

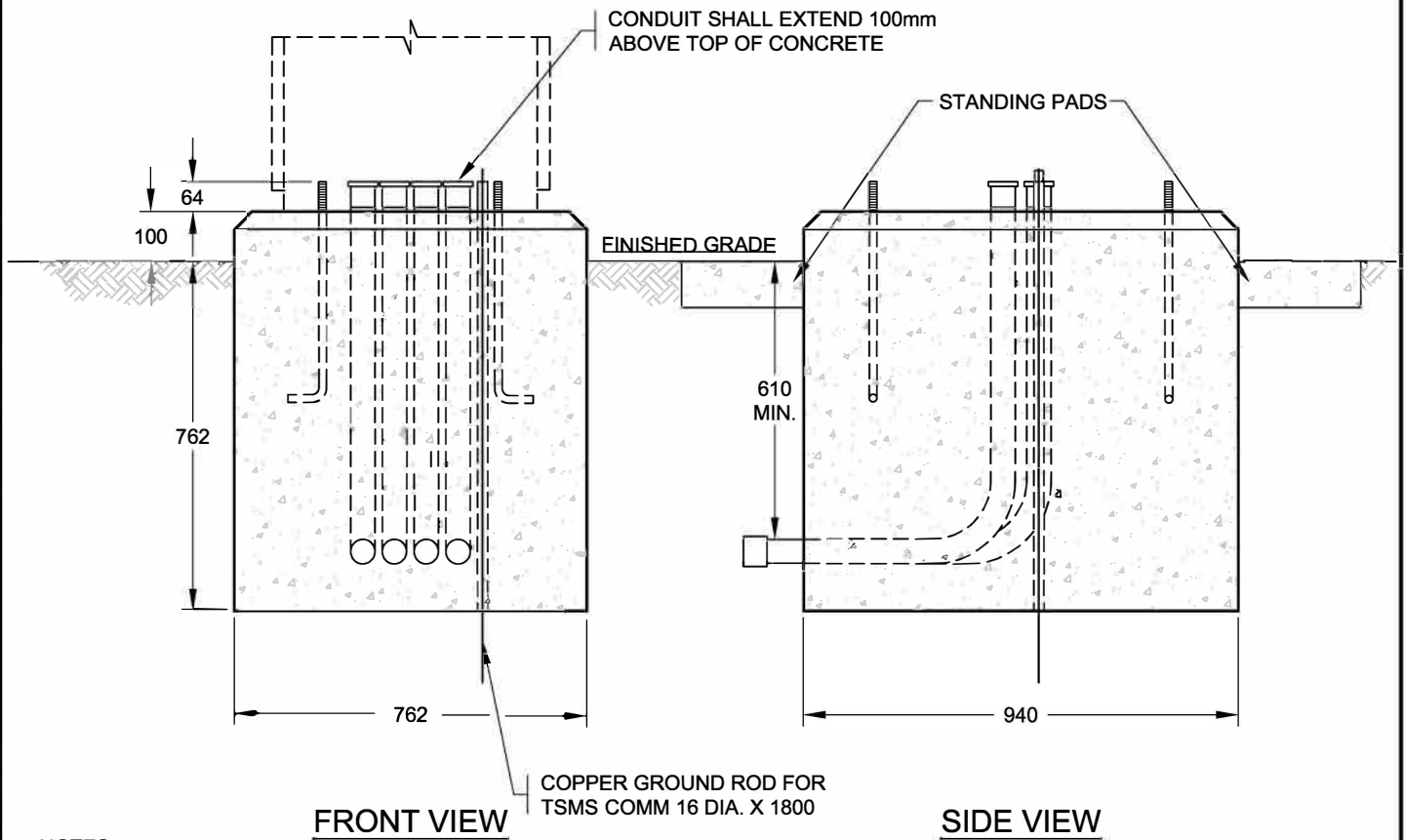
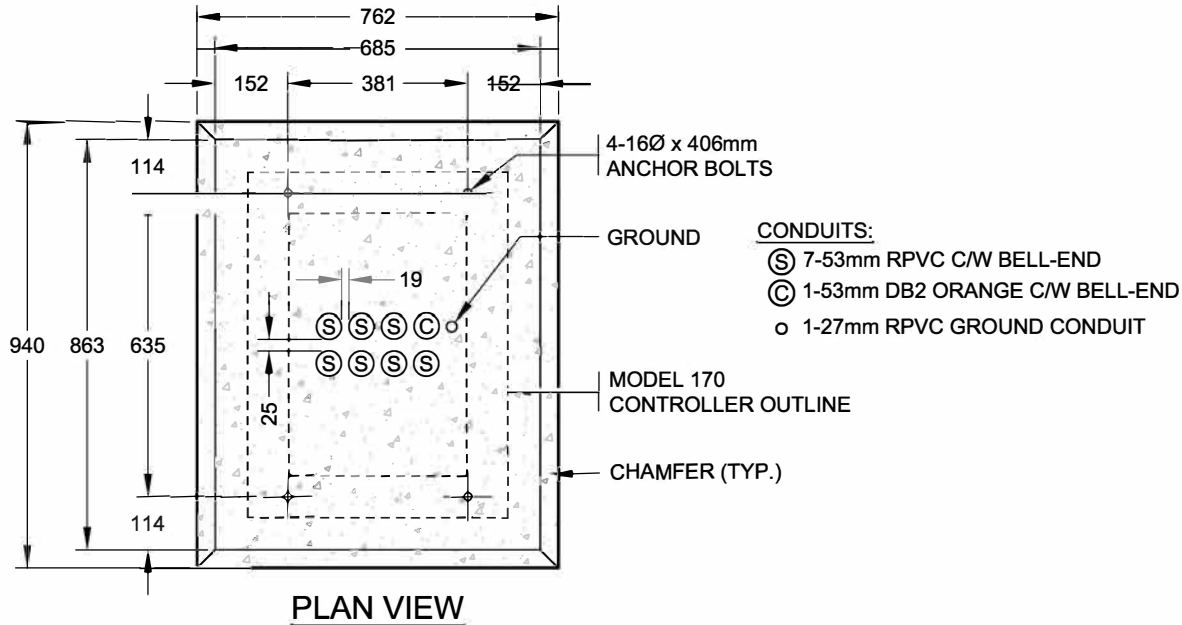
# Electrical

Sheet Number	Sheet Title	Description
E0.1	DRAWING INDEX	ELECTRICAL
E1.3	CONCRETE BASES	POURED IN PLACE CONCRETE CONTROLLER BASE
E1.4	CONCRETE BASES	POURED IN PLACE CONCRETE BASE FOR CABINETS
E2.3	JUNCTION BOXES	TIER 22 RATED
E2.4	JUNCTION BOXES	DETAILS
E4.17	POLES	3.0m TRAFFIC SIGNAL POST
E4.23	POLES	1.8m / 2.5m TROLLEY POLE LUMINAIRE ARM
E4.24	POLES	1.8m / 2.5m TROLLEY POLE LUMINAIRE ARM
E5.2	HEADS	POLE SHAFT SIGNAL HEAD MOUNTING
E5.9A	HEADS	OVERHEAD SIGNAL HEAD MOUNTING (ADJUSTABLE BRACKET METHOD)
E5.9B	HEADS	OVERHEAD SIGNAL HEAD MOUNTING (ADJUSTABLE BRACKET METHOD)
E5.12	HEADS	AUDIBLE SIGNALS
E5.16	HEADS	OVERHEAD SIGN MOUNTING
E5.17	HEADS	FIRE SIGNAL SIGNS
E5.18A	HEADS	TENON MOUNT ELEVATOR PLUMBIZER INSTALLATION DETAILS
E5.18B	HEADS	TENON MOUNT ELEVATOR PLUMBIZER INSTALLATION DETAILS
E7.7	SERVICE PANELS	POLE MOUNT SERVICE PANEL AND WIREWAY DETAIL
E7.8A	SERVICE PANELS	POLE MOUNT SERVICE PANEL 100A, 120/240V, 1 PHASE STREET LIGHTING
E7.8B	SERVICE PANELS	POLE MOUNT SERVICE PANEL 100A, 240/480V, 1 PHASE STREET LIGHTING
E7.8C	SERVICE PANELS	POLE MOUNT SERVICE PANEL 100A, 120/240V, 1 PHASE TS/SL COMBO
E7.9A	SERVICE CABINETS	TYPICAL SERVICE KIOSK / CABINET
E7.9B	SERVICE CABINETS	SERVICE CABINET STANDARD 120/208V 3Ø, 4W STREET LIGHTING / TRAFFIC SIGNAL
E7.9C	SERVICE CABINETS	SERVICE KIOSK STANDARD 600V 120/208V 3Ø, 4W
E7.13	WIRING	25 CONDUCTOR SIGNAL CABLE COLOUR CODING
E7.19	WIRING	MISSING BONDING CONDUCTOR MITIGATION INSTALLATION
E7.20	WIRING	POLE AND JUNCTION BOX PLACEMENT
E7.21	WIRING	COMMUNICATIONS SYSTEM DUCTING
E8.2	DETECTOR LOOPS	LOOP STUB
E8.7	DETECTOR LOOPS	VEHICLE DETECTOR LOOP (TYP.)
E8.11	DETECTOR LOOPS	SYSTEM LOOP (TYP.)

REV.	REVISION DATE	APPROVED

## DRAWING INDEX ELECTRICAL

ISSUE DATE: SEPTEMBER 2018  
APPROVED BY: D. EPA



NOTES:

1. REFER TO CONTRACT DRAWINGS, MMCD AND CITY CONSTRUCTION SPECIFICATIONS FOR FURTHER INFORMATION.
2. BASES TO BE STAMPED WITH DATE AND BASE TYPE.
3. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.

SCALE: N.T.S.

REV.	REVISION DATE	APPROVED

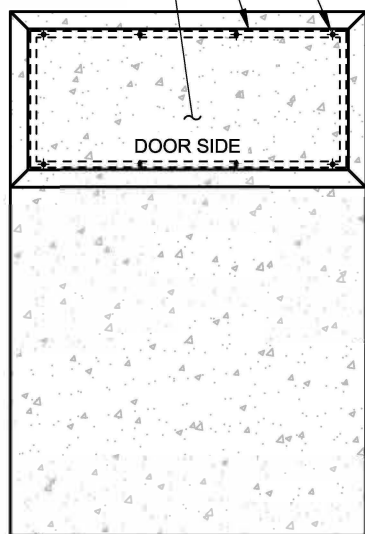
CONCRETE BASES  
POURED IN PLACE CONCRETE CONTROLLER BASE

ISSUE DATE: SEPTEMBER 2018  
APPROVED BY: D. EPA

HILTI RED RING KWIK BOLT  
ANCHORS (3/8"Ø x 3 1/2"  
LONG) TYPICAL

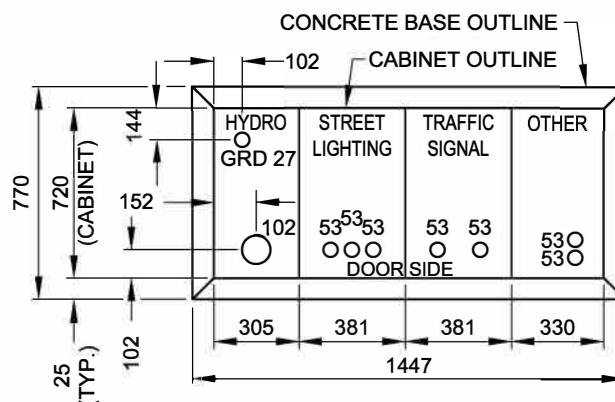
## CABINET OUTLINE

CONDUIT NOT SHOWN  
(REFER TO CONDUIT  
FOOTPRINT DETAILS)

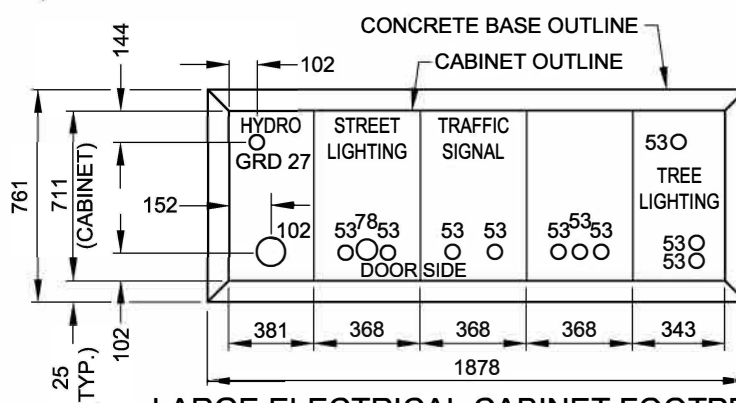


CONCRETE  
WORKING PAD

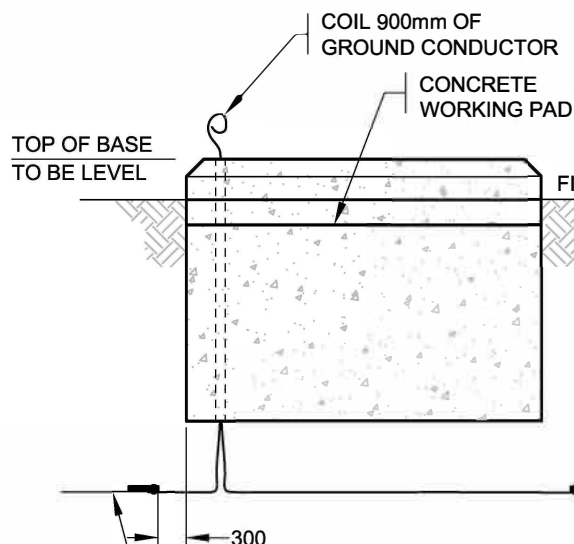
## PLAN VIEW



## SMALL/MEDIUM ELECTRICAL CABINET FOOTPRINT



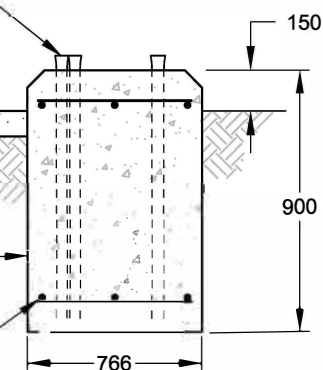
## LARGE ELECTRICAL CABINET FOOTPRINT



CONDUIT SHALL EXTEND 100mm  
ABOVE TOP OF CONCRETE

100mm THICK  
CONCRETE  
WORKING PA

CONCRETE BASE C/W 10M REBAR  
SPACED AT 300mm (TOP AND  
BOTTOM) AND CONCRETE WORKING  
PAD TO SUIT



### SIDE VIEW

**FRONT VIEW**

NOTES:

1. REFER TO CONTRACT DRAWINGS, MMCD AND CITY CONSTRUCTION SPECIFICATIONS FOR FURTHER INFORMATION.
2. BASES TO BE STAMPED WITH DATE AND BASE TYPE.
3. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.

SCALE: N.T.S.

