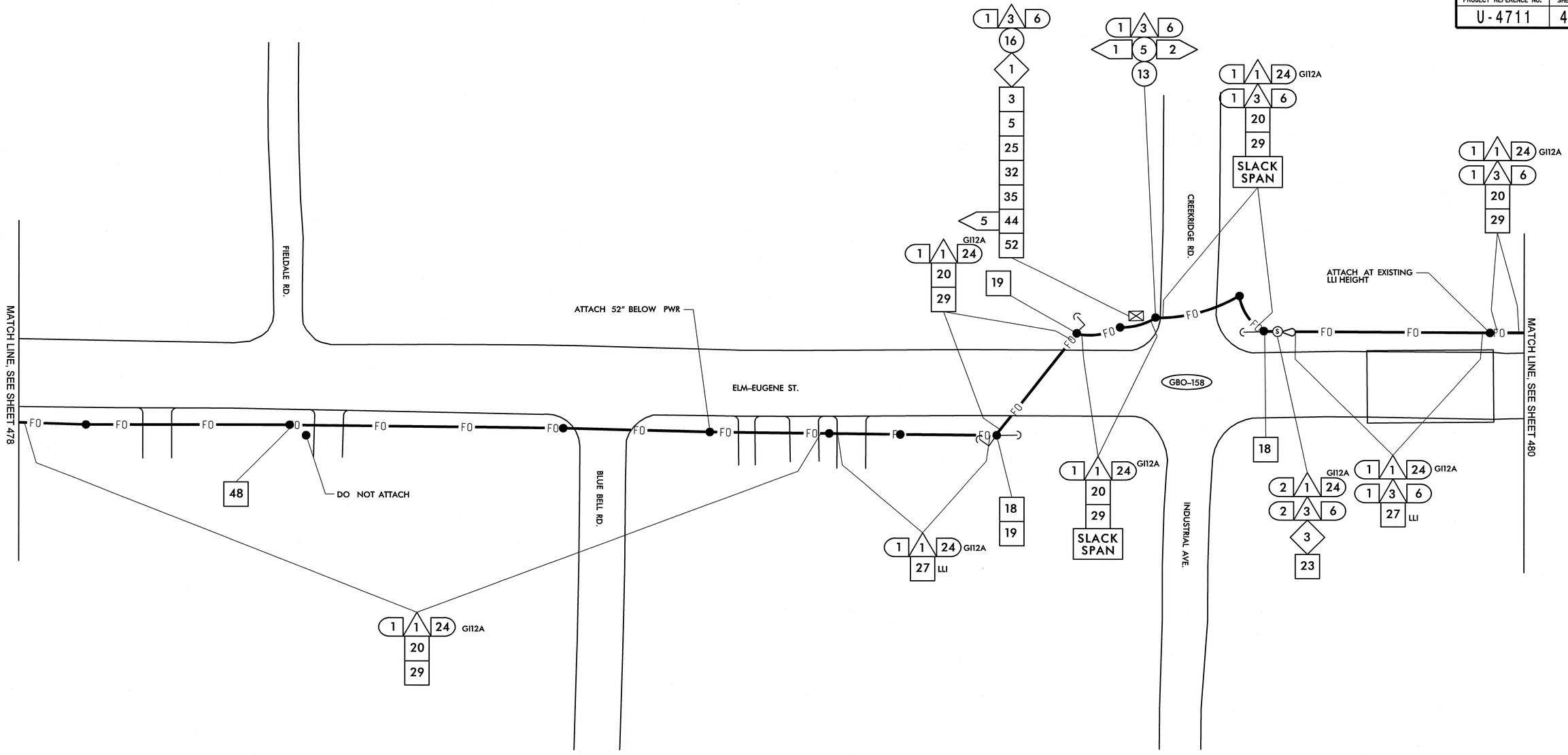


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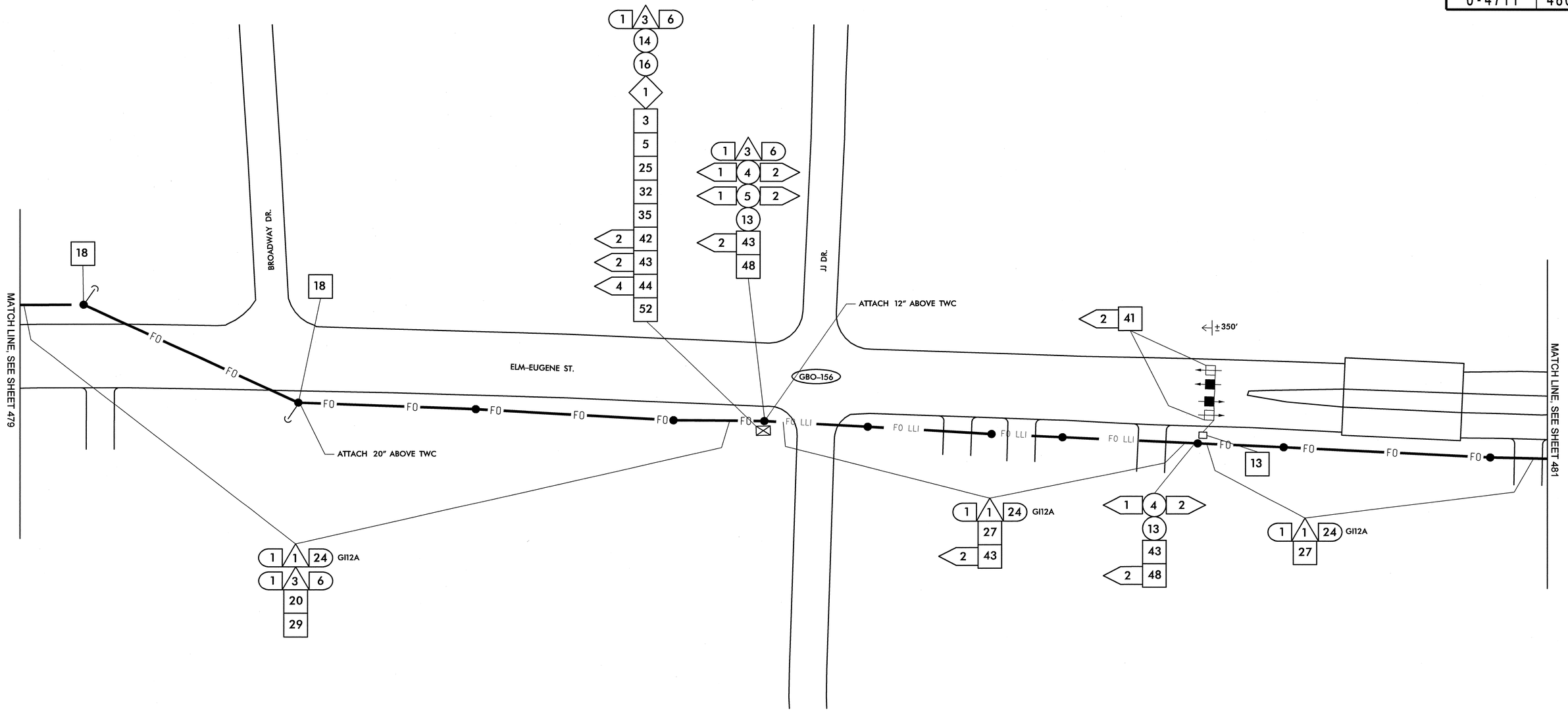


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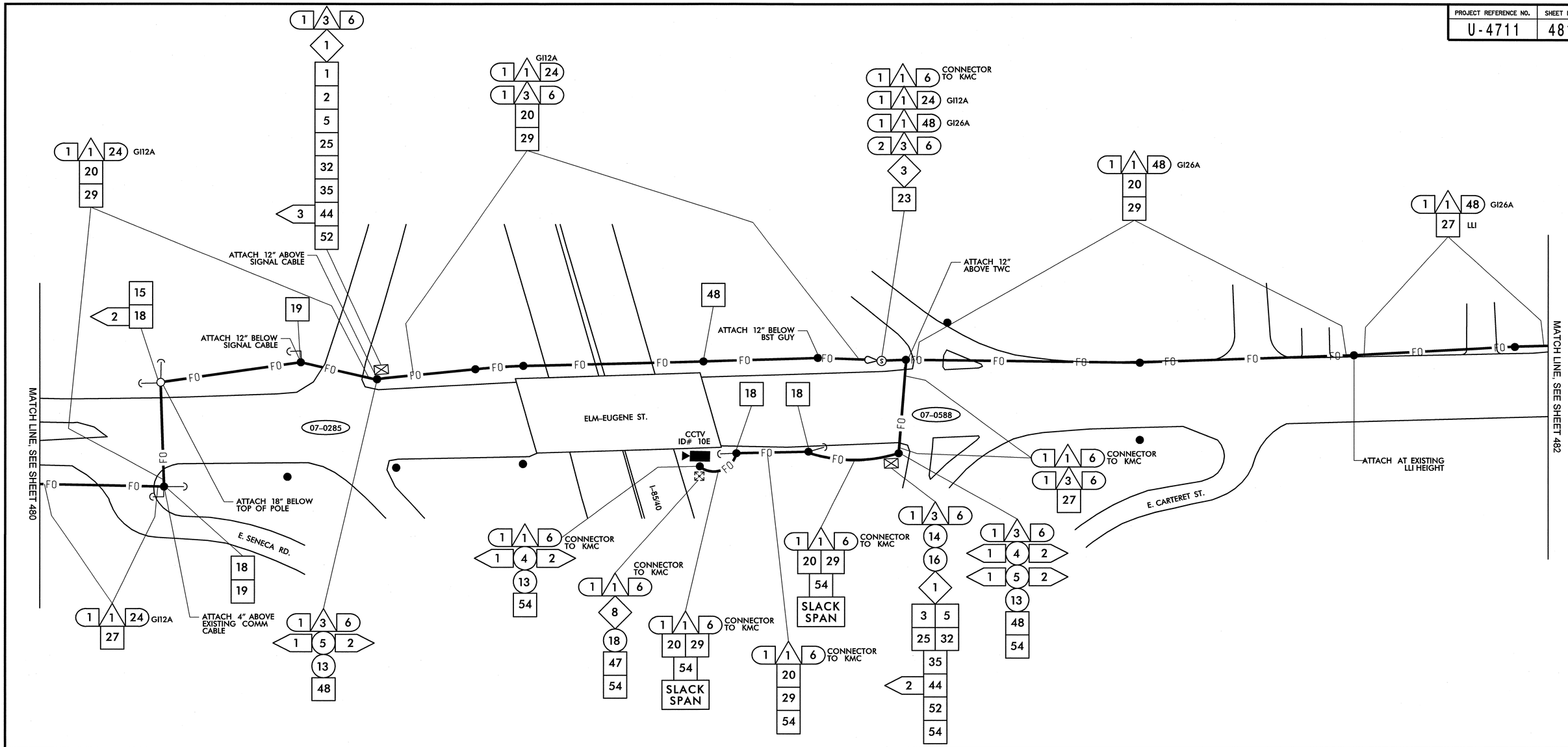


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|---|---|---|---|
| 6 | INSTALL NEW 336S CABINET | 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 7 | INSTALL CCTV CAMERA ASSEMBLY | 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 8 | INSTALL CCTV CAMERA WOOD POLE | 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION | 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX | 30 | INSTALL NEW ELECTRICAL SERVICE |
| 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX | 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 12 | INSTALL OVERSIZED JUNCTION BOX | 32 | INSTALL NEW CONTROLLER |
| 13 | INSTALL STANDARD JUNCTION BOX | 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 14 | REMOVE EXISTING JUNCTION BOX | 34 | INSTALL GENERATOR POWER INLET BOX |
| 15 | INSTALL WOOD POLE | 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 16 | REMOVE EXISTING WOOD POLE | 36 | INSTALL UNIFIED CABLE |
| 17 | INSTALL AERIAL GUY ASSEMBLY | 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 18 | INSTALL STANDARD GUY ASSEMBLY | 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 19 | INSTALL SIDEWALK GUY ASSEMBLY | 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 20 | INSTALL MESSENGER CABLE | 40 | INSTALL RADIO TRANSCEIVER |
| 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE | 41 | INSTALL SYSTEM LOOP |
| 22 | REMOVE EXISTING COMMUNICATIONS CABLE | 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE | 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 24 | INSTALL DELINEATOR MARKER | | |
| 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE | | |

| | | | |
|---|---|---|---|
| 44 | INSTALL LOCAL LOOP AMPLIFIER | 53 | INSTALL DSL ETHERNET SWITCH |
| 45 | INSTALL CITY WI-FI ANTENNA | 54 | INSTALL ETHERNET CABLE |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH | 55 | INSTALL TERMINAL SERVER |
| 47 | INSTALL CODEC | 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
| 48 | BOND MESSENGER CABLE TO POLE GROUND | 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION | 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |
| 50 | INSTALL ANTENNA CABLE | | |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT | | |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT | | |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000


Traffic Engineering and Safety Systems Branch
Division of Highways
North Carolina Department of Transportation
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 — GUILFORD COUNTY

| | |
|---|---|
| PLAN DATE: FEBRUARY, 2008 | REVIEWED BY: K.W. SMITH |
| PREPARED BY: K.D. VANPATTEN | REVIEWED BY: M.W. DUNZO |

| REVISIONS | INIT. | DATE |
|---|---|---|
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO
SIGNATURE — DATE 2/20/08
CADD Filename: ...\Sht0481.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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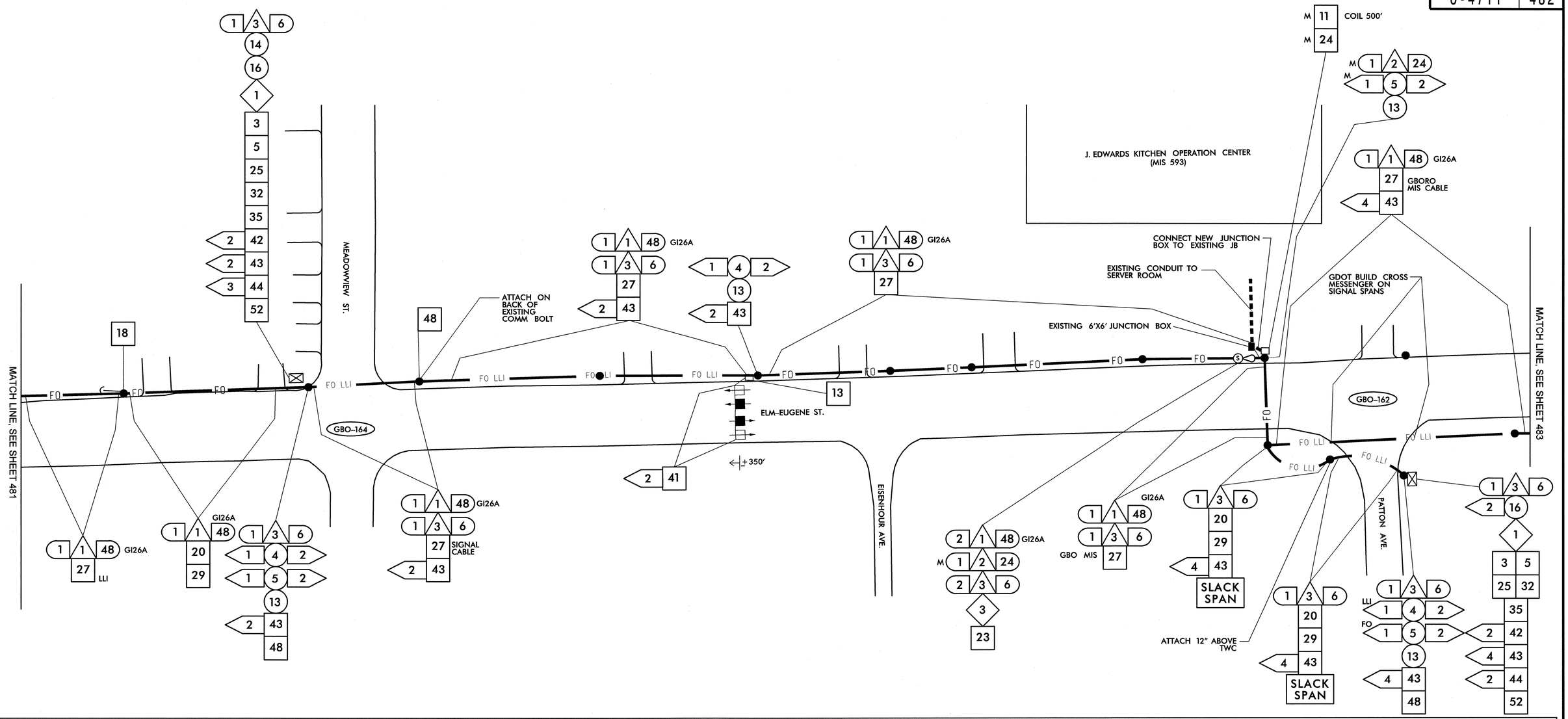
| U-4711 | 482 |




| | |
|---|---|
| 1 | INSTALL SMFO CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE |
| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
| 6 | REUSE GDOT SMFO CABLE |
| 1 | TRENCH |
| 2 | INSTALL PVC CONDUIT |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT |
| 7 | INSTALL POLYETHYLENE CONDUIT |
| 8 | DIRECTIONAL DRILL CONDUIT |
| 9 | BORE AND JACK CONDUIT |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT |
| 12 | INSTALL CABLE(S) IN EXISTING RISER |
| 13 | INSTALL CABLE(S) IN NEW RISER |
| 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE |
| 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET |
| 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET |
| 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING |
| 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET |
| 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE |
| 3 | INSTALL AERIAL SPLICE ENCLOSURE |
| 4 | INSTALL POLE MOUNTED SPLICE CABINET |
| 5 | INSTALL BASE MOUNTED SPLICE CABINET |
| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
| 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX |
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| 20 | INSTALL MESSENGER CABLE |
| 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE |
| 22 | REMOVE EXISTING COMMUNICATIONS CABLE |
| 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE |
| 24 | INSTALL DELINEATOR MARKER |
| 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE |
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NOTE:
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PLANS PREPARED IN THE OFFICE OF:

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Raleigh N.C. 27636-3068
(919) 677-2000

750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht0482m.dgn

2/20/2008
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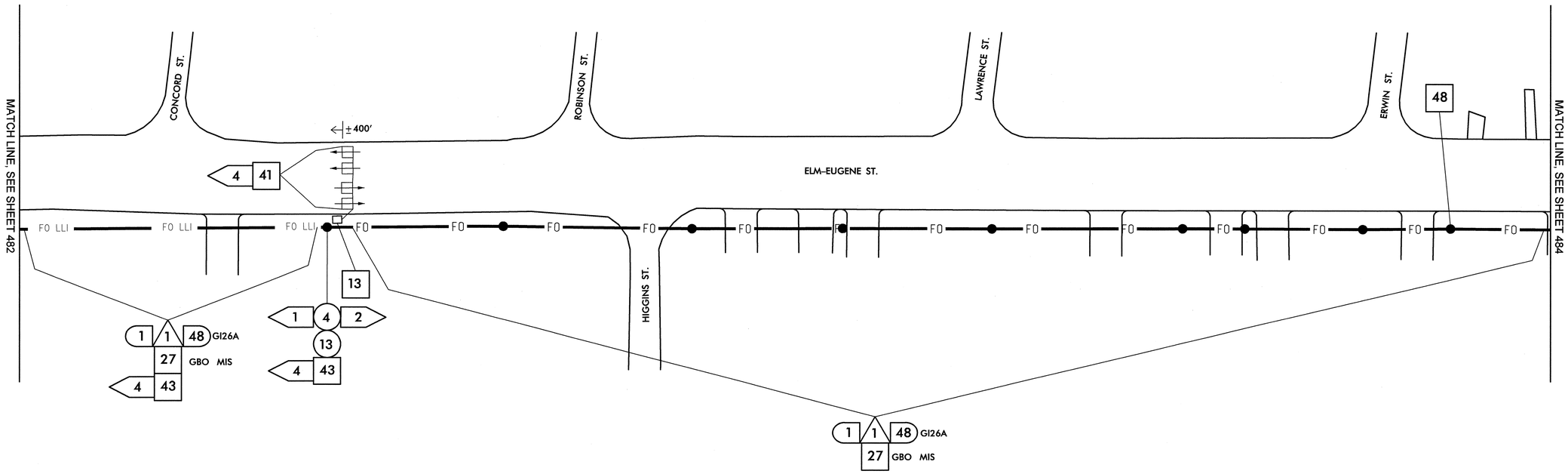
| U-4711 | 483 |

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| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
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| 7 | INSTALL CCTV CAMERA ASSEMBLY |
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NOTE:
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PLANS PREPARED IN THE OFFICE OF:

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750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 — GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 — REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN — REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE — DATE 2/20/08

CADD Filename: ...\Sht0483.dgn

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| PROJECT REFERENCE NO. | SHEET NO. |
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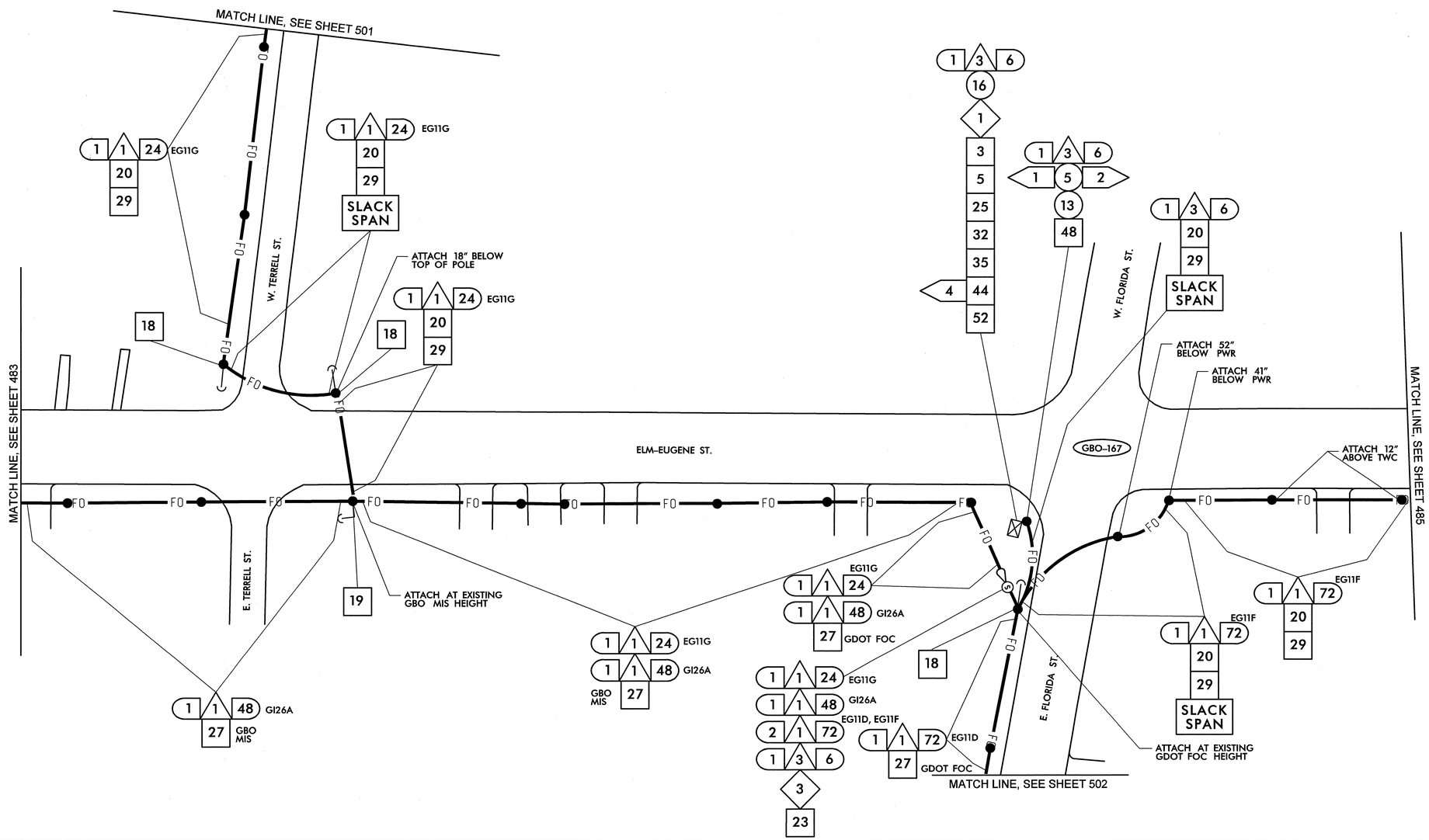
| U-4711 | 484 |




1. INSTALL SMFO CABLE
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Traffic Engineering and Safety Systems Branch
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
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SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 — GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 — REVIEWED BY: K.W. SMITH

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE — DATE

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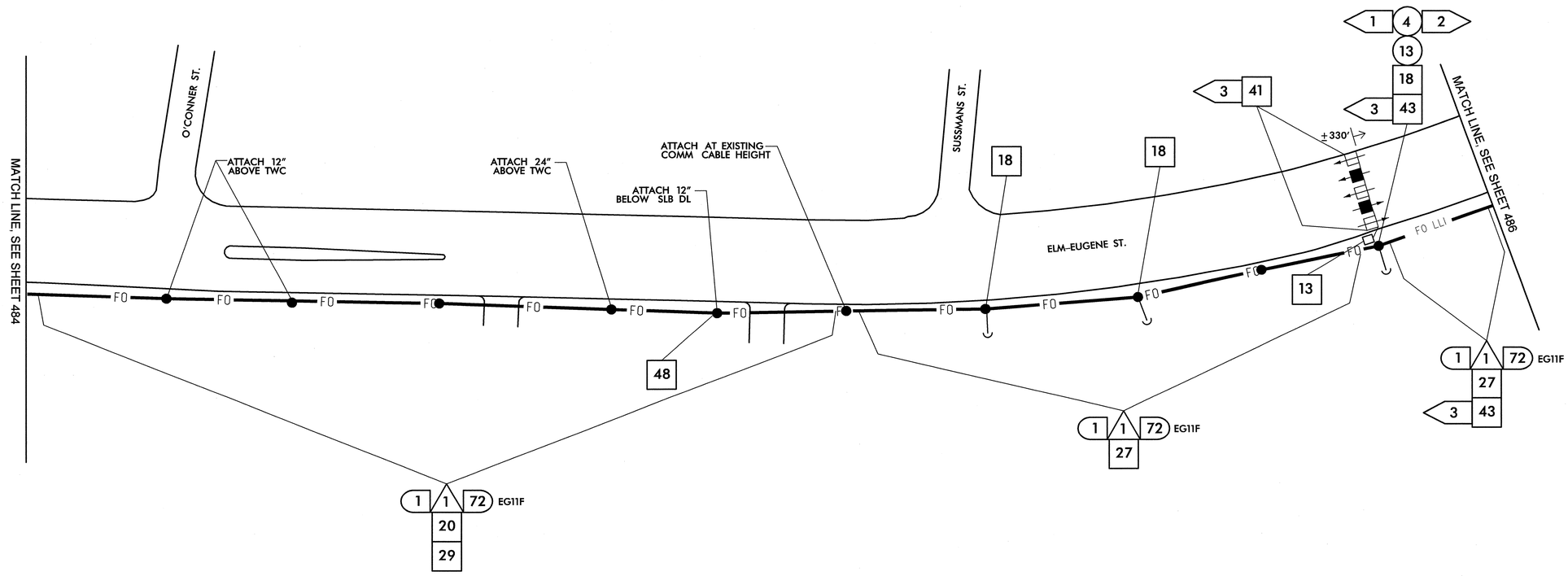


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| 5 | REUSE NCDOT SMFO CABLE |
| 6 | REUSE GDOT SMFO CABLE |
| 1 | TRENCH |
| 2 | INSTALL PVC CONDUIT |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD |
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| 6 | REMOVE EXISTING SPLICE CABINET |
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| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
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| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
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PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000

Institute of North Carolina Transportation Systems
Center for Engineering and Safety Science Research
Department of Transportation
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY
PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH
PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO
SIGNATURE DATE 2/20/08
CADD Filenames: ...\Sht0485.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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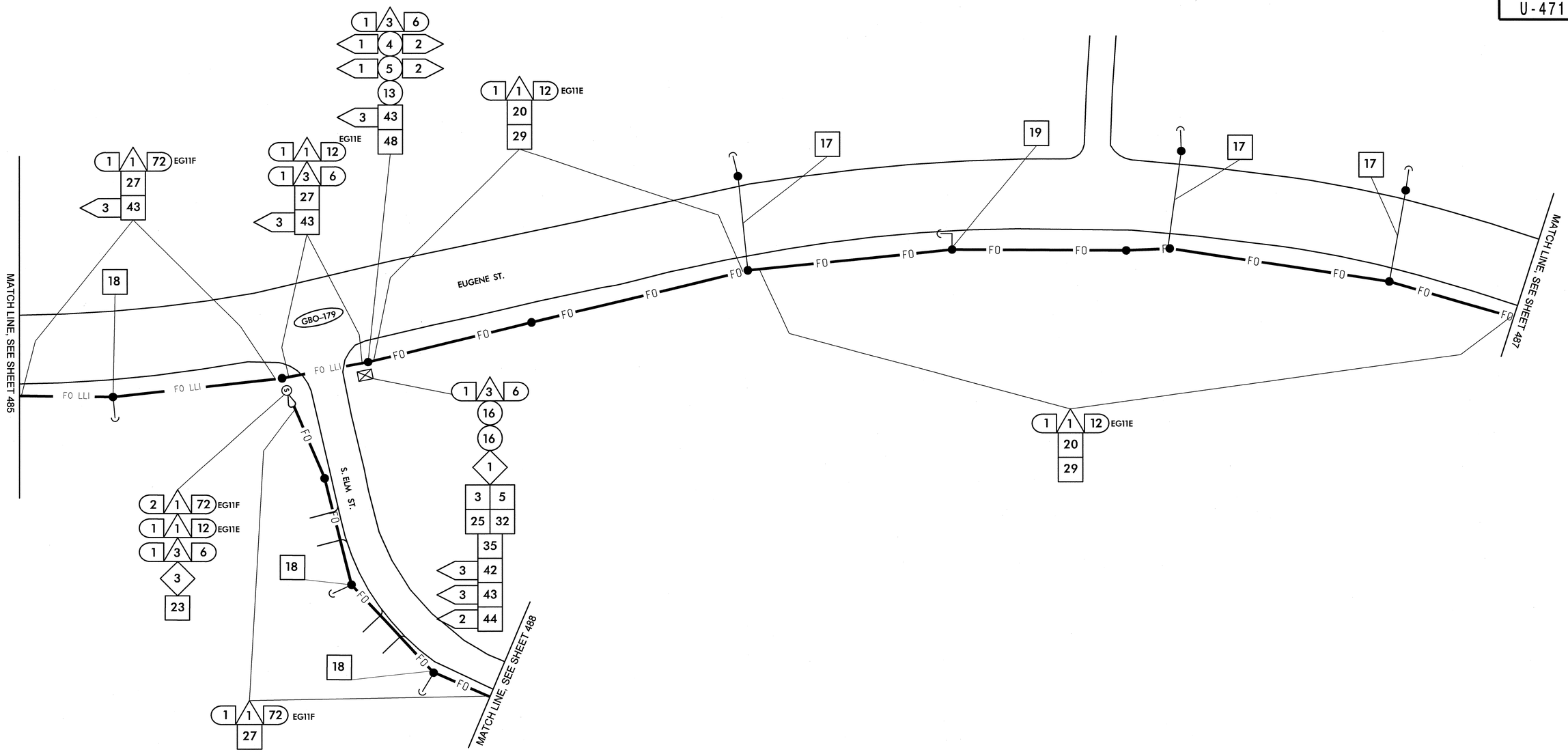
| U-4711 | 486 |

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PLANS PREPARED IN THE OFFICE OF:

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Traffic Engineering and Safety Systems Branch
Transportation Mobility & Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH
PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/20/08 DATE

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2/20/2008
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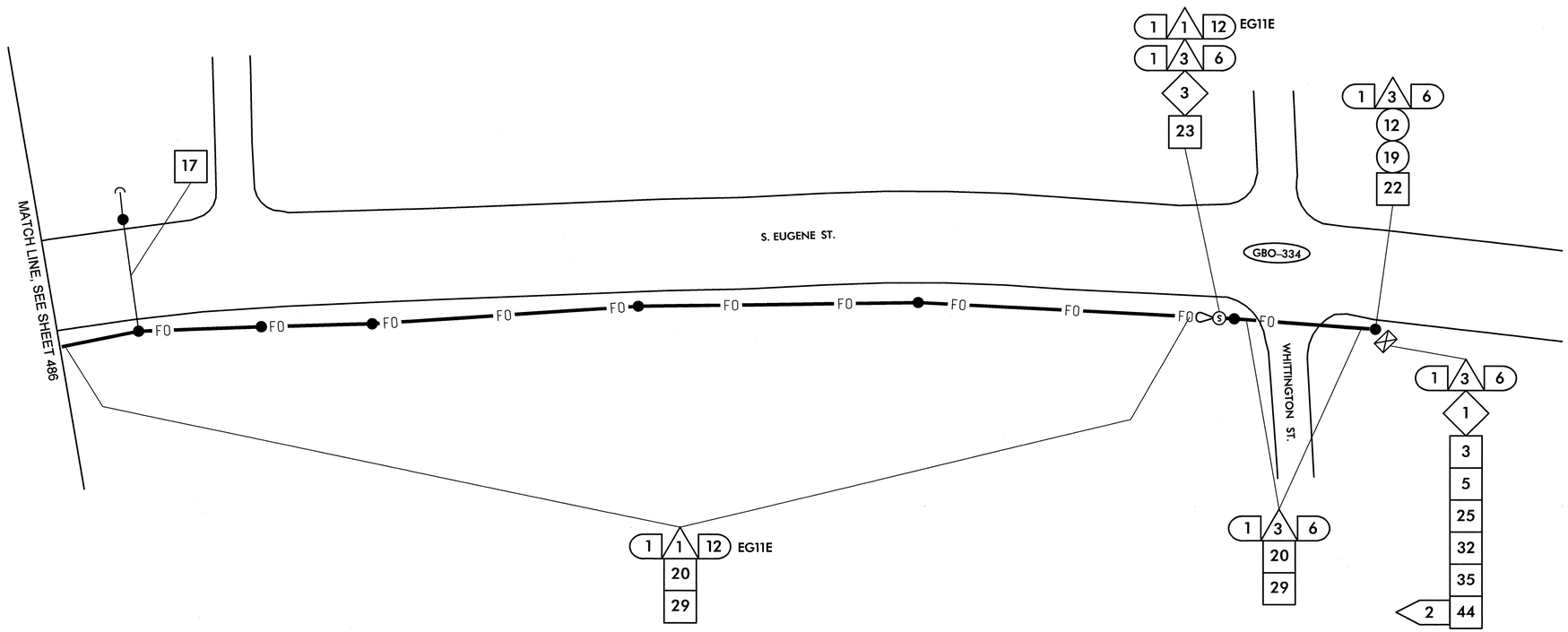
| U-4711 | 487 |

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## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/20/08 DATE

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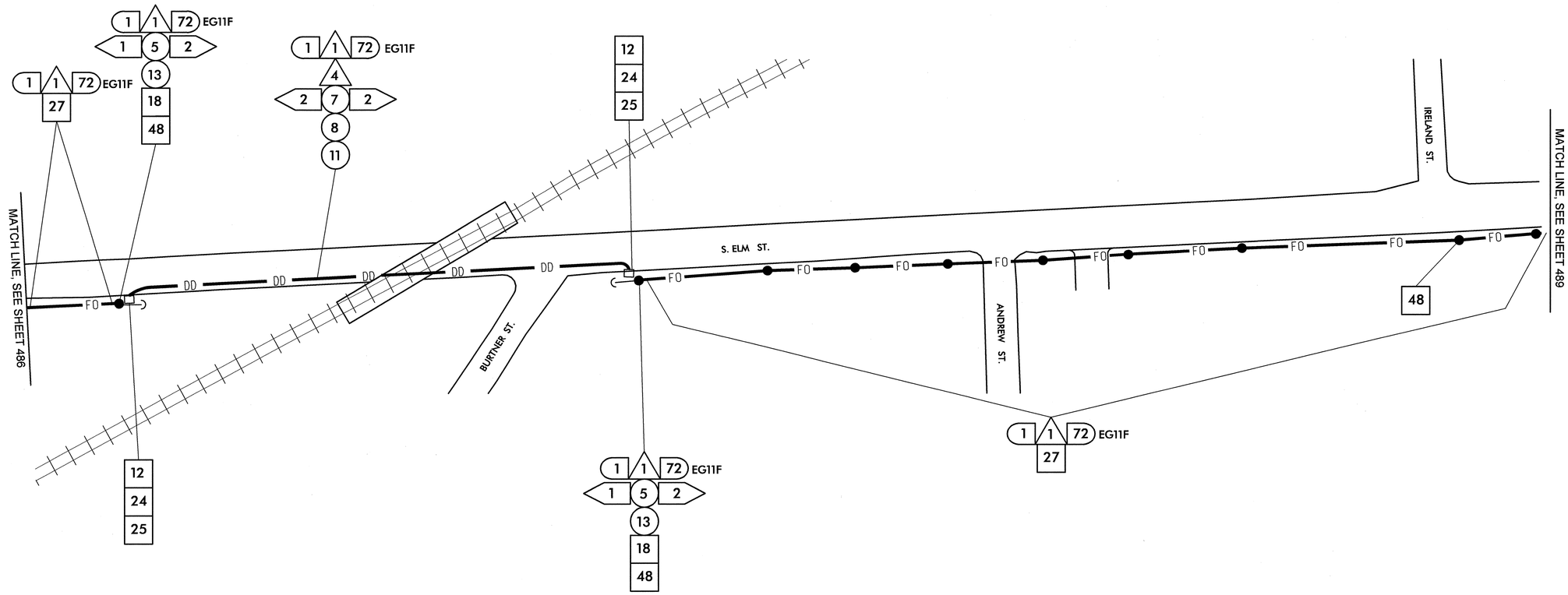
| U-4711 | 488 |

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| 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 40 | INSTALL RADIO TRANSCEIVER |
| 41 | INSTALL SYSTEM LOOP |
| 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 44 | INSTALL LOCAL LOOP AMPLIFIER |
| 45 | INSTALL CITY WI-FI ANTENNA |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH |
| 47 | INSTALL CODEC |
| 48 | BOND MESSENGER CABLE TO POLE GROUND |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION |
| 50 | INSTALL ANTENNA CABLE |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT |
| 53 | INSTALL DSL ETHERNET SWITCH |
| 54 | INSTALL ETHERNET CABLE |
| 55 | INSTALL TERMINAL SERVER |
| 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
| 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

PLANS PREPARED IN THE OFFICE OF:

Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000

Traffic Engineering and Safety Systems Branch
Intelligent Transportation Systems
N.C. DEPT. OF TRANSPORTATION
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht0488.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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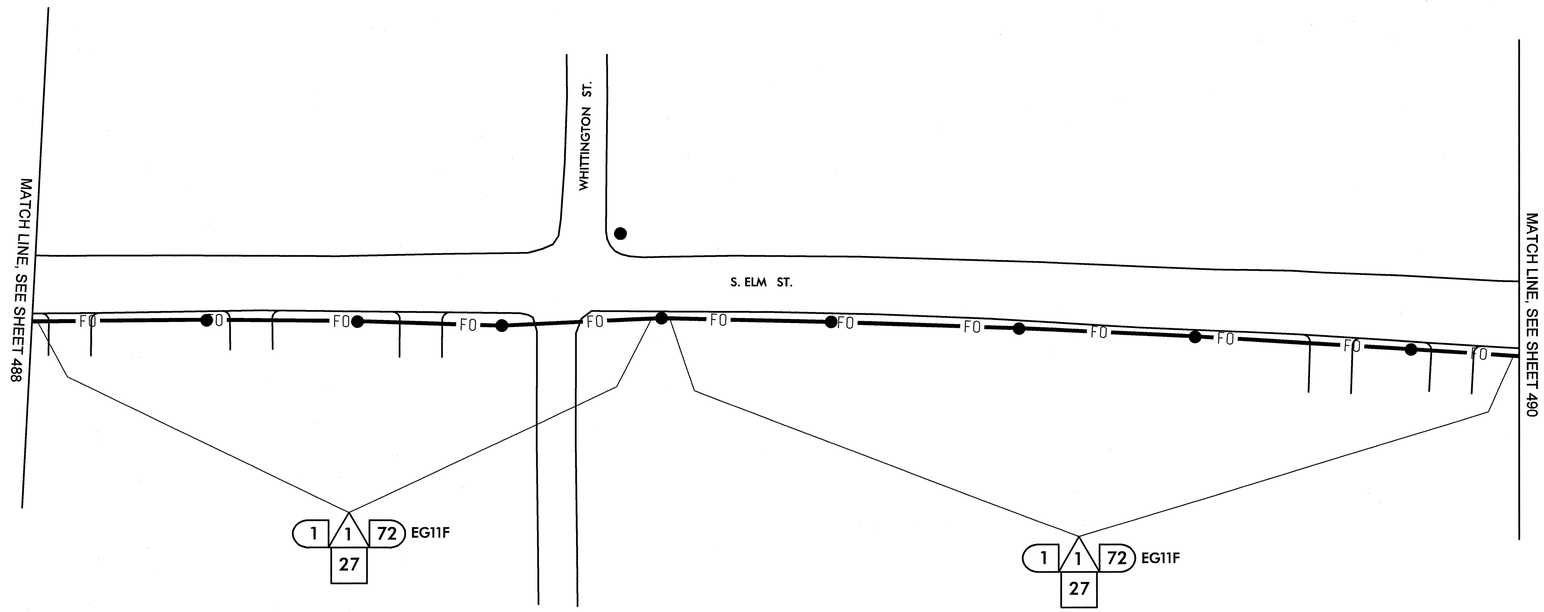
| U-4711 | 489 |




| | |
|---|---|
| 1 | INSTALL SMFO CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE |
| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
| 6 | REUSE GDOT SMFO CABLE |
| 1 | TRENCH |
| 2 | INSTALL PVC CONDUIT |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT |
| 7 | INSTALL POLYETHYLENE CONDUIT |
| 8 | DIRECTIONAL DRILL CONDUIT |
| 9 | BORE AND JACK CONDUIT |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT |
| 12 | INSTALL CABLE(S) IN EXISTING RISER |
| 13 | INSTALL CABLE(S) IN NEW RISER |
| 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE |
| 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET |
| 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET |
| 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING |
| 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET |
| 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE |
| 3 | INSTALL AERIAL SPLICE ENCLOSURE |
| 4 | INSTALL POLE MOUNTED SPLICE CABINET |
| 5 | INSTALL BASE MOUNTED SPLICE CABINET |
| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
| 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX |
| 12 | INSTALL OVERSIZED JUNCTION BOX |
| 13 | INSTALL STANDARD JUNCTION BOX |
| 14 | REMOVE EXISTING JUNCTION BOX |
| 15 | INSTALL WOOD POLE |
| 16 | REMOVE EXISTING WOOD POLE |
| 17 | INSTALL AERIAL GUY ASSEMBLY |
| 18 | INSTALL STANDARD GUY ASSEMBLY |
| 19 | INSTALL SIDEWALK GUY ASSEMBLY |
| 20 | INSTALL MESSENGER CABLE |
| 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE |
| 22 | REMOVE EXISTING COMMUNICATIONS CABLE |
| 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE |
| 24 | INSTALL DELINEATOR MARKER |
| 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE |
| 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 30 | INSTALL NEW ELECTRICAL SERVICE |
| 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 32 | INSTALL NEW CONTROLLER |
| 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 34 | INSTALL GENERATOR POWER INLET BOX |
| 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 36 | INSTALL UNIFIED CABLE |
| 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
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NOTE:
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Traffic Engineering and Safety Systems Branch
Transportation Systems
DIVISION OF HIGHWAYS · DEPARTMENT OF TRANSPORTATION · STATE OF NORTH CAROLINA
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

| | | | |
|---|---|---|---|
| PLAN DATE: | FEBRUARY, 2008 | REVIEWED BY: | K.W. SMITH |
| PREPARED BY: | K.D. VANPATTEN | REVIEWED BY: | M.W. DUNZO |

| REVISIONS | INIT. | DATE |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht0489.dgn

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| PROJECT REFERENCE NO. | SHEET NO. |
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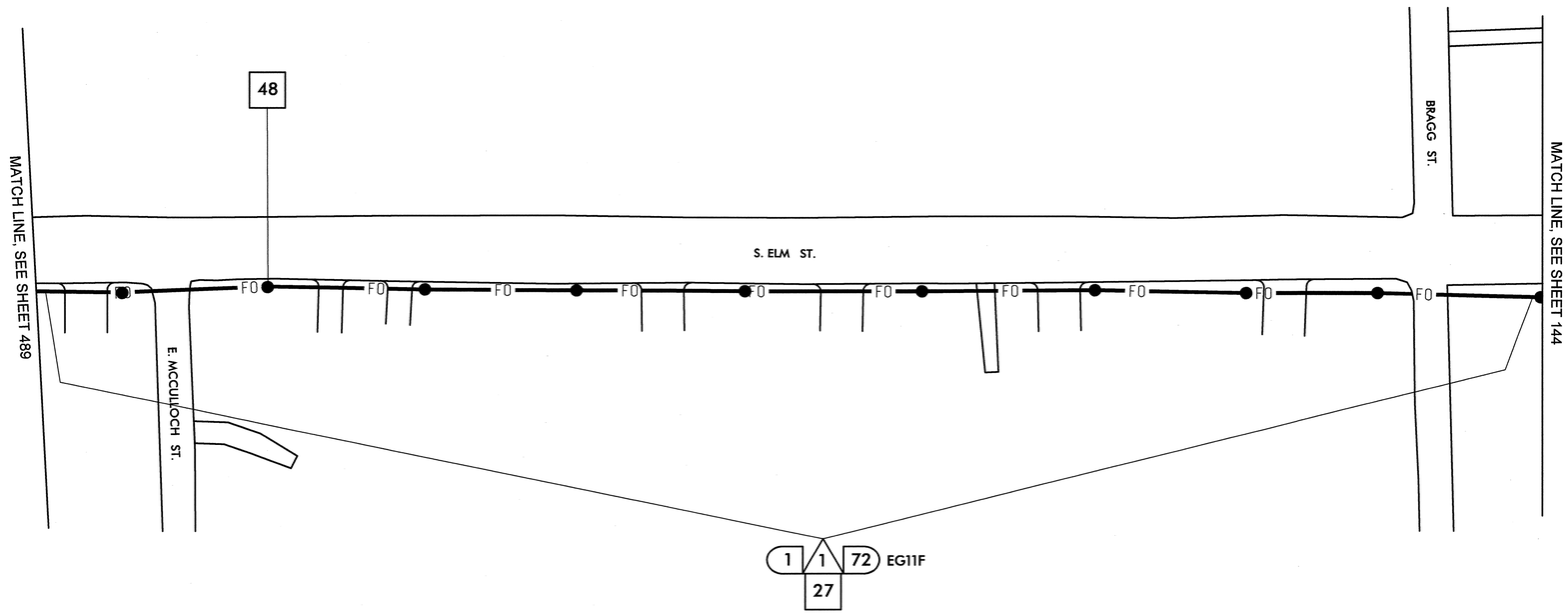
| U-4711 | 490 |

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|---|---|---|---|---|---|---|---|
| 1 | INSTALL SMFO CABLE | 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE | 6 | INSTALL NEW 336S CABINET | 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE | 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 7 | INSTALL CCTV CAMERA ASSEMBLY | 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE | 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 8 | INSTALL CCTV CAMERA WOOD POLE | 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 4 | INSTALL TRACER WIRE | 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET | 9 | INSTALL CCTV METAL POLE AND FOUNDATION | 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 5 | REUSE NCDOT SMFO CABLE | 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET | 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX | 30 | INSTALL NEW ELECTRICAL SERVICE |
| 6 | REUSE GDOT SMFO CABLE | 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING | 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX | 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 1 | TRENCH | 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET | 12 | INSTALL OVERSIZED JUNCTION BOX | 32 | INSTALL NEW CONTROLLER |
| 2 | INSTALL PVC CONDUIT | 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE | 13 | INSTALL STANDARD JUNCTION BOX | 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT | 3 | INSTALL AERIAL SPLICE ENCLOSURE | 14 | REMOVE EXISTING JUNCTION BOX | 34 | INSTALL GENERATOR POWER INLET BOX |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD | 4 | INSTALL POLE MOUNTED SPLICE CABINET | 15 | INSTALL WOOD POLE | 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING | 5 | INSTALL BASE MOUNTED SPLICE CABINET | 16 | REMOVE EXISTING WOOD POLE | 36 | INSTALL UNIFIED CABLE |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT | 6 | REMOVE EXISTING SPLICE CABINET | 17 | INSTALL AERIAL GUY ASSEMBLY | 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 7 | INSTALL POLYETHYLENE CONDUIT | 7 | INSTALL TERMINAL SPLICE BOX | 18 | INSTALL STANDARD GUY ASSEMBLY | 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 8 | DIRECTIONAL DRILL CONDUIT | 8 | MODIFY EXISTING SPLICE ENCLOSURE | 19 | INSTALL SIDEWALK GUY ASSEMBLY | 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 9 | BORE AND JACK CONDUIT | 1 | INSTALL CABINET FOUNDATION | 20 | INSTALL MESSENGER CABLE | 40 | INSTALL RADIO TRANSCEIVER |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT | 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER | 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE | 41 | INSTALL SYSTEM LOOP |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT | 3 | MODIFY EXISTING CABINET FOUNDATION | 22 | REMOVE EXISTING COMMUNICATIONS CABLE | 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 12 | INSTALL CABLE(S) IN EXISTING RISER | 4 | INSTALL NEW 333 COMMUNICATION CABINET | 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE | 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 13 | INSTALL CABLE(S) IN NEW RISER | 5 | INSTALL NEW 332 BASE MOUNTED CABINET | 24 | INSTALL DELINEATOR MARKER | | |
| | | | | 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE | | |

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| 44 | INSTALL LOCAL LOOP AMPLIFIER | 53 | INSTALL DSL ETHERNET SWITCH |
| 45 | INSTALL CITY WI-FI ANTENNA | 54 | INSTALL ETHERNET CABLE |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH | 55 | INSTALL TERMINAL SERVER |
| 47 | INSTALL CODEC | 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
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| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT | | |
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NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
P.O. Box 33068
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Intelligent Transportation Systems
Fiber Engineering and Safety Systems Branch
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

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| PLAN DATE: | FEBRUARY, 2008 | REVIEWED BY: | K.W. SMITH |
| PREPARED BY: | K.D. VANPATTEN | REVIEWED BY: | M.W. DUNZO |

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht0490.dgn

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| PROJECT REFERENCE NO. | SHEET NO. |
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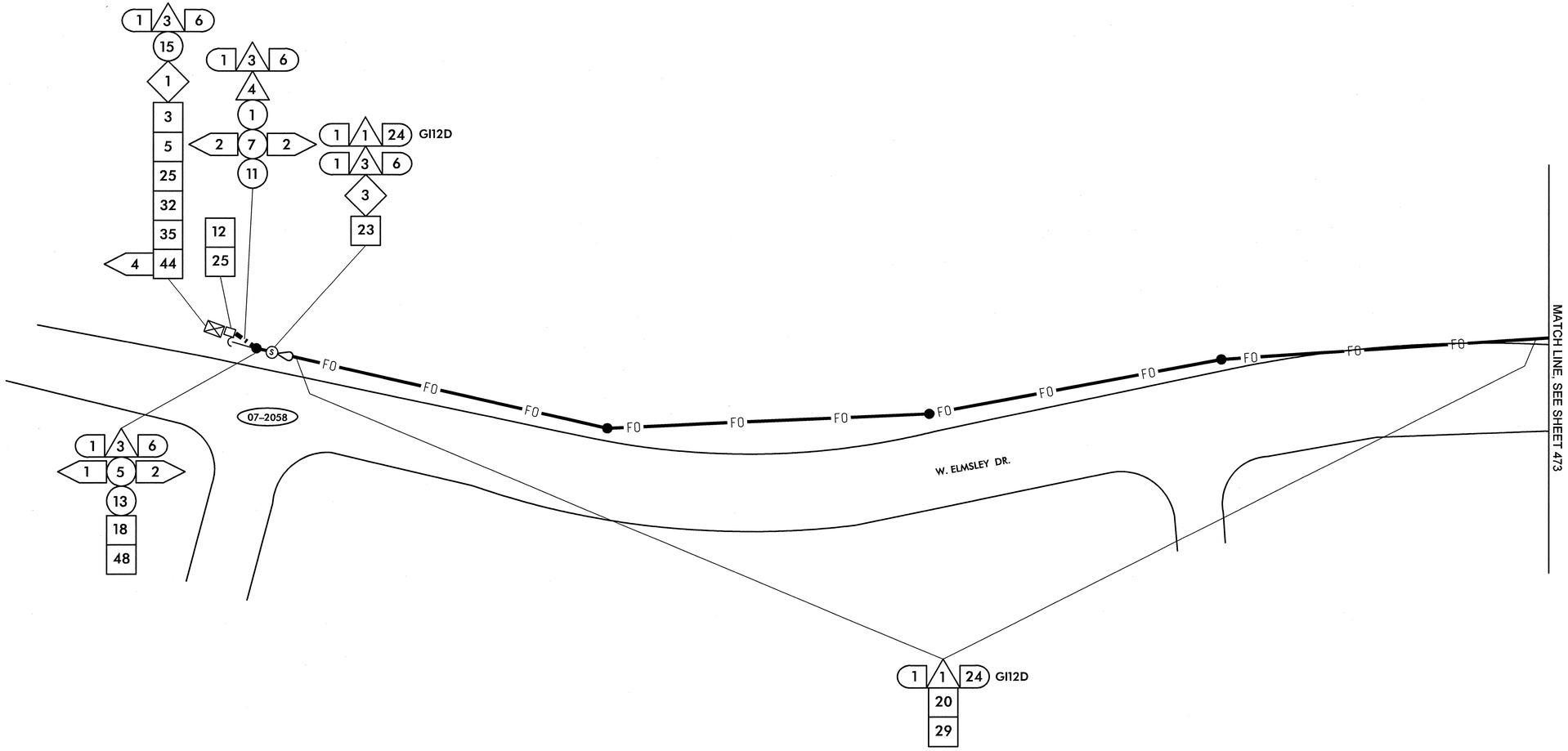
| U-4711 | 491 |

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|---|---|---|---|---|---|---|---|
| 1 | INSTALL SMFO CABLE | 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE | 6 | INSTALL NEW 336S CABINET | 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE | 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 7 | INSTALL CCTV CAMERA ASSEMBLY | 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
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| 4 | INSTALL TRACER WIRE | 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET | 9 | INSTALL CCTV METAL POLE AND FOUNDATION | 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 5 | REUSE NCDOT SMFO CABLE | 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET | 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX | 30 | INSTALL NEW ELECTRICAL SERVICE |
| 6 | REUSE GDOT SMFO CABLE | 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING | 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX | 31 | MODIFY EXISTING ELECTRICAL SERVICE |
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| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT | 3 | INSTALL AERIAL SPLICE ENCLOSURE | 14 | REMOVE EXISTING JUNCTION BOX | 34 | INSTALL GENERATOR POWER INLET BOX |
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| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT | | | | |
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Traffic Engineering and Safety Systems Branch
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
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SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

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| PROJECT REFERENCE NO. | SHEET NO. |
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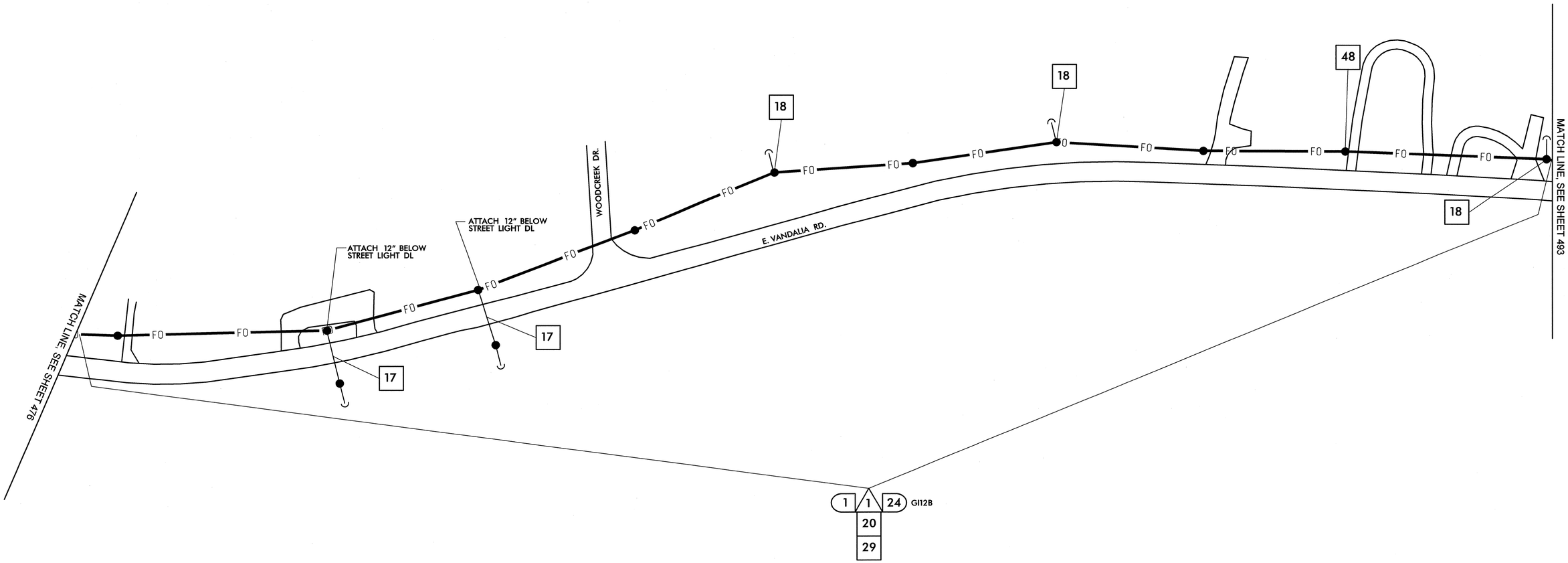
| U-4711 | 492 |

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|---|---|---|---|---|---|---|---|
| 1 | INSTALL SMFO CABLE | 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE | 6 | INSTALL NEW 336S CABINET | 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE | 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 7 | INSTALL CCTV CAMERA ASSEMBLY | 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
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| 6 | REUSE GDOT SMFO CABLE | 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING | 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX | 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 1 | TRENCH | 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET | 12 | INSTALL OVERSIZED JUNCTION BOX | 32 | INSTALL NEW CONTROLLER |
| 2 | INSTALL PVC CONDUIT | 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE | 13 | INSTALL STANDARD JUNCTION BOX | 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT | 3 | INSTALL AERIAL SPLICE ENCLOSURE | 14 | REMOVE EXISTING JUNCTION BOX | 34 | INSTALL GENERATOR POWER INLET BOX |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD | 4 | INSTALL POLE MOUNTED SPLICE CABINET | 15 | INSTALL WOOD POLE | 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING | 5 | INSTALL BASE MOUNTED SPLICE CABINET | 16 | REMOVE EXISTING WOOD POLE | 36 | INSTALL UNIFIED CABLE |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT | 6 | REMOVE EXISTING SPLICE CABINET | 17 | INSTALL AERIAL GUY ASSEMBLY | 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 7 | INSTALL POLYETHYLENE CONDUIT | 7 | INSTALL TERMINAL SPLICE BOX | 18 | INSTALL STANDARD GUY ASSEMBLY | 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 8 | DIRECTIONAL DRILL CONDUIT | 8 | MODIFY EXISTING SPLICE ENCLOSURE | 19 | INSTALL SIDEWALK GUY ASSEMBLY | 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 9 | BORE AND JACK CONDUIT | 1 | INSTALL CABINET FOUNDATION | 20 | INSTALL MESSENGER CABLE | 40 | INSTALL RADIO TRANSCEIVER |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT | 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER | 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE | 41 | INSTALL SYSTEM LOOP |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT | 3 | MODIFY EXISTING CABINET FOUNDATION | 22 | REMOVE EXISTING COMMUNICATIONS CABLE | 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 12 | INSTALL CABLE(S) IN EXISTING RISER | 4 | INSTALL NEW 333 COMMUNICATION CABINET | 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE | 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 13 | INSTALL CABLE(S) IN NEW RISER | 5 | INSTALL NEW 332 BASE MOUNTED CABINET | 24 | INSTALL DELINEATOR MARKER | | |
| | | | | 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE | | |

| | | | | | |
|---|---|---|---|---|---|
| 44 | INSTALL LOCAL LOOP AMPLIFIER | 53 | INSTALL DSL ETHERNET SWITCH | | |
| 45 | INSTALL CITY WI-FI ANTENNA | 54 | INSTALL ETHERNET CABLE | | |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH | 55 | INSTALL TERMINAL SERVER | | |
| 47 | INSTALL CODEC | 56 | INSTALL MICROWAVE VEHICLE DETECTOR | | |
| 48 | BOND MESSENGER CABLE TO POLE GROUND | 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT | | |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION | 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE | | |
| 50 | INSTALL ANTENNA CABLE | | | | |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT | | | | |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT | | | | |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000



Traffic Engineering and Safety Systems Branch
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Transportation Building
750 Greenfield Pkwy., Garner, NC 27529


SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

| | | | |
|---|---|---|---|
| PLAN DATE: FEBRUARY, 2008 | | REVIEWED BY: K.W. SMITH | |
| PREPARED BY: K.D. VANPATTEN | | REVIEWED BY: M.W. DUNZO | |
| REVISIONS | | INIT. | DATE |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/20/08 DATE

CADD Filename: ...\Sht0492.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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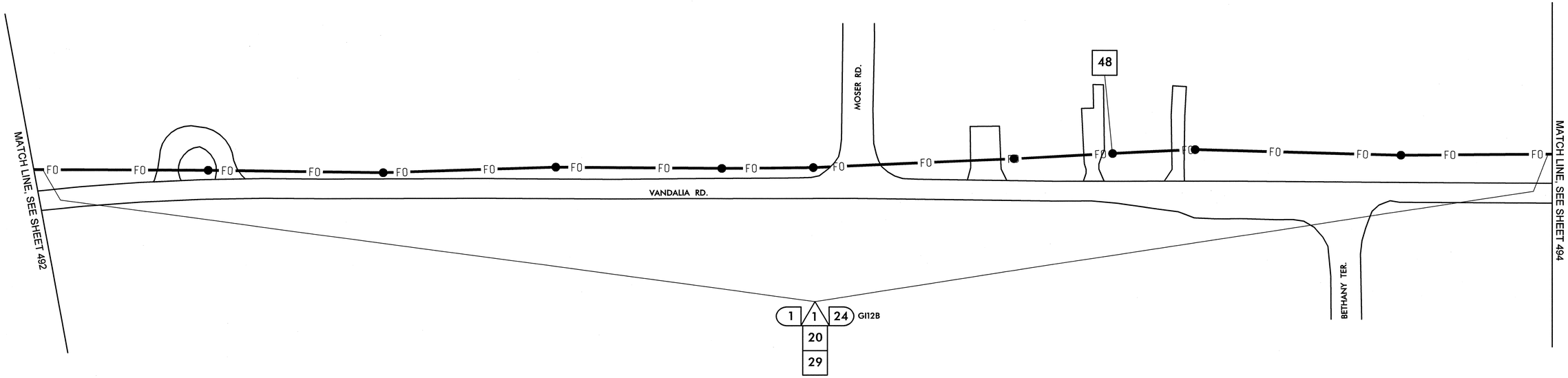
| U-4711 | 493 |

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|---|---|---|---|---|---|---|---|
| 1 | INSTALL SMFO CABLE | 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE | 6 | INSTALL NEW 336S CABINET | 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE | 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 7 | INSTALL CCTV CAMERA ASSEMBLY | 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE | 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 8 | INSTALL CCTV CAMERA WOOD POLE | 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 4 | INSTALL TRACER WIRE | 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET | 9 | INSTALL CCTV METAL POLE AND FOUNDATION | 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 5 | REUSE NCDOT SMFO CABLE | 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET | 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX | 30 | INSTALL NEW ELECTRICAL SERVICE |
| 6 | REUSE GDOT SMFO CABLE | 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING | 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX | 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 1 | TRENCH | 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET | 12 | INSTALL OVERSIZED JUNCTION BOX | 32 | INSTALL NEW CONTROLLER |
| 2 | INSTALL PVC CONDUIT | 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE | 13 | INSTALL STANDARD JUNCTION BOX | 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT | 3 | INSTALL AERIAL SPLICE ENCLOSURE | 14 | REMOVE EXISTING JUNCTION BOX | 34 | INSTALL GENERATOR POWER INLET BOX |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD | 4 | INSTALL POLE MOUNTED SPLICE CABINET | 15 | INSTALL WOOD POLE | 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING | 5 | INSTALL BASE MOUNTED SPLICE CABINET | 16 | REMOVE EXISTING WOOD POLE | 36 | INSTALL UNIFIED CABLE |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT | 6 | REMOVE EXISTING SPLICE CABINET | 17 | INSTALL AERIAL GUY ASSEMBLY | 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 7 | INSTALL POLYETHYLENE CONDUIT | 7 | INSTALL TERMINAL SPLICE BOX | 18 | INSTALL STANDARD GUY ASSEMBLY | 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 8 | DIRECTIONAL DRILL CONDUIT | 8 | MODIFY EXISTING SPLICE ENCLOSURE | 19 | INSTALL SIDEWALK GUY ASSEMBLY | 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 9 | BORE AND JACK CONDUIT | 1 | INSTALL CABINET FOUNDATION | 20 | INSTALL MESSENGER CABLE | 40 | INSTALL RADIO TRANSCEIVER |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT | 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER | 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE | 41 | INSTALL SYSTEM LOOP |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT | 3 | MODIFY EXISTING CABINET FOUNDATION | 22 | REMOVE EXISTING COMMUNICATIONS CABLE | 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 12 | INSTALL CABLE(S) IN EXISTING RISER | 4 | INSTALL NEW 333 COMMUNICATION CABINET | 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE | 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 13 | INSTALL CABLE(S) IN NEW RISER | 5 | INSTALL NEW 332 BASE MOUNTED CABINET | 24 | INSTALL DELINEATOR MARKER | | |
| | | | | 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE | | |

| | | | |
|---|---|---|---|
| 44 | INSTALL LOCAL LOOP AMPLIFIER | 53 | INSTALL DSL ETHERNET SWITCH |
| 45 | INSTALL CITY WI-FI ANTENNA | 54 | INSTALL ETHERNET CABLE |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH | 55 | INSTALL TERMINAL SERVER |
| 47 | INSTALL CODEC | 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
| 48 | BOND MESSENGER CABLE TO POLE GROUND | 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION | 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |
| 50 | INSTALL ANTENNA CABLE | | |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT | | |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT | | |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


PLANS PREPARED IN THE OFFICE OF:
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Traffic Engineering and Safety Systems Branch
Transportation Management Unit
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 — GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 — REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN — REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE — DATE 2/20/08

