

| EXISTING ELECTRICAL CONDUIT SLEEVES | | |
|-------------------------------------|------|-----------------------------|
| SLEEVE DESC. | DIA. | LOCATION |
| ACROSS NORTH STREET | 10" | 12+22, 50 LT.-12+73, 47 LT. |
| ACROSS ROUTE 116 | 10" | 12+12, 38 LT.-12+31, 27 RT. |
| ACROSS SOUTH STREET | 10" | 12+45, 45 RT.-13+08, 50 RT. |

*APPROXIMATE LOCATIONS

| POLE IDENTIFICATION TABLE | | |
|---------------------------|---------------------|---------------|
| NUMBER | DESCRIPTION | LOCATION |
| MA 1 | 21' ARM W/POLE EXT. | 12+85, 34 LT. |
| MA 2 | 33' ARM | 13+26, 40 RT. |
| MA 3 | 18' ARM | 12+45, 34 RT. |
| MA 4 | 40' ARM | 11+99, 44 LT. |
| PP 1 | LIGHTING POLE | 12+10, 50 LT. |
| PP 2 | LIGHTING POLE | 13+06, 20 LT. |
| PP 3 | LIGHTING POLE | 13+09, 54 RT. |
| PP 4 | LIGHTING POLE | 12+20, 23 RT. |

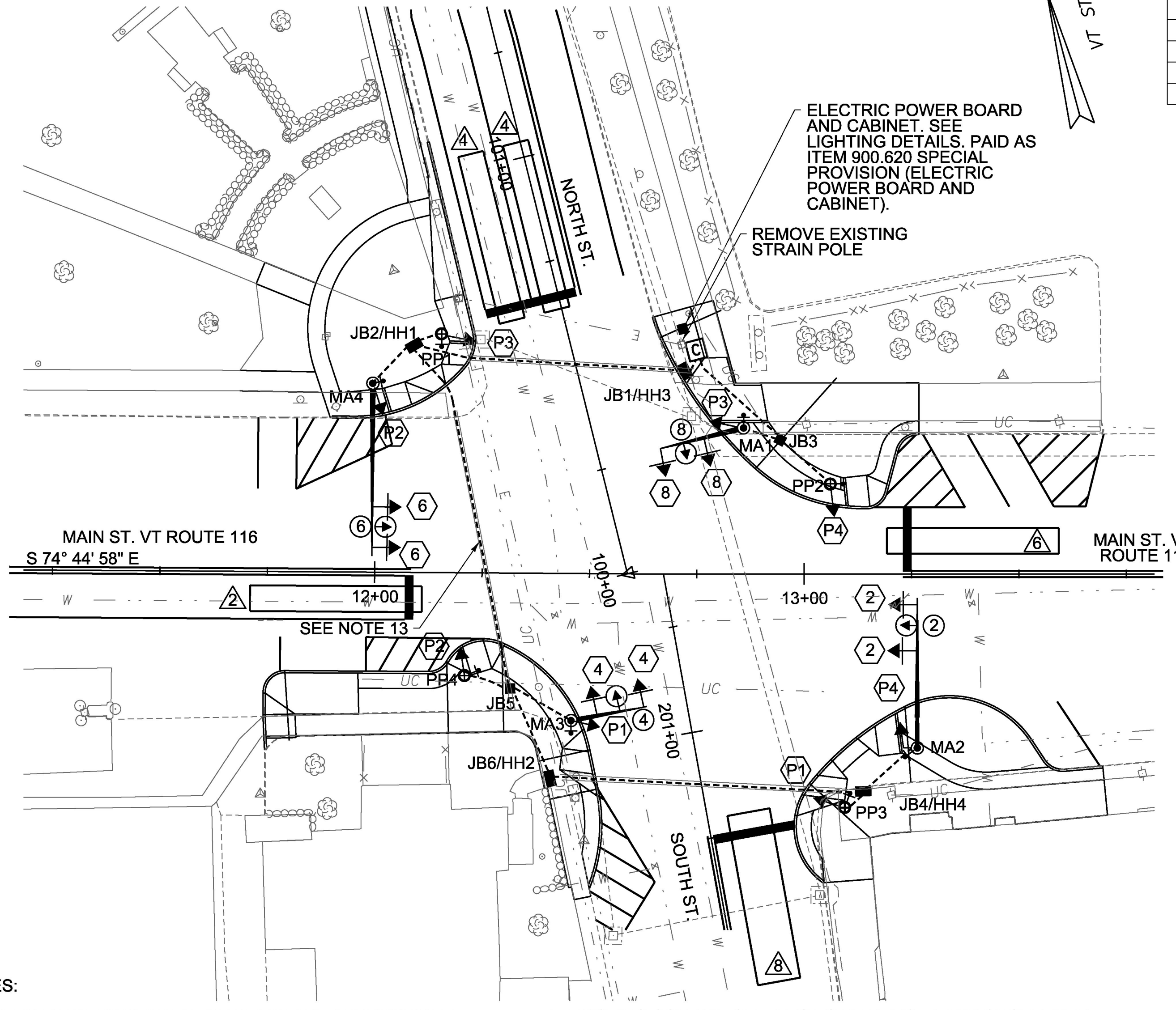
| PULL BOX/JUNCTION BOX | | |
|-----------------------|-----------------|---------------|
| NUMBER | DESCRIPTION | LOCATION |
| JB 1/HH3 | DOUBLE JCT. BOX | 12+73, 47 LT. |
| JB 2/HH1 | DOUBLE JCT. BOX | 12+09, 50 LT. |
| JB 3 | JUNCTION BOX | 12+95, 31 LT. |
| JB 4/HH4 | DOUBLE JCT. BOX | 13+16, 51 RT. |
| JB 5 | JUNCTION BOX | 12+31, 28 RT. |
| JB 6/HH 2 | DOUBLE JCT. BOX | 12+41, 47 RT. |

