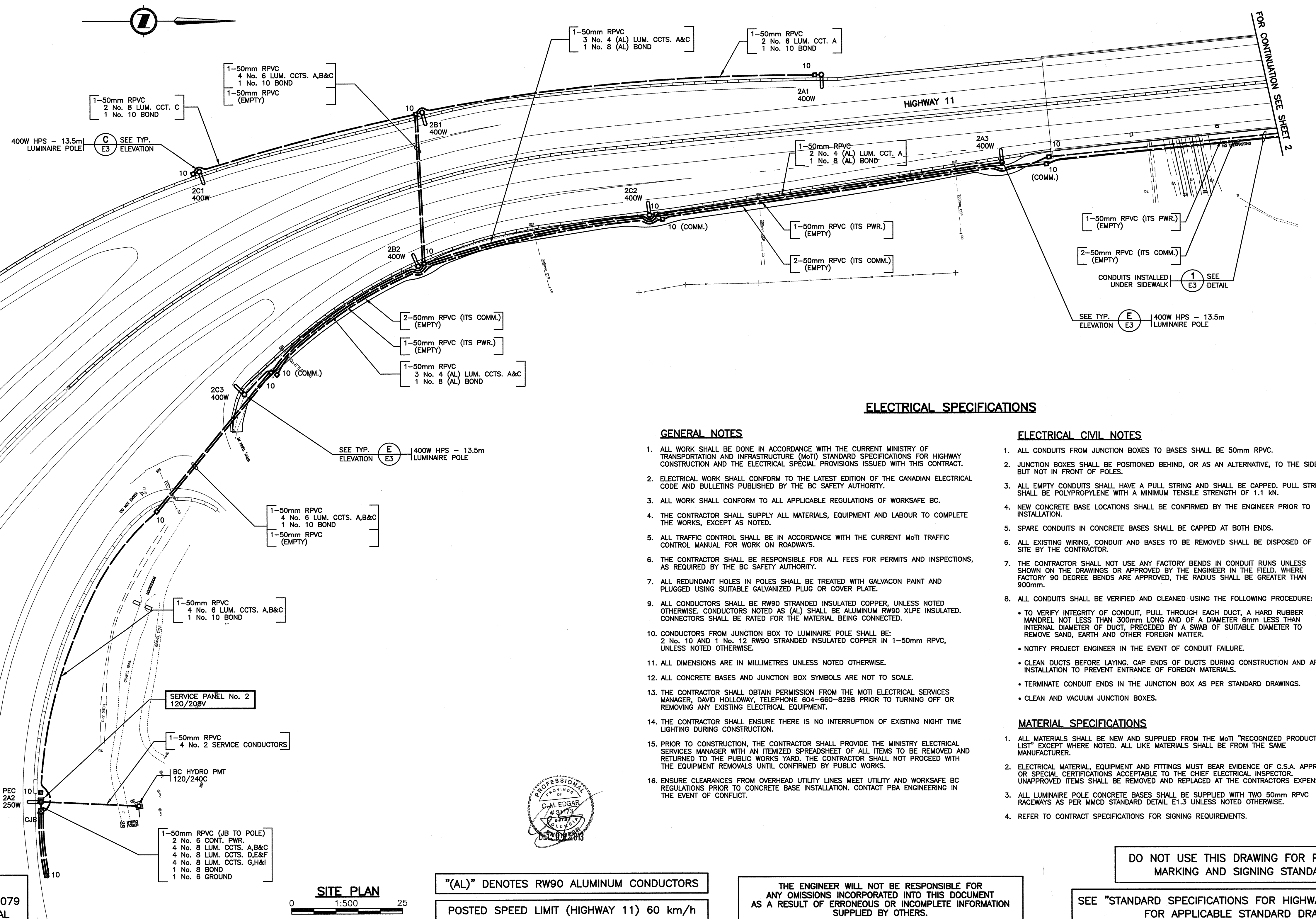
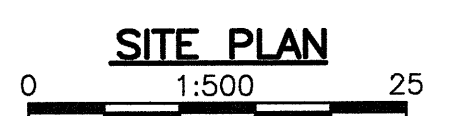


PATHWAY LIGHTING DESIGN CRITERIA		
PATHWAY LOCATION	EAST ROADSIDE WALKWAY	
PEDESTRIAN CONFLICT	MEDIUM	
WATTAGE/TYPE/ LUMINAIRE MANUFACTURER/ MODEL NUMBER	150W HPS/TYPE II/GE/MDCL15S1A 400W HPS/TYPE II/GE/MDCL40S1A	
ILLUMINATION LEVEL (AVG.)	RECOMMENDED ILLUMINANCE	ACHIEVED ILLUMINANCE
	5.0 LUX	18.4 LUX
UNIFORMITY RATIO (AVG:MIN)	4.0:1	4.0:1

NOTE: BASED ON IESNA RP-8-00 (TABLE 6)



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REFER TO DRAWING SERIES TE-98079  
FOR CONTINUATION OF ELECTRICAL



"(AL)" DENOTES RW90 ALUMINUM CONDUCTORS  
POSTED SPEED LIMIT (HIGHWAY 11) 60 km/h

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SUPPLIED BY OTHERS.