CADD Filename: ...\Sht0493.dgn

2/20/2008
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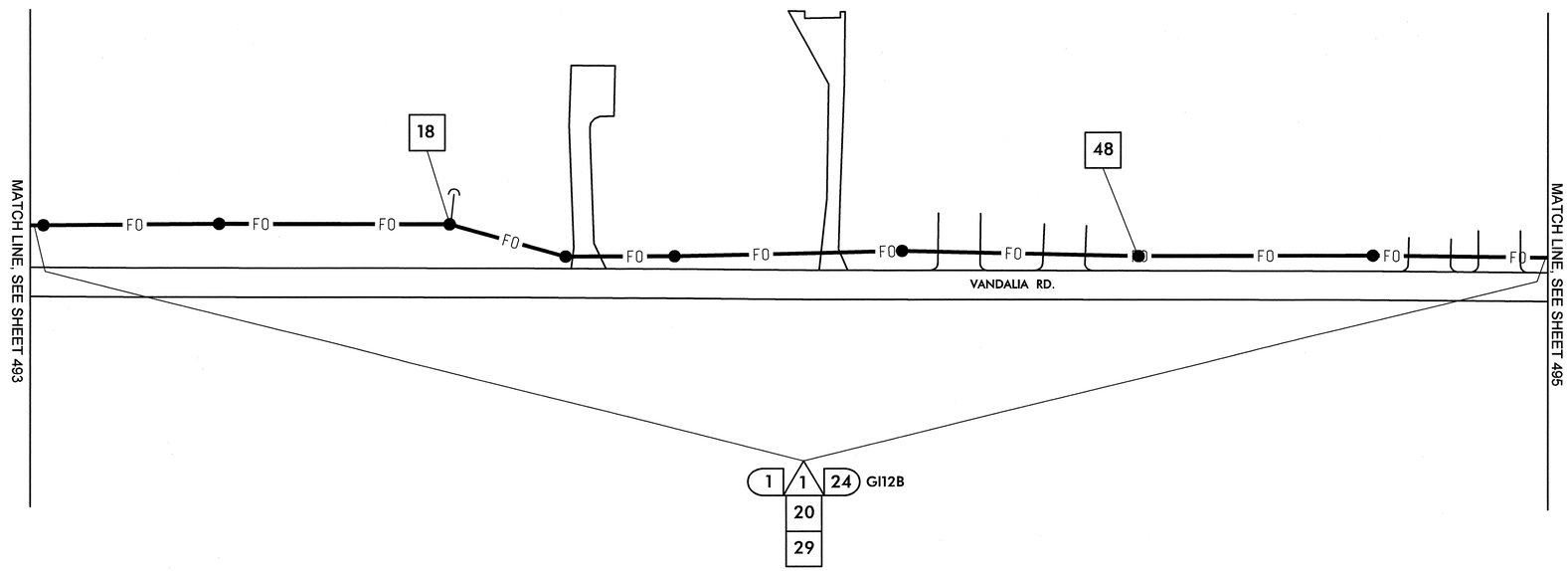
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-4711 | 494 |




| | |
|---|---|
| 1 | INSTALL SMFO CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE |
| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
| 6 | REUSE GDOT SMFO CABLE |
| 1 | TRENCH |
| 2 | INSTALL PVC CONDUIT |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT |
| 7 | INSTALL POLYETHYLENE CONDUIT |
| 8 | DIRECTIONAL DRILL CONDUIT |
| 9 | BORE AND JACK CONDUIT |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT |
| 12 | INSTALL CABLE(S) IN EXISTING RISER |
| 13 | INSTALL CABLE(S) IN NEW RISER |
| 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE |
| 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET |
| 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET |
| 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING |
| 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET |
| 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE |
| 3 | INSTALL AERIAL SPLICE ENCLOSURE |
| 4 | INSTALL POLE MOUNTED SPLICE CABINET |
| 5 | INSTALL BASE MOUNTED SPLICE CABINET |
| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
| 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX |
| 12 | INSTALL OVERSIZED JUNCTION BOX |
| 13 | INSTALL STANDARD JUNCTION BOX |
| 14 | REMOVE EXISTING JUNCTION BOX |
| 15 | INSTALL WOOD POLE |
| 16 | REMOVE EXISTING WOOD POLE |
| 17 | INSTALL AERIAL GUY ASSEMBLY |
| 18 | INSTALL STANDARD GUY ASSEMBLY |
| 19 | INSTALL SIDEWALK GUY ASSEMBLY |
| 20 | INSTALL MESSENGER CABLE |
| 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE |
| 22 | REMOVE EXISTING COMMUNICATIONS CABLE |
| 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE |
| 24 | INSTALL DELINEATOR MARKER |
| 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE |
| 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 30 | INSTALL NEW ELECTRICAL SERVICE |
| 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 32 | INSTALL NEW CONTROLLER |
| 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 34 | INSTALL GENERATOR POWER INLET BOX |
| 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 36 | INSTALL UNIFIED CABLE |
| 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 40 | INSTALL RADIO TRANSCEIVER |
| 41 | INSTALL SYSTEM LOOP |
| 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 44 | INSTALL LOCAL LOOP AMPLIFIER |
| 45 | INSTALL CITY WI-FI ANTENNA |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH |
| 47 | INSTALL CODEC |
| 48 | BOND MESSENGER CABLE TO POLE GROUND |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION |
| 50 | INSTALL ANTENNA CABLE |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT |
| 53 | INSTALL DSL ETHERNET SWITCH |
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| 55 | INSTALL TERMINAL SERVER |
| 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
| 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

PLANS PREPARED IN THE OFFICE OF:

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P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000

750 Greenfield Pkwy., Garner, NC 27529

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SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

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| PROJECT REFERENCE NO. | SHEET NO. |
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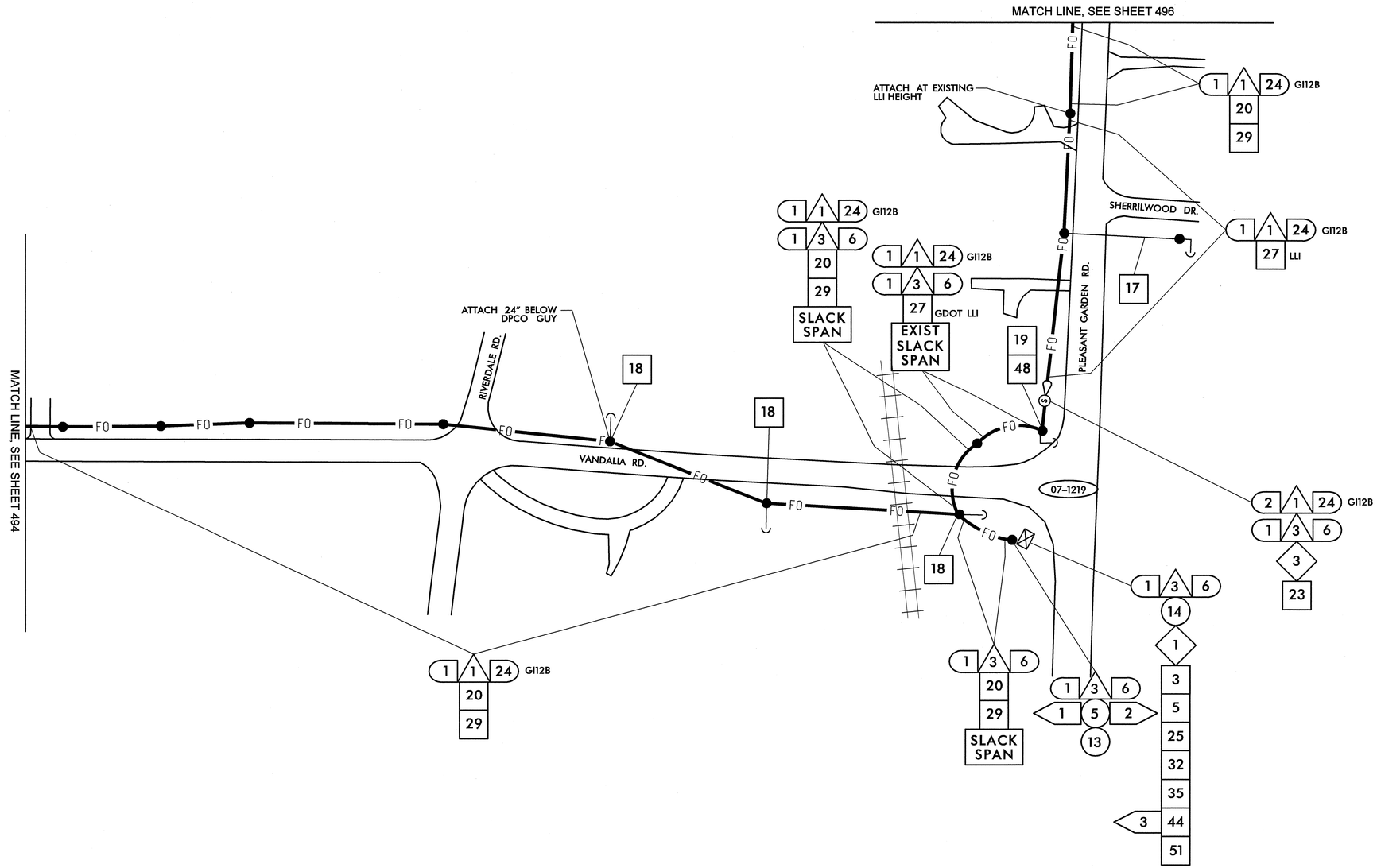
| U-4711 | 495 |

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|---|---|
| 1 | INSTALL SMFO CABLE |
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| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
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| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
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| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
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PLANS PREPARED IN THE OFFICE OF:
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STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Pkwy., Garner, NC 27529


SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 — GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 — REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN — REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE — DATE 2/20/08

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2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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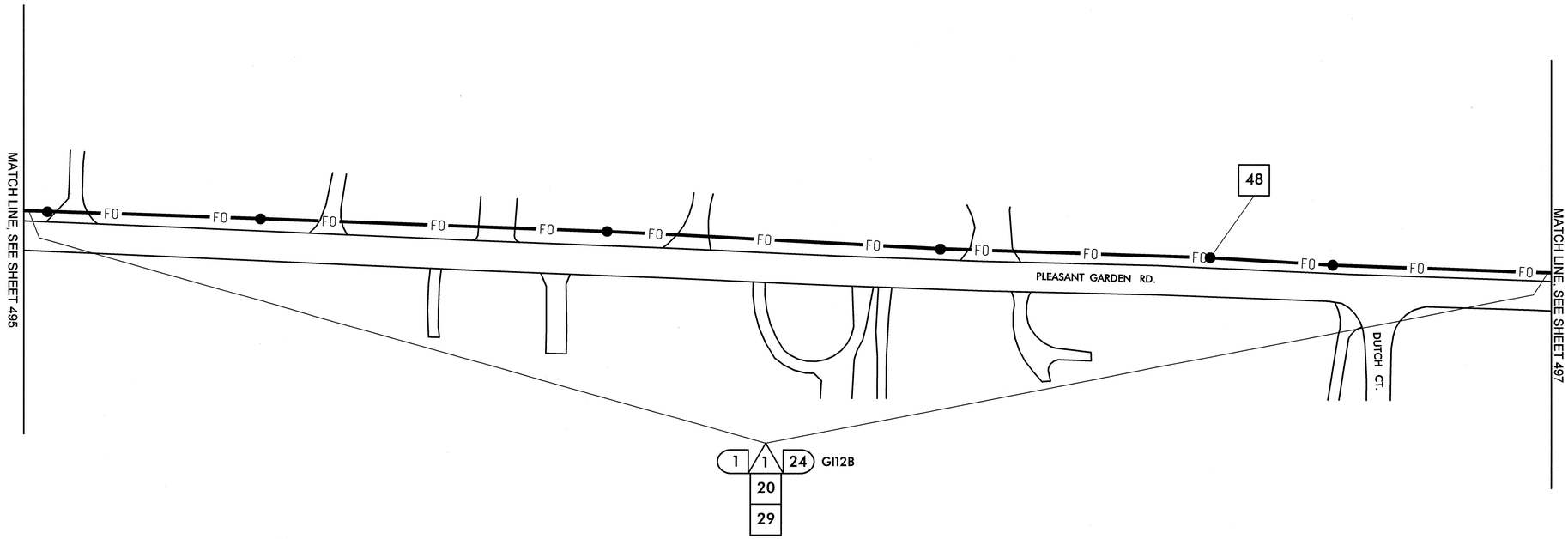
| U-4711 | 496 |




1. INSTALL SMFO CABLE
2. INSTALL PLENUM RATED FIBER OPTIC CABLE
3. INSTALL FIBER OPTIC DROP CABLE
4. INSTALL TRACER WIRE
5. REUSE NCDOT SMFO CABLE
6. REUSE GDOT SMFO CABLE

1. TRENCH
2. INSTALL PVC CONDUIT
3. INSTALL RIGID, GALVANIZED STEEL CONDUIT
4. INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
5. INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING
6. INSTALL OUTER-DUCT POLYETHYLENE CONDUIT
7. INSTALL POLYETHYLENE CONDUIT
8. DIRECTIONAL DRILL CONDUIT
9. BORE AND JACK CONDUIT
10. INSTALL CABLE(S) IN EXISTING CONDUIT
11. INSTALL CABLE(S) IN NEW CONDUIT
12. INSTALL CABLE(S) IN EXISTING RISER
13. INSTALL CABLE(S) IN NEW RISER
14. INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE
15. INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
16. INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
17. INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET
18. INSTALL NEW RISER INTO POLE MOUNTED CABINET
19. REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING

1. INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET
2. INSTALL UNDERGROUND SPLICE ENCLOSURE
3. INSTALL AERIAL SPLICE ENCLOSURE
4. INSTALL POLE MOUNTED SPLICE CABINET
5. INSTALL BASE MOUNTED SPLICE CABINET
6. REMOVE EXISTING SPLICE CABINET
7. INSTALL TERMINAL SPLICE BOX
8. MODIFY EXISTING SPLICE ENCLOSURE

1. INSTALL CABINET FOUNDATION
2. REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER
3. MODIFY EXISTING CABINET FOUNDATION
4. INSTALL NEW 333 COMMUNICATION CABINET
5. INSTALL NEW 332 BASE MOUNTED CABINET
6. INSTALL NEW 336S CABINET
7. INSTALL CCTV CAMERA ASSEMBLY
8. INSTALL CCTV CAMERA WOOD POLE
9. INSTALL CCTV METAL POLE AND FOUNDATION
10. INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX
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19. INSTALL SIDEWALK GUY ASSEMBLY
20. INSTALL MESSENGER CABLE
21. REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE
22. REMOVE EXISTING COMMUNICATIONS CABLE
23. INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE
24. INSTALL DELINEATOR MARKER
25. STORE 30 FEET OF EACH COMMUNICATIONS CABLE
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27. LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE
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58. INSTALL WIRELESS ACCESS POINT POWER CABLE

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000



Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
750 Greenfield Pkwy., Garner, NC 27529


SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

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| PLAN DATE: FEBRUARY, 2008 | REVIEWED BY: K.W. SMITH |
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NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

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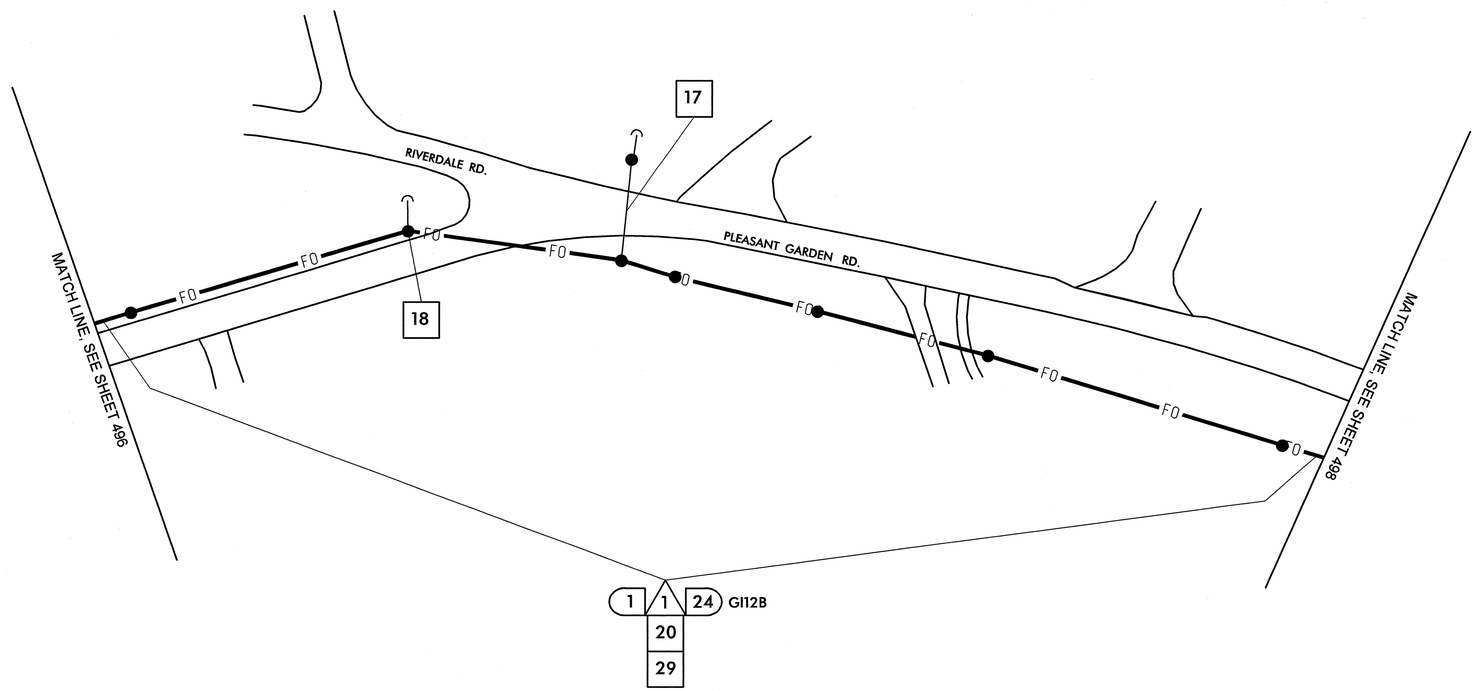


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# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

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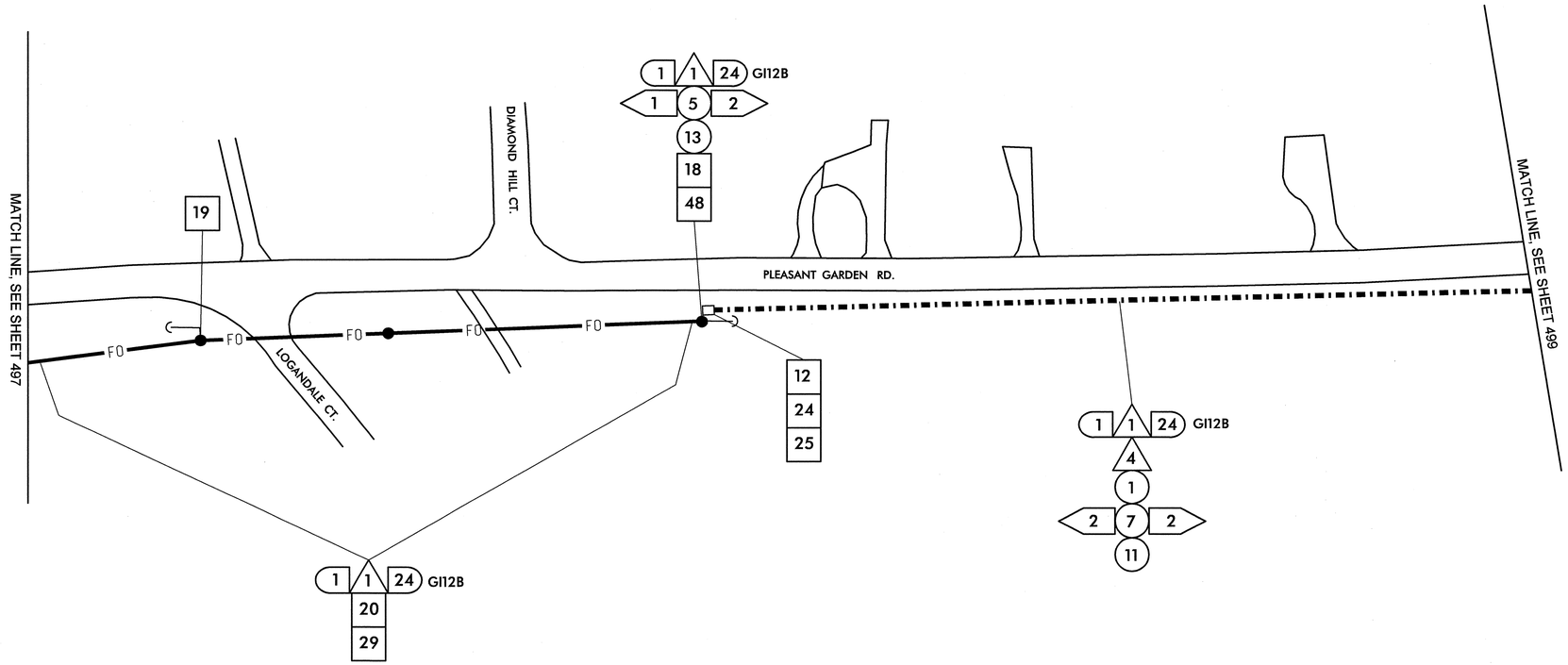


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Traffic Engineering and Safety Systems Branch
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Intelligent Transportation Systems
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SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

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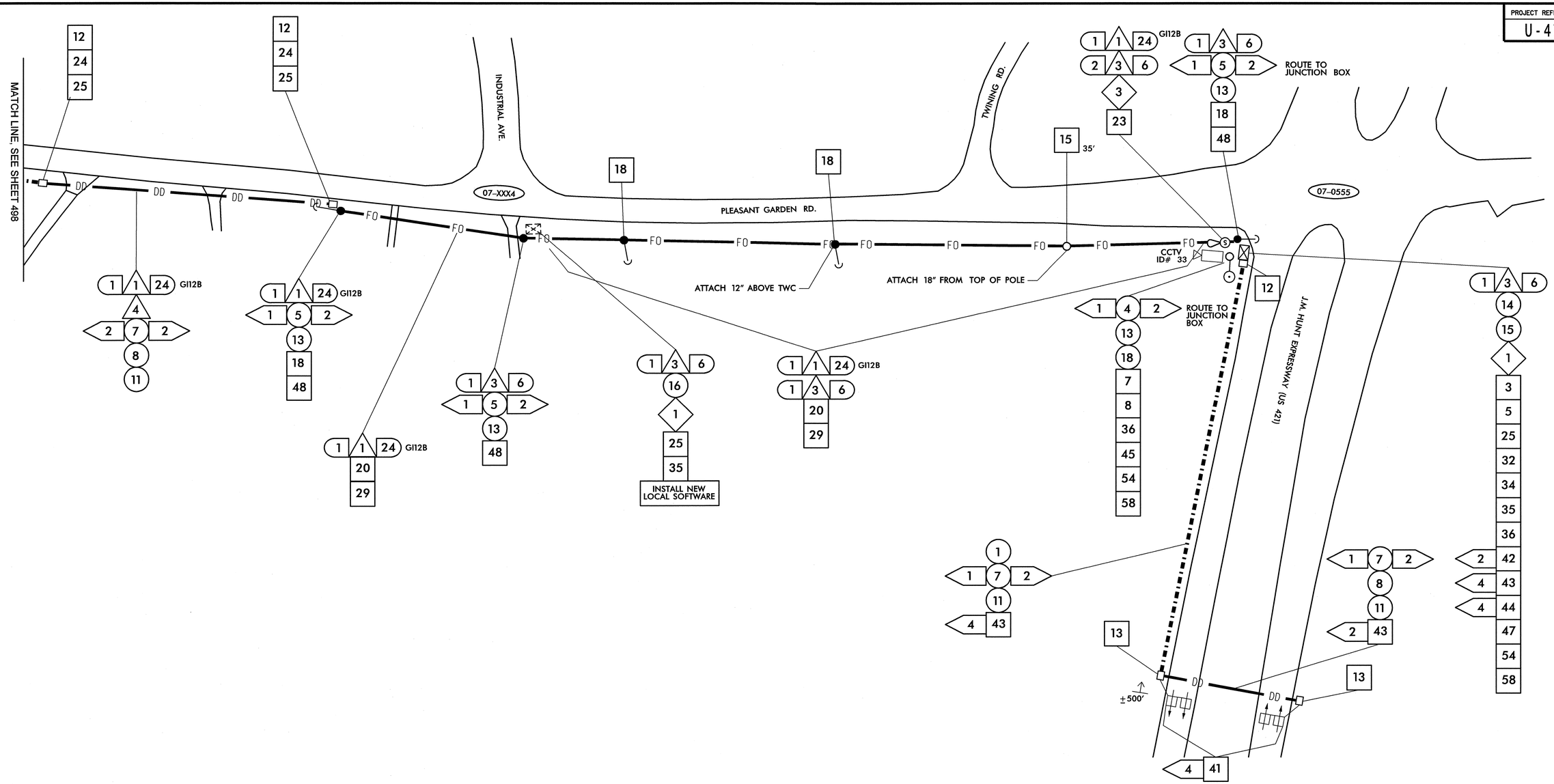
| U-4711 | 499 |

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| 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE |
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| 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
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| 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 34 | INSTALL GENERATOR POWER INLET BOX |
| 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
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| 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000



Traffic Engineering and Safety Systems Branch
Transportation Management Unit
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
750 Greenfield Pkwy., Garner, NC 27529


SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

| | |
|---|---|
| PLAN DATE: FEBRUARY, 2008 | REVIEWED BY: K.W. SMITH |
| PREPARED BY: K.D. VANPATTEN | REVIEWED BY: M.W. DUNZO |

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO
SIGNATURE DATE 2/20/08
CADD Filename: ...\Sht0499.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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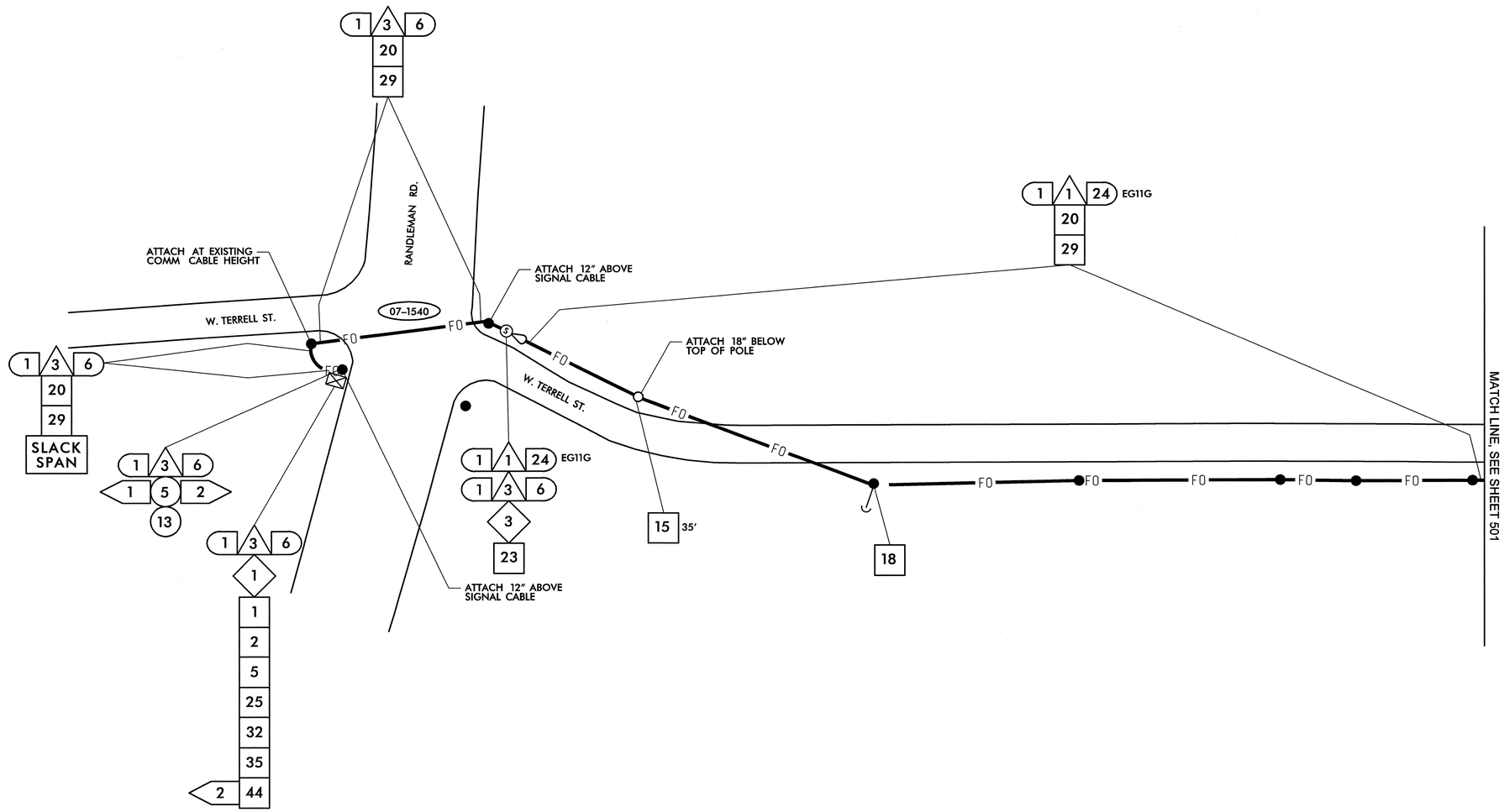
| U-4711 | 500 |

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3. INSTALL FIBER OPTIC DROP CABLE
4. INSTALL TRACER WIRE
5. REUSE NCDOT SMFO CABLE
6. REUSE GDOT SMFO CABLE
1. TRENCH
2. INSTALL PVC CONDUIT
3. INSTALL RIGID, GALVANIZED STEEL CONDUIT
4. INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
5. INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING
6. INSTALL OUTER-DUCT POLYETHYLENE CONDUIT
7. INSTALL POLYETHYLENE CONDUIT
8. DIRECTIONAL DRILL CONDUIT
9. BORE AND JACK CONDUIT
10. INSTALL CABLE(S) IN EXISTING CONDUIT
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13. INSTALL CABLE(S) IN NEW RISER
14. INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE
15. INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
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3. INSTALL AERIAL SPLICE ENCLOSURE
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5. INSTALL BASE MOUNTED SPLICE CABINET
6. REMOVE EXISTING SPLICE CABINET
7. INSTALL TERMINAL SPLICE BOX
8. MODIFY EXISTING SPLICE ENCLOSURE
1. INSTALL CABINET FOUNDATION
2. REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER
3. MODIFY EXISTING CABINET FOUNDATION
4. INSTALL NEW 333 COMMUNICATION CABINET
5. INSTALL NEW 332 BASE MOUNTED CABINET
6. INSTALL NEW 336S CABINET
7. INSTALL CCTV CAMERA ASSEMBLY
8. INSTALL CCTV CAMERA WOOD POLE
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10. INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX
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PLANS PREPARED IN THE OFFICE OF:
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Traffic Engineering and Safety Systems Branch
Intelligent Transportation Systems
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/8/08 DATE

CADD Filename: ...\Sht0500.dgn

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| PROJECT REFERENCE NO. | SHEET NO. |
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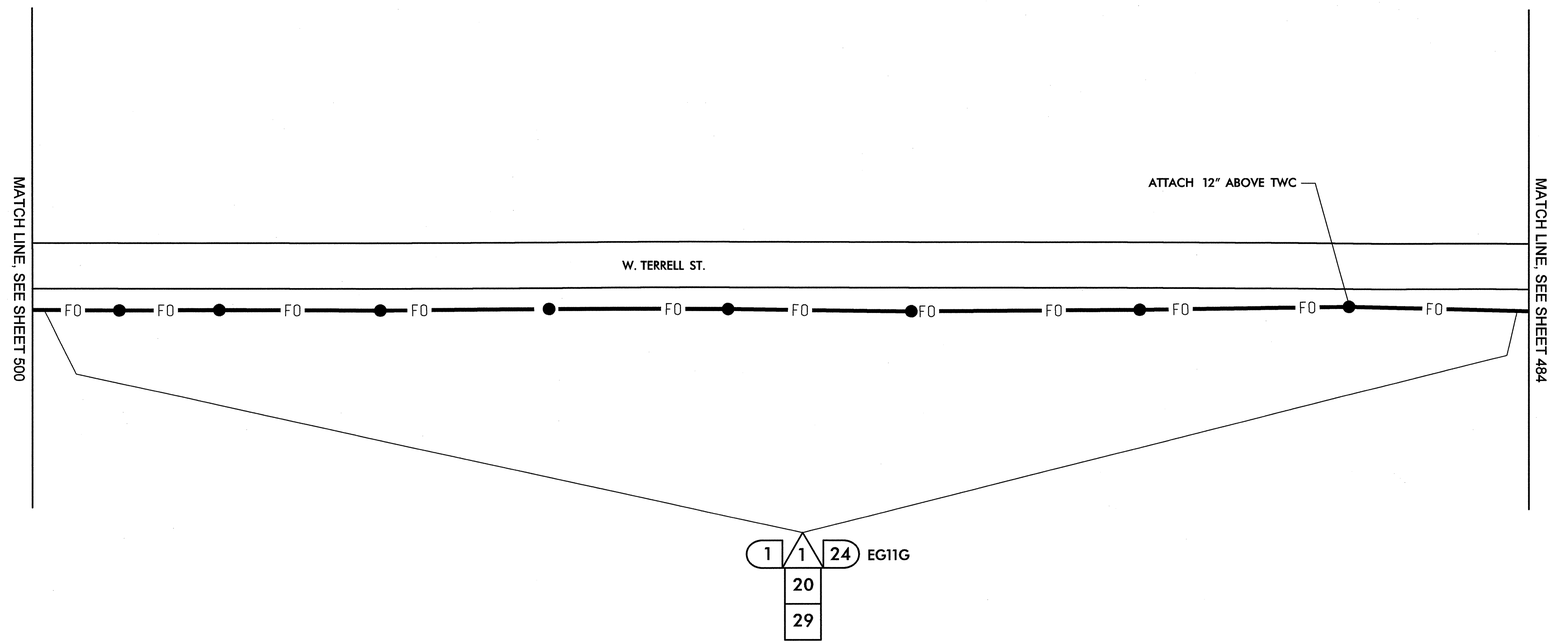
| U-4711 | 501 |

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PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000



Traffic Engineering and Safety Systems Branch
Intelligent Transportation Systems
DIVISION OF HIGHWAYS, STATE OF NORTH CAROLINA
750 Greenfield Pkwy., Garner, NC 27529


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SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

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| PROJECT REFERENCE NO. | SHEET NO. |
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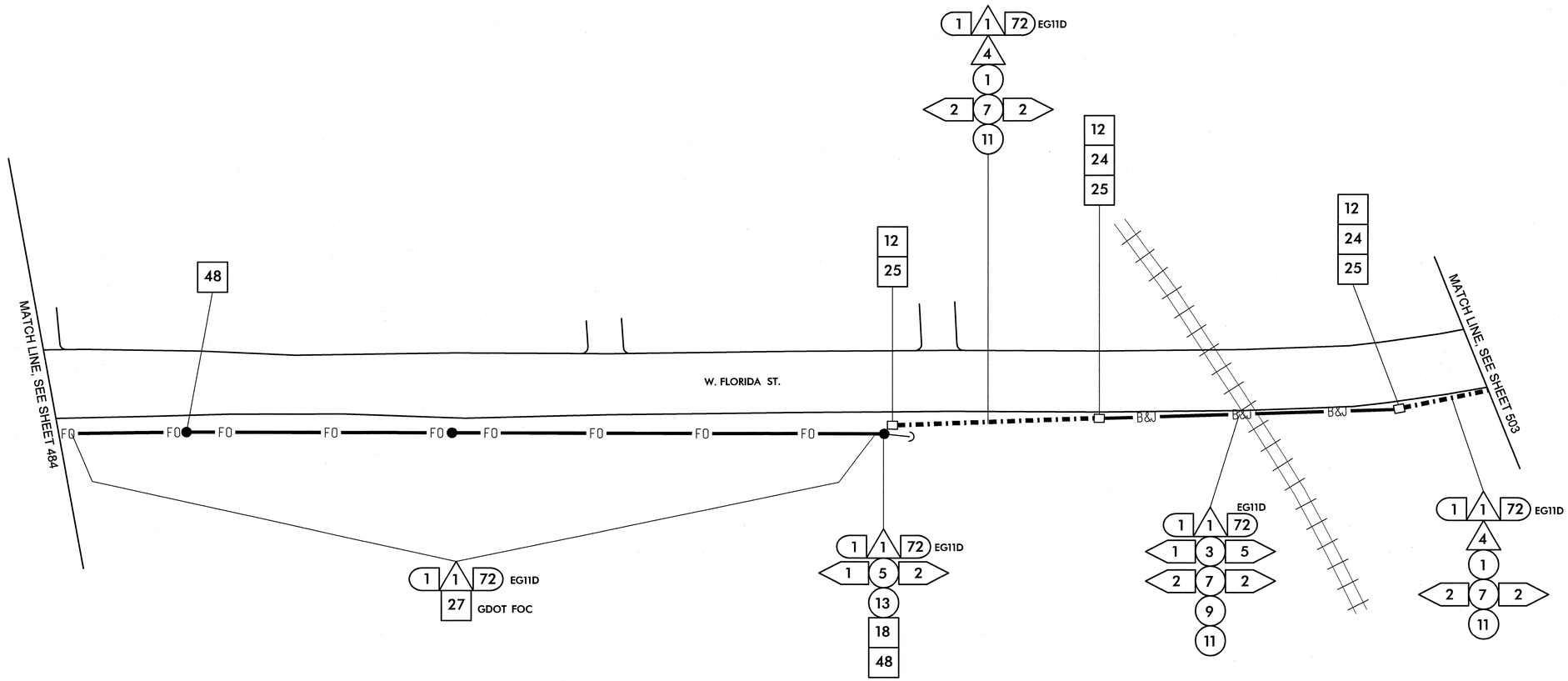
| U-4711 | 502 |

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SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 — GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 — REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN — REVIEWED BY: M.W. DUNZO

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE — DATE 2/20/08

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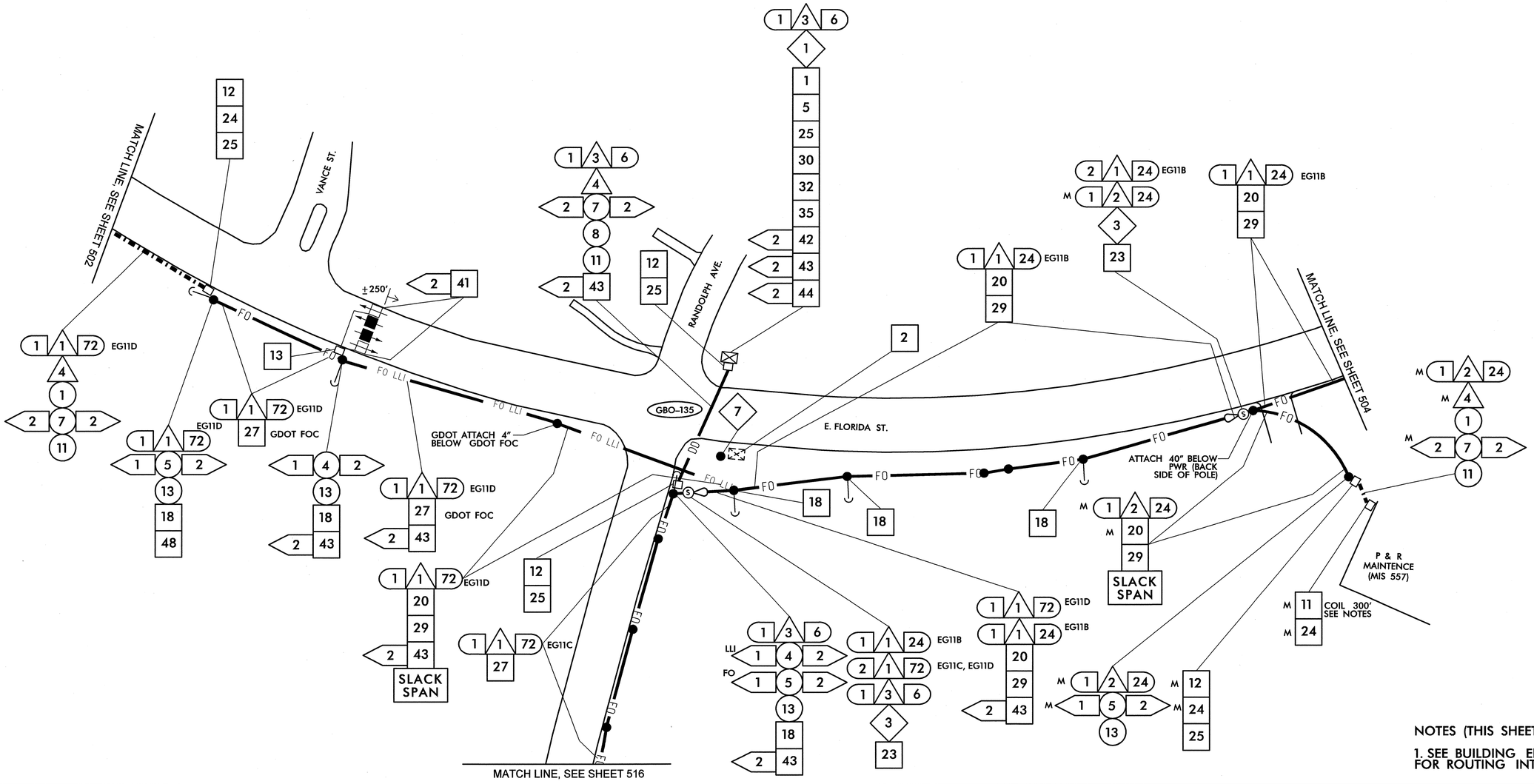
| U-4711 | 503 |




NOTES (THIS SHEET ONLY)

1. SEE BUILDING ENTRANCE DETAIL FOR ROUTING INTO BUILDING

| | |
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| 8 | DIRECTIONAL DRILL CONDUIT |
| 9 | BORE AND JACK CONDUIT |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT |
| 12 | INSTALL CABLE(S) IN EXISTING RISER |
| 13 | INSTALL CABLE(S) IN NEW RISER |
| 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE |
| 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET |
| 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET |
| 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING |
| 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET |
| 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE |
| 3 | INSTALL AERIAL SPLICE ENCLOSURE |
| 4 | INSTALL POLE MOUNTED SPLICE CABINET |
| 5 | INSTALL BASE MOUNTED SPLICE CABINET |
| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
| 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX |
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| 13 | INSTALL STANDARD JUNCTION BOX |
| 14 | REMOVE EXISTING JUNCTION BOX |
| 15 | INSTALL WOOD POLE |
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| 17 | INSTALL AERIAL GUY ASSEMBLY |
| 18 | INSTALL STANDARD GUY ASSEMBLY |
| 19 | INSTALL SIDEWALK GUY ASSEMBLY |
| 20 | INSTALL MESSENGER CABLE |
| 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE |
| 22 | REMOVE EXISTING COMMUNICATIONS CABLE |
| 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE |
| 24 | INSTALL DELINEATOR MARKER |
| 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE |
| 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 30 | INSTALL NEW ELECTRICAL SERVICE |
| 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 32 | INSTALL NEW CONTROLLER |
| 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 34 | INSTALL GENERATOR POWER INLET BOX |
| 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 36 | INSTALL UNIFIED CABLE |
| 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 40 | INSTALL RADIO TRANSCEIVER |
| 41 | INSTALL SYSTEM LOOP |
| 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 44 | INSTALL LOCAL LOOP AMPLIFIER |
| 45 | INSTALL CITY WI-FI ANTENNA |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH |
| 47 | INSTALL CODEC |
| 48 | BOND MESSENGER CABLE TO POLE GROUND |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION |
| 50 | INSTALL ANTENNA CABLE |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT |
| 53 | INSTALL DSL ETHERNET SWITCH |
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| 55 | INSTALL TERMINAL SERVER |
| 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
| 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000

750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 — GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 — REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN — REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL — NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE — DATE 2/29/08

CADD Filename: ...\Sht0503m.dgn

2/29/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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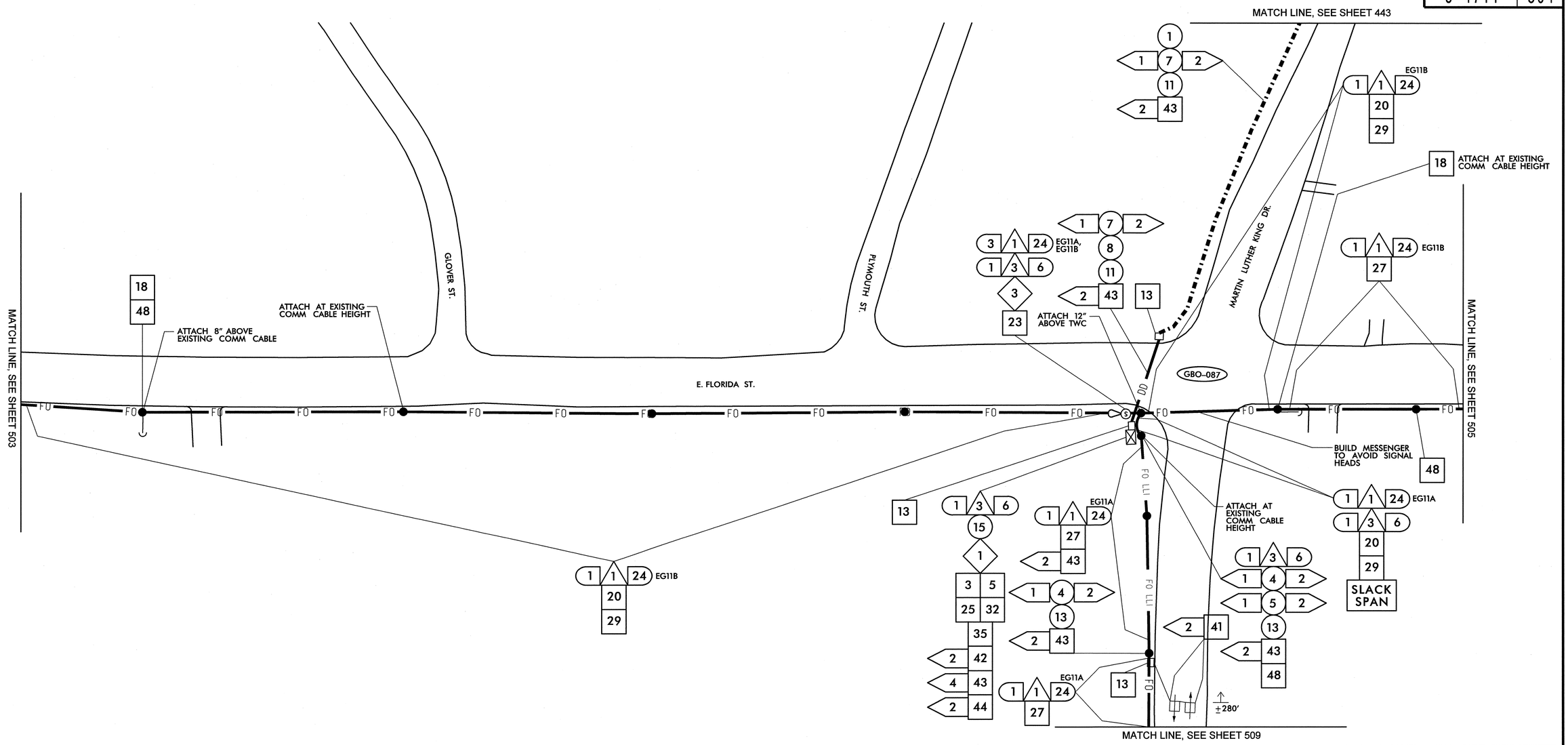
| U-4711 | 504 |

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|---|---|---|---|---|---|---|---|
| 1 | INSTALL SMFO CABLE | 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE | 6 | INSTALL NEW 336S CABINET | 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE | 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 7 | INSTALL CCTV CAMERA ASSEMBLY | 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE | 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 8 | INSTALL CCTV CAMERA WOOD POLE | 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 4 | INSTALL TRACER WIRE | 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET | 9 | INSTALL CCTV METAL POLE AND FOUNDATION | 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 5 | REUSE NCDOT SMFO CABLE | 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET | 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX | 30 | INSTALL NEW ELECTRICAL SERVICE |
| 6 | REUSE GDOT SMFO CABLE | 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING | 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX | 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 1 | TRENCH | 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET | 12 | INSTALL OVERSIZED JUNCTION BOX | 32 | INSTALL NEW CONTROLLER |
| 2 | INSTALL PVC CONDUIT | 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE | 13 | INSTALL STANDARD JUNCTION BOX | 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT | 3 | INSTALL AERIAL SPLICE ENCLOSURE | 14 | REMOVE EXISTING JUNCTION BOX | 34 | INSTALL GENERATOR POWER INLET BOX |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD | 4 | INSTALL POLE MOUNTED SPLICE CABINET | 15 | INSTALL WOOD POLE | 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING | 5 | INSTALL BASE MOUNTED SPLICE CABINET | 16 | REMOVE EXISTING WOOD POLE | 36 | INSTALL UNIFIED CABLE |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT | 6 | REMOVE EXISTING SPLICE CABINET | 17 | INSTALL AERIAL GUY ASSEMBLY | 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 7 | INSTALL POLYETHYLENE CONDUIT | 7 | INSTALL TERMINAL SPLICE BOX | 18 | INSTALL STANDARD GUY ASSEMBLY | 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 8 | DIRECTIONAL DRILL CONDUIT | 8 | MODIFY EXISTING SPLICE ENCLOSURE | 19 | INSTALL SIDEWALK GUY ASSEMBLY | 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 9 | BORE AND JACK CONDUIT | 1 | INSTALL CABINET FOUNDATION | 20 | INSTALL MESSENGER CABLE | 40 | INSTALL RADIO TRANSCEIVER |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT | 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER | 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE | 41 | INSTALL SYSTEM LOOP |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT | 3 | MODIFY EXISTING CABINET FOUNDATION | 22 | REMOVE EXISTING COMMUNICATIONS CABLE | 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 12 | INSTALL CABLE(S) IN EXISTING RISER | 4 | INSTALL NEW 333 COMMUNICATION CABINET | 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE | 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 13 | INSTALL CABLE(S) IN NEW RISER | 5 | INSTALL NEW 332 BASE MOUNTED CABINET | 24 | INSTALL DELINEATOR MARKER | | |
| | | | | 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE | | |

| | | | | | |
|---|---|---|---|---|---|
| 44 | INSTALL LOCAL LOOP AMPLIFIER | 53 | INSTALL DSL ETHERNET SWITCH | | |
| 45 | INSTALL CITY WI-FI ANTENNA | 54 | INSTALL ETHERNET CABLE | | |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH | 55 | INSTALL TERMINAL SERVER | | |
| 47 | INSTALL CODEC | 56 | INSTALL MICROWAVE VEHICLE DETECTOR | | |
| 48 | BOND MESSENGER CABLE TO POLE GROUND | 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT | | |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION | 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE | | |
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| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT | | | | |
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NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


PLANS PREPARED IN THE OFFICE OF:
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Traffic Engineering and Safety Systems Branch
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Pkwy., Garner, NC 27529


SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE CABLE ROUTING SHEET

DIVISION 7 — GUILFORD COUNTY

| | |
|---|---|
| PLAN DATE: FEBRUARY, 2008 | REVIEWED BY: K.W. SMITH |
| PREPARED BY: K.D. VANPATTEN | REVIEWED BY: M.W. DUNZO |

| REVISIONS | INIT. | DATE |
|---|---|---|
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE — DATE 2/20/08

CADD Filename: ...\Sht0504.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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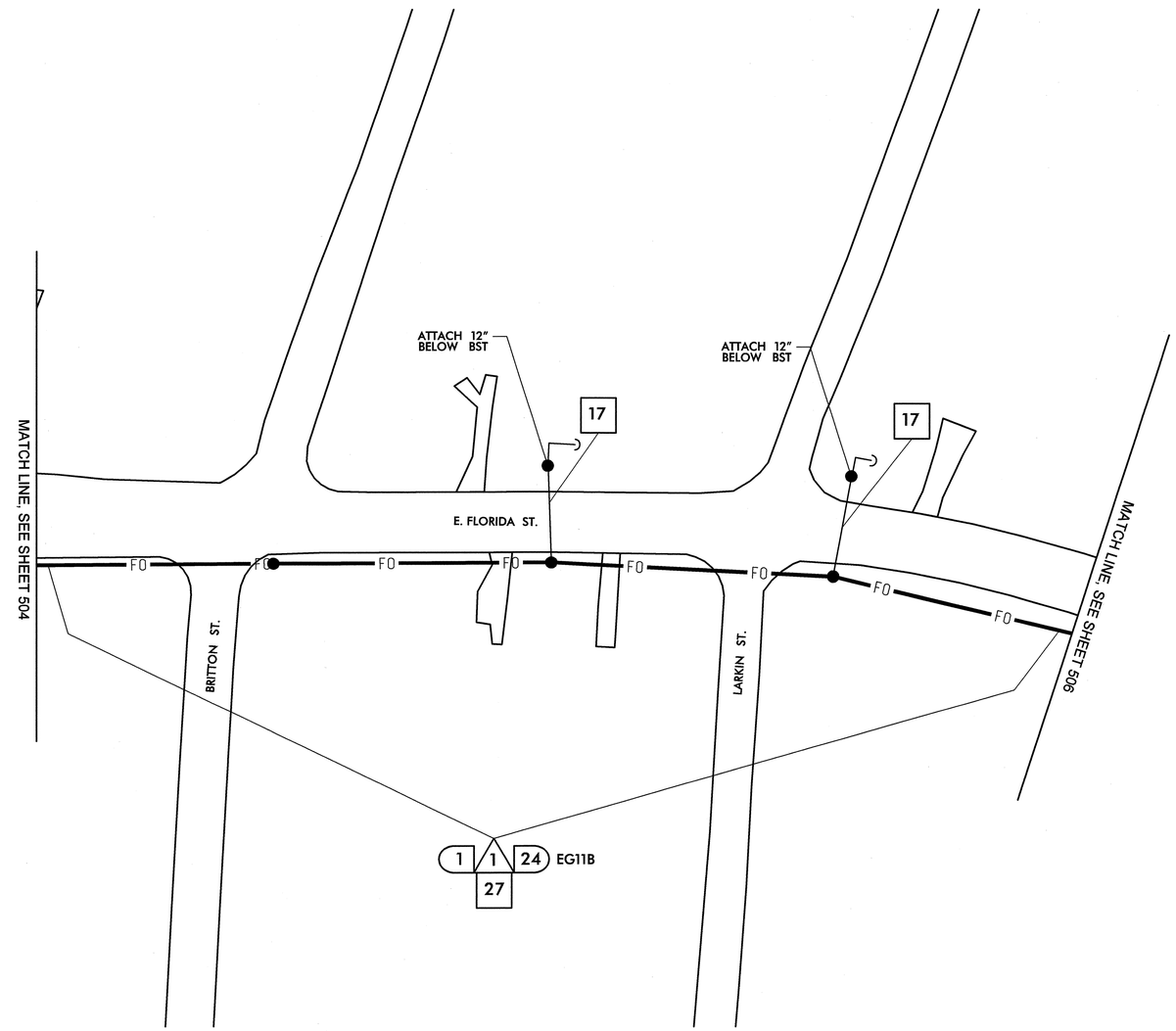
| U-4711 | 505 |

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|---|---|---|---|---|---|---|---|
| 1 | INSTALL SMFO CABLE | 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE | 6 | INSTALL NEW 336S CABINET | 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE | 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 7 | INSTALL CCTV CAMERA ASSEMBLY | 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
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| 4 | INSTALL TRACER WIRE | 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET | 9 | INSTALL CCTV METAL POLE AND FOUNDATION | 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 5 | REUSE NCDOT SMFO CABLE | 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET | 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX | 30 | INSTALL NEW ELECTRICAL SERVICE |
| 6 | REUSE GDOT SMFO CABLE | 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING | 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX | 31 | MODIFY EXISTING ELECTRICAL SERVICE |
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| 2 | INSTALL PVC CONDUIT | 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE | 13 | INSTALL STANDARD JUNCTION BOX | 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT | 3 | INSTALL AERIAL SPLICE ENCLOSURE | 14 | REMOVE EXISTING JUNCTION BOX | 34 | INSTALL GENERATOR POWER INLET BOX |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD | 4 | INSTALL POLE MOUNTED SPLICE CABINET | 15 | INSTALL WOOD POLE | 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING | 5 | INSTALL BASE MOUNTED SPLICE CABINET | 16 | REMOVE EXISTING WOOD POLE | 36 | INSTALL UNIFIED CABLE |
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| 7 | INSTALL POLYETHYLENE CONDUIT | 7 | INSTALL TERMINAL SPLICE BOX | 18 | INSTALL STANDARD GUY ASSEMBLY | 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 8 | DIRECTIONAL DRILL CONDUIT | 8 | MODIFY EXISTING SPLICE ENCLOSURE | 19 | INSTALL SIDEWALK GUY ASSEMBLY | 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 9 | BORE AND JACK CONDUIT | 1 | INSTALL CABINET FOUNDATION | 20 | INSTALL MESSENGER CABLE | 40 | INSTALL RADIO TRANSCEIVER |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT | 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER | 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE | 41 | INSTALL SYSTEM LOOP |
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| 13 | INSTALL CABLE(S) IN NEW RISER | 5 | INSTALL NEW 332 BASE MOUNTED CABINET | 24 | INSTALL DELINEATOR MARKER | | |
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| 45 | INSTALL CITY WI-FI ANTENNA | 54 | INSTALL ETHERNET CABLE |
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| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION | 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |
| 50 | INSTALL ANTENNA CABLE | | |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT | | |
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GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


PLANS PREPARED IN THE OFFICE OF:
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Traffic Engineering and Safety Systems Branch
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Transportation Building
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

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|---|---|---|---|
| PLAN DATE: FEBRUARY, 2008 | | REVIEWED BY: K.W. SMITH | |
| PREPARED BY: K.D. VANPATTEN | | REVIEWED BY: M.W. DUNZO | |
| REVISIONS | | INIT. | DATE |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO
SIGNATURE DATE 2/20/08
CADD Filename: ...\Sht0505.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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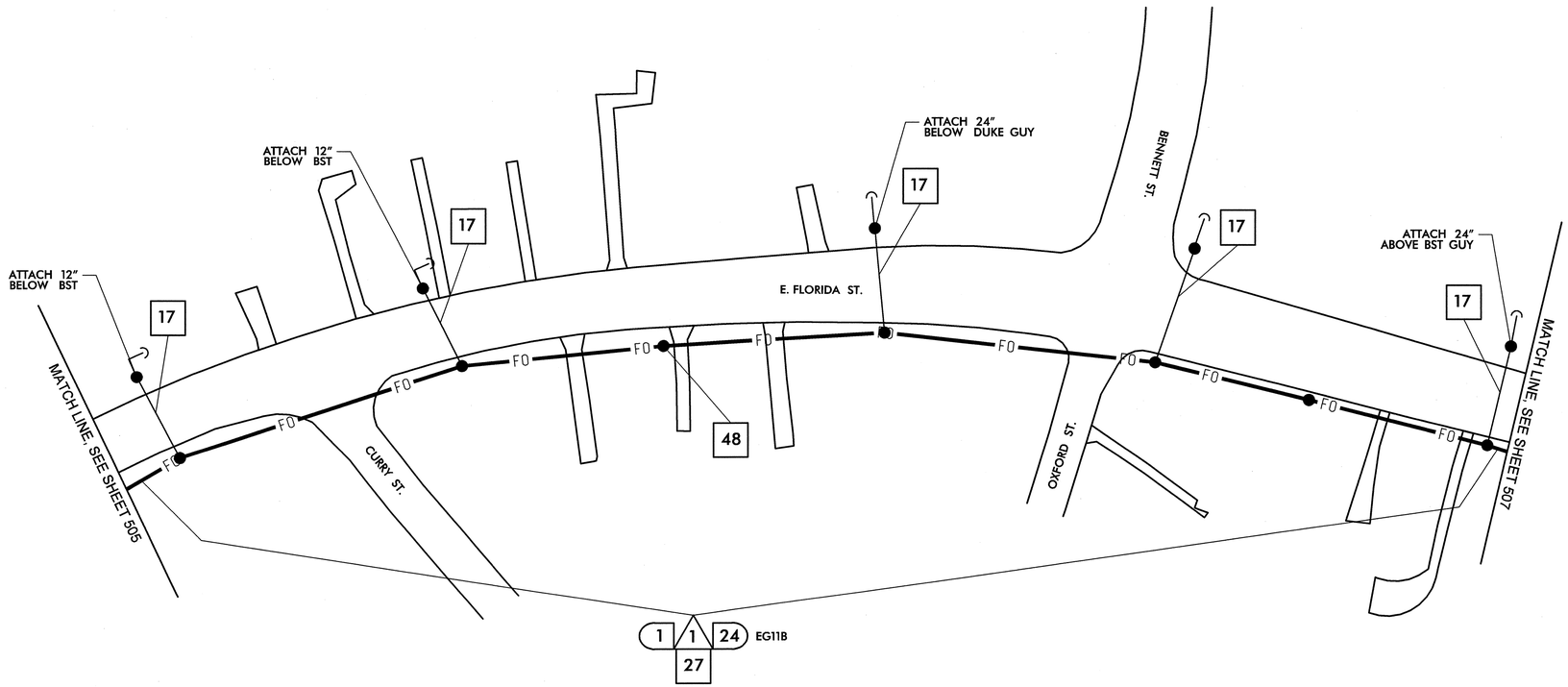
| U-4711 | 506 |

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|---|---|
| 1 | INSTALL SMFO CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE |
| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
| 6 | REUSE GDOT SMFO CABLE |
| 1 | TRENCH |
| 2 | INSTALL PVC CONDUIT |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD |
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NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000



Traffic Engineering and Safety Systems Branch
Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
750 Greenfield Pkwy., Garner, NC 27529


N

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/20/08 DATE

CADD Filenames ...\Sht0506.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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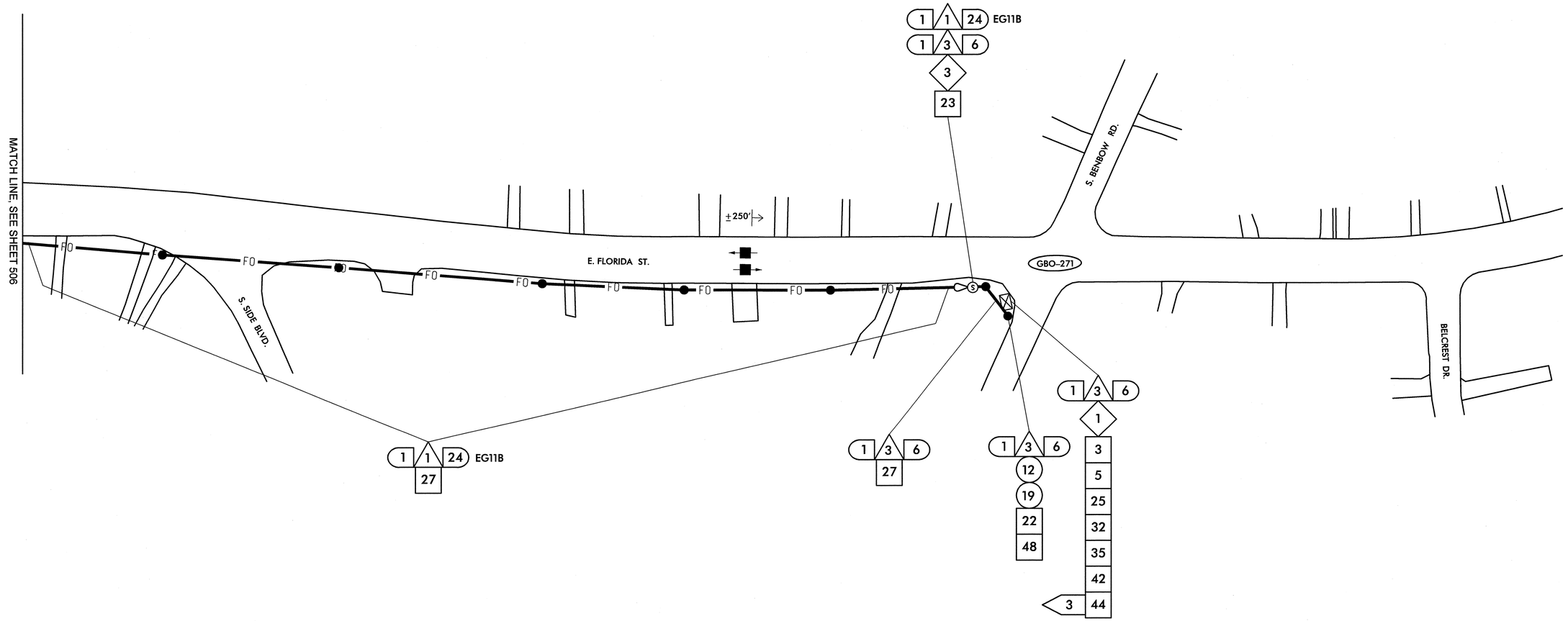
| U-4711 | 507 |




| | |
|---|---|
| 1 | INSTALL SMFO CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE |
| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
| 6 | REUSE GDOT SMFO CABLE |
| 1 | TRENCH |
| 2 | INSTALL PVC CONDUIT |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT |
| 7 | INSTALL POLYETHYLENE CONDUIT |
| 8 | DIRECTIONAL DRILL CONDUIT |
| 9 | BORE AND JACK CONDUIT |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT |
| 12 | INSTALL CABLE(S) IN EXISTING RISER |
| 13 | INSTALL CABLE(S) IN NEW RISER |
| 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE |
| 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET |
| 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET |
| 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING |
| 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET |
| 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE |
| 3 | INSTALL AERIAL SPLICE ENCLOSURE |
| 4 | INSTALL POLE MOUNTED SPLICE CABINET |
| 5 | INSTALL BASE MOUNTED SPLICE CABINET |
| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
| 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX |
| 12 | INSTALL OVERSIZED JUNCTION BOX |
| 13 | INSTALL STANDARD JUNCTION BOX |
| 14 | REMOVE EXISTING JUNCTION BOX |
| 15 | INSTALL WOOD POLE |
| 16 | REMOVE EXISTING WOOD POLE |
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| 18 | INSTALL STANDARD GUY ASSEMBLY |
| 19 | INSTALL SIDEWALK GUY ASSEMBLY |
| 20 | INSTALL MESSENGER CABLE |
| 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE |
| 22 | REMOVE EXISTING COMMUNICATIONS CABLE |
| 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE |
| 24 | INSTALL DELINEATOR MARKER |
| 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE |
| 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 30 | INSTALL NEW ELECTRICAL SERVICE |
| 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 32 | INSTALL NEW CONTROLLER |
| 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 34 | INSTALL GENERATOR POWER INLET BOX |
| 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 36 | INSTALL UNIFIED CABLE |
| 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 40 | INSTALL RADIO TRANSCEIVER |
| 41 | INSTALL SYSTEM LOOP |
| 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 44 | INSTALL LOCAL LOOP AMPLIFIER |
| 45 | INSTALL CITY WI-FI ANTENNA |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH |
| 47 | INSTALL CODEC |
| 48 | BOND MESSENGER CABLE TO POLE GROUND |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION |
| 50 | INSTALL ANTENNA CABLE |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT |
| 53 | INSTALL DSL ETHERNET SWITCH |
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NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


PLANS PREPARED IN THE OFFICE OF:
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(919) 677-2000


Institute for Transportation Research and Education
Transportation Mobility and Safety Division
NC DEPT. OF TRANSPORTATION
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

| | | | |
|---|---|---|---|
| PLAN DATE: | FEBRUARY, 2008 | REVIEWED BY: | K.W. SMITH |
| PREPARED BY: | K.D. VANPATTEN | REVIEWED BY: | M.W. DUNZO |

| REVISIONS | INIT. | DATE |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/20/08 DATE