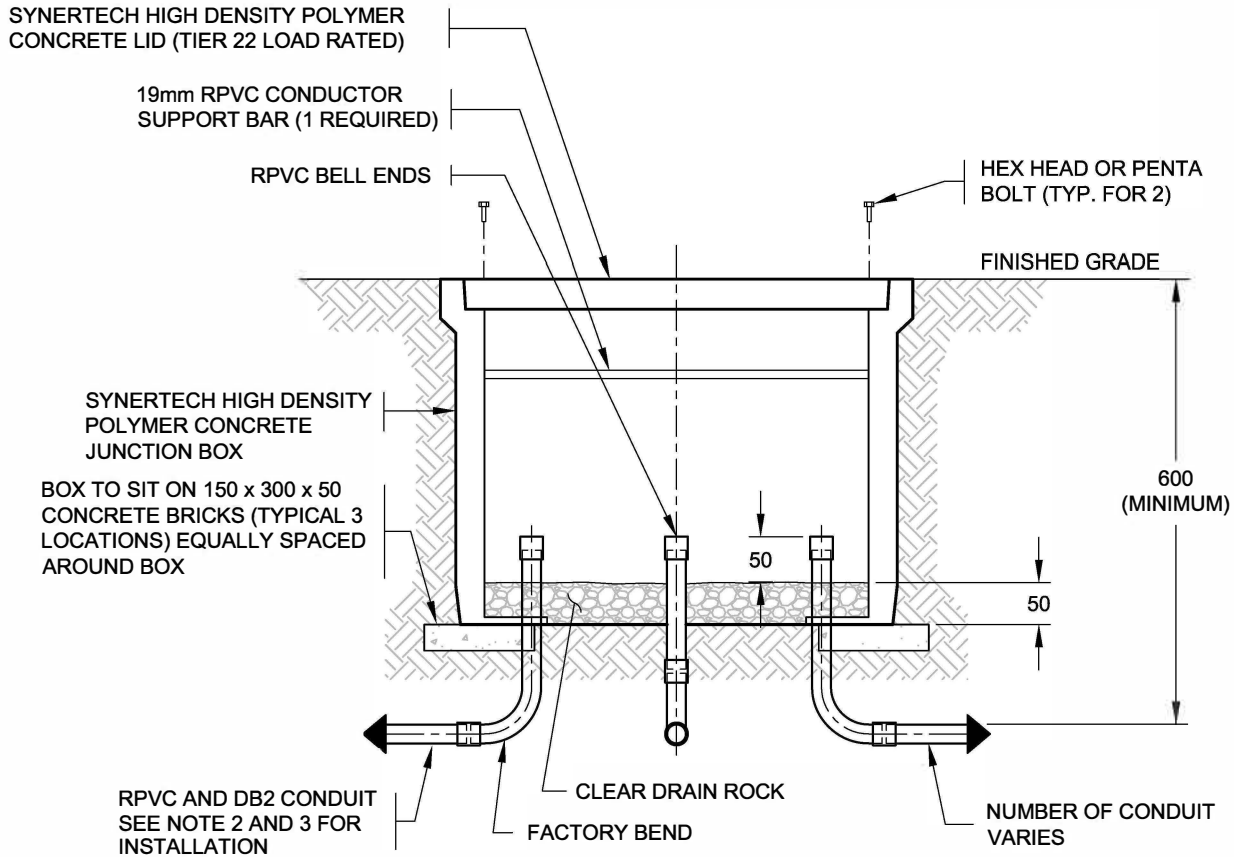
REV.	REVISION DATE	APPROVED

## CONCRETE BASES

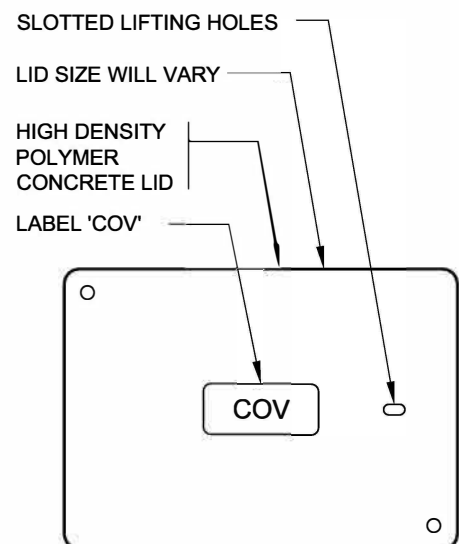
### POURED IN PLACE CONCRETE BASE FOR CABINETS

ISSUE DATE: SEPTEMBER 2018

APPROVED BY: D.EPA



ELEVATION



**NOTES:**

1. REFER TO CONTRACT DRAWINGS, MMCD AND CITY CONSTRUCTION SPECIFICATIONS FOR FURTHER INFORMATION.
2. RPVC AND DB2 COM 53mm SIZE AND BELOW SHALL ENTER THE JB VERTICALLY.
3. 78 & 103mm DB2 COM SHALL HAVE FLARED ENDS AND ENTER THE JB FROM THE SHORT SIDE HORIZONTALLY.
4. 78 & 103mm RPVC COM SHALL HAVE FLARED ENDS AND ENTER THE JB FROM THE BOTTOM VERTICALLY.
5. ALL JB INSTALLATIONS NEAR BC HYDRO WOODEN POLES MUST BE MIN. 2m AWAY.
6. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.

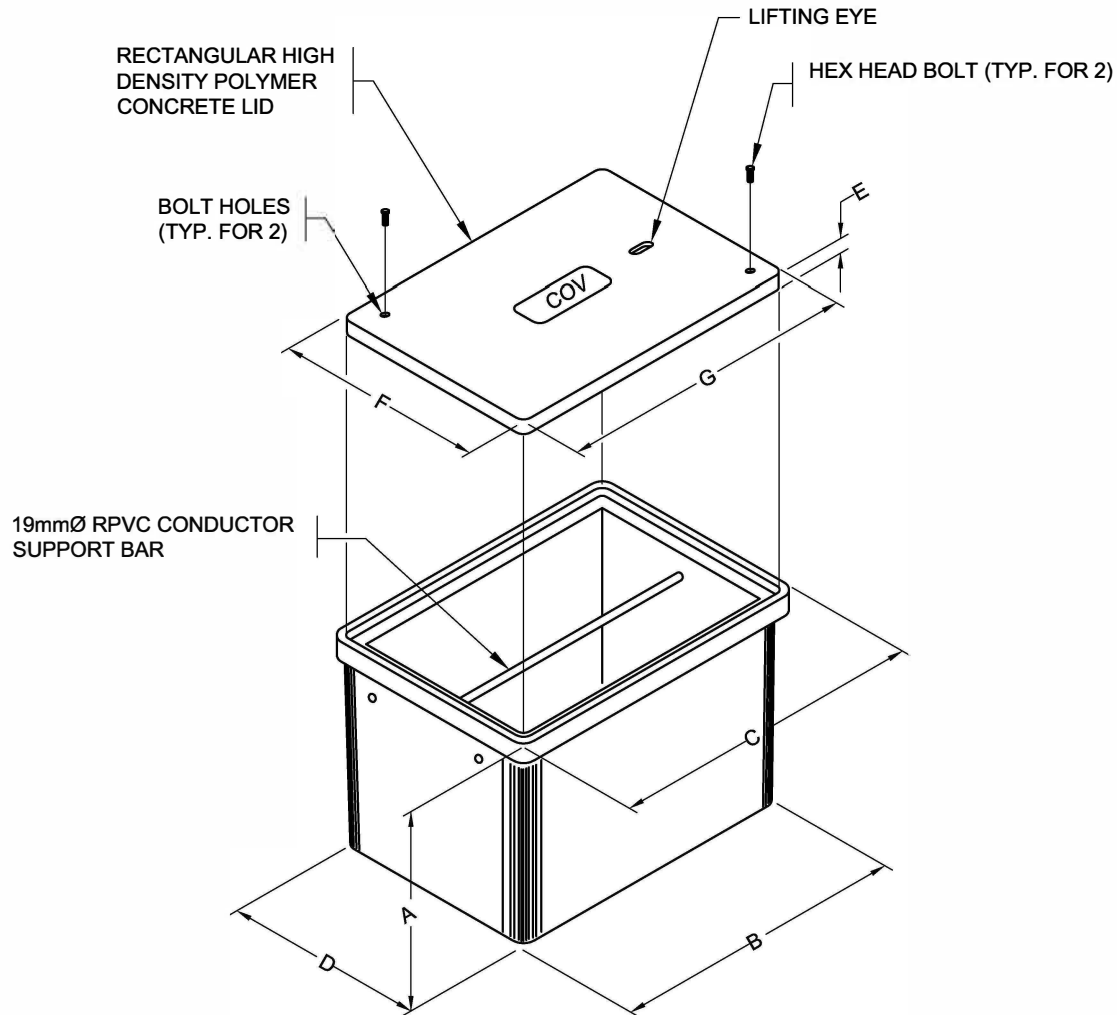
SCALE: N.T.S.

REV.	REVISION DATE	APPROVED

**JUNCTION BOXES  
TIER 22 RATED**

ISSUE DATE: SEPTEMBER 2018  
APPROVED BY: D. EPA





**POLYMER CONCRETE JUNCTION BOX**

JUNCTION BOX TYPE	A	B	C	D	E	F	G	PART NUMBER	BRAND
TYPE 3 (279x457x457)	457	432	508	292	26	280	457	SYN 1118-18	OLD CASTLE SYNERTECH
TYPE 4 (330x610x457)	457	534	636	356	50	331	584	SYN 1324-24	
TYPE 5 (432x762x610)	610	763	814	433	50	432	763	SYN 1730-24	
TYPE 6 (610x914x610)	610	889	941	585	75	610	890	SYN 2436-24	

**NOTES:**

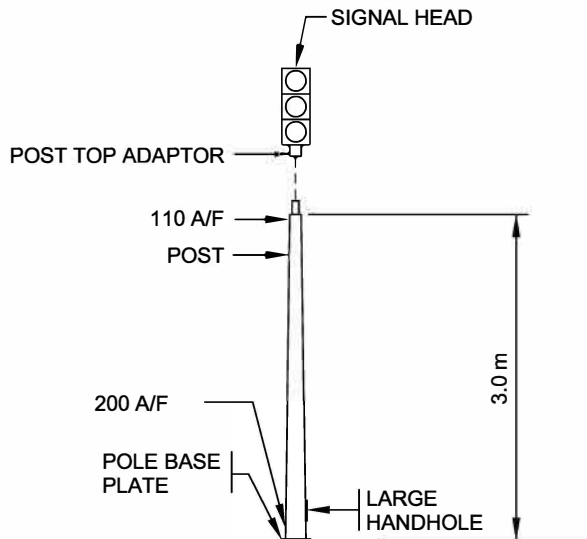
1. REFER TO CONTRACT DRAWINGS, MMCD AND CITY CONSTRUCTION SPECIFICATIONS FOR FURTHER INFORMATION.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.

SCALE: N.T.S.

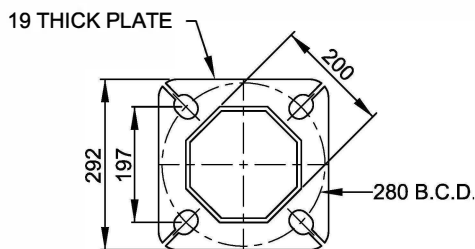
REV.	REVISION DATE	APPROVED

**JUNCTION BOXES  
DETAILS**

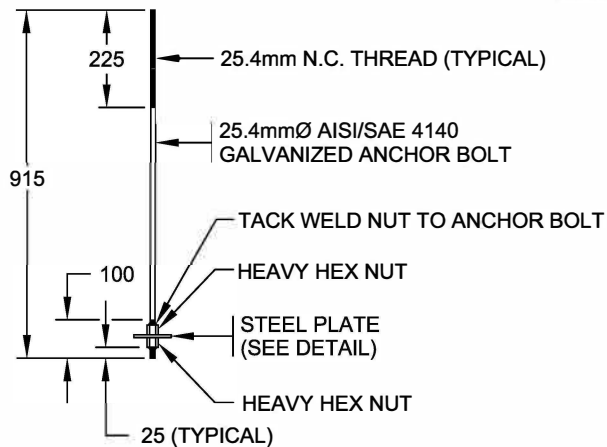
ISSUE DATE: SEPTEMBER 2018  
APPROVED BY: D. EPA



**TRAFFIC SIGNAL POST**

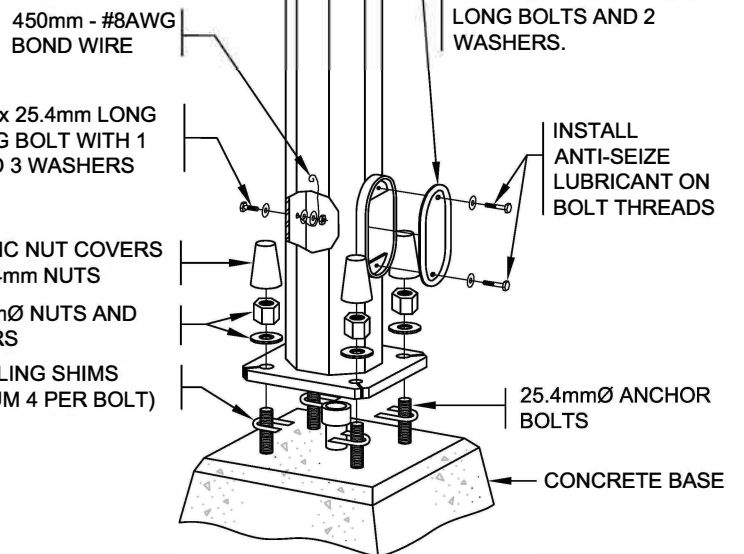


**POLE BASE PLATE**

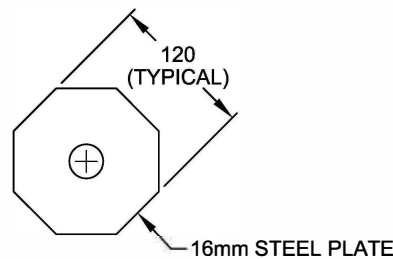


**ANCHOR BOLT**

4 PER SET



**POLE ASSEMBLY DETAIL**



**STEEL PLATE**

**NOTES:**

1. REFER TO CONTRACT DRAWINGS, MMCD AND CITY CONSTRUCTION SPECIFICATIONS FOR FURTHER INFORMATION.
2. SHAFTS TO BE INSTALLED PLUMB.
3. ALL SHAFTS, ARMS AND EXTENSIONS TO BE SUPPLIED WITH A GALVANIZED FINISH, UNLESS OTHERWISE NOTED.
4. APPLY GREASE TO ANCHOR BOLT THREADS.
5. TOUCH UP ANY SCRATCHES IN GALVANIZED SURFACES WITH COLD GALVANIZING COMPOUND.
6. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.

SCALE: N.T.S.

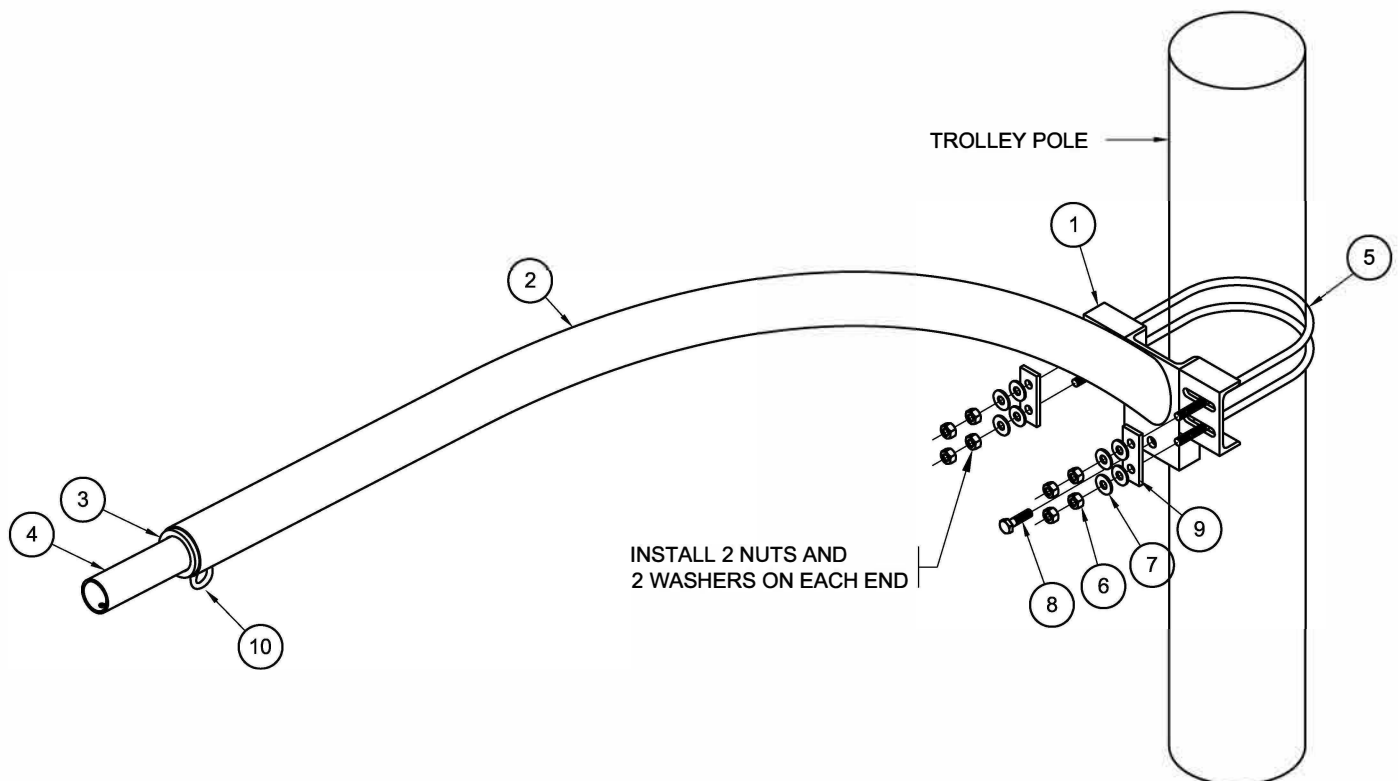
REV.	REVISION DATE	APPROVED

**POLES**  
**3.0m TRAFFIC SIGNAL POST**

ISSUE DATE: SEPTEMBER 2018

APPROVED BY: D. EPA

QTY	ITEM NO.	PART NUMBER	DESCRIPTION	MATERIAL	UNIT WEIGHT	TOTAL WEIGHT
1	1	S15-22-AVA-A02	Bracket Arm, For Trolley Pole, City of Vancouver	See drawing S15-22-AVA-A02	5.0	5.0
2	1	R20-65-3.00-C003	Arm, 76.2mm Sch 10 Pipe, OD=88.9mm, Thk=3.05mm	ASTM A53 Grade B	16.0	16.0
3	1	P66-00-84X62X10	TENON PLATE, ROUND, OD=84mm, CO=62mm, THK=9.53mm	G40.21 300W	0.2	0.2
4	1	P65-60X230-001	TENON, HSS ROUND, OD=60mm, THK=3.9mm, L=230mm	ASTM A500 GR.C	1.2	1.2
5	2	H12-GS-2,020-10.00x8.86	U Bolt, Wire Dia=12.7mm, For Pole Size= 254.0mm, Thread Length = 177.8mm, Galvanized Steel	SAE GR.5	0.9	1.8
6	8	H40-A194-G0.500	NUT, HEAVY HEX, 12.7mm, GALV	ASTM A563 GRADE DH	0.0	0.0
7	8	H70-F436-G0.500	WASHER, FLAT, STRUCTURAL, 12.7mm, GALV	ASTM F436	0.0	0.0
8	1	H10-A325-0.500X2.00	BOLT HEX, 12.7mm x 50.8mm, GALV	ASTM A325 TYPE1	0.1	0.1
9	2	H70-PW-D001	Rectangular Washer Plate, Length=101.6mm, Width=38.1mm, Thk=7.9mm, Galv	G40.21 300W	0.2	0.4
10	1	R20-15-AVA-01	Curved Rod, Dia=38.1mm, Rod Dia=9.53mm	G40.21 300W	0.1	0.1
Assembly Weight (kg)=						24.8