DO NOT USE THIS DRAWING FOR PAVEMENT  
MARKING AND SIGNING STANDARDS

SEE "STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION"  
FOR APPLICABLE STANDARD DRAWINGS

### ELECTRICAL SPECIFICATIONS

#### GENERAL NOTES

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE CURRENT MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE (MoT) STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION AND THE ELECTRICAL SPECIAL PROVISIONS ISSUED WITH THIS CONTRACT.
2. ELECTRICAL WORK SHALL CONFORM TO THE LATEST EDITION OF THE CANADIAN ELECTRICAL CODE AND BULLETINS PUBLISHED BY THE BC SAFETY AUTHORITY.
3. ALL WORK SHALL CONFORM TO ALL APPLICABLE REGULATIONS OF WORKSAFE BC.
4. THE CONTRACTOR SHALL SUPPLY ALL MATERIALS, EQUIPMENT AND LABOUR TO COMPLETE THE WORKS, EXCEPT AS NOTED.
5. ALL TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE CURRENT MoT TRAFFIC CONTROL MANUAL FOR WORK ON ROADWAYS.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FEES FOR PERMITS AND INSPECTIONS, AS REQUIRED BY THE BC SAFETY AUTHORITY.
7. ALL REDUNDANT HOLES IN POLES SHALL BE TREATED WITH GALVAON PAINT AND PLUGGED USING SUITABLE GALVANIZED PLUG OR COVER PLATE.
8. ALL CONDUCTORS SHALL BE RW90 STRANDED INSULATED COPPER, UNLESS NOTED OTHERWISE. CONDUCTORS NOTED AS (AL) SHALL BE ALUMINUM RW90 XLPE INSULATED. CONNECTORS SHALL BE RATED FOR THE MATERIAL BEING CONNECTED.
9. CONDUCTORS FROM JUNCTION BOX TO LUMINAIRE POLE SHALL BE: 2 No. 10 AND 1 No. 12 RW90 STRANDED INSULATED COPPER IN 1-50mm RPVC, UNLESS NOTED OTHERWISE.
10. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
11. ALL CONCRETE BASES AND JUNCTION BOX SYMBOLS ARE NOT TO SCALE.
12. THE CONTRACTOR SHALL OBTAIN PERMISSION FROM THE MOTI ELECTRICAL SERVICES MANAGER, DAVID HOLLOWAY, TELEPHONE 604-660-8298 PRIOR TO TURNING OFF OR REMOVING ANY EXISTING ELECTRICAL EQUIPMENT.
13. THE CONTRACTOR SHALL ENSURE THERE IS NO INTERRUPTION OF EXISTING NIGHT TIME LIGHTING DURING CONSTRUCTION.
14. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE THE MINISTRY ELECTRICAL SERVICES MANAGER WITH AN ITEMIZED SPREADSHEET OF ALL ITEMS TO BE REMOVED AND RETURNED TO THE PUBLIC WORKS YARD. THE CONTRACTOR SHALL NOT PROCEED WITH THE EQUIPMENT REMOVALS UNTIL CONFIRMED BY PUBLIC WORKS.
15. ENSURE CLEARANCES FROM OVERHEAD UTILITY LINES MEET UTILITY AND WORKSAFE BC REGULATIONS PRIOR TO CONCRETE BASE INSTALLATION. CONTACT PBA ENGINEERING IN THE EVENT OF CONFLICT.

#### ELECTRICAL CIVIL NOTES

1. ALL CONDUITS FROM JUNCTION BOXES TO BASES SHALL BE 50mm RPVC.
2. JUNCTION BOXES SHALL BE POSITIONED BEHIND, OR AS AN ALTERNATIVE, TO THE SIDE BUT NOT IN FRONT OF POLES.
3. ALL EMPTY CONDUITS SHALL HAVE A PULL STRING AND SHALL BE CAPPED. PULL STRING SHALL BE POLYPROPYLENE WITH A MINIMUM TENSILE STRENGTH OF 1.1 kN.
4. NEW CONCRETE BASE LOCATIONS SHALL BE CONFIRMED BY THE ENGINEER PRIOR TO INSTALLATION.
5. SPARE CONDUITS IN CONCRETE BASES SHALL BE CAPPED AT BOTH ENDS.
6. ALL EXISTING WIRING, CONDUIT AND BASES TO BE REMOVED SHALL BE DISPOSED OF OFF SITE BY THE CONTRACTOR.
7. THE CONTRACTOR SHALL NOT USE ANY FACTORY BENDS IN CONDUIT RUNS UNLESS SHOWN ON THE DRAWINGS OR APPROVED BY THE ENGINEER IN THE FIELD. WHERE FACTORY 90 DEGREE BENDS ARE APPROVED, THE RADIUS SHALL BE GREATER THAN 900mm.
8. ALL CONDUITS SHALL BE VERIFIED AND CLEANED USING THE FOLLOWING PROCEDURE:
  - TO VERIFY INTEGRITY OF CONDUIT, PULL THROUGH EACH DUCT, A HARD RUBBER MANDREL NOT LESS THAN 300mm LONG AND OF A DIAMETER 6mm LESS THAN INTERNAL DIAMETER OF DUCT, PRECEDED BY A SWAB OF SUITABLE DIAMETER TO REMOVE SAND, EARTH AND OTHER FOREIGN MATTER.
  - NOTIFY PROJECT ENGINEER IN THE EVENT OF CONDUIT FAILURE.
  - CLEAN DUCTS BEFORE LAYING. CAP ENDS OF DUCTS DURING CONSTRUCTION AND AFTER INSTALLATION TO PREVENT ENTRANCE OF FOREIGN MATERIALS.
  - TERMINATE CONDUIT ENDS IN THE JUNCTION BOX AS PER STANDARD DRAWINGS.
  - CLEAN AND VACUUM JUNCTION BOXES.

#### MATERIAL SPECIFICATIONS

1. ALL MATERIALS SHALL BE NEW AND SUPPLIED FROM THE MoT "RECOGNIZED PRODUCTS LIST" EXCEPT WHERE NOTED. ALL LIKE MATERIALS SHALL BE FROM THE SAME MANUFACTURER.
2. ELECTRICAL MATERIAL, EQUIPMENT AND FITTINGS MUST BEAR EVIDENCE OF C.S.A. APPROVAL OR SPECIAL CERTIFICATIONS ACCEPTABLE TO THE CHIEF ELECTRICAL INSPECTOR. UNAPPROVED ITEMS SHALL BE REMOVED AND REPLACED AT THE CONTRACTORS EXPENSE.
3. ALL LUMINAIRE POLE CONCRETE BASES SHALL BE SUPPLIED WITH TWO 50mm RPVC RACEWAYS AS PER MMCD STANDARD DETAIL E1.3 UNLESS NOTED OTHERWISE.
4. REFER TO CONTRACT SPECIFICATIONS FOR SIGNING REQUIREMENTS.

