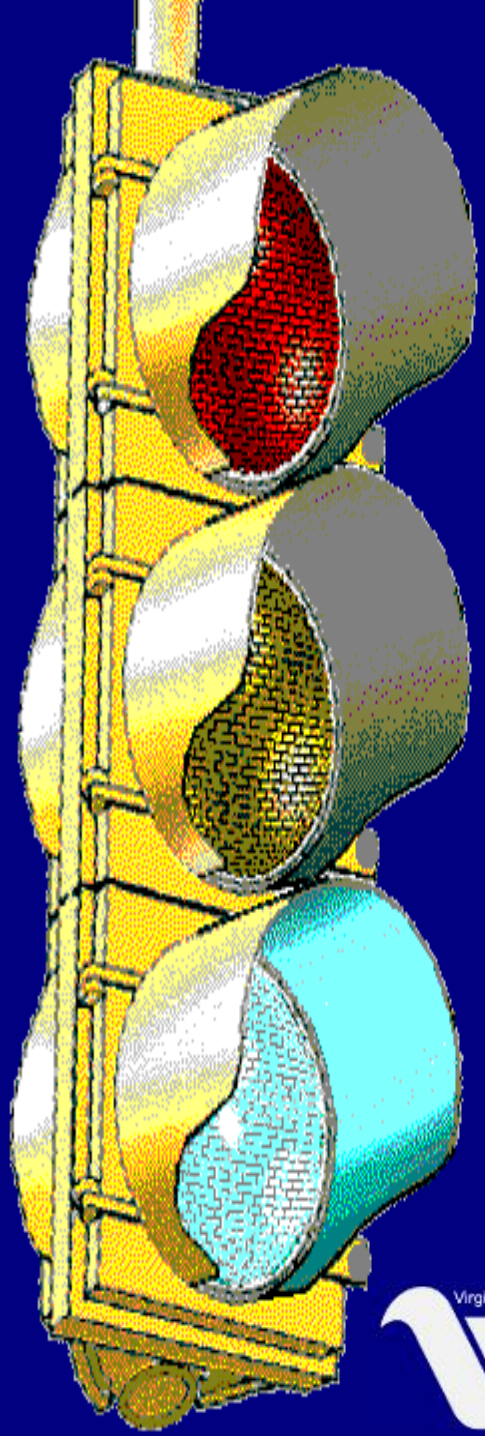


VDOT NRO

Traffic Signal Design

The Communication System and YOU

NRO Communication Group

Virginia Department of Transportation

VDOT

We Keep Virginia Moving

Change in Technology

- Type 170 Controllers – VERIZON 9.6
  1994 to 2012
- Type 2070 Controllers - Broadband
  - Greater bandwidth requirements
  - Auxiliary Equipment (CCTV-DMS)
  - Increased Reliability
  - Higher Function with Lower Costs

Type 2070 Controller Cabinets will be installed on all projects

BE AWARE - MOST TRAFFIC SIGNAL PLANS DO NOT HAVE THE COMMUNICATION REQUIREMENTS INCLUDED…AND IF THEY DO IT IS PROBABLY INCORRECT INFORMATION!!

It is imperative that the project read and understand the traffic signal notes related to the communication requirements.

Traffic Signal Notes Breakdown

THE PROJECT SHALL BE RESPONSIBLE FOR PROVIDING AND MAINTAINING COMMUNICATION TO THE TRAFFIC SIGNAL CONTROLLER AT ALL TIMES.

THE PROJECT IS RESPONSIBLE FOR ANY COSTS ASSOCIATED WITH PROVIDING COMMUNICATION TO THE TRAFFIC SIGNAL.

THE PROJECT SHALL BE RESPONSIBLE FOR COORDINATING THE LOCATION AND THE INSTALLATION OF THE COMMUNICATION CIRCUIT CONDUIT(S) TO THE TRAFFIC SIGNAL CONTROLLER CABINET WITH THE DESIGNATED COMMUNICATION PROVIDER.