NOTES:

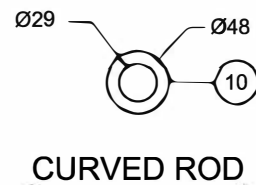
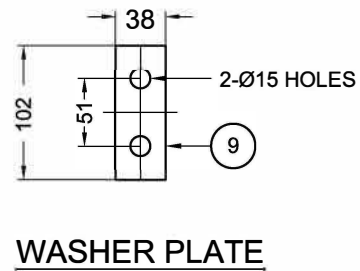
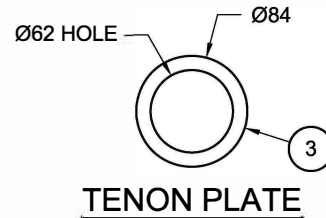
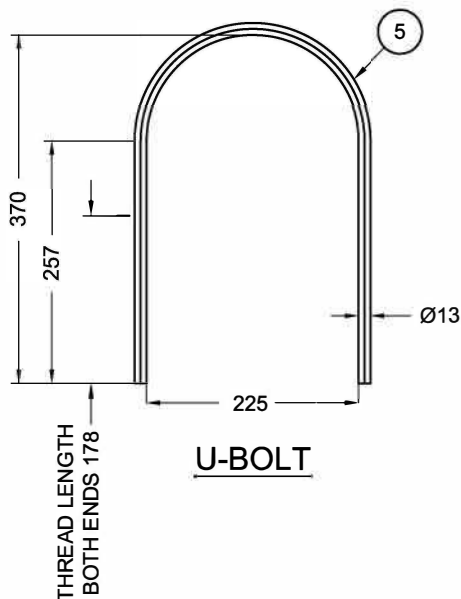
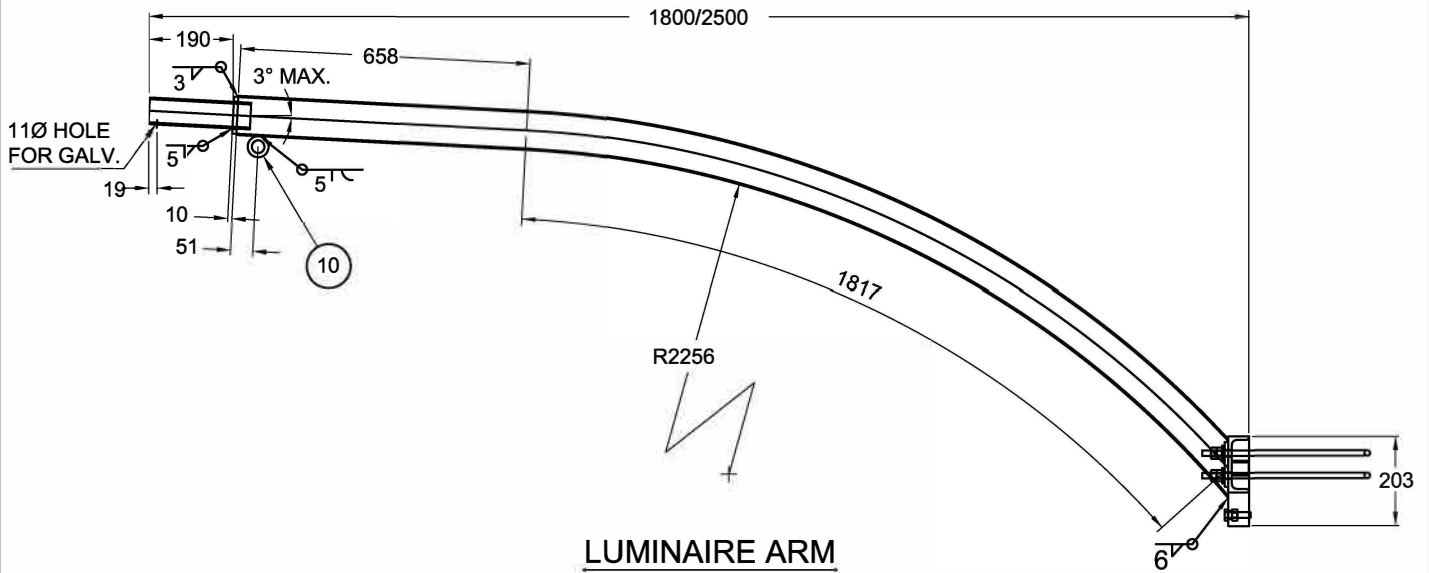
- REFER TO CONTRACT DRAWINGS, MMCD AND CITY CONSTRUCTION SPECIFICATIONS FOR FURTHER INFORMATION.
- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.

SCALE: N.T.S.

REV.	REVISION DATE	APPROVED

POLES  
1.8M / 2.5M TROLLEY POLE LUMINAIRE ARM

ISSUE DATE: SEPTEMBER 2018  
APPROVED BY: D. EPA



**NOTES:**

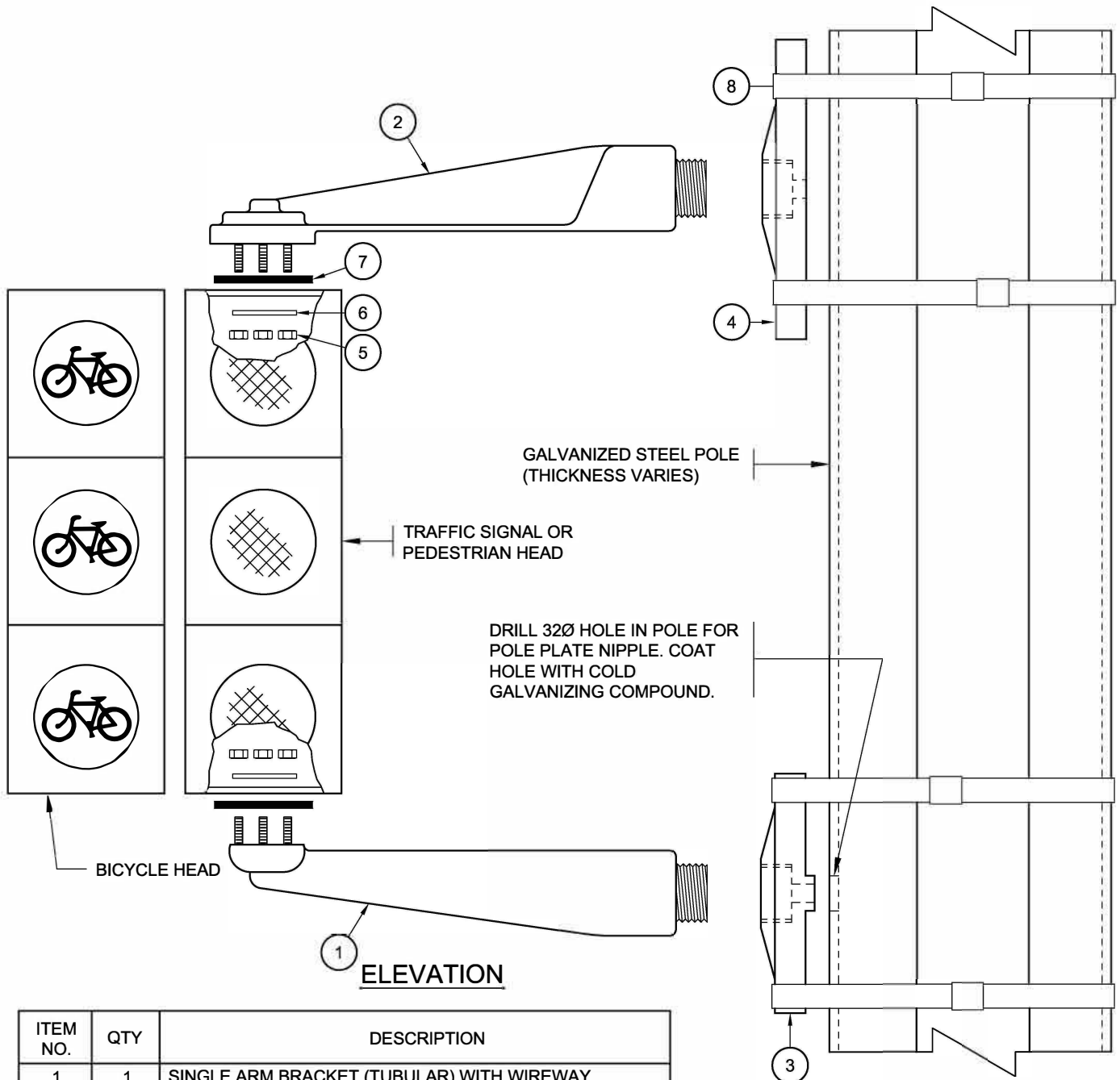
1. REFER TO CONTRACT DRAWINGS, MMCD AND CITY CONSTRUCTION SPECIFICATIONS FOR FURTHER INFORMATION.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.

SCALE: N.T.S.

REV.	REVISION DATE	APPROVED

**POLES**  
**1.8M / 2.5M TROLLEY POLE LUMINAIRE ARM**

ISSUE DATE: SEPTEMBER 2018  
APPROVED BY: D. EPA



ITEM NO.	QTY	DESCRIPTION
1	1	SINGLE ARM BRACKET (TUBULAR) WITH WIREWAY
2	1	SINGLE ARM BRACKET (T SECTION)
3	1	POLE PLATE WITH NIPPLE
4	1	POLE PLATE WITH NO NIPPLE AND SLOTTED HOLES
5	6	7.9mmØ STAINLESS STEEL NYLOCK NUT
6	2	STAINLESS STEEL RETAINING WASHER
7	2	RUBBER GASKET
8	4	19.1mm STAINLESS STEEL BANDING

NOTES:

- REFER TO CONTRACT DRAWINGS, MMCD AND CITY CONSTRUCTION SPECIFICATIONS FOR FURTHER INFORMATION.
- AIM SIGNAL HEADS AS DIRECTED BY CONTRACT ADMINISTRATOR.
- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.

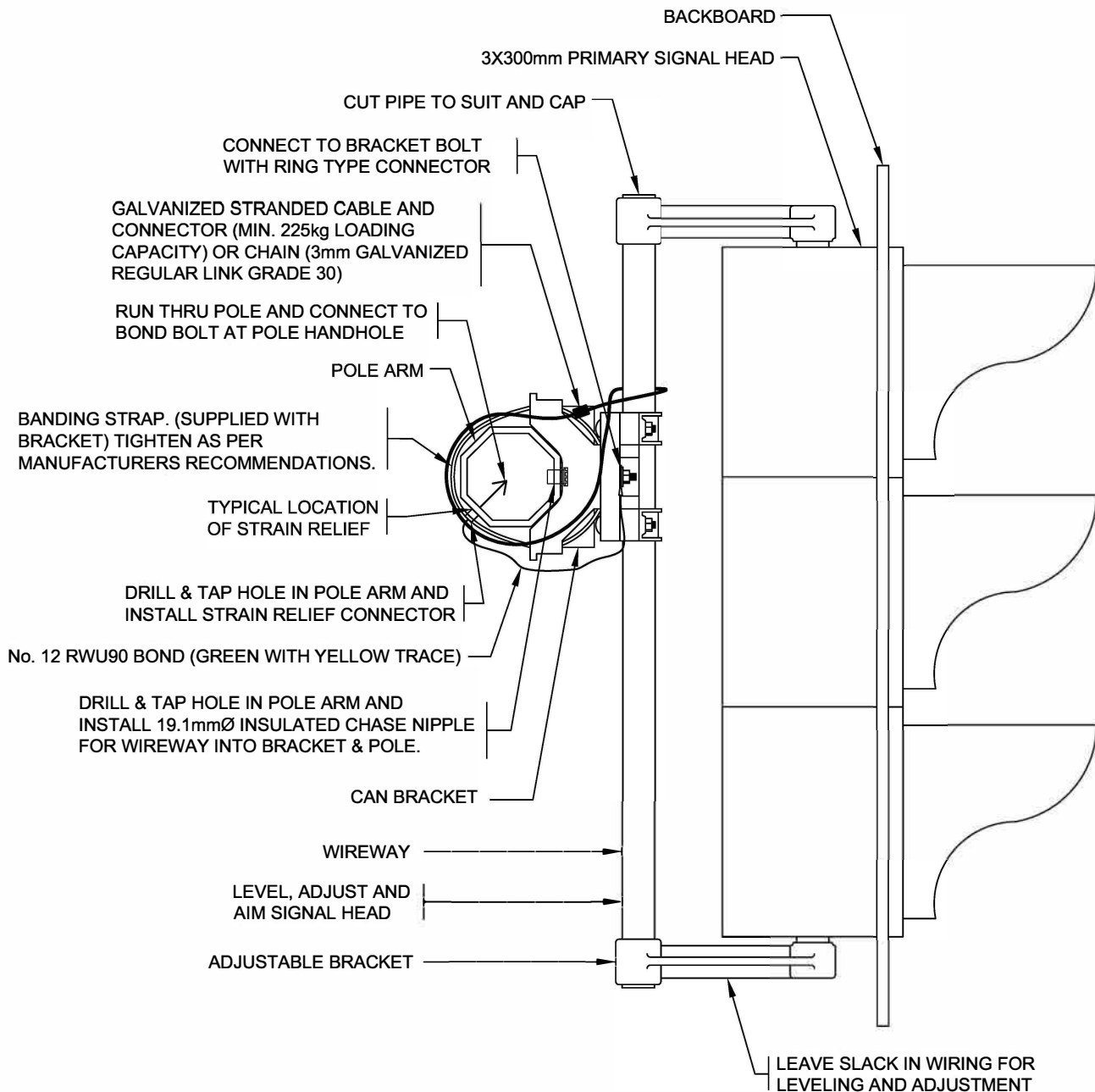
SCALE: N.T.S.