### LEGEND

<ul style="list-style-type: none"> <li>○ FUTURE CONCRETE BASE AND LUMINAIRE POLE (SINGLE)</li> <li>○ LUMINAIRE POLE (SINGLE) 'F' DENOTES FRANGIBLE BASE</li> <li>○ LUMINAIRE POLE (DOUBLE)</li> <li>○ PRIVATE LUMINAIRE (BASE VARIABLE)</li> <li>○ POST TOP MOUNTED LUMINAIRE</li> <li>○ WALL MOUNTED LUMINAIRE</li> <li>○ 10 JUNCTION BOX - No. DENOTES TYPE</li> <li>○ CJB CONCRETE JUNCTION BOX</li> <li>○ V CONCRETE VAULT</li> </ul>	<ul style="list-style-type: none"> <li>○ SIGNAL POLE WITH SIGNAL HEAD MOUNTED ON SIDE</li> <li>○ COMBINATION LUMINAIRE/TRAFFIC SIGNAL POLE</li> <li>○ ILLUMINATED SIGN WITH AMBER FLASHERS</li> <li>○ COMBINATION LUMINAIRE/ILLUMINATED SIGN WITH AMBER FLASHERS</li> <li>○ SIGN POLE (NON-ILLUMINATED)</li> <li>○ ILLUMINATED SIGN POLE</li> <li>○ COMBINATION LUMINAIRE/ NON-ILLUMINATED SIGN</li> <li>○ COMBINATION LUMINAIRE/ ILLUMINATED SIGN</li> </ul>	<ul style="list-style-type: none"> <li>PEC PHOTO ELECTRIC CELL</li> <li>RPVC RIGID P.V.C. CONDUIT</li> <li>R.M.C. RIGID STEEL CONDUIT</li> <li>F.C. FLEXIBLE CONDUIT (LIQUID TIGHT)</li> <li>OVERHEAD FLASHING BEACON</li> <li>POST MOUNTED FLASHER</li> <li>BACKGUY</li> <li>POWER POLE</li> <li>TELEPHONE POLE</li> <li>POWER/TELEPHONE POLE</li> <li>A,B,T1, A2(T) SIGNAL HEAD VEHICLE PHASE (T) DENOTES TUNNEL VISOR</li> <li>P,A1,P2, PA1,P2B SIGNAL HEAD PEDESTRIAN PHASE</li> <li>ppb PEDESTRIAN PUSHBUTTON</li> </ul>	<ul style="list-style-type: none"> <li>○ TEST SWITCH</li> <li>○ BREAKER</li> <li>○ NEUTRAL BAR</li> <li>○ DIAMOND DETECTOR LOOP (WITH LOOP LEADER)</li> <li>○ PRE-FORMED DETECTOR LOOP</li> <li>○ ROUND DETECTOR LOOP</li> <li>○ RECTANGULAR COUNT LOOP</li> <li>○ QUADRAPOLE DETECTOR LOOP</li> </ul>	<ul style="list-style-type: none"> <li>RAISED CURB</li> <li>PROPERTY LINE</li> <li>EDGE OF GRAVEL SHOULDER</li> <li>EDGE OF PAVEMENT</li> <li>PAINT LINE</li> <li>FUTURE ELECTRICAL AND GEOMETRICS</li> <li>ELECTRICAL EQUIPMENT TO BE REMOVED</li> <li>PROPOSED UNDERGROUND CONDUIT</li> <li>EXISTING UNDERGROUND CONDUIT</li> <li>FENCE</li> <li>CORRUGATED METAL PIPE (CULVERT)</li> <li>U/G UTILITY:           <ul style="list-style-type: none"> <li>'G' DENOTES GAS</li> <li>'S' DENOTES STORM DRAINS/SEWERS</li> <li>'W' DENOTES WATER</li> <li>'E' DENOTES ELECTRIC</li> <li>'UT' DENOTES TELEPHONE</li> <li>'SAN' DENOTES SANITARY SEWER</li> </ul> </li> </ul>
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REV	DATE	DRAWING ISSUED	REVISIONS	DRAWN
FEB/13		DRAWING ISSUED		PBA
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B	FEB/13	ISSUED FOR BRIDGE WORKS		PBA
C	NOV/13	RECORD DRAWING		PBA

PEDESTRIAN FACILITIES LIGHTING INSTALLATION  
HIGHWAY 11 - LONDON AVENUE TO LOUGHEED HIGHWAY MISSION

SITE PLAN

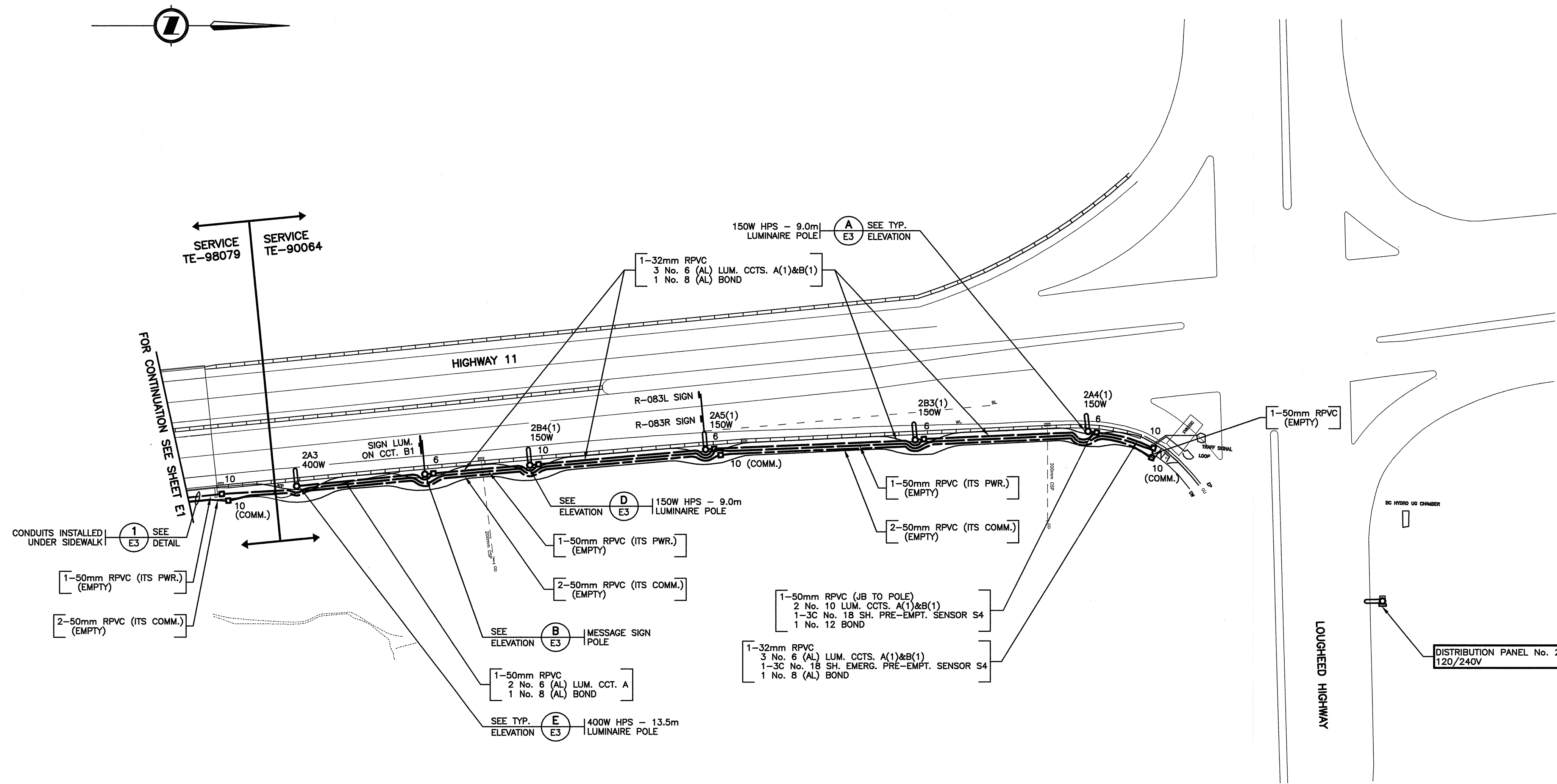
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DATE: DEC 03 2013

