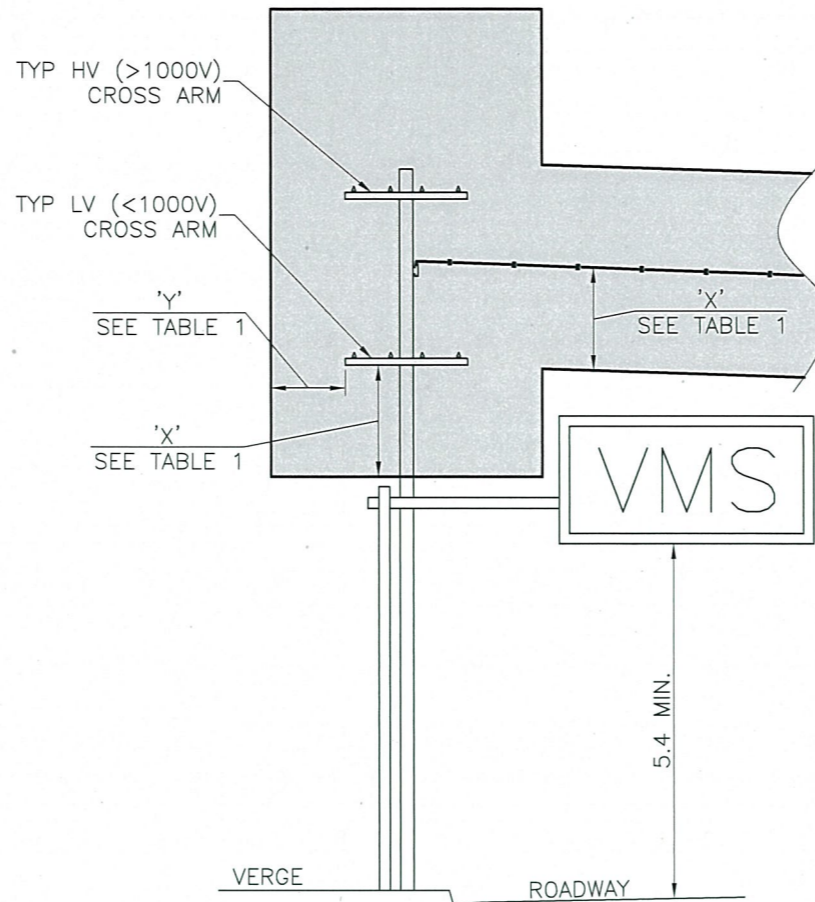