REV.	REVISION DATE	APPROVED

HEADS  
POLE SHAFT SIGNAL HEAD MOUNTING

ISSUE DATE: SEPTEMBER 2018

APPROVED BY: D. EPA



**NOTES:**

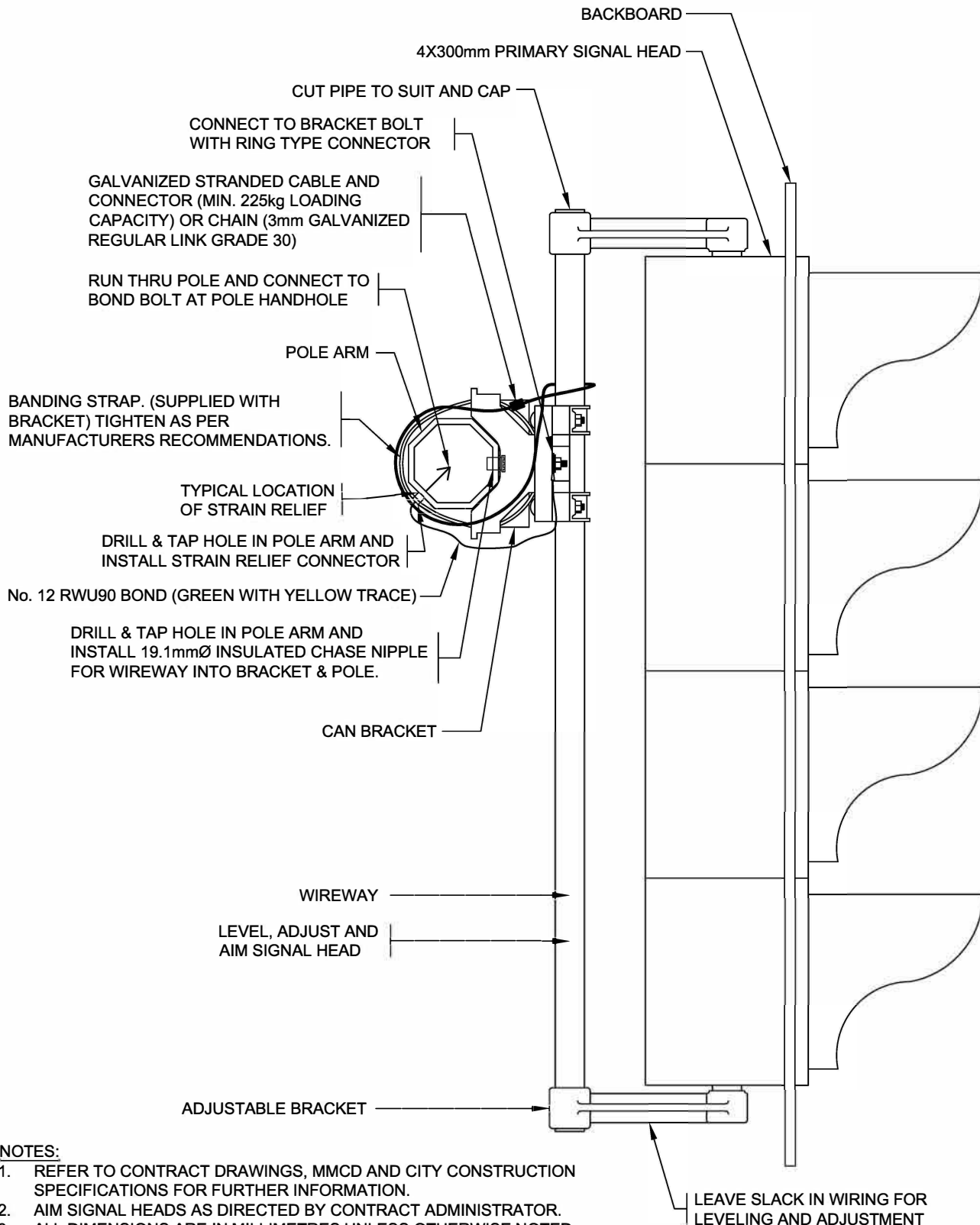
1. REFER TO CONTRACT DRAWINGS, MMCD AND CITY CONSTRUCTION SPECIFICATIONS FOR FURTHER INFORMATION.
2. AIM SIGNAL HEADS AS DIRECTED BY CONTRACT ADMINISTRATOR.
3. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.
4. ALL METAL PARTS THAT ELECTRICAL CONDUCTORS RUN THROUGH SHALL BE BONDED.

SCALE: N.T.S.

REV.	REVISION DATE	APPROVED

**HEADS**  
**OVERHEAD SIGNAL HEAD MOUNTING (ADJUSTABLE BRACKET METHOD)**

ISSUE DATE: SEPTEMBER 2018  
APPROVED BY: D. EPA



**NOTES:**

1. REFER TO CONTRACT DRAWINGS, MMCD AND CITY CONSTRUCTION SPECIFICATIONS FOR FURTHER INFORMATION.
2. AIM SIGNAL HEADS AS DIRECTED BY CONTRACT ADMINISTRATOR.
3. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.
4. ALL METAL PARTS THAT ELECTRICAL CONDUCTORS RUN THROUGH SHALL BE BONDED.

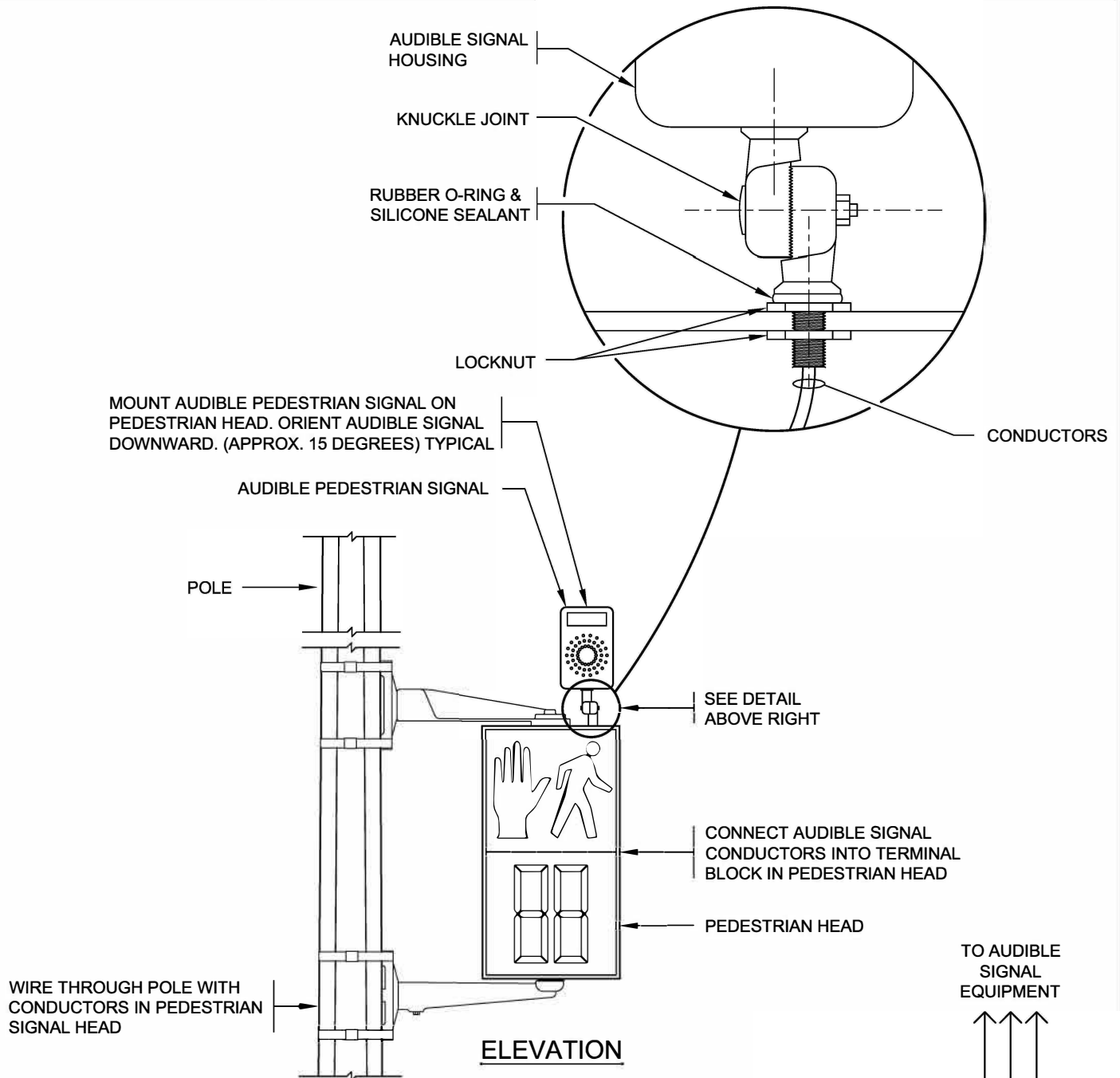
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REV.	REVISION DATE	APPROVED

**HEADS**  
**OVERHEAD SIGNAL HEAD MOUNTING (ADJUSTABLE BRACKET METHOD)**

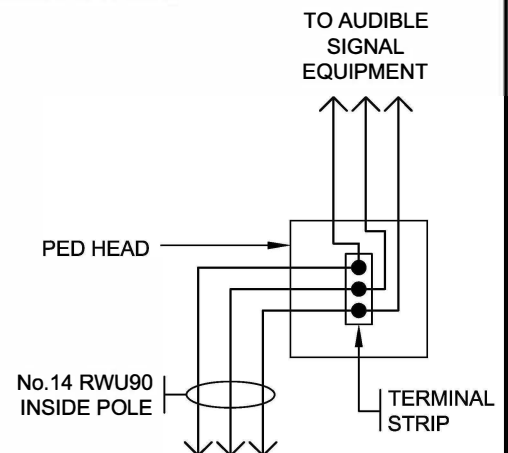
ISSUE DATE: SEPTEMBER 2018

APPROVED BY: D. EPA



**NOTES:**

1. REFER TO CONTRACT DRAWINGS, MMCD AND CITY CONSTRUCTION SPECIFICATIONS FOR FURTHER INFORMATION.
2. AIM, CONNECT AUDIBLE SIGNAL AS PER MANUFACTURERS INSTRUCTIONS AND ADJUST VOLUME AS REQUIRED BY CITY TO SATISFACTION OF CONTRACT ADMINISTRATOR.
3. AUDIBLE SIGNAL TO 'CHIRP' FOR EAST TO WEST CROSSINGS & 'CUCKOO' FOR NORTH TO SOUTH CROSSINGS. AT INTERSECTIONS WHERE NORTH/SOUTH AND EAST/WEST ARE NOT EASILY DEFINED CONTACT CONTRACT ADMINISTRATOR FOR DIRECTION.
4. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.



**WIRING DIAGRAM**

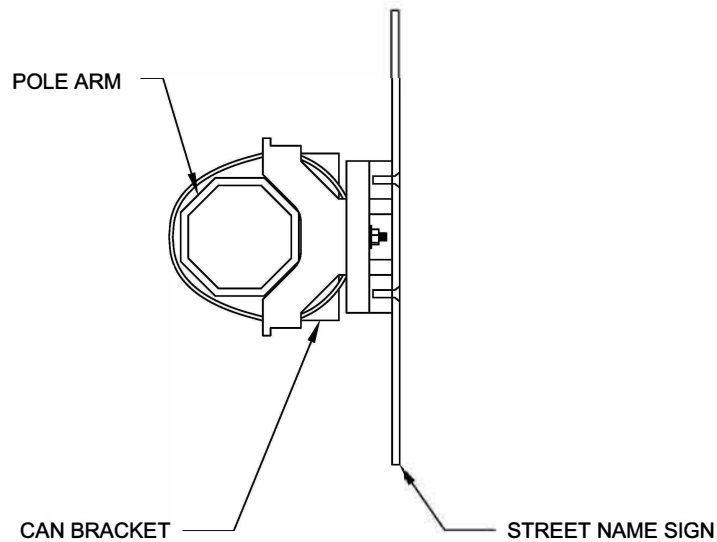
SCALE: N.T.S.

REV.	REVISION DATE	APPROVED

**HEADS  
AUDIBLE SIGNALS**

ISSUE DATE: SEPTEMBER 2018  
APPROVED BY: D. EPA





**NOTES:**

1. REFER TO CONTRACT DRAWINGS, MMCD AND CITY CONSTRUCTION SPECIFICATIONS FOR FURTHER INFORMATION.
2. AIM STREET SIGNS AS DIRECTED BY CONTRACT ADMINISTRATOR.
3. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.

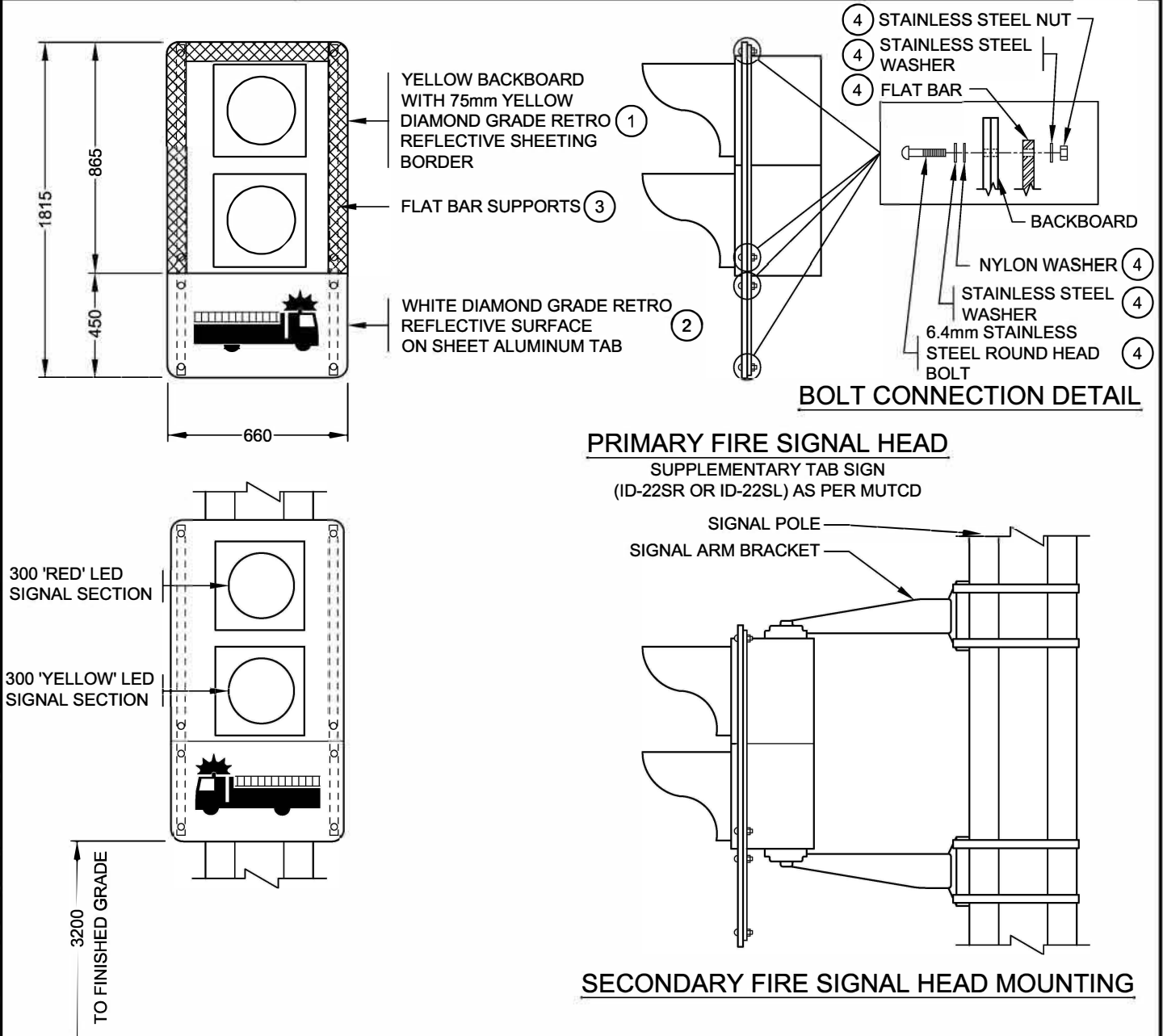
SCALE: N.T.S.