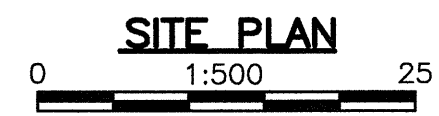
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 FOR EXIST. TRAFFIC SIGNAL AND  
 CONTINUATION OF LIGHTING



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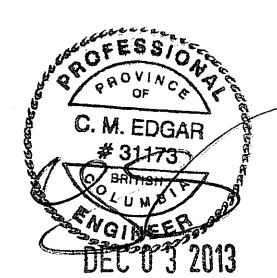
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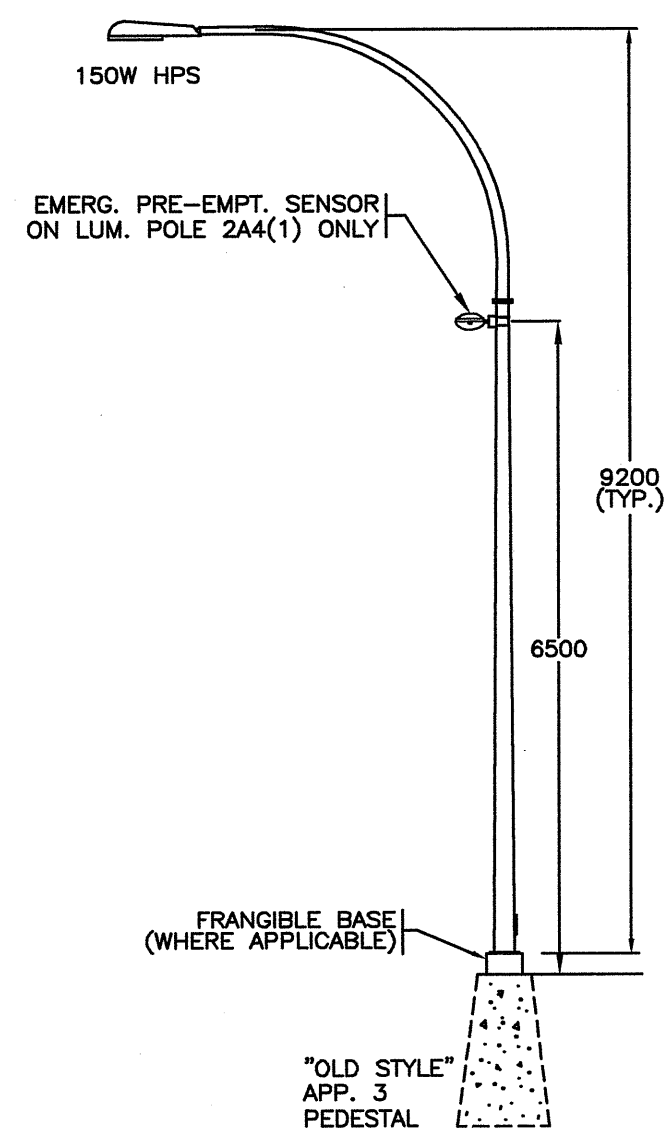
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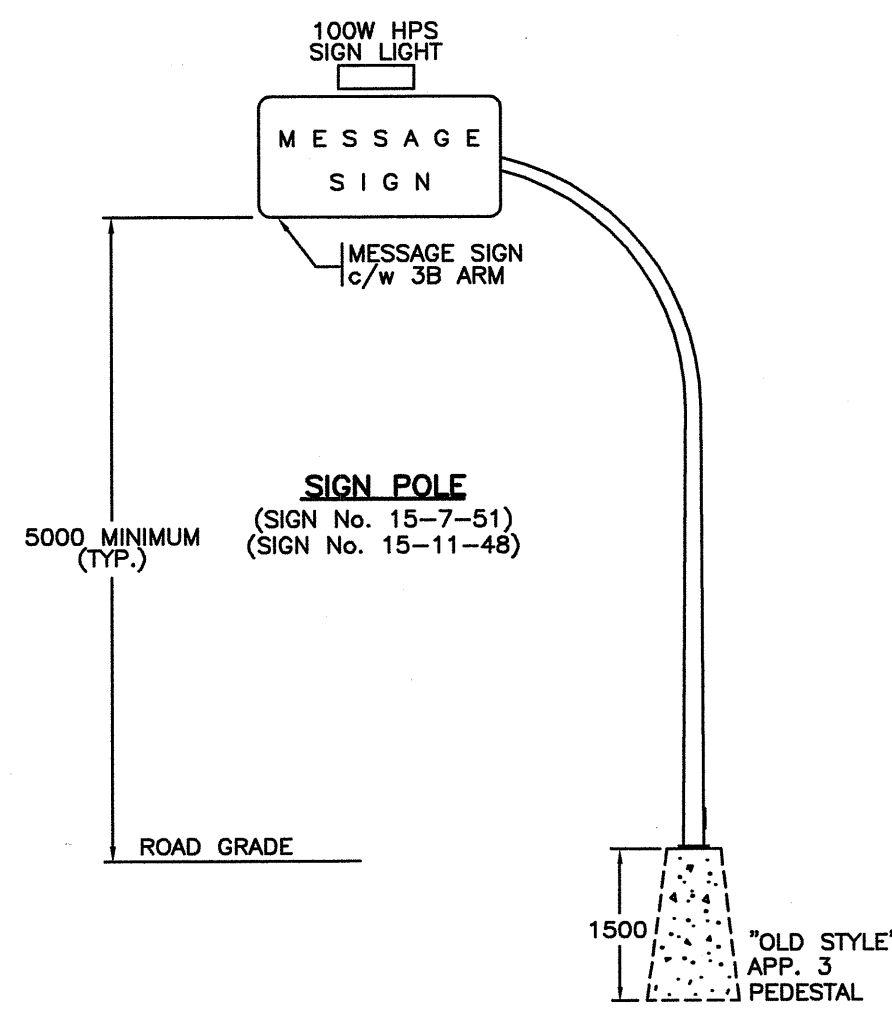
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<b>PEDESTRIAN FACILITIES LIGHTING INSTALLATION          HIGHWAY 11 - LONDON AVENUE TO LOUGHEED HIGHWAY          MISSION</b>					
<b>SITE PLAN</b>					
DESIGNED: <u>AMB</u> DATE: <u>NOV/13</u> QUALITY CONTROL: <u>RC</u> DATE: <u>NOV/13</u> QUALITY ASSURANCE: <u>CE</u> DATE: <u>NOV/13</u>		ELECTRICAL ENGINEER OF RECORD (FOR CURRENT REVISION)      DATE: <u>DEC 03 2013</u> TRAN ELECTRICAL DESIGN REVIEW: <u>AC</u> DATE: <u>Apr/14</u>			
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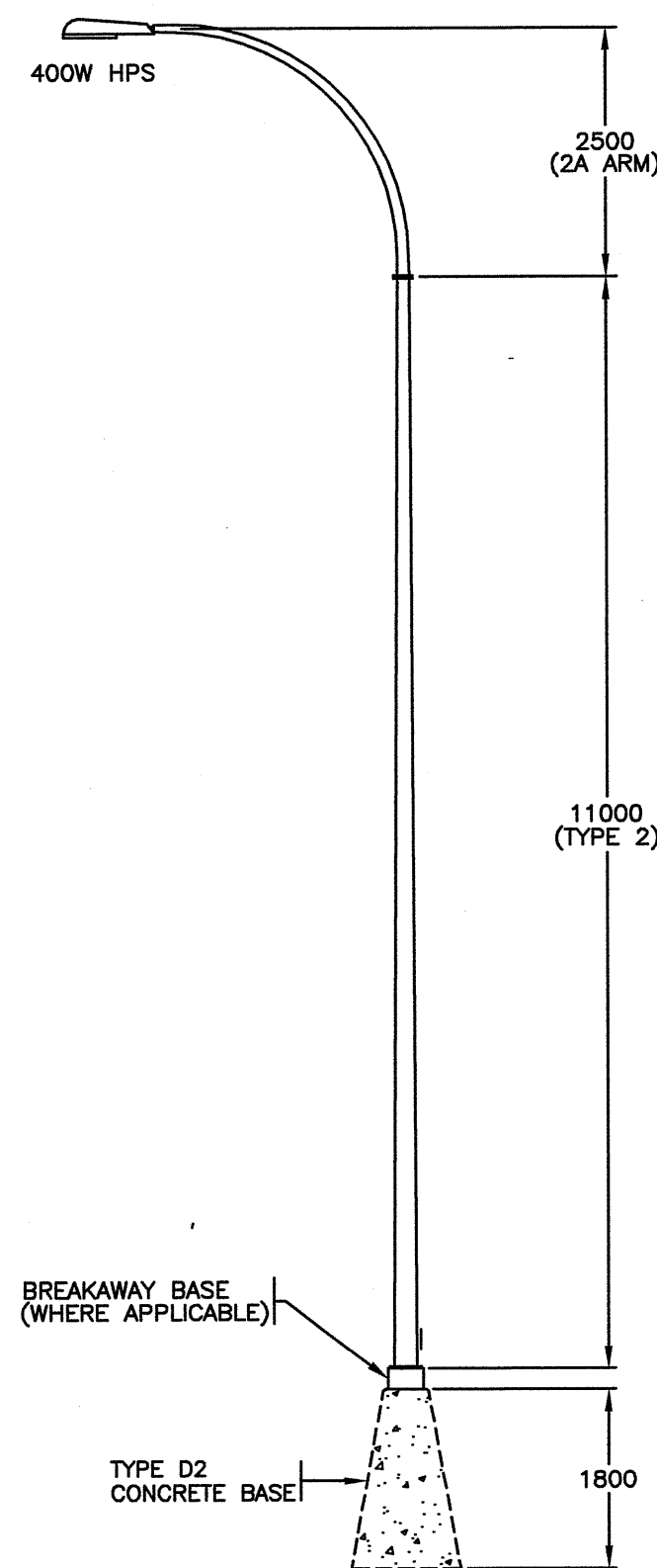