THE PROJECT SHALL CONTACT VDOT'S NORTHERN REGION OPERATIONS COMMUNICATIONS GROUP (Ida Stephens 703-334-0882 Ida.Stephens@VDOT.VIRGINIA.GOV OR TIM TERRY 703-334-0362 TIM.TERRY@VDOT.VIRGINIA.GOV) ONE HUNDRED TWENTY (**120**) DAYS PRIOR TO THE START OF THE TRAFFIC SIGNAL CONSTRUCTION TO ESTABLISH THE COMMUNICATION PROVIDER AND TO COORDINATE THE COMMUNICATION ACTIVITIES.

Traffic Signal Notes Breakdown

DESIGNATED COMMUNICATION PROVIDERS;

COX Communication – FAIRFAX COUNTY

COMCAST Communication – PRINCE WILLIAM COUNTY; LOUDOUN COUNTY AND MOST OF RESTON

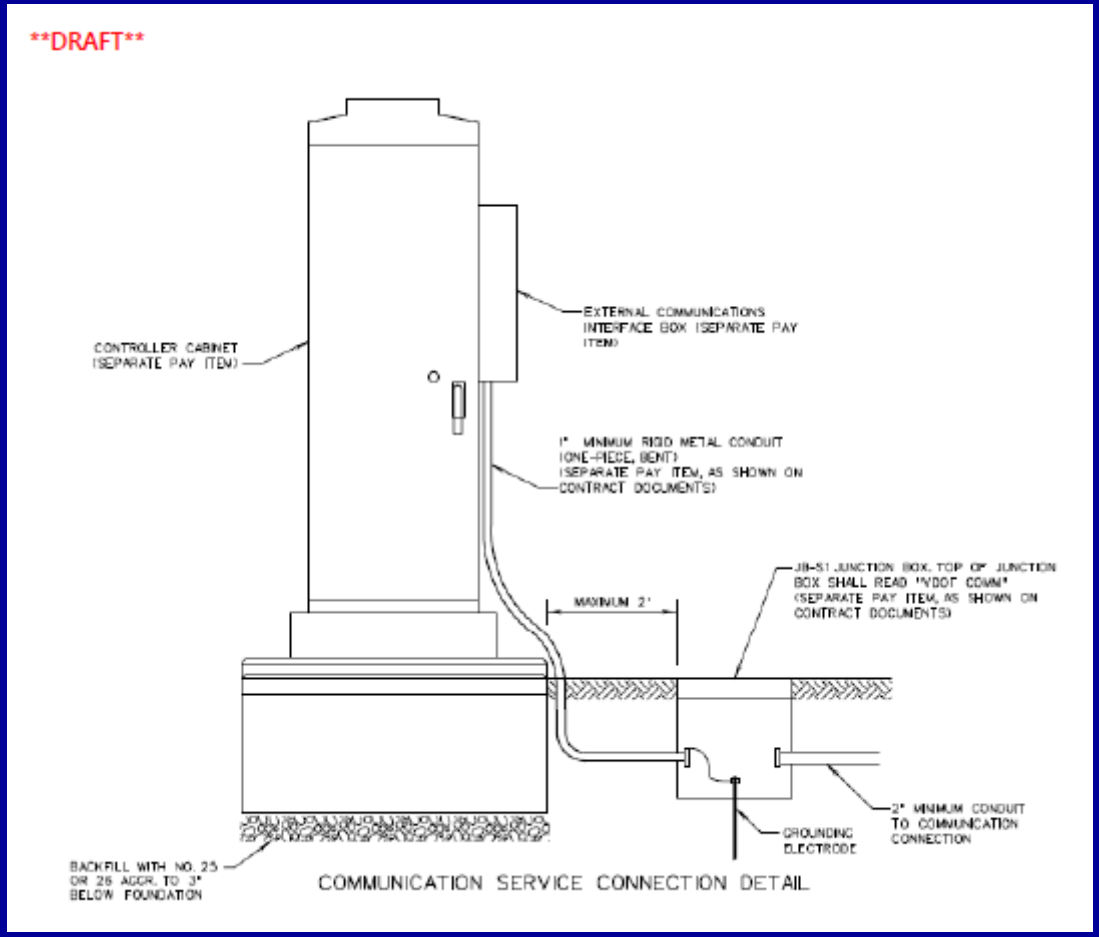
The project's design consultant shall contact NRO's Communication Group to determine the correct communication provider.