REV.	REVISION DATE	APPROVED

HEADS  
OVERHEAD SIGN MOUNTING

ISSUE DATE: SEPTEMBER 2018

APPROVED BY: D. EPA



ITEM NO.	QTY	DESCRIPTION
1	1	BACKBOARD
2	1	FIRE SIGNAL SIGN
3	2	1150x30x5 GALVANIZED FLAT BAR
4	8	6.4mmx19.1mm STAINLESS STEEL ROUND HEAD BOLT (WITH FULL THREAD) 2 STAINLESS STEEL WASHERS, STAINLESS STEEL NUT AND NYLON WASHER

**NOTES:**

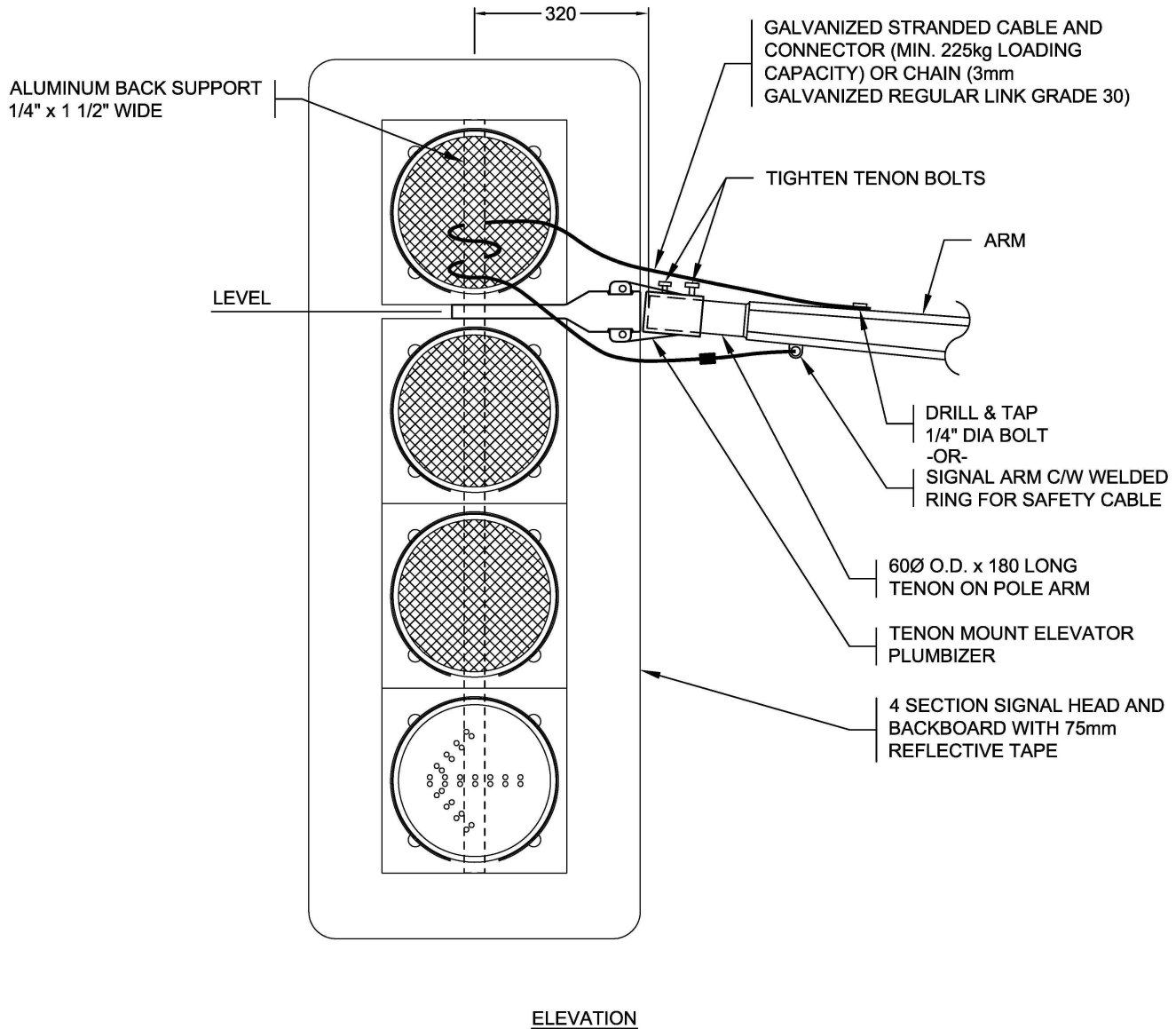
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SCALE: N.T.S.

REV.	REVISION DATE	APPROVED

**HEADS  
FIRE SIGNAL SIGNS**

ISSUE DATE: SEPTEMBER 2018  
APPROVED BY: D. EPA



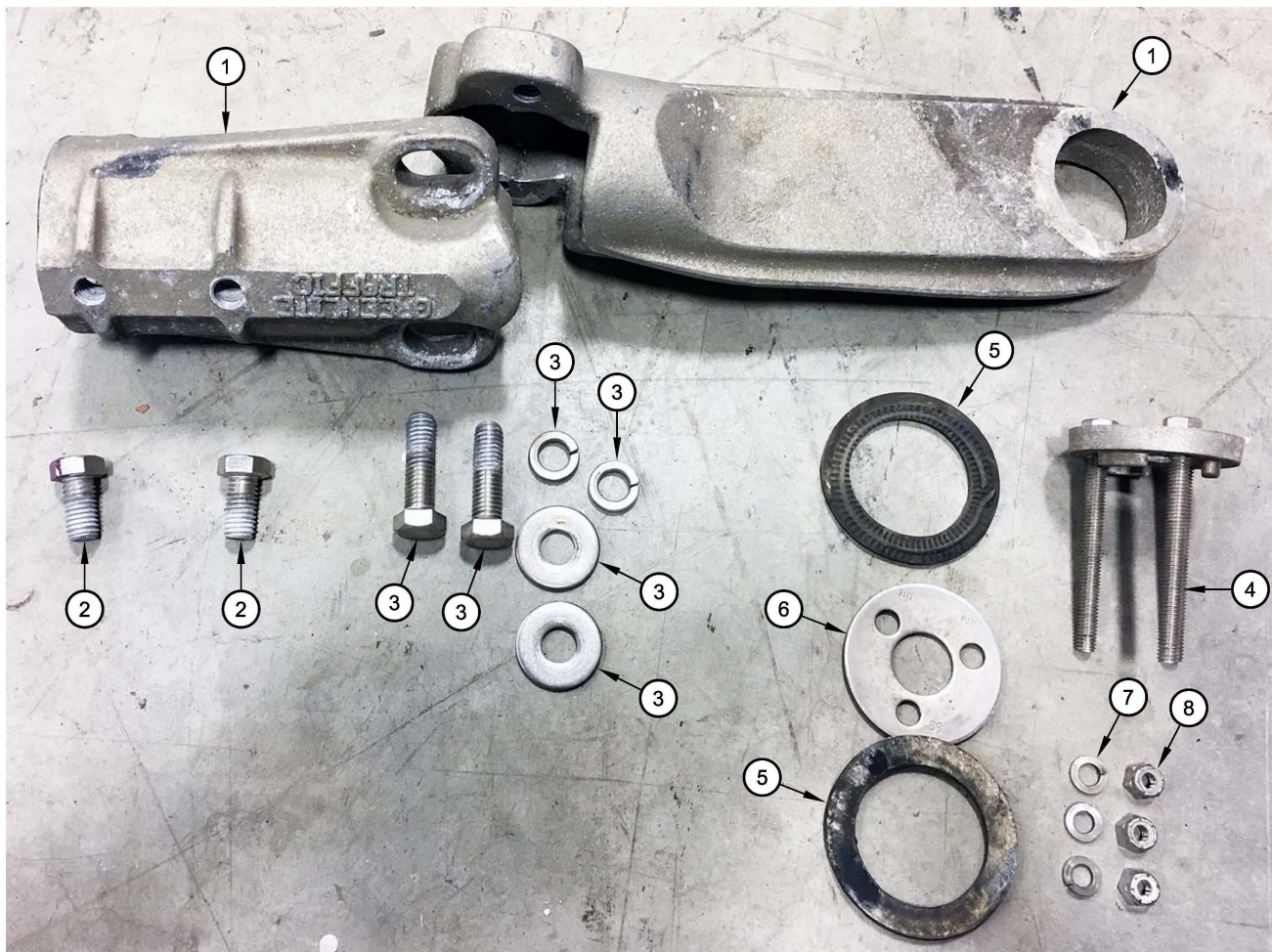
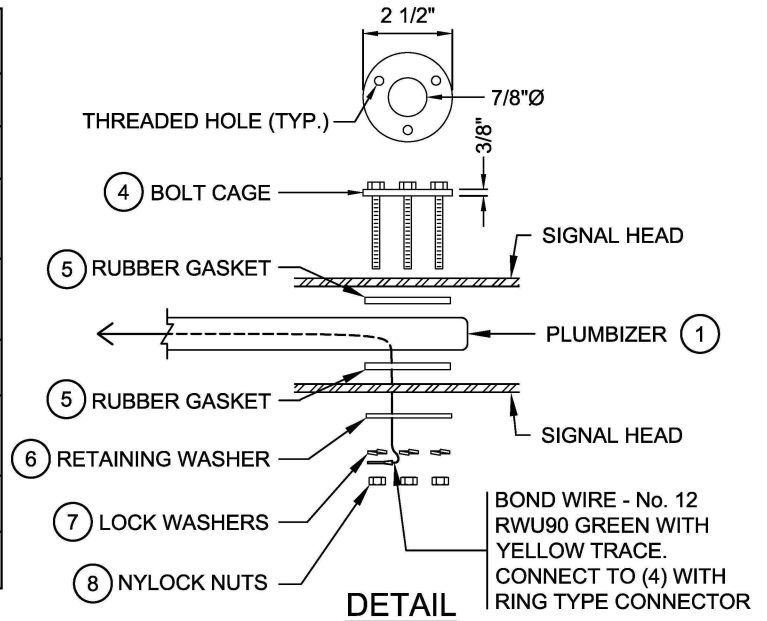
SCALE: N.T.S.

REV.	REVISION DATE	APPROVED

**HEADS**  
**TENON MOUNT ELEVATOR PLUMBIZER INSTALLATION DETAILS**

ISSUE DATE: SEPTEMBER 2018  
APPROVED BY: D. EPA

ITEM NO.	QTY	DESCRIPTION
1	1	PLUMBIZER BRACKET
2	2	3/4"Ø x 1" STAINLESS STEEL BOLT
3	2	3/4"Ø x 1 3/4" STAINLESS STEEL BOLT, LOCK WASHER AND FLAT WASHER
4	1	3 - 1/2"Ø x 3 1/2" LONG STAINLESS STEEL BOLT AND CAGE
5	2	RUBBER GASKET
6	1	9.5mm THICK CAST ALUMINUM RETAINING WASHER
7	3	STAINLESS STEEL LOCK WASHER
8	3	1/2" STAINLESS STEEL NYLOCK NUTS

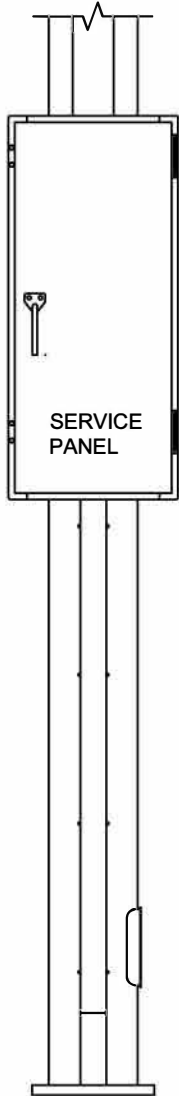


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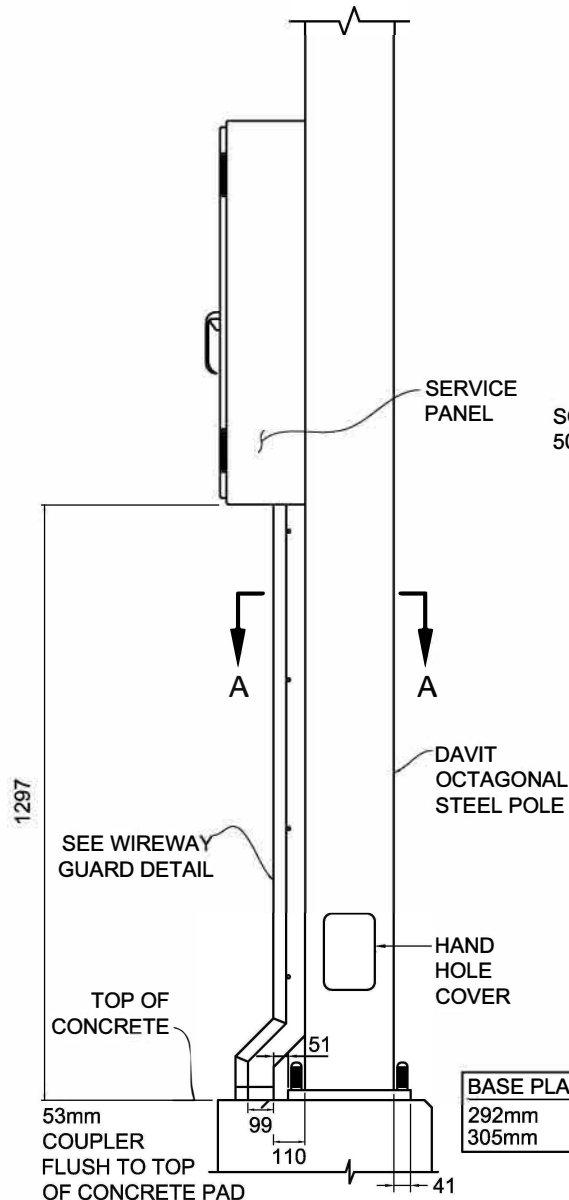
REV.	REVISION DATE	APPROVED

HEADS  
TENON MOUNT ELEVATOR PLUMBIZER INSTALLATION DETAILS

ISSUE DATE: SEPTEMBER 2018  
APPROVED BY: D. EPA

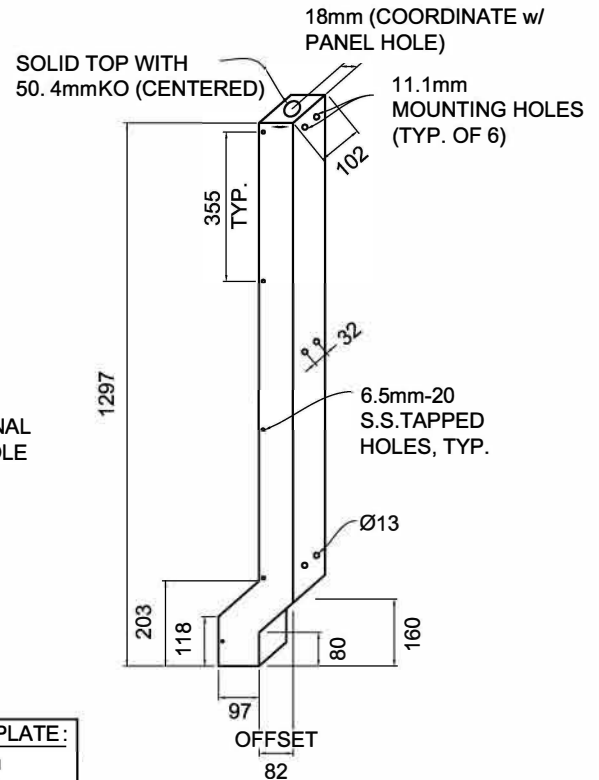
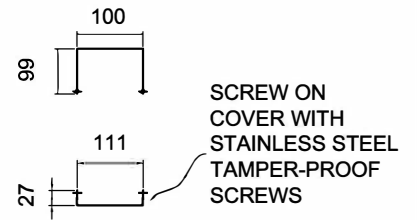


**FRONT VIEW**

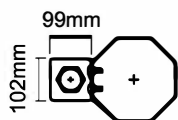


**SIDE VIEW**

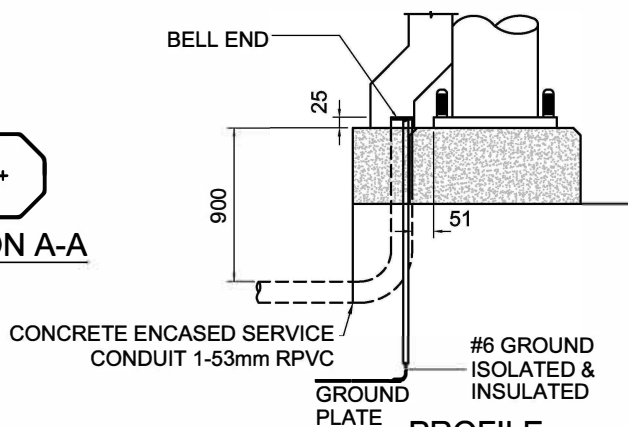
**WIREWAY GUARD  
PLAN VIEW**



**WIREWAY GUARD  
DETAIL**



**SECTION A-A**



**PROFILE**

**NOTES:**

1. REFER TO CONTRACT DRAWINGS, MMCD AND CITY CONSTRUCTION SPECIFICATIONS FOR FURTHER INFORMATION.
2. MATERIAL: 12 GA STAINLESS STEEL.
3. FRONT COVER TO BE CLOSED BY STAINLESS STEEL TAMPER PROOF SCREWS.
4. POWDER COATED COV GREEN RAL 6005 (UNLESS OTHERWISE SPECIFIED).
5. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.