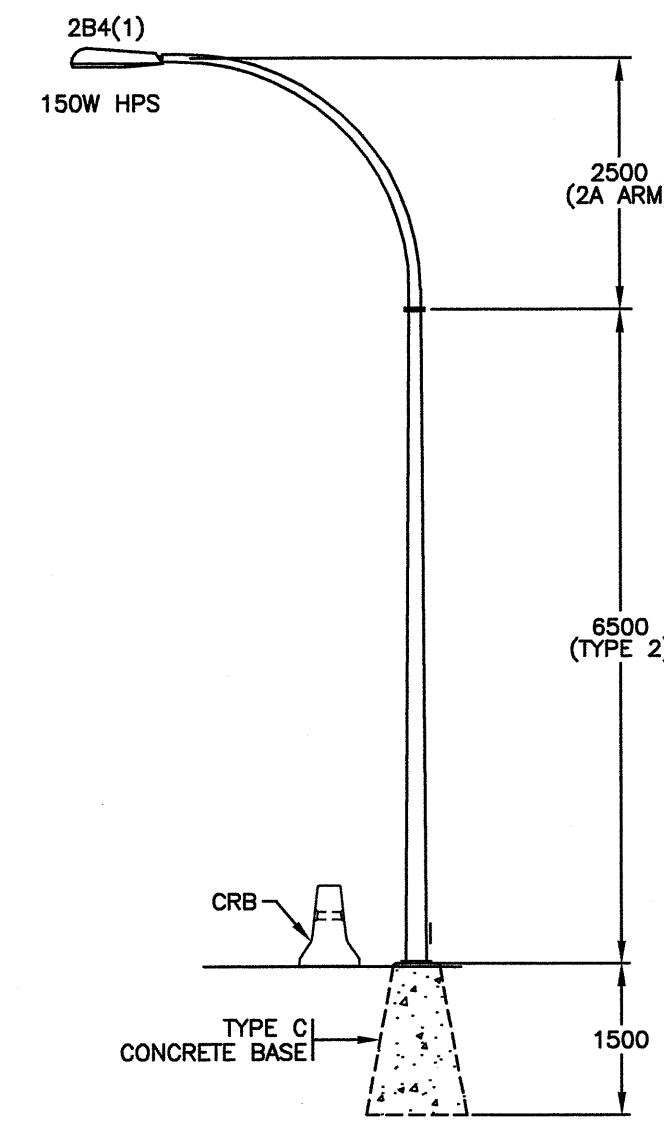
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1:75 **E2** LUMINAIRE POLE