VERIZON Copper (twisted pair) is no longer an option.

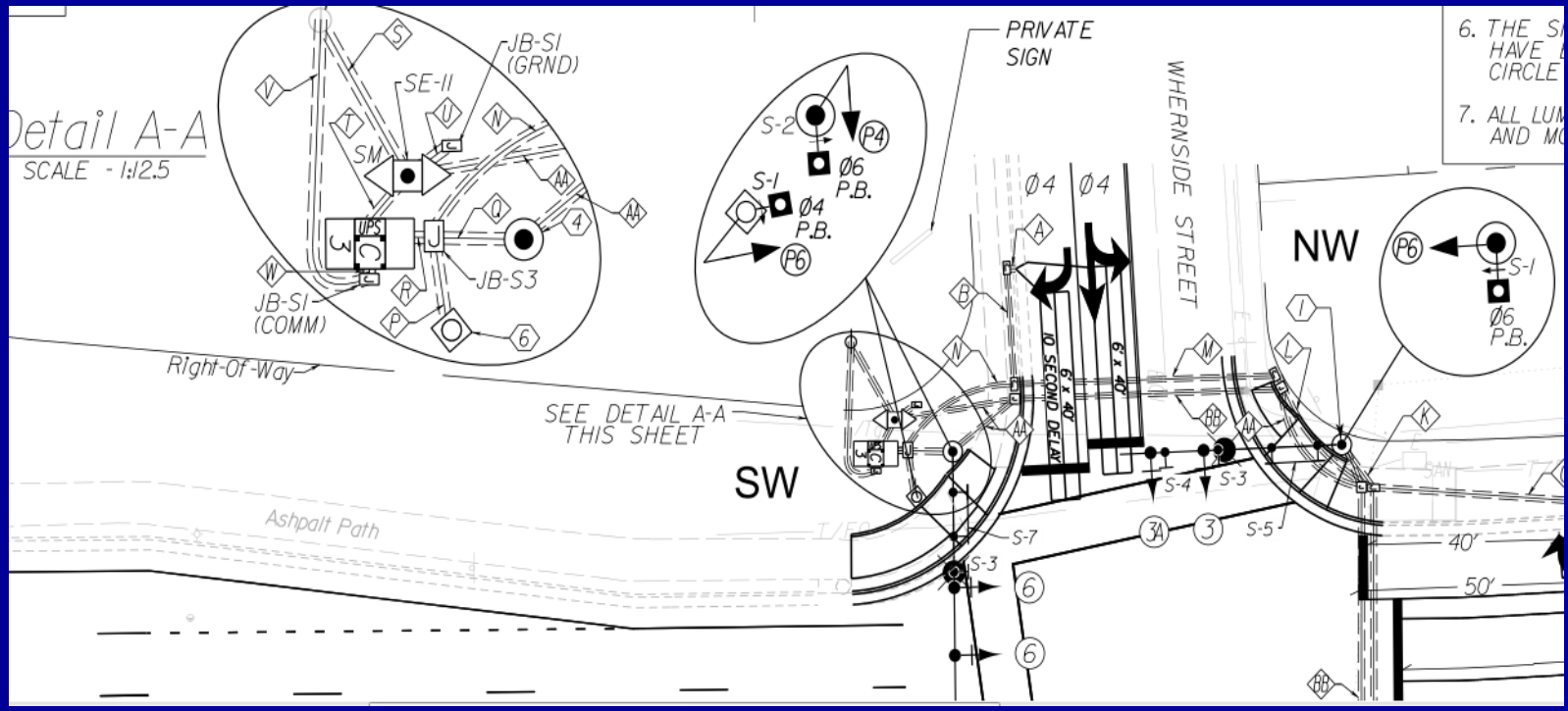
Traffic Signal Notes Breakdown

THE 1" METAL CONDUIT THAT IS INSTALLED AS PART OF THE COMMUNICATION CIRCUIT (ST'D CC-2 ON THE CONTROLLER CABINET) SHALL BE TERMINATED INTO A ST'D JB-S1 JUNCTION BOX LOCATED 12" TO 24" FROM THE CONTROLLER CABINET FOUNDATION.