CADD Filename: ...\Sht0507.dgn

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| PROJECT REFERENCE NO. | SHEET NO. |
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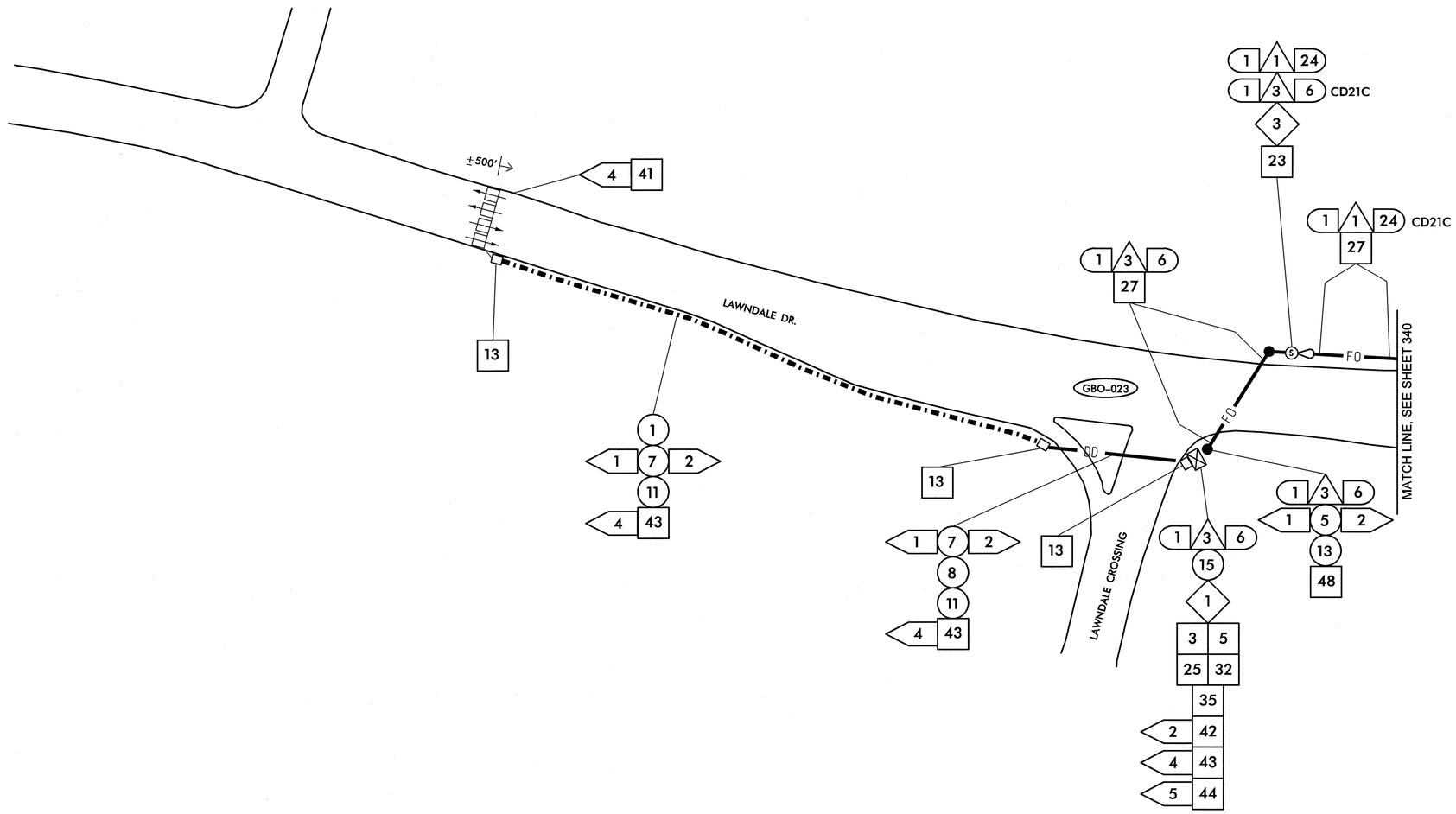
| U-4711 | 508 |




1. INSTALL SMFO CABLE
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Traffic Engineering and Safety Systems Branch
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Pkwy., Garner, NC 27529


SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

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| PLAN DATE: FEBRUARY, 2008 | REVIEWED BY: K.W. SMITH |
| PREPARED BY: K.D. VANPATTEN | REVIEWED BY: M.W. DUNZO |

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/20/08 DATE

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| PROJECT REFERENCE NO. | SHEET NO. |
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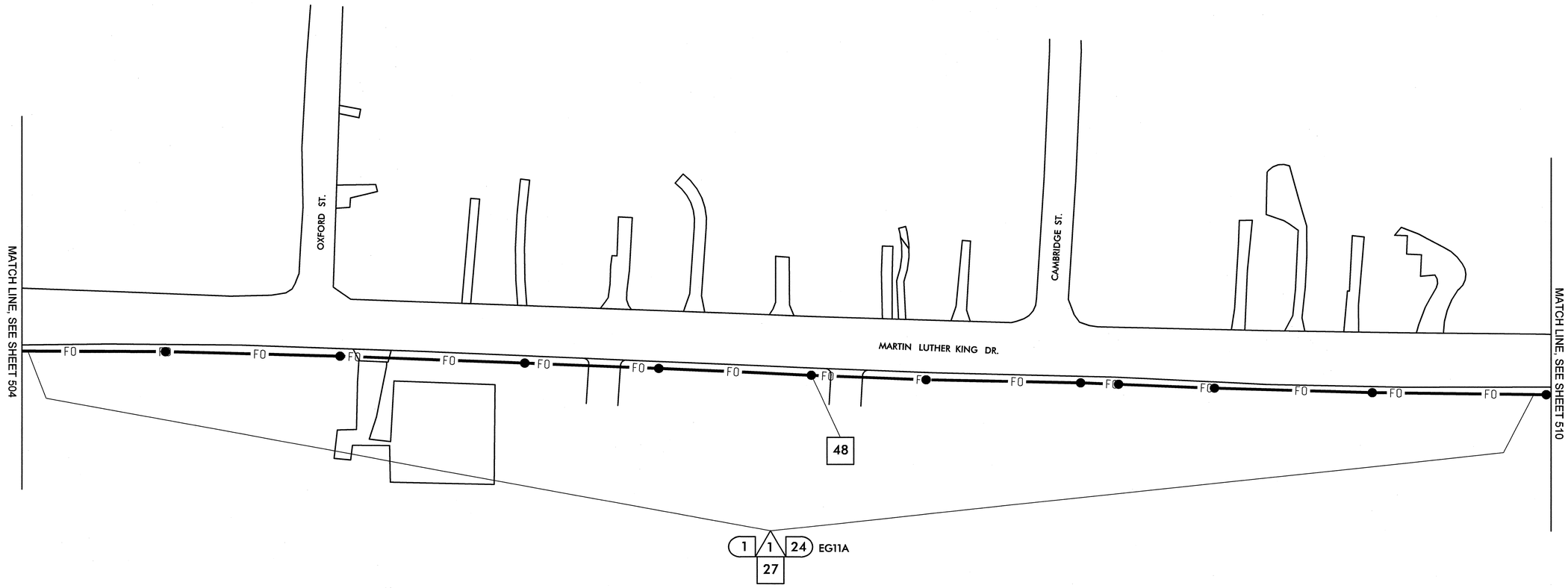


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8. MODIFY EXISTING SPLICE ENCLOSURE

1. INSTALL CABINET FOUNDATION
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## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

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PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/21/08 DATE

CADD Filenames ...\Sht0509.dgn

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| PROJECT REFERENCE NO. | SHEET NO. |
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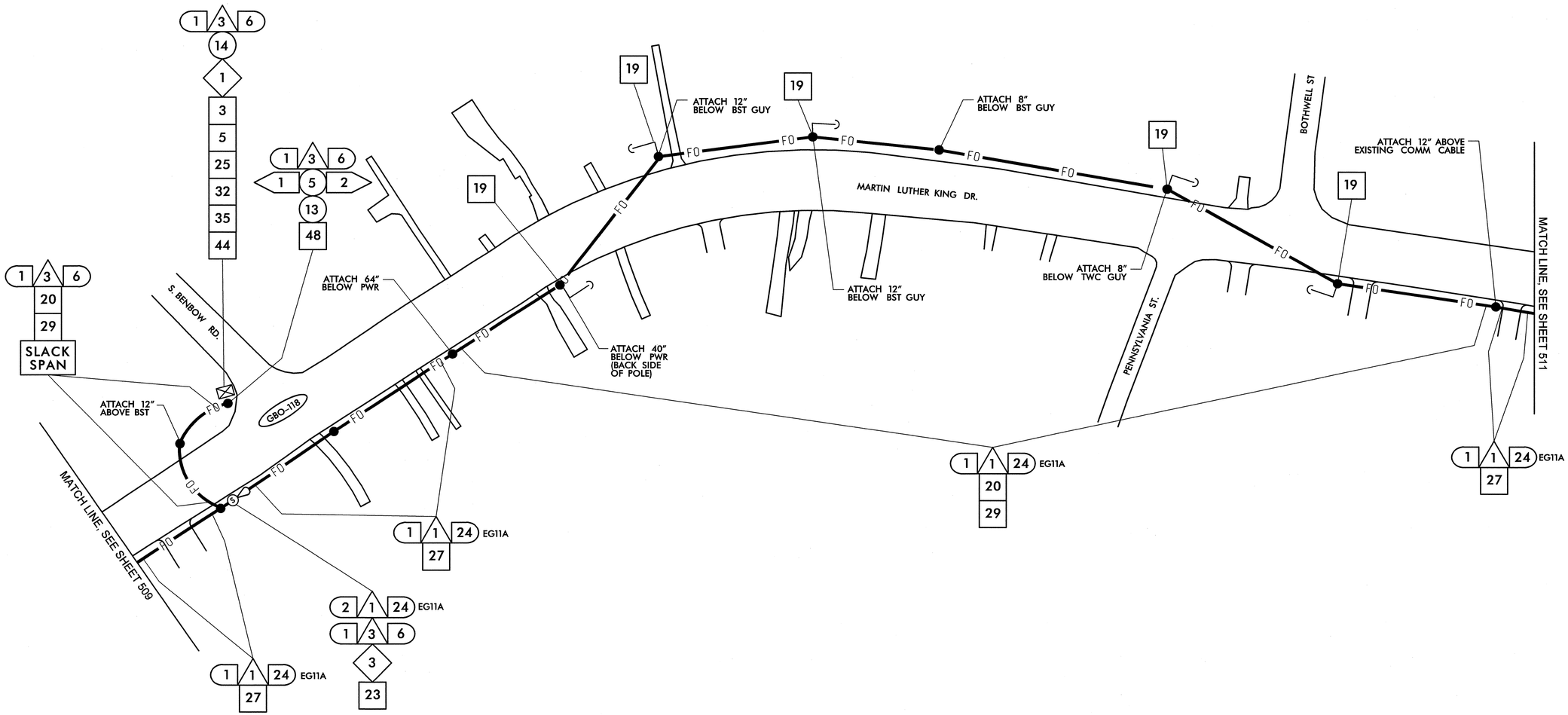
| U-4711 | 510 |

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|---|---|---|---|
| 1 | INSTALL SMFO CABLE | 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE | 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 3 | INSTALL FIBER OPTIC DROP CABLE | 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 4 | INSTALL TRACER WIRE | 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET |
| 5 | REUSE NCDOT SMFO CABLE | 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET |
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| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT | 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL POLYETHYLENE CONDUIT | 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | DIRECTIONAL DRILL CONDUIT | 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 9 | BORE AND JACK CONDUIT | 1 | INSTALL CABINET FOUNDATION |
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| | | | |
|---|---|---|---|
| 6 | INSTALL NEW 336S CABINET | 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
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| 13 | INSTALL STANDARD JUNCTION BOX | 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 14 | REMOVE EXISTING JUNCTION BOX | 34 | INSTALL GENERATOR POWER INLET BOX |
| 15 | INSTALL WOOD POLE | 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 16 | REMOVE EXISTING WOOD POLE | 36 | INSTALL UNIFIED CABLE |
| 17 | INSTALL AERIAL GUY ASSEMBLY | 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 18 | INSTALL STANDARD GUY ASSEMBLY | 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 19 | INSTALL SIDEWALK GUY ASSEMBLY | 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 20 | INSTALL MESSENGER CABLE | 40 | INSTALL RADIO TRANSCEIVER |
| 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE | 41 | INSTALL SYSTEM LOOP |
| 22 | REMOVE EXISTING COMMUNICATIONS CABLE | 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE | 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 24 | INSTALL DELINEATOR MARKER | | |
| 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE | | |

| | | | |
|---|---|---|---|
| 44 | INSTALL LOCAL LOOP AMPLIFIER | 53 | INSTALL DSL ETHERNET SWITCH |
| 45 | INSTALL CITY WI-FI ANTENNA | 54 | INSTALL ETHERNET CABLE |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH | 55 | INSTALL TERMINAL SERVER |
| 47 | INSTALL CODEC | 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
| 48 | BOND MESSENGER CABLE TO POLE GROUND | 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION | 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |
| 50 | INSTALL ANTENNA CABLE | | |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT | | |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT | | |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000



Institute for Transportation Research and Education
Center for Transportation Systems
750 Greenfield Pkwy., Garner, NC 27529


SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

| | |
|---|---|
| PLAN DATE: FEBRUARY, 2008 | REVIEWED BY: K.W. SMITH |
| PREPARED BY: K.D. VANPATTEN | REVIEWED BY: M.W. DUNZO |

| REVISIONS | INIT. | DATE |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filenames ...\Sht0510.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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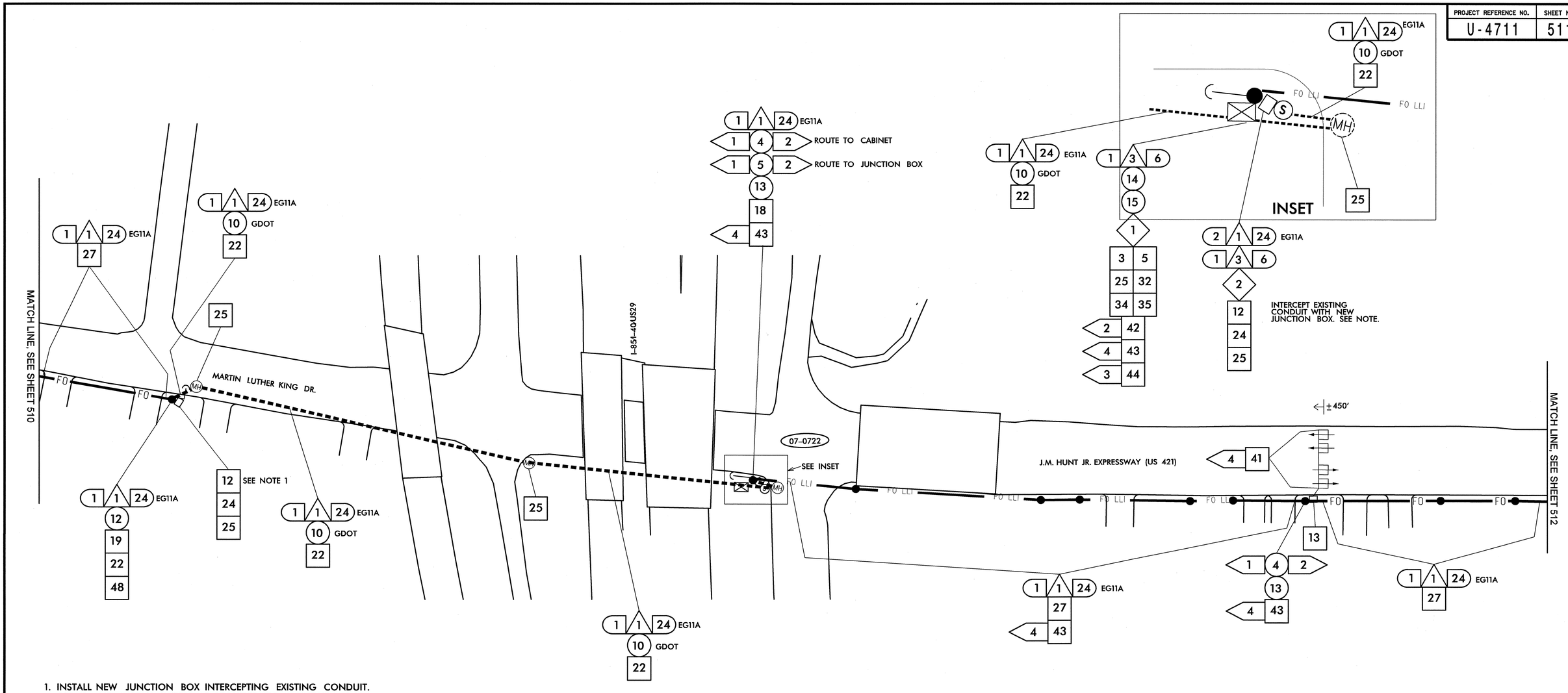
| U-4711 | 511 |




1. INSTALL NEW JUNCTION BOX INTERCEPTING EXISTING CONDUIT. REPAIR AND INSTALL SWEEPS AS REQUIRED TO MAINTAIN BEND RADIUS. USE METHODS APPROVED BY ENGINEER.

| | |
|---|---|
| 1 | INSTALL SMFO CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE |
| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
| 6 | REUSE GDOT SMFO CABLE |
| 1 | TRENCH |
| 2 | INSTALL PVC CONDUIT |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT |
| 7 | INSTALL POLYETHYLENE CONDUIT |
| 8 | DIRECTIONAL DRILL CONDUIT |
| 9 | BORE AND JACK CONDUIT |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT |
| 12 | INSTALL CABLE(S) IN EXISTING RISER |
| 13 | INSTALL CABLE(S) IN NEW RISER |
| 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE |
| 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET |
| 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET |
| 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING |
| 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET |
| 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE |
| 3 | INSTALL AERIAL SPLICE ENCLOSURE |
| 4 | INSTALL POLE MOUNTED SPLICE CABINET |
| 5 | INSTALL BASE MOUNTED SPLICE CABINET |
| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
| 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX |
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| 13 | INSTALL STANDARD JUNCTION BOX |
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| 19 | INSTALL SIDEWALK GUY ASSEMBLY |
| 20 | INSTALL MESSENGER CABLE |
| 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE |
| 22 | REMOVE EXISTING COMMUNICATIONS CABLE |
| 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE |
| 24 | INSTALL DELINEATOR MARKER |
| 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE |
| 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 30 | INSTALL NEW ELECTRICAL SERVICE |
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| 47 | INSTALL CODEC |
| 48 | BOND MESSENGER CABLE TO POLE GROUND |
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| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT |
| 53 | INSTALL DSL ETHERNET SWITCH |
| 54 | INSTALL ETHERNET CABLE |
| 55 | INSTALL TERMINAL SERVER |
| 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
| 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |

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PLANS PREPARED IN THE OFFICE OF:
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(919) 677-2000

Traffic Engineering and Safety Systems Branch
Traffic Management Systems
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

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| PLAN DATE: FEBRUARY, 2008 | REVIEWED BY: K.W. SMITH |
| PREPARED BY: K.D. VANPATTEN | REVIEWED BY: M.W. DUNZO |

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NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO
SIGNATURE 2/20/08 DATE
CADD Filename: ...\Sht05il.dgn

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| PROJECT REFERENCE NO. | SHEET NO. |
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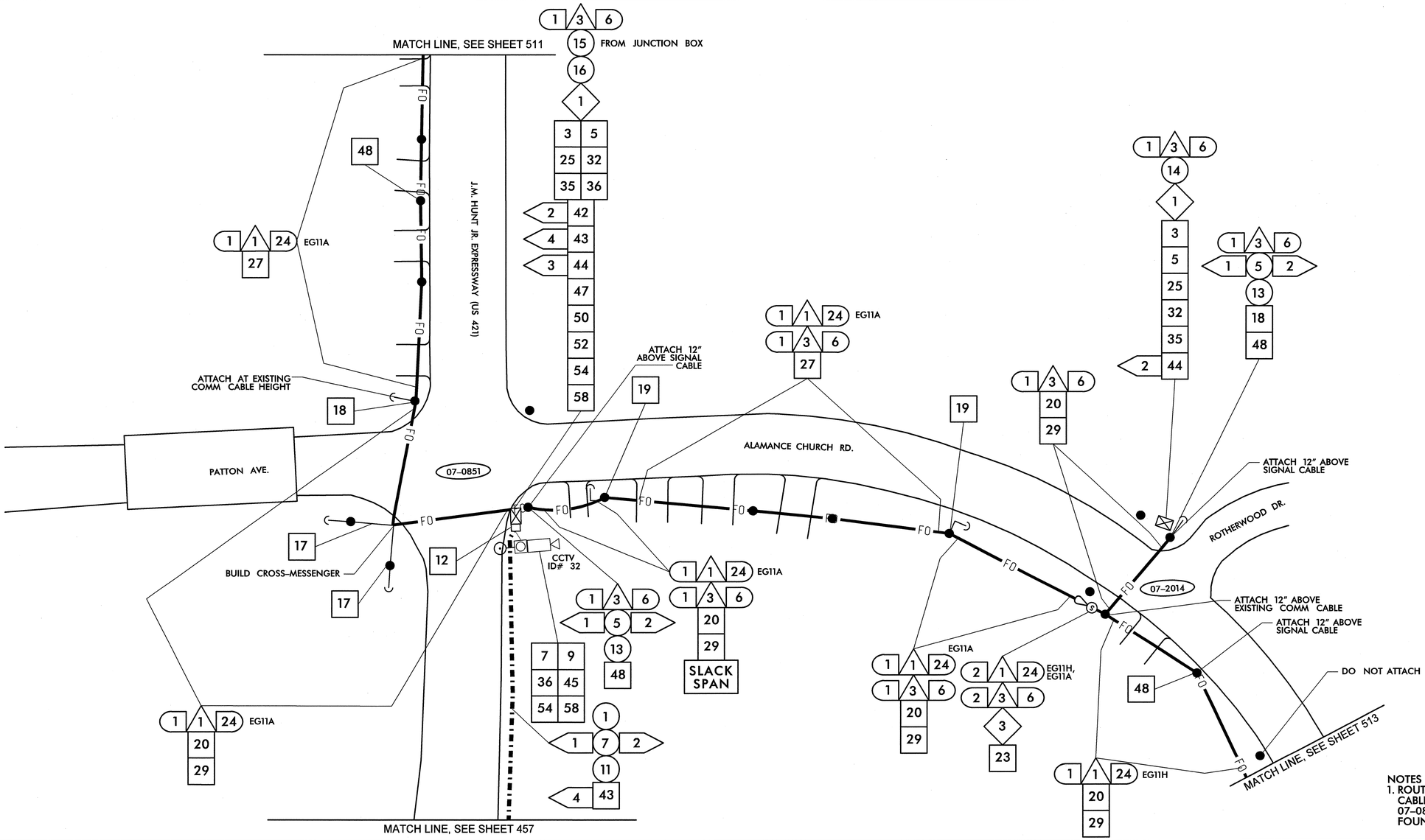
| U-4711 | 512 |




NOTES (THIS SHEET ONLY):
1. ROUTE UNIFIED CABLE, ETHERNET CABLE, AND WI FI POWER CABLE FROM CCTV ID#32 TO CONTROLLER CABINET AT 07-0851 VIA NEW POLYETHYLENE CONDUIT FROM CCTV POLE FOUNDATION TO JUNCTION BOX AT CABINET.

1. INSTALL SMFO CABLE
2. INSTALL PLENUM RATED FIBER OPTIC CABLE
3. INSTALL FIBER OPTIC DROP CABLE
4. INSTALL TRACER WIRE
5. REUSE NCDOT SMFO CABLE
6. REUSE GDOT SMFO CABLE
1. TRENCH
2. INSTALL PVC CONDUIT
3. INSTALL RIGID, GALVANIZED STEEL CONDUIT
4. INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
5. INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING
6. INSTALL OUTER-DUCT POLYETHYLENE CONDUIT
7. INSTALL POLYETHYLENE CONDUIT
8. DIRECTIONAL DRILL CONDUIT
9. BORE AND JACK CONDUIT
10. INSTALL CABLE(S) IN EXISTING CONDUIT
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14. INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE
15. INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
16. INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
17. INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET
18. INSTALL NEW RISER INTO POLE MOUNTED CABINET
19. REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING
1. INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET
2. INSTALL UNDERGROUND SPLICE ENCLOSURE
3. INSTALL AERIAL SPLICE ENCLOSURE
4. INSTALL POLE MOUNTED SPLICE CABINET
5. INSTALL BASE MOUNTED SPLICE CABINET
6. REMOVE EXISTING SPLICE CABINET
7. INSTALL TERMINAL SPLICE BOX
8. MODIFY EXISTING SPLICE ENCLOSURE
1. INSTALL CABINET FOUNDATION
2. REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER
3. MODIFY EXISTING CABINET FOUNDATION
4. INSTALL NEW 333 COMMUNICATION CABINET
5. INSTALL NEW 332 BASE MOUNTED CABINET
6. INSTALL NEW 336S CABINET
7. INSTALL CCTV CAMERA ASSEMBLY
8. INSTALL CCTV CAMERA WOOD POLE
9. INSTALL CCTV METAL POLE AND FOUNDATION
10. INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX
11. INSTALL SPECIAL OVERSIZED JUNCTION BOX
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20. INSTALL MESSENGER CABLE
21. REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE
22. REMOVE EXISTING COMMUNICATIONS CABLE
23. INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE
24. INSTALL DELINEATOR MARKER
25. STORE 30 FEET OF EACH COMMUNICATIONS CABLE
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27. LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE
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43. INSTALL SYSTEM LOOP LEAD-IN CABLE
44. INSTALL LOCAL LOOP AMPLIFIER
45. INSTALL CITY WI-FI ANTENNA
46. INSTALL HUB 10-GIGABIT ETHERNET SWITCH
47. INSTALL CODEC
48. BOND MESSENGER CABLE TO POLE GROUND
49. INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION
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NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000

Traffic Engineering and Safety Systems Branch
Transportation Mobility and Safety Division
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

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|---|---|
| PLAN DATE: FEBRUARY, 2008 | REVIEWED BY: K.W. SMITH |
| PREPARED BY: K.D. VANPATTEN | REVIEWED BY: M.W. DUNZO |

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO
SIGNATURE DATE 2/20/08
CADD Filename: ...\Sht0512.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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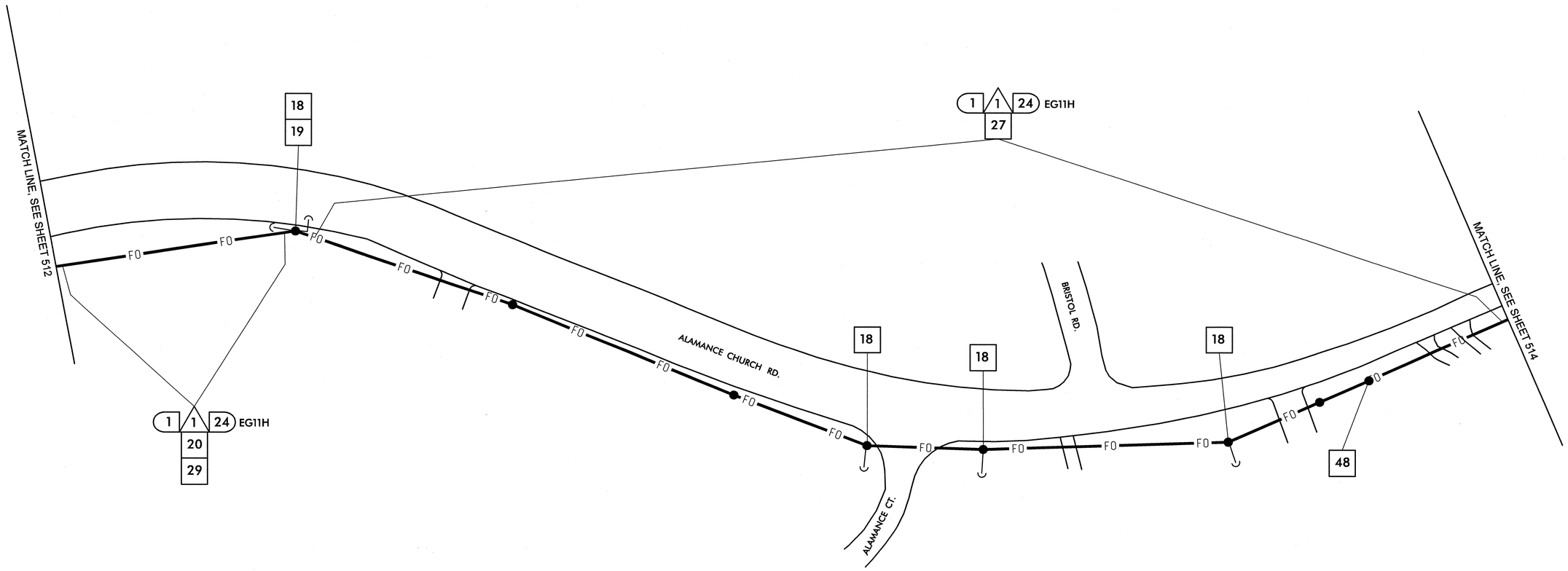
| U-4711 | 513 |




| | |
|---|---|
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Traffic Engineering and Safety Systems Branch
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Pkwy., Garner, NC 27529


SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht0513.dgn

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| PROJECT REFERENCE NO. | SHEET NO. |
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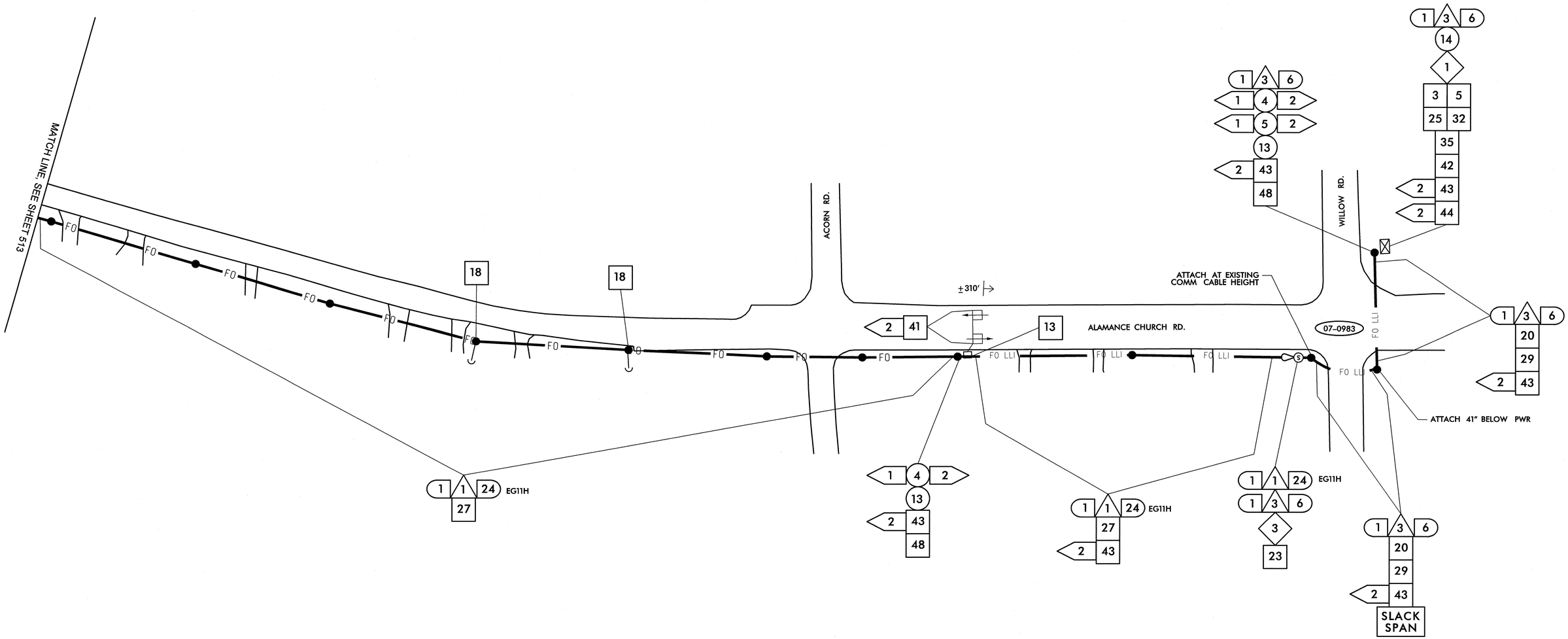
| U-4711 | 514 |




| | |
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| 2 | INSTALL PVC CONDUIT |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT |
| 7 | INSTALL POLYETHYLENE CONDUIT |
| 8 | DIRECTIONAL DRILL CONDUIT |
| 9 | BORE AND JACK CONDUIT |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT |
| 12 | INSTALL CABLE(S) IN EXISTING RISER |
| 13 | INSTALL CABLE(S) IN NEW RISER |
| 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE |
| 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET |
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| 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING |
| 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET |
| 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE |
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| 4 | INSTALL POLE MOUNTED SPLICE CABINET |
| 5 | INSTALL BASE MOUNTED SPLICE CABINET |
| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
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| 20 | INSTALL MESSENGER CABLE |
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| 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
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| 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 34 | INSTALL GENERATOR POWER INLET BOX |
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| 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

PLANS PREPARED IN THE OFFICE OF:

Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000

Division of Highways, Traffic Engineering and Safety Systems Branch
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

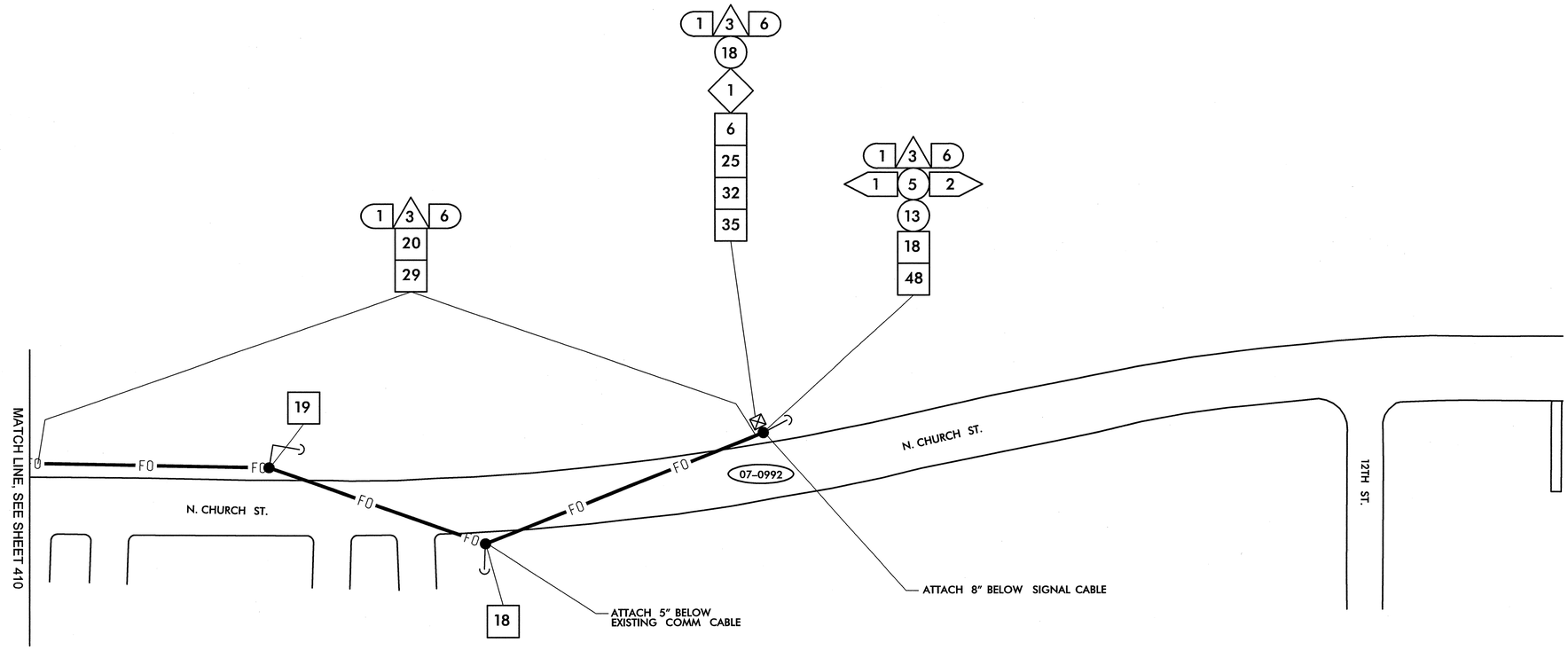
| | |
|---|---|
| PLAN DATE: FEBRUARY, 2008 | REVIEWED BY: K.W. SMITH |
| PREPARED BY: K.D. VANPATTEN | REVIEWED BY: M.W. DUNZO |

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO
SIGNATURE 2/22/08 DATE
CADD Filename: ...\Sht0514.dgn

2/20/2008
h:\systems\projects\01\462020 (g-boro mts)\SH0514.dgn

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-4711 | 515 |




NOTE:
THIS AREA HAS BEEN DETERMINED TO CONTAIN PROPERTIES WITH DOCUMENTED HISTORIC SIGNIFICANCE. IF IT IS NECESSARY TO DEVIATE FROM THESE PLANS IN THIS AREA, PLEASE 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.

1. INSTALL SMFO CABLE
2. INSTALL PLENUM RATED FIBER OPTIC CABLE
3. INSTALL FIBER OPTIC DROP CABLE
4. INSTALL TRACER WIRE
5. REUSE NCDOT SMFO CABLE
6. REUSE GDOT SMFO CABLE

1. TRENCH
2. INSTALL PVC CONDUIT
3. INSTALL RIGID, GALVANIZED STEEL CONDUIT
4. INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
5. INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING
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7. INSTALL POLYETHYLENE CONDUIT
8. DIRECTIONAL DRILL CONDUIT
9. BORE AND JACK CONDUIT
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7. INSTALL TERMINAL SPLICE BOX
8. MODIFY EXISTING SPLICE ENCLOSURE

1. INSTALL CABINET FOUNDATION
2. REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER
3. MODIFY EXISTING CABINET FOUNDATION
4. INSTALL NEW 333 COMMUNICATION CABINET
5. INSTALL NEW 332 BASE MOUNTED CABINET
6. INSTALL NEW 336S CABINET
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GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


PLANS PREPARED IN THE OFFICE OF:
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P.O. Box 33068
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State Traffic Engineering and Safety Systems Branch
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Transportation Building
750 Greenfield Pkwy., Garner, NC 27529


SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht0515.dgn

2/20/2008
h:\systems\projects\U4711\62020 (g-boro mts)\SH0515.dgn

| PROJECT REFERENCE NO. | SHEET NO. |
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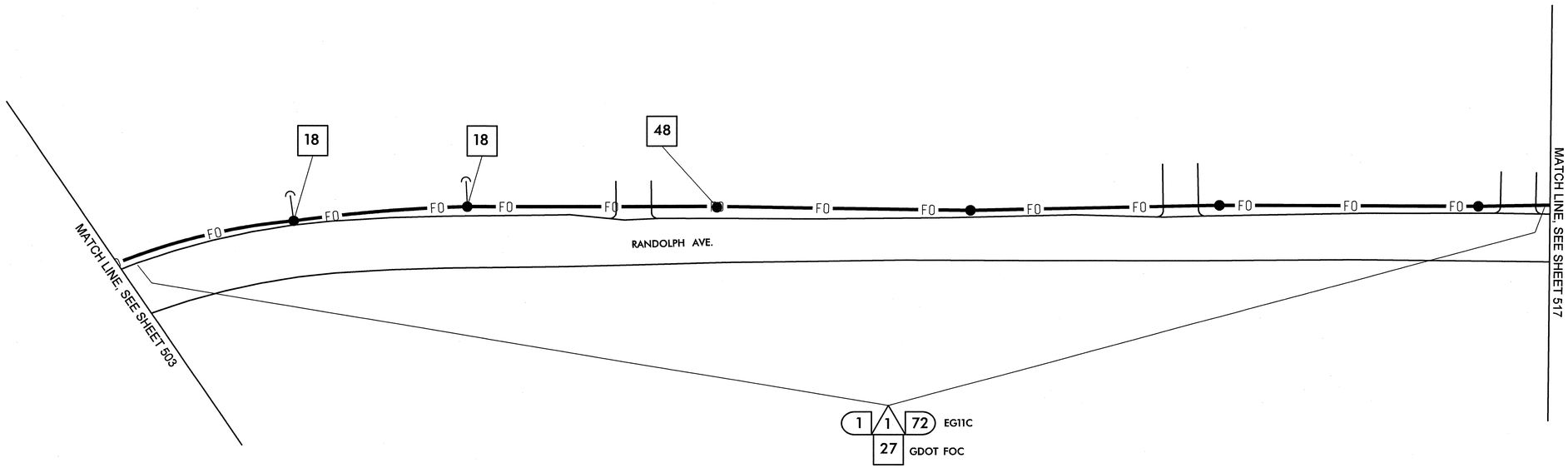
| U-4711 | 516 |

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| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
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PLANS PREPARED IN THE OFFICE OF:
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Traffic Engineering and Safety Systems Branch
Intelligent Transportation Systems
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
750 Greenfield Pkwy., Garner, NC 27529

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SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

| | | | |
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| PLAN DATE: | FEBRUARY, 2008 | REVIEWED BY: | K.W. SMITH |
| PREPARED BY: | K.D. VANPATTEN | REVIEWED BY: | M.W. DUNZO |

| REVISIONS | INIT. | DATE |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/12/08

CADD Filename: ...\Sht0516.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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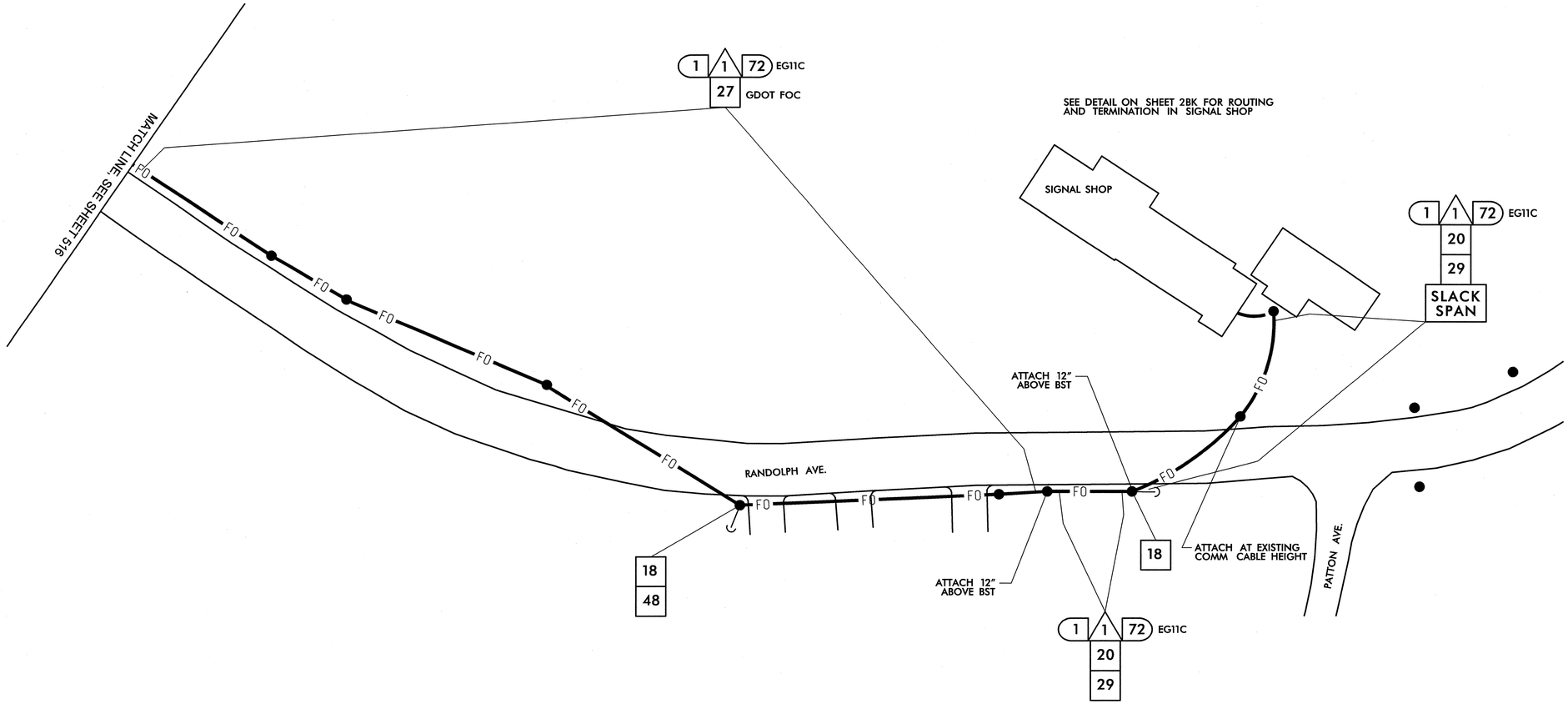
| U-4711 | 517 |

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| 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 40 | INSTALL RADIO TRANSCEIVER |
| 41 | INSTALL SYSTEM LOOP |
| 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 44 | INSTALL LOCAL LOOP AMPLIFIER |
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| 47 | INSTALL CODEC |
| 48 | BOND MESSENGER CABLE TO POLE GROUND |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION |
| 50 | INSTALL ANTENNA CABLE |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT |
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| 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000


Traffic Engineering and Safety Systems Branch
Department of Transportation
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht0517m.dgn

2/20/2008
f:\systems\projects\01\462020 (g-bard mts)\Sht0517m.dgn

| PROJECT REFERENCE NO. | SHEET NO. |
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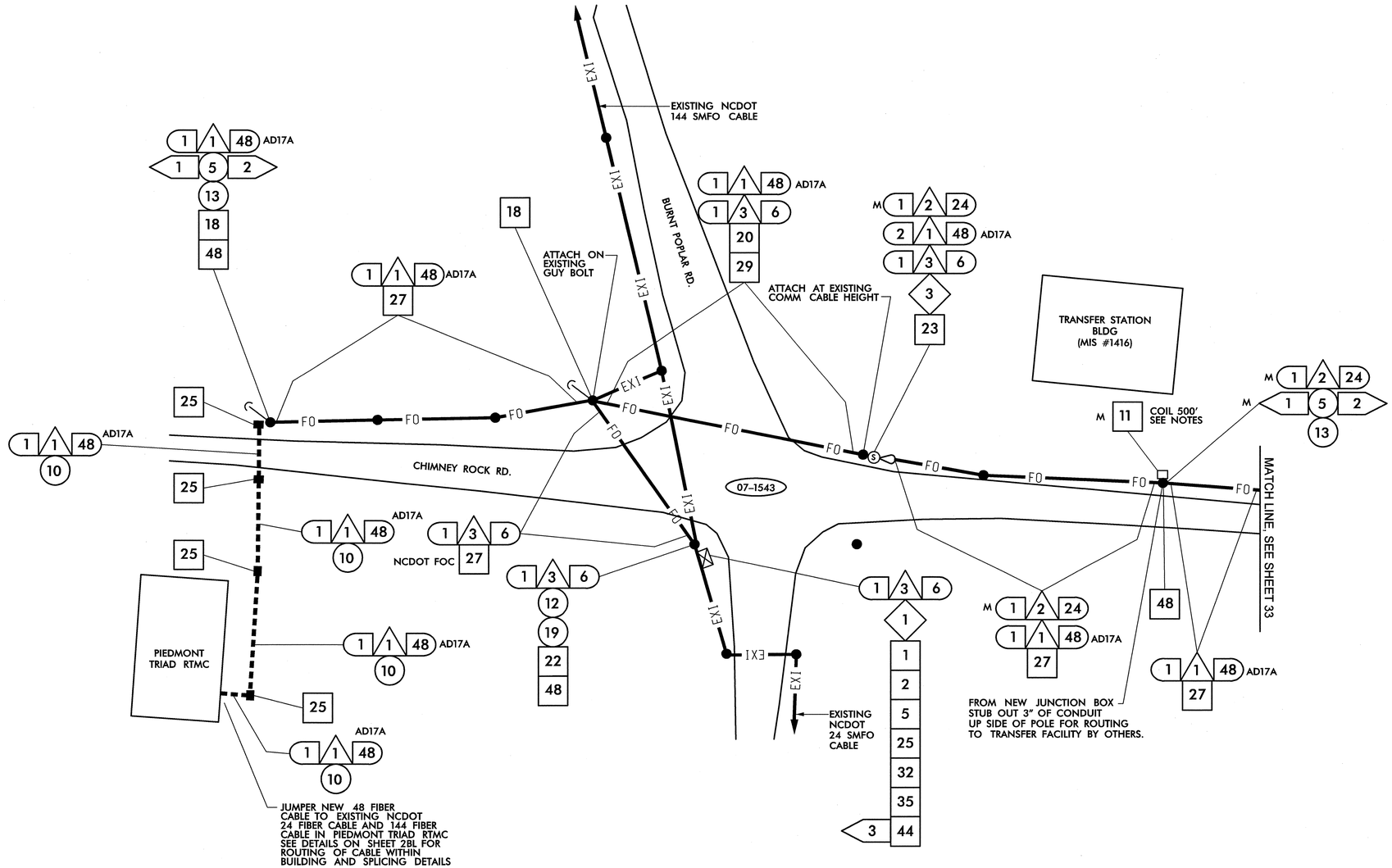
| U-4711 | 518 |




| | |
|---|---|
| 1 | INSTALL SMFO CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE |
| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
| 6 | REUSE GDOT SMFO CABLE |
| 1 | TRENCH |
| 2 | INSTALL PVC CONDUIT |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT |
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| 8 | DIRECTIONAL DRILL CONDUIT |
| 9 | BORE AND JACK CONDUIT |
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| 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE |
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| 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET |
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| 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING |
| 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET |
| 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE |
| 3 | INSTALL AERIAL SPLICE ENCLOSURE |
| 4 | INSTALL POLE MOUNTED SPLICE CABINET |
| 5 | INSTALL BASE MOUNTED SPLICE CABINET |
| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
| 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX |
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| 20 | INSTALL MESSENGER CABLE |
| 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE |
| 22 | REMOVE EXISTING COMMUNICATIONS CABLE |
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Traffic Engineering and Safety Systems Branch
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Pkwy., Garner, NC 27529


SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 — GUILFORD COUNTY

| | | | |
|---|---|---|---|
| PLAN DATE: | FEBRUARY, 2008 | REVIEWED BY: | K.W. SMITH |
| PREPARED BY: | K.D. VANPATTEN | REVIEWED BY: | M.W. DUNZO |

| REVISIONS | INIT. | DATE |
|---|---|---|
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE — DATE 2/29/08

CADD Filename: ...\Sht0518m.dgn

2/29/2008
I:\Systems\projects\Q1462020 (g-boro mts)\Sht0518m.dgn

| PROJECT REFERENCE NO. | SHEET NO. |
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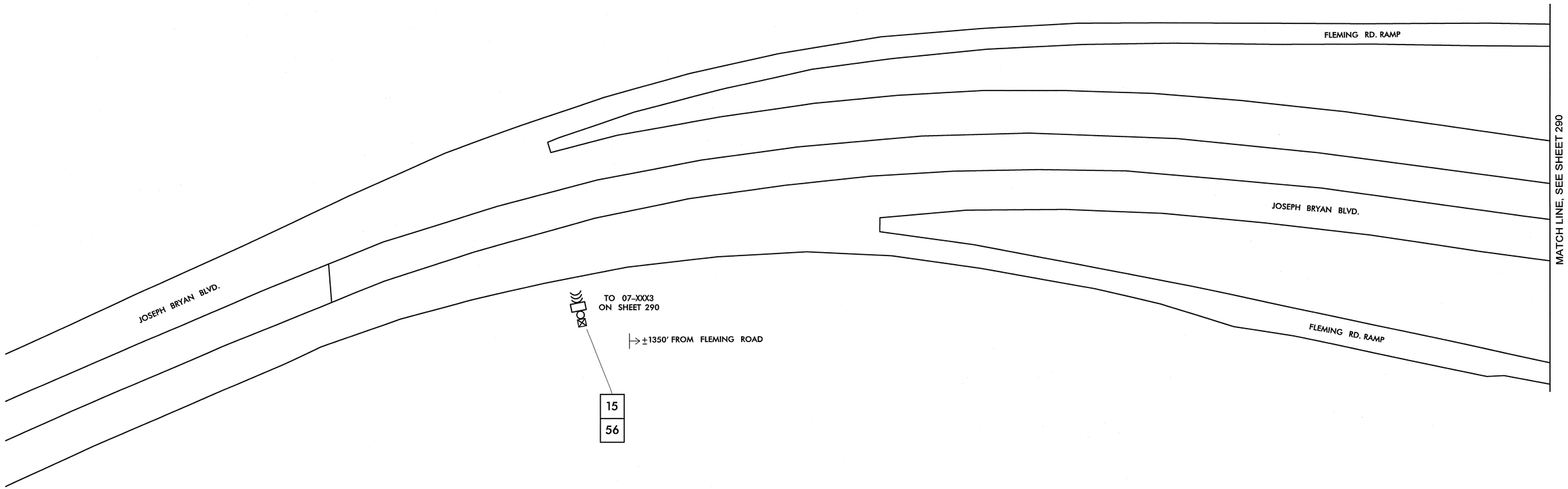
| U-4711 | 519 |

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PLANS PREPARED IN THE OFFICE OF:

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Traffic Engineering and Safety Systems Branch
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Pkwy., Garner, NC 27529

N

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht0519.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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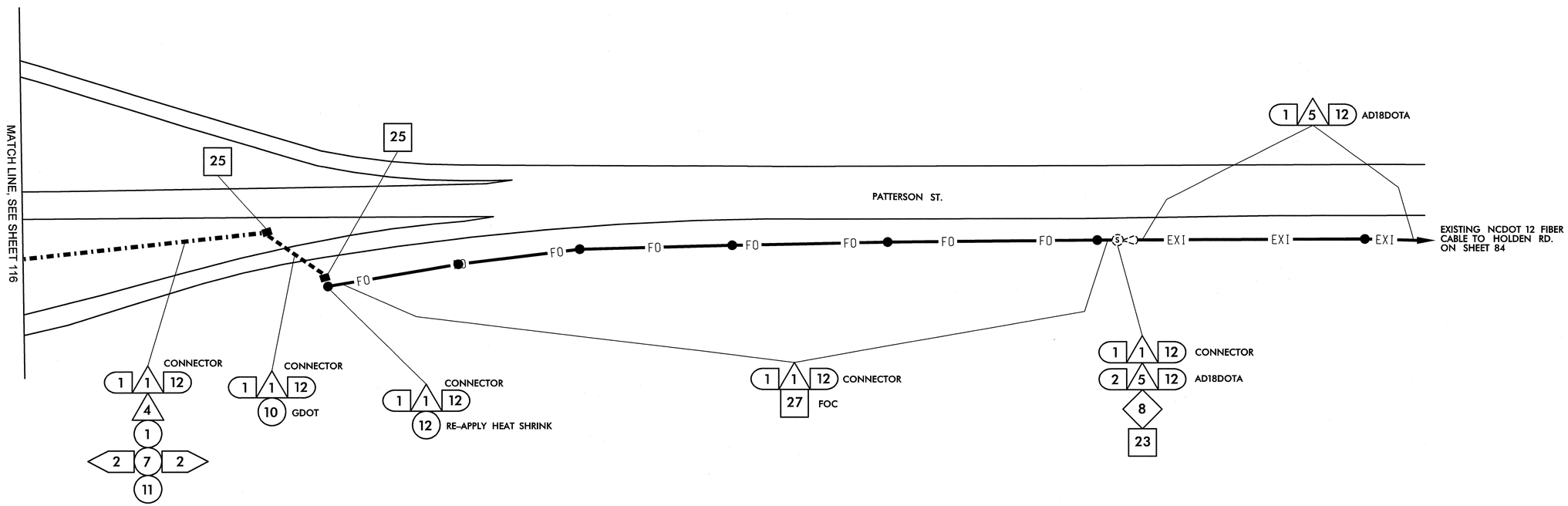
| U-4711 | 520 |

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SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/29/08

CADD Filename: ...\Sht0520.dgn

2/29/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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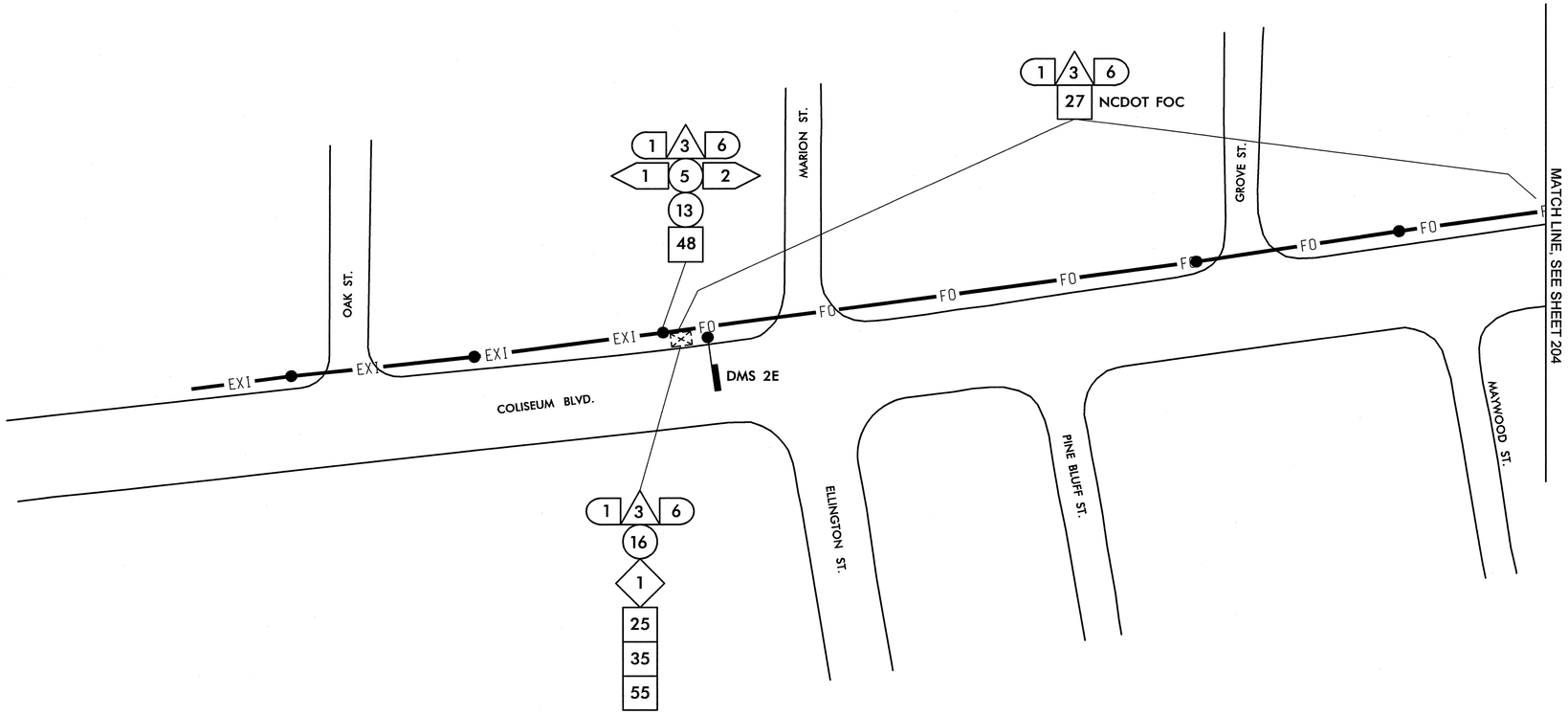
| U-4711 | 521 |

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|---|---|---|---|---|---|---|---|
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| 3 | INSTALL FIBER OPTIC DROP CABLE | 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 8 | INSTALL CCTV CAMERA WOOD POLE | 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
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| 5 | REUSE NCDOT SMFO CABLE | 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET | 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX | 30 | INSTALL NEW ELECTRICAL SERVICE |
| 6 | REUSE GDOT SMFO CABLE | 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING | 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX | 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 1 | TRENCH | 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET | 12 | INSTALL OVERSIZED JUNCTION BOX | 32 | INSTALL NEW CONTROLLER |
| 2 | INSTALL PVC CONDUIT | 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE | 13 | INSTALL STANDARD JUNCTION BOX | 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT | 3 | INSTALL AERIAL SPLICE ENCLOSURE | 14 | REMOVE EXISTING JUNCTION BOX | 34 | INSTALL GENERATOR POWER INLET BOX |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD | 4 | INSTALL POLE MOUNTED SPLICE CABINET | 15 | INSTALL WOOD POLE | 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING | 5 | INSTALL BASE MOUNTED SPLICE CABINET | 16 | REMOVE EXISTING WOOD POLE | 36 | INSTALL UNIFIED CABLE |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT | 6 | REMOVE EXISTING SPLICE CABINET | 17 | INSTALL AERIAL GUY ASSEMBLY | 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 7 | INSTALL POLYETHYLENE CONDUIT | 7 | INSTALL TERMINAL SPLICE BOX | 18 | INSTALL STANDARD GUY ASSEMBLY | 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 8 | DIRECTIONAL DRILL CONDUIT | 8 | MODIFY EXISTING SPLICE ENCLOSURE | 19 | INSTALL SIDEWALK GUY ASSEMBLY | 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 9 | BORE AND JACK CONDUIT | 1 | INSTALL CABINET FOUNDATION | 20 | INSTALL MESSENGER CABLE | 40 | INSTALL RADIO TRANSCEIVER |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT | 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER | 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE | 41 | INSTALL SYSTEM LOOP |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT | 3 | MODIFY EXISTING CABINET FOUNDATION | 22 | REMOVE EXISTING COMMUNICATIONS CABLE | 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 12 | INSTALL CABLE(S) IN EXISTING RISER | 4 | INSTALL NEW 333 COMMUNICATION CABINET | 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE | 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 13 | INSTALL CABLE(S) IN NEW RISER | 5 | INSTALL NEW 332 BASE MOUNTED CABINET | 24 | INSTALL DELINEATOR MARKER | | |
| | | | | 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE | | |

| | | | |
|---|---|---|---|
| 44 | INSTALL LOCAL LOOP AMPLIFIER | 53 | INSTALL DSL ETHERNET SWITCH |
| 45 | INSTALL CITY WI-FI ANTENNA | 54 | INSTALL ETHERNET CABLE |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH | 55 | INSTALL TERMINAL SERVER |
| 47 | INSTALL CODEC | 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
| 48 | BOND MESSENGER CABLE TO POLE GROUND | 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION | 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |
| 50 | INSTALL ANTENNA CABLE | | |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT | | |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT | | |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000



Traffic Engineering and Safety Systems Branch
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Pkwy., Garner, NC 27529


SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/20/08 DATE

CADD Filename: ...\Sht0521.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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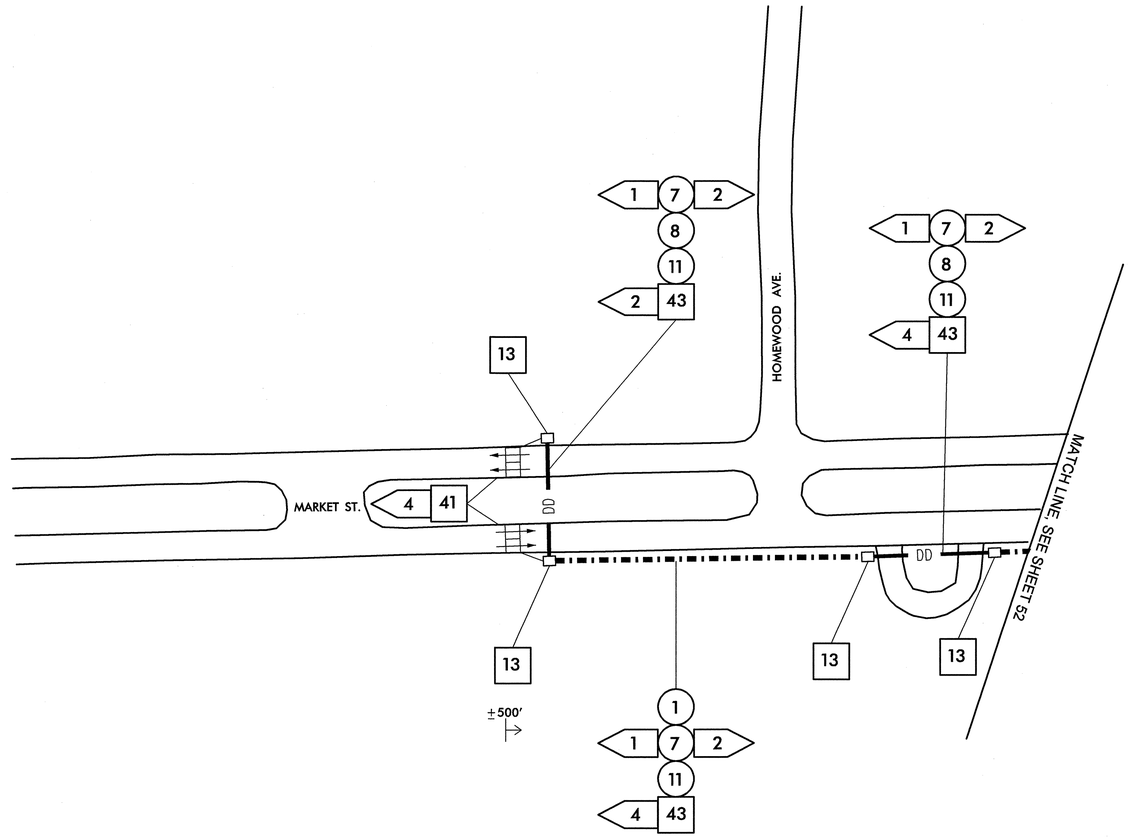
| U-4711 | 522 |

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|---|---|---|---|---|---|---|---|
| 1 | INSTALL SMFO CABLE | 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE | 6 | INSTALL NEW 336S CABINET | 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE | 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 7 | INSTALL CCTV CAMERA ASSEMBLY | 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE | 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 8 | INSTALL CCTV CAMERA WOOD POLE | 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 4 | INSTALL TRACER WIRE | 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET | 9 | INSTALL CCTV METAL POLE AND FOUNDATION | 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 5 | REUSE NCDOT SMFO CABLE | 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET | 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX | 30 | INSTALL NEW ELECTRICAL SERVICE |
| 6 | REUSE GDOT SMFO CABLE | 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING | 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX | 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 1 | TRENCH | 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET | 12 | INSTALL OVERSIZED JUNCTION BOX | 32 | INSTALL NEW CONTROLLER |
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| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD | 4 | INSTALL POLE MOUNTED SPLICE CABINET | 15 | INSTALL WOOD POLE | 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING | 5 | INSTALL BASE MOUNTED SPLICE CABINET | 16 | REMOVE EXISTING WOOD POLE | 36 | INSTALL UNIFIED CABLE |
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| 8 | DIRECTIONAL DRILL CONDUIT | 8 | MODIFY EXISTING SPLICE ENCLOSURE | 19 | INSTALL SIDEWALK GUY ASSEMBLY | 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 9 | BORE AND JACK CONDUIT | 1 | INSTALL CABINET FOUNDATION | 20 | INSTALL MESSENGER CABLE | 40 | INSTALL RADIO TRANSCEIVER |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT | 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER | 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE | 41 | INSTALL SYSTEM LOOP |
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| 45 | INSTALL CITY WI-FI ANTENNA | 54 | INSTALL ETHERNET CABLE |
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| 48 | BOND MESSENGER CABLE TO POLE GROUND | 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
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| 50 | INSTALL ANTENNA CABLE | | |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT | | |
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PLANS PREPARED IN THE OFFICE OF:
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Traffic Engineering and Safety Systems Branch
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Transportation Building
750 Greenfield Pkwy., Garner, NC 27529


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SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht0522.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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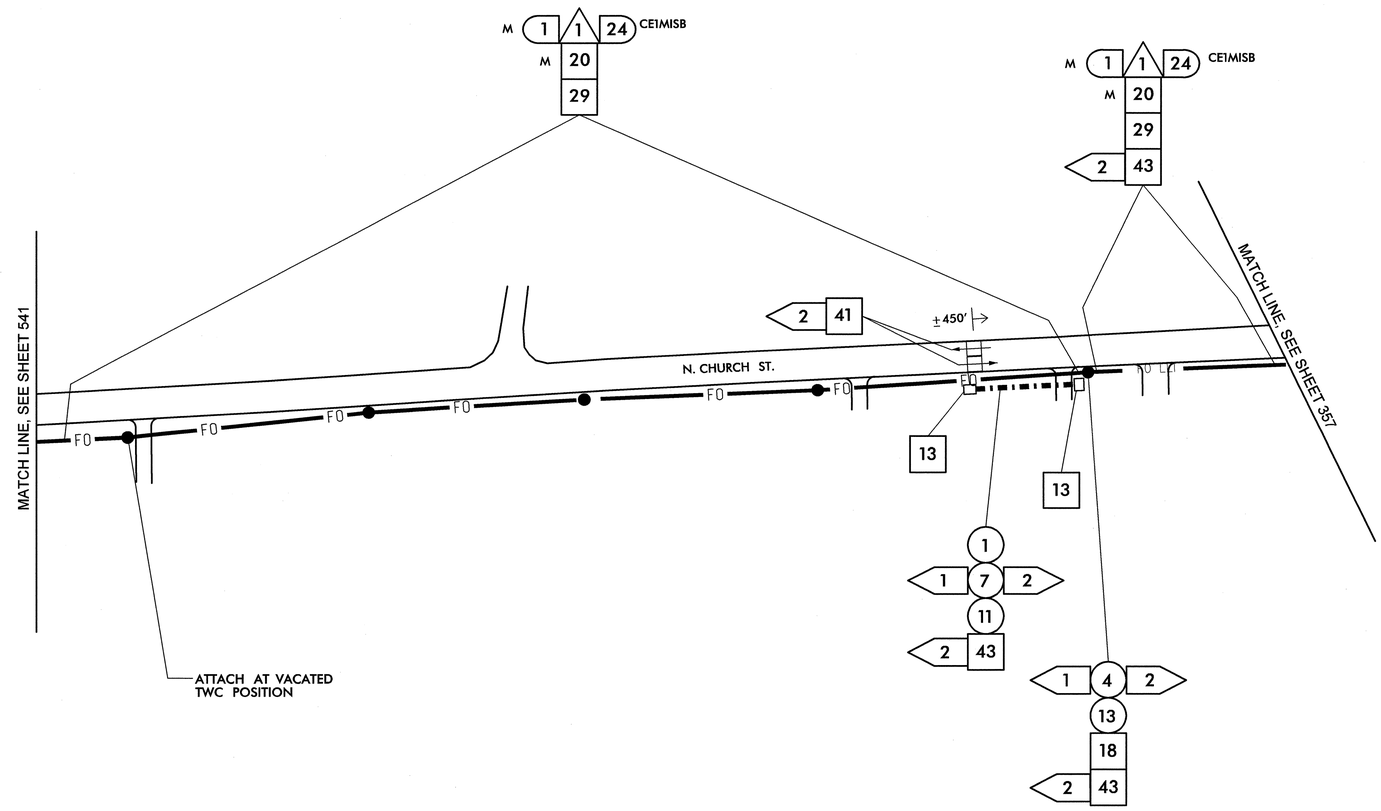
| U-4711 | 523 |