| SIGNAL PHASE CLEARANCE - VT ROUTE 116 /NORTH ST./SOUTH ST. | | | | | | | | | | | |
|--|-----|--------------------|-----|-----|--------------------|-----|-----|--------------|-----|--------------------|--|
| FACE | R/W | PHASE 2&6 CLEAR TO | | | PHASE 4&8 CLEAR TO | | | PED CLEAR TO | | FLASHING OPERATION | |
| | | PHASE 4&8 | PED | R/W | PHASE 2&6 | PED | R/W | 2&6 OR 4&8 | | | |
| 2 | G | Y | R | Y | R | Y | R | R | R | FLY | |
| 4 | R | Y | R | Y | R | Y | R | R | R | FLY | |
| 6 | G | Y | R | Y | R | Y | R | R | R | FLY | |
| 8 | R | Y | R | Y | R | Y | R | R | R | FLY | |
| P1-P4 | DW | DW | DW | DW | DW | DW | DW | W | FDW | DW/OUT | |

| CONTROLLER TIMINGS (SECONDS) | | | | | | | | | | |
|------------------------------|------------|---------|--------|-----|-----|----|---|---|-----|----|
| PHASE | MIN. GREEN | PASSAGE | YELLOW | RED | MAX | | | W | FDW | DW |
| | | | | | 1 | 2 | 3 | | | |
| 2 | 12 | 3 | 3.5 | 2 | 20 | 30 | | | | |
| 4 | 5 | 3 | 3 | 2.5 | 15 | 20 | | | | |
| 6 | 12 | 3 | 3.5 | 2 | 20 | 30 | | | | |
| 8 | 5 | 3 | 3 | 2.5 | 15 | 20 | | | | |
| 9 | - | - | - | - | - | - | | 7 | 16 | 3 |

| LIST OF MAJOR ITEMS | | |
|---|------|--|
| QUANTITY | UNIT | DESCRIPTION |
| ITEM 679.55 POWER DROP STANCHION, STREET LIGHTING | | |
| 1 | EA | POWER DROP STANCHION FROM UP |
| ITEM 678.15 TRAFFIC CONTROL SIGNAL SYSTEM | | |
| 8 | EA | COUNTDOWN TYPE PEDESTRIAN SIGNAL HEADS |
| 8 | EA | 3-SECTION SIGNAL HEADS (12") (MAST ARM MOUNTED) |
| 3 | EA | MAST ARM (CANTILEVER) WITH FOUNDATION |
| 1 | EA | MAST ARM (CANTILEVER) WITH LUMINAIRE EXTENSION) WITH FOUNDATION |
| 4 | EA | VEHICLE STOP BAR DETECTORS |
| 8 | EA | PEDESTRIAN PUSHBUTTON ASSEMBLY WITH SIGNS AND AUDIBLE LOCATOR TONE |
| 1050 | LF | SIGNAL CABLE (12C) (650 IN CONDUIT) |
| 825 | LF | DETECTOR CABLE (565 IN CONDUIT) |
| 2 | EA | JUNCTION BOXES |
| 4 | EA | DOUBLE JUNCTION BOXES |
| 750 | LF | WIRED CONDUIT (PVC)(SCH 80) FOR SIGNALS* |
| 1 | EA | GROUND MOUNTED CONTROLLER CABINET (P44) WITH FOUNDATION AND PAD |
| 1 | EA | CONTROLLER |
| 1 | EA | MALFUNCTION MONITORING UNIT |
| 1 | EA | CONTROLLER IDENTIFICATION PLAQUE (SEE TRAFFIC SIGNAL NOTES) |
| 120 | LF | 2" CONDUIT |
| 70 | LF | 4" CONDUIT |