COMM JB-S1 Location



Cabinet Orientation and the COMM JB-S1



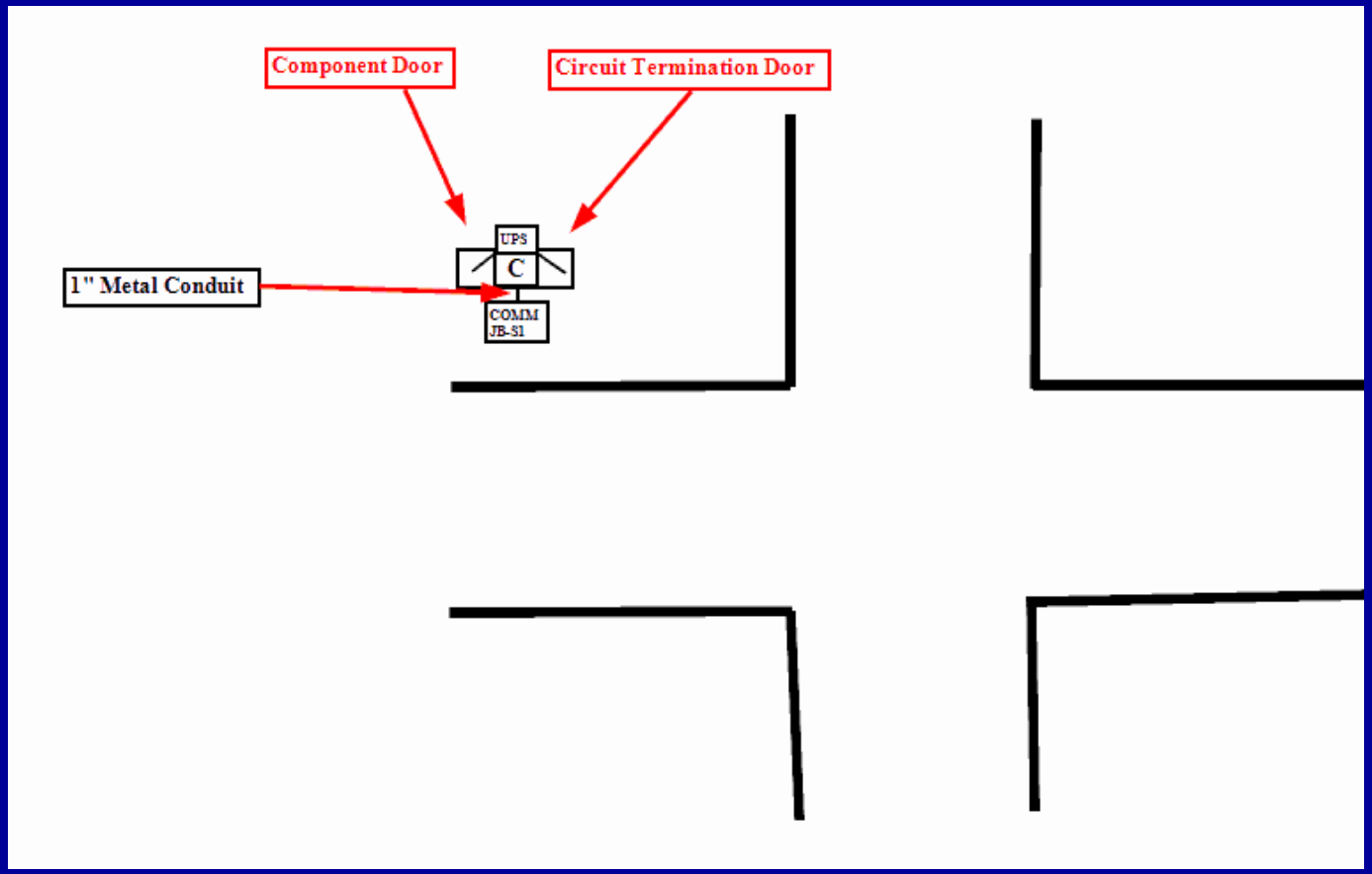
Cabinet Orientation

- There are two doors on the 332 controller cabinet that VDOT utilizes in the Northern Region. One door is called the circuit termination door and allows access to the cabinet input and output (wires/cables) termination panels. This door also allows access to the cable connectors for the 2070 controller and auxiliary equipment.

Cabinet Orientation

- The other door is called the component door where access to the equipment/components is possible. This is the door that the technician will use to observe the operation of the traffic signal viewing the front panel of the Type 2070 controller and the auxiliary equipment. The controller cabinet should be oriented to the intersection so the technician can observe the equipment/components and have an unobstructed view of the traffic signal heads.