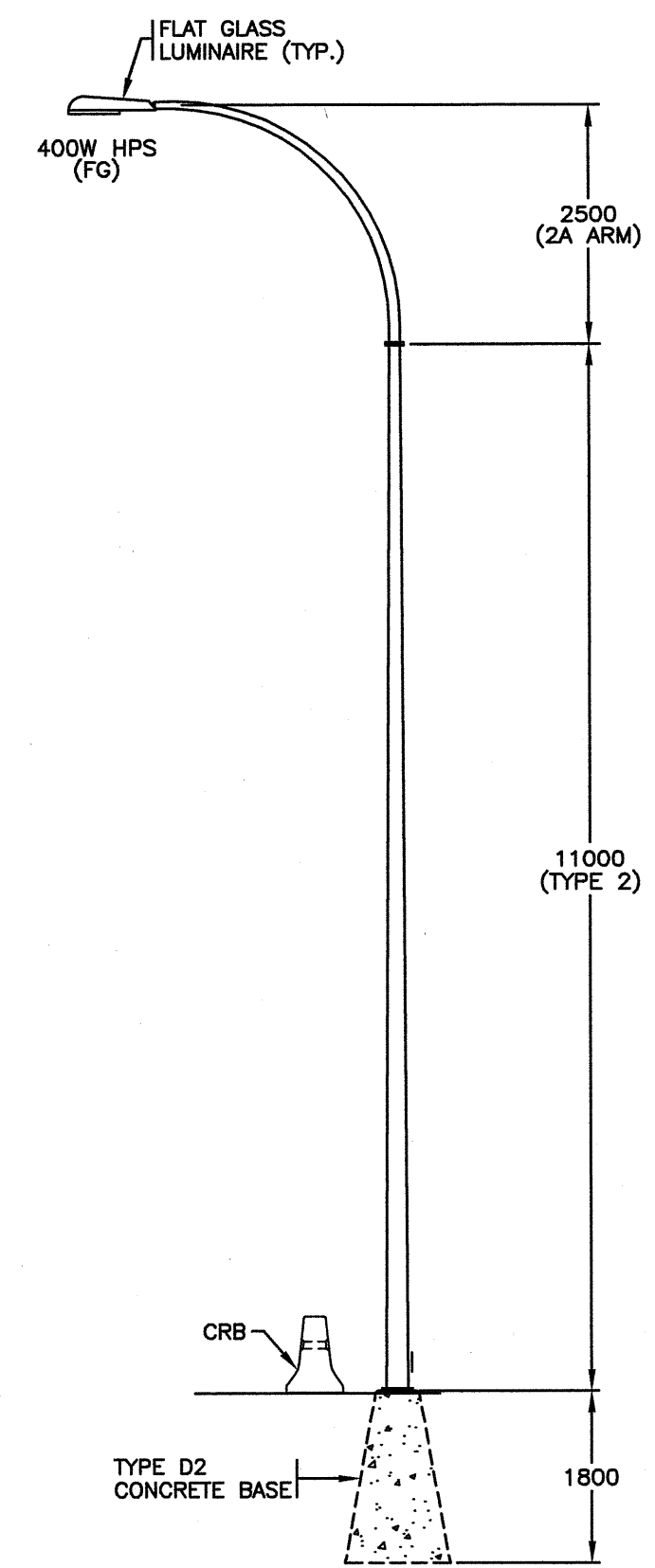
ELEVATION **B** MESSAGE SIGN  
1:75 **E2**



TYP. ELEVATION **C** 400W HPS - 13.5m  
1:75 **E1** LUMINAIRE POLE

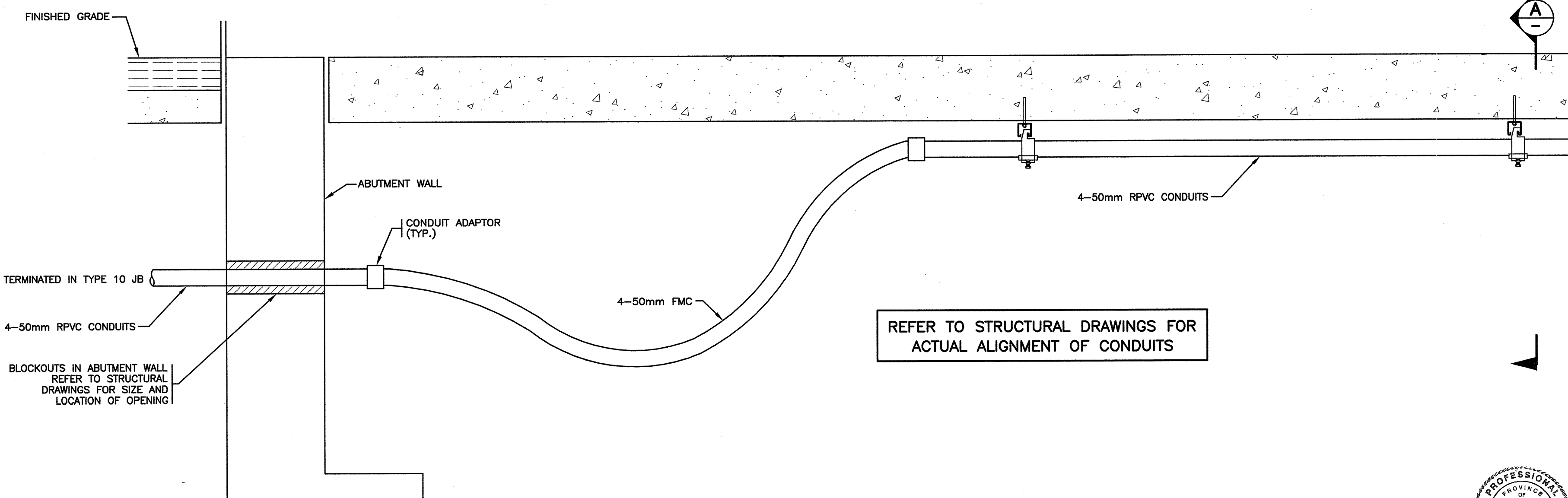
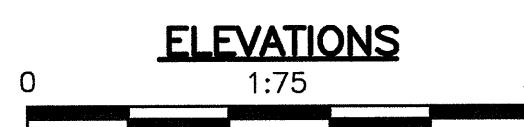