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|---|---|
| 1 | INSTALL SMFO CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE |
| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
| 6 | REUSE GDOT SMFO CABLE |
| 1 | TRENCH |
| 2 | INSTALL PVC CONDUIT |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT |
| 7 | INSTALL POLYETHYLENE CONDUIT |
| 8 | DIRECTIONAL DRILL CONDUIT |
| 9 | BORE AND JACK CONDUIT |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT |
| 12 | INSTALL CABLE(S) IN EXISTING RISER |
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| 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET |
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| 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET |
| 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE |
| 3 | INSTALL AERIAL SPLICE ENCLOSURE |
| 4 | INSTALL POLE MOUNTED SPLICE CABINET |
| 5 | INSTALL BASE MOUNTED SPLICE CABINET |
| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
| 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX |
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| 13 | INSTALL STANDARD JUNCTION BOX |
| 14 | REMOVE EXISTING JUNCTION BOX |
| 15 | INSTALL WOOD POLE |
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| 19 | INSTALL SIDEWALK GUY ASSEMBLY |
| 20 | INSTALL MESSENGER CABLE |
| 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE |
| 22 | REMOVE EXISTING COMMUNICATIONS CABLE |
| 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE |
| 24 | INSTALL DELINEATOR MARKER |
| 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE |
| 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
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| 34 | INSTALL GENERATOR POWER INLET BOX |
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| 36 | INSTALL UNIFIED CABLE |
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| 48 | BOND MESSENGER CABLE TO POLE GROUND |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION |
| 50 | INSTALL ANTENNA CABLE |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT |
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GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


PLANS PREPARED IN THE OFFICE OF:
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Traffic Engineering and Safety Systems Branch
Transportation Management Unit
Division of Highways
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SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/20/08 DATE

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| PROJECT REFERENCE NO. | SHEET NO. |
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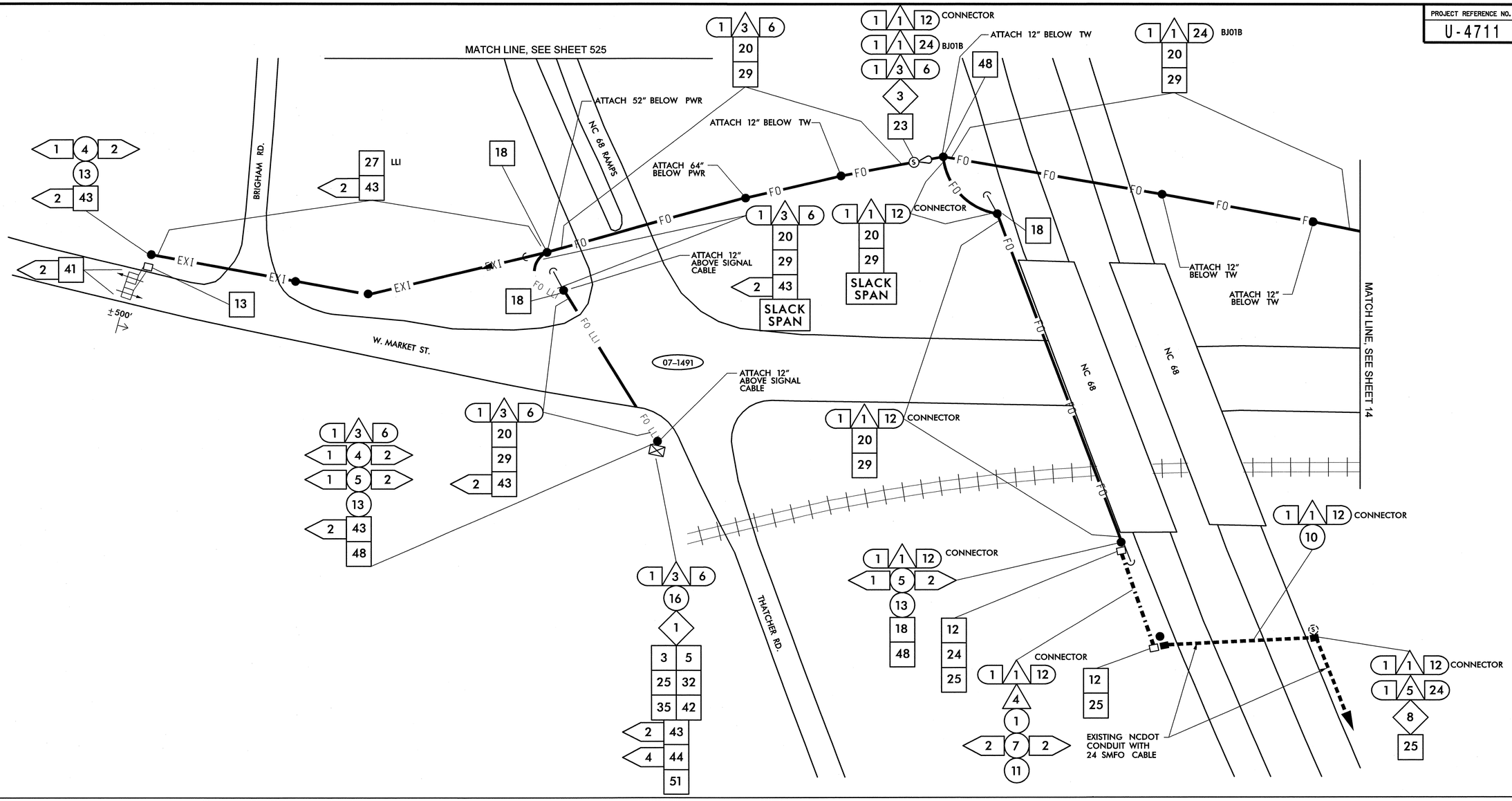
| U-4711 | 524 |

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| 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000



Engineering and Safety Support Branch
Transportation Systems
750 Greenfield Pkwy., Garner, NC 27529


SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht0524.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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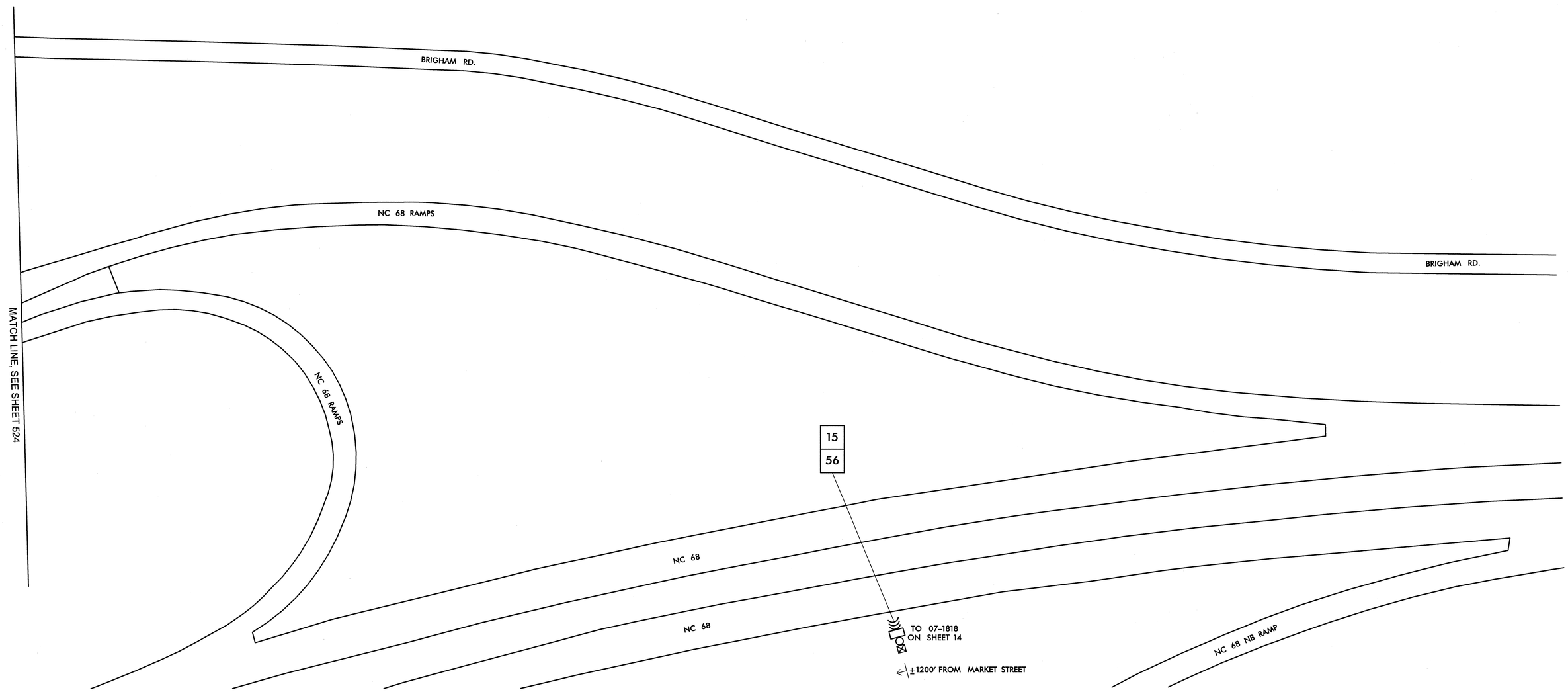
| U-4711 | 525 |




| | |
|---|---|
| 1 | INSTALL SMFO CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE |
| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
| 6 | REUSE GDOT SMFO CABLE |
| 1 | TRENCH |
| 2 | INSTALL PVC CONDUIT |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT |
| 7 | INSTALL POLYETHYLENE CONDUIT |
| 8 | DIRECTIONAL DRILL CONDUIT |
| 9 | BORE AND JACK CONDUIT |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT |
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| 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET |
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| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
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| 1 | INSTALL CABINET FOUNDATION |
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Traffic Engineering and Safety Systems Branch
Intelligent Transportation Systems
DIVISION OF HIGHWAYS
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

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| PLAN DATE: FEBRUARY, 2008 | REVIEWED BY: K.W. SMITH |
| PREPARED BY: K.D. VANPATTEN | REVIEWED BY: M.W. DUNZO |

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NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/20/08 DATE

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2/20/2008
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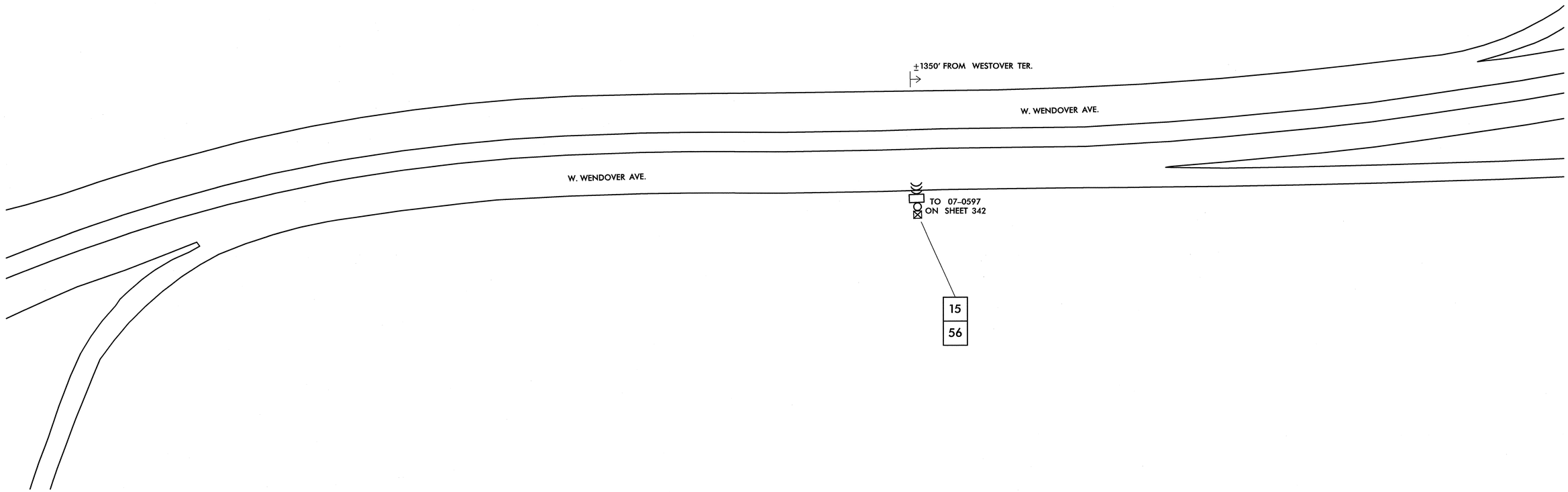
| U-4711 | 526 |

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Traffic Engineering and Safety Systems Branch
Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
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SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

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| PROJECT REFERENCE NO. | SHEET NO. |
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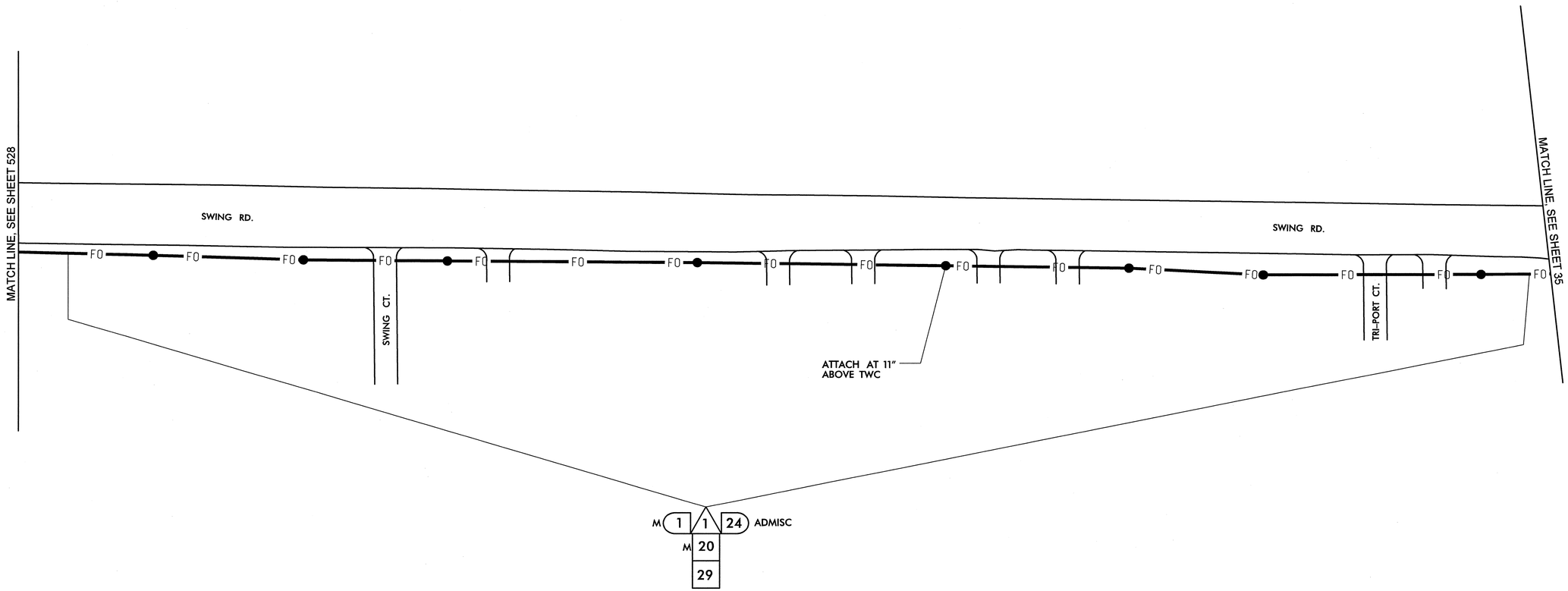
| U-4711 | 527 |

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DIVISION 7 GUILFORD COUNTY

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CADD Filename: ...\Sht0527.dgn

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| PROJECT REFERENCE NO. | SHEET NO. |
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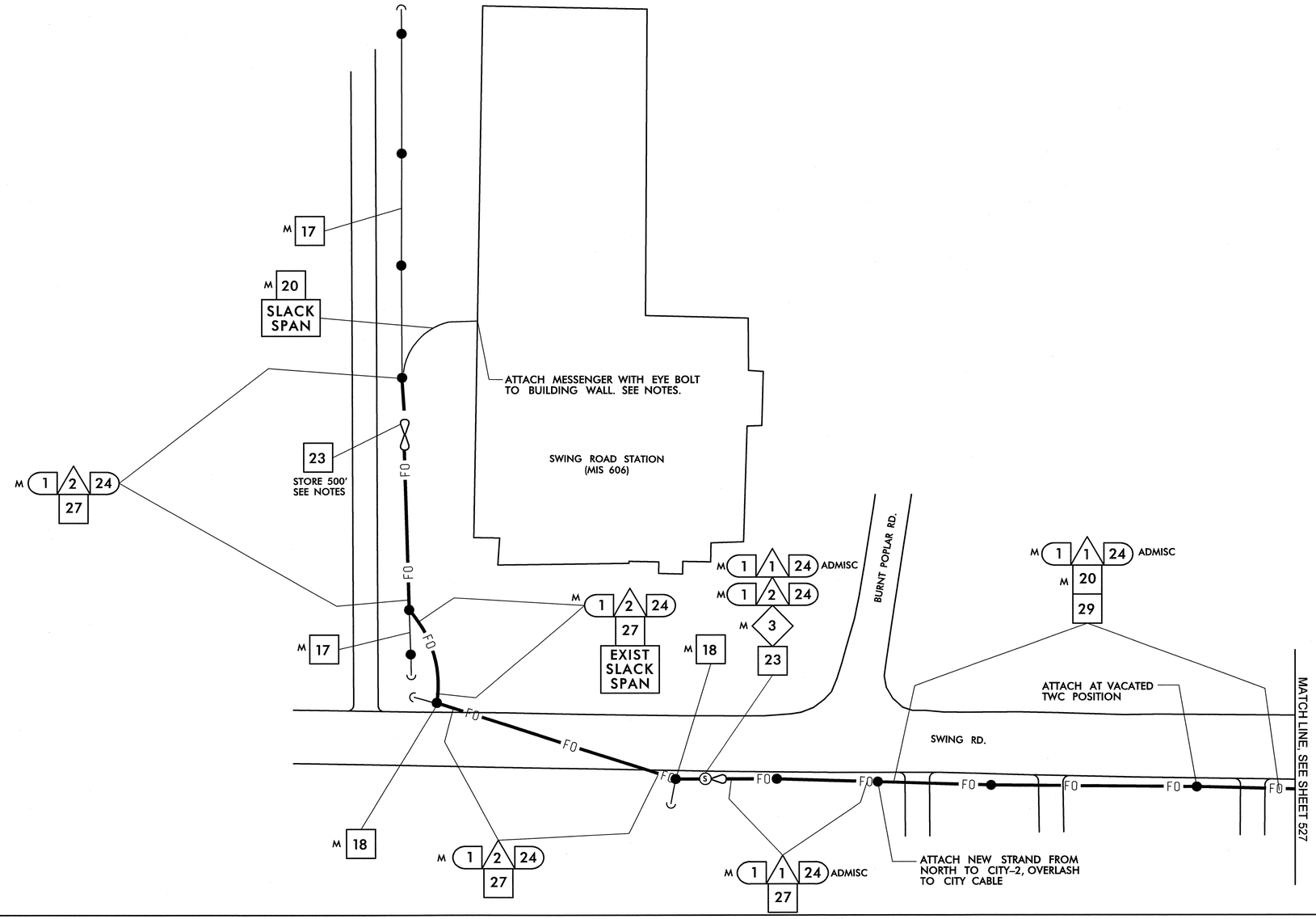
| U-4711 | 528 |




## NOTES (THIS SHEET ONLY)

1. SEE BUILDING ENTRANCE DETAIL FOR ROUTING INTO BUILDING

| | |
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| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
| 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX |
| 12 | INSTALL OVERSIZED JUNCTION BOX |
| 13 | INSTALL STANDARD JUNCTION BOX |
| 14 | REMOVE EXISTING JUNCTION BOX |
| 15 | INSTALL WOOD POLE |
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| 18 | INSTALL STANDARD GUY ASSEMBLY |
| 19 | INSTALL SIDEWALK GUY ASSEMBLY |
| 20 | INSTALL MESSENGER CABLE |
| 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE |
| 22 | REMOVE EXISTING COMMUNICATIONS CABLE |
| 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE |
| 24 | INSTALL DELINEATOR MARKER |
| 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE |
| 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 30 | INSTALL NEW ELECTRICAL SERVICE |
| 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 32 | INSTALL NEW CONTROLLER |
| 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 34 | INSTALL GENERATOR POWER INLET BOX |
| 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 36 | INSTALL UNIFIED CABLE |
| 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
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| 40 | INSTALL RADIO TRANSCEIVER |
| 41 | INSTALL SYSTEM LOOP |
| 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
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| 48 | BOND MESSENGER CABLE TO POLE GROUND |
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| 50 | INSTALL ANTENNA CABLE |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT |
| 53 | INSTALL DSL ETHERNET SWITCH |
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| 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

PLANS PREPARED IN THE OFFICE OF:

Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000

Traffic Engineering and Safety Systems Branch
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 — GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 — REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN — REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE — DATE 2/20/08

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2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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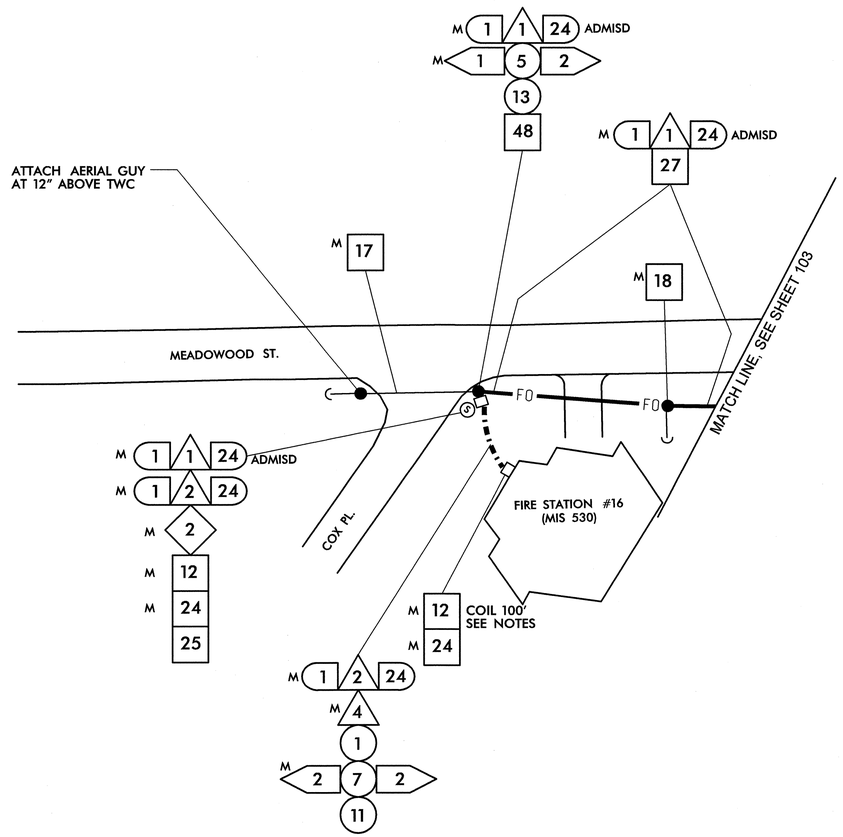
| U-4711 | 529 |




NOTES (THIS SHEET ONLY)

1. SEE BUILDING ENTRANCE DETAIL FOR ROUTING INTO BUILDING

1. INSTALL SMFO CABLE
2. INSTALL PLENUM RATED FIBER OPTIC CABLE
3. INSTALL FIBER OPTIC DROP CABLE
4. INSTALL TRACER WIRE
5. REUSE NCDOT SMFO CABLE
6. REUSE GDOT SMFO CABLE
1. TRENCH
2. INSTALL PVC CONDUIT
3. INSTALL RIGID, GALVANIZED STEEL CONDUIT
4. INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
5. INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING
6. INSTALL OUTER-DUCT POLYETHYLENE CONDUIT
7. INSTALL POLYETHYLENE CONDUIT
8. DIRECTIONAL DRILL CONDUIT
9. BORE AND JACK CONDUIT
10. INSTALL CABLE(S) IN EXISTING CONDUIT
11. INSTALL CABLE(S) IN NEW CONDUIT
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17. INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET
18. INSTALL NEW RISER INTO POLE MOUNTED CABINET
19. REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING
1. INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET
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3. INSTALL AERIAL SPLICE ENCLOSURE
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5. INSTALL BASE MOUNTED SPLICE CABINET
6. REMOVE EXISTING SPLICE CABINET
7. INSTALL TERMINAL SPLICE BOX
8. MODIFY EXISTING SPLICE ENCLOSURE
1. INSTALL CABINET FOUNDATION
2. REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER
3. MODIFY EXISTING CABINET FOUNDATION
4. INSTALL NEW 333 COMMUNICATION CABINET
5. INSTALL NEW 332 BASE MOUNTED CABINET
6. INSTALL NEW 336S CABINET
7. INSTALL CCTV CAMERA ASSEMBLY
8. INSTALL CCTV CAMERA WOOD POLE
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NOTE:
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PLANS PREPARED IN THE OFFICE OF:
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(919) 677-2000


Pacific Engineering and Safety Systems Branch
Intelligent Transportation Systems
DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 — GUILFORD COUNTY

| | |
|---|---|
| PLAN DATE: FEBRUARY, 2008 | REVIEWED BY: K.W. SMITH |
| PREPARED BY: K.D. VANPATTEN | REVIEWED BY: M.W. DUNZO |

| REVISIONS | INIT. | DATE |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE — DATE 2/20/08

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2/20/2008
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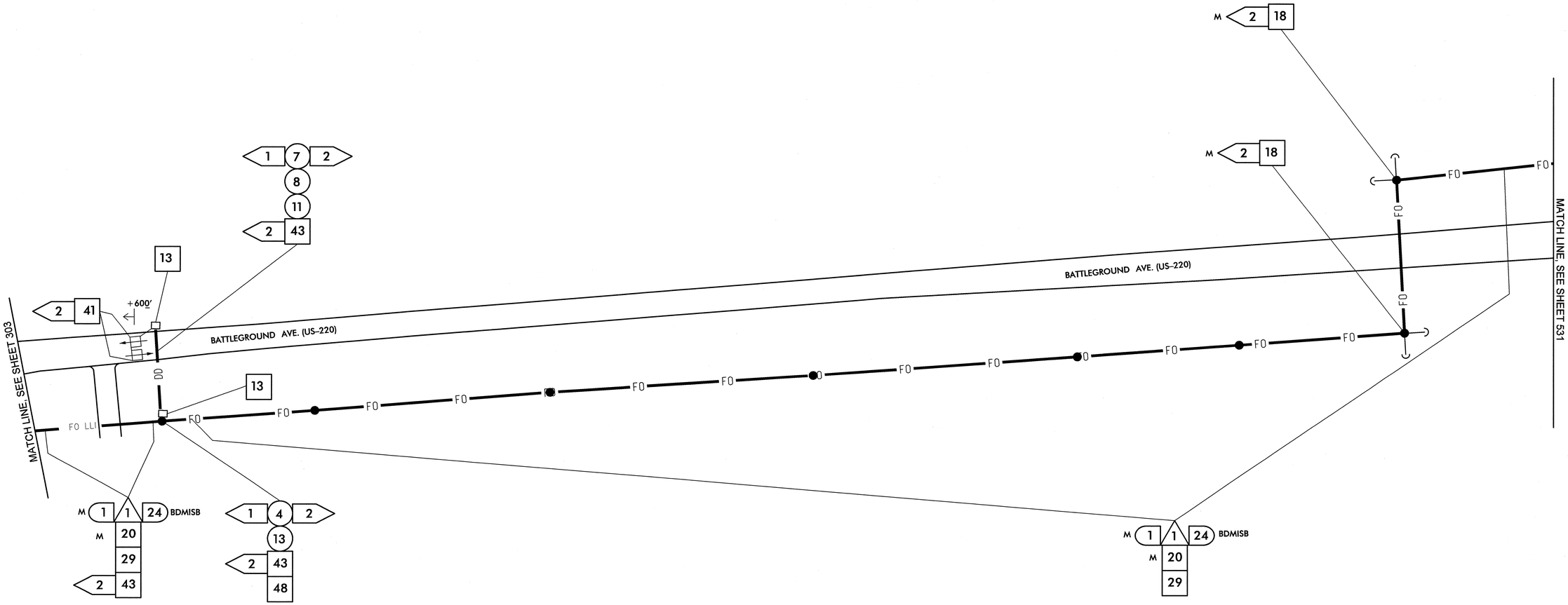


| | |
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| 1 | INSTALL SMFO CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
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| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
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| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
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NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

PLANS PREPARED IN THE OFFICE OF:

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P.O. Box 33068
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(919) 677-2000

Transportation Management Systems
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/20/08 DATE

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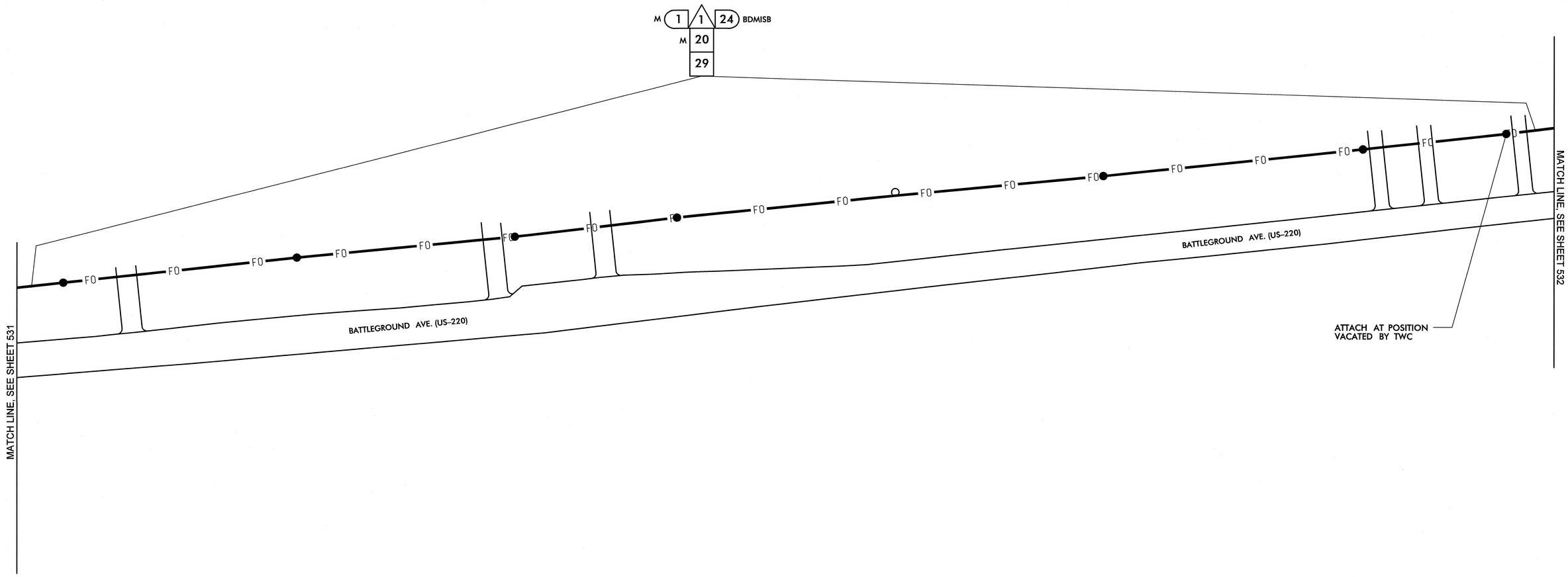


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SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/20/08 DATE

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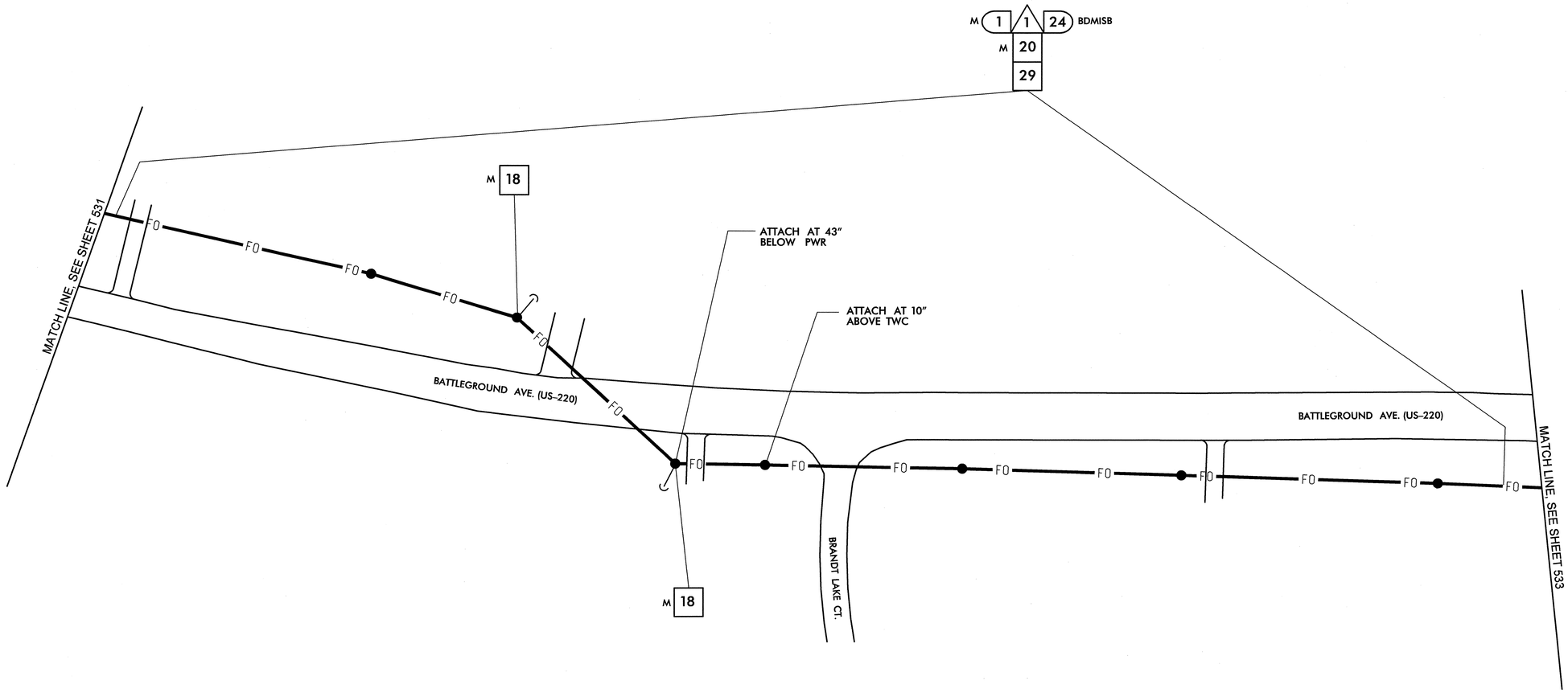


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6. INSTALL OUTER-DUCT POLYETHYLENE CONDUIT
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7. INSTALL TERMINAL SPLICE BOX
8. MODIFY EXISTING SPLICE ENCLOSURE
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2. REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER
3. MODIFY EXISTING CABINET FOUNDATION
4. INSTALL NEW 333 COMMUNICATION CABINET
5. INSTALL NEW 332 BASE MOUNTED CABINET
6. INSTALL NEW 336S CABINET
7. INSTALL CCTV CAMERA ASSEMBLY
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NOTE:
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PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000


Intelligent Transportation Systems
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

| | |
|---|---|
| PLAN DATE: FEBRUARY, 2008 | REVIEWED BY: K.W. SMITH |
| PREPARED BY: K.D. VANPATTEN | REVIEWED BY: M.W. DUNZO |

| REVISIONS | INIT. | DATE |
|---|---|---|
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO
SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht0532.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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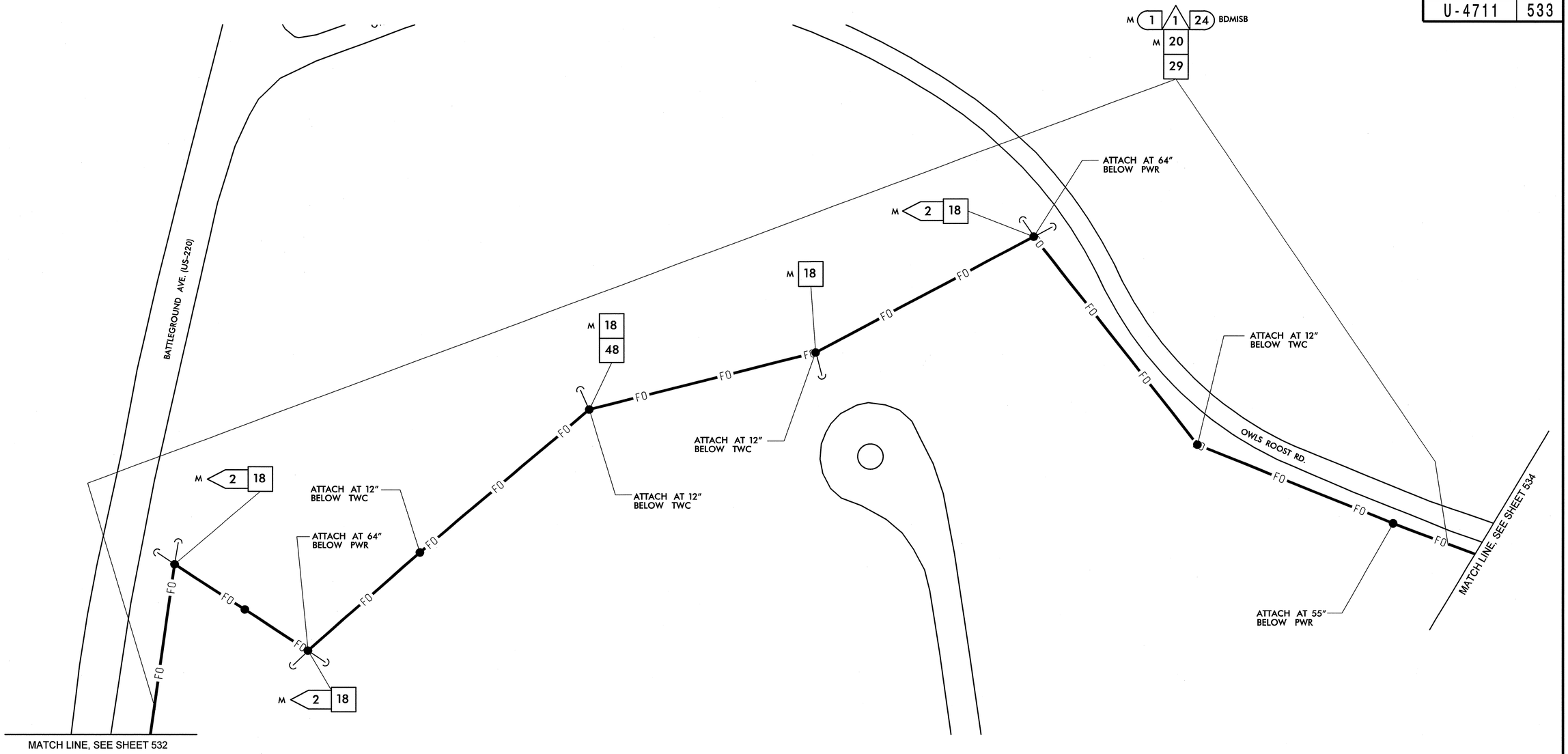
| U-4711 | 533 |

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PLANS PREPARED IN THE OFFICE OF:
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Public Engineering and Safety Systems Branch
Intelligent Transportation Systems
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/12/08 DATE

CADD Filenames ...\Sht0533.dgn

2/20/2008
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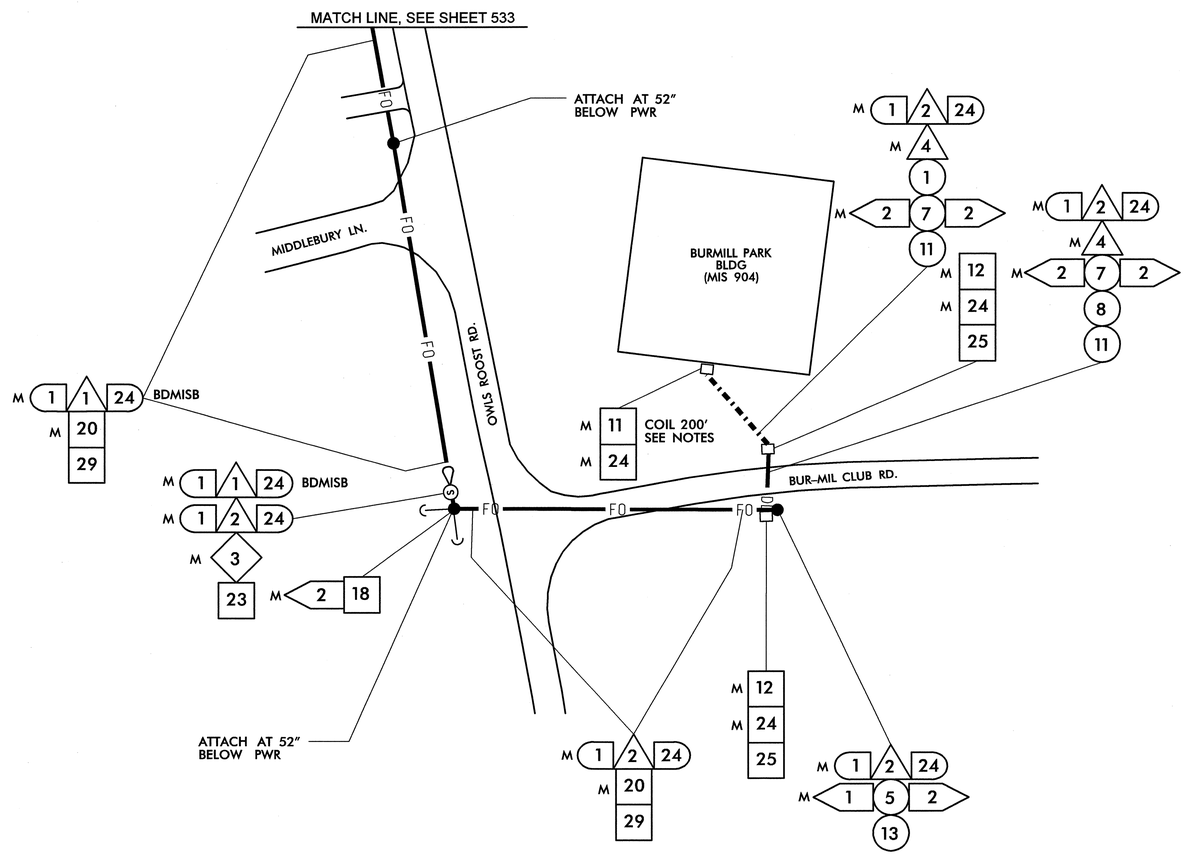


## NOTES (THIS SHEET ONLY)

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PLANS PREPARED IN THE OFFICE OF:
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Traffic Engineering and Safety Systems Branch
Transportation Systems
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
750 Greenfield Pkwy., Garner, NC 27529


SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

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|---|---|
| PLAN DATE: FEBRUARY, 2008 | REVIEWED BY: K.W. SMITH |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO
SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht0534.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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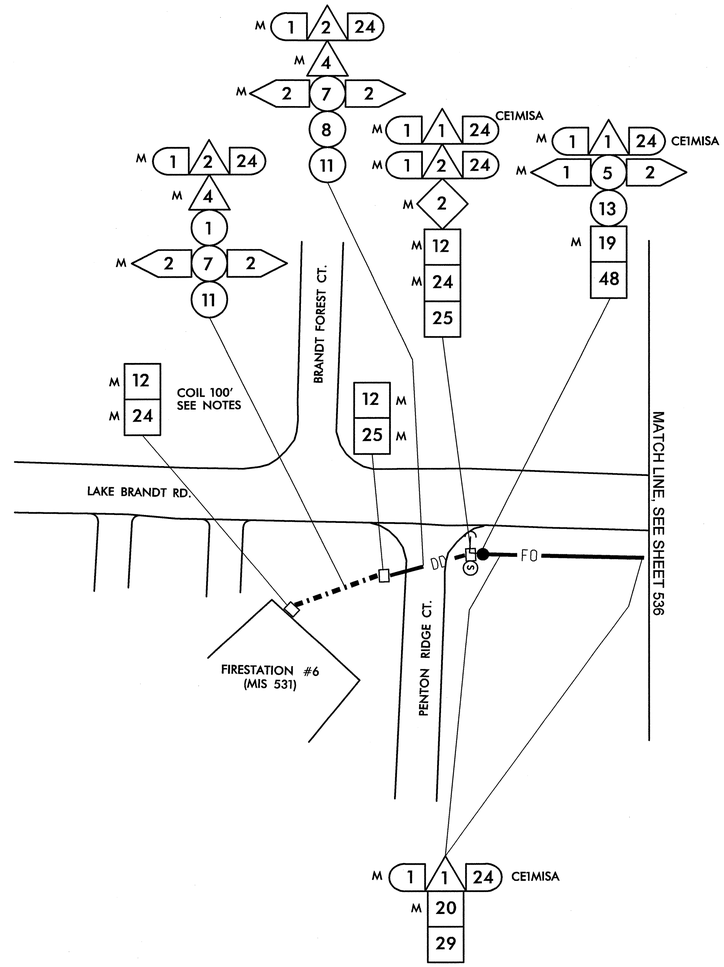
| U-4711 | 535 |

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NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000


Traffic Engineering and Safety Systems Branch
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Transportation Building
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/20/08 DATE

CADD Filenames ...\Sht0535.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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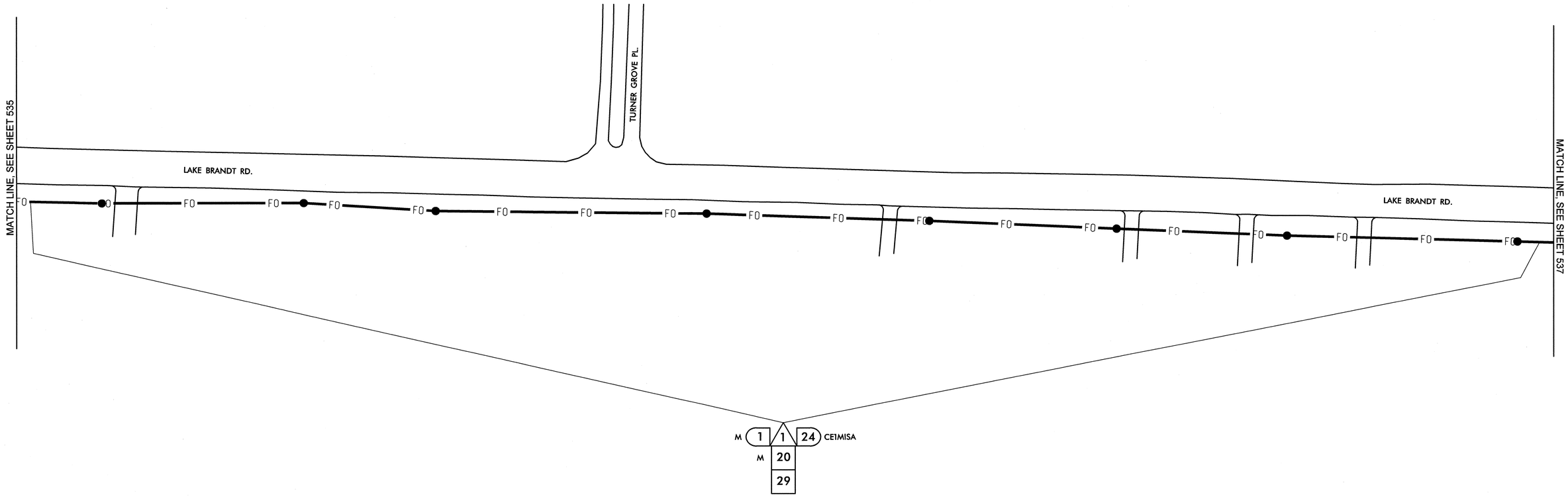
| U-4711 | 536 |

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| 1 | INSTALL SMFO CABLE |
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| 3 | INSTALL FIBER OPTIC DROP CABLE |
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| 5 | REUSE NCDOT SMFO CABLE |
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| 1 | TRENCH |
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| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
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| 6 | REMOVE EXISTING SPLICE CABINET |
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| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
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| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
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Public Engineering and Safety Systems Branch
Intelligent Transportation Systems
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

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## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/20/08 DATE

CADD Filenames ...\Sht0536.dgn

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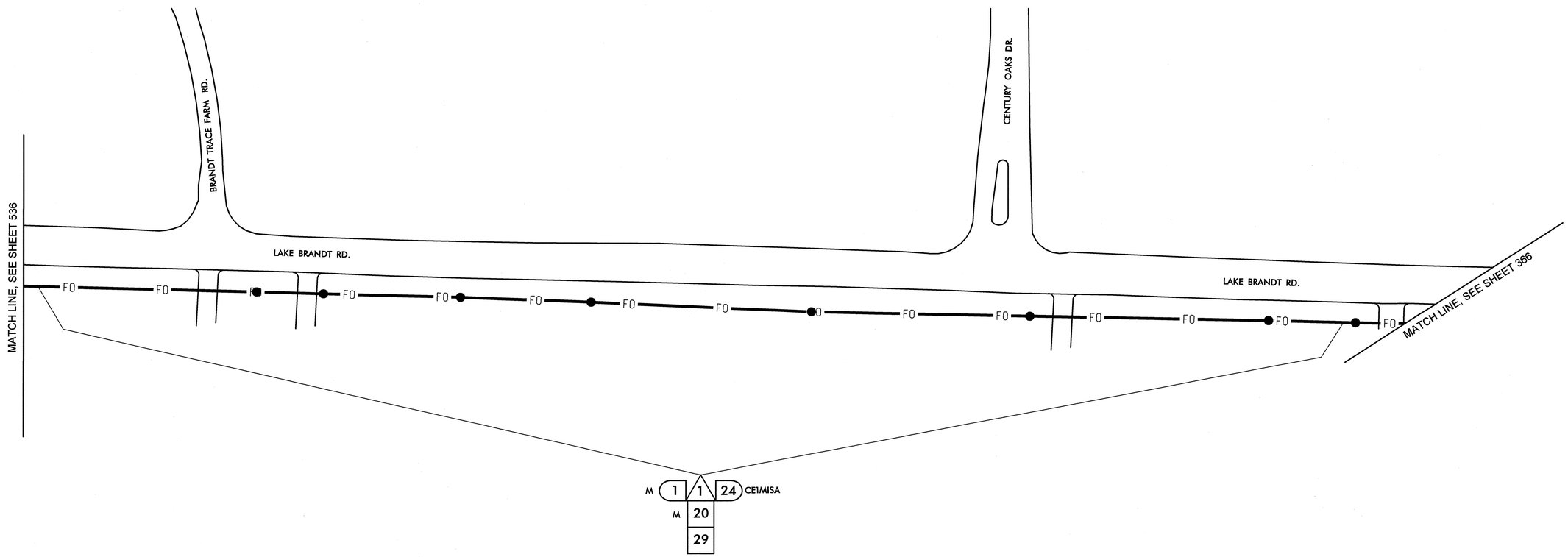
| U-4711 | 537 |

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# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filenames ...\Sht0537.dgn

2/20/2008
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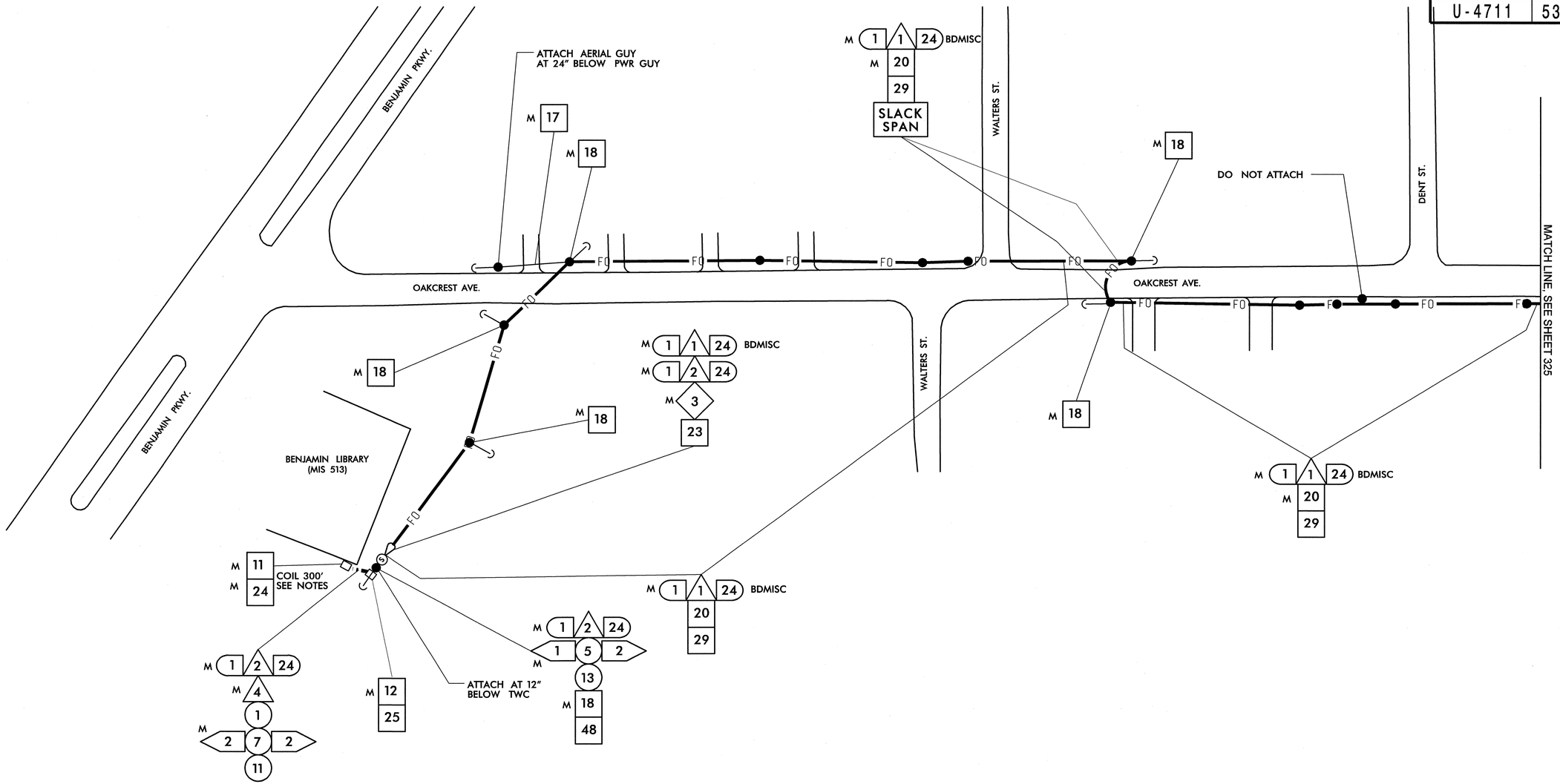
| U-4711 | 538 |




## NOTES (THIS SHEET ONLY)

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750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 — GUILFORD COUNTY

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| PLAN DATE: FEBRUARY, 2008 | REVIEWED BY: K.W. SMITH |
| PREPARED BY: K.D. VANPATTEN | REVIEWED BY: M.W. DUNZO |

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO
SIGNATURE — DATE 2/20/08

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2/20/2008
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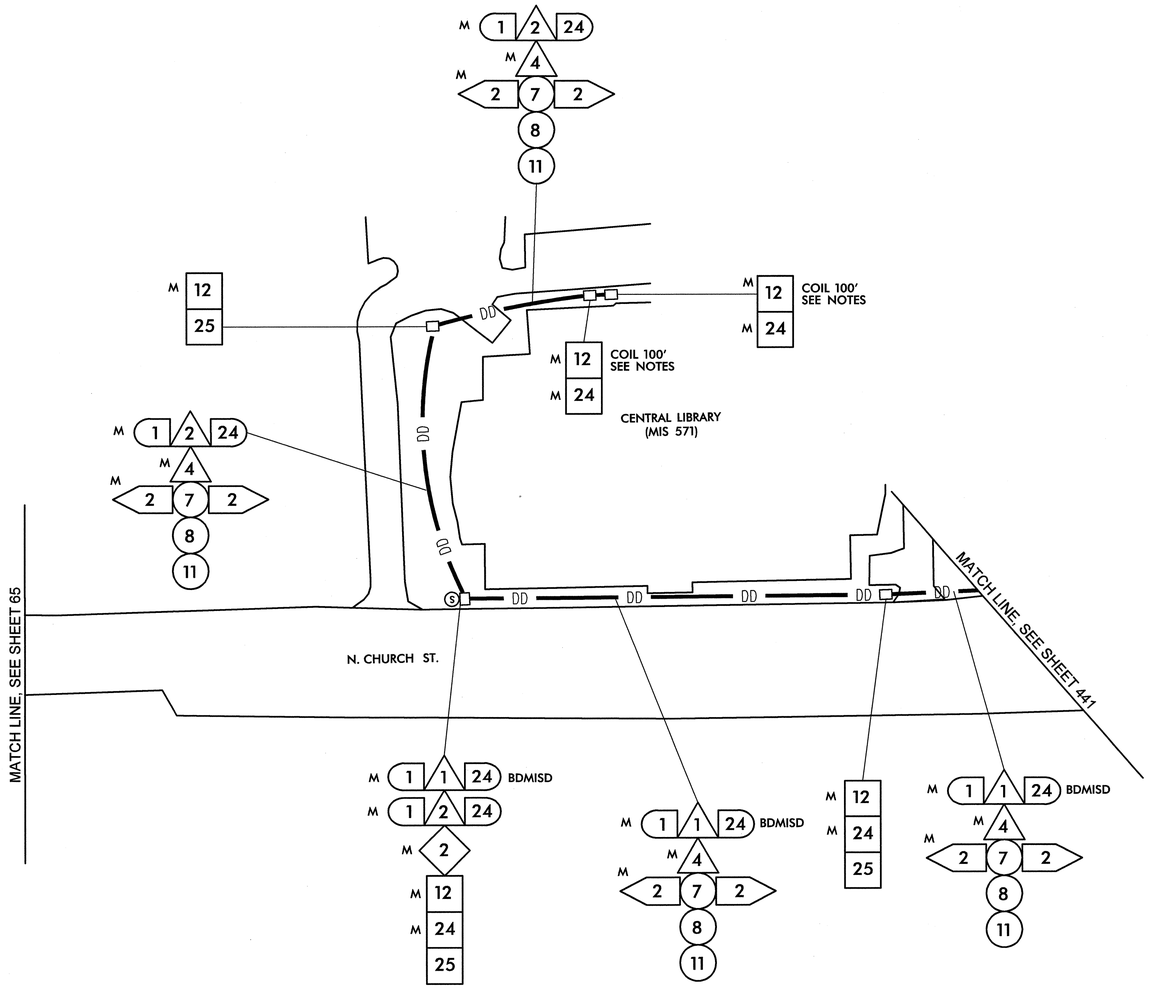
| U-4711 | 539 |

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- (6) REMOVE EXISTING SPLICE CABINET
- (7) INSTALL TERMINAL SPLICE BOX
- (8) MODIFY EXISTING SPLICE ENCLOSURE
- [1] INSTALL CABINET FOUNDATION
- [2] REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER
- [3] MODIFY EXISTING CABINET FOUNDATION
- [4] INSTALL NEW 333 COMMUNICATION CABINET
- [5] INSTALL NEW 332 BASE MOUNTED CABINET
- [6] INSTALL NEW 336S CABINET
- [7] INSTALL CCTV CAMERA ASSEMBLY
- [8] INSTALL CCTV CAMERA WOOD POLE
- [9] INSTALL CCTV METAL POLE AND FOUNDATION
- [10] INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX
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- [24] INSTALL DELINEATOR MARKER
- [25] STORE 30 FEET OF EACH COMMUNICATIONS CABLE
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- [32] INSTALL NEW CONTROLLER
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- [34] INSTALL GENERATOR POWER INLET BOX
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- [57] INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT
- [58] INSTALL WIRELESS ACCESS POINT POWER CABLE

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000


Traffic Engineering and Safety Systems Branch
Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/29/08 DATE

CADD Filename: ...\Sht0539.dgn

2/29/2008
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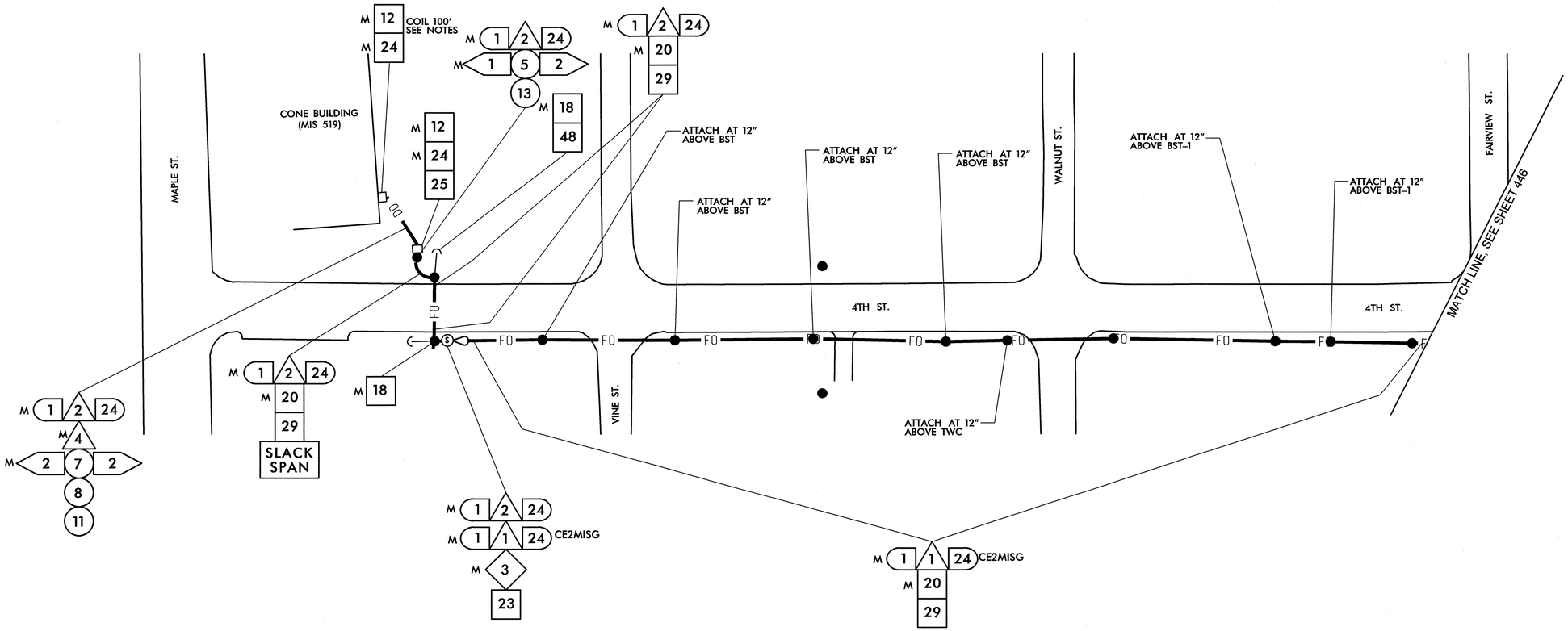
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-4711 | 540 |




## NOTES (THIS SHEET ONLY)

1. SEE BUILDING ENTRANCE DETAIL FOR ROUTING INTO BUILDING

| | |
|---|---|
| 1 | INSTALL SMFO CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE |
| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
| 6 | REUSE GDOT SMFO CABLE |
| 1 | TRENCH |
| 2 | INSTALL PVC CONDUIT |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT |
| 7 | INSTALL POLYETHYLENE CONDUIT |
| 8 | DIRECTIONAL DRILL CONDUIT |
| 9 | BORE AND JACK CONDUIT |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT |
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PLANS PREPARED IN THE OFFICE OF:

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Traffic Engineering and Safety Systems Branch
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

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|---|---|---|---|
| PLAN DATE: FEBRUARY, 2008 | | REVIEWED BY: K.W. SMITH | |
| PREPARED BY: K.D. VANPATTEN | | REVIEWED BY: M.W. DUNZO | |
| REVISIONS | | INIT. | DATE |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/27/08

CADD Filename: ...\Sht0540.dgn

2/29/2008
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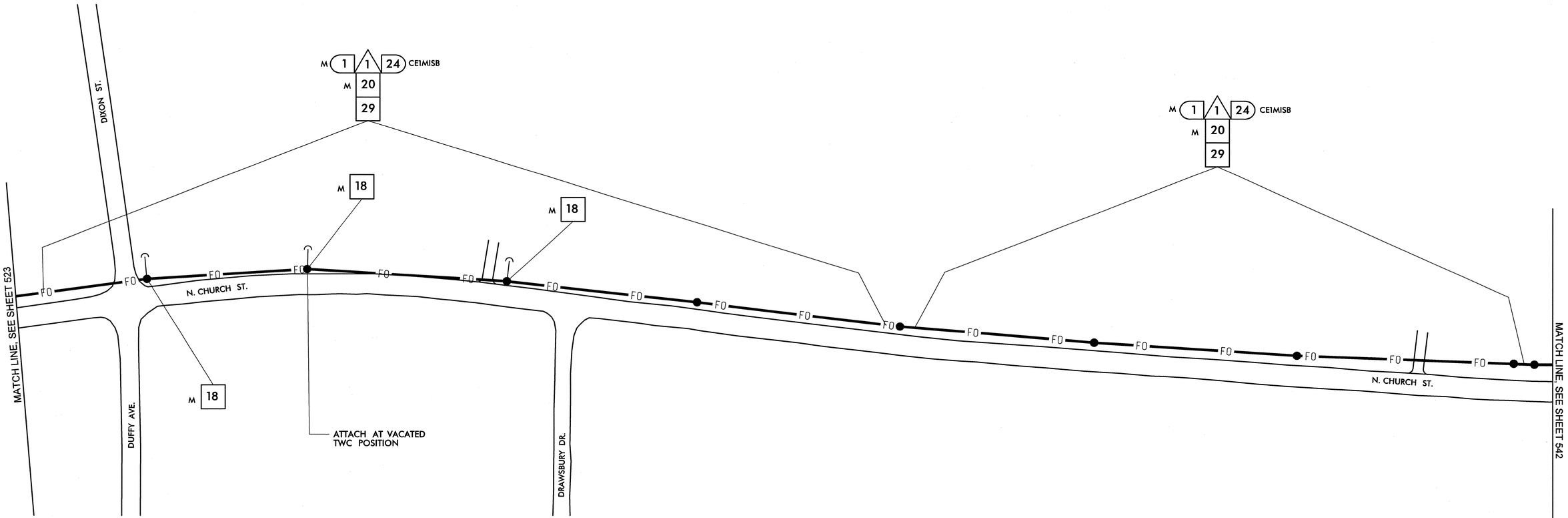
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-4711 | 541 |

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PLANS PREPARED IN THE OFFICE OF:
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750 Greenfield Pkwy., Garner, NC 27529


SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

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| PLAN DATE: FEBRUARY, 2008 | REVIEWED BY: K.W. SMITH |
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| REVISIONS | INIT. | DATE |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht0541.dgn