SCALE: N.T.S.

REV.	REVISION DATE	APPROVED

**SERVICE PANELS  
POLE MOUNT SERVICE PANEL AND WIREWAY DETAIL**

ISSUE DATE: SEPTEMBER 2018  
APPROVED BY: D. EPA



SCALE: N.T.S.

ISSUE DATE: SEPTEMBER 2018  
APPROVED BY: D. EPA



Technical drawing of the Pole Mounting Bracket showing front and side views with dimensions and material specifications.

**Dimensions:**

- Width as per Enclosure Dimensions
- Height as per Enclosure Dimensions
- 38.1mm (Front View)
- 101.6mm (Side View)

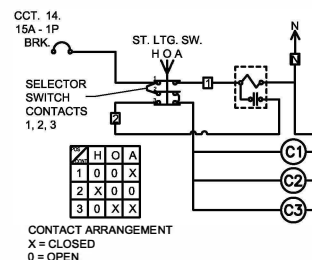
**Material and Construction:**

- POLE MOUNTING BRACKET - MADE OUT OF 12 GA. S.S.
- 9.5mm MOUNTING HOLES - (TYP.)
- 38.1mm X 38.1mm X 6.4mm S.S. ANGLE c/w 9.5mm S.S. WELDED BOLTS (TYP.)

## SCALE: N.T.S.

APPROVED BY: D. EPA





BC HYDRO INCOMING

COV OUTGOING

MECHANICAL STEEL PROTECTOR

BRACKET (SEE DETAIL)

1297mm

PHOTOCELL WIREWAY

BCH WOOD POLE

HUB, BULLET 19.1mm WP T&B

BCH INCOMING 31.8mm THREADED NIPPLE c/w WASHER & BUSHING

POLE MOUNTING BRACKET (SEE DETAIL)

EQ EQ

-SERVICE ENTRANCE HOLE 31.8mm  
-OFFSET NIPPLE 31.8mm  
CONDUIT  
-OFFSET BUSHING 31.8mm  
CONDUIT  
-HUB BULLET W/P T&B

NOTE: 50.8mm K.O. COV OUTGOING  
POWDER-COATED BLACK  
UNLESS OTHERWISE SPECIFIED.

## WOOD POLE MOUNT

COV METAL POLE

50.8mm INSULATED CHASE NIPPLE

COV CUSTOM WIREWAY

1297mm

CONCRETE ENCASED

BC HYDRO INCOMING

TO JB

COV OUTGOING (INSIDE POLE)

50.8mm INSULATED CHASE NIPPLE

MOUNTING HARDWARE  
-5X 9.5mm X 31.8mm SSBOLTS  
-5X 9.5mm SS WASHER

EQ EQ

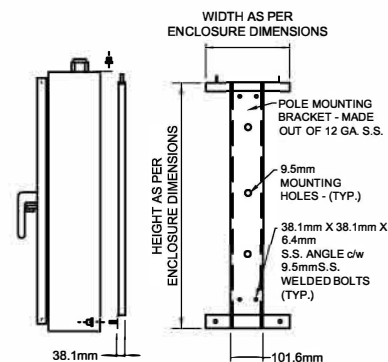
BC INCOMING

SERVICE ENTRANCE HOLE IN BOTTOM  
-POSITIONED TO ALIGN WITH WIREWAY CENTRE

50.8mm THREADED NIPPLE c/w WASHER & BUSHING

ITEM NO.	QTY	DESCRIPTION
1	1	CSA TYPE 3R ENCLOSURE - 812.8mm x 304.8mm x 203.2mm
2	1	H.O.A. - IDEC 3 POS. SELECTOR SWITCH #ASD320N c/w EXTRA CONTACT BLOCK - #BST-001
3	16	WEIDMULLER TERMINAL BLOCKS - (9 - #102880 #12 - #2AWG) (3 - #102040 #14 - #6AWG) - (1 - #102030 #18 - #6) (3 - #102020 #20 - #8AWG)
4	1	ILSCO COPPER GROUND BAR - 13 POINT
5	1	ILSCO - ISOLATED NEUTRAL BLOCK - #M8074 (1 - MAIN LUG - 300MCM - #6) (6 - #14 - 2/0) (10 - #14 - #6)
6	3	EATON LIGHTING CONTACTORS - 20A. 3P. 120V. COIL #XTCE012B10A
7	1	ANDVANCE PROTECTION "SPD" - #S50A120V2PN/W10
8	1	SCHNIEDER 100A. 120/240V. 1PH. 3W. COMBINATION LOAD CENTER - 100A. MAIN BREAKER - #CQO116M100C100 (COPPER BUS) - C/W BRANCH BREAKERS. (1- 15A. 1P #QO115) - (13 - 20A. 1P #QO115) (1 - 20A. 2P. #QO220)
9	1	T & B 2" SNAP IN PLASTIC BUSHING - #3215

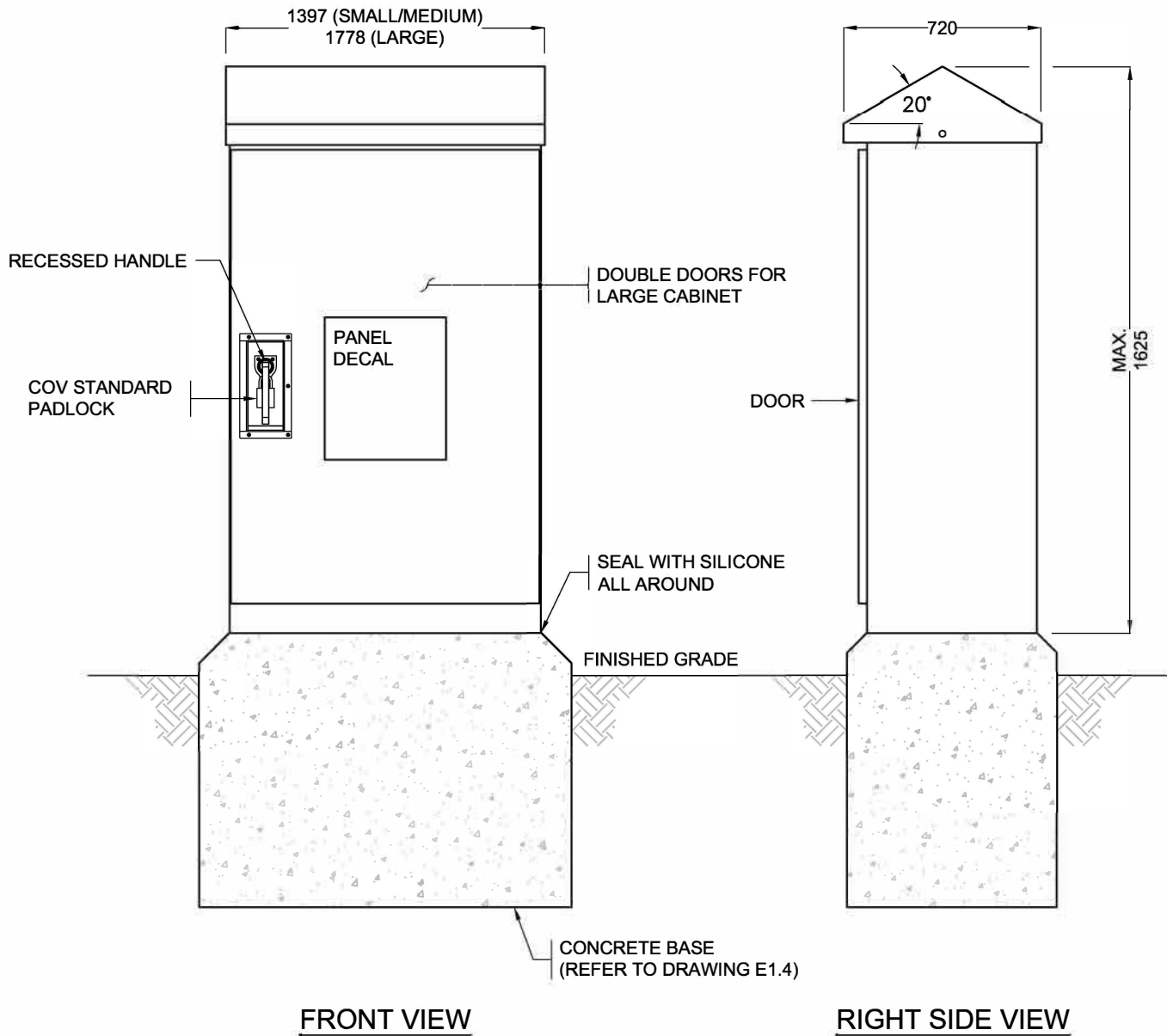
## SCALE: N.T.S.



WOOD POLE  
MOUNT DETAIL  
NTS

ISSUE DATE: SEPTEMBER 2018  
APPROVED BY: D. EPA





**NOTES:**

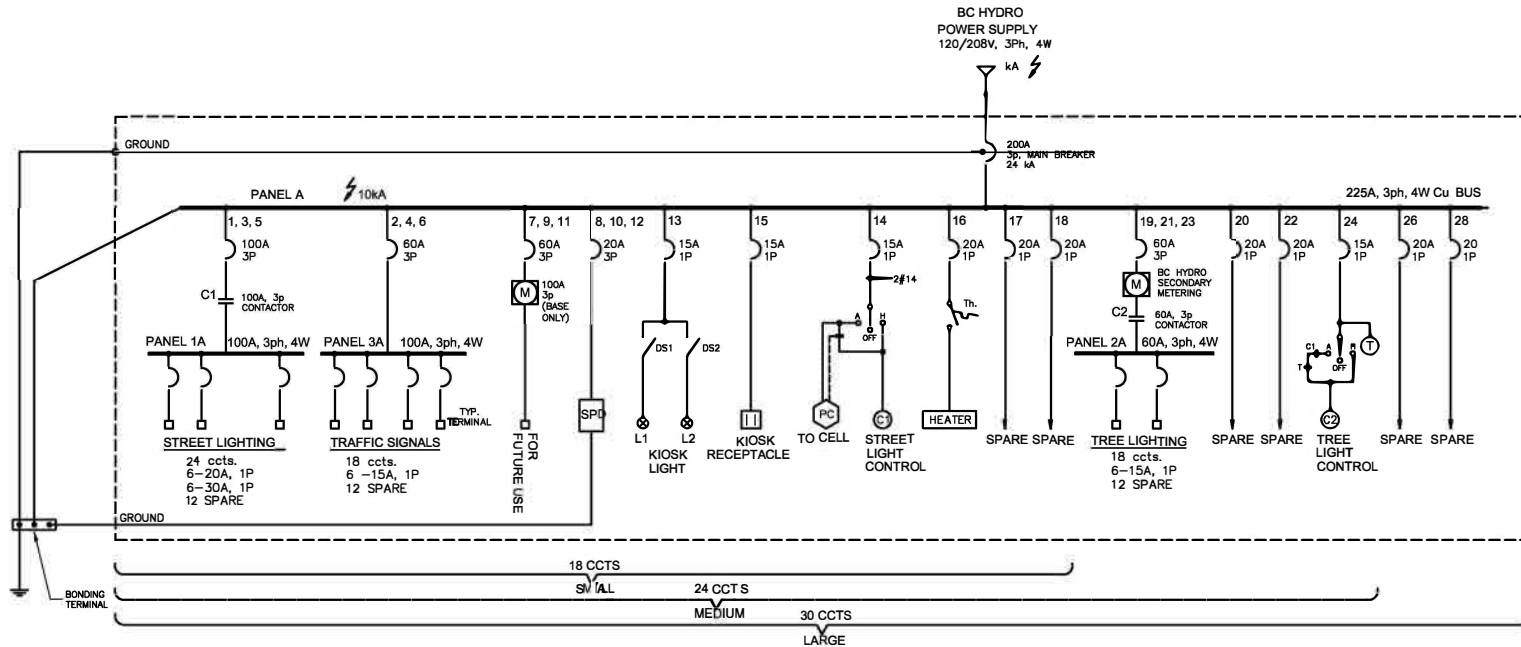
1. REFER TO CONTRACT DRAWINGS, MMCD AND CITY CONSTR/CTION SPECIFICATIONS FOR FURTHER INFORMATION.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.

SCALE: N.T.S.

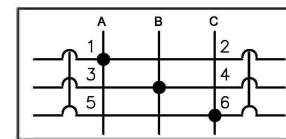
REV.	REVISION DATE	APPROVED

**SERVICE CABINETS**  
**TYPICAL SERVICE KIOSK / CABINET**

ISSUE DATE: SEPTEMBER 2018  
APPROVED BY: D. EPA



CIRCUIT DIAGRAM FOR THE TYPICAL TIE ON THREE 1p CB's. IF COMMON NEUTRAL IS USED



NOTES:

1. REFER TO CONTRACT DRAWINGS, MMCD AND CITY CONSTRUCTION SPECIFICATIONS SECTION 26 56 02S FOR FURTHER INFORMATION.
2. THREE 1P CB's TIED TOGETHER ON 1 PH CIRCUITS USING THE SAME NEUTRAL.

SCALE: N.T.S.

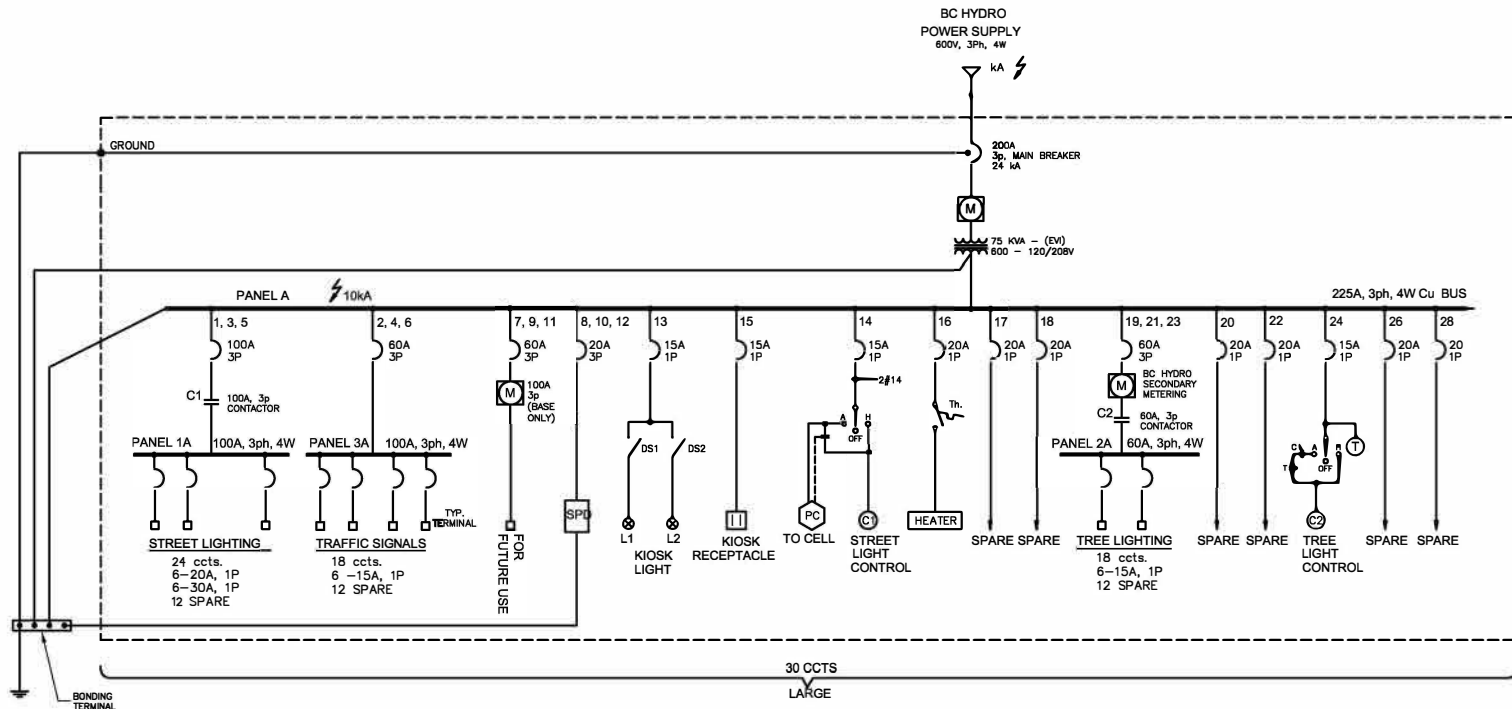
SERVICE CABINETS

SERVICE CABINET STANDARD 120/208V 3Ø, 4W STREET LIGHTING / TRAFFIC SIGNAL

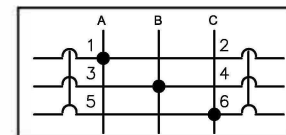
ISSUE DATE: SEPTEMBER 2018

APPROVED BY: D. EPA

REV. REVISION DATE APPROVED



CIRCUIT DIAGRAM FOR THE TYPICAL TIE ON THREE 1p CB's. IF COMMON NEUTRAL IS USED



NOTES:

1. REFER TO CONTRACT DRAWINGS, MMCD AND CITY CONSTRUCTION SPECIFICATIONS SECTION 26 56 02S FOR FURTHER INFORMATION.
2. THREE 1P CB's TIED TOGETHER ON 1 PH CIRCUITS USING THE SAME NEUTRAL.