ELEVATION **D** 150W HPS - 9.0m  
1:75 **E2** LUMINAIRE POLE

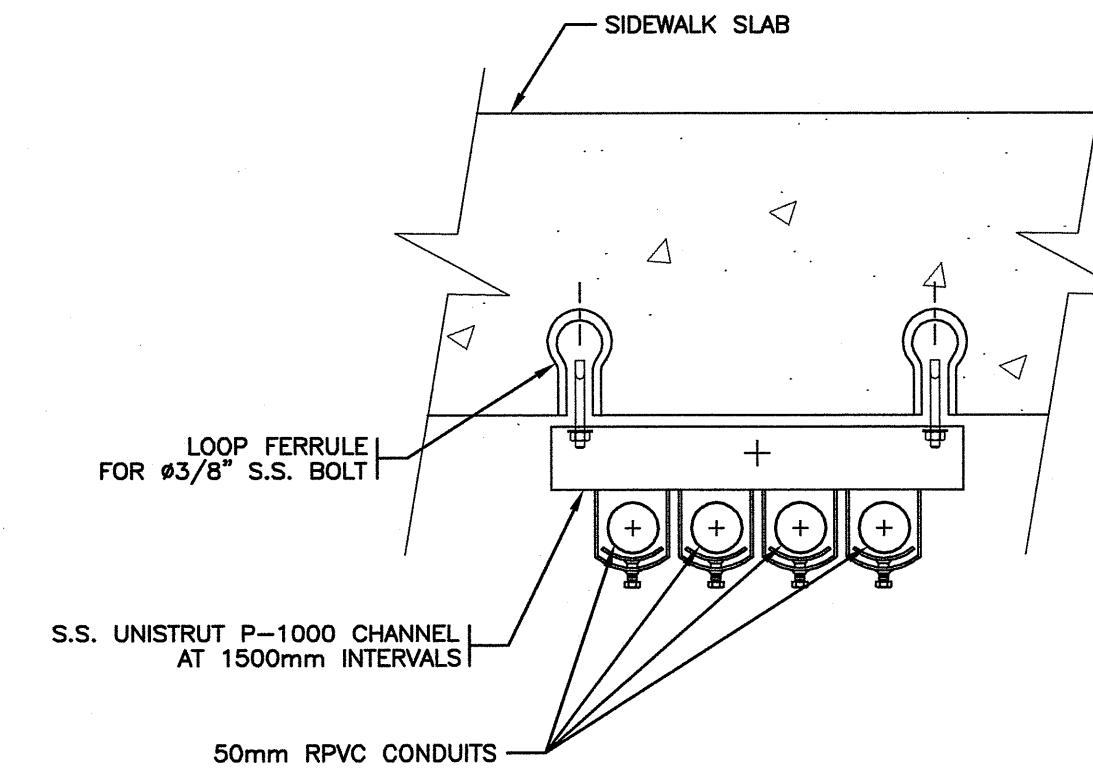


TYP. ELEVATION **E** 400W HPS - 13.5m  
1:75 **E1** **E2** LUMINAIRE POLE

CONDUCTOR COLOUR CODE	
ITEM	CONDUCTOR COLOUR
LUMINAIRE CCTS. A, A(1)	RED
LUMINAIRE CCTS. B, B(1)	BLACK
LUMINAIRE CCT. C	BLUE
NEUTRAL	WHITE
GROUND/BOND	GREEN



DETAIL **1** CONDUIT SUPPORT DETAILS  
N.T.S. **E1** **E2**



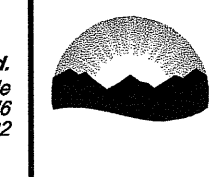
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N.T.S. **E1** **E2** UNDER SIDEWALK

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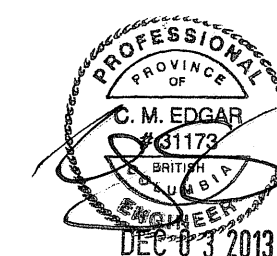


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HIGHWAY 11 - LONDON AVENUE TO LOUGHEED HIGHWAY MISSION

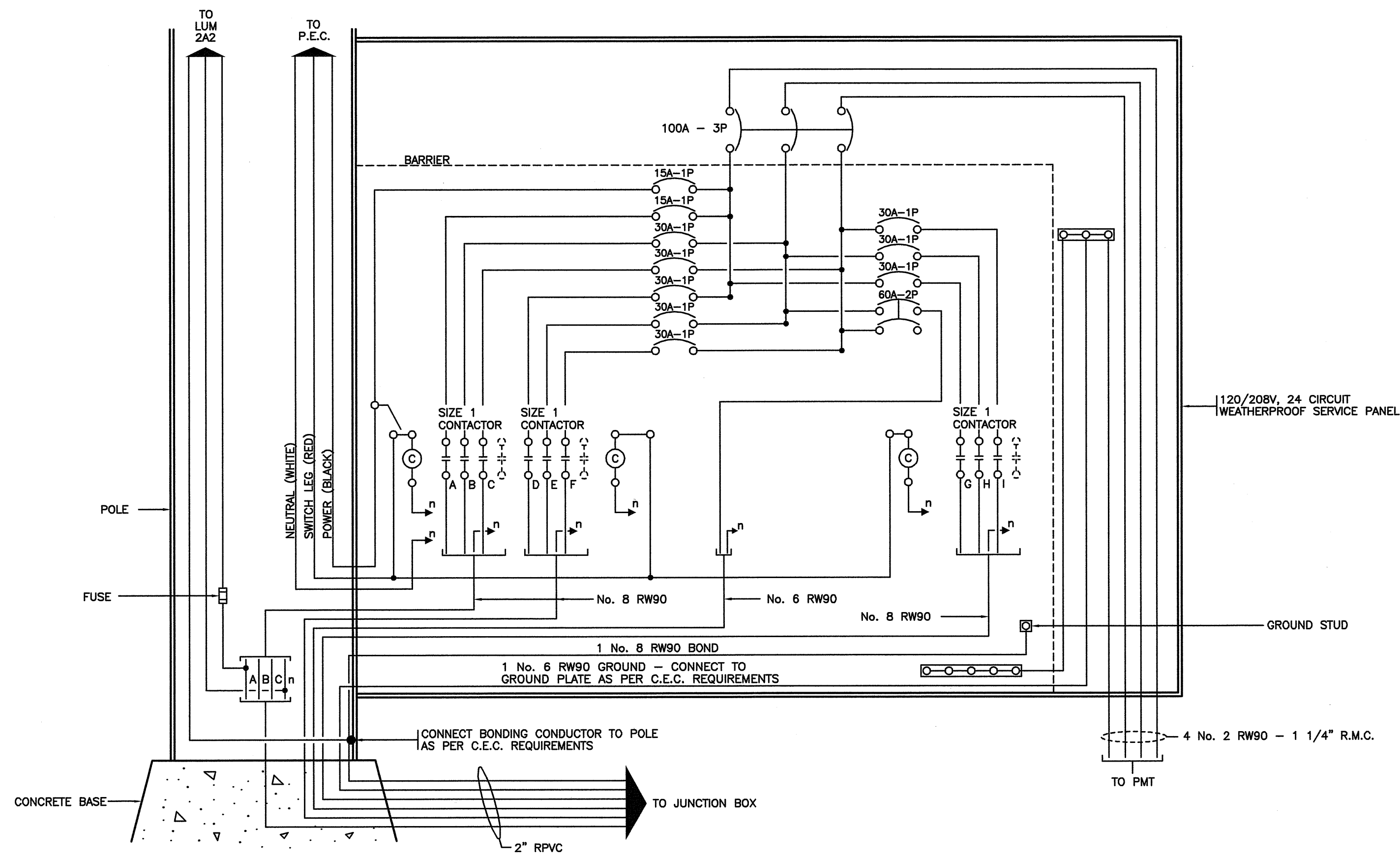
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B	NOV/13	RECORD DRAWING	PBA