2/20/2008
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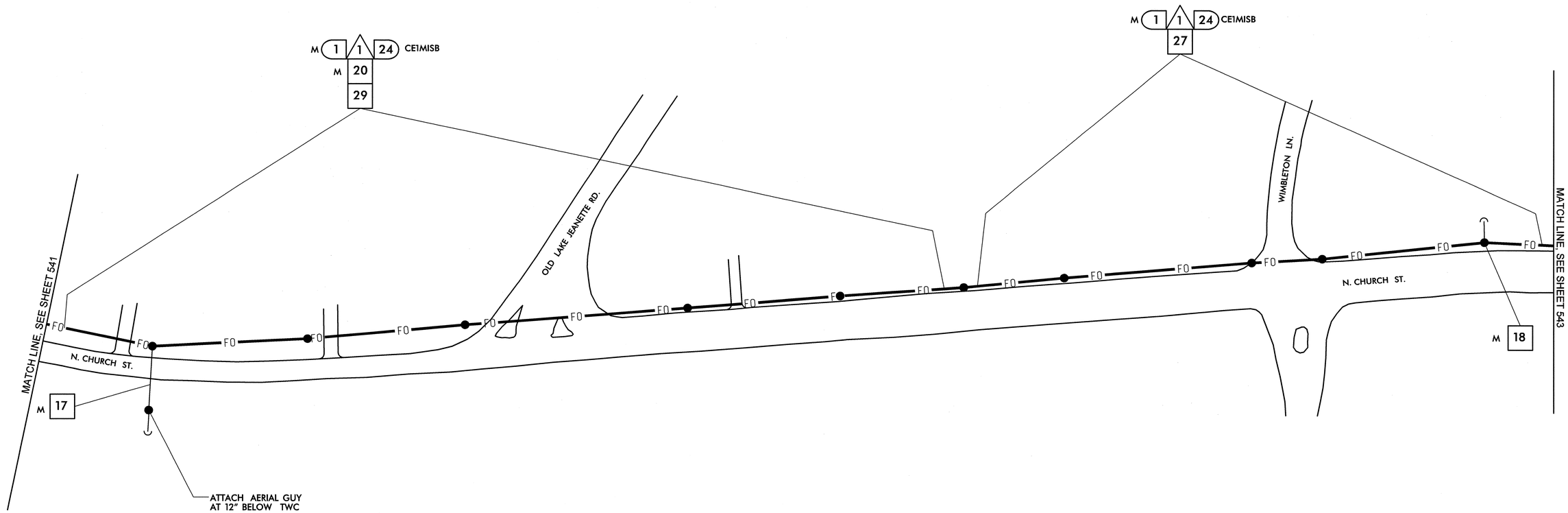
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-4711 | 542 |

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750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 — GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 — REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN — REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE — DATE 2/20/08

CADD Filename: ...\Sht0542.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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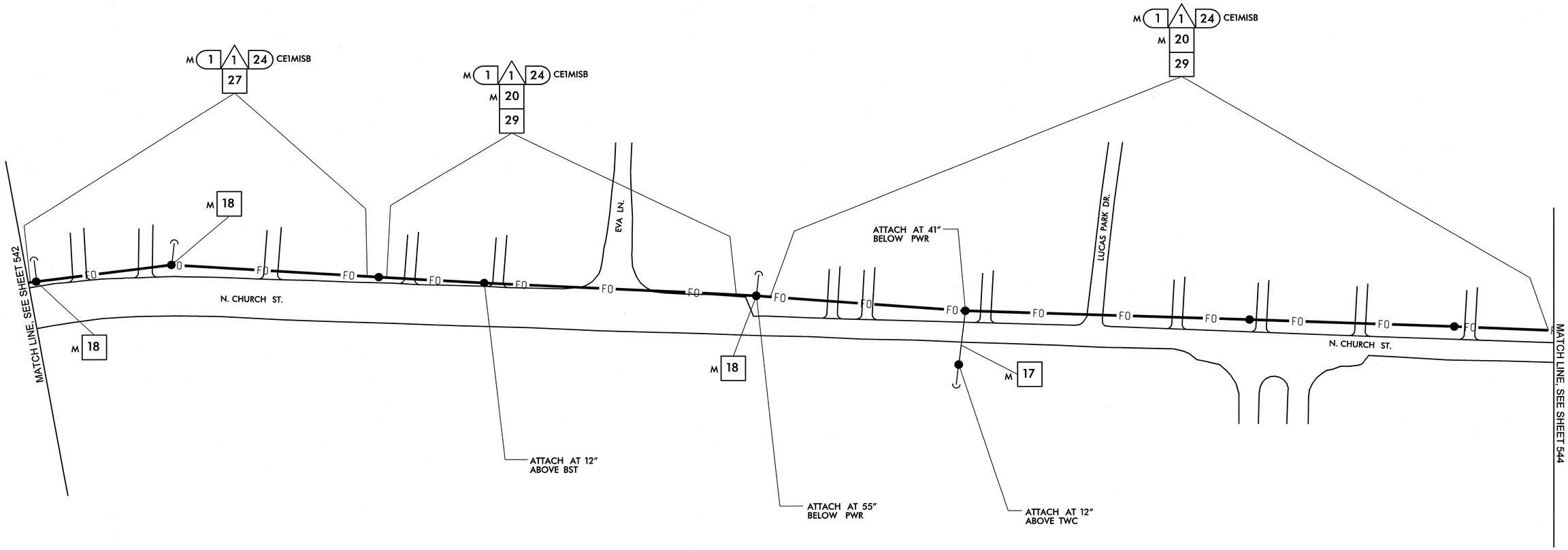
| U-4711 | 543 |




1. INSTALL SMFO CABLE
2. INSTALL PLENUM RATED FIBER OPTIC CABLE
3. INSTALL FIBER OPTIC DROP CABLE
4. INSTALL TRACER WIRE
5. REUSE NCDOT SMFO CABLE
6. REUSE GDOT SMFO CABLE
1. TRENCH
2. INSTALL PVC CONDUIT
3. INSTALL RIGID, GALVANIZED STEEL CONDUIT
4. INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
5. INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING
6. INSTALL OUTER-DUCT POLYETHYLENE CONDUIT
7. INSTALL POLYETHYLENE CONDUIT
8. DIRECTIONAL DRILL CONDUIT
9. BORE AND JACK CONDUIT
10. INSTALL CABLE(S) IN EXISTING CONDUIT
11. INSTALL CABLE(S) IN NEW CONDUIT
12. INSTALL CABLE(S) IN EXISTING RISER
13. INSTALL CABLE(S) IN NEW RISER
14. INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE
15. INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
16. INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
17. INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET
18. INSTALL NEW RISER INTO POLE MOUNTED CABINET
19. REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING
1. INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET
2. INSTALL UNDERGROUND SPLICE ENCLOSURE
3. INSTALL AERIAL SPLICE ENCLOSURE
4. INSTALL POLE MOUNTED SPLICE CABINET
5. INSTALL BASE MOUNTED SPLICE CABINET
6. REMOVE EXISTING SPLICE CABINET
7. INSTALL TERMINAL SPLICE BOX
8. MODIFY EXISTING SPLICE ENCLOSURE
1. INSTALL CABINET FOUNDATION
2. REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER
3. MODIFY EXISTING CABINET FOUNDATION
4. INSTALL NEW 333 COMMUNICATION CABINET
5. INSTALL NEW 332 BASE MOUNTED CABINET
6. INSTALL NEW 336S CABINET
7. INSTALL CCTV CAMERA ASSEMBLY
8. INSTALL CCTV CAMERA WOOD POLE
9. INSTALL CCTV METAL POLE AND FOUNDATION
10. INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX
11. INSTALL SPECIAL OVERSIZED JUNCTION BOX
12. INSTALL OVERSIZED JUNCTION BOX
13. INSTALL STANDARD JUNCTION BOX
14. REMOVE EXISTING JUNCTION BOX
15. INSTALL WOOD POLE
16. REMOVE EXISTING WOOD POLE
17. INSTALL AERIAL GUY ASSEMBLY
18. INSTALL STANDARD GUY ASSEMBLY
19. INSTALL SIDEWALK GUY ASSEMBLY
20. INSTALL MESSENGER CABLE
21. REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE
22. REMOVE EXISTING COMMUNICATIONS CABLE
23. INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE
24. INSTALL DELINEATOR MARKER
25. STORE 30 FEET OF EACH COMMUNICATIONS CABLE
26. STORE 100 FEET OF EACH COMMUNICATIONS CABLE
27. LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE
28. LASH CABLE(S) TO EXISTING MESSENGER CABLE
29. LASH CABLE(S) TO NEW MESSENGER CABLE
30. INSTALL NEW ELECTRICAL SERVICE
31. MODIFY EXISTING ELECTRICAL SERVICE
32. INSTALL NEW CONTROLLER
33. INSTALL EXISTING CABLE IN NEW CABINET
34. INSTALL GENERATOR POWER INLET BOX
35. INSTALL LOCAL GIGABIT ETHERNET SWITCH
36. INSTALL UNIFIED CABLE
37. INSTALL POLE MOUNTED EQUIPMENT CABINET
38. INSTALL UNI-DIRECTIONAL YAGI ANTENNA
39. INSTALL OMNI-DIRECTIONAL ANTENNA
40. INSTALL RADIO TRANSCEIVER
41. INSTALL SYSTEM LOOP
42. INSTALL SYSTEM LOOP AMPLIFIER
43. INSTALL SYSTEM LOOP LEAD-IN CABLE
44. INSTALL LOCAL LOOP AMPLIFIER
45. INSTALL CITY WI-FI ANTENNA
46. INSTALL HUB 10-GIGABIT ETHERNET SWITCH
47. INSTALL CODEC
48. BOND MESSENGER CABLE TO POLE GROUND
49. INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION
50. INSTALL ANTENNA CABLE
51. RECONNECT RAILROAD PREEMPTION EQUIPMENT
52. RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT
53. INSTALL DSL ETHERNET SWITCH
54. INSTALL ETHERNET CABLE
55. INSTALL TERMINAL SERVER
56. INSTALL MICROWAVE VEHICLE DETECTOR
57. INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT
58. INSTALL WIRELESS ACCESS POINT POWER CABLE

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

PLANS PREPARED IN THE OFFICE OF:


Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000


Traffic Engineering and Safety Systems Branch
Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/22/08 DATE

CADD Filenames: ...\Sht0543.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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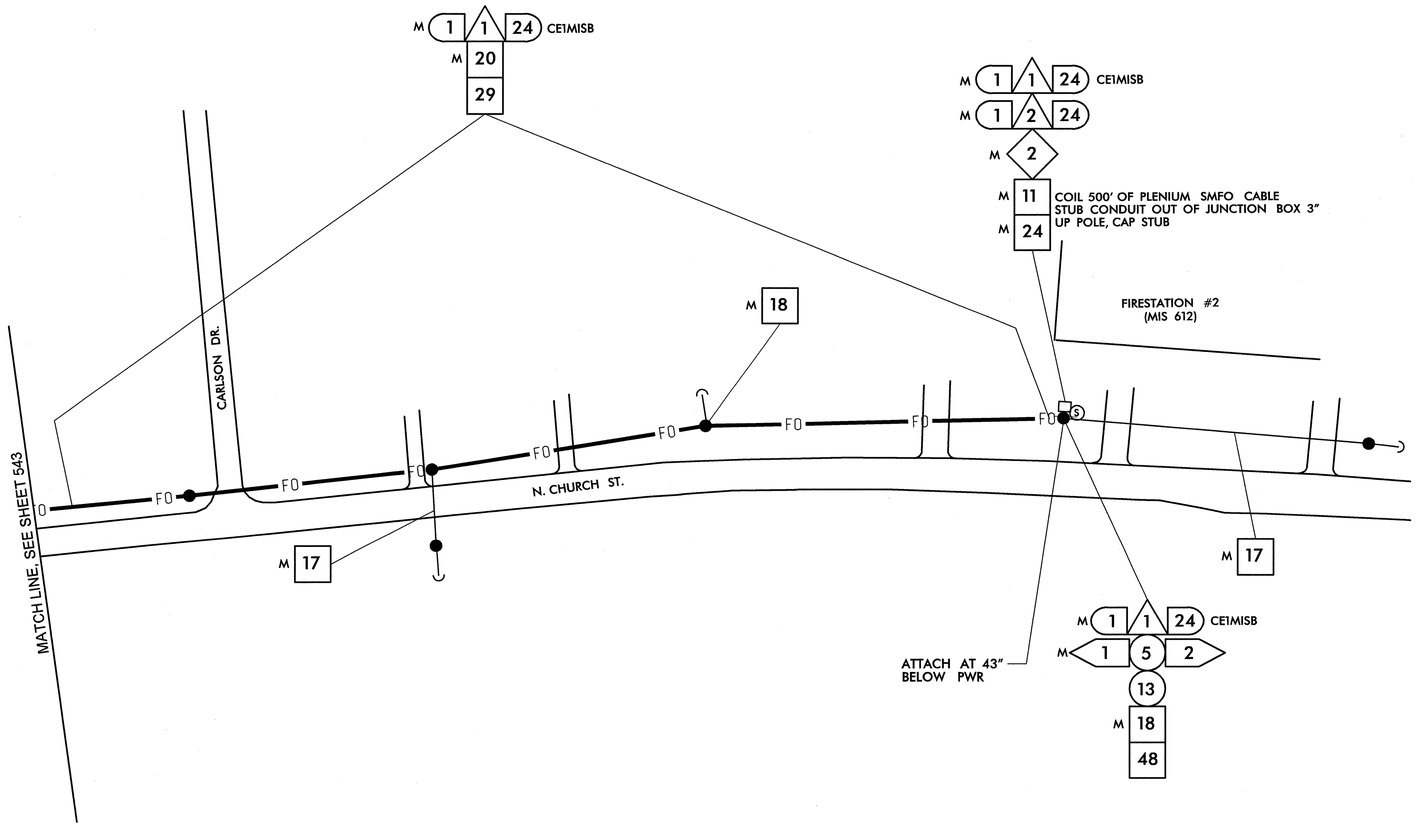
| U-4711 | 544 |

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|---|---|---|---|---|---|---|---|
| 1 | INSTALL SMFO CABLE | 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE | 6 | INSTALL NEW 336S CABINET | 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE | 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 7 | INSTALL CCTV CAMERA ASSEMBLY | 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE | 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 8 | INSTALL CCTV CAMERA WOOD POLE | 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 4 | INSTALL TRACER WIRE | 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET | 9 | INSTALL CCTV METAL POLE AND FOUNDATION | 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 5 | REUSE NCDOT SMFO CABLE | 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET | 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX | 30 | INSTALL NEW ELECTRICAL SERVICE |
| 6 | REUSE GDOT SMFO CABLE | 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING | 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX | 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 1 | TRENCH | 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET | 12 | INSTALL OVERSIZED JUNCTION BOX | 32 | INSTALL NEW CONTROLLER |
| 2 | INSTALL PVC CONDUIT | 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE | 13 | INSTALL STANDARD JUNCTION BOX | 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT | 3 | INSTALL AERIAL SPLICE ENCLOSURE | 14 | REMOVE EXISTING JUNCTION BOX | 34 | INSTALL GENERATOR POWER INLET BOX |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD | 4 | INSTALL POLE MOUNTED SPLICE CABINET | 15 | INSTALL WOOD POLE | 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING | 5 | INSTALL BASE MOUNTED SPLICE CABINET | 16 | REMOVE EXISTING WOOD POLE | 36 | INSTALL UNIFIED CABLE |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT | 6 | REMOVE EXISTING SPLICE CABINET | 17 | INSTALL AERIAL GUY ASSEMBLY | 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 7 | INSTALL POLYETHYLENE CONDUIT | 7 | INSTALL TERMINAL SPLICE BOX | 18 | INSTALL STANDARD GUY ASSEMBLY | 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 8 | DIRECTIONAL DRILL CONDUIT | 8 | MODIFY EXISTING SPLICE ENCLOSURE | 19 | INSTALL SIDEWALK GUY ASSEMBLY | 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 9 | BORE AND JACK CONDUIT | 1 | INSTALL CABINET FOUNDATION | 20 | INSTALL MESSENGER CABLE | 40 | INSTALL RADIO TRANSCEIVER |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT | 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER | 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE | 41 | INSTALL SYSTEM LOOP |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT | 3 | MODIFY EXISTING CABINET FOUNDATION | 22 | REMOVE EXISTING COMMUNICATIONS CABLE | 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 12 | INSTALL CABLE(S) IN EXISTING RISER | 4 | INSTALL NEW 333 COMMUNICATION CABINET | 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE | 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 13 | INSTALL CABLE(S) IN NEW RISER | 5 | INSTALL NEW 332 BASE MOUNTED CABINET | 24 | INSTALL DELINEATOR MARKER | | |
| | | | | 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE | | |

| | | | | | |
|---|---|---|---|---|---|
| 44 | INSTALL LOCAL LOOP AMPLIFIER | 53 | INSTALL DSL ETHERNET SWITCH | | |
| 45 | INSTALL CITY WI-FI ANTENNA | 54 | INSTALL ETHERNET CABLE | | |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH | 55 | INSTALL TERMINAL SERVER | | |
| 47 | INSTALL CODEC | 56 | INSTALL MICROWAVE VEHICLE DETECTOR | | |
| 48 | BOND MESSENGER CABLE TO POLE GROUND | 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT | | |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION | 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE | | |
| 50 | INSTALL ANTENNA CABLE | | | | |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT | | | | |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT | | | | |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

PLANS PREPARED IN THE OFFICE OF:

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# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

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DIVISION 7 — GUILFORD COUNTY

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SIGNATURE — DATE 2/20/08

CADD Filename: ...\Sht0544.dgn

2/20/2008
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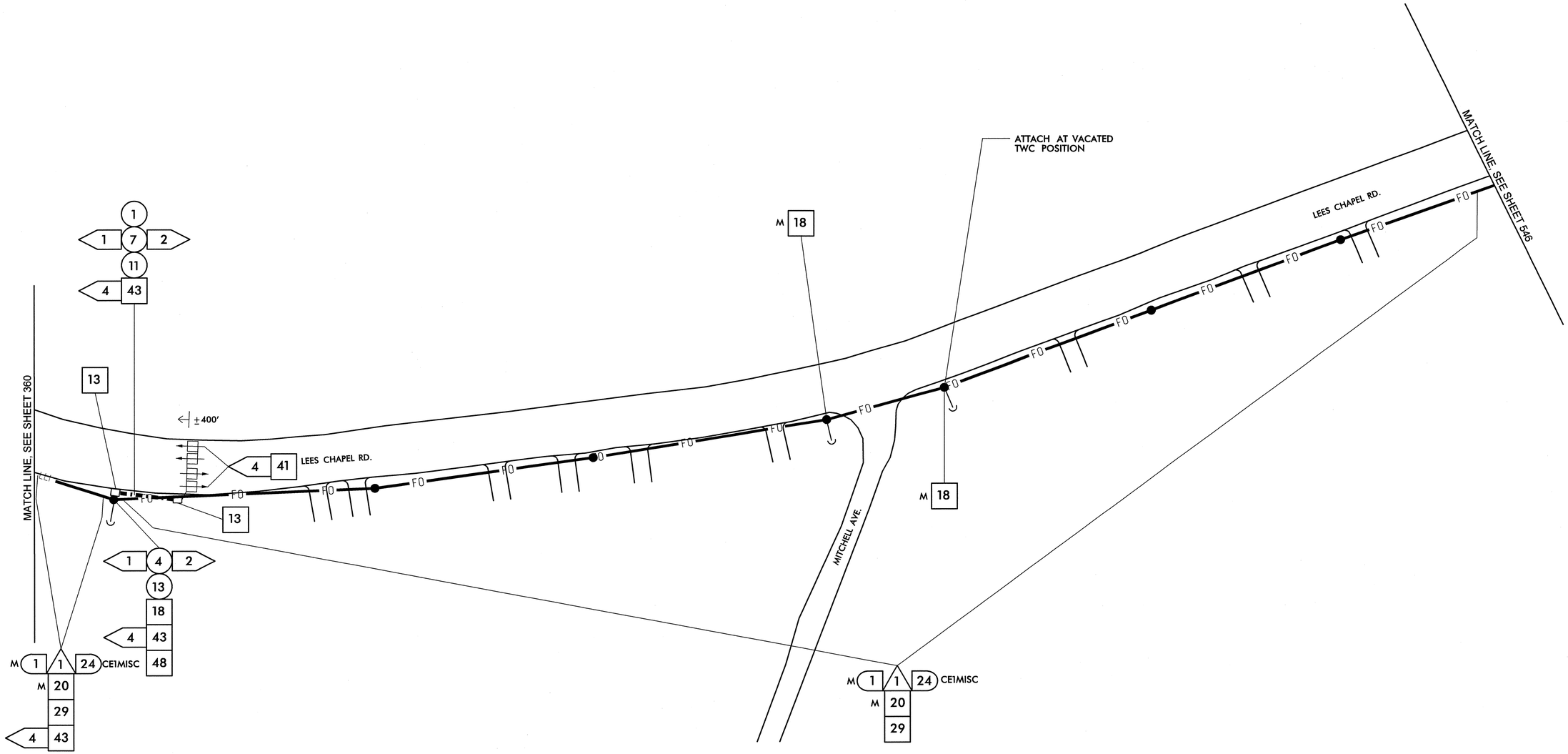
| U-4711 | 545 |

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| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
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| 4 | INSTALL TRACER WIRE |
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| 5 | INSTALL BASE MOUNTED SPLICE CABINET |
| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
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| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
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SIGNATURE — DATE 2/20/08

CADD Filename: ...\Sht0545.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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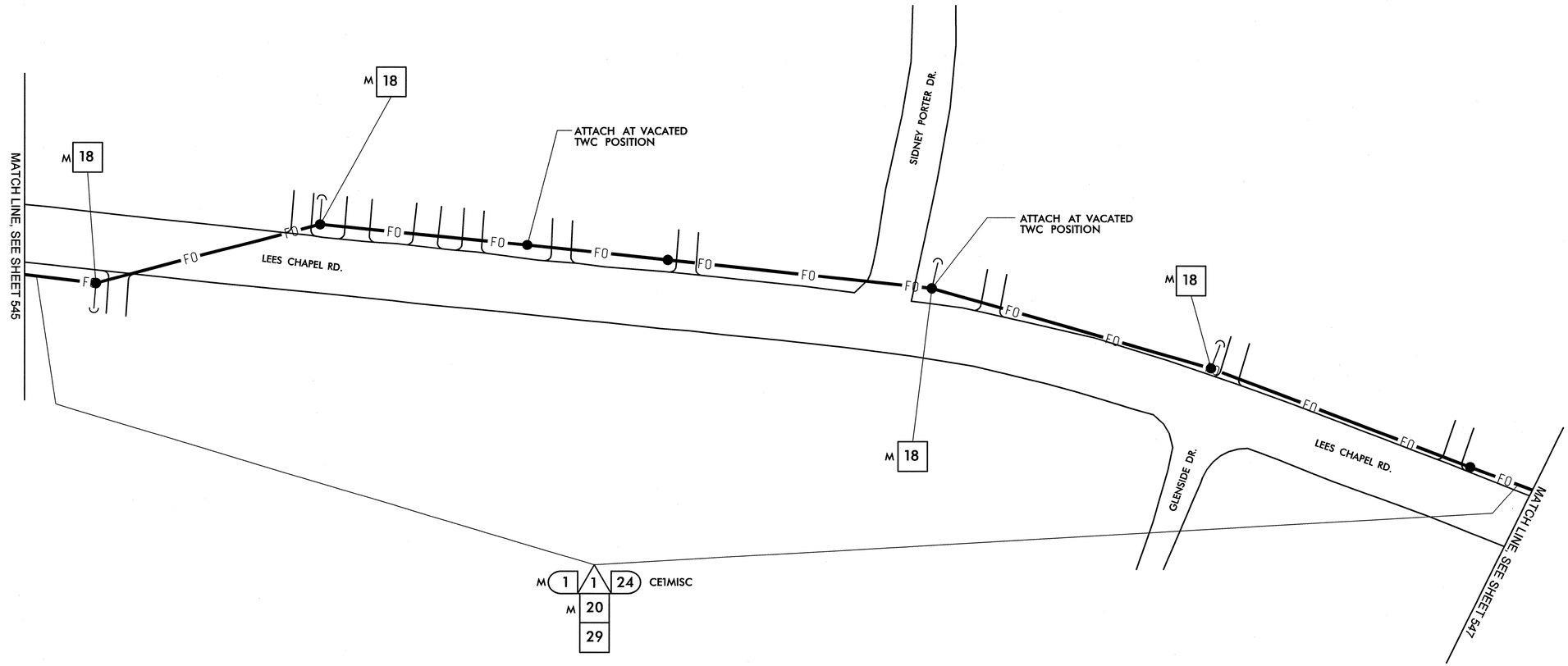
| U-4711 | 546 |

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| 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 30 | INSTALL NEW ELECTRICAL SERVICE |
| 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 32 | INSTALL NEW CONTROLLER |
| 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 34 | INSTALL GENERATOR POWER INLET BOX |
| 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 36 | INSTALL UNIFIED CABLE |
| 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 40 | INSTALL RADIO TRANSCEIVER |
| 41 | INSTALL SYSTEM LOOP |
| 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 44 | INSTALL LOCAL LOOP AMPLIFIER |
| 45 | INSTALL CITY WI-FI ANTENNA |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH |
| 47 | INSTALL CODEC |
| 48 | BOND MESSENGER CABLE TO POLE GROUND |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION |
| 50 | INSTALL ANTENNA CABLE |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT |
| 53 | INSTALL DSL ETHERNET SWITCH |
| 54 | INSTALL ETHERNET CABLE |
| 55 | INSTALL TERMINAL SERVER |
| 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
| 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

PLANS PREPARED IN THE OFFICE OF:

Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000

750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH
PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht0546.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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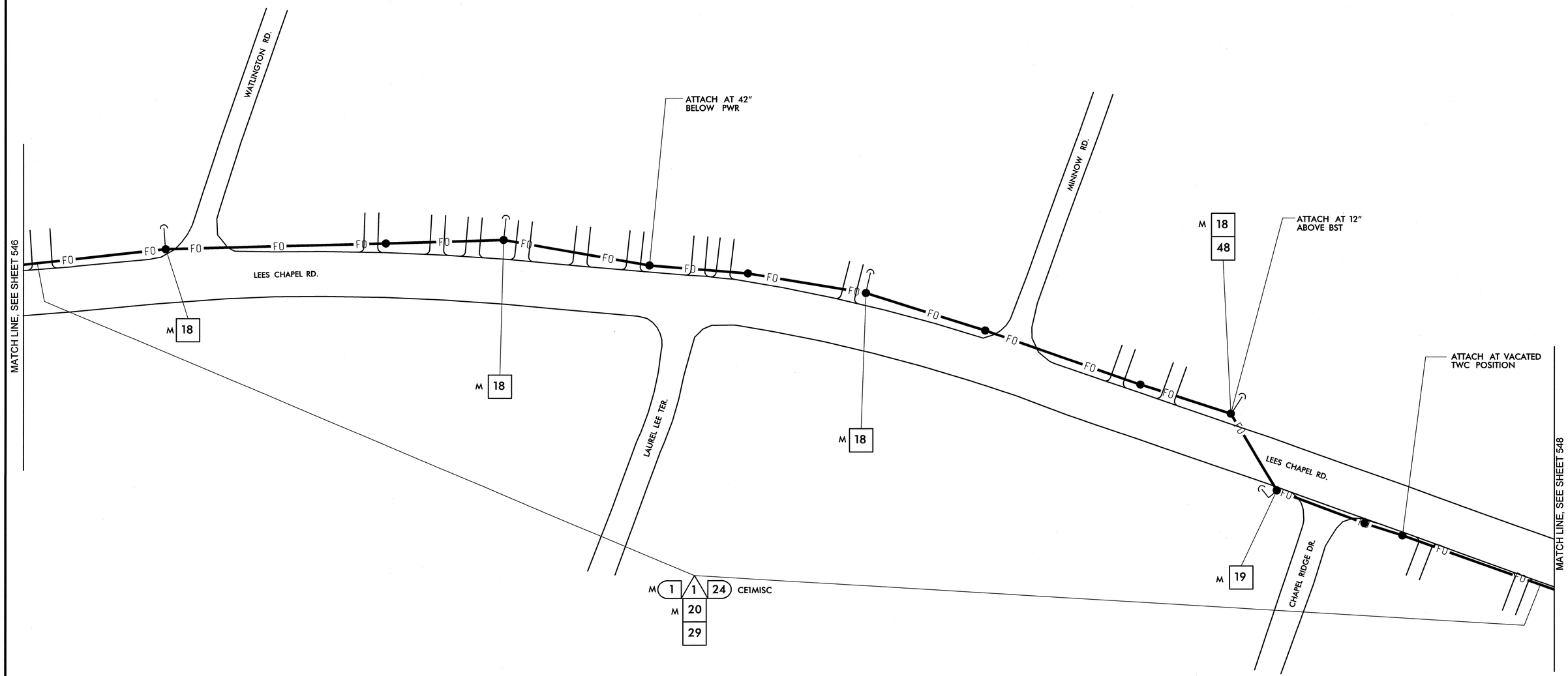
| U-4711 | 547 |




| | |
|---|---|
| 1 | INSTALL SMFO CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE |
| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
| 6 | REUSE GDOT SMFO CABLE |
| 1 | TRENCH |
| 2 | INSTALL PVC CONDUIT |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT |
| 7 | INSTALL POLYETHYLENE CONDUIT |
| 8 | DIRECTIONAL DRILL CONDUIT |
| 9 | BORE AND JACK CONDUIT |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT |
| 12 | INSTALL CABLE(S) IN EXISTING RISER |
| 13 | INSTALL CABLE(S) IN NEW RISER |
| 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE |
| 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET |
| 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET |
| 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING |
| 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET |
| 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE |
| 3 | INSTALL AERIAL SPLICE ENCLOSURE |
| 4 | INSTALL POLE MOUNTED SPLICE CABINET |
| 5 | INSTALL BASE MOUNTED SPLICE CABINET |
| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
| 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX |
| 12 | INSTALL OVERSIZED JUNCTION BOX |
| 13 | INSTALL STANDARD JUNCTION BOX |
| 14 | REMOVE EXISTING JUNCTION BOX |
| 15 | INSTALL WOOD POLE |
| 16 | REMOVE EXISTING WOOD POLE |
| 17 | INSTALL AERIAL GUY ASSEMBLY |
| 18 | INSTALL STANDARD GUY ASSEMBLY |
| 19 | INSTALL SIDEWALK GUY ASSEMBLY |
| 20 | INSTALL MESSENGER CABLE |
| 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE |
| 22 | REMOVE EXISTING COMMUNICATIONS CABLE |
| 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE |
| 24 | INSTALL DELINEATOR MARKER |
| 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE |
| 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
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| 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |

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PLANS PREPARED IN THE OFFICE OF:


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Traffic Engineering and Safety Systems Branch
Division of Highways
North Carolina Department of Transportation
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

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| PLAN DATE: FEBRUARY, 2008 | REVIEWED BY: K.W. SMITH |
| PREPARED BY: K.D. VANPATTEN | REVIEWED BY: M.W. DUNZO |

| REVISIONS | INIT. | DATE |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht0547.dgn

2/20/2008
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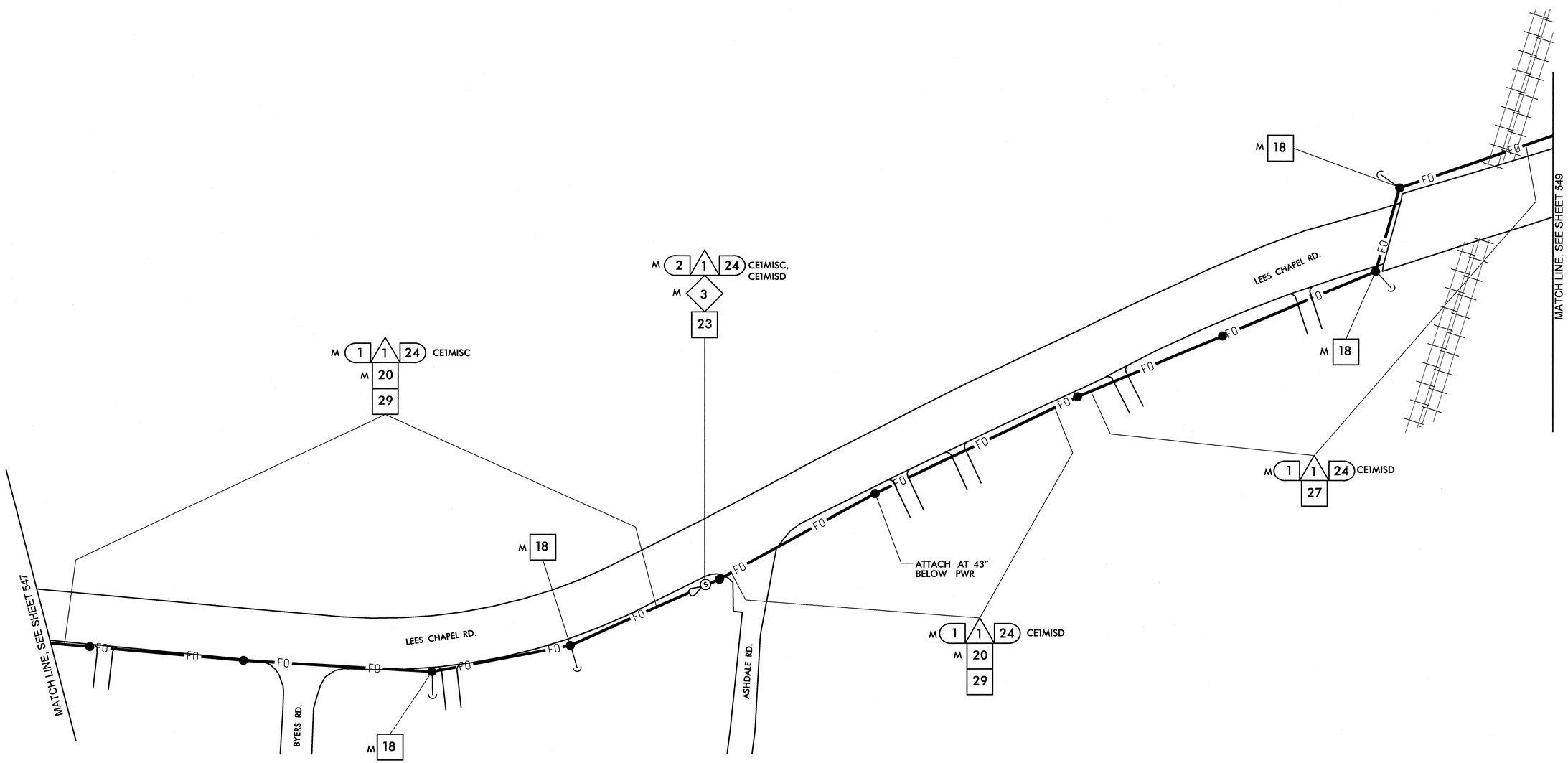
| U-4711 | 548 |




| | |
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| 1 | INSTALL SMFO CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
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| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
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| 1 | TRENCH |
| 2 | INSTALL PVC CONDUIT |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
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| 4 | INSTALL POLE MOUNTED SPLICE CABINET |
| 5 | INSTALL BASE MOUNTED SPLICE CABINET |
| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
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| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
| 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX |
| 12 | INSTALL OVERSIZED JUNCTION BOX |
| 13 | INSTALL STANDARD JUNCTION BOX |
| 14 | REMOVE EXISTING JUNCTION BOX |
| 15 | INSTALL WOOD POLE |
| 16 | REMOVE EXISTING WOOD POLE |
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| 19 | INSTALL SIDEWALK GUY ASSEMBLY |
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| 40 | INSTALL RADIO TRANSCEIVER |
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| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT |
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PLANS PREPARED IN THE OFFICE OF:

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Traffic Engineering and Safety Systems Branch
Intelligent Transportation Systems
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/22/08 DATE

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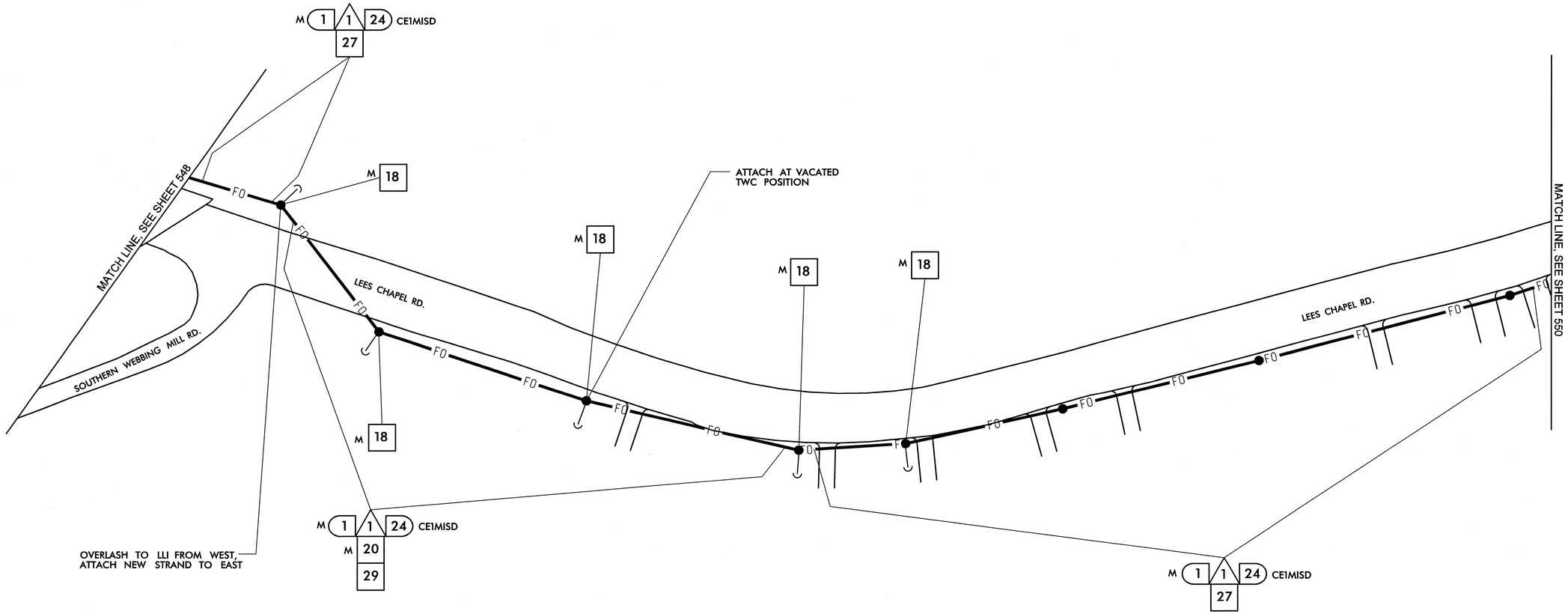
| U-4711 | 549 |




| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | INSTALL SMFO CABLE | 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE | 6 | INSTALL NEW 336S CABINET | 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE | 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 7 | INSTALL CCTV CAMERA ASSEMBLY | 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE | 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 8 | INSTALL CCTV CAMERA WOOD POLE | 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 4 | INSTALL TRACER WIRE | 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET | 9 | INSTALL CCTV METAL POLE AND FOUNDATION | 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 5 | REUSE NCDOT SMFO CABLE | 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET | 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX | 30 | INSTALL NEW ELECTRICAL SERVICE |
| 6 | REUSE GDOT SMFO CABLE | 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING | 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX | 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 1 | TRENCH | 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET | 12 | INSTALL OVERSIZED JUNCTION BOX | 32 | INSTALL NEW CONTROLLER |
| 2 | INSTALL PVC CONDUIT | 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE | 13 | INSTALL STANDARD JUNCTION BOX | 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT | 3 | INSTALL AERIAL SPLICE ENCLOSURE | 14 | REMOVE EXISTING JUNCTION BOX | 34 | INSTALL GENERATOR POWER INLET BOX |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD | 4 | INSTALL POLE MOUNTED SPLICE CABINET | 15 | INSTALL WOOD POLE | 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING | 5 | INSTALL BASE MOUNTED SPLICE CABINET | 16 | REMOVE EXISTING WOOD POLE | 36 | INSTALL UNIFIED CABLE |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT | 6 | REMOVE EXISTING SPLICE CABINET | 17 | INSTALL AERIAL GUY ASSEMBLY | 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 7 | INSTALL POLYETHYLENE CONDUIT | 7 | INSTALL TERMINAL SPLICE BOX | 18 | INSTALL STANDARD GUY ASSEMBLY | 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 8 | DIRECTIONAL DRILL CONDUIT | 8 | MODIFY EXISTING SPLICE ENCLOSURE | 19 | INSTALL SIDEWALK GUY ASSEMBLY | 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 9 | BORE AND JACK CONDUIT | 1 | INSTALL CABINET FOUNDATION | 20 | INSTALL MESSENGER CABLE | 40 | INSTALL RADIO TRANSCEIVER |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT | 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER | 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE | 41 | INSTALL SYSTEM LOOP |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT | 3 | MODIFY EXISTING CABINET FOUNDATION | 22 | REMOVE EXISTING COMMUNICATIONS CABLE | 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 12 | INSTALL CABLE(S) IN EXISTING RISER | 4 | INSTALL NEW 333 COMMUNICATION CABINET | 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE | 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 13 | INSTALL CABLE(S) IN NEW RISER | 5 | INSTALL NEW 332 BASE MOUNTED CABINET | 24 | INSTALL DELINEATOR MARKER | | |
| | | | | 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE | | |

| | | | |
|---|---|---|---|
| 44 | INSTALL LOCAL LOOP AMPLIFIER | 53 | INSTALL DSL ETHERNET SWITCH |
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GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

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SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

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| PROJECT REFERENCE NO. | SHEET NO. |
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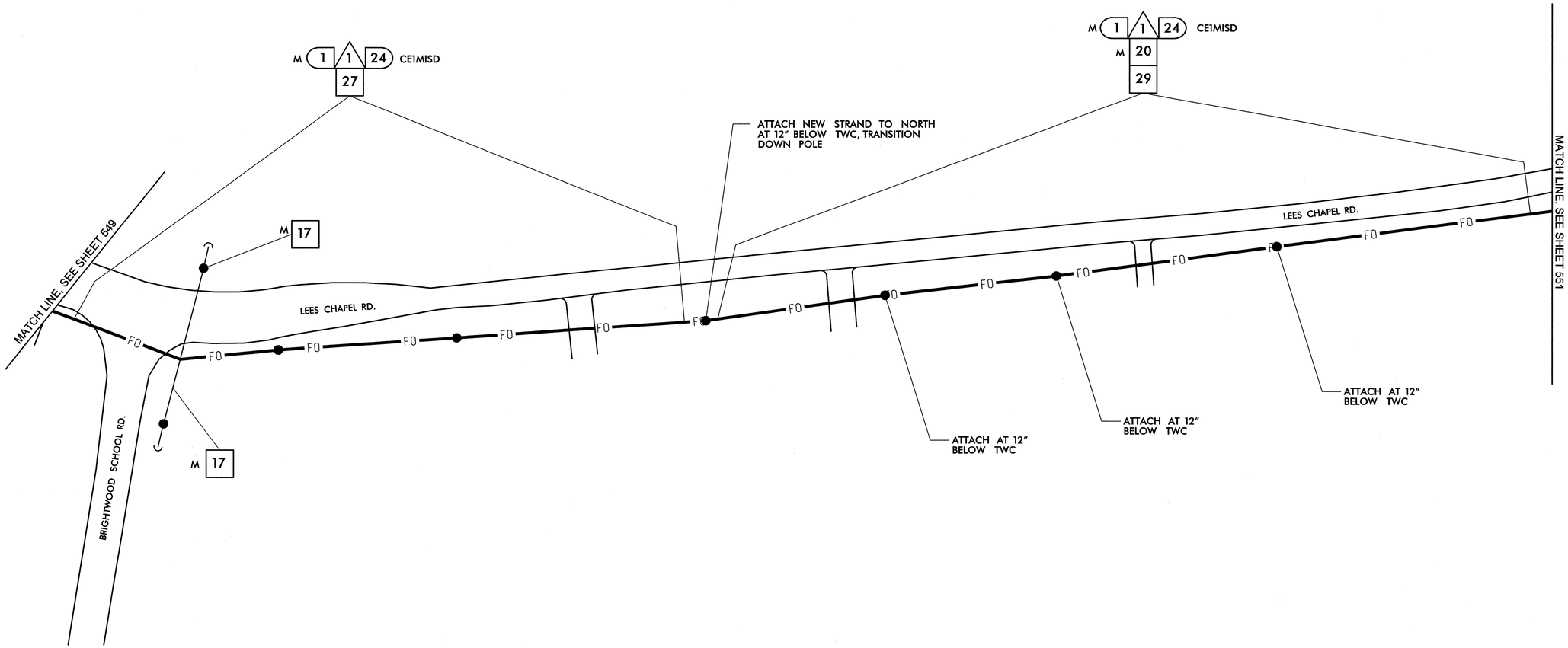
| U-4711 | 550 |




1. INSTALL SMFO CABLE
2. INSTALL PLENUM RATED FIBER OPTIC CABLE
3. INSTALL FIBER OPTIC DROP CABLE
4. INSTALL TRACER WIRE
5. REUSE NCDOT SMFO CABLE
6. REUSE GDOT SMFO CABLE

1. TRENCH
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13. INSTALL CABLE(S) IN NEW RISER
14. INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE
15. INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
16. INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
17. INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET
18. INSTALL NEW RISER INTO POLE MOUNTED CABINET
19. REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING

1. INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET
2. INSTALL UNDERGROUND SPLICE ENCLOSURE
3. INSTALL AERIAL SPLICE ENCLOSURE
4. INSTALL POLE MOUNTED SPLICE CABINET
5. INSTALL BASE MOUNTED SPLICE CABINET
6. REMOVE EXISTING SPLICE CABINET
7. INSTALL TERMINAL SPLICE BOX
8. MODIFY EXISTING SPLICE ENCLOSURE

1. INSTALL CABINET FOUNDATION
2. REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER
3. MODIFY EXISTING CABINET FOUNDATION
4. INSTALL NEW 333 COMMUNICATION CABINET
5. INSTALL NEW 332 BASE MOUNTED CABINET
6. INSTALL NEW 336S CABINET
7. INSTALL CCTV CAMERA ASSEMBLY
8. INSTALL CCTV CAMERA WOOD POLE
9. INSTALL CCTV METAL POLE AND FOUNDATION
10. INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX
11. INSTALL SPECIAL OVERSIZED JUNCTION BOX
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19. INSTALL SIDEWALK GUY ASSEMBLY
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21. REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE
22. REMOVE EXISTING COMMUNICATIONS CABLE
23. INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE
24. INSTALL DELINEATOR MARKER
25. STORE 30 FEET OF EACH COMMUNICATIONS CABLE
26. STORE 100 FEET OF EACH COMMUNICATIONS CABLE
27. LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE
28. LASH CABLE(S) TO EXISTING MESSENGER CABLE
29. LASH CABLE(S) TO NEW MESSENGER CABLE
30. INSTALL NEW ELECTRICAL SERVICE
31. MODIFY EXISTING ELECTRICAL SERVICE
32. INSTALL NEW CONTROLLER
33. INSTALL EXISTING CABLE IN NEW CABINET
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35. INSTALL LOCAL GIGABIT ETHERNET SWITCH
36. INSTALL UNIFIED CABLE
37. INSTALL POLE MOUNTED EQUIPMENT CABINET
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43. INSTALL SYSTEM LOOP LEAD-IN CABLE
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47. INSTALL CODEC
48. BOND MESSENGER CABLE TO POLE GROUND
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55. INSTALL TERMINAL SERVER
56. INSTALL MICROWAVE VEHICLE DETECTOR
57. INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT
58. INSTALL WIRELESS ACCESS POINT POWER CABLE

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

PLANS PREPARED IN THE OFFICE OF:

Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000

State Engineering and Safety Services Branch
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 — GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 — REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN — REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE — DATE 2/20/08

CADD Filename: ...\Sht0550.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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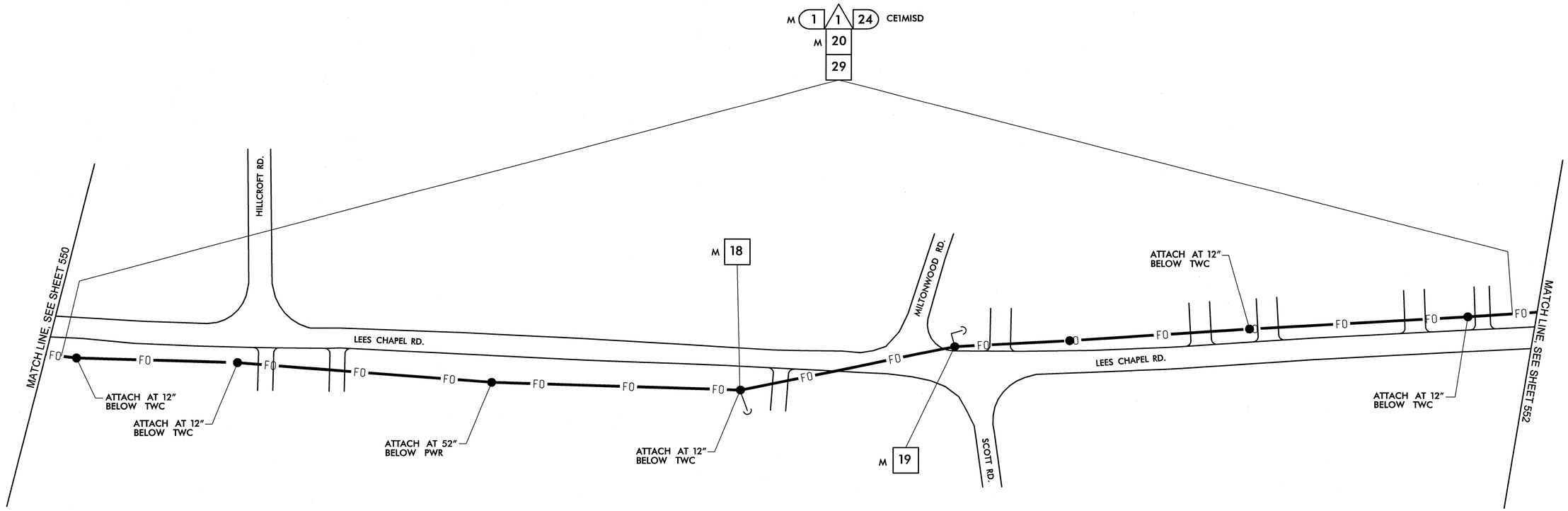
| U-4711 | 551 |

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3. INSTALL FIBER OPTIC DROP CABLE
4. INSTALL TRACER WIRE
5. REUSE NCDOT SMFO CABLE
6. REUSE GDOT SMFO CABLE

1. TRENCH
2. INSTALL PVC CONDUIT
3. INSTALL RIGID, GALVANIZED STEEL CONDUIT
4. INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
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8. DIRECTIONAL DRILL CONDUIT
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750 Greenfield Pkwy., Garner, NC 27529


SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

| | |
|---|---|
| PLAN DATE: FEBRUARY, 2008 | REVIEWED BY: K.W. SMITH |
| PREPARED BY: K.D. VANPATTEN | REVIEWED BY: M.W. DUNZO |

| REVISIONS | INIT. | DATE |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht055l.dgn

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| PROJECT REFERENCE NO. | SHEET NO. |
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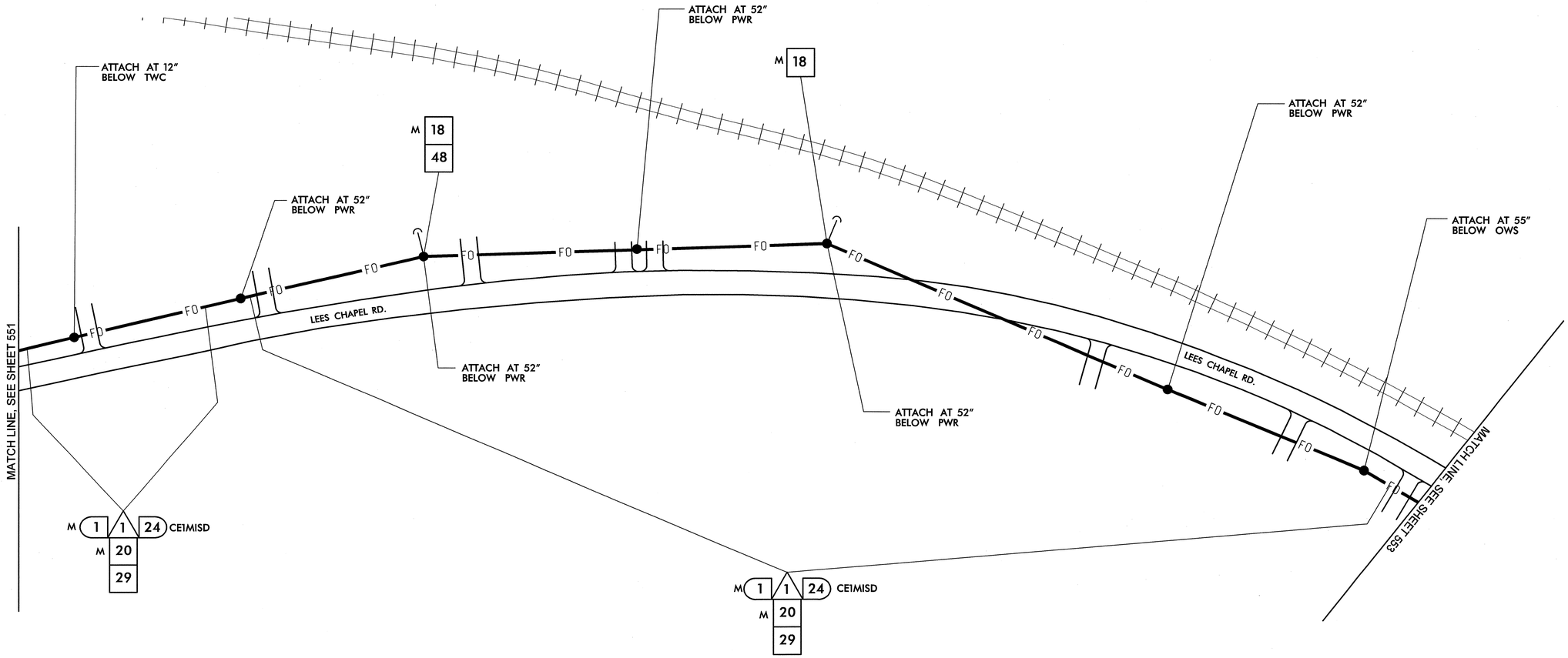
| U-4711 | 552 |

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NOTE:
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PLANS PREPARED IN THE OFFICE OF:
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Traffic Engineering and Safety Systems Branch
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
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SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/29/08

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| PROJECT REFERENCE NO. | SHEET NO. |
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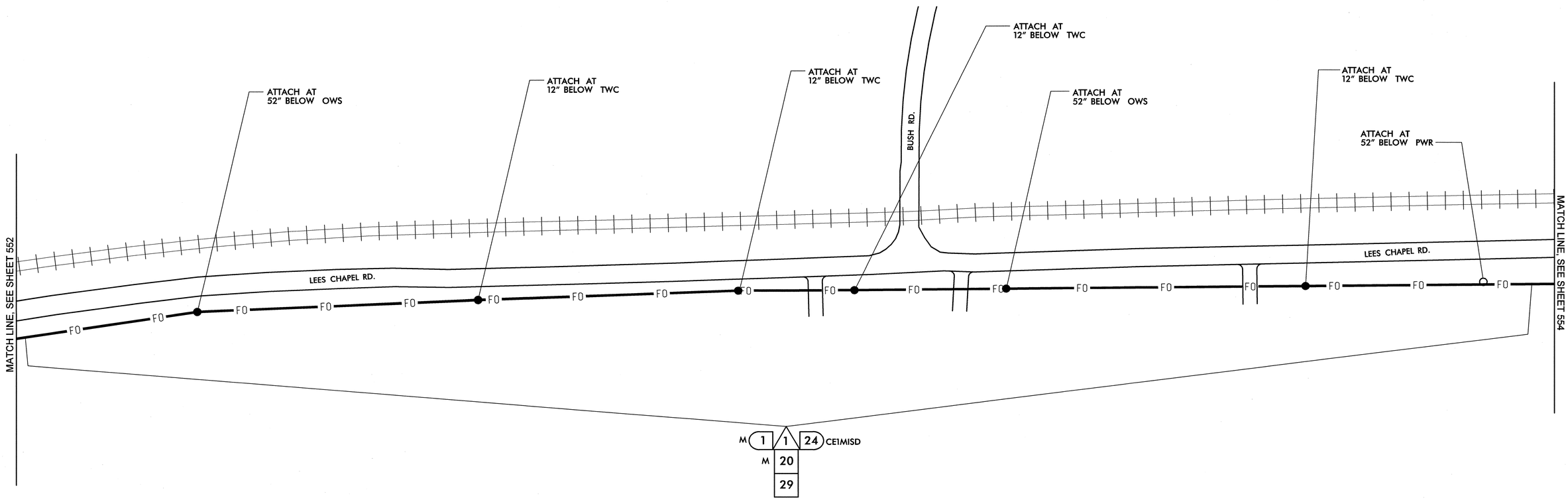
| U-4711 | 553 |

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DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/22/08 DATE

CADD Filename: ...\Sht0553.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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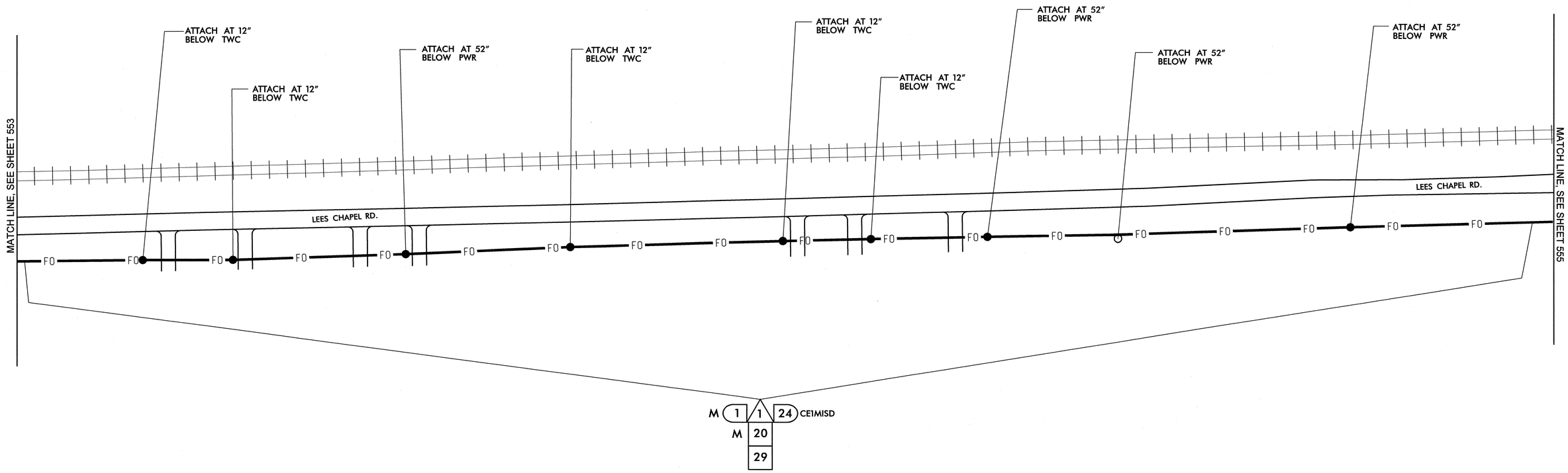
| U-4711 | 554 |

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| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE |
| 4 | INSTALL TRACER WIRE |
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PLANS PREPARED IN THE OFFICE OF:

Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000

Public Engineering and Safety Systems Branch
Intelligent Transportation Systems
Division of Highways
State of North Carolina Department of Transportation
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

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| PLAN DATE: FEBRUARY, 2008 | REVIEWED BY: K.W. SMITH |
| PREPARED BY: K.D. VANPATTEN | REVIEWED BY: M.W. DUNZO |

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SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht0554.dgn

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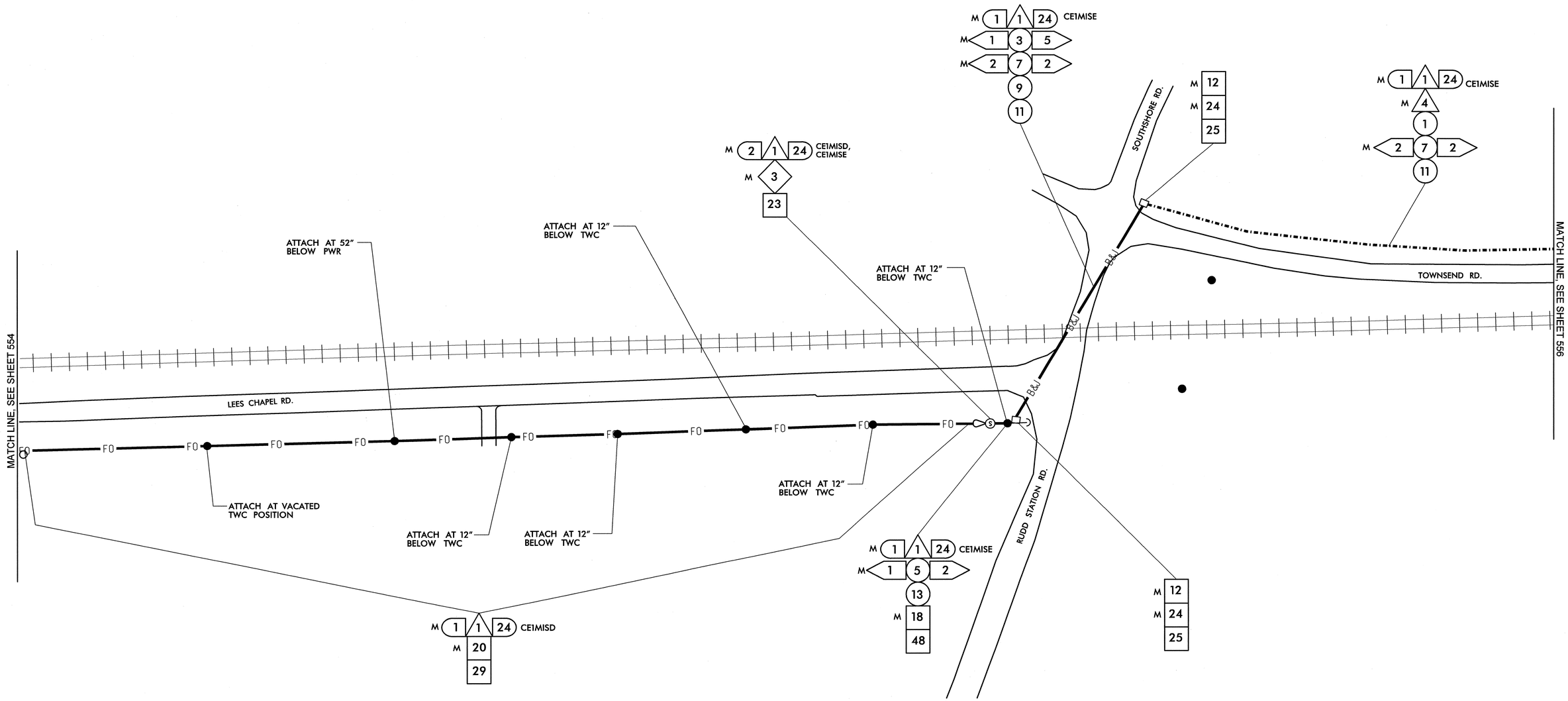


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SCALE 0 50

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## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

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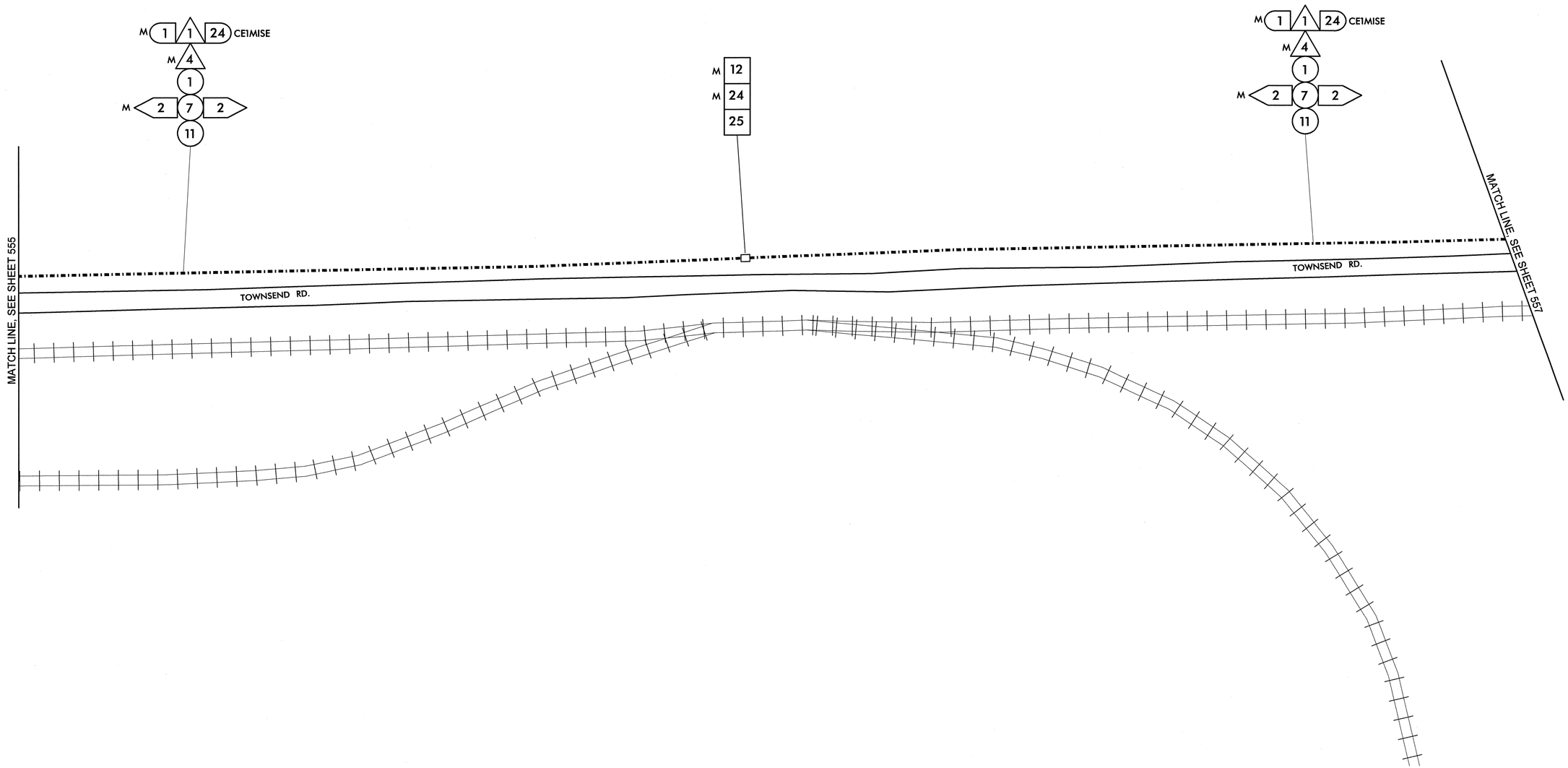


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Traffic Engineering and Safety Systems Branch
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SCALE 0 50

