

# GENERAL NOTES

| FED. RD. DIVISION | STATE | PROJECT     | FISCAL YEAR |
|-------------------|-------|-------------|-------------|
| 5                 | OHIO  | T-4030 (11) | 1973        |

8  
33

WILLOUGHBY CITY SIGNALS, LAKE COUNTY  
LAKE 20/84/640

THE AMPLIFIER IS ADDED TO PROVIDE A LOW IMPEDANCE OUTPUT AND ALSO TO PROVIDE A TRANSMIT LEVEL OF 20 VRMS MAXIMUM AND OF SUFFICIENT VOLTAGE TO PROVIDE AN ACCURATE SIGNAL TO ALL DECODERS IN THE SYSTEM. THE POWER SUPPLY IS DESIGNED TO POWER ONE COMPLETE ENCODER STATION FROM A 117 VAC 60 HERTZ POWER LINE.

#### DECODER STATION

THE DECODER STATION CONSISTS OF A TEN CHANNEL DECODER, A LINE COUPLING AMPLIFIER AND A POWER SUPPLY. THE TEN CHANNEL DECODER CONSISTS OF TEN SEPARATE DECODERS WITH RELAY OUTPUTS. THE RELAY OUTPUT IS A SINGLE FORM C CONTACT. THE LINE COUPLING AMPLIFIER IS A HIGH INPUT IMPEDANCE DEVICE WHICH IS DESIGNED TO DRIVE TEN RF20 REEDS. THE HIGH INPUT IMPEDANCE PROVIDES THE CAPABILITY OF CONNECTING AS MANY AS 20 DECODER STATIONS ON ONE PAIR OF 600 OHM TELEPHONE LINES. THE POWER SUPPLY IS DESIGNED TO POWER ONE COMPLETE DECODER STATION FROM A 117 VAC 60 HZ. POWER LINE.

THE INDIVIDUAL DECODER OUTPUT RELAY IS ENERGIZED ONLY WHEN THE PROPER FREQUENCY TONE IS PRESENT ON THE LINE.

THE DECODER STATION IS HOUSED IN A NEMA 3 STEEL ENCLOSURE. THE ENCLOSURE IS TO BE SUITABLE TO BE MOUNTED ON A SHELF. A SINGLE MS CONNECTOR SHALL BE USED TO MAKE CONNECTION TO THE OUTSIDE OF THE ENCLOSURE.

#### DECODER STATION SPECIFICATIONS

AMPLIFIER GAIN: ADJUSTABLE, CAN BE SET TO OPERATE WITH NOMINAL PER TONE SIGNAL LEVELS WITHIN THE RANGE .025 TO .25 VRMS (THIS IS A 20 DB RANGE). THE SYSTEM CAN BE ADJUSTED TO OPERATE WITH TELEPHONE LINE LOSSES OF 0 TO 20 DB.

DYNAMIC RANGE: THE RECEIVED TONE LEVEL MUST REMAIN WITHIN  $\pm 6$  DB OF THE NOMINAL LEVEL.

INPUT IMPEDANCE: 20,000 OHMS NOMINAL, BALANCED AND ISOLATED.

RESPONSE TIME: .2 SEC. MAX.

DROPOUT TIME: 1.2 SEC. MAX.

AMBIENT TEMPERATURE RANGE: -30 TO +60° C.

OUTPUT CONTROL FUNCTION: RELAY CONTACTS 1 AMP AT 115 VAC (RESISTIVE LOAD) .3 AMP AT 115 VAC (INDUCTIVE LOAD)

SUPPLY VOLTAGE: 115 VAC  $\pm 20\%$ , 50/60 HZ.

PAYMENT ITEM 625 10 CHANNEL REMOTE CONTROL SYSTEM WILL BE MADE AS A PART OF THE EQUIPMENT OF WHICH IT IS A PART, INSTALLED AND FULLY TESTED.

#### 625 WEATHERHEAD AND CONDUIT RISER

THE WEATHERHEAD AND CONDUIT RISER SHALL PROVIDE A WIRING RACEWAY FOR SIGNAL CABLE FROM THE CONTROLLER TO THE OVERHEAD SPAN WIRE.

THE WEATHERHEAD AND CONDUIT RISER SHALL CONSIST OF A WEATHERHEAD, TWO (2) INCH CONDUIT, TWO (2) INCH CONDUIT FITTINGS AND ELLS, AND STAINLESS STEEL STRAPS AS DETAILED ON SHEET NO. 33.