SCALE: N.T.S.

SERVICE CABINETS

SERVICE KIOSK STANDARD 600V 120/208V 3Ø, 4W

ISSUE DATE: SEPTEMBER 2018

APPROVED BY: D. EPA

REV. REVISION DATE APPROVED

### TRAFFIC SIGNAL WIRE CHART

PHASE AND CROSSWALKS (CROSSWALKS DESIGNATED BY PHYSICAL LOCATION)	SIGNAL HEAD	FIELD CONDUCTOR	25c CABLE (INDIVIDUAL CONDUCTOR REQUIRED, PER PHASE & CROSSWALK)
NORTH BOUND PHASE	RED	RED	RED
	AMBER	YELLOW	ORANGE
	GREEN	GREEN	GREEN
SOUTH BOUND PHASE	RED	RED	RED
	AMBER	YELLOW	ORANGE
	GREEN	GREEN	GREEN
EAST BOUND PHASE	RED	RED	BLK/RED T
	AMBER	ORANGE	ORANGE/RED T
	GREEN	BLUE	BLUE
WEST BOUND PHASE	RED	RED	BLK/RED T
	AMBER	ORANGE	ORANGE/RED T
	GREEN	BLUE	BLUE
NORTH BOUND LEFT TURN PHASE	RED	RED	RED/WHITE T
	AMBER	ORANGE	WHITE/RED T
	GREEN	BLUE	BLUE/BLK T
SOUTH BOUND LEFT TURN PHASE	RED	RED	RED/WHITE T
	AMBER	ORANGE	WHITE/RED T
	GREEN	BLUE	BLUE/BLK T
EAST BOUND LEFT TURN PHASE	RED	RED	BLUE/RED T
	AMBER	YELLOW	ORANGE/BLK T
	GREEN	GREEN	GRN/WHITE T
WEST BOUND LEFT TURN PHASE	RED	RED	BLUE/RED T
	AMBER	YELLOW	ORANGE/BLK T
	GREEN	GREEN	GRN/WHITE T
NORTH CROSSWALK	WALK	YELLOW	BLUE/WHITE T
	DON'T WALK	BLUE	RED/BLK T
SOUTH CROSSWALK	WALK	YELLOW	BLUE/WHITE T
	DON'T WALK	BLUE	RED/BLK T
EAST CROSSWALK	WALK	ORANGE	WHITE/BLK T
	DON'T WALK	BROWN	GREEN/BLK T
WEST CROSSWALK	WALK	ORANGE	WHITE/BLK T
	DON'T WALK	BROWN	GREEN/BLK T
AUDIBLE PEDESTRIAN INHIBITS	NORTH CROSSWALK	BLACK	BLK/GRN T
	SOUTH CROSSWALK	BLACK	WHITE/GRN T
	EAST CROSSWALK	BLACK	ORANGE/GRN T
	WEST CROSSWALK	BLACK	RED/BLUE T
SPARE CONDUCTOR	X	X	GREEN/ORG T
AC COMMON / NEUTRAL	ALL	WHITE	WHITE
BOND CONDUCTOR	ALL	#12AWG RWU90 GREEN/YELLOW T	
PEDESTRIAN & CYCLIST BUTTONS (CROSSWALKS DESIGNATED BY PHYSICAL LOCATION)	BUTTONS	FIELD CONDUCTOR	25c CABLE (INDIVIDUAL CONDUCTOR REQUIRED, PER PEDESTRIAN CROSSWALK & CYCLIST DIRECTION)
PEDESTRIAN BUTTON, NORTH CROSSWALK	DC PLUS	BLACK	BLACK
PEDESTRIAN BUTTON, SOUTH CROSSWALK	DC PLUS	BLACK	BLACK
PEDESTRIAN BUTTON, EAST CROSSWALK	DC PLUS	BLACK	BLACK
PEDESTRIAN BUTTON, WEST CROSSWALK	DC PLUS	BLACK	BLACK
CYCLIST BUTTON, NORTH BOUND	DC PLUS	YELLOW	RED/GRN T
CYCLIST BUTTON, SOUTH BOUND	DC PLUS	YELLOW	RED/GRN T
CYCLIST BUTTON, EAST BOUND	DC PLUS	YELLOW	RED/GRN T
CYCLIST BUTTON, WEST BOUND	DC PLUS	YELLOW	RED/GRN T
BUTTON COMMON / RETURN	DC COMMON	WHITE	BLK/WHITE T
APS Intellicross (Novax)	APS PEDESTRIAN BUTTON CIRCUIT	AS PER PEDESTRIAN BUTTON FIELD CONDUCTOR DESIGNATIONS	AS PER PEDESTRIAN BUTTON 25c CABLE CONDUCTOR DESIGNATIONS
	PIM TO ASSOCIATED APS BUTTON STATION	6c 18 AWG BELDEN CABLE (BLACK/RED/BLUE/ORANGE /YELLOW/BROWN)	
	BOND CONDUCTOR	#12AWG RWU90 GREEN/YELLOW T	
APS iNavigator (Polara)	APS PEDESTRIAN BUTTON CIRCUIT	AS PER PEDESTRIAN BUTTON FIELD CONDUCTOR DESIGNATIONS	AS PER PEDESTRIAN BUTTON 25c CABLE CONDUCTOR DESIGNATIONS

T-TRACE  
APS-ACCESSIBLE PEDESTRIAN SIGNAL

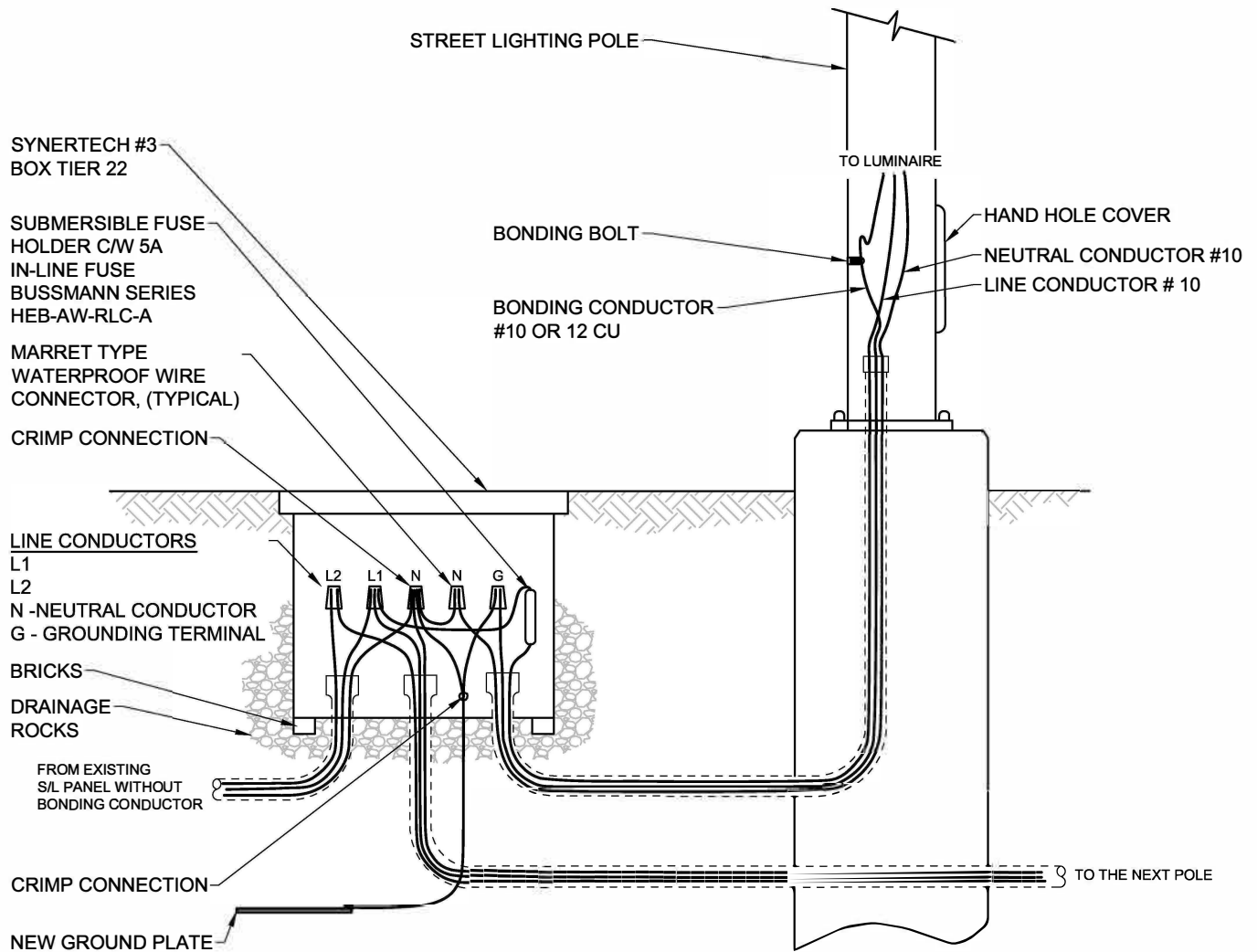
### NOTES:

- REFER TO CONTRACT DRAWINGS, MMCD AND CITY CONSTRUCTION SPECIFICATIONS FOR FURTHER INFORMATION.
- CABLE TO BE POLYETHYLENE INSULATED POLYVINYL CHLORIDE JACKETED, BLACK, RATED AT 600 VOLTS.
- CONDUCTORS TO BE No.14 AWG STRANDED.
- REFERENCE TO CSA 22.2 - No. 239-97, IMSA SPEC. 19-1.

WIRING			ISSUE DATE: SEPTEMBER 2018
25 CONDUCTOR SIGNAL CABLE COLOUR CODING			APPROVED BY: <u>D. EPA</u>
REV.	REVISION DATE	APPROVED	

### T.S.M.S. TIGER TAILS

NORTH	BLUE
SOUTH	ORANGE
EAST	BROWN
WEST	GREEN
CONTROL	GREY



**NOTE:**

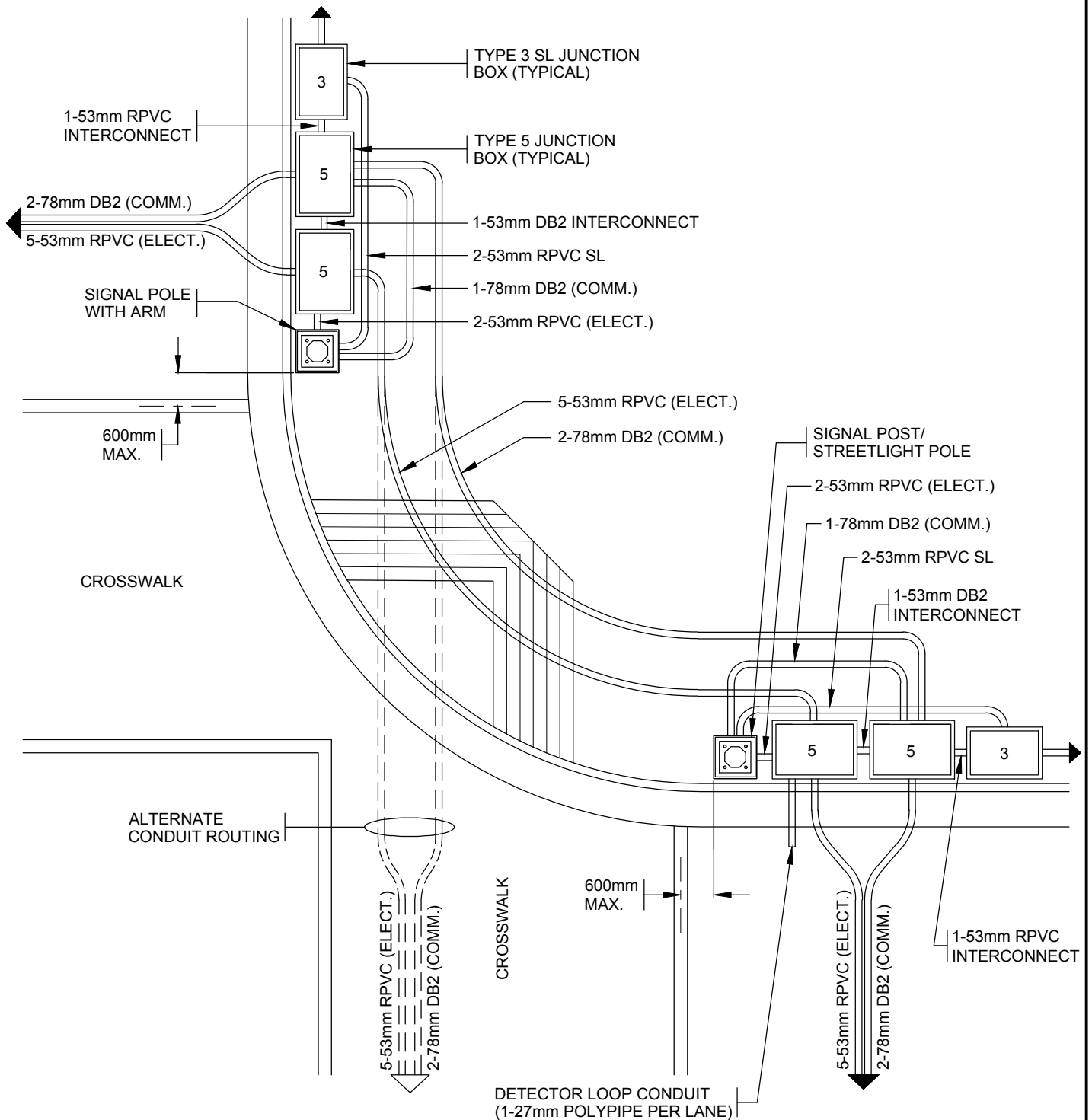
1. REFER TO CONTRACT DRAWINGS, MMCD AND CITY CONSTRUCTION SPECIFICATIONS FOR FURTHER INFORMATION.

SCALE: N.T.S.

REV.	REVISION DATE	APPROVED

**WIRING**  
**MISSING BONDING CONDUCTOR MITIGATION INSTALLATION**

ISSUE DATE: SEPTEMBER 2018  
APPROVED BY: D. EPA



**NOTES:**

1. MINIMUM NUMBER AND SIZE OF COMM. CONDUIT FOR ROAD CROSSINGS AND RADII VARY AS REQUIRED BY THE CITY.
2. JB PLACEMENT IS DIAGRAMATIC ONLY. JB IS PREFERRED TO BE INSTALLED AT THE BACK OF WALK IF SPACE PERMITS.