| VEHICLE STOP BAR DETECTION | | | | | | |
|----------------------------|---------------|-------|--------|----------|-------------|----|
| NO. | APPROACH/LANE | SIZE | CALL Ø | MODE | CAMERA LOC. | ID |
| 2 | EB RT/THRU | 6X40 | 2 | PRESENCE | MAST ARM | 2 |
| 4 | SB RT/THRU/LT | 6X40 | 4 | PRESENCE | MAST ARM | 4 |
| 4A | SB RT | 6X40 | 4 | PRESENCE | MAST ARM | 4 |
| 6 | WB THRU | 6X40 | 6 | PRESENCE | MAST ARM | 6 |
| 8 | NB | 10X40 | 8 | PRESENCE | MAST ARM | 8 |

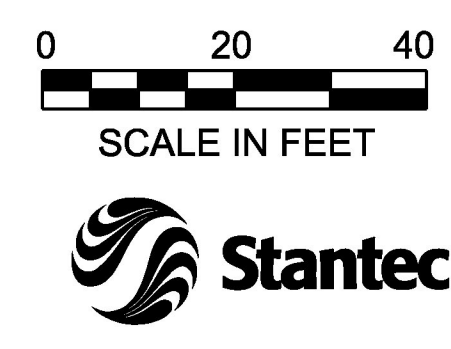


- NOTES:
- UTILITY LOCATIONS ON THESE PLANS ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY PRIOR TO CONSTRUCTION.
 - FOR POWER SOURCE FOR SIGNALS AND LIGHTING SEE LIGHTING PLANS.
 - ALL NEW TRAFFIC SIGNAL EQUIPMENT IS TO BE INSTALLED AT THE LOCATION PROPOSED ON THE PLANS.
 - THE EXISTING TRAFFIC SIGNAL EQUIPMENT REMOVED IS TO BE SALVAGED AND RETURNED BY THE CONTRACTOR TO THE TOWN OF BRISTOL WITHIN 48 HOURS OF REMOVAL. SEE THE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
 - ANY OTHER MISCELLANEOUS EQUIPMENT (CONDUIT, FITTINGS, CONNECTORS, ETC.) AND LABOR NECESSARY TO PROVIDE A FULLY FUNCTIONAL TRAFFIC SIGNAL SYSTEM SHALL BE INCIDENTAL TO ITEM 678.15.
 - CONSTRUCTION ACTIVITIES WILL BE OF SHORT DURATION. ALL WORK SHALL BE PERFORMED DURING DAYTIME, OFF-PEAK HOURS. REFER TO THE VERMONT AGENCY OF TRANSPORTATION STANDARD DRAWINGS T-1, T-12 AND T-21 FOR ADDITIONAL INFORMATION. TRAFFIC CONTROL WARNING SIGNS SHALL BE PROVIDED AS NECESSARY ON EACH APPROACH PER THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). PAYMENT FOR THESE SIGNS, REFLECTORIZED DRUMS, ETC. SHALL BE PAID UNDER CONTRACT ITEM 641.10 TRAFFIC CONTROL.
 - EXISTING CONDUIT SLEEVES TO BE REUSED AND SHORTENED /EXTENDED 1' MIN. PAST NEW CURB LINE. THIS WORK IS INCIDENTAL TO ITEM 678.15.
 - JUNCTION BOXES/HAND HOLES FOR COMMON TRAFFIC SIGNAL AND LIGHTING. USE AS SHOWN ON PLAN.
 - FOR LIGHTING CONDUIT SEE LIGHTING DETAILS.
 - PEDESTRIAN SIGNALS AND PUSH BUTTONS NOT MOUNTED ON MAST ARMS SHALL BE MOUNTED ON LIGHTING POLES.
 - AS REQUIRED, TO MAINTAIN SIGNAL CONTROL. A TEMPORARY TRAFFIC SIGNAL SHALL BE INSTALLED; PAID AS ITEM 678.40. A TEMPORARY SIGNAL PLAN SHOWING LAYOUT AND TIMING SHALL BE SUBMITTED TO VTRANS FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
 - SEE TRAFFIC SIGNAL SYSTEM NOTES FOR PEDESTRIAN TEMPORARY TRAFFIC CONTROL NOTES.
 - EMPTY CONDUIT IN EXISTING SLEEVE BETWEEN 12+20 LT AND 12+27 RT SHALL BE 4" DIA. ALL OTHERS SHALL BE 2" DIA. EMPTY CONDUIT NOT PAID FOR SEPARATELY BUT PAID FOR UNDER ITEM 678.15.