THE WEATHERHEAD SHALL BE CAST ALUMINUM OR GALVANIZED CAST FERROUS METAL AND SHALL PREVENT ENTRY OF WATER INTO THE CONDUIT.

CONDUIT SHALL BE TYPE III AS SPECIFIED IN 713.04. STAINLESS STEEL STRAPS SHALL BE 3/4 OF AN INCH WIDE BY .020 INCH THICK AND SHALL BE SPACED AT MAXIMUM INTERVALS OF FIVE (5) FEET.

PAYMENT FOR 625 "WEATHERHEAD AND CONDUIT RISER" WILL BE MADE AT UNIT PRICE BID FOR EACH WEATHERHEAD AND CONDUIT RISER INSTALLATION COMPLETELY INSTALLED AND ACCEPTED INCLUDING ALL LABOR, MATERIAL, EQUIPMENT AND INCIDENTALS NECESSARY TO PERFORM THE REQUIRED ITEM OF WORK.

#### 816 SPAN WIRE MOUNTED SIGN ATTACHMENT, AS PER PLAN

THIS ITEM OF WORK SHALL CONSIST OF THE FURNISHING AND INSTALLATION OF A STEEL ANGLE, SPAN WIRE MOUNTING BRACKET, AND HARDWARE AS DETAILED ON SHEET NO. 33.

BASIS OF PAYMENT SHALL BE AT THE CONTRACT BID PRICE PER EACH SPAN WIRE MOUNTED SIGN ATTACHMENT, AS PER PLAN WHICH PRICE SHALL INCLUDE ALL LABOR, MATERIAL, EQUIPMENT AND INCIDENTALS NECESSARY TO PERFORM THE REQUIRED ITEM OF WORK.

#### UNDERGROUND UTILITIES

Cleveland Electric Illuminating Co.  
Ohio Bell  
City of Willoughby, Water Dept.  
East Ohio Gas Co.

Before commencement of any work, all utilities shall be notified. Ph. No. 1-800-362-2764

#### 202 REMOVAL OF EXISTING SIGNAL INSTALLATION

In accordance with 202, this item shall include the removal of the signal heads, controller, City owned strain poles, pole foundations (unless used to support other items), cables, messenger wires, and all other portions of the existing traffic signal which are not to be reused in the new installation.

With the exception of items to be relocated and incorporated into the new installations or whose removal is otherwise necessary to permit the installation of the new signal equipment, no item shall be removed until the new installation is in full operation unless otherwise directed by the Engineer.