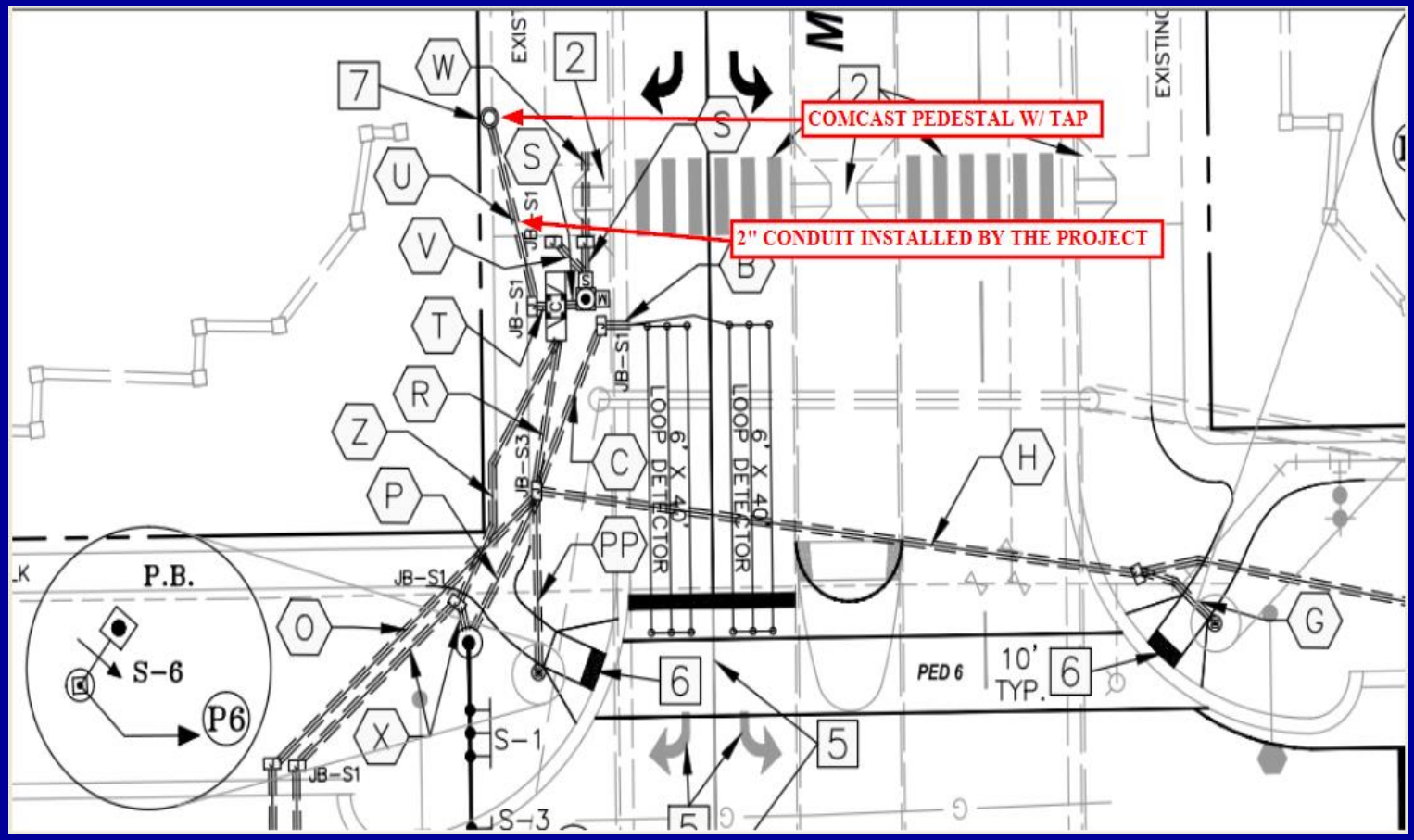
Cabinet Orientation



Traffic Signal Notes Breakdown

THE 2" CONDUIT INSTALLED BY THE PROJECT FROM THE DESIGNATED COMMUNICATION PROVIDER CONNECTION POINT TO THE CONTROLLER CABINET SHALL BE TERMINATED INTO THE COMM JB-S1. THE REQUIRED GROUND ELECTRODE FOR THE COMMUNICATION CIRCUIT SHALL BE INSTALLED IN THIS JB-S1. THE COVER SHALL HAVE "COMM" CAST IN THE DEPRESSION ON TOP AS DETAILED IN THE ST'D JB-S1. PULL ROPE RATED AT 1100 LBS. SHALL BE INSTALLED IN ALL COMMUNICATION CONDUITS.

Communication on Signal Plans



Communication on Signal Plans

- How do you get there?

Communication on Signal Plans

- Nothing happens overnight with the cable companies!!!
- In most cases after being contacted by the design consultant I will notify the service provider of the project** and initiate a site survey (two weeks).
- After the site survey has been completed a scope of work (SOW) is developed. The SOW details the service providers work such a plant extension and vault/pedestal installation. The SOW will also detail the project's responsibility related to conduit installation from the service provider's facility to the COMM JB-S1 (two weeks).

- ** Single Traffic Signal Projects

Communication on Signal Plans

- But Brian can't you teach us how to identify service provider's facilities so we can by-pass all this nonsense and move forward with what we have to do?

Communication on Signal Plans

Communication on Signal Plans

- The site survey/SOW process is mandatory to confirm the facility and to ensure signal strength.