ELEVATIONS - DETAILS				
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QUALITY CONTROL <u>RC</u>	DATE <u>NOV/13</u>			
QUALITY ASSURANCE <u>CE</u>	DATE <u>NOV/13</u>			
TRAN ELECTRICAL DESIGN REVIEW <u>AC</u>	DATE <u>Apr/14</u>			
DATE <u>DEC 03 2013</u>				
SHEET NUMBER	SITE CODE	HWY DIST	REG	DRAWING NUMBER
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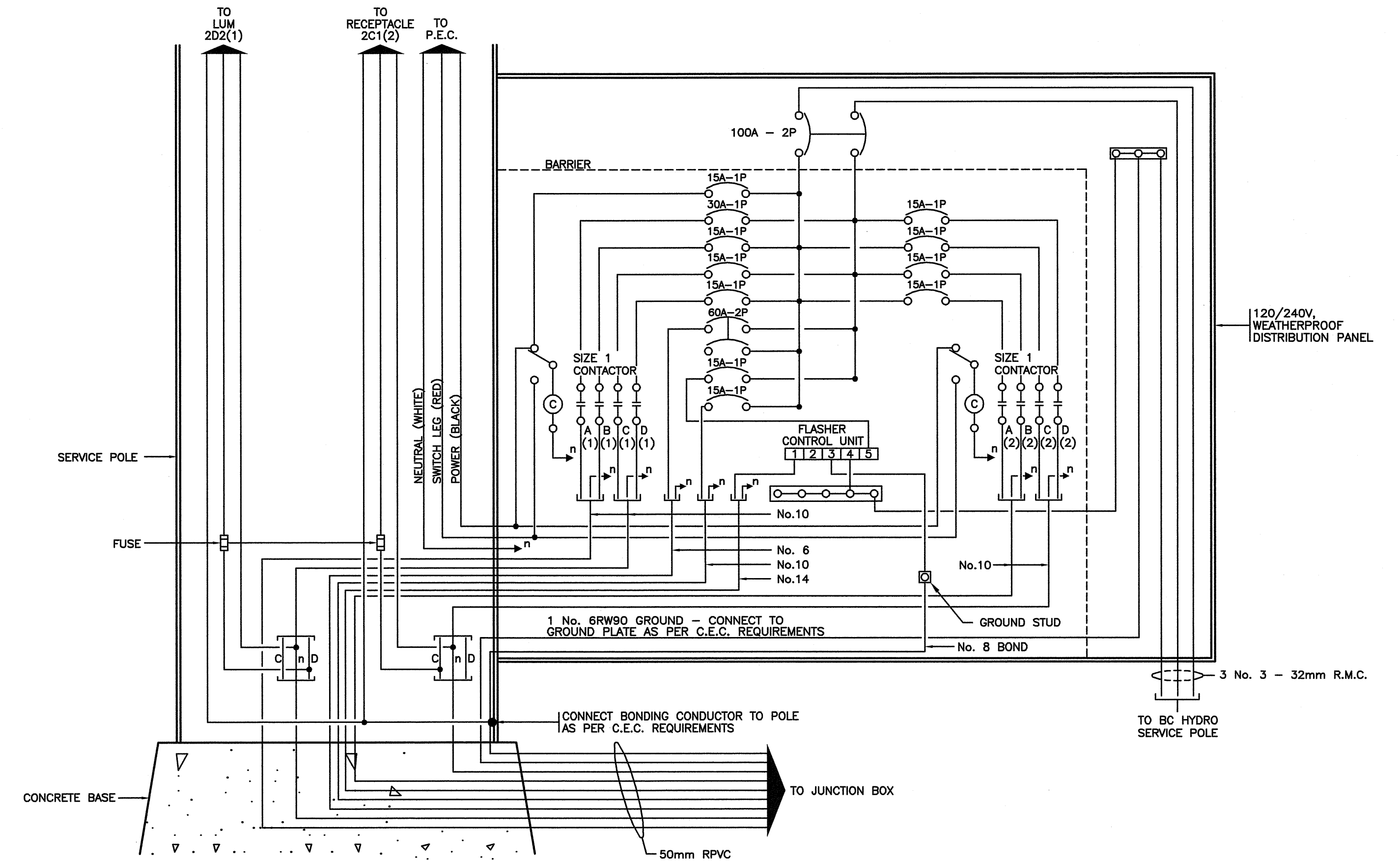


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PEDESTRIAN FACILITIES LIGHTING INSTALLATION  
HIGHWAY 11 - LONDON AVENUE TO LOUGHEED HIGHWAY MISSION

WIRING DIAGRAMS			
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QUALITY CONTROL	RC	DATE	NOV/13
QUALITY ASSURANCE	CE	DATE	NOV/13
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