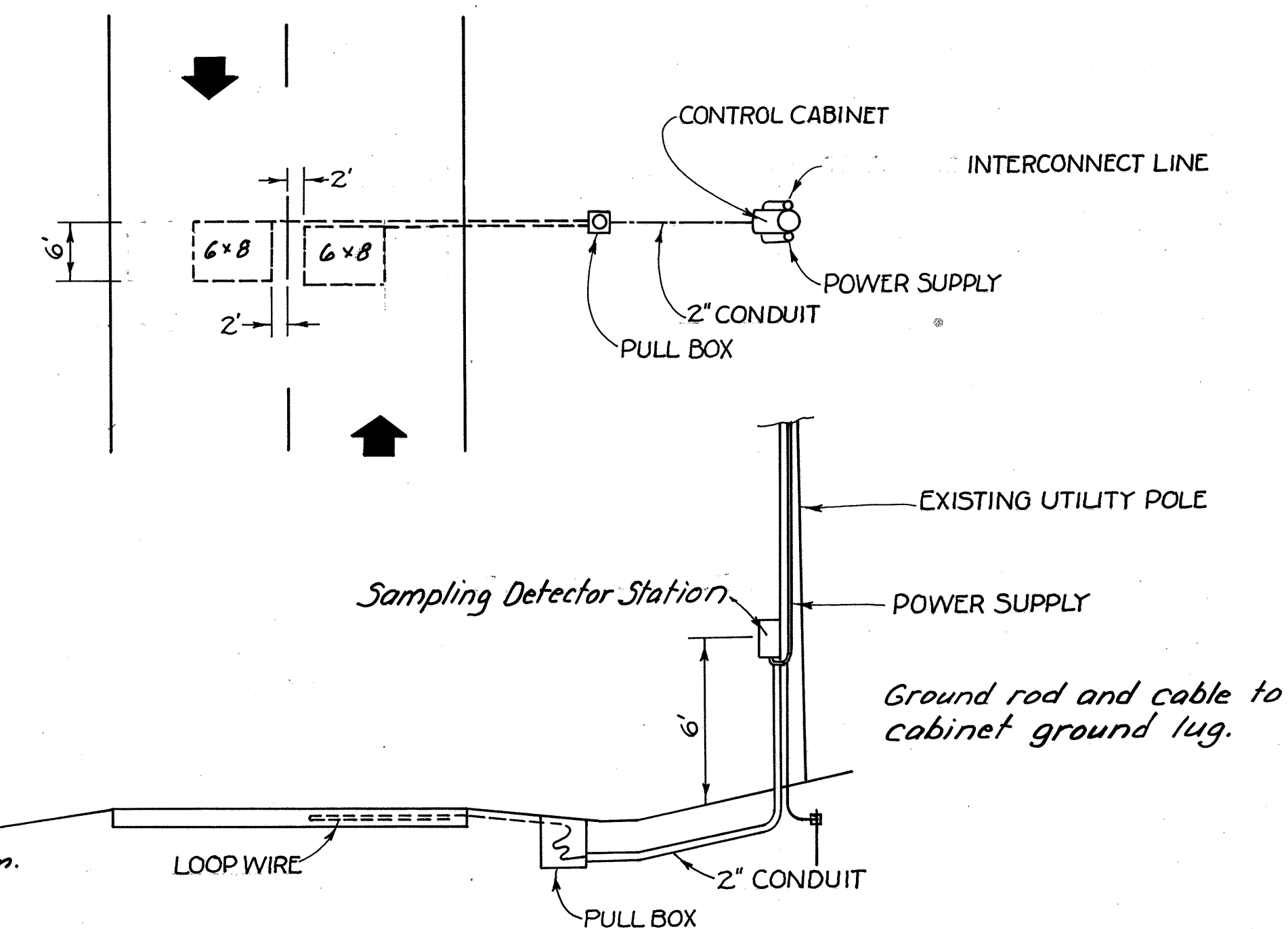
Payment for "Item 202, Removal of Existing Signal Installation" will be made at the unit price bid per each intersection wherein existing signal equipment is to be removed.

#### 625 SAMPLING DETECTOR STATION

THE SAMPLING DETECTOR STATION SHALL CONSIST OF A CABINET, TWO LOOP DETECTOR AMPLIFIERS, TEN CHANNEL REMOTE ENCODER STATION (WITH TWO CHANNELS PROVIDED), LIGHTING PROTECTION DEVICE, TWO - 1" CONDUIT RISERS WITH WEATHERHEADS (ONE FOR POWER SUPPLY AND ONE FOR INTERCONNECT CABLE), AND A 2" CONDUIT TO THE ADJACENT PULL BOX.

THE CABINET AND CABINET DOOR SHALL BE CAST, CORROSION RESISTANT ALUMINUM ALLOY WITH INTEGRAL HINGES AND STAINLESS STEEL HINGE PINS. THE INSIDE DIMENSIONS SHALL BE A MINIMUM OF 22-1/2" INCHES HIGH, 13-1/4" INCHES WIDE AND 10-3/4" INCHES DEEP. THE CABINET SHALL BE BOTH WEATHERPROOF AND DUST-TIGHT. THE DOOR SHALL BE PROVIDED WITH A LOCK AND TWO (2) KEYS. THE CABINET SHALL BE PROVIDED WITH ALL NECESSARY EQUIPMENT FOR MOUNTING ON EITHER WOOD OR STEEL POLES.

PAYMENT FOR ITEM 625, SAMPLING DETECTOR FOR STATION SHALL BE AT THE UNIT PRICE BID PER EACH, COMPLETE (IN PLACE), WITH ALL ACCESSORIES INCLUDING AMPLIFIERS, ENCODER, LIGHTING PROTECTION, CONDUIT RISERS, CONDUIT AND TRENCHING FROM THE POLE TO ROADWAY EDGE.



SAMPLING DETECTOR DETAIL  
(NOT TO SCALE)

NOTE: FOR LOCATIONS OF SAMPLING DETECTORS SEE SHEET NO. 11