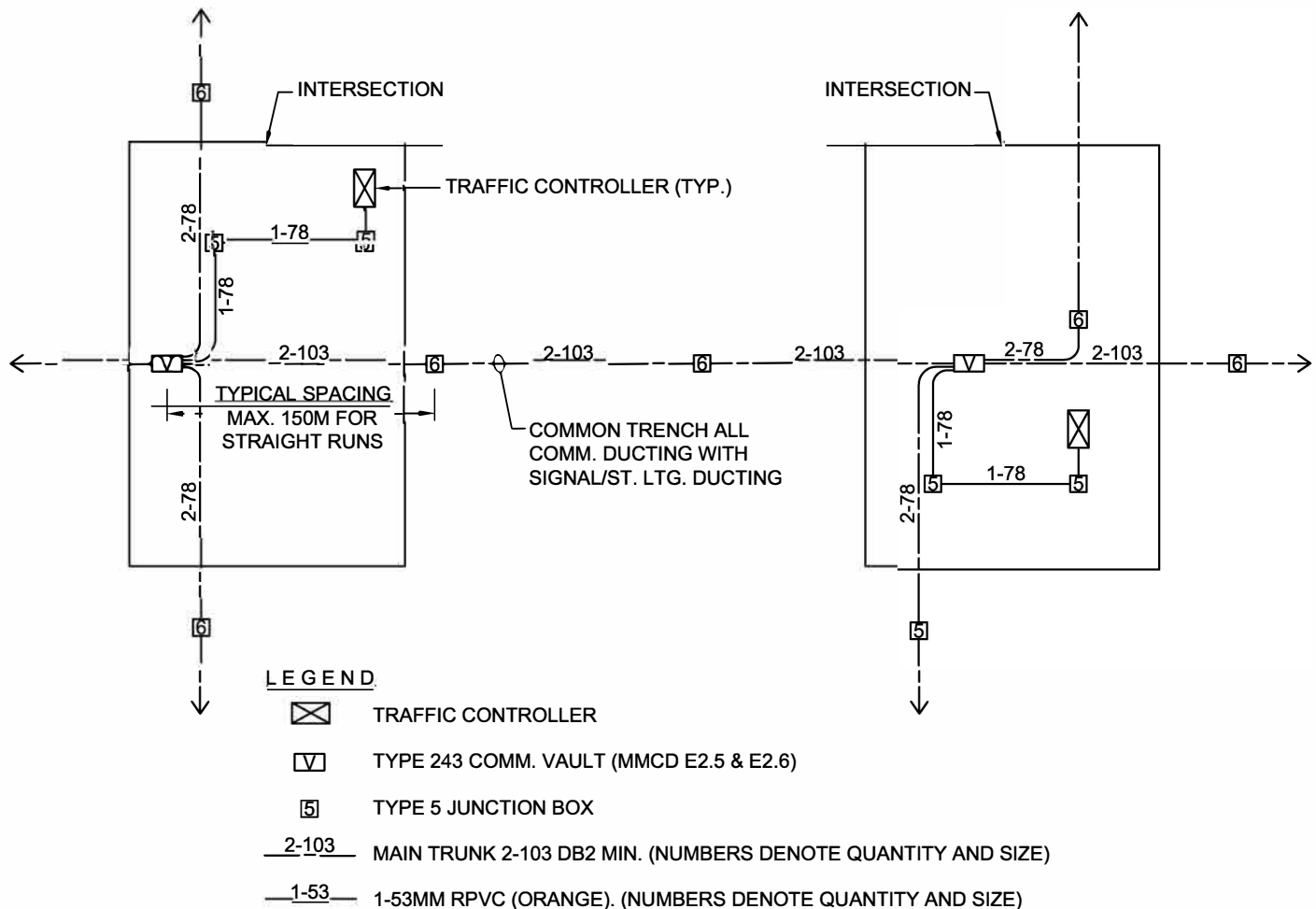
SCALE: N.T.S.

1	2019-04-29	D. EPA
REV.	REVISION DATE	APPROVED

**POLE AND JUNCTION BOX  
PLACEMENT**

ISSUE DATE: APRIL 2019

APPROVED BY: D. EPA



COMMUNICATIONS DUCTING

**NOTES:**

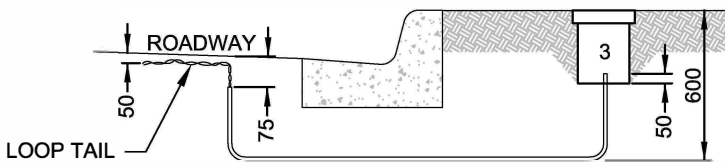
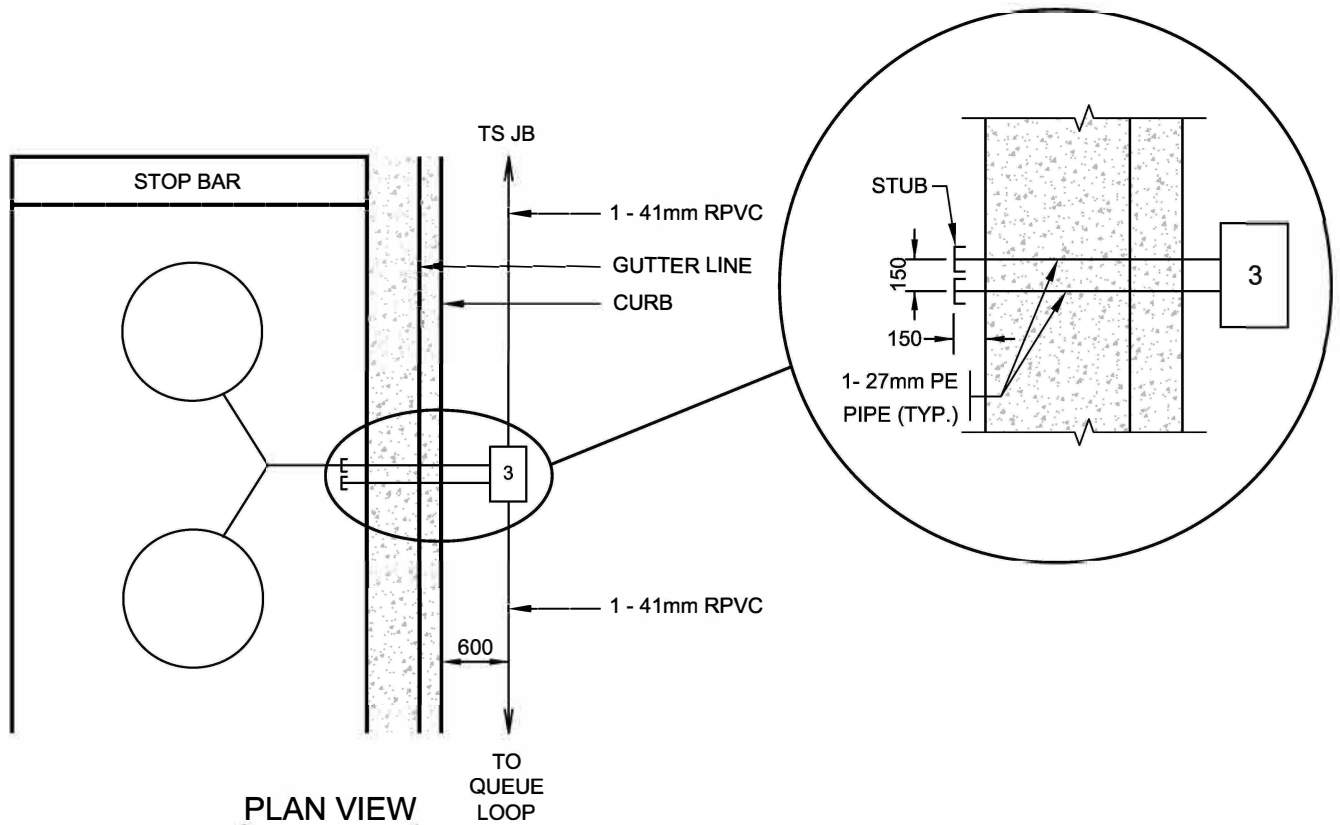
1. SUB TRUNK LINES AND INTERSECTION COMM. DUCT 2-78mm DB2 MIN.
2. MAIN AND SUB TRUNK LINE J.B. IN BETWEEN 243 VAULT SHALL BE No. 6. KEEP 243 VAULT AT INTERSECTION.
3. CONDUIT MUST BE STRAIGHT THROUGH BOX. NO 90° INTO No. 6 OR 243 BOXES FOR ALL 78mm AND 103mm CONDUITS.

SCALE: N.T.S.

REV.	REVISION DATE	APPROVED

**WIRING**  
**COMMUNICATIONS SYSTEM DUCTING**

ISSUE DATE: SEPTEMBER 2018  
APPROVED BY: D. EPA



**NOTES:**

1. REFER TO CONTRACT DRAWINGS, MMCD AND CITY CONSTRUCTION SPECIFICATIONS FOR FURTHER INFORMATION.
2. ONE LOOP STUB PER LANE.
3. ONE SPARE LOOP STUB.
4. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.

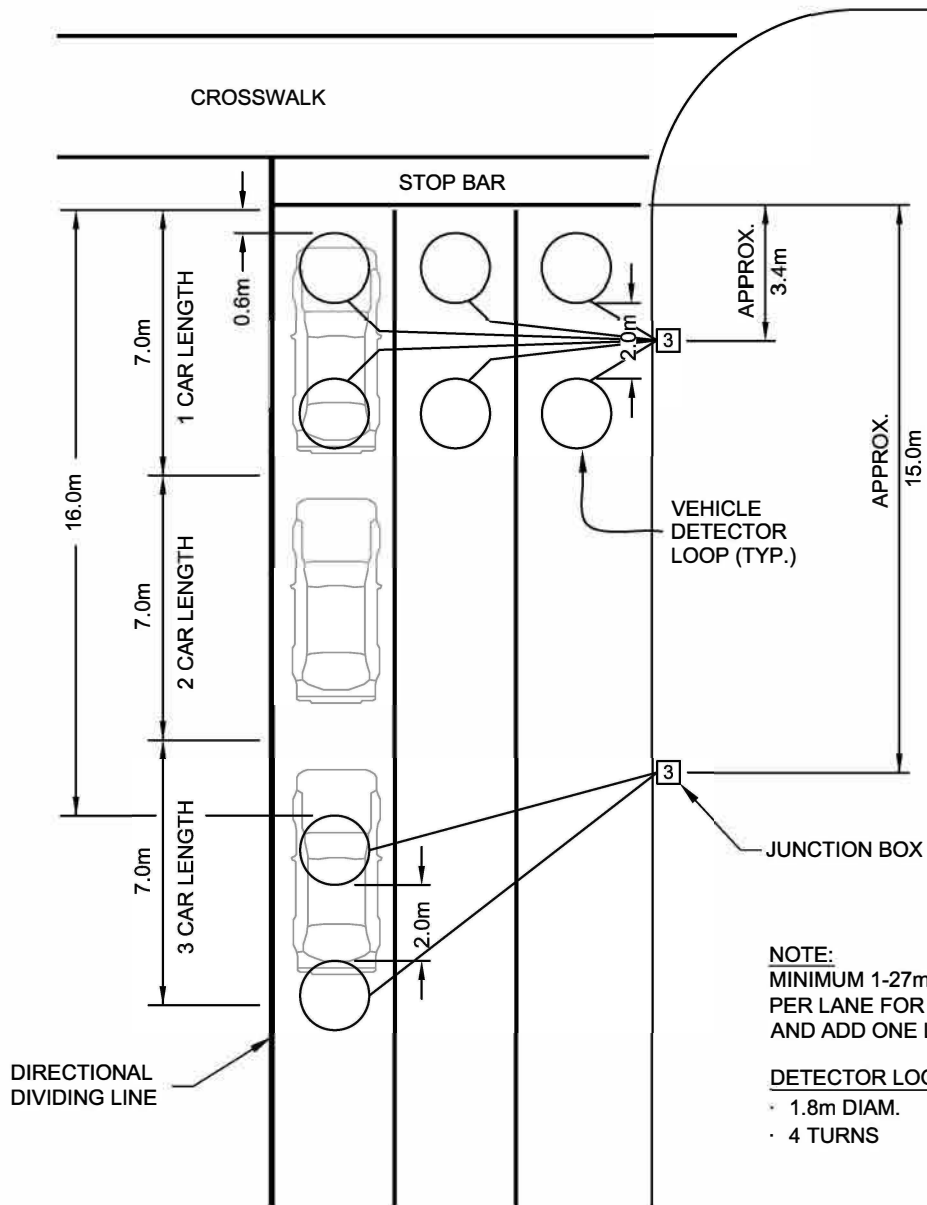
SCALE: N.T.S.

REV.	REVISION DATE	APPROVED

**DETECTOR LOOPS  
LOOP STUB**

ISSUE DATE: SEPTEMBER 2018  
APPROVED BY: D. EPA





LOOP SET	LANE 1	LANE 2	LANE 3	LANE 4	LANE 5
STOP	BLUE	YELLOW	RED	BROWN	ORANGE
QUEUE	YELLOW	RED	BROWN	ORANGE	BLUE

**NOTES:**

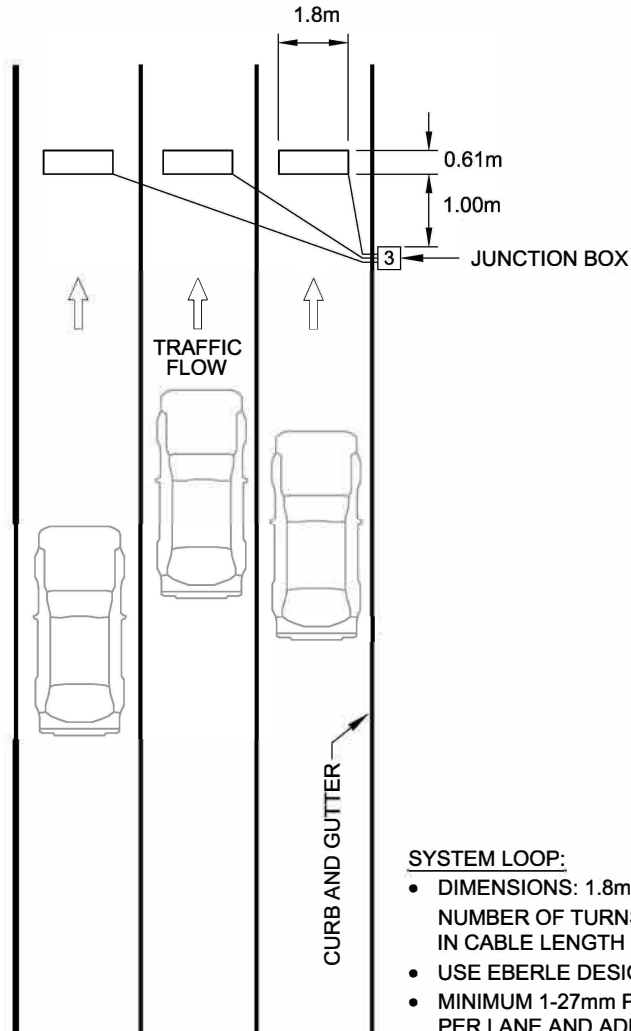
1. REFER TO CONTRACT DRAWINGS, MMCD AND CITY CONSTRUCTION SPECIFICATIONS FOR FURTHER INFORMATION.
2. WHITE TAPE INDICATES THE BACK LOOP OF THE SET.
3. LANE 1 IS THE CURB (SLOW) LANE INCLUDING WHEN TAILS ARE FROM THE MEDIAN.
4. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.
5. CONSULT CITY FOR LOOP DESIGN WITH CONCRETE MEDIAN, SEPARATED BIKE LANE, LEFT TURN BUS LANE AND INTERSECTION SAFETY CAMERA.

SCALE: N.T.S.

REV.	REVISION DATE	APPROVED

**DETECTOR LOOPS**  
**VEHICLE DETECTOR LOOP (TYP.)**

ISSUE DATE: SEPTEMBER 2018  
APPROVED BY: D. EPA



**SYSTEM LOOP:**

- DIMENSIONS: 1.8m x 0.61m  
NUMBER OF TURNS DETERMINED BY LEAD IN CABLE LENGTH
- USE EBERLE DESIGN LOOP CALCULATOR
- MINIMUM 1-27mm POLYPIPE LOOP STUB PER LANE AND ADD 1 LOOP STUB, SPARE

**NOTES:**

1. REFER TO CONTRACT DRAWINGS, MMCD AND CITY CONSTRUCTION SPECIFICATIONS FOR FURTHER INFORMATION.
2. CONSULT CITY FOR SYSTEM LOOP LOCATION.
3. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.

SCALE: N.T.S.

REV.	REVISION DATE	APPROVED

**DETECTOR LOOPS  
SYSTEM LOOP (TYP.)**

ISSUE DATE: SEPTEMBER 2018  
APPROVED BY: D. EPA