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DIVISION 7 GUILFORD COUNTY

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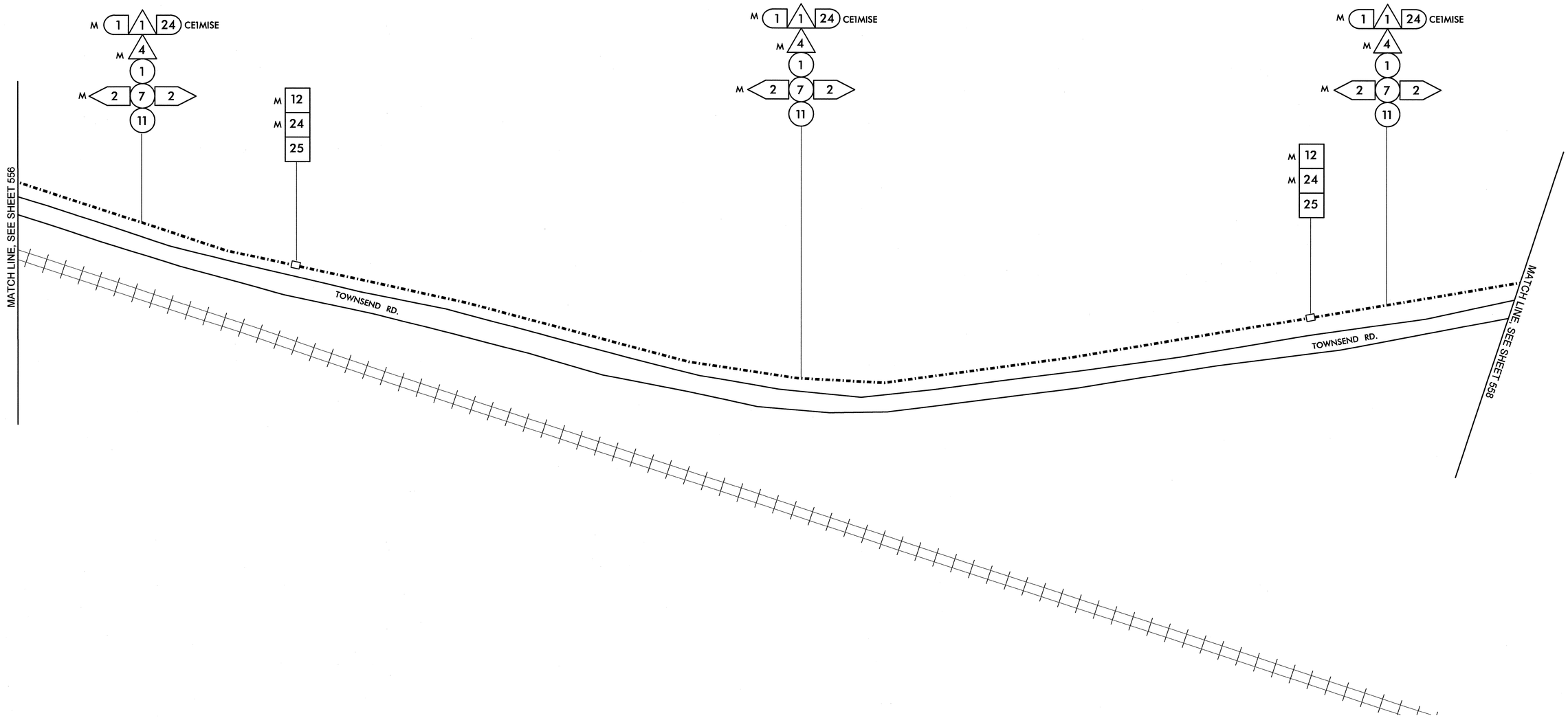


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| 13 | INSTALL STANDARD JUNCTION BOX |
| 14 | REMOVE EXISTING JUNCTION BOX |
| 15 | INSTALL WOOD POLE |
| 16 | REMOVE EXISTING WOOD POLE |
| 17 | INSTALL AERIAL GUY ASSEMBLY |
| 18 | INSTALL STANDARD GUY ASSEMBLY |
| 19 | INSTALL SIDEWALK GUY ASSEMBLY |
| 20 | INSTALL MESSENGER CABLE |
| 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE |
| 22 | REMOVE EXISTING COMMUNICATIONS CABLE |
| 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE |
| 24 | INSTALL DELINEATOR MARKER |
| 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE |
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| 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 30 | INSTALL NEW ELECTRICAL SERVICE |
| 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 32 | INSTALL NEW CONTROLLER |
| 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 34 | INSTALL GENERATOR POWER INLET BOX |
| 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 36 | INSTALL UNIFIED CABLE |
| 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 40 | INSTALL RADIO TRANSCEIVER |
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| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH |
| 47 | INSTALL CODEC |
| 48 | BOND MESSENGER CABLE TO POLE GROUND |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION |
| 50 | INSTALL ANTENNA CABLE |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT |
| 53 | INSTALL DSL ETHERNET SWITCH |
| 54 | INSTALL ETHERNET CABLE |
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| 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
| 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

PLANS PREPARED IN THE OFFICE OF:

Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000

Traffic Engineering and Safety Systems Branch
Transportation Systems
DIVISION OF HIGHWAYS
DEPT. OF TRANSPORTATION
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

| | | | |
|---|---|---|---|
| PLAN DATE: FEBRUARY, 2008 | | REVIEWED BY: K.W. SMITH | |
| PREPARED BY: K.D. VANPATTEN | | REVIEWED BY: M.W. DUNZO | |
| REVISIONS | | INIT. | DATE |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO
SIGNATURE 2/20/08 DATE

CADD Filename: ...\Sht0557.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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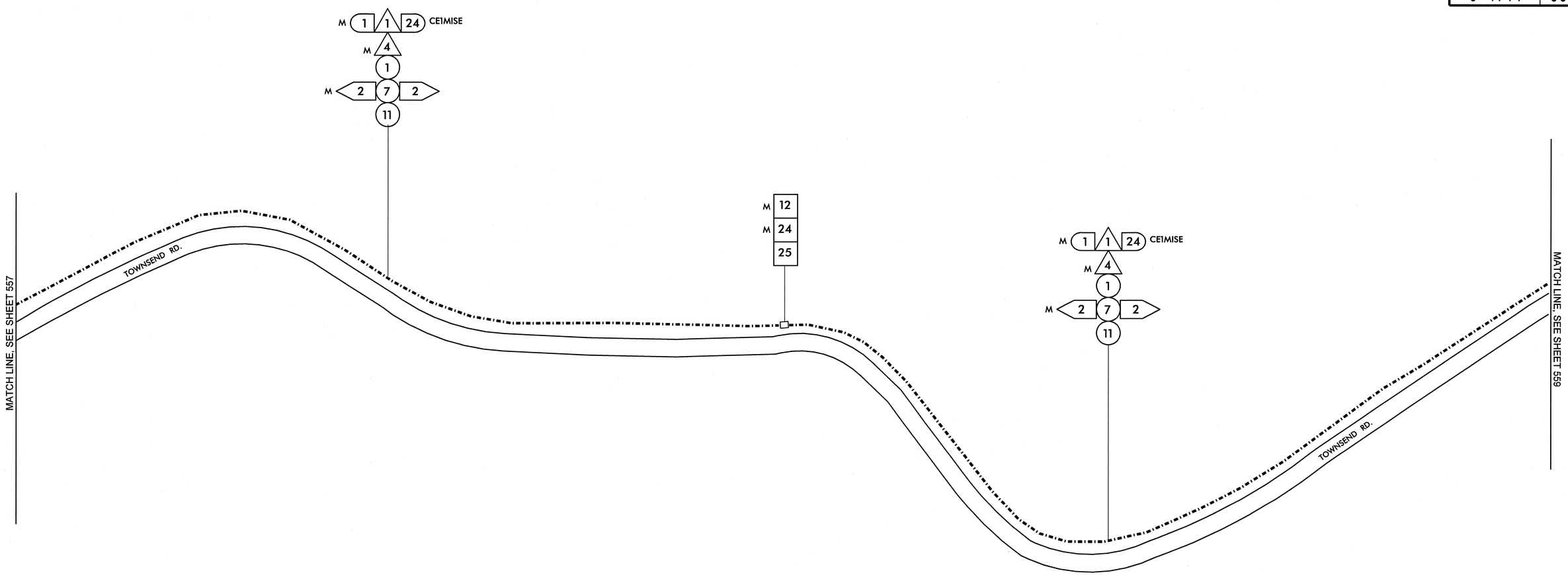
| U-4711 | 558 |




| | |
|---|---|
| 1 | INSTALL SMFO CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE |
| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
| 6 | REUSE GDOT SMFO CABLE |
| 1 | TRENCH |
| 2 | INSTALL PVC CONDUIT |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT |
| 7 | INSTALL POLYETHYLENE CONDUIT |
| 8 | DIRECTIONAL DRILL CONDUIT |
| 9 | BORE AND JACK CONDUIT |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT |
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| 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE |
| 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
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| 3 | INSTALL AERIAL SPLICE ENCLOSURE |
| 4 | INSTALL POLE MOUNTED SPLICE CABINET |
| 5 | INSTALL BASE MOUNTED SPLICE CABINET |
| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
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PLANS PREPARED IN THE OFFICE OF:

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(919) 677-2000

Traffic Engineering and Safety Systems Branch
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNTO

SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht0558.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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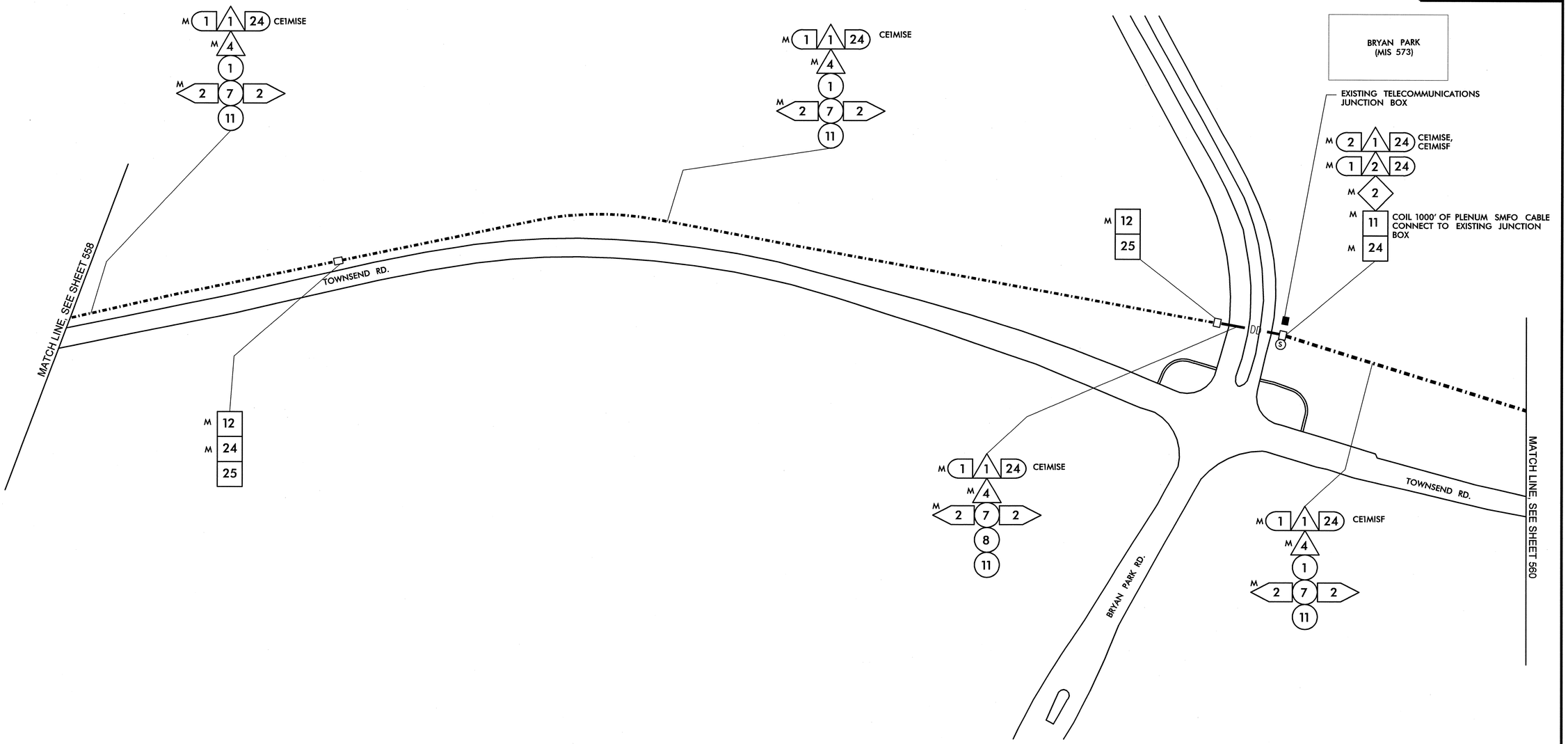
| U-4711 | 559 |

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| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
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NOTE:
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PLANS PREPARED IN THE OFFICE OF:
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750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

| | |
|---|---|
| PLAN DATE: FEBRUARY, 2008 | REVIEWED BY: K.W. SMITH |
| PREPARED BY: K.D. VANPATTEN | REVIEWED BY: M.W. DUNZO |

| REVISIONS | INIT. | DATE |
|---|---|---|
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/29/08

CADD Filename: ...\Sht0559.dgn

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| PROJECT REFERENCE NO. | SHEET NO. |
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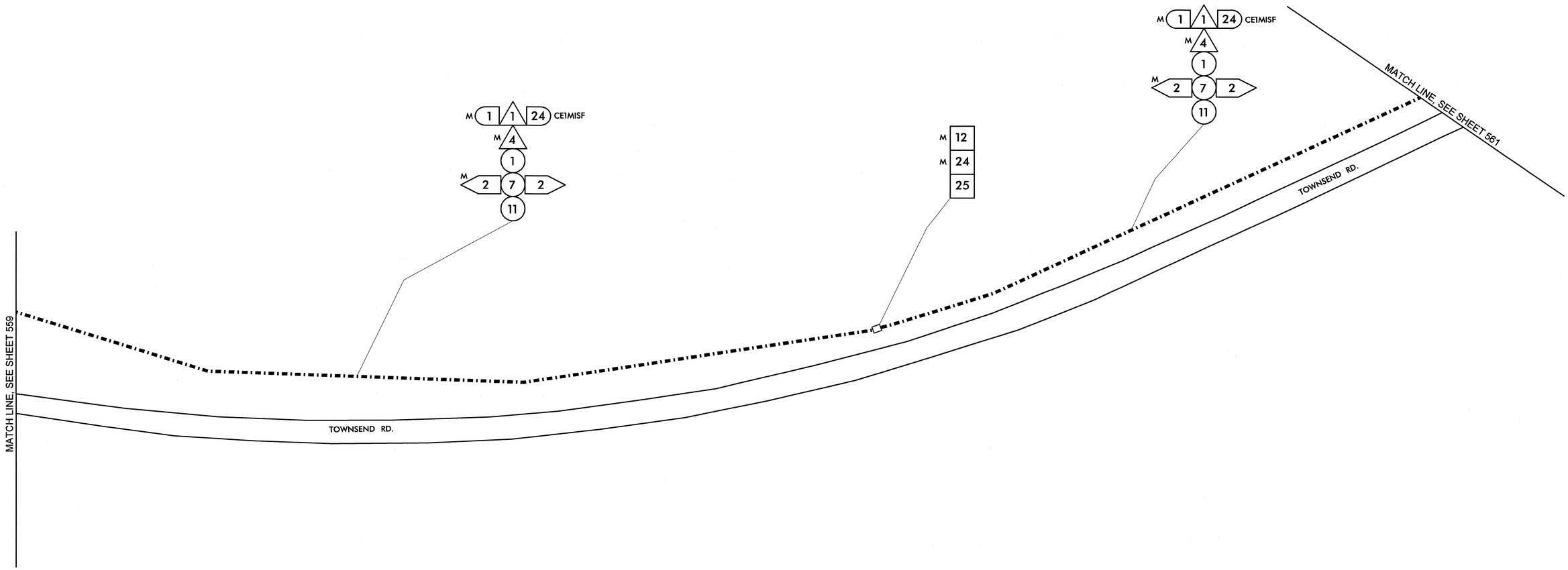
| U-4711 | 560 |




1. INSTALL SMFO CABLE
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5. REUSE NCDOT SMFO CABLE
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1. TRENCH
2. INSTALL PVC CONDUIT
3. INSTALL RIGID, GALVANIZED STEEL CONDUIT
4. INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
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6. INSTALL OUTER-DUCT POLYETHYLENE CONDUIT
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5. INSTALL BASE MOUNTED SPLICE CABINET
6. REMOVE EXISTING SPLICE CABINET
7. INSTALL TERMINAL SPLICE BOX
8. MODIFY EXISTING SPLICE ENCLOSURE

1. INSTALL CABINET FOUNDATION
2. REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER
3. MODIFY EXISTING CABINET FOUNDATION
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SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

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| PLAN DATE: FEBRUARY, 2008 | REVIEWED BY: K.W. SMITH |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht0560.dgn

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| PROJECT REFERENCE NO. | SHEET NO. |
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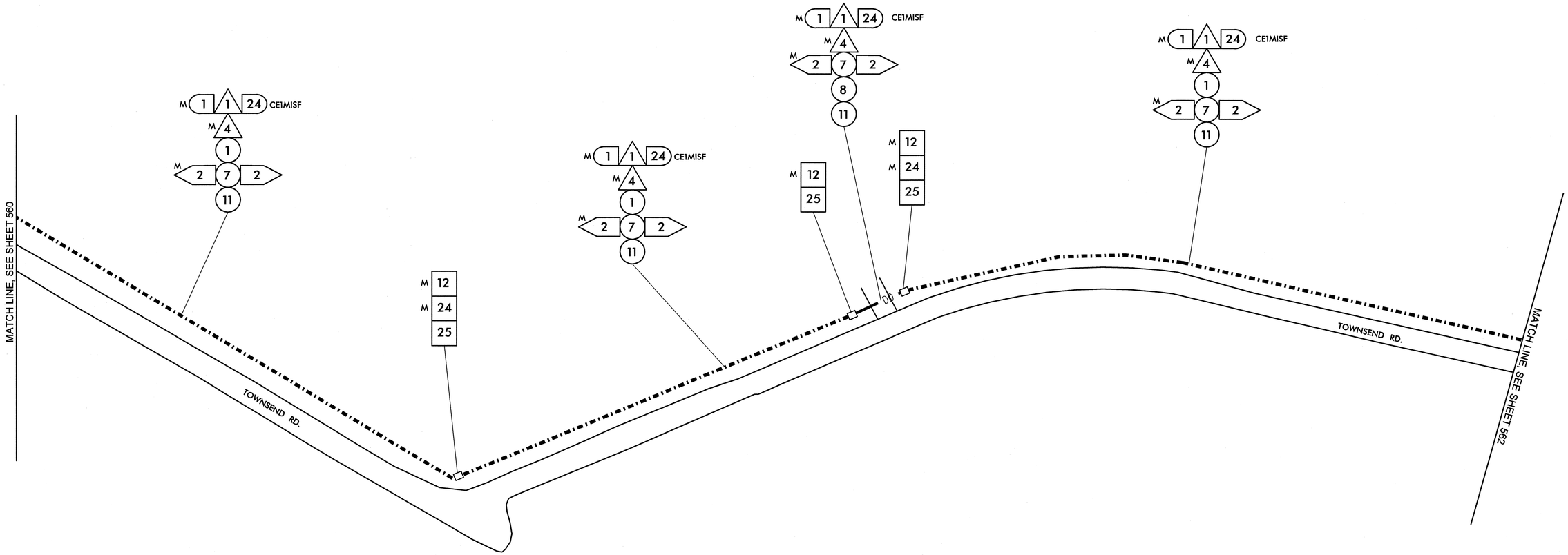
| U-4711 | 561 |

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|---|---|---|---|---|---|---|---|
| 1 | INSTALL SMFO CABLE | 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE | 6 | INSTALL NEW 336S CABINET | 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE | 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 7 | INSTALL CCTV CAMERA ASSEMBLY | 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE | 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 8 | INSTALL CCTV CAMERA WOOD POLE | 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 4 | INSTALL TRACER WIRE | 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET | 9 | INSTALL CCTV METAL POLE AND FOUNDATION | 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 5 | REUSE NCDOT SMFO CABLE | 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET | 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX | 30 | INSTALL NEW ELECTRICAL SERVICE |
| 6 | REUSE GDOT SMFO CABLE | 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING | 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX | 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 1 | TRENCH | 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET | 12 | INSTALL OVERSIZED JUNCTION BOX | 32 | INSTALL NEW CONTROLLER |
| 2 | INSTALL PVC CONDUIT | 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE | 13 | INSTALL STANDARD JUNCTION BOX | 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT | 3 | INSTALL AERIAL SPLICE ENCLOSURE | 14 | REMOVE EXISTING JUNCTION BOX | 34 | INSTALL GENERATOR POWER INLET BOX |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD | 4 | INSTALL POLE MOUNTED SPLICE CABINET | 15 | INSTALL WOOD POLE | 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING | 5 | INSTALL BASE MOUNTED SPLICE CABINET | 16 | REMOVE EXISTING WOOD POLE | 36 | INSTALL UNIFIED CABLE |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT | 6 | REMOVE EXISTING SPLICE CABINET | 17 | INSTALL AERIAL GUY ASSEMBLY | 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 7 | INSTALL POLYETHYLENE CONDUIT | 7 | INSTALL TERMINAL SPLICE BOX | 18 | INSTALL STANDARD GUY ASSEMBLY | 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 8 | DIRECTIONAL DRILL CONDUIT | 8 | MODIFY EXISTING SPLICE ENCLOSURE | 19 | INSTALL SIDEWALK GUY ASSEMBLY | 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 9 | BORE AND JACK CONDUIT | 1 | INSTALL CABINET FOUNDATION | 20 | INSTALL MESSENGER CABLE | 40 | INSTALL RADIO TRANSCEIVER |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT | 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER | 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE | 41 | INSTALL SYSTEM LOOP |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT | 3 | MODIFY EXISTING CABINET FOUNDATION | 22 | REMOVE EXISTING COMMUNICATIONS CABLE | 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 12 | INSTALL CABLE(S) IN EXISTING RISER | 4 | INSTALL NEW 333 COMMUNICATION CABINET | 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE | 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 13 | INSTALL CABLE(S) IN NEW RISER | 5 | INSTALL NEW 332 BASE MOUNTED CABINET | 24 | INSTALL DELINEATOR MARKER | | |
| | | | | 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE | | |

| | | | |
|---|---|---|---|
| 44 | INSTALL LOCAL LOOP AMPLIFIER | 53 | INSTALL DSL ETHERNET SWITCH |
| 45 | INSTALL CITY WI-FI ANTENNA | 54 | INSTALL ETHERNET CABLE |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH | 55 | INSTALL TERMINAL SERVER |
| 47 | INSTALL CODEC | 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
| 48 | BOND MESSENGER CABLE TO POLE GROUND | 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION | 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |
| 50 | INSTALL ANTENNA CABLE | | |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT | | |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT | | |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

PLANS PREPARED IN THE OFFICE OF:

Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000

Traffic Engineering and Safety Systems Branch
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/27/08 DATE

CADD Filename: ...\Sht0561.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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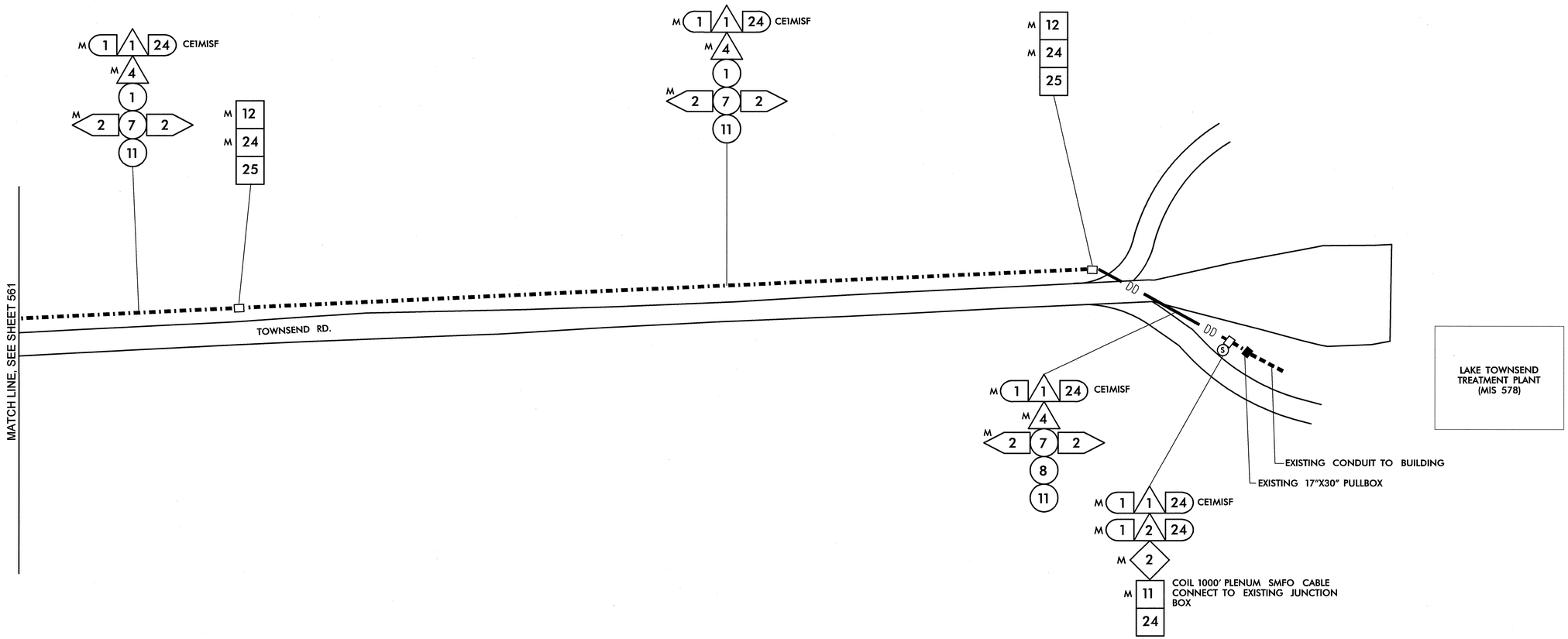
| U-4711 | 562 |




| | |
|---|---|
| 1 | INSTALL SMFO CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE |
| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
| 6 | REUSE GDOT SMFO CABLE |
| 1 | TRENCH |
| 2 | INSTALL PVC CONDUIT |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT |
| 7 | INSTALL POLYETHYLENE CONDUIT |
| 8 | DIRECTIONAL DRILL CONDUIT |
| 9 | BORE AND JACK CONDUIT |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT |
| 12 | INSTALL CABLE(S) IN EXISTING RISER |
| 13 | INSTALL CABLE(S) IN NEW RISER |
| 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE |
| 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET |
| 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET |
| 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING |
| 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET |
| 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE |
| 3 | INSTALL AERIAL SPLICE ENCLOSURE |
| 4 | INSTALL POLE MOUNTED SPLICE CABINET |
| 5 | INSTALL BASE MOUNTED SPLICE CABINET |
| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
| 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX |
| 12 | INSTALL OVERSIZED JUNCTION BOX |
| 13 | INSTALL STANDARD JUNCTION BOX |
| 14 | REMOVE EXISTING JUNCTION BOX |
| 15 | INSTALL WOOD POLE |
| 16 | REMOVE EXISTING WOOD POLE |
| 17 | INSTALL AERIAL GUY ASSEMBLY |
| 18 | INSTALL STANDARD GUY ASSEMBLY |
| 19 | INSTALL SIDEWALK GUY ASSEMBLY |
| 20 | INSTALL MESSENGER CABLE |
| 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE |
| 22 | REMOVE EXISTING COMMUNICATIONS CABLE |
| 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE |
| 24 | INSTALL DELINEATOR MARKER |
| 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE |
| 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 30 | INSTALL NEW ELECTRICAL SERVICE |
| 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 32 | INSTALL NEW CONTROLLER |
| 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 34 | INSTALL GENERATOR POWER INLET BOX |
| 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 36 | INSTALL UNIFIED CABLE |
| 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 40 | INSTALL RADIO TRANSCEIVER |
| 41 | INSTALL SYSTEM LOOP |
| 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 44 | INSTALL LOCAL LOOP AMPLIFIER |
| 45 | INSTALL CITY WI-FI ANTENNA |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH |
| 47 | INSTALL CODEC |
| 48 | BOND MESSENGER CABLE TO POLE GROUND |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION |
| 50 | INSTALL ANTENNA CABLE |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT |
| 53 | INSTALL DSL ETHERNET SWITCH |
| 54 | INSTALL ETHERNET CABLE |
| 55 | INSTALL TERMINAL SERVER |
| 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
| 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

PLANS PREPARED IN THE OFFICE OF:

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(919) 677-2000

750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 4/17/08

CADD Filename: ...\Sht0562.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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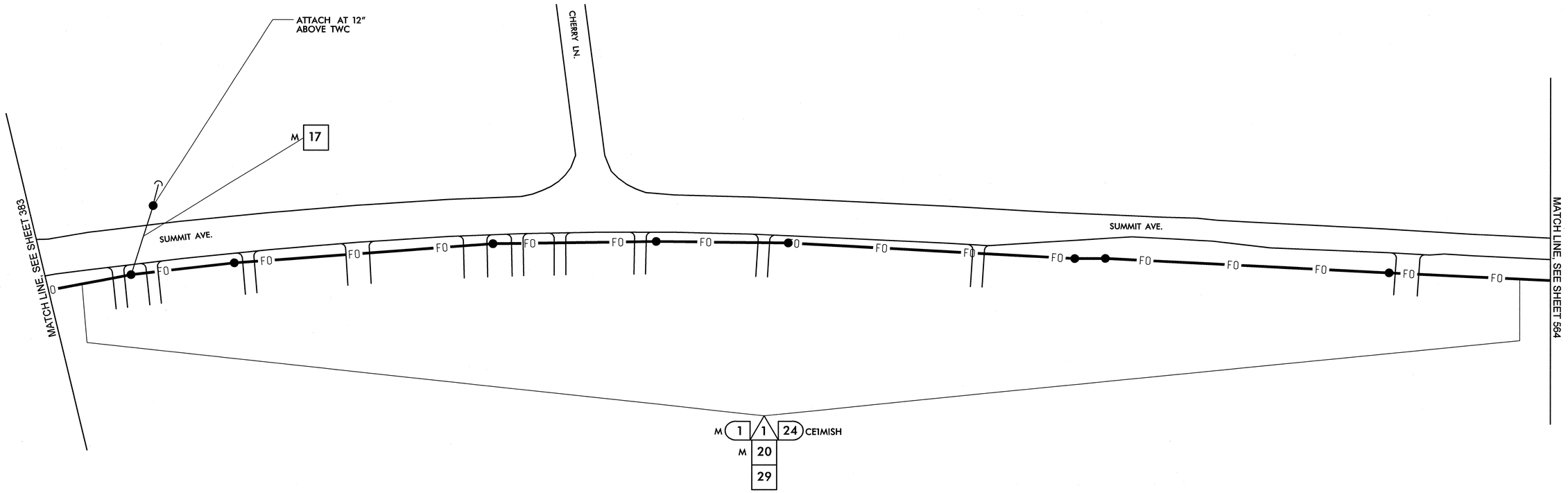
| U-4711 | 563 |




| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | INSTALL SMFO CABLE | 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE | 6 | INSTALL NEW 336S CABINET | 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE | 44 | INSTALL LOCAL LOOP AMPLIFIER | 53 | INSTALL DSL ETHERNET SWITCH |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE | 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 7 | INSTALL CCTV CAMERA ASSEMBLY | 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE | 45 | INSTALL CITY WI-FI ANTENNA | 54 | INSTALL ETHERNET CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE | 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 8 | INSTALL CCTV CAMERA WOOD POLE | 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE | 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH | 55 | INSTALL TERMINAL SERVER |
| 4 | INSTALL TRACER WIRE | 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET | 9 | INSTALL CCTV METAL POLE AND FOUNDATION | 29 | LASH CABLE(S) TO NEW MESSENGER CABLE | 47 | INSTALL CODEC | 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
| 5 | REUSE NCDOT SMFO CABLE | 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET | 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX | 30 | INSTALL NEW ELECTRICAL SERVICE | 48 | BOND MESSENGER CABLE TO POLE GROUND | 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 6 | REUSE GDOT SMFO CABLE | 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING | 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX | 31 | MODIFY EXISTING ELECTRICAL SERVICE | 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION | 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |
| 1 | TRENCH | 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET | 12 | INSTALL OVERSIZED JUNCTION BOX | 32 | INSTALL NEW CONTROLLER | 50 | INSTALL ANTENNA CABLE | | |
| 2 | INSTALL PVC CONDUIT | 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE | 13 | INSTALL STANDARD JUNCTION BOX | 33 | INSTALL EXISTING CABLE IN NEW CABINET | 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT | | |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT | 3 | INSTALL AERIAL SPLICE ENCLOSURE | 14 | REMOVE EXISTING JUNCTION BOX | 34 | INSTALL GENERATOR POWER INLET BOX | 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT | | |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD | 4 | INSTALL POLE MOUNTED SPLICE CABINET | 15 | INSTALL WOOD POLE | 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH | | | | |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING | 5 | INSTALL BASE MOUNTED SPLICE CABINET | 16 | REMOVE EXISTING WOOD POLE | 36 | INSTALL UNIFIED CABLE | | | | |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT | 6 | REMOVE EXISTING SPLICE CABINET | 17 | INSTALL AERIAL GUY ASSEMBLY | 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET | | | | |
| 7 | INSTALL POLYETHYLENE CONDUIT | 7 | INSTALL TERMINAL SPLICE BOX | 18 | INSTALL STANDARD GUY ASSEMBLY | 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA | | | | |
| 8 | DIRECTIONAL DRILL CONDUIT | 8 | MODIFY EXISTING SPLICE ENCLOSURE | 19 | INSTALL SIDEWALK GUY ASSEMBLY | 39 | INSTALL OMNI-DIRECTIONAL ANTENNA | | | | |
| 9 | BORE AND JACK CONDUIT | 1 | INSTALL CABINET FOUNDATION | 20 | INSTALL MESSENGER CABLE | 40 | INSTALL RADIO TRANSCEIVER | | | | |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT | 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER | 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE | 41 | INSTALL SYSTEM LOOP | | | | |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT | 3 | MODIFY EXISTING CABINET FOUNDATION | 22 | REMOVE EXISTING COMMUNICATIONS CABLE | 42 | INSTALL SYSTEM LOOP AMPLIFIER | | | | |
| 12 | INSTALL CABLE(S) IN EXISTING RISER | 4 | INSTALL NEW 333 COMMUNICATION CABINET | 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE | 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE | | | | |
| 13 | INSTALL CABLE(S) IN NEW RISER | 5 | INSTALL NEW 332 BASE MOUNTED CABINET | 24 | INSTALL DELINEATOR MARKER | | | | | | |
| | | | | 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE | | | | | | |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

PLANS PREPARED IN THE OFFICE OF:

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Traffic Engineering and Safety Systems Branch
Intelligent Transportation Systems
DIVISION OF HIGHWAYS
DEPT. OF TRANSPORTATION
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

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| PLAN DATE: FEBRUARY, 2008 | REVIEWED BY: K.W. SMITH |
| PREPARED BY: K.D. VANPATTEN | REVIEWED BY: M.W. DUNZO |

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 4/17/08

CADD Filename: ...\Sht0563.dgn

2/20/2008
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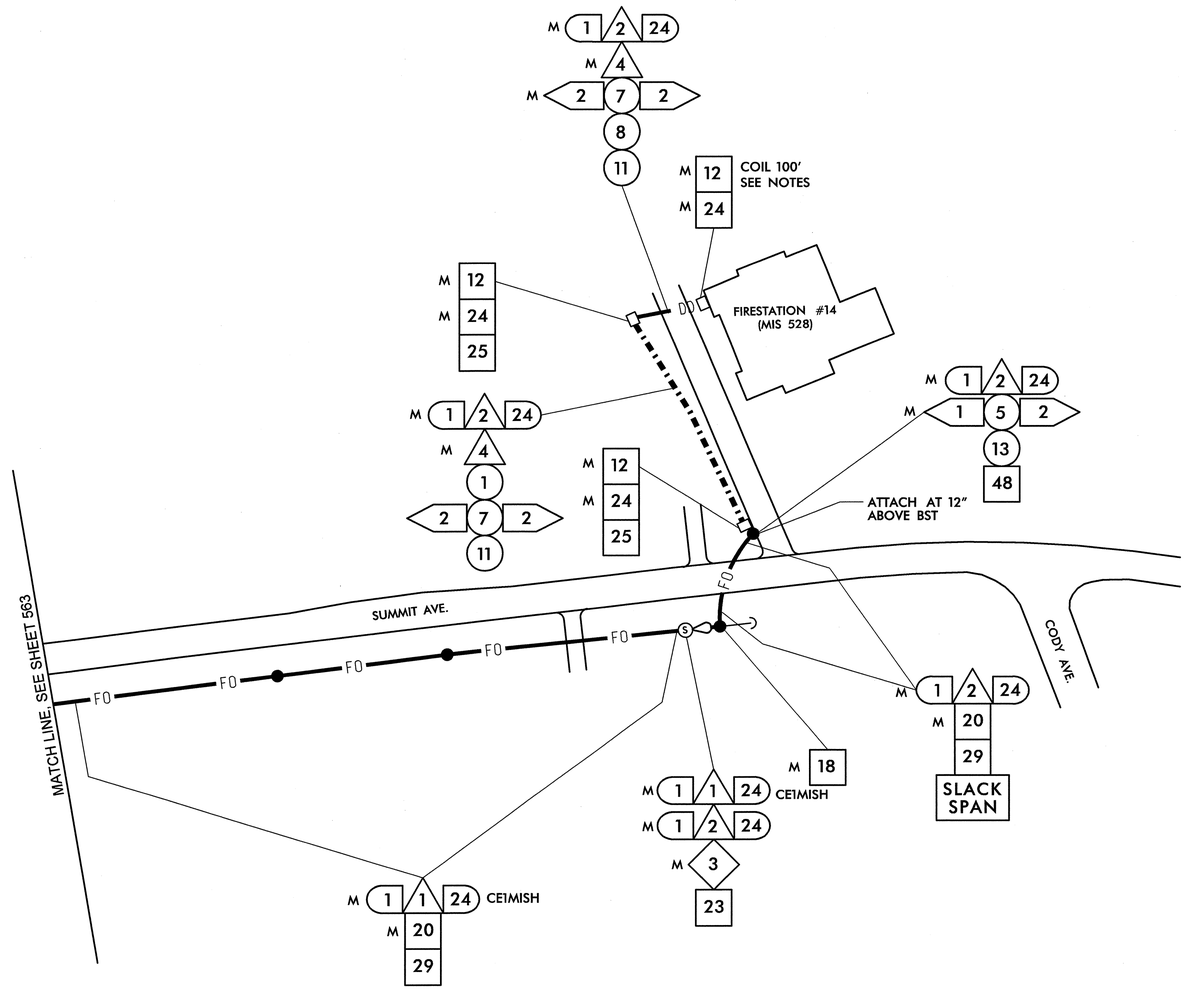
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-4711 | 564 |




## NOTES (THIS SHEET ONLY)

1. SEE BUILDING ENTRANCE DETAIL FOR ROUTING INTO BUILDING

| | |
|---|---|
| 1 | INSTALL SMFO CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE |
| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
| 6 | REUSE GDOT SMFO CABLE |
| 1 | TRENCH |
| 2 | INSTALL PVC CONDUIT |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD |
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| 9 | BORE AND JACK CONDUIT |
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| 11 | INSTALL CABLE(S) IN NEW CONDUIT |
| 12 | INSTALL CABLE(S) IN EXISTING RISER |
| 13 | INSTALL CABLE(S) IN NEW RISER |
| 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE |
| 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET |
| 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET |
| 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING |
| 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET |
| 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE |
| 3 | INSTALL AERIAL SPLICE ENCLOSURE |
| 4 | INSTALL POLE MOUNTED SPLICE CABINET |
| 5 | INSTALL BASE MOUNTED SPLICE CABINET |
| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
| 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX |
| 12 | INSTALL OVERSIZED JUNCTION BOX |
| 13 | INSTALL STANDARD JUNCTION BOX |
| 14 | REMOVE EXISTING JUNCTION BOX |
| 15 | INSTALL WOOD POLE |
| 16 | REMOVE EXISTING WOOD POLE |
| 17 | INSTALL AERIAL GUY ASSEMBLY |
| 18 | INSTALL STANDARD GUY ASSEMBLY |
| 19 | INSTALL SIDEWALK GUY ASSEMBLY |
| 20 | INSTALL MESSENGER CABLE |
| 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE |
| 22 | REMOVE EXISTING COMMUNICATIONS CABLE |
| 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE |
| 24 | INSTALL DELINEATOR MARKER |
| 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE |
| 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
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| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH |
| 47 | INSTALL CODEC |
| 48 | BOND MESSENGER CABLE TO POLE GROUND |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION |
| 50 | INSTALL ANTENNA CABLE |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT |
| 53 | INSTALL DSL ETHERNET SWITCH |
| 54 | INSTALL ETHERNET CABLE |
| 55 | INSTALL TERMINAL SERVER |
| 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
| 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

PLANS PREPARED IN THE OFFICE OF:

Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000

Intelligent Transportation Systems
Traffic Engineering and Safety Systems Branch
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 4/17/08

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2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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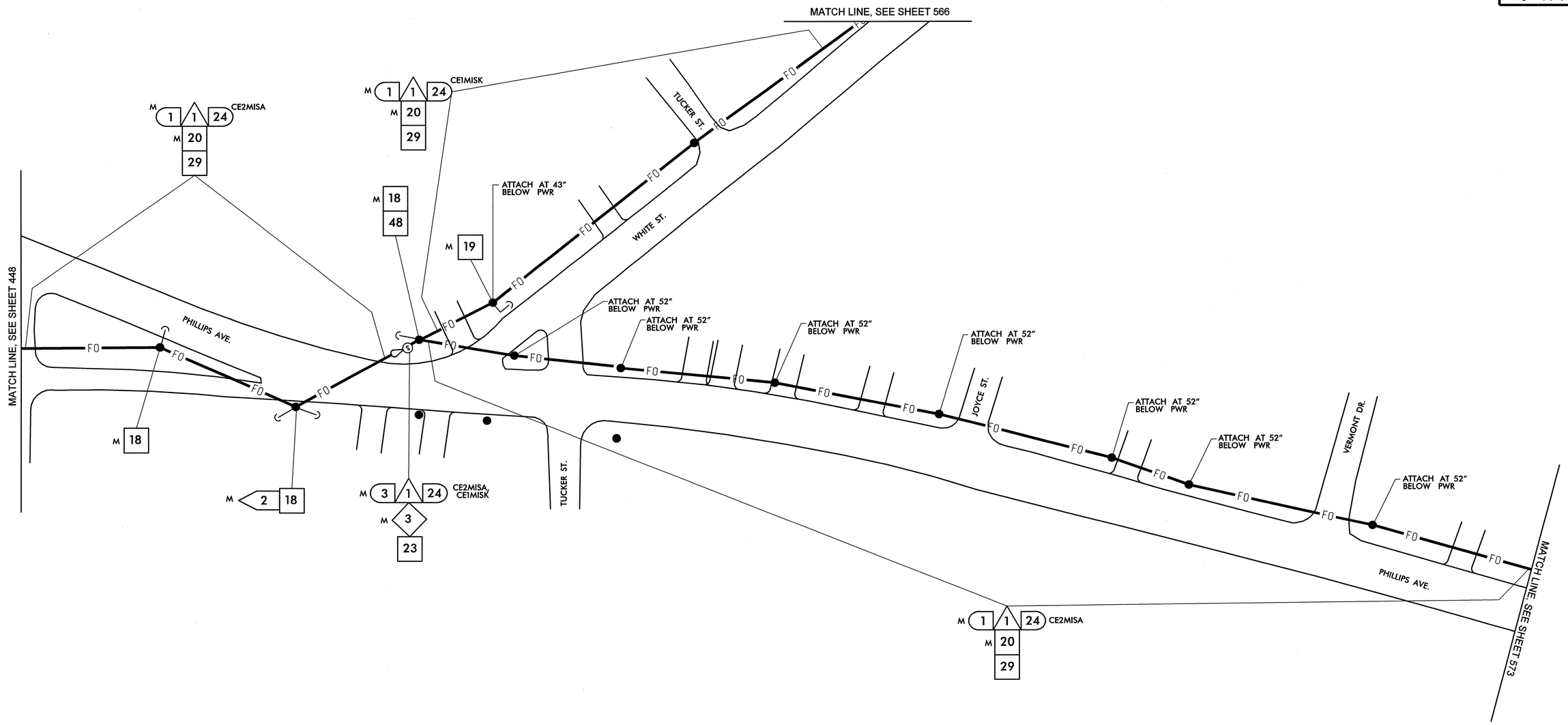
| U-4711 | 565 |




| | | | | | |
|---|---|---|---|---|---|
| 1 INSTALL SMFO CABLE | 14 INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE | 6 INSTALL NEW 336S CABINET | 26 STORE 100 FEET OF EACH COMMUNICATIONS CABLE | 44 INSTALL LOCAL LOOP AMPLIFIER | 53 INSTALL DSL ETHERNET SWITCH |
| 2 INSTALL PLENUM RATED FIBER OPTIC CABLE | 15 INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 7 INSTALL CCTV CAMERA ASSEMBLY | 27 LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE | 45 INSTALL CITY WI-FI ANTENNA | 54 INSTALL ETHERNET CABLE |
| 3 INSTALL FIBER OPTIC DROP CABLE | 16 INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 8 INSTALL CCTV CAMERA WOOD POLE | 28 LASH CABLE(S) TO EXISTING MESSENGER CABLE | 46 INSTALL HUB 10-GIGABIT ETHERNET SWITCH | 55 INSTALL TERMINAL SERVER |
| 4 INSTALL TRACER WIRE | 17 INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET | 9 INSTALL CCTV METAL POLE AND FOUNDATION | 29 LASH CABLE(S) TO NEW MESSENGER CABLE | 47 INSTALL CODEC | 56 INSTALL MICROWAVE VEHICLE DETECTOR |
| 5 REUSE NCDOT SMFO CABLE | 18 INSTALL NEW RISER INTO POLE MOUNTED CABINET | 10 INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX | 30 INSTALL NEW ELECTRICAL SERVICE | 48 BOND MESSENGER CABLE TO POLE GROUND | 57 INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 6 REUSE GDOT SMFO CABLE | 19 REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING | 11 INSTALL SPECIAL OVERSIZED JUNCTION BOX | 31 MODIFY EXISTING ELECTRICAL SERVICE | 49 INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION | 58 INSTALL WIRELESS ACCESS POINT POWER CABLE |
| 1 TRENCH | 1 INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET | 12 INSTALL OVERSIZED JUNCTION BOX | 32 INSTALL NEW CONTROLLER | 50 INSTALL ANTENNA CABLE | |
| 2 INSTALL PVC CONDUIT | 2 INSTALL UNDERGROUND SPLICE ENCLOSURE | 13 INSTALL STANDARD JUNCTION BOX | 33 INSTALL EXISTING CABLE IN NEW CABINET | 51 RECONNECT RAILROAD PREEMPTION EQUIPMENT | |
| 3 INSTALL RIGID, GALVANIZED STEEL CONDUIT | 3 INSTALL AERIAL SPLICE ENCLOSURE | 14 REMOVE EXISTING JUNCTION BOX | 34 INSTALL GENERATOR POWER INLET BOX | 52 RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT | |
| 4 INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD | 4 INSTALL POLE MOUNTED SPLICE CABINET | 15 INSTALL WOOD POLE | 35 INSTALL LOCAL GIGABIT ETHERNET SWITCH | | |
| 5 INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING | 5 INSTALL BASE MOUNTED SPLICE CABINET | 16 REMOVE EXISTING WOOD POLE | 36 INSTALL UNIFIED CABLE | | |
| 6 INSTALL OUTER-DUCT POLYETHYLENE CONDUIT | 6 REMOVE EXISTING SPLICE CABINET | 17 INSTALL AERIAL GUY ASSEMBLY | 37 INSTALL POLE MOUNTED EQUIPMENT CABINET | | |
| 7 INSTALL POLYETHYLENE CONDUIT | 7 INSTALL TERMINAL SPLICE BOX | 18 INSTALL STANDARD GUY ASSEMBLY | 38 INSTALL UNI-DIRECTIONAL YAGI ANTENNA | | |
| 8 DIRECTIONAL DRILL CONDUIT | 8 MODIFY EXISTING SPLICE ENCLOSURE | 19 INSTALL SIDEWALK GUY ASSEMBLY | 39 INSTALL OMNI-DIRECTIONAL ANTENNA | | |
| 9 BORE AND JACK CONDUIT | 1 INSTALL CABINET FOUNDATION | 20 INSTALL MESSENGER CABLE | 40 INSTALL RADIO TRANSCEIVER | | |
| 10 INSTALL CABLE(S) IN EXISTING CONDUIT | 2 REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER | 21 REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE | 41 INSTALL SYSTEM LOOP | | |
| 11 INSTALL CABLE(S) IN NEW CONDUIT | 3 MODIFY EXISTING CABINET FOUNDATION | 22 REMOVE EXISTING COMMUNICATIONS CABLE | 42 INSTALL SYSTEM LOOP AMPLIFIER | | |
| 12 INSTALL CABLE(S) IN EXISTING RISER | 4 INSTALL NEW 333 COMMUNICATION CABINET | 23 INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE | 43 INSTALL SYSTEM LOOP LEAD-IN CABLE | | |
| 13 INSTALL CABLE(S) IN NEW RISER | 5 INSTALL NEW 332 BASE MOUNTED CABINET | 24 INSTALL DELINEATOR MARKER | | | |
| | | 25 STORE 30 FEET OF EACH COMMUNICATIONS CABLE | | | |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


PLANS PREPARED IN THE OFFICE OF:
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750 Greenfield Pkwy., Garner, NC 27529


SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 — GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 — REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN — REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE — DATE 2/12/08

CADD Filename: ...\Sht0565.dgn

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| PROJECT REFERENCE NO. | SHEET NO. |
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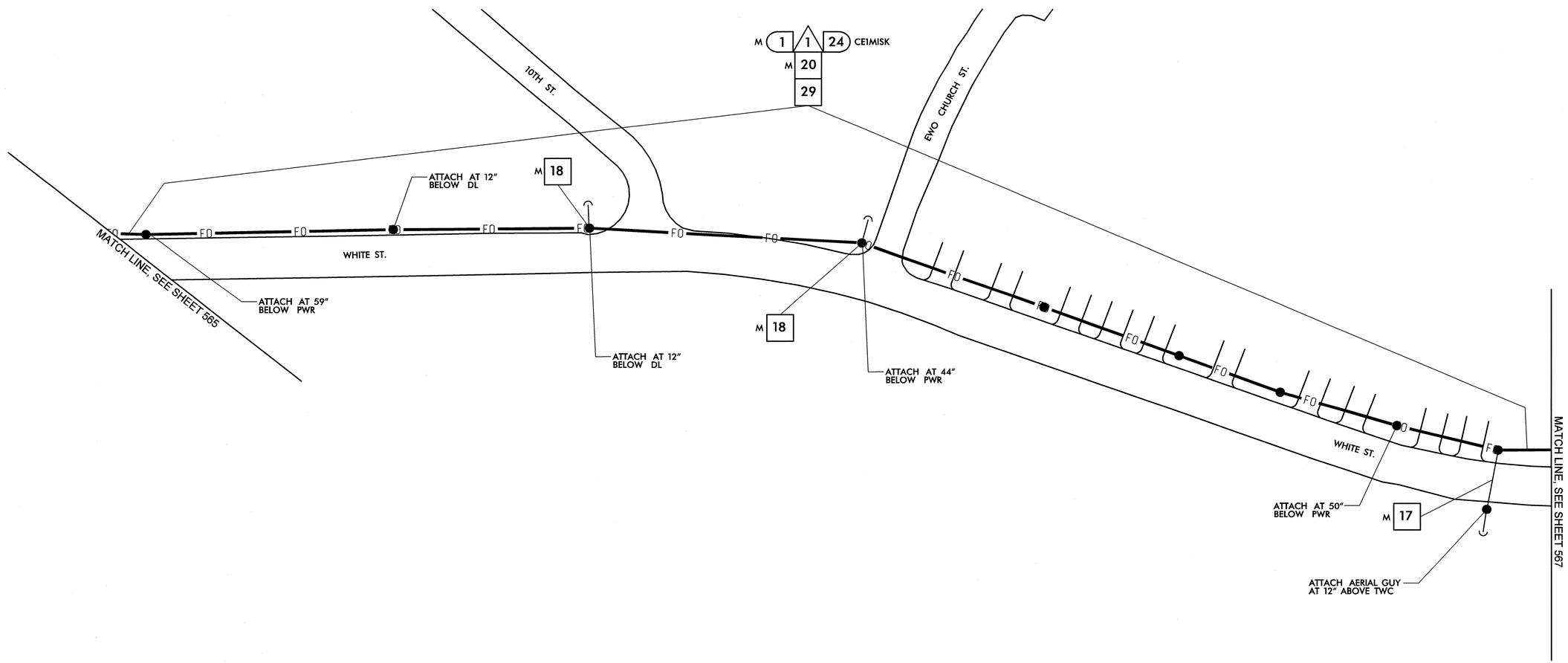


1. INSTALL SMFO CABLE
2. INSTALL PLENUM RATED FIBER OPTIC CABLE
3. INSTALL FIBER OPTIC DROP CABLE
4. INSTALL TRACER WIRE
5. REUSE NCDOT SMFO CABLE
6. REUSE GDOT SMFO CABLE

1. TRENCH
2. INSTALL PVC CONDUIT
3. INSTALL RIGID, GALVANIZED STEEL CONDUIT
4. INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
5. INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING
6. INSTALL OUTER-DUCT POLYETHYLENE CONDUIT
7. INSTALL POLYETHYLENE CONDUIT
8. DIRECTIONAL DRILL CONDUIT
9. BORE AND JACK CONDUIT
10. INSTALL CABLE(S) IN EXISTING CONDUIT
11. INSTALL CABLE(S) IN NEW CONDUIT
12. INSTALL CABLE(S) IN EXISTING RISER
13. INSTALL CABLE(S) IN NEW RISER
14. INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE
15. INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
16. INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
17. INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET
18. INSTALL NEW RISER INTO POLE MOUNTED CABINET
19. REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING

1. INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET
2. INSTALL UNDERGROUND SPLICE ENCLOSURE
3. INSTALL AERIAL SPLICE ENCLOSURE
4. INSTALL POLE MOUNTED SPLICE CABINET
5. INSTALL BASE MOUNTED SPLICE CABINET
6. REMOVE EXISTING SPLICE CABINET
7. INSTALL TERMINAL SPLICE BOX
8. MODIFY EXISTING SPLICE ENCLOSURE

1. INSTALL CABINET FOUNDATION
2. REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER
3. MODIFY EXISTING CABINET FOUNDATION
4. INSTALL NEW 333 COMMUNICATION CABINET
5. INSTALL NEW 332 BASE MOUNTED CABINET
6. INSTALL NEW 336S CABINET
7. INSTALL CCTV CAMERA ASSEMBLY
8. INSTALL CCTV CAMERA WOOD POLE
9. INSTALL CCTV METAL POLE AND FOUNDATION
10. INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX
11. INSTALL SPECIAL OVERSIZED JUNCTION BOX
12. INSTALL OVERSIZED JUNCTION BOX
13. INSTALL STANDARD JUNCTION BOX
14. REMOVE EXISTING JUNCTION BOX
15. INSTALL WOOD POLE
16. REMOVE EXISTING WOOD POLE
17. INSTALL AERIAL GUY ASSEMBLY
18. INSTALL STANDARD GUY ASSEMBLY
19. INSTALL SIDEWALK GUY ASSEMBLY
20. INSTALL MESSENGER CABLE
21. REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE
22. REMOVE EXISTING COMMUNICATIONS CABLE
23. INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE
24. INSTALL DELINEATOR MARKER
25. STORE 30 FEET OF EACH COMMUNICATIONS CABLE
26. STORE 100 FEET OF EACH COMMUNICATIONS CABLE
27. LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE
28. LASH CABLE(S) TO EXISTING MESSENGER CABLE
29. LASH CABLE(S) TO NEW MESSENGER CABLE
30. INSTALL NEW ELECTRICAL SERVICE
31. MODIFY EXISTING ELECTRICAL SERVICE
32. INSTALL NEW CONTROLLER
33. INSTALL EXISTING CABLE IN NEW CABINET
34. INSTALL GENERATOR POWER INLET BOX
35. INSTALL LOCAL GIGABIT ETHERNET SWITCH
36. INSTALL UNIFIED CABLE
37. INSTALL POLE MOUNTED EQUIPMENT CABINET
38. INSTALL UNI-DIRECTIONAL YAGI ANTENNA
39. INSTALL OMNI-DIRECTIONAL ANTENNA
40. INSTALL RADIO TRANSCEIVER
41. INSTALL SYSTEM LOOP
42. INSTALL SYSTEM LOOP AMPLIFIER
43. INSTALL SYSTEM LOOP LEAD-IN CABLE
44. INSTALL LOCAL LOOP AMPLIFIER
45. INSTALL CITY WI-FI ANTENNA
46. INSTALL HUB 10-GIGABIT ETHERNET SWITCH
47. INSTALL CODEC
48. BOND MESSENGER CABLE TO POLE GROUND
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58. INSTALL WIRELESS ACCESS POINT POWER CABLE

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


PLANS PREPARED IN THE OFFICE OF:
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Power Engineering and Safety Second Approach
Intelligent Transportation Systems
DEPARTMENT OF TRANSPORTATION
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SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/20/08 DATE

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| PROJECT REFERENCE NO. | SHEET NO. |
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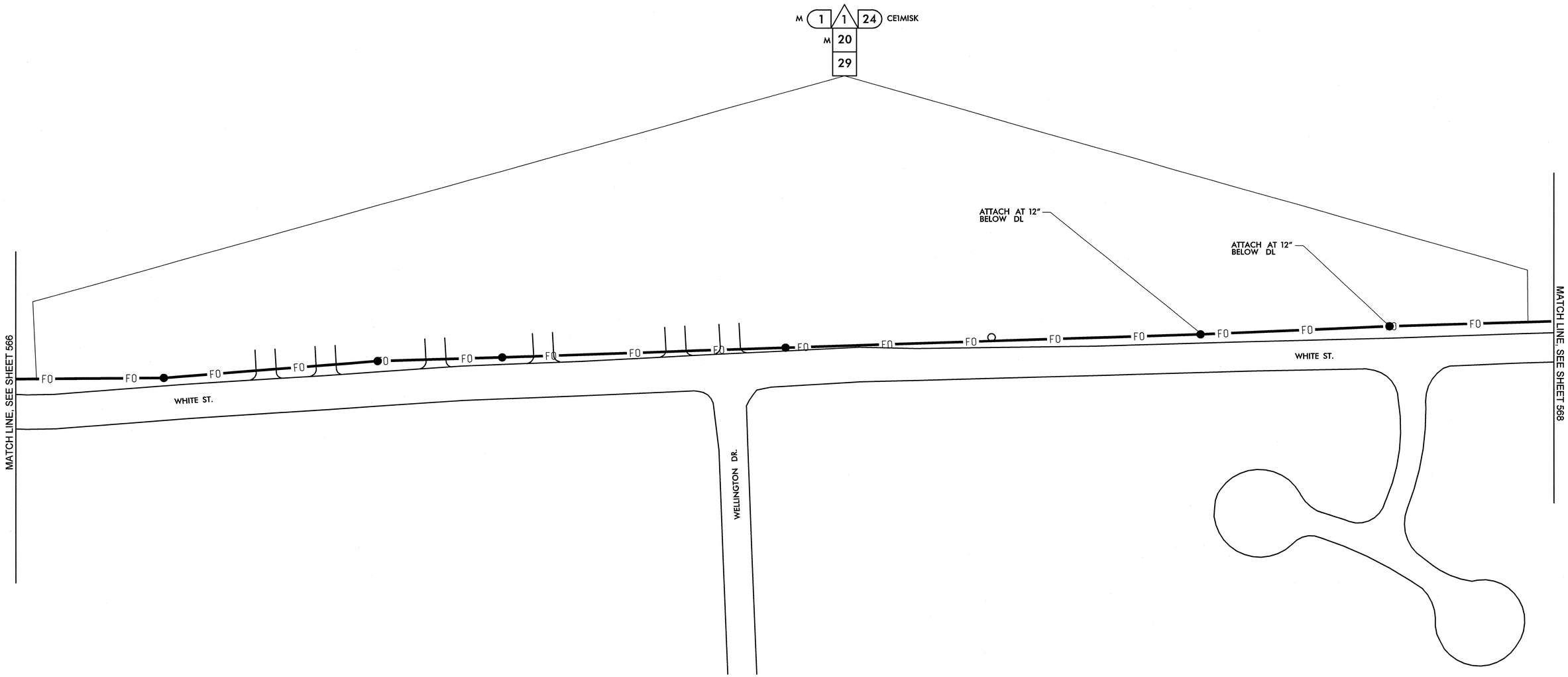
| U-4711 | 567 |

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|---|---|
| 1 | INSTALL SMFO CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE |
| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
| 6 | REUSE GDOT SMFO CABLE |
| 1 | TRENCH |
| 2 | INSTALL PVC CONDUIT |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT |
| 7 | INSTALL POLYETHYLENE CONDUIT |
| 8 | DIRECTIONAL DRILL CONDUIT |
| 9 | BORE AND JACK CONDUIT |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT |
| 12 | INSTALL CABLE(S) IN EXISTING RISER |
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| 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE |
| 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET |
| 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET |
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| 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET |
| 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE |
| 3 | INSTALL AERIAL SPLICE ENCLOSURE |
| 4 | INSTALL POLE MOUNTED SPLICE CABINET |
| 5 | INSTALL BASE MOUNTED SPLICE CABINET |
| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
| 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX |
| 12 | INSTALL OVERSIZED JUNCTION BOX |
| 13 | INSTALL STANDARD JUNCTION BOX |
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## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/20/08 DATE

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| PROJECT REFERENCE NO. | SHEET NO. |
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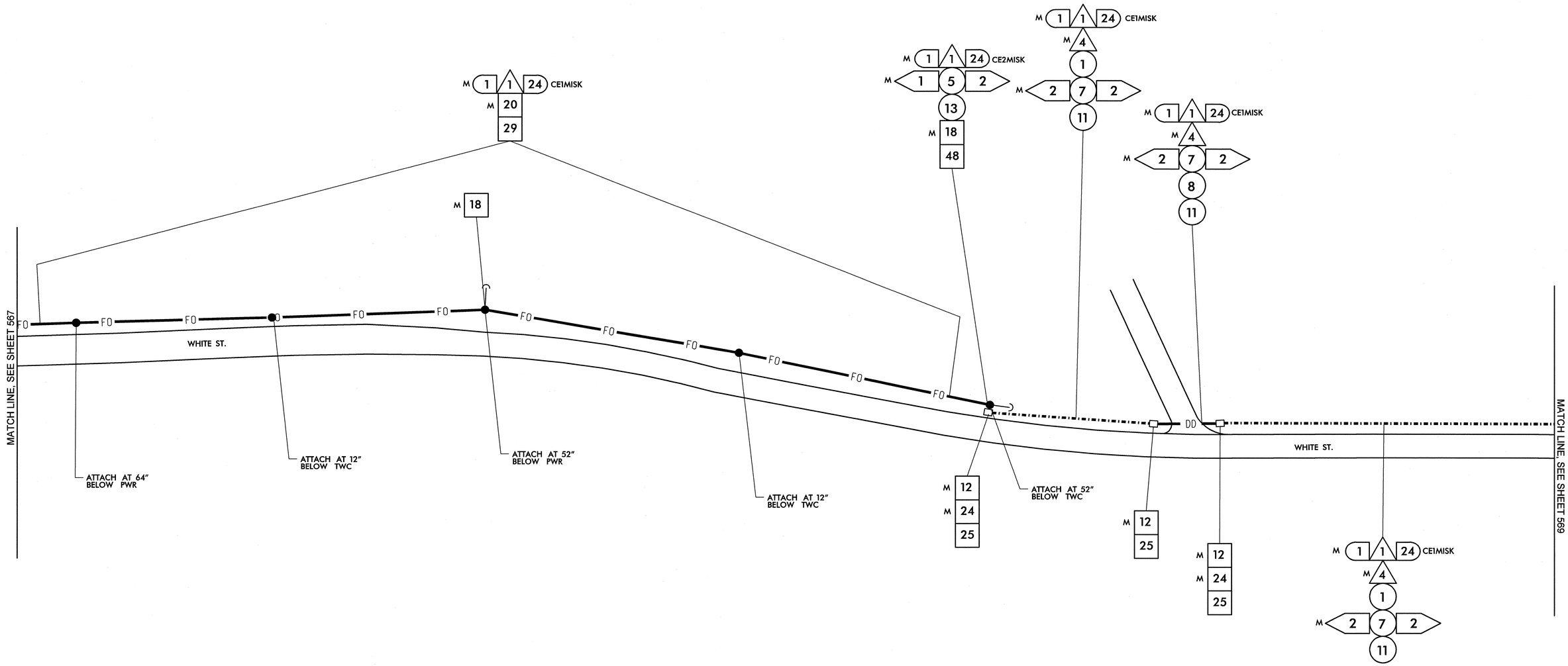
| U-4711 | 568 |

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|---|---|
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| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
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| 5 | INSTALL BASE MOUNTED SPLICE CABINET |
| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
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| 7 | INSTALL CCTV CAMERA ASSEMBLY |
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| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
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| 19 | INSTALL SIDEWALK GUY ASSEMBLY |
| 20 | INSTALL MESSENGER CABLE |
| 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE |
| 22 | REMOVE EXISTING COMMUNICATIONS CABLE |
| 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE |
| 24 | INSTALL DELINEATOR MARKER |
| 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE |
| 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 30 | INSTALL NEW ELECTRICAL SERVICE |
| 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 32 | INSTALL NEW CONTROLLER |
| 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 34 | INSTALL GENERATOR POWER INLET BOX |
| 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 36 | INSTALL UNIFIED CABLE |
| 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 40 | INSTALL RADIO TRANSCEIVER |
| 41 | INSTALL SYSTEM LOOP |
| 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 44 | INSTALL LOCAL LOOP AMPLIFIER |
| 45 | INSTALL CITY WI-FI ANTENNA |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH |
| 47 | INSTALL CODEC |
| 48 | BOND MESSENGER CABLE TO POLE GROUND |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION |
| 50 | INSTALL ANTENNA CABLE |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT |
| 53 | INSTALL DSL ETHERNET SWITCH |
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| 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
| 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

PLANS PREPARED IN THE OFFICE OF:

Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000

Traffic Engineering and Safety Systems Branch
Intelligent Transportation Systems
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/20/08 DATE