| WIRED CONDUIT (PVC)(SCH80) FOR SIGNALS * | | | |
|--|--------------------|-------------|---|
| LOCATION | 2" DIA LENGTH (LF) | DESCRIPTION | |
| STANCHION TO CONTROLLER | 1 | 8 | SIGNAL POWER |
| CONTROLLER TO JB1/HH3 | 3 | 6 | DETECTOR CABLE, SIGNAL CABLE & LIGHTING |
| CONTROLLER TO JB3 | 2 | 29 | DETECTOR CABLE & SIGNAL CABLE |
| JB1/HH3 TO JB2/HH1** | 3 | 64 | DETECTOR CABLE, SIGNAL CABLE & LIGHTING |
| JB2/HH1 TO PP1 | 1 | 9 | SIGNAL CABLE |
| JB2/HH1 TO MA4 | 2 | 13 | DETECTOR CABLE & SIGNAL CABLE |
| JB2/HH1 TO JB5** | 2 | 83 | DETECTOR CABLE & SIGNAL CABLE |
| JB3 TO MA1 | 2 | 11 | DETECTOR CABLE & SIGNAL CABLE |
| JB3 TO PP2 | 1 | 16 | SIGNAL CABLE |
| JB4/HH4 TO MA2 | 2 | 16 | DETECTOR CABLE & SIGNAL CABLE |
| JB4/HH4 TO PP3 | 1 | 8 | SIGNAL CABLE |
| JB4/HH4 TO JB6/HH2** | 3 | 78 | DETECTOR CABLE, SIGNAL CABLE & LIGHTING |
| JB5 TO MA3 | 2 | 16 | DETECTOR CABLE & SIGNAL CABLE |
| JB5 TO PP4 | 1 | 14 | SIGNAL CABLE |
| JB5 TO JB 6/HH2 | 3 | 23 | DETECTOR CABLE, SIGNAL CABLE & LIGHTING |

* ONE CONDUIT FOR LIGHTING PAID UNDER ITEM 678.23 WIRED CONDUIT.
** ADD ONE EMPTY CONDUIT LINE IN EACH SLEEVE FOR FUTURE USE.

| LEGEND | | |
|----------|-----|---------------------------------|
| EXISTING | NEW | DESCRIPTION |
| | | UTILITY POLE |
| | | LUMINAIRE |
| | | LIGHT POLE |
| | | STRAIN POLE/CANTILEVER POLE |
| | | CONTROLLER CABINET |
| | | PULLBOX/JUNCTION BOX |
| | | SIGNAL HEAD |
| | | SIGNAL HEAD WITH LOUVERED PLATE |
| | | CONDUIT(SIGNAL) |
| | | VEHICLE LOOPS |
| | | VEHICLE DETECTION AREA |
| | | PEDESTAL POLE/LIGHTING POLE |
| | | CANTILEVER |
| | | DRAINAGE STRUCTURE |
| | | VEHICLE DETECTOR |
| | | SLEEVE |
| | | PREEMPT OPTICAL DETECTOR |
| | | PEDESTRIAN PUSHBUTTON ASSEMBLY |
| | | POWER DROP STANCHION |
| | | POWER DROP STANCHION |



PROJECT NAME: BRISTOL
 PROJECT NUMBER: HES 021-1 (28)
 FILE NAME: z10b078bdr_sig.dgn PLOT DATE: 4/29/2014
 PROJECT LEADER: T. LUTHER DRAWN BY: P. ARMATA
 DESIGNED BY: D. DEBAIE CHECKED BY: G. EDWARDS
SIGNAL PLAN SHEET 19 OF 29