- Often equipment has to be installed (amplifiers/taps) and cable plants extended.
- We're not in Verizonland anymore.

Communication on Signal Plans

- On large multi-intersection projects or projects that require utility relocation/undergrounding all traffic signal broadband requirements shall be taken into consideration during the utility relocation design process.
- The utility design consultant will work directly with COX/Comcast to accommodate all traffic signals within the project area.

Traffic Signal Notes Breakdown

NO TRAFFIC SIGNAL SHALL BE PLACED INTO OPERATION UNTIL THE LOCATION IS 100% COMPLETE.

THIS INCLUDES ANY NECESSARY PAVEMENT MARKINGS AND SIGNAGE SHOWN ON THE PLANS AND THAT THE TRAFFIC SIGNAL COMMUNICATION REQUIREMENTS ARE COMPLETE AND OPERATIONAL.

Traffic Signal Communication Summary

1. The Project shall contact NRO's Communication Group 120 days prior to start of signal construction. This starts the process of providing communication to the traffic signal.
2. The Project contacts NRO's Communication Group after the signal contractor has completed the installation of the communication infrastructure, the controller cabinet and the electrical service equipment. At this point the communication circuit is ordered though VITA. This process can take up to two weeks.
3. NRO's Communication Group coordinates the communication service providers installation, installs the router and tests/confirms the operation of the broadband communication.

Good communication between the Project and NRO's Communication Group is essential for a smooth process.

Questions and Answers

THANK YOU!