CADD Filename: ...\Sht0568.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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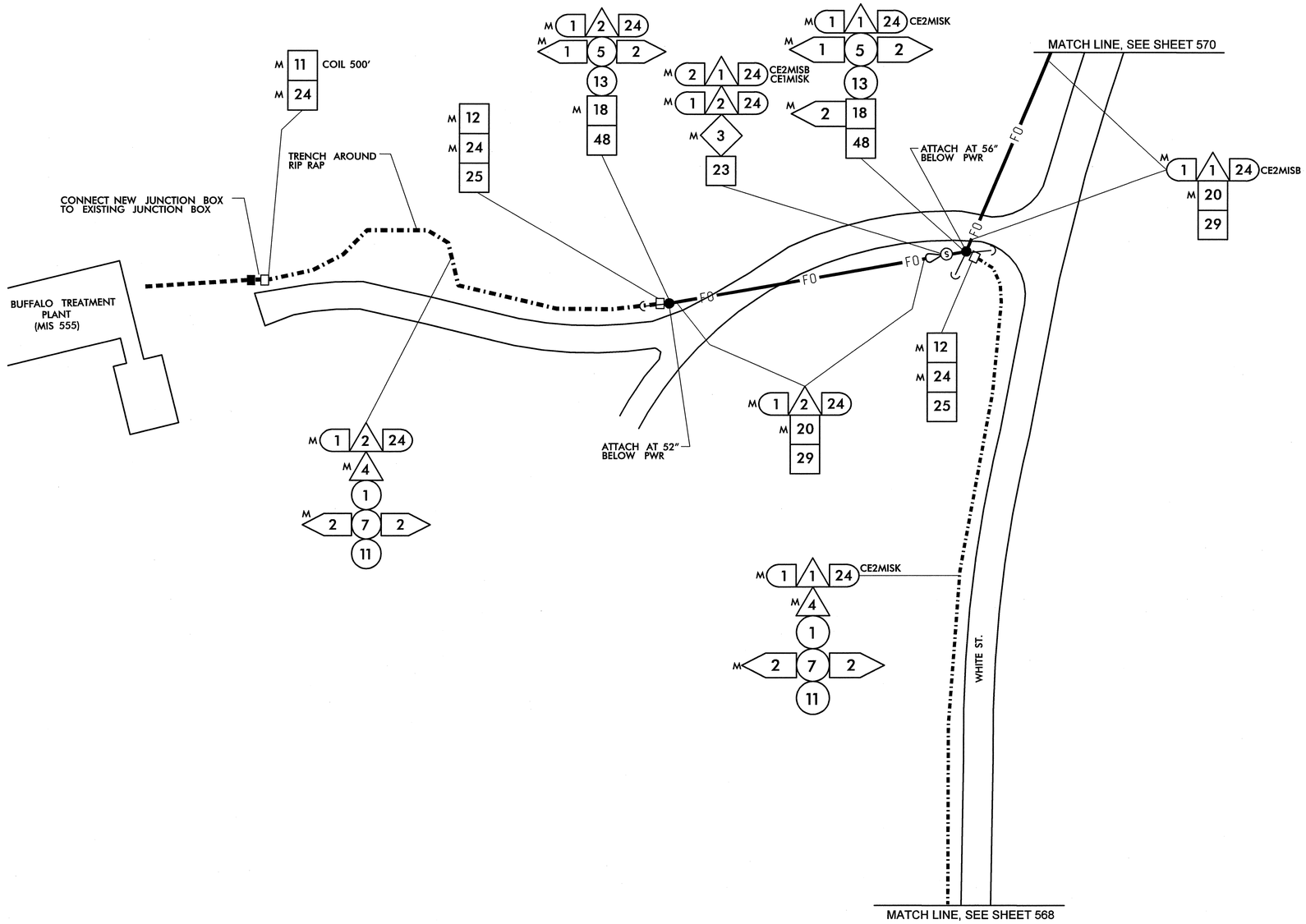
| U-4711 | 569 |




| | |
|---|---|
| 1 | INSTALL SMFO CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE |
| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
| 6 | REUSE GDOT SMFO CABLE |
| 1 | TRENCH |
| 2 | INSTALL PVC CONDUIT |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT |
| 7 | INSTALL POLYETHYLENE CONDUIT |
| 8 | DIRECTIONAL DRILL CONDUIT |
| 9 | BORE AND JACK CONDUIT |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT |
| 12 | INSTALL CABLE(S) IN EXISTING RISER |
| 13 | INSTALL CABLE(S) IN NEW RISER |
| 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE |
| 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET |
| 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET |
| 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING |
| 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET |
| 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE |
| 3 | INSTALL AERIAL SPLICE ENCLOSURE |
| 4 | INSTALL POLE MOUNTED SPLICE CABINET |
| 5 | INSTALL BASE MOUNTED SPLICE CABINET |
| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
| 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX |
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750 Greenfield Pkwy., Garner, NC 27529


SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/29/08

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2/29/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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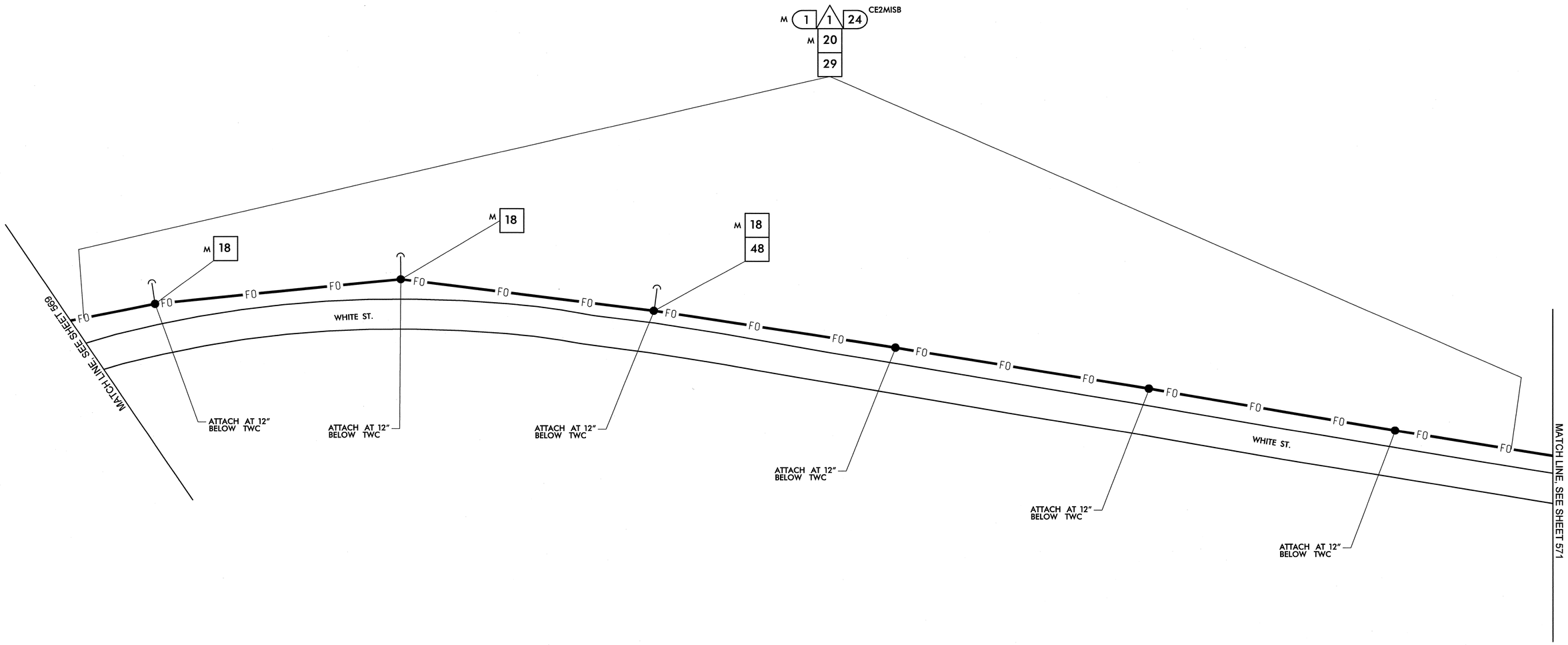
| U-4711 | 570 |

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| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
| 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX |
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| 41 | INSTALL SYSTEM LOOP |
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| 44 | INSTALL LOCAL LOOP AMPLIFIER |
| 45 | INSTALL CITY WI-FI ANTENNA |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH |
| 47 | INSTALL CODEC |
| 48 | BOND MESSENGER CABLE TO POLE GROUND |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION |
| 50 | INSTALL ANTENNA CABLE |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT |
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NOTE:
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PLANS PREPARED IN THE OFFICE OF:
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Traffic Engineering and Safety Systems Branch
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SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/20/08 DATE

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| PROJECT REFERENCE NO. | SHEET NO. |
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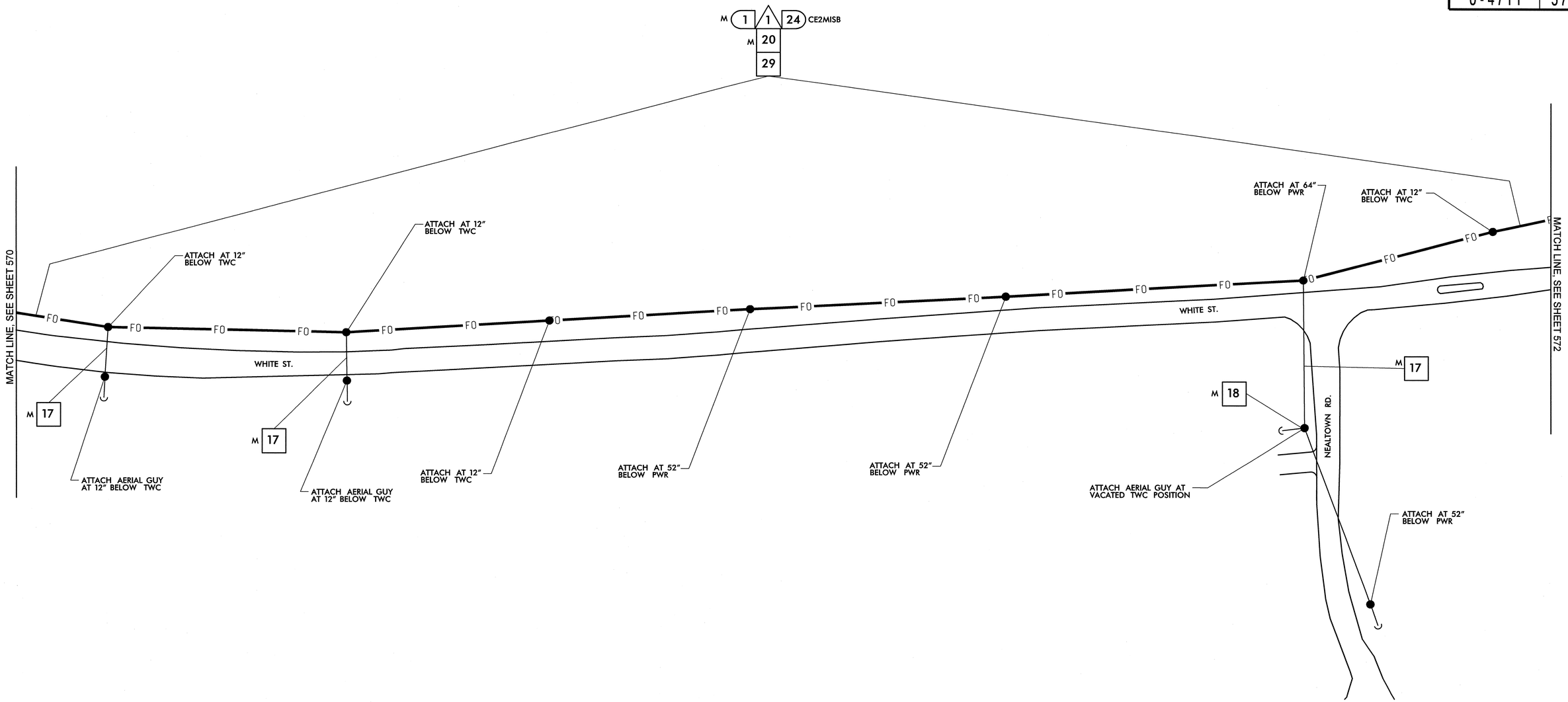
| U-4711 | 571 |

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|---|---|---|---|---|---|---|---|
| 1 | INSTALL SMFO CABLE | 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE | 6 | INSTALL NEW 336S CABINET | 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE | 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 7 | INSTALL CCTV CAMERA ASSEMBLY | 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE | 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 8 | INSTALL CCTV CAMERA WOOD POLE | 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 4 | INSTALL TRACER WIRE | 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET | 9 | INSTALL CCTV METAL POLE AND FOUNDATION | 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 5 | REUSE NCDOT SMFO CABLE | 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET | 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX | 30 | INSTALL NEW ELECTRICAL SERVICE |
| 6 | REUSE GDOT SMFO CABLE | 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING | 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX | 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 1 | TRENCH | 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET | 12 | INSTALL OVERSIZED JUNCTION BOX | 32 | INSTALL NEW CONTROLLER |
| 2 | INSTALL PVC CONDUIT | 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE | 13 | INSTALL STANDARD JUNCTION BOX | 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT | 3 | INSTALL AERIAL SPLICE ENCLOSURE | 14 | REMOVE EXISTING JUNCTION BOX | 34 | INSTALL GENERATOR POWER INLET BOX |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD | 4 | INSTALL POLE MOUNTED SPLICE CABINET | 15 | INSTALL WOOD POLE | 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING | 5 | INSTALL BASE MOUNTED SPLICE CABINET | 16 | REMOVE EXISTING WOOD POLE | 36 | INSTALL UNIFIED CABLE |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT | 6 | REMOVE EXISTING SPLICE CABINET | 17 | INSTALL AERIAL GUY ASSEMBLY | 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
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| 8 | DIRECTIONAL DRILL CONDUIT | 8 | MODIFY EXISTING SPLICE ENCLOSURE | 19 | INSTALL SIDEWALK GUY ASSEMBLY | 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 9 | BORE AND JACK CONDUIT | 1 | INSTALL CABINET FOUNDATION | 20 | INSTALL MESSENGER CABLE | 40 | INSTALL RADIO TRANSCEIVER |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT | 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER | 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE | 41 | INSTALL SYSTEM LOOP |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT | 3 | MODIFY EXISTING CABINET FOUNDATION | 22 | REMOVE EXISTING COMMUNICATIONS CABLE | 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 12 | INSTALL CABLE(S) IN EXISTING RISER | 4 | INSTALL NEW 333 COMMUNICATION CABINET | 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE | 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 13 | INSTALL CABLE(S) IN NEW RISER | 5 | INSTALL NEW 332 BASE MOUNTED CABINET | 24 | INSTALL DELINEATOR MARKER | | |
| | | | | 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE | | |

| | | | |
|---|---|---|---|
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Traffic Engineering and Safety Systems Branch
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SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

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| PLAN DATE: | FEBRUARY, 2008 | REVIEWED BY: | K.W. SMITH |
| PREPARED BY: | K.D. VANPATTEN | REVIEWED BY: | M.W. DUNZO |

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/20/08 DATE

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| PROJECT REFERENCE NO. | SHEET NO. |
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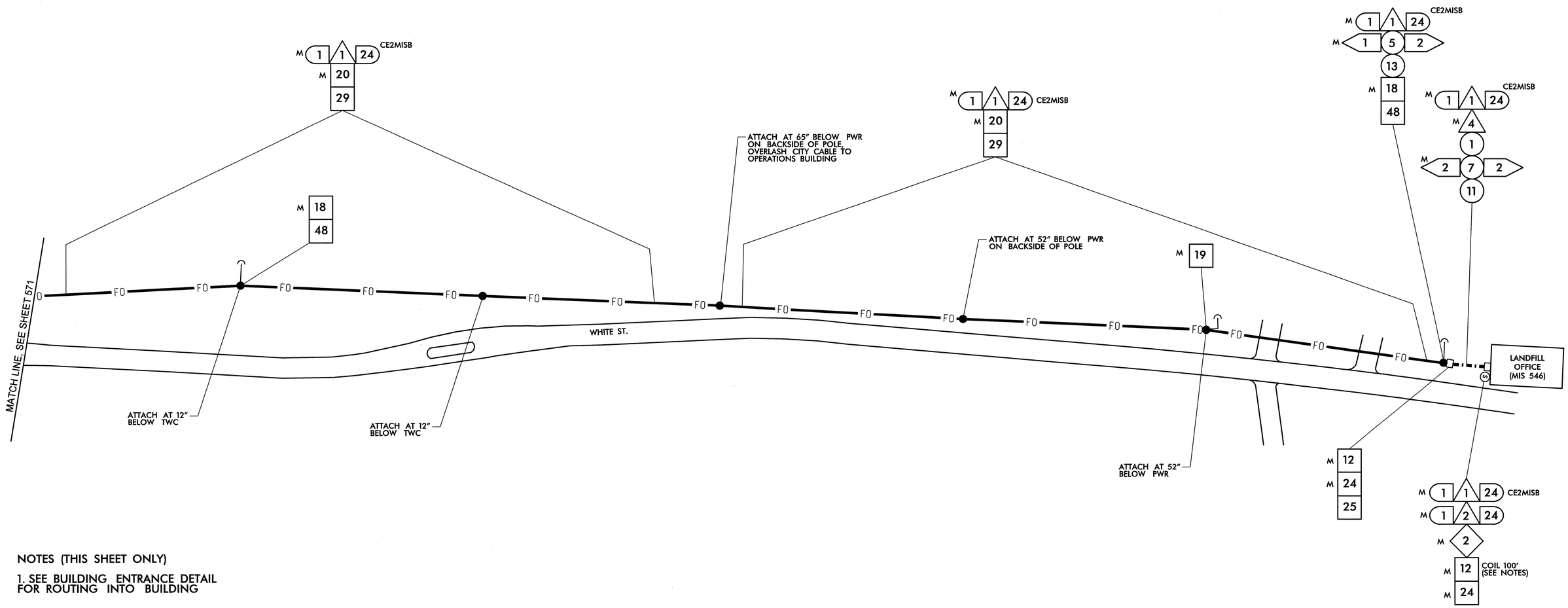


## NOTES (THIS SHEET ONLY)

1. SEE BUILDING ENTRANCE DETAIL FOR ROUTING INTO BUILDING

| | |
|---|---|
| 1 | INSTALL SMFO CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE |
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| 2 | INSTALL PVC CONDUIT |
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| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT |
| 7 | INSTALL POLYETHYLENE CONDUIT |
| 8 | DIRECTIONAL DRILL CONDUIT |
| 9 | BORE AND JACK CONDUIT |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT |
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| 12 | INSTALL CABLE(S) IN EXISTING RISER |
| 13 | INSTALL CABLE(S) IN NEW RISER |
| 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE |
| 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET |
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| 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET |
| 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE |
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| 4 | INSTALL POLE MOUNTED SPLICE CABINET |
| 5 | INSTALL BASE MOUNTED SPLICE CABINET |
| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
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PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
P.O. Box 33068
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(919) 677-2000



Traffic Engineering and Safety Systems Branch
Transportation Management Unit
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
750 Greenfield Pkwy., Garner, NC 27529


SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

| | |
|---|---|
| PLAN DATE: FEBRUARY, 2008 | REVIEWED BY: K.W. SMITH |
| PREPARED BY: K.D. VANPATTEN | REVIEWED BY: M.W. DUNZO |

| REVISIONS | INIT. | DATE |
|---|---|---|
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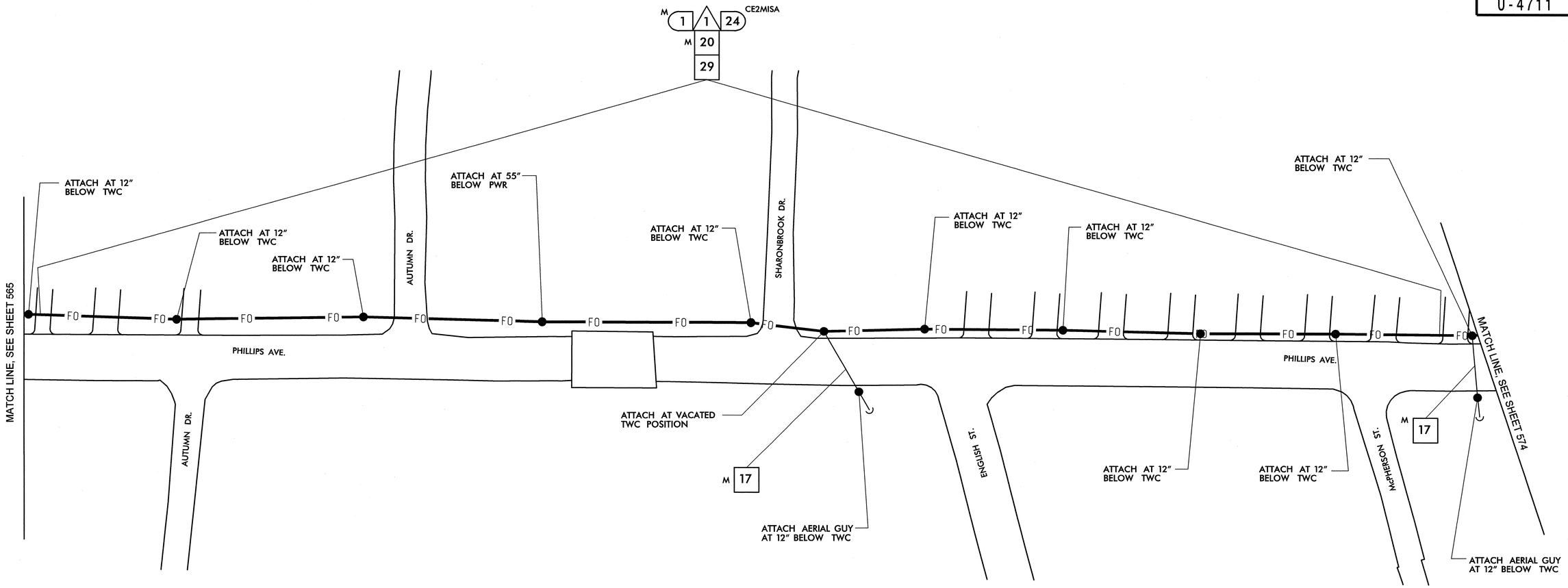
SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO
SIGNATURE DATE 2/29/08

CADD Filename: ...\Sht0572.dgn

2/29/2008
h:\systems\projects\U4711\62020 tg-boro mis\SH0572.dgn

| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-4711 | 573 |

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| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE |
| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
| 6 | REUSE GDOT SMFO CABLE |
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PLANS PREPARED IN THE OFFICE OF:
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750 Greenfield Pkwy., Garner, NC 27529


SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht0573.dgn

2/20/2008
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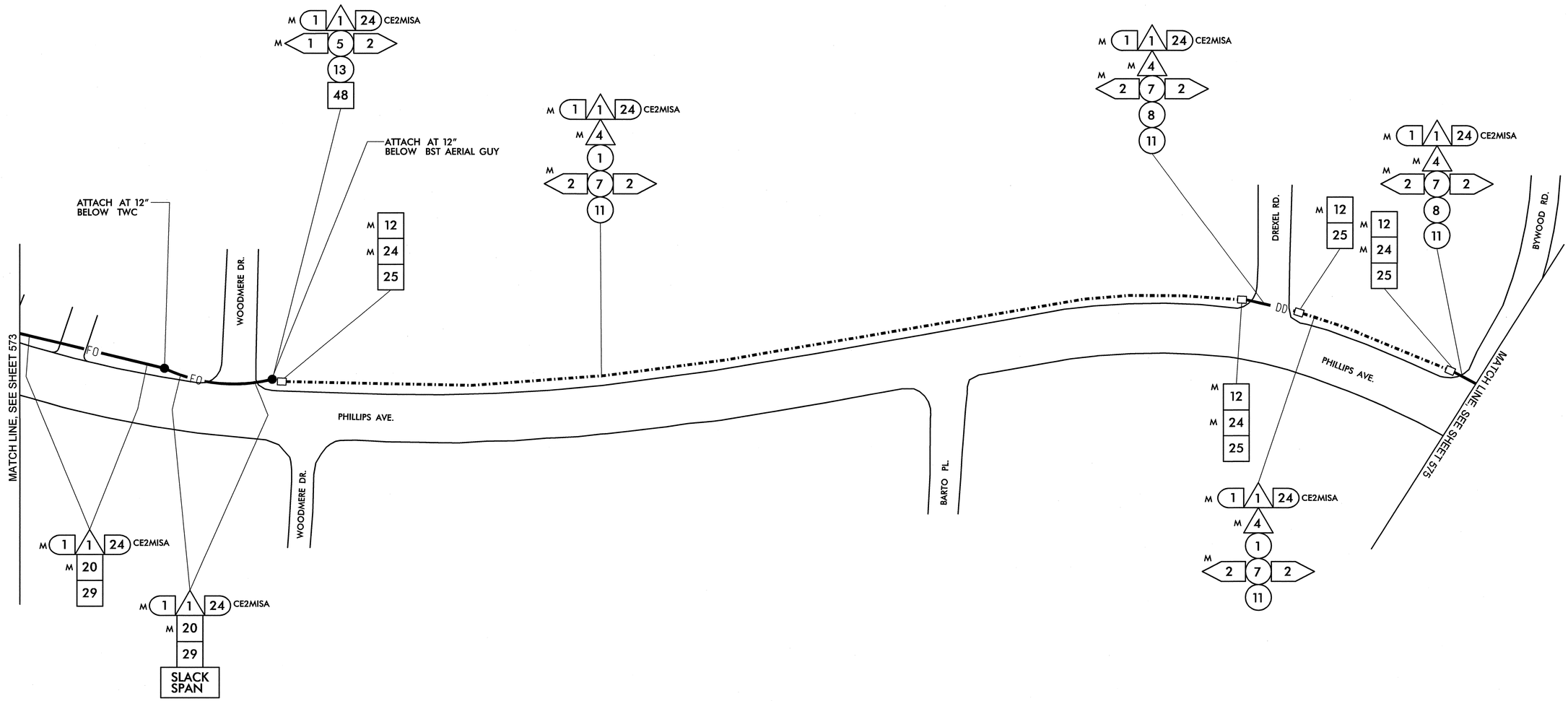
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-4711 | 574 |

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PLANS PREPARED IN THE OFFICE OF:

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Traffic Engineering and Safety Systems Branch
Intelligent Transportation Systems
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

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| PLAN DATE: FEBRUARY, 2008 | REVIEWED BY: K.W. SMITH |
| PREPARED BY: K.D. VANPATTEN | REVIEWED BY: M.W. DUNZO |

| REVISIONS | INIT. | DATE |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/20/08 DATE

CADD Filename ...\Sht0574.dgn

2/20/2008
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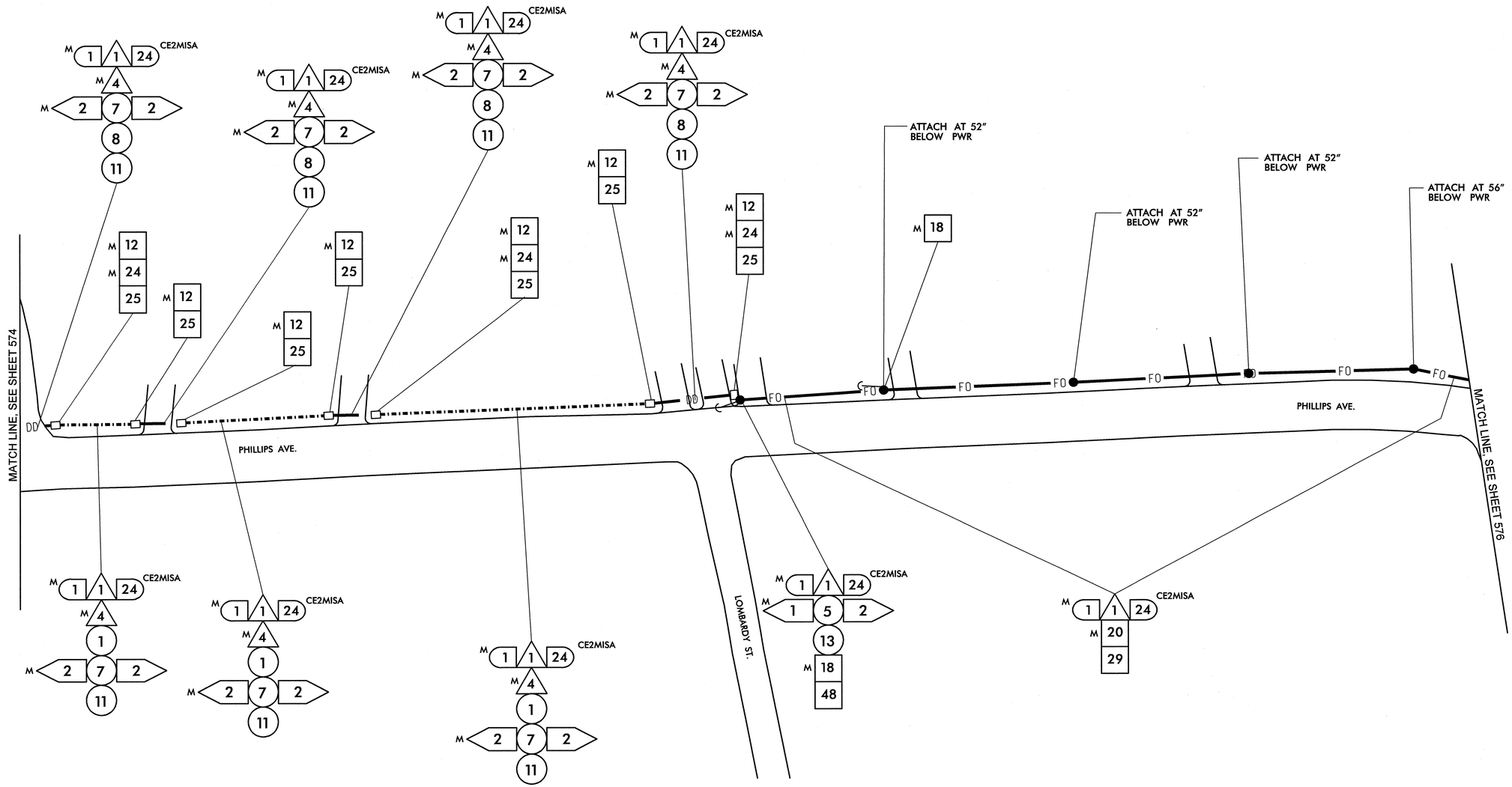
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-4711 | 575 |

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| 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 40 | INSTALL RADIO TRANSCEIVER |
| 41 | INSTALL SYSTEM LOOP |
| 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 44 | INSTALL LOCAL LOOP AMPLIFIER |
| 45 | INSTALL CITY WI-FI ANTENNA |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH |
| 47 | INSTALL CODEC |
| 48 | BOND MESSENGER CABLE TO POLE GROUND |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION |
| 50 | INSTALL ANTENNA CABLE |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT |
| 53 | INSTALL DSL ETHERNET SWITCH |
| 54 | INSTALL ETHERNET CABLE |
| 55 | INSTALL TERMINAL SERVER |
| 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
| 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000


Traffic Engineering and Safety Systems Branch
Division of Highways
Department of Transportation
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

| | |
|---|---|
| PLAN DATE: FEBRUARY, 2008 | REVIEWED BY: K.W. SMITH |
| PREPARED BY: K.D. VANPATTEN | REVIEWED BY: M.W. DUNZO |

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/29/08 DATE

CADD Filename: ...\Sht0575.dgn

2/29/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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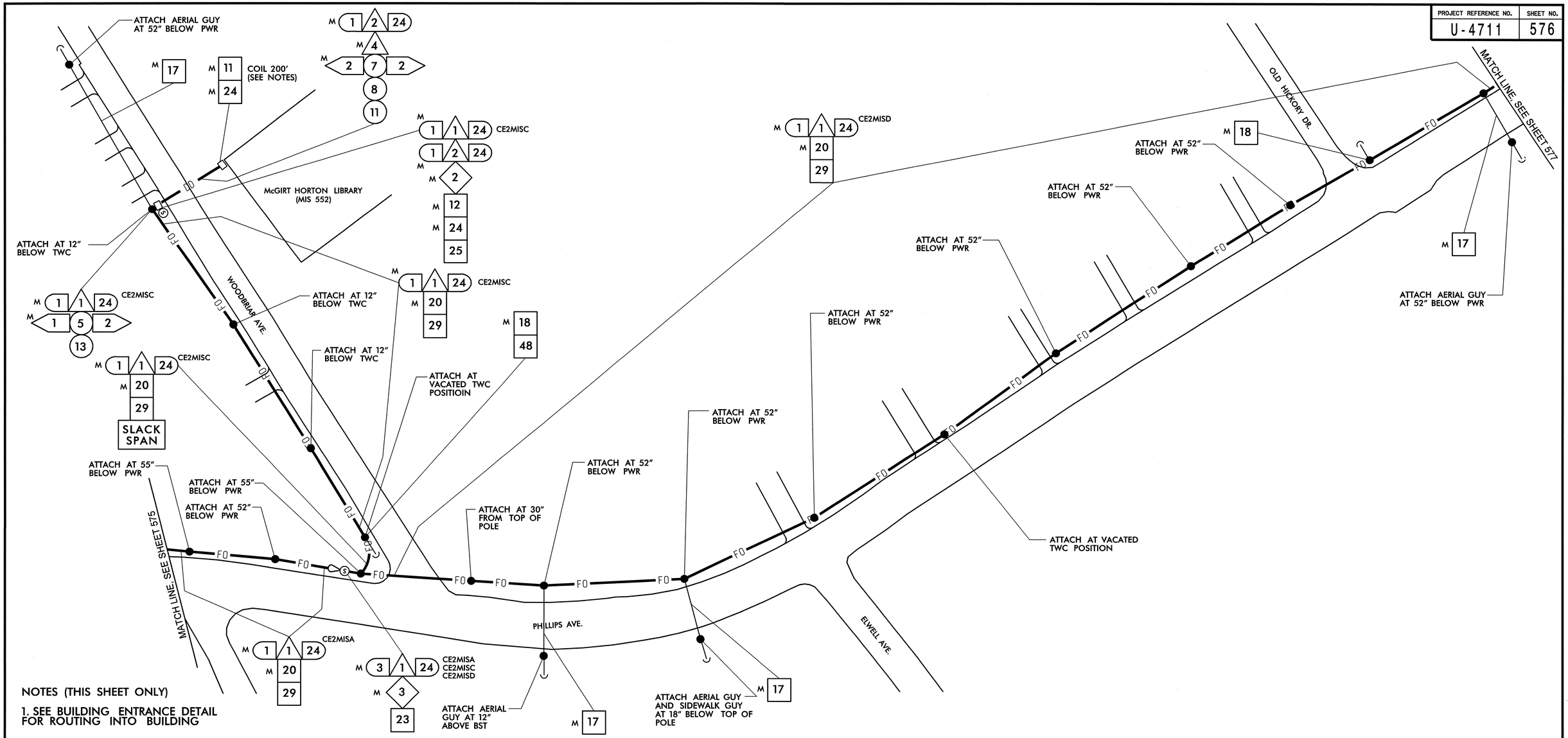
| U-4711 | 576 |




## NOTES (THIS SHEET ONLY)

1. SEE BUILDING ENTRANCE DETAIL FOR ROUTING INTO BUILDING

| | |
|---|---|
| 1 | INSTALL SMFO CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE |
| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
| 6 | REUSE GDOT SMFO CABLE |
| 1 | TRENCH |
| 2 | INSTALL PVC CONDUIT |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT |
| 7 | INSTALL POLYETHYLENE CONDUIT |
| 8 | DIRECTIONAL DRILL CONDUIT |
| 9 | BORE AND JACK CONDUIT |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT |
| 12 | INSTALL CABLE(S) IN EXISTING RISER |
| 13 | INSTALL CABLE(S) IN NEW RISER |
| 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE |
| 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET |
| 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET |
| 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING |
| 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET |
| 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE |
| 3 | INSTALL AERIAL SPLICE ENCLOSURE |
| 4 | INSTALL POLE MOUNTED SPLICE CABINET |
| 5 | INSTALL BASE MOUNTED SPLICE CABINET |
| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
| 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX |
| 12 | INSTALL OVERSIZED JUNCTION BOX |
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| 17 | INSTALL AERIAL GUY ASSEMBLY |
| 18 | INSTALL STANDARD GUY ASSEMBLY |
| 19 | INSTALL SIDEWALK GUY ASSEMBLY |
| 20 | INSTALL MESSENGER CABLE |
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| 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE |
| 24 | INSTALL DELINEATOR MARKER |
| 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE |
| 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 30 | INSTALL NEW ELECTRICAL SERVICE |
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| 32 | INSTALL NEW CONTROLLER |
| 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 34 | INSTALL GENERATOR POWER INLET BOX |
| 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 36 | INSTALL UNIFIED CABLE |
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SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht0576.dgn

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| PROJECT REFERENCE NO. | SHEET NO. |
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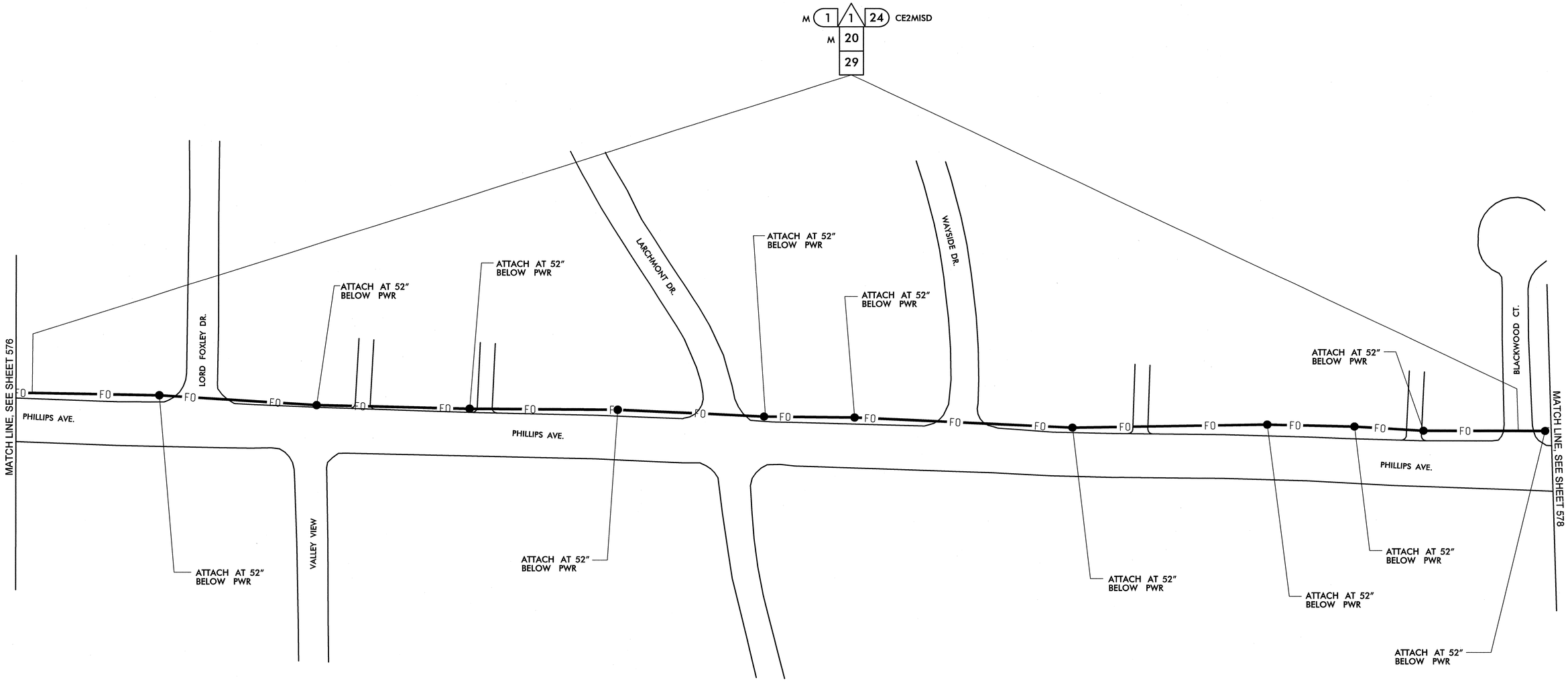
| U-4711 | 577 |




| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | INSTALL SMFO CABLE | 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE | 6 | INSTALL NEW 336S CABINET | 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE | 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 7 | INSTALL CCTV CAMERA ASSEMBLY | 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE | 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 8 | INSTALL CCTV CAMERA WOOD POLE | 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 4 | INSTALL TRACER WIRE | 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET | 9 | INSTALL CCTV METAL POLE AND FOUNDATION | 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 5 | REUSE NCDOT SMFO CABLE | 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET | 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX | 30 | INSTALL NEW ELECTRICAL SERVICE |
| 6 | REUSE GDOT SMFO CABLE | 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING | 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX | 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 1 | TRENCH | 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET | 12 | INSTALL OVERSIZED JUNCTION BOX | 32 | INSTALL NEW CONTROLLER |
| 2 | INSTALL PVC CONDUIT | 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE | 13 | INSTALL STANDARD JUNCTION BOX | 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT | 3 | INSTALL AERIAL SPLICE ENCLOSURE | 14 | REMOVE EXISTING JUNCTION BOX | 34 | INSTALL GENERATOR POWER INLET BOX |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD | 4 | INSTALL POLE MOUNTED SPLICE CABINET | 15 | INSTALL WOOD POLE | 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING | 5 | INSTALL BASE MOUNTED SPLICE CABINET | 16 | REMOVE EXISTING WOOD POLE | 36 | INSTALL UNIFIED CABLE |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT | 6 | REMOVE EXISTING SPLICE CABINET | 17 | INSTALL AERIAL GUY ASSEMBLY | 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 7 | INSTALL POLYETHYLENE CONDUIT | 7 | INSTALL TERMINAL SPLICE BOX | 18 | INSTALL STANDARD GUY ASSEMBLY | 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 8 | DIRECTIONAL DRILL CONDUIT | 8 | MODIFY EXISTING SPLICE ENCLOSURE | 19 | INSTALL SIDEWALK GUY ASSEMBLY | 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 9 | BORE AND JACK CONDUIT | 1 | INSTALL CABINET FOUNDATION | 20 | INSTALL MESSENGER CABLE | 40 | INSTALL RADIO TRANSCEIVER |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT | 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER | 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE | 41 | INSTALL SYSTEM LOOP |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT | 3 | MODIFY EXISTING CABINET FOUNDATION | 22 | REMOVE EXISTING COMMUNICATIONS CABLE | 42 | INSTALL SYSTEM LOOP AMPLIFIER |
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| 13 | INSTALL CABLE(S) IN NEW RISER | 5 | INSTALL NEW 332 BASE MOUNTED CABINET | 24 | INSTALL DELINEATOR MARKER | | |
| | | | | 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE | | |

| | | | |
|---|---|---|---|
| 44 | INSTALL LOCAL LOOP AMPLIFIER | 53 | INSTALL DSL ETHERNET SWITCH |
| 45 | INSTALL CITY WI-FI ANTENNA | 54 | INSTALL ETHERNET CABLE |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH | 55 | INSTALL TERMINAL SERVER |
| 47 | INSTALL CODEC | 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
| 48 | BOND MESSENGER CABLE TO POLE GROUND | 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION | 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |
| 50 | INSTALL ANTENNA CABLE | | |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT | | |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT | | |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

PLANS PREPARED IN THE OFFICE OF:

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Raleigh N.C. 27636-3068
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Traffic Engineering and Safety Systems Branch
Transportation Mobility and Safety Division
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

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| PROJECT REFERENCE NO. | SHEET NO. |
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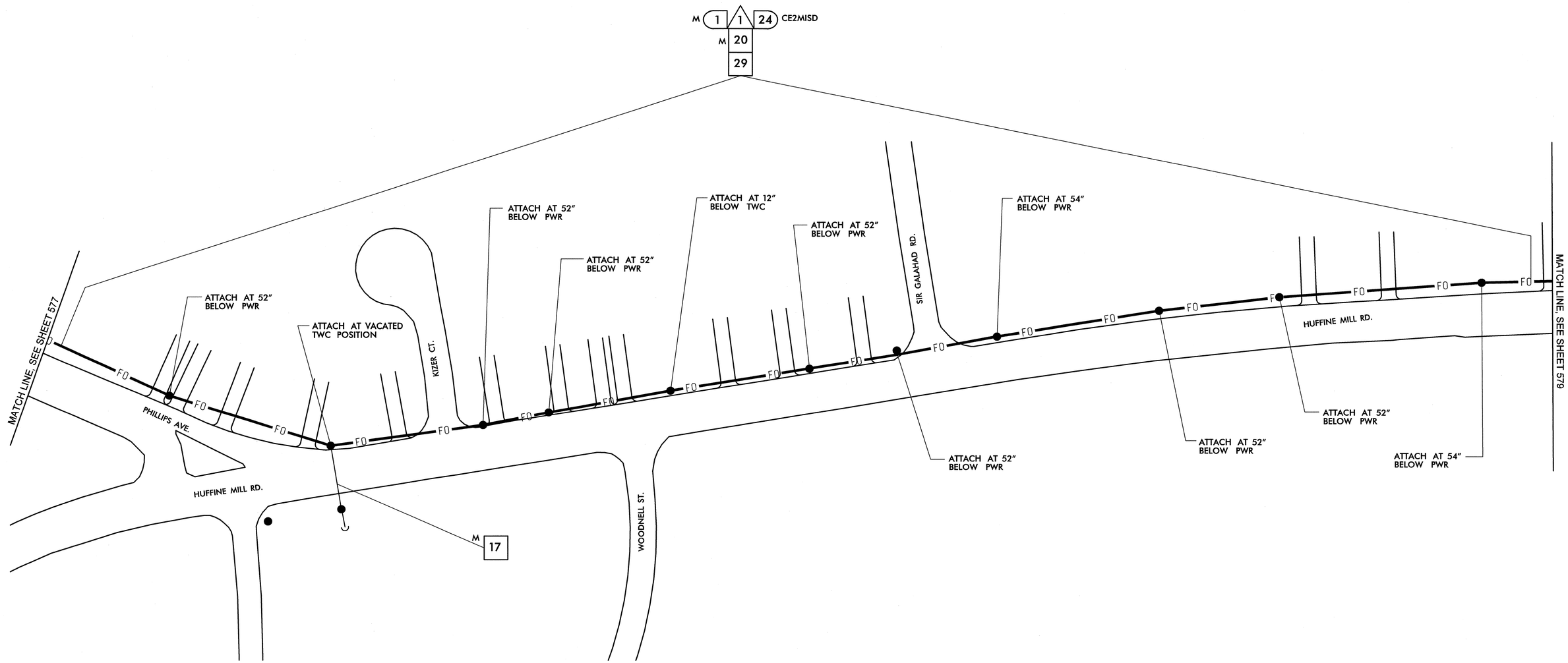
| U-4711 | 578 |




| | |
|---|---|
| 1 | INSTALL SMFO CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE |
| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
| 6 | REUSE GDOT SMFO CABLE |
| 1 | TRENCH |
| 2 | INSTALL PVC CONDUIT |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
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| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
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| 7 | INSTALL CCTV CAMERA ASSEMBLY |
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Traffic Engineering and Safety Systems Branch
Intelligent Transportation Systems
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SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

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| PLAN DATE: FEBRUARY, 2008 | REVIEWED BY: K.W. SMITH |
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SIGNATURE DATE 2/20/08

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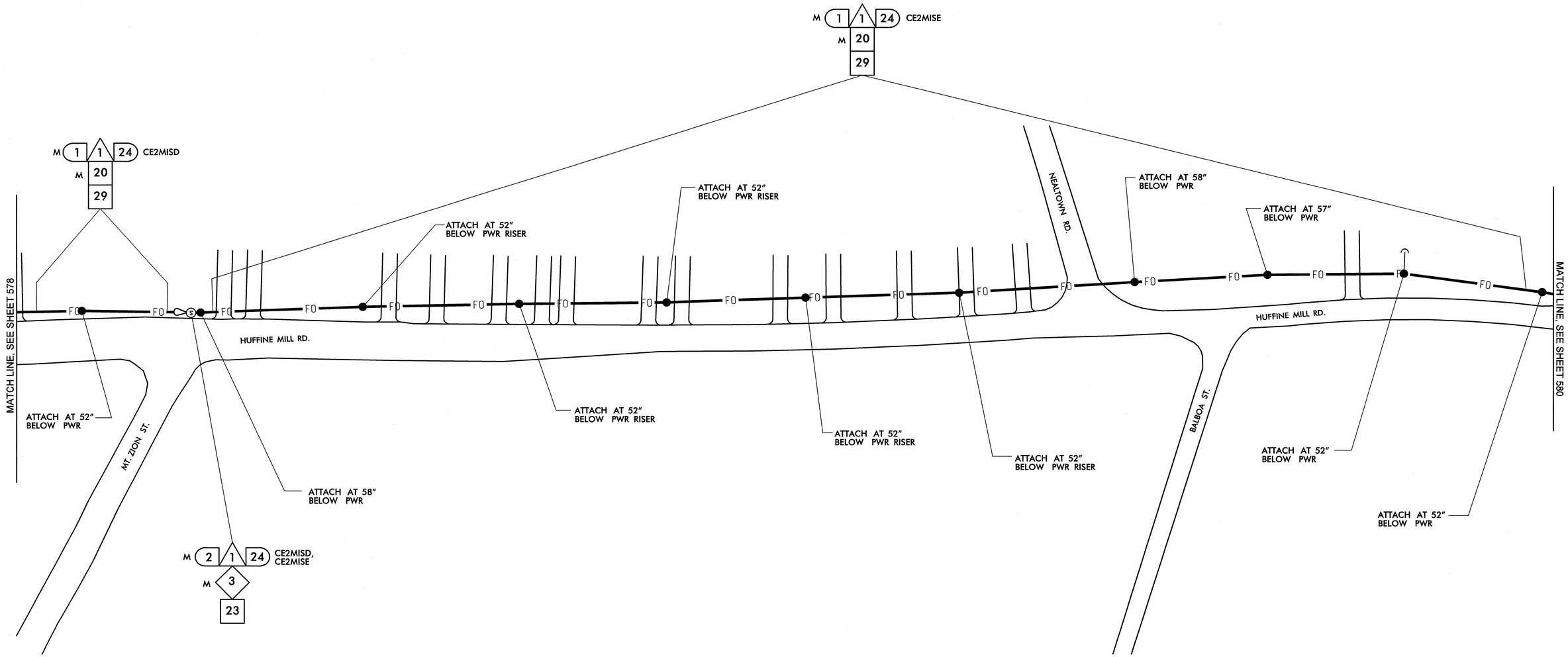
| U-4711 | 579 |

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| 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET |
| 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING |
| 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET |
| 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE |
| 3 | INSTALL AERIAL SPLICE ENCLOSURE |
| 4 | INSTALL POLE MOUNTED SPLICE CABINET |
| 5 | INSTALL BASE MOUNTED SPLICE CABINET |
| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
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| 48 | BOND MESSENGER CABLE TO POLE GROUND |
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PLANS PREPARED IN THE OFFICE OF:
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P.O. Box 33068
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Traffic Engineering and Safety Systems Branch
Transportation Management Unit
Division of Highways, State of North Carolina Department of Transportation
750 Greenfield Pkwy., Garner, NC 27529


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SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht0579.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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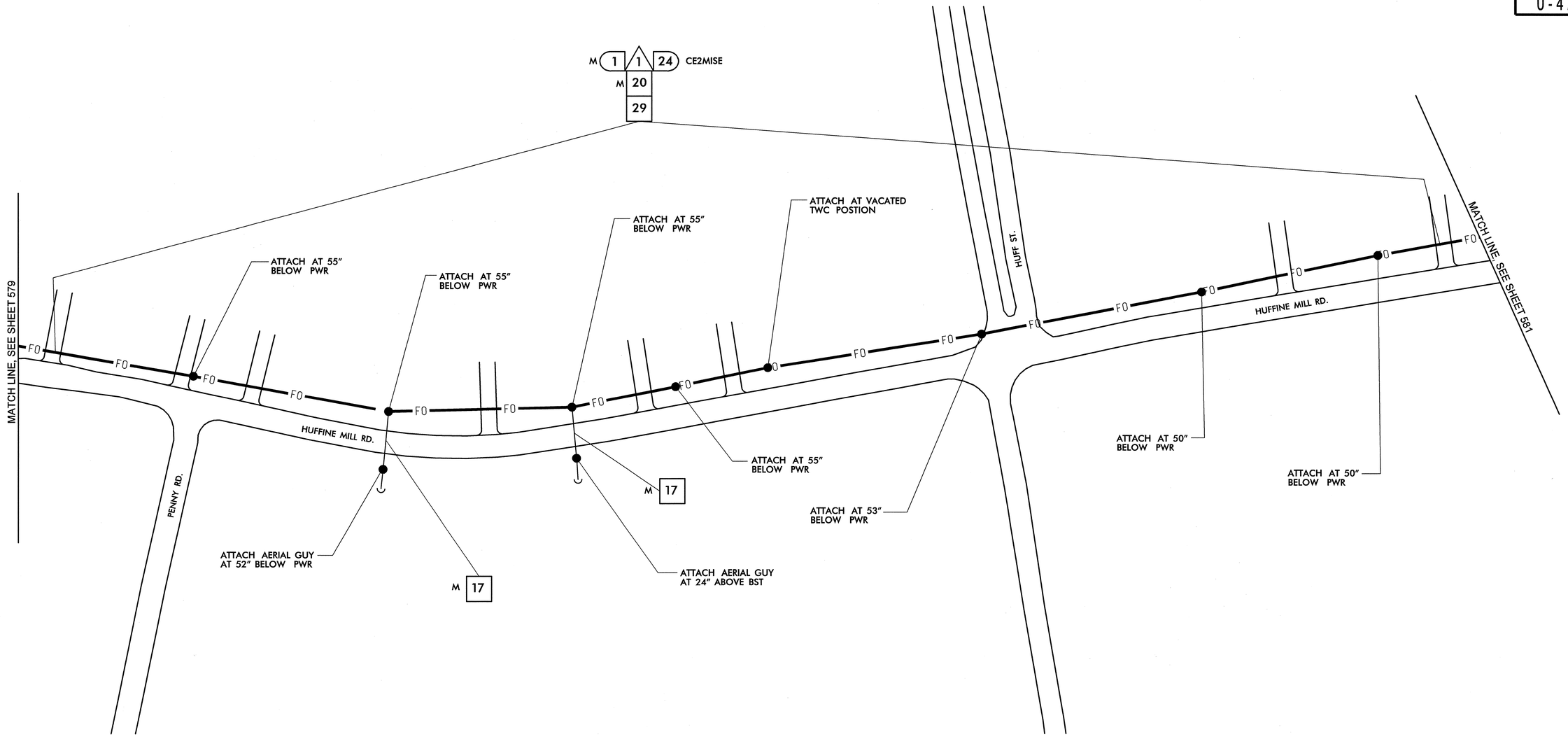
| U-4711 | 580 |

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| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE |
| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
| 6 | REUSE GDOT SMFO CABLE |
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| 2 | INSTALL PVC CONDUIT |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD |
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PLANS PREPARED IN THE OFFICE OF:
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Traffic Engineering and Safety Systems Branch
Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
750 Greenfield Pkwy., Garner, NC 27529


SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH
PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/20/08 DATE

CADD Filename: ...\Sht0580.dgn

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| PROJECT REFERENCE NO. | SHEET NO. |
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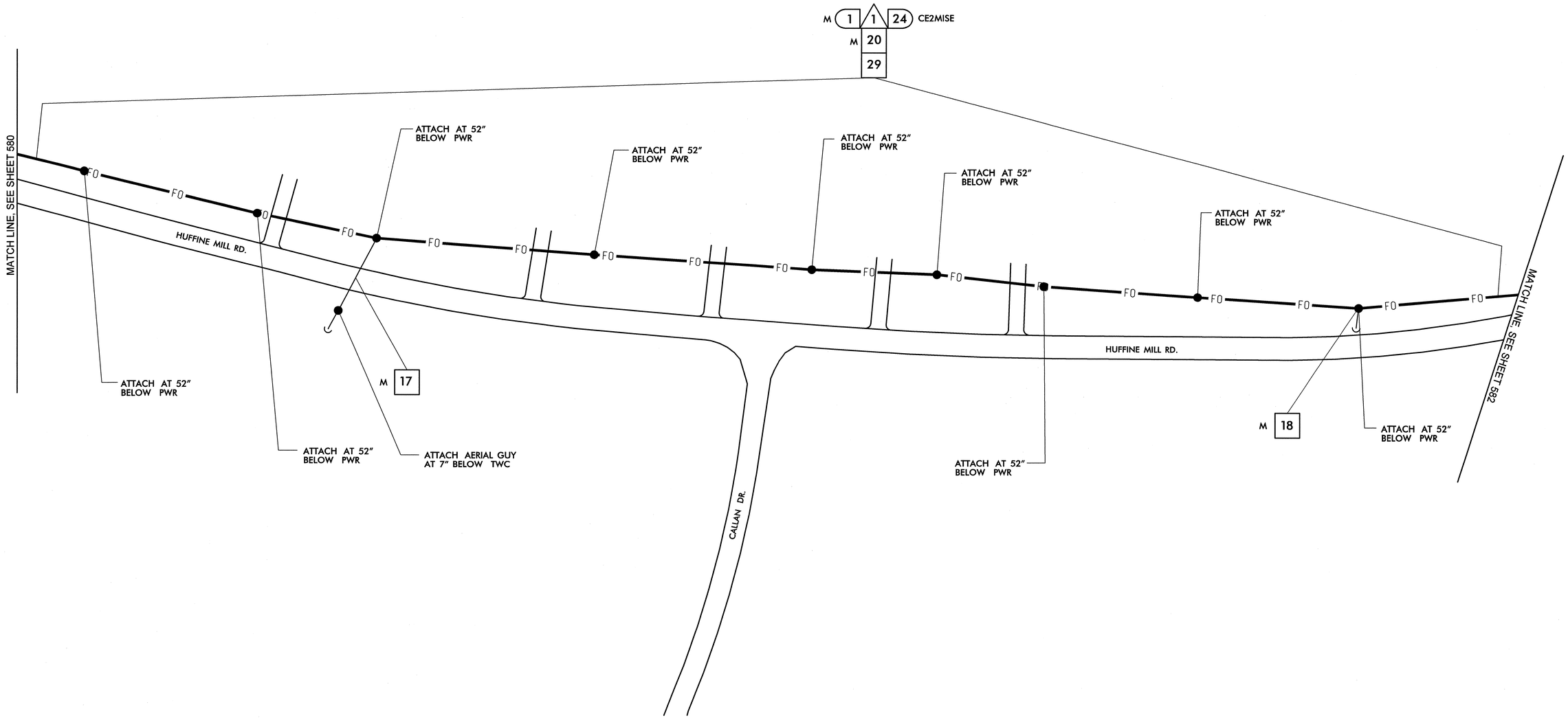
| U-4711 | 581 |

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## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht058I.dgn

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| PROJECT REFERENCE NO. | SHEET NO. |
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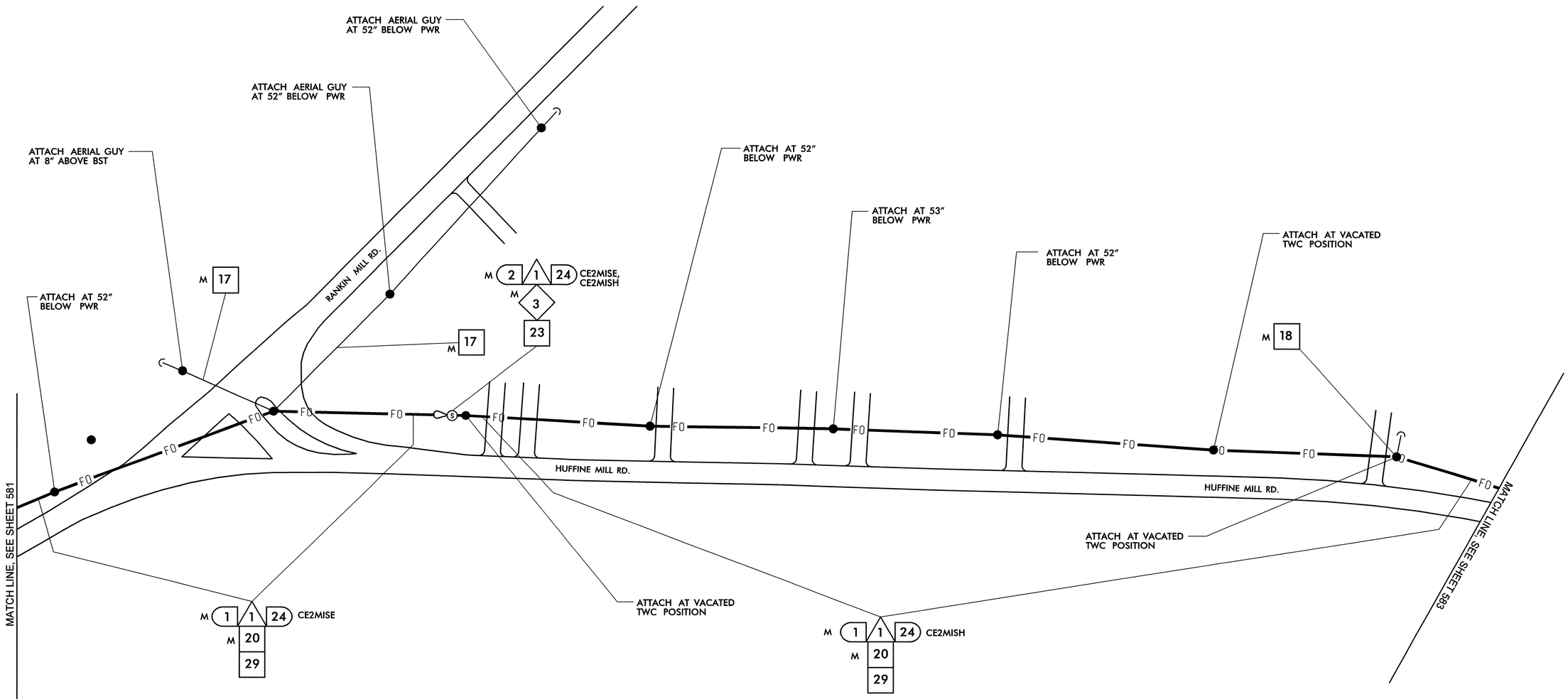
| U-4711 | 582 |

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| 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

PLANS PREPARED IN THE OFFICE OF:

Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000

Traffic Engineering and Safety Systems Branch
Management Services Unit
Transportation Systems
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht0582.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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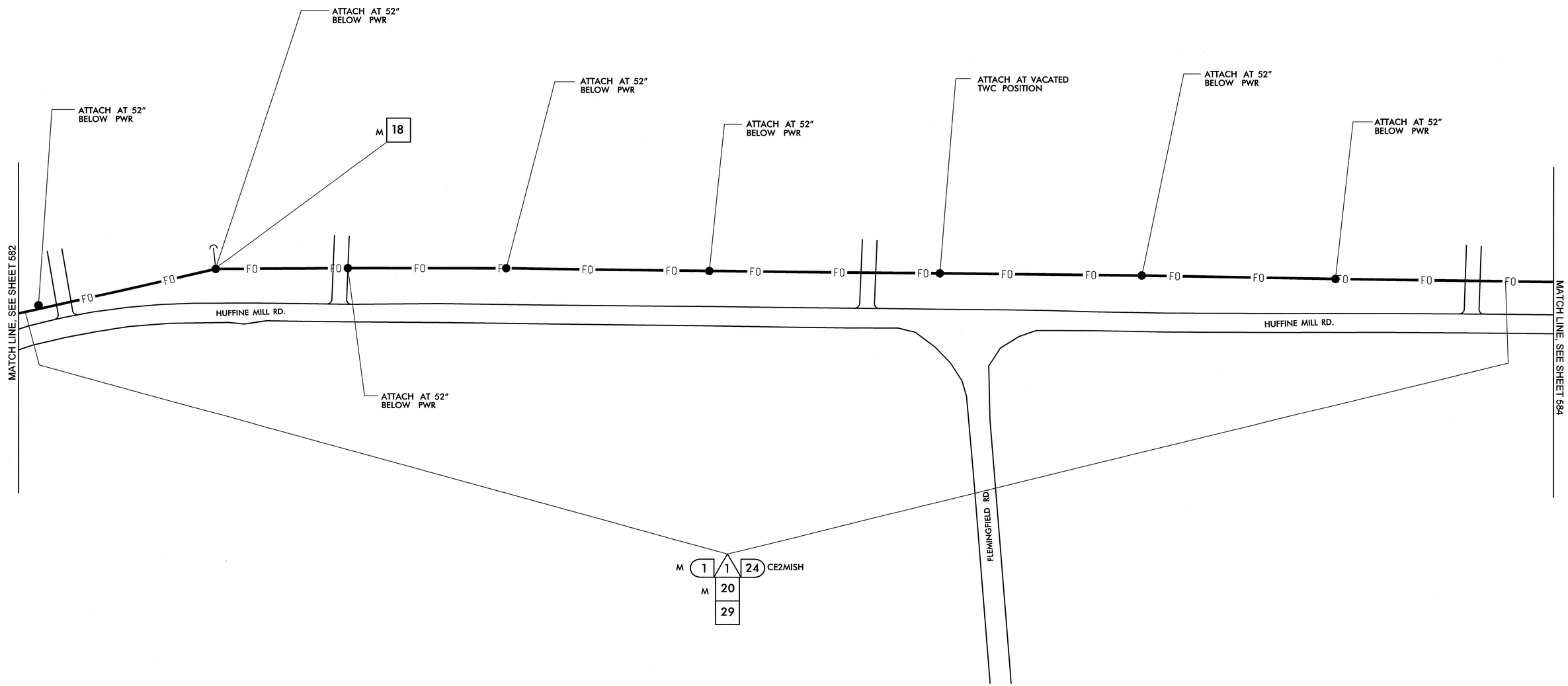
| U-4711 | 583 |




| | |
|---|---|
| 1 | INSTALL SMFO CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE |
| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
| 6 | REUSE GDOT SMFO CABLE |
| 1 | TRENCH |
| 2 | INSTALL PVC CONDUIT |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT |
| 7 | INSTALL POLYETHYLENE CONDUIT |
| 8 | DIRECTIONAL DRILL CONDUIT |
| 9 | BORE AND JACK CONDUIT |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT |
| 12 | INSTALL CABLE(S) IN EXISTING RISER |
| 13 | INSTALL CABLE(S) IN NEW RISER |
| 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE |
| 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET |
| 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET |
| 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING |
| 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET |
| 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE |
| 3 | INSTALL AERIAL SPLICE ENCLOSURE |
| 4 | INSTALL POLE MOUNTED SPLICE CABINET |
| 5 | INSTALL BASE MOUNTED SPLICE CABINET |
| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
| 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX |
| 12 | INSTALL OVERSIZED JUNCTION BOX |
| 13 | INSTALL STANDARD JUNCTION BOX |
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| 19 | INSTALL SIDEWALK GUY ASSEMBLY |
| 20 | INSTALL MESSENGER CABLE |
| 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE |
| 22 | REMOVE EXISTING COMMUNICATIONS CABLE |
| 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE |
| 24 | INSTALL DELINEATOR MARKER |
| 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE |
| 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 30 | INSTALL NEW ELECTRICAL SERVICE |
| 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 32 | INSTALL NEW CONTROLLER |
| 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 34 | INSTALL GENERATOR POWER INLET BOX |
| 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 36 | INSTALL UNIFIED CABLE |
| 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
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| 41 | INSTALL SYSTEM LOOP |
| 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 44 | INSTALL LOCAL LOOP AMPLIFIER |
| 45 | INSTALL CITY WI-FI ANTENNA |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH |
| 47 | INSTALL CODEC |
| 48 | BOND MESSENGER CABLE TO POLE GROUND |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION |
| 50 | INSTALL ANTENNA CABLE |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT |
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SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

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| PLAN DATE: FEBRUARY, 2008 | | REVIEWED BY: K.W. SMITH | |
| PREPARED BY: K.D. VANPATTEN | | REVIEWED BY: M.W. DUNZO | |
| REVISIONS | | INIT. | DATE |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht0583.dgn

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| PROJECT REFERENCE NO. | SHEET NO. |
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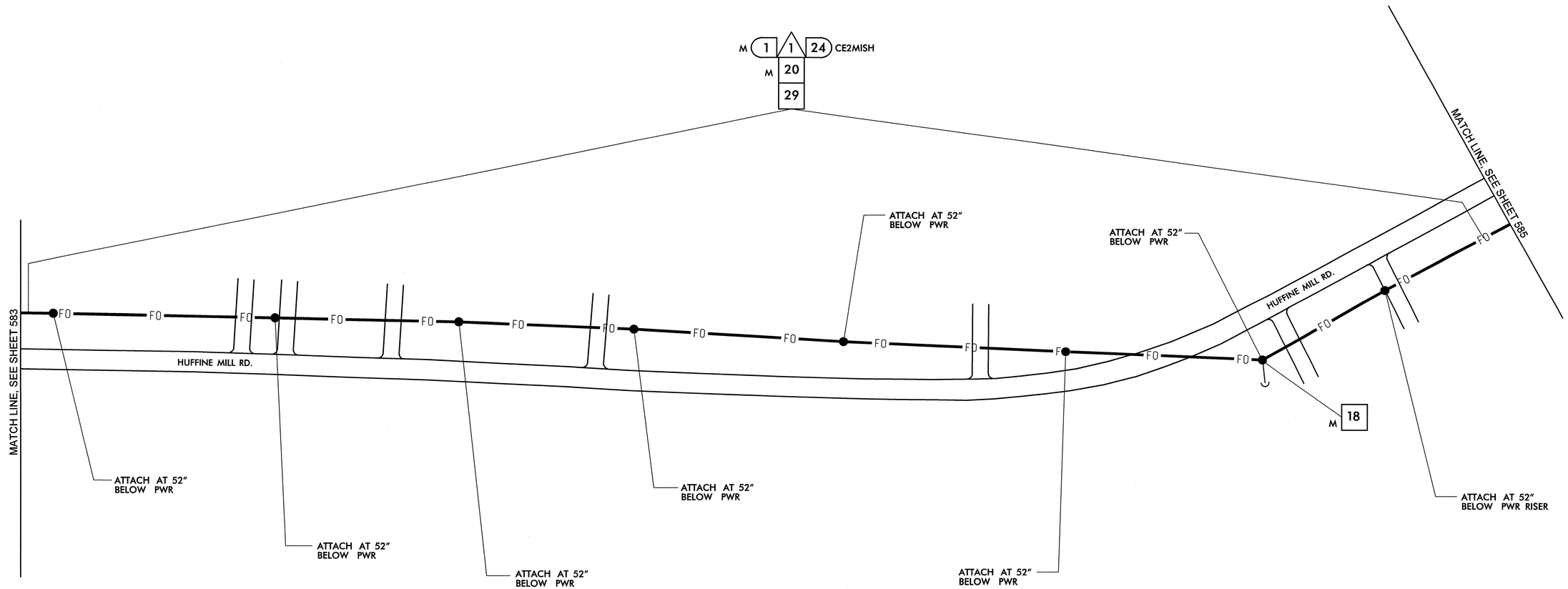
| U-4711 | 584 |

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| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

2/20/08
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| PROJECT REFERENCE NO. | SHEET NO. |
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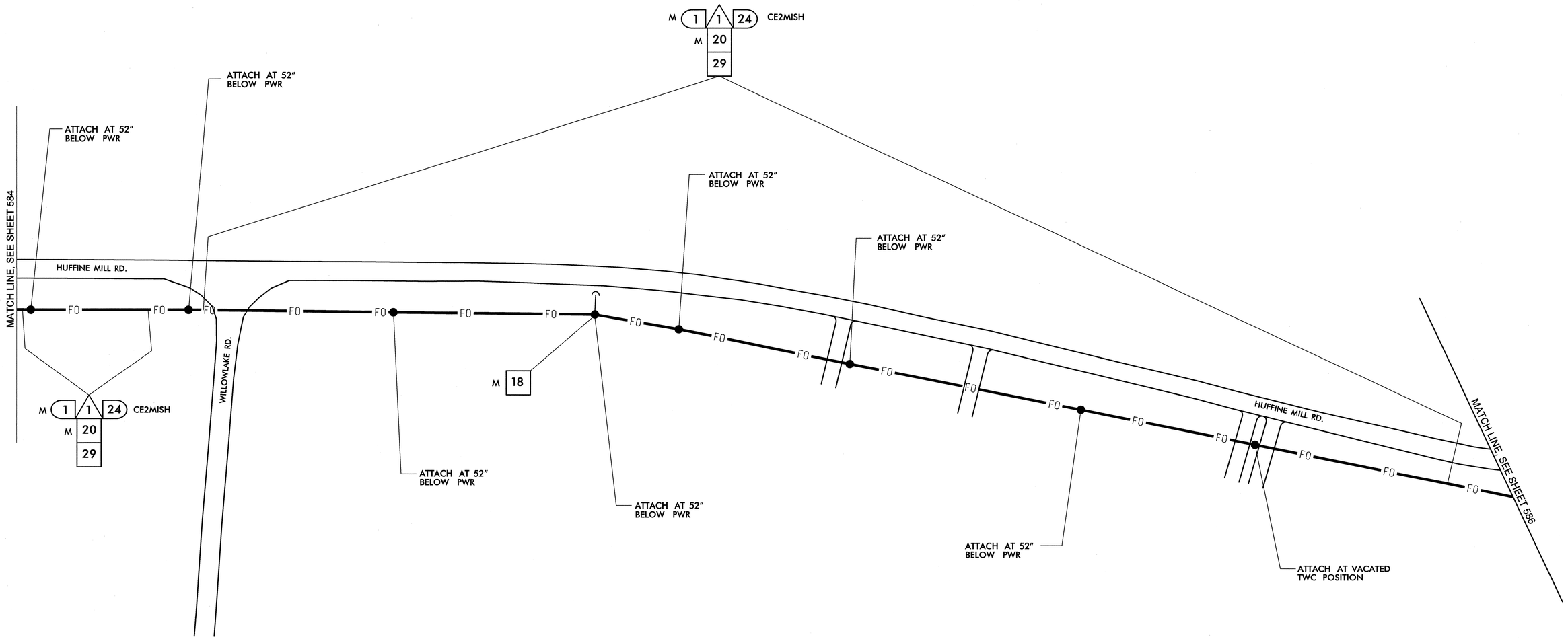
| U-4711 | 585 |

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5. INSTALL BASE MOUNTED SPLICE CABINET
6. REMOVE EXISTING SPLICE CABINET
7. INSTALL TERMINAL SPLICE BOX
8. MODIFY EXISTING SPLICE ENCLOSURE

1. INSTALL CABINET FOUNDATION
2. REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER
3. MODIFY EXISTING CABINET FOUNDATION
4. INSTALL NEW 333 COMMUNICATION CABINET
5. INSTALL NEW 332 BASE MOUNTED CABINET
6. INSTALL NEW 336S CABINET
7. INSTALL CCTV CAMERA ASSEMBLY
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht0585.dgn

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| PROJECT REFERENCE NO. | SHEET NO. |
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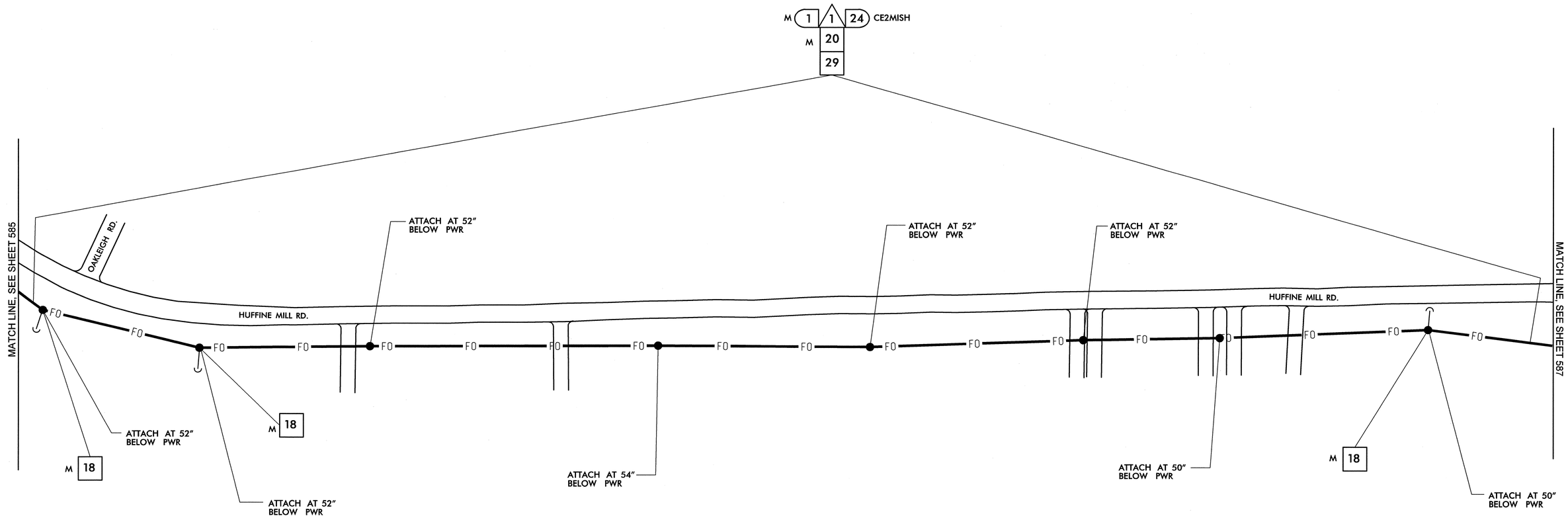
| U-4711 | 586 |




NOTE: TWC TO REMOVE OLD CABLE FROM POLE 661-7 TO POLE 663-6 TO IMPROVE DRIVEWAY CLEARANCES

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | INSTALL SMFO CABLE | 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE | 6 | INSTALL NEW 336S CABINET | 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE | 44 | INSTALL LOCAL LOOP AMPLIFIER | 53 | INSTALL DSL ETHERNET SWITCH |
| B | INSTALL PLENUM RATED FIBER OPTIC CABLE | 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 7 | INSTALL CCTV CAMERA ASSEMBLY | 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE | 45 | INSTALL CITY WI-FI ANTENNA | 54 | INSTALL ETHERNET CABLE |
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| 1 | TRENCH | 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET | 12 | INSTALL OVERSIZED JUNCTION BOX | 32 | INSTALL NEW CONTROLLER | 50 | INSTALL ANTENNA CABLE | | |
| 2 | INSTALL PVC CONDUIT | 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE | 13 | INSTALL STANDARD JUNCTION BOX | 33 | INSTALL EXISTING CABLE IN NEW CABINET | 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT | | |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT | 3 | INSTALL AERIAL SPLICE ENCLOSURE | 14 | REMOVE EXISTING JUNCTION BOX | 34 | INSTALL GENERATOR POWER INLET BOX | 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT | | |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD | 4 | INSTALL POLE MOUNTED SPLICE CABINET | 15 | INSTALL WOOD POLE | 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH | | | | |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING | 5 | INSTALL BASE MOUNTED SPLICE CABINET | 16 | REMOVE EXISTING WOOD POLE | 36 | INSTALL UNIFIED CABLE | | | | |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT | 6 | REMOVE EXISTING SPLICE CABINET | 17 | INSTALL AERIAL GUY ASSEMBLY | 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET | | | | |
| 7 | INSTALL POLYETHYLENE CONDUIT | 7 | INSTALL TERMINAL SPLICE BOX | 18 | INSTALL STANDARD GUY ASSEMBLY | 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA | | | | |
| 8 | DIRECTIONAL DRILL CONDUIT | 8 | MODIFY EXISTING SPLICE ENCLOSURE | 19 | INSTALL SIDEWALK GUY ASSEMBLY | 39 | INSTALL OMNI-DIRECTIONAL ANTENNA | | | | |
| 9 | BORE AND JACK CONDUIT | 1 | INSTALL CABINET FOUNDATION | 20 | INSTALL MESSENGER CABLE | 40 | INSTALL RADIO TRANSCEIVER | | | | |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT | 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER | 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE | 41 | INSTALL SYSTEM LOOP | | | | |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT | 3 | MODIFY EXISTING CABINET FOUNDATION | 22 | REMOVE EXISTING COMMUNICATIONS CABLE | 42 | INSTALL SYSTEM LOOP AMPLIFIER | | | | |
| 12 | INSTALL CABLE(S) IN EXISTING RISER | 4 | INSTALL NEW 333 COMMUNICATION CABINET | 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE | 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE | | | | |
| 13 | INSTALL CABLE(S) IN NEW RISER | 5 | INSTALL NEW 332 BASE MOUNTED CABINET | 24 | INSTALL DELINEATOR MARKER | | | | | | |
| | | | | 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE | | | | | | |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


PLANS PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000



750 Greenfield Pkwy., Garner, NC 27529


SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht0586.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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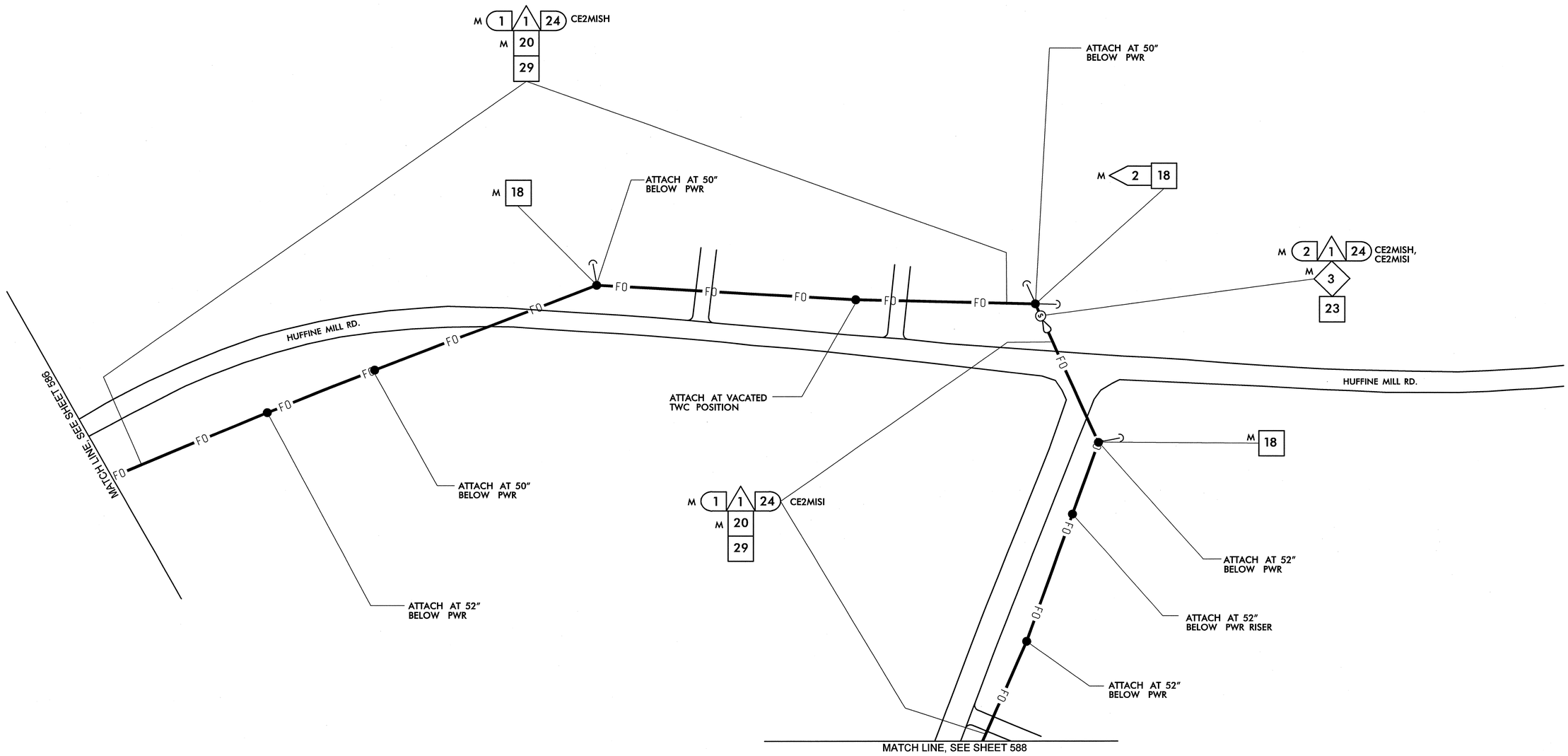
| U-4711 | 587 |




| | |
|---|---|
| 1 | INSTALL SMFO CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE |
| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
| 6 | REUSE GDOT SMFO CABLE |
| 1 | TRENCH |
| 2 | INSTALL PVC CONDUIT |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT |
| 7 | INSTALL POLYETHYLENE CONDUIT |
| 8 | DIRECTIONAL DRILL CONDUIT |
| 9 | BORE AND JACK CONDUIT |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT |
| 12 | INSTALL CABLE(S) IN EXISTING RISER |
| 13 | INSTALL CABLE(S) IN NEW RISER |
| 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE |
| 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET |
| 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET |
| 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING |
| 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET |
| 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE |
| 3 | INSTALL AERIAL SPLICE ENCLOSURE |
| 4 | INSTALL POLE MOUNTED SPLICE CABINET |
| 5 | INSTALL BASE MOUNTED SPLICE CABINET |
| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
| 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX |
| 12 | INSTALL OVERSIZED JUNCTION BOX |
| 13 | INSTALL STANDARD JUNCTION BOX |
| 14 | REMOVE EXISTING JUNCTION BOX |
| 15 | INSTALL WOOD POLE |
| 16 | REMOVE EXISTING WOOD POLE |
| 17 | INSTALL AERIAL GUY ASSEMBLY |
| 18 | INSTALL STANDARD GUY ASSEMBLY |
| 19 | INSTALL SIDEWALK GUY ASSEMBLY |
| 20 | INSTALL MESSENGER CABLE |
| 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE |
| 22 | REMOVE EXISTING COMMUNICATIONS CABLE |
| 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE |
| 24 | INSTALL DELINEATOR MARKER |
| 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE |
| 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 30 | INSTALL NEW ELECTRICAL SERVICE |
| 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 32 | INSTALL NEW CONTROLLER |
| 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 34 | INSTALL GENERATOR POWER INLET BOX |
| 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 36 | INSTALL UNIFIED CABLE |
| 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 40 | INSTALL RADIO TRANSCEIVER |
| 41 | INSTALL SYSTEM LOOP |
| 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 44 | INSTALL LOCAL LOOP AMPLIFIER |
| 45 | INSTALL CITY WI-FI ANTENNA |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH |
| 47 | INSTALL CODEC |
| 48 | BOND MESSENGER CABLE TO POLE GROUND |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION |
| 50 | INSTALL ANTENNA CABLE |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT |
| 53 | INSTALL DSL ETHERNET SWITCH |
| 54 | INSTALL ETHERNET CABLE |
| 55 | INSTALL TERMINAL SERVER |
| 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
| 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

PLANS PREPARED IN THE OFFICE OF:
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Traffic Engineering and Safety Systems Branch
Transportation Management Unit
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/29/08 DATE

CADD Filename: ...\Sht0587.dgn

2/29/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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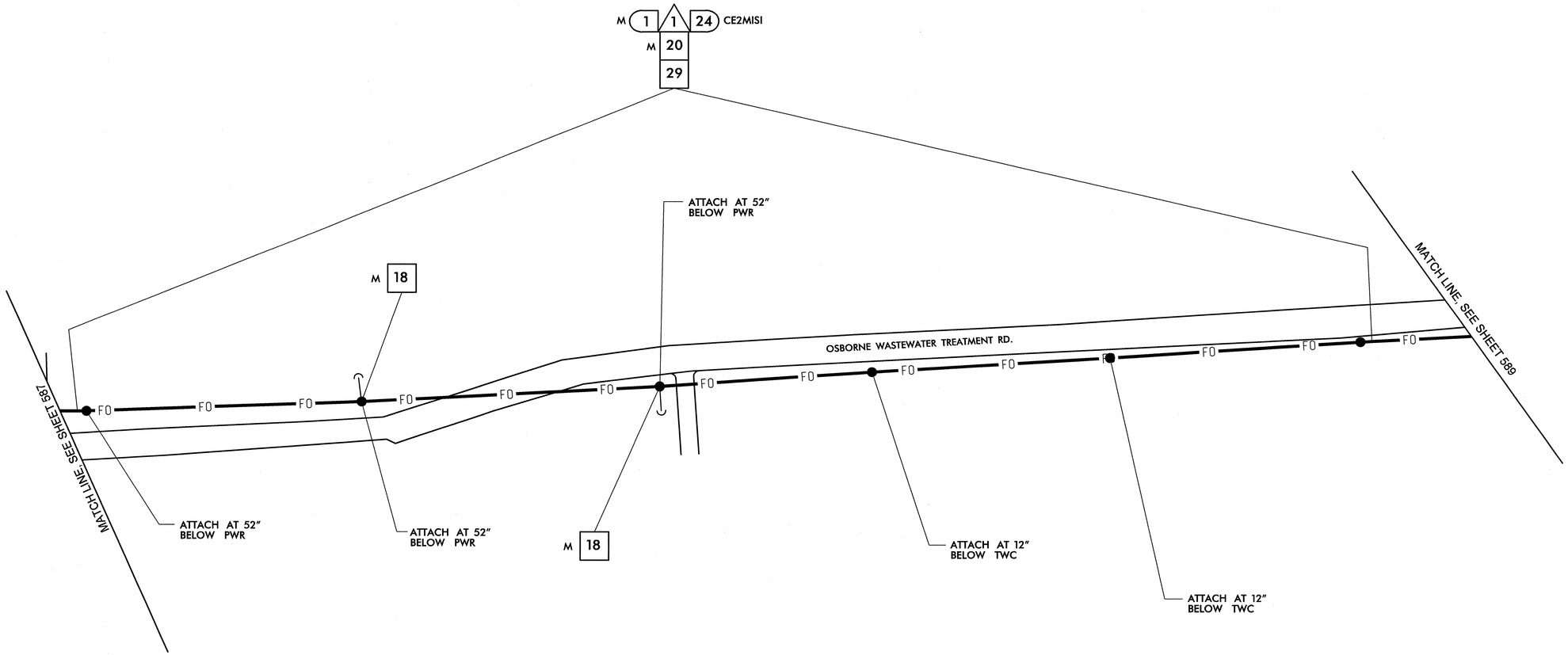
| U-4711 | 588 |




1. INSTALL SMFO CABLE
2. INSTALL PLENUM RATED FIBER OPTIC CABLE
3. INSTALL FIBER OPTIC DROP CABLE
4. INSTALL TRACER WIRE
5. REUSE NCDOT SMFO CABLE
6. REUSE GDOT SMFO CABLE

1. TRENCH
2. INSTALL PVC CONDUIT
3. INSTALL RIGID, GALVANIZED STEEL CONDUIT
4. INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
5. INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING
6. INSTALL OUTER-DUCT POLYETHYLENE CONDUIT
7. INSTALL POLYETHYLENE CONDUIT
8. DIRECTIONAL DRILL CONDUIT
9. BORE AND JACK CONDUIT
10. INSTALL CABLE(S) IN EXISTING CONDUIT
11. INSTALL CABLE(S) IN NEW CONDUIT
12. INSTALL CABLE(S) IN EXISTING RISER
13. INSTALL CABLE(S) IN NEW RISER
14. INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE
15. INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
16. INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
17. INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET
18. INSTALL NEW RISER INTO POLE MOUNTED CABINET
19. REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING

1. INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET
2. INSTALL UNDERGROUND SPLICE ENCLOSURE
3. INSTALL AERIAL SPLICE ENCLOSURE
4. INSTALL POLE MOUNTED SPLICE CABINET
5. INSTALL BASE MOUNTED SPLICE CABINET
6. REMOVE EXISTING SPLICE CABINET
7. INSTALL TERMINAL SPLICE BOX
8. MODIFY EXISTING SPLICE ENCLOSURE

1. INSTALL CABINET FOUNDATION
2. REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER
3. MODIFY EXISTING CABINET FOUNDATION
4. INSTALL NEW 333 COMMUNICATION CABINET
5. INSTALL NEW 332 BASE MOUNTED CABINET
6. INSTALL NEW 336S CABINET
7. INSTALL CCTV CAMERA ASSEMBLY
8. INSTALL CCTV CAMERA WOOD POLE
9. INSTALL CCTV METAL POLE AND FOUNDATION
10. INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX
11. INSTALL SPECIAL OVERSIZED JUNCTION BOX
12. INSTALL OVERSIZED JUNCTION BOX
13. INSTALL STANDARD JUNCTION BOX
14. REMOVE EXISTING JUNCTION BOX
15. INSTALL WOOD POLE
16. REMOVE EXISTING WOOD POLE
17. INSTALL AERIAL GUY ASSEMBLY
18. INSTALL STANDARD GUY ASSEMBLY
19. INSTALL SIDEWALK GUY ASSEMBLY
20. INSTALL MESSENGER CABLE
21. REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE
22. REMOVE EXISTING COMMUNICATIONS CABLE
23. INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE
24. INSTALL DELINEATOR MARKER
25. STORE 30 FEET OF EACH COMMUNICATIONS CABLE
26. STORE 100 FEET OF EACH COMMUNICATIONS CABLE
27. LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE
28. LASH CABLE(S) TO EXISTING MESSENGER CABLE
29. LASH CABLE(S) TO NEW MESSENGER CABLE
30. INSTALL NEW ELECTRICAL SERVICE
31. MODIFY EXISTING ELECTRICAL SERVICE
32. INSTALL NEW CONTROLLER
33. INSTALL EXISTING CABLE IN NEW CABINET
34. INSTALL GENERATOR POWER INLET BOX
35. INSTALL LOCAL GIGABIT ETHERNET SWITCH
36. INSTALL UNIFIED CABLE
37. INSTALL POLE MOUNTED EQUIPMENT CABINET
38. INSTALL UNI-DIRECTIONAL YAGI ANTENNA
39. INSTALL OMNI-DIRECTIONAL ANTENNA
40. INSTALL RADIO TRANSCEIVER
41. INSTALL SYSTEM LOOP
42. INSTALL SYSTEM LOOP AMPLIFIER
43. INSTALL SYSTEM LOOP LEAD-IN CABLE
44. INSTALL LOCAL LOOP AMPLIFIER
45. INSTALL CITY WI-FI ANTENNA
46. INSTALL HUB 10-GIGABIT ETHERNET SWITCH
47. INSTALL CODEC
48. BOND MESSENGER CABLE TO POLE GROUND
49. INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION
50. INSTALL ANTENNA CABLE
51. RECONNECT RAILROAD PREEMPTION EQUIPMENT
52. RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT
53. INSTALL DSL ETHERNET SWITCH
54. INSTALL ETHERNET CABLE
55. INSTALL TERMINAL SERVER
56. INSTALL MICROWAVE VEHICLE DETECTOR
57. INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT
58. INSTALL WIRELESS ACCESS POINT POWER CABLE

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


PLANS PREPARED IN THE OFFICE OF:
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Traffic Engineering and Safety Systems Branch
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Intelligent Transportation Systems
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht0588.dgn

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| PROJECT REFERENCE NO. | SHEET NO. |
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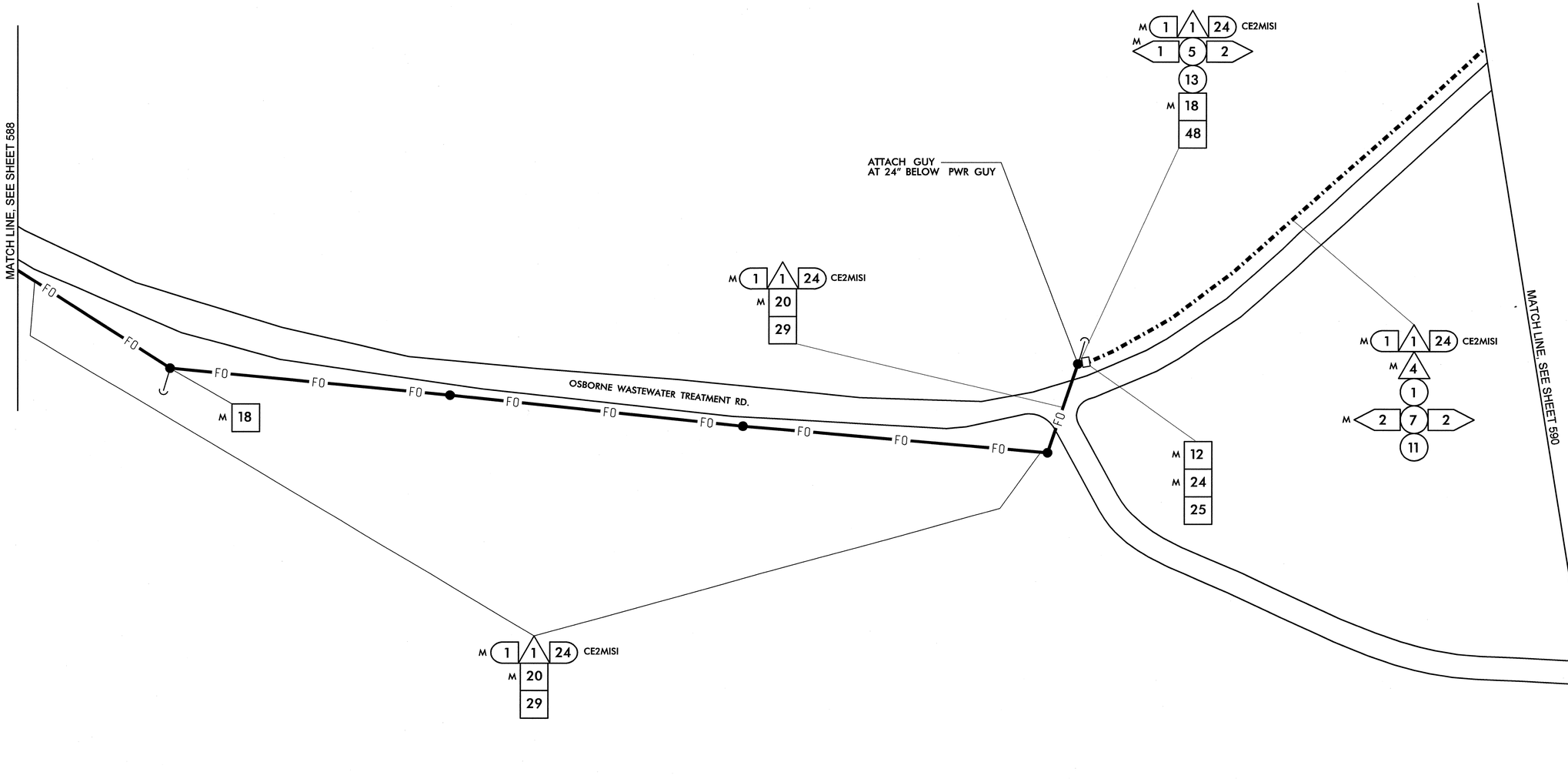
| U-4711 | 589 |




| | |
|---|---|
| 1 | INSTALL SMFO CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE |
| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
| 6 | REUSE GDOT SMFO CABLE |
| 1 | TRENCH |
| 2 | INSTALL PVC CONDUIT |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT |
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| 8 | DIRECTIONAL DRILL CONDUIT |
| 9 | BORE AND JACK CONDUIT |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT |
| 12 | INSTALL CABLE(S) IN EXISTING RISER |
| 13 | INSTALL CABLE(S) IN NEW RISER |
| 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE |
| 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
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| 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET |
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| 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING |
| 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET |
| 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE |
| 3 | INSTALL AERIAL SPLICE ENCLOSURE |
| 4 | INSTALL POLE MOUNTED SPLICE CABINET |
| 5 | INSTALL BASE MOUNTED SPLICE CABINET |
| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
| 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX |
| 12 | INSTALL OVERSIZED JUNCTION BOX |
| 13 | INSTALL STANDARD JUNCTION BOX |
| 14 | REMOVE EXISTING JUNCTION BOX |
| 15 | INSTALL WOOD POLE |
| 16 | REMOVE EXISTING WOOD POLE |
| 17 | INSTALL AERIAL GUY ASSEMBLY |
| 18 | INSTALL STANDARD GUY ASSEMBLY |
| 19 | INSTALL SIDEWALK GUY ASSEMBLY |
| 20 | INSTALL MESSENGER CABLE |
| 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE |
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| 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE |
| 24 | INSTALL DELINEATOR MARKER |
| 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE |
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| 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
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| 34 | INSTALL GENERATOR POWER INLET BOX |
| 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 36 | INSTALL UNIFIED CABLE |
| 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
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| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION |
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| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT |
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GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

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# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE
## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/29/08 DATE

CADD Filename: ...\Sht0589.dgn

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| PROJECT REFERENCE NO. | SHEET NO. |
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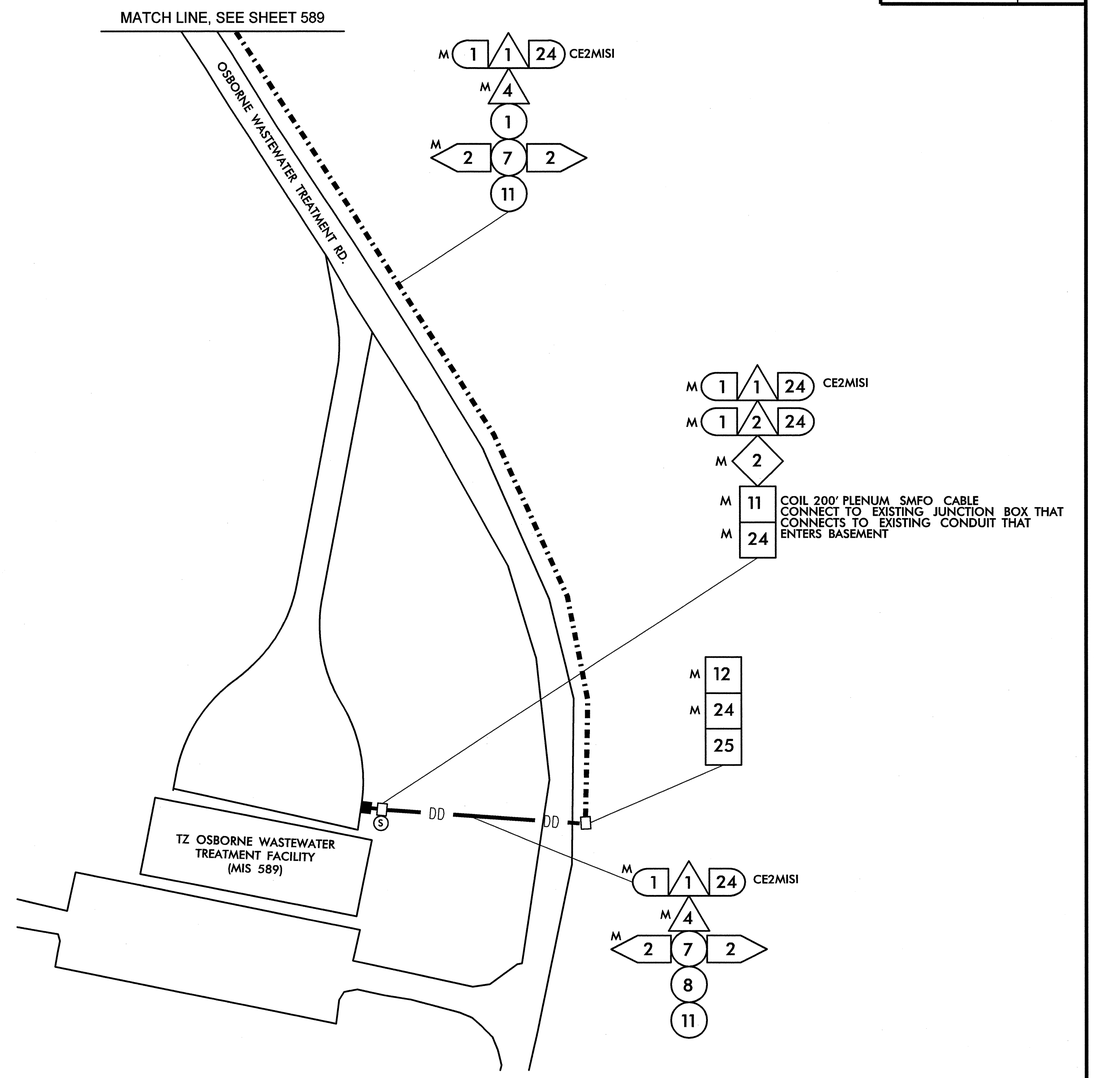
| U-4711 | 590 |




NOTES (THIS SHEET ONLY)
1. CONNECT NEW JUNCTION BOX TO EXISTING JUNCTION BOX USING NEW CONDUIT. NEW CABLE WILL BE ROUTED INTO BUILDING BY OTHERS.

1. INSTALL SMFO CABLE
2. INSTALL PLENUM RATED FIBER OPTIC CABLE
3. INSTALL FIBER OPTIC DROP CABLE
4. INSTALL TRACER WIRE
5. REUSE NCDOT SMFO CABLE
6. REUSE GDOT SMFO CABLE
1. TRENCH
2. INSTALL PVC CONDUIT
3. INSTALL RIGID, GALVANIZED STEEL CONDUIT
4. INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
5. INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING
6. INSTALL OUTER-DUCT POLYETHYLENE CONDUIT
7. INSTALL POLYETHYLENE CONDUIT
8. DIRECTIONAL DRILL CONDUIT
9. BORE AND JACK CONDUIT
10. INSTALL CABLE(S) IN EXISTING CONDUIT
11. INSTALL CABLE(S) IN NEW CONDUIT
12. INSTALL CABLE(S) IN EXISTING RISER
13. INSTALL CABLE(S) IN NEW RISER
14. INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE
15. INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
16. INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
17. INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET
18. INSTALL NEW RISER INTO POLE MOUNTED CABINET
19. REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING
1. INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET
2. INSTALL UNDERGROUND SPLICE ENCLOSURE
3. INSTALL AERIAL SPLICE ENCLOSURE
4. INSTALL POLE MOUNTED SPLICE CABINET
5. INSTALL BASE MOUNTED SPLICE CABINET
6. REMOVE EXISTING SPLICE CABINET
7. INSTALL TERMINAL SPLICE BOX
8. MODIFY EXISTING SPLICE ENCLOSURE
1. INSTALL CABINET FOUNDATION
2. REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER
3. MODIFY EXISTING CABINET FOUNDATION
4. INSTALL NEW 333 COMMUNICATION CABINET
5. INSTALL NEW 332 BASE MOUNTED CABINET
6. INSTALL NEW 336S CABINET
7. INSTALL CCTV CAMERA ASSEMBLY
8. INSTALL CCTV CAMERA WOOD POLE
9. INSTALL CCTV METAL POLE AND FOUNDATION
10. INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX
11. INSTALL SPECIAL OVERSIZED JUNCTION BOX
12. INSTALL OVERSIZED JUNCTION BOX
13. INSTALL STANDARD JUNCTION BOX
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19. INSTALL SIDEWALK GUY ASSEMBLY
20. INSTALL MESSENGER CABLE
21. REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE
22. REMOVE EXISTING COMMUNICATIONS CABLE
23. INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE
24. INSTALL DELINEATOR MARKER
25. STORE 30 FEET OF EACH COMMUNICATIONS CABLE
26. STORE 100 FEET OF EACH COMMUNICATIONS CABLE
27. LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE
28. LASH CABLE(S) TO EXISTING MESSENGER CABLE
29. LASH CABLE(S) TO NEW MESSENGER CABLE
30. INSTALL NEW ELECTRICAL SERVICE
31. MODIFY EXISTING ELECTRICAL SERVICE
32. INSTALL NEW CONTROLLER
33. INSTALL EXISTING CABLE IN NEW CABINET
34. INSTALL GENERATOR POWER INLET BOX
35. INSTALL LOCAL GIGABIT ETHERNET SWITCH
36. INSTALL UNIFIED CABLE
37. INSTALL POLE MOUNTED EQUIPMENT CABINET
38. INSTALL UNI-DIRECTIONAL YAGI ANTENNA
39. INSTALL OMNI-DIRECTIONAL ANTENNA
40. INSTALL RADIO TRANSCEIVER
41. INSTALL SYSTEM LOOP
42. INSTALL SYSTEM LOOP AMPLIFIER
43. INSTALL SYSTEM LOOP LEAD-IN CABLE
44. INSTALL LOCAL LOOP AMPLIFIER
45. INSTALL CITY WI-FI ANTENNA
46. INSTALL HUB 10-GIGABIT ETHERNET SWITCH
47. INSTALL CODEC
48. BOND MESSENGER CABLE TO POLE GROUND
49. INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION
50. INSTALL ANTENNA CABLE
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52. RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT
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54. INSTALL ETHERNET CABLE
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57. INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT
58. INSTALL WIRELESS ACCESS POINT POWER CABLE

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

PLANS PREPARED IN THE OFFICE OF:


Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000


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

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht0590.dgn

2/20/2008
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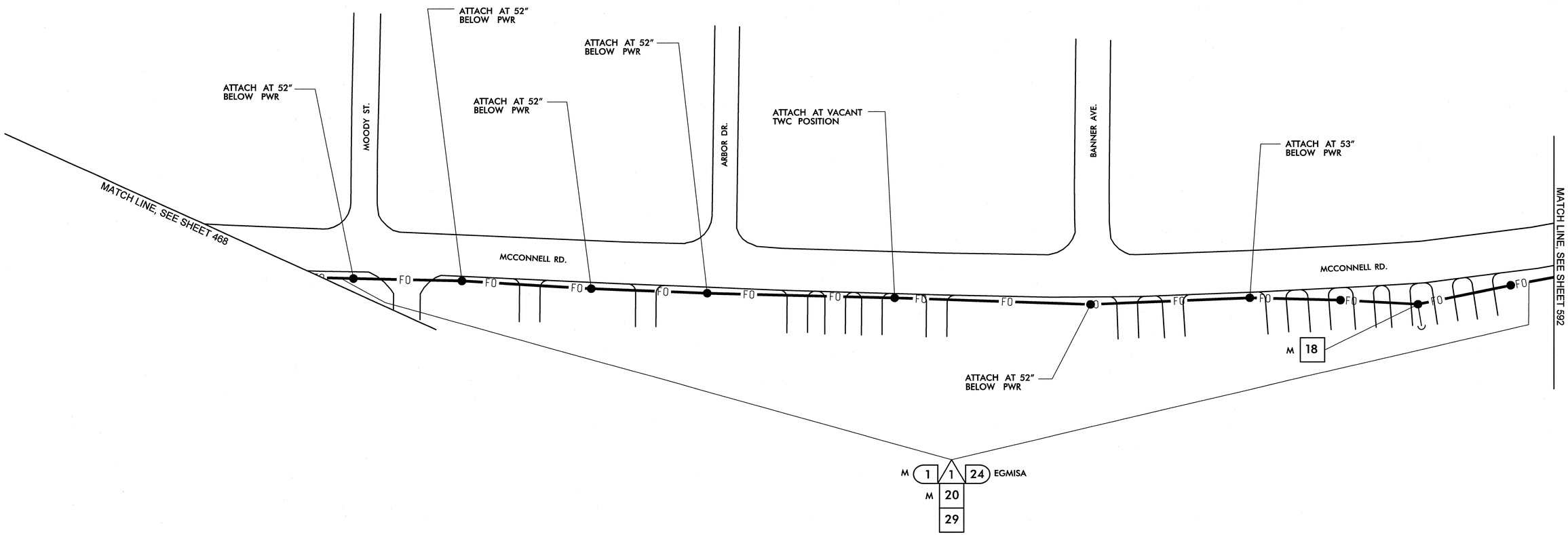
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-4711 | 591 |




| | | | | | | | |
|---|---|---|---|---|---|---|---|
| △1 | INSTALL SMFO CABLE | (14) | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE | 6 | INSTALL NEW 336S CABINET | 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| △2 | INSTALL PLENUM RATED FIBER OPTIC CABLE | (15) | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 7 | INSTALL CCTV CAMERA ASSEMBLY | 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| △3 | INSTALL FIBER OPTIC DROP CABLE | (16) | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) | 8 | INSTALL CCTV CAMERA WOOD POLE | 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| △4 | INSTALL TRACER WIRE | (17) | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET | 9 | INSTALL CCTV METAL POLE AND FOUNDATION | 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| △5 | REUSE NCDOT SMFO CABLE | (18) | INSTALL NEW RISER INTO POLE MOUNTED CABINET | 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX | 30 | INSTALL NEW ELECTRICAL SERVICE |
| △6 | REUSE GDOT SMFO CABLE | (19) | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING | 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX | 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| (1) | TRENCH | ◇1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET | 12 | INSTALL OVERSIZED JUNCTION BOX | 32 | INSTALL NEW CONTROLLER |
| (2) | INSTALL PVC CONDUIT | ◇2 | INSTALL UNDERGROUND SPLICE ENCLOSURE | 13 | INSTALL STANDARD JUNCTION BOX | 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| (3) | INSTALL RIGID, GALVANIZED STEEL CONDUIT | ◇3 | INSTALL AERIAL SPLICE ENCLOSURE | 14 | REMOVE EXISTING JUNCTION BOX | 34 | INSTALL GENERATOR POWER INLET BOX |
| (4) | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD | ◇4 | INSTALL POLE MOUNTED SPLICE CABINET | 15 | INSTALL WOOD POLE | 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| (5) | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING | ◇5 | INSTALL BASE MOUNTED SPLICE CABINET | 16 | REMOVE EXISTING WOOD POLE | 36 | INSTALL UNIFIED CABLE |
| (6) | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT | ◇6 | REMOVE EXISTING SPLICE CABINET | 17 | INSTALL AERIAL GUY ASSEMBLY | 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| (7) | INSTALL POLYETHYLENE CONDUIT | ◇7 | INSTALL TERMINAL SPLICE BOX | 18 | INSTALL STANDARD GUY ASSEMBLY | 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| (8) | DIRECTIONAL DRILL CONDUIT | ◇8 | MODIFY EXISTING SPLICE ENCLOSURE | 19 | INSTALL SIDEWALK GUY ASSEMBLY | 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| (9) | BORE AND JACK CONDUIT | 1 | INSTALL CABINET FOUNDATION | 20 | INSTALL MESSENGER CABLE | 40 | INSTALL RADIO TRANSCEIVER |
| (10) | INSTALL CABLE(S) IN EXISTING CONDUIT | 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER | 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE | 41 | INSTALL SYSTEM LOOP |
| (11) | INSTALL CABLE(S) IN NEW CONDUIT | 3 | MODIFY EXISTING CABINET FOUNDATION | 22 | REMOVE EXISTING COMMUNICATIONS CABLE | 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| (12) | INSTALL CABLE(S) IN EXISTING RISER | 4 | INSTALL NEW 333 COMMUNICATION CABINET | 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE | 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| (13) | INSTALL CABLE(S) IN NEW RISER | 5 | INSTALL NEW 332 BASE MOUNTED CABINET | 24 | INSTALL DELINEATOR MARKER | | |
| | | | | 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE | | |

| | | | | | |
|---|---|---|---|---|---|
| 44 | INSTALL LOCAL LOOP AMPLIFIER | 53 | INSTALL DSL ETHERNET SWITCH | | |
| 45 | INSTALL CITY WI-FI ANTENNA | 54 | INSTALL ETHERNET CABLE | | |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH | 55 | INSTALL TERMINAL SERVER | | |
| 47 | INSTALL CODEC | 56 | INSTALL MICROWAVE VEHICLE DETECTOR | | |
| 48 | BOND MESSENGER CABLE TO POLE GROUND | 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT | | |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION | 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE | | |
| 50 | INSTALL ANTENNA CABLE | | | | |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT | | | | |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT | | | | |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED


PLANS PREPARED IN THE OFFICE OF:
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Traffic Engineering and Safety Systems Branch
Transportation Management Unit
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE DATE 2/20/08

CADD Filename: ...\Sht0591.dgn

2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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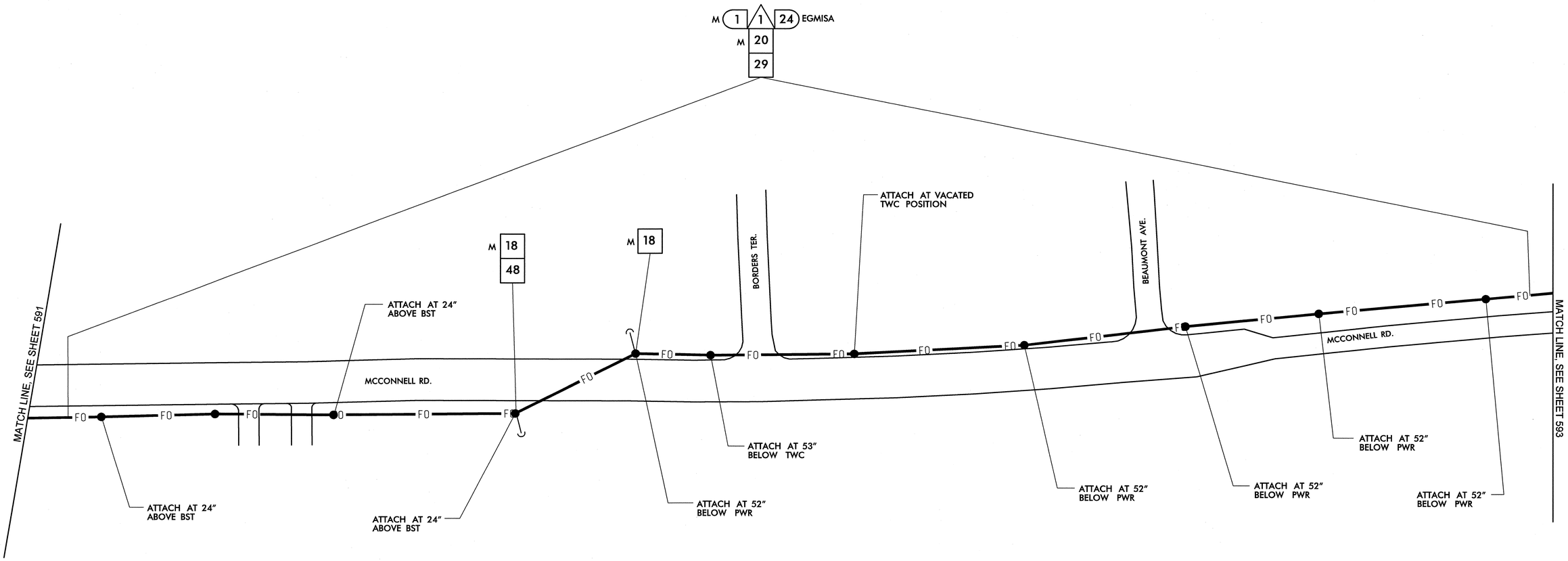
| U-4711 | 592 |




| | |
|---|---|
| 1 | INSTALL SMFO CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE |
| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
| 6 | REUSE GDOT SMFO CABLE |
| 1 | TRENCH |
| 2 | INSTALL PVC CONDUIT |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT |
| 7 | INSTALL POLYETHYLENE CONDUIT |
| 8 | DIRECTIONAL DRILL CONDUIT |
| 9 | BORE AND JACK CONDUIT |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT |
| 12 | INSTALL CABLE(S) IN EXISTING RISER |
| 13 | INSTALL CABLE(S) IN NEW RISER |
| 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE |
| 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET |
| 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET |
| 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING |
| 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET |
| 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE |
| 3 | INSTALL AERIAL SPLICE ENCLOSURE |
| 4 | INSTALL POLE MOUNTED SPLICE CABINET |
| 5 | INSTALL BASE MOUNTED SPLICE CABINET |
| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
| 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX |
| 12 | INSTALL OVERSIZED JUNCTION BOX |
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| 14 | REMOVE EXISTING JUNCTION BOX |
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| 17 | INSTALL AERIAL GUY ASSEMBLY |
| 18 | INSTALL STANDARD GUY ASSEMBLY |
| 19 | INSTALL SIDEWALK GUY ASSEMBLY |
| 20 | INSTALL MESSENGER CABLE |
| 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE |
| 22 | REMOVE EXISTING COMMUNICATIONS CABLE |
| 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE |
| 24 | INSTALL DELINEATOR MARKER |
| 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE |
| 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 30 | INSTALL NEW ELECTRICAL SERVICE |
| 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 32 | INSTALL NEW CONTROLLER |
| 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 34 | INSTALL GENERATOR POWER INLET BOX |
| 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 36 | INSTALL UNIFIED CABLE |
| 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
| 39 | INSTALL OMNI-DIRECTIONAL ANTENNA |
| 40 | INSTALL RADIO TRANSCEIVER |
| 41 | INSTALL SYSTEM LOOP |
| 42 | INSTALL SYSTEM LOOP AMPLIFIER |
| 43 | INSTALL SYSTEM LOOP LEAD-IN CABLE |
| 44 | INSTALL LOCAL LOOP AMPLIFIER |
| 45 | INSTALL CITY WI-FI ANTENNA |
| 46 | INSTALL HUB 10-GIGABIT ETHERNET SWITCH |
| 47 | INSTALL CODEC |
| 48 | BOND MESSENGER CABLE TO POLE GROUND |
| 49 | INSTALL BASE ADAPTER AND MODIFY EXISTING CABINET FOUNDATION |
| 50 | INSTALL ANTENNA CABLE |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT |
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SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/20/08 DATE

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2/20/2008
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| PROJECT REFERENCE NO. | SHEET NO. |
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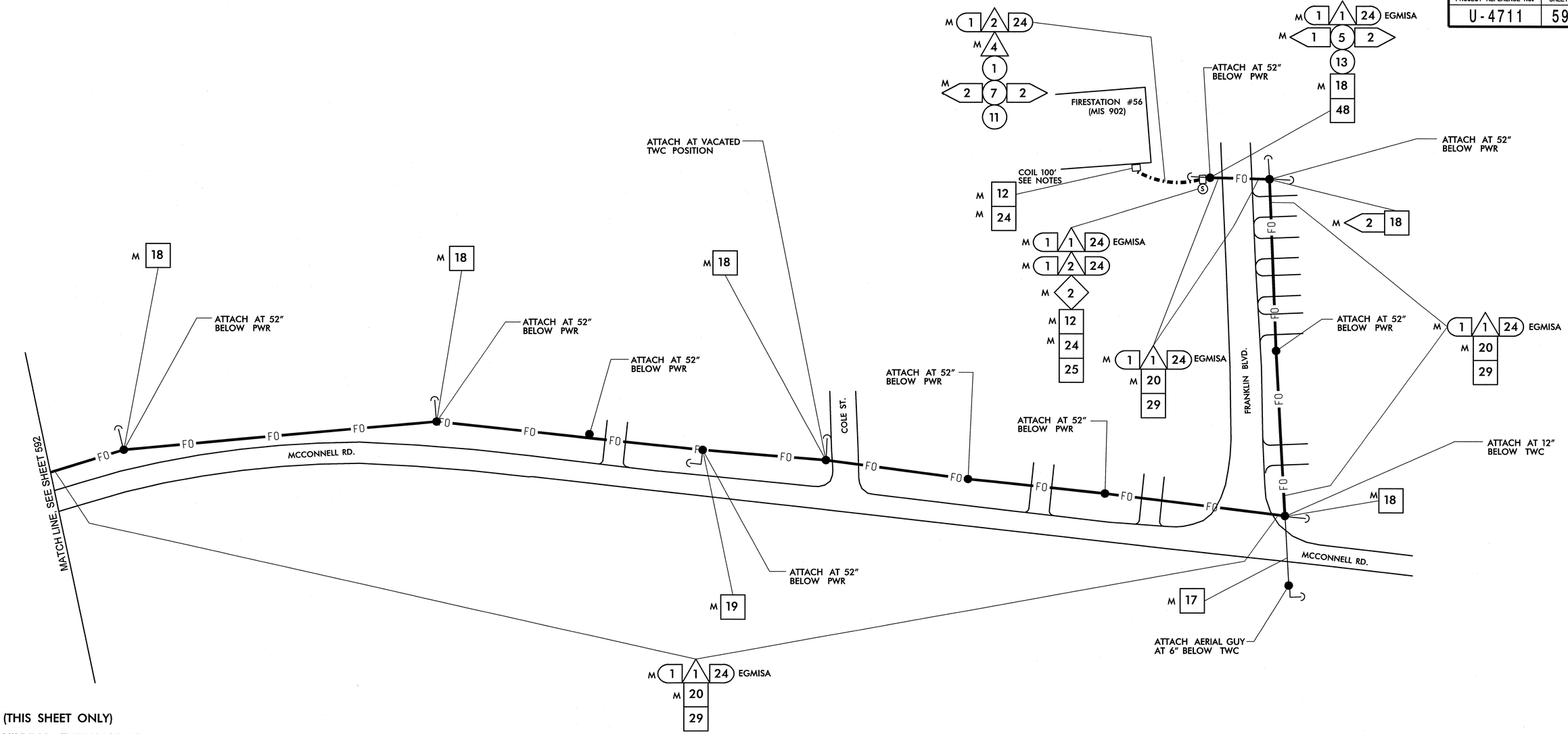
| U-4711 | 593 |




## NOTES (THIS SHEET ONLY)

1. SEE BUILDING ENTRANCE DETAIL FOR ROUTING INTO BUILDING

| | |
|---|---|
| 1 | INSTALL SMFO CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
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| 50 | INSTALL ANTENNA CABLE |
| 51 | RECONNECT RAILROAD PREEMPTION EQUIPMENT |
| 52 | RECONNECT EMERGENCY VEHICLE PREEMPTION EQUIPMENT |
| 53 | INSTALL DSL ETHERNET SWITCH |
| 54 | INSTALL ETHERNET CABLE |
| 55 | INSTALL TERMINAL SERVER |
| 56 | INSTALL MICROWAVE VEHICLE DETECTOR |
| 57 | INSTALL MICROWAVE VEHICLE DETECTOR CONTROLLER UNIT |
| 58 | INSTALL WIRELESS ACCESS POINT POWER CABLE |

NOTE:
GDOT ATTACH 40" BELOW PWR ON FRONT SIDE OF POLE, UNLESS OTHERWISE NOTED

PLANS PREPARED IN THE OFFICE OF:

Kimley-Horn and Associates, Inc.
P.O. Box 33068
Raleigh N.C. 27636-3068
(919) 677-2000

Traffic Engineering and Safety Systems Branch
Intelligent Transportation Systems
750 Greenfield Pkwy., Garner, NC 27529

SCALE 0 50

# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

PLAN DATE: FEBRUARY, 2008 REVIEWED BY: K.W. SMITH

PREPARED BY: K.D. VANPATTEN REVIEWED BY: M.W. DUNZO

| REVISIONS | INIT. | DATE |
|---|---|---|
| | | |

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO

SIGNATURE 2/22/08 DATE

CADD Filename ...\Sht0593.dgn

2/20/2008
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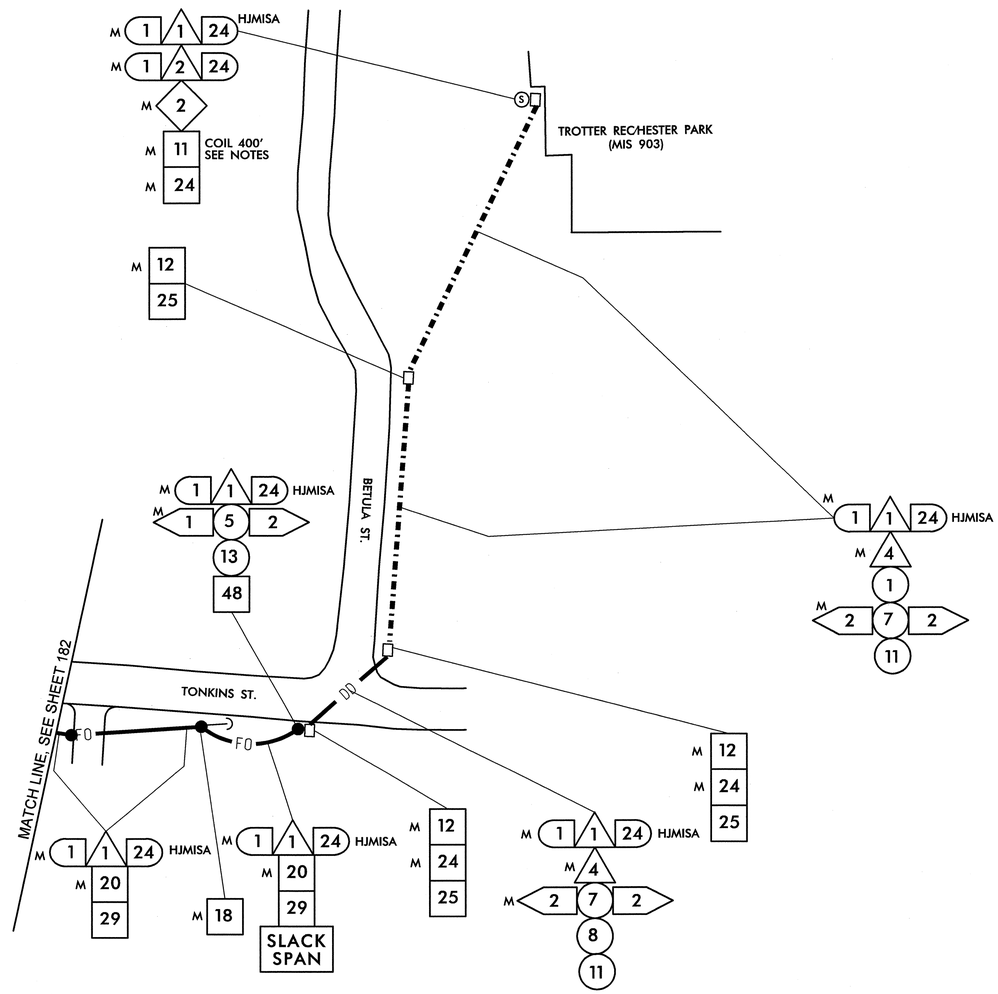
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-4711 | 594 |




NOTES (THIS SHEET ONLY)

1. SEE BUILDING ENTRANCE DETAIL FOR ROUTING INTO BUILDING

| | |
|---|---|
| 1 | INSTALL SMFO CABLE |
| 2 | INSTALL PLENUM RATED FIBER OPTIC CABLE |
| 3 | INSTALL FIBER OPTIC DROP CABLE |
| 4 | INSTALL TRACER WIRE |
| 5 | REUSE NCDOT SMFO CABLE |
| 6 | REUSE GDOT SMFO CABLE |
| 1 | TRENCH |
| 2 | INSTALL PVC CONDUIT |
| 3 | INSTALL RIGID, GALVANIZED STEEL CONDUIT |
| 4 | INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD |
| 5 | INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC HEAT SHRINK TUBING |
| 6 | INSTALL OUTER-DUCT POLYETHYLENE CONDUIT |
| 7 | INSTALL POLYETHYLENE CONDUIT |
| 8 | DIRECTIONAL DRILL CONDUIT |
| 9 | BORE AND JACK CONDUIT |
| 10 | INSTALL CABLE(S) IN EXISTING CONDUIT |
| 11 | INSTALL CABLE(S) IN NEW CONDUIT |
| 12 | INSTALL CABLE(S) IN EXISTING RISER |
| 13 | INSTALL CABLE(S) IN NEW RISER |
| 14 | INSTALL NEW CONDUIT OR RISER INTO EXISTING CONDUIT ENTRANCE |
| 15 | INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 16 | INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE) |
| 17 | INSTALL NEW CONDUIT INTO POLE MOUNTED CABINET |
| 18 | INSTALL NEW RISER INTO POLE MOUNTED CABINET |
| 19 | REPLACE EXISTING WEATHERHEAD WITH HEAT SHRINK TUBING |
| 1 | INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS, AND FUSION SPLICE CABLE IN CABINET |
| 2 | INSTALL UNDERGROUND SPLICE ENCLOSURE |
| 3 | INSTALL AERIAL SPLICE ENCLOSURE |
| 4 | INSTALL POLE MOUNTED SPLICE CABINET |
| 5 | INSTALL BASE MOUNTED SPLICE CABINET |
| 6 | REMOVE EXISTING SPLICE CABINET |
| 7 | INSTALL TERMINAL SPLICE BOX |
| 8 | MODIFY EXISTING SPLICE ENCLOSURE |
| 1 | INSTALL CABINET FOUNDATION |
| 2 | REMOVE EXISTING CABINET FOUNDATION, CABINET AND CONTROLLER |
| 3 | MODIFY EXISTING CABINET FOUNDATION |
| 4 | INSTALL NEW 333 COMMUNICATION CABINET |
| 5 | INSTALL NEW 332 BASE MOUNTED CABINET |
| 6 | INSTALL NEW 336S CABINET |
| 7 | INSTALL CCTV CAMERA ASSEMBLY |
| 8 | INSTALL CCTV CAMERA WOOD POLE |
| 9 | INSTALL CCTV METAL POLE AND FOUNDATION |
| 10 | INSTALL OVERSIZED HEAVY DUTY JUNCTION BOX |
| 11 | INSTALL SPECIAL OVERSIZED JUNCTION BOX |
| 12 | INSTALL OVERSIZED JUNCTION BOX |
| 13 | INSTALL STANDARD JUNCTION BOX |
| 14 | REMOVE EXISTING JUNCTION BOX |
| 15 | INSTALL WOOD POLE |
| 16 | REMOVE EXISTING WOOD POLE |
| 17 | INSTALL AERIAL GUY ASSEMBLY |
| 18 | INSTALL STANDARD GUY ASSEMBLY |
| 19 | INSTALL SIDEWALK GUY ASSEMBLY |
| 20 | INSTALL MESSENGER CABLE |
| 21 | REMOVE EXISTING COMMUNICATIONS CABLE AND MESSENGER CABLE |
| 22 | REMOVE EXISTING COMMUNICATIONS CABLE |
| 23 | INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE |
| 24 | INSTALL DELINEATOR MARKER |
| 25 | STORE 30 FEET OF EACH COMMUNICATIONS CABLE |
| 26 | STORE 100 FEET OF EACH COMMUNICATIONS CABLE |
| 27 | LASH CABLE(S) TO EXISTING SIGNAL/ COMMUNICATIONS CABLE |
| 28 | LASH CABLE(S) TO EXISTING MESSENGER CABLE |
| 29 | LASH CABLE(S) TO NEW MESSENGER CABLE |
| 30 | INSTALL NEW ELECTRICAL SERVICE |
| 31 | MODIFY EXISTING ELECTRICAL SERVICE |
| 32 | INSTALL NEW CONTROLLER |
| 33 | INSTALL EXISTING CABLE IN NEW CABINET |
| 34 | INSTALL GENERATOR POWER INLET BOX |
| 35 | INSTALL LOCAL GIGABIT ETHERNET SWITCH |
| 36 | INSTALL UNIFIED CABLE |
| 37 | INSTALL POLE MOUNTED EQUIPMENT CABINET |
| 38 | INSTALL UNI-DIRECTIONAL YAGI ANTENNA |
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# CITY OF GREENSBORO COMPUTERIZED SIGNAL SYSTEM UPGRADE

## CABLE ROUTING SHEET

DIVISION 7 GUILFORD COUNTY

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| PLAN DATE: FEBRUARY, 2008 | REVIEWED BY: K.W. SMITH |
| PREPARED BY: K.D. VANPATTEN | REVIEWED BY: M.W. DUNZO |

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SEAL
NORTH CAROLINA PROFESSIONAL SEAL 023562 ENGINEER MARK DUNZO
SIGNATURE DATE 2/29/08
CADD Filename: ...\Sht0594.dgn

2/29/2008
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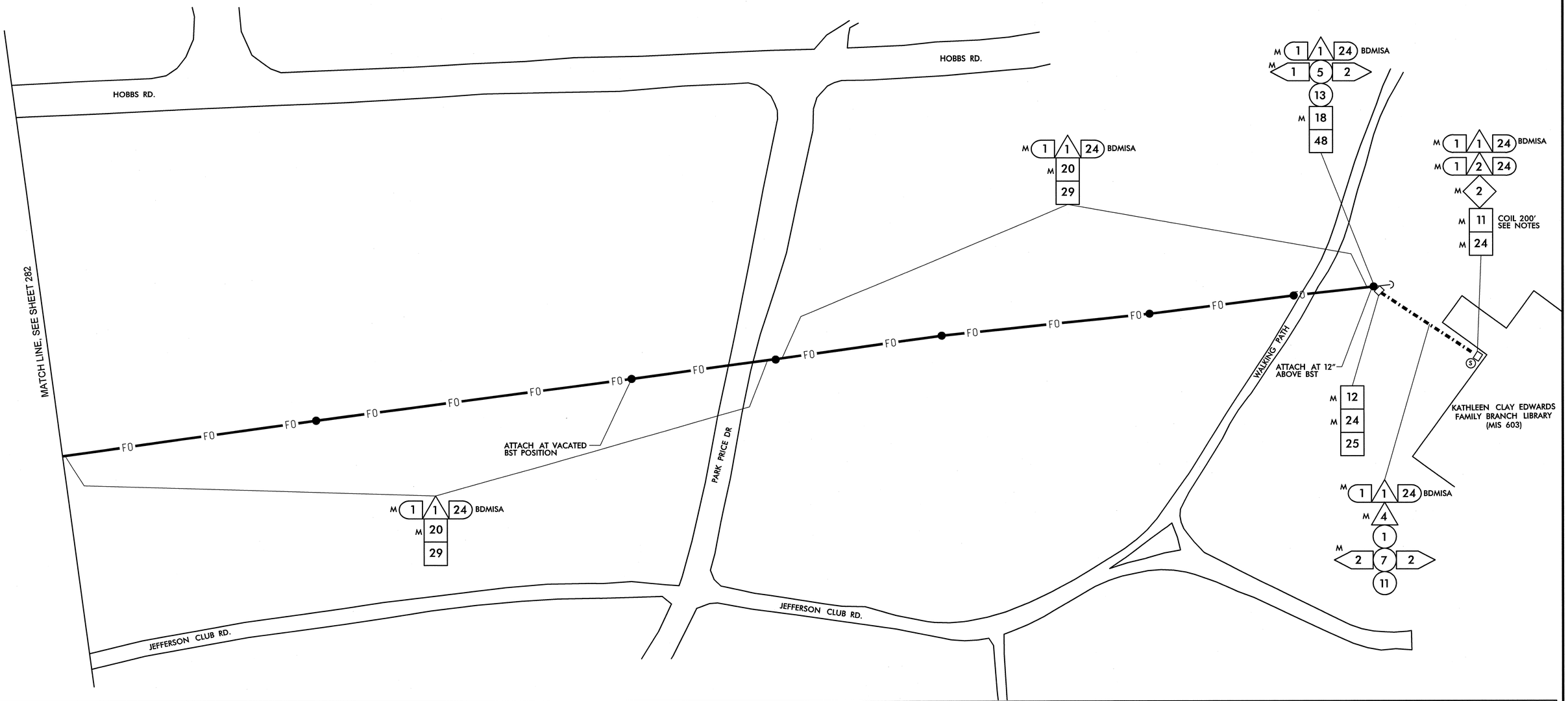
| PROJECT REFERENCE NO. | SHEET NO. |
|---|---|
| U-4711 | 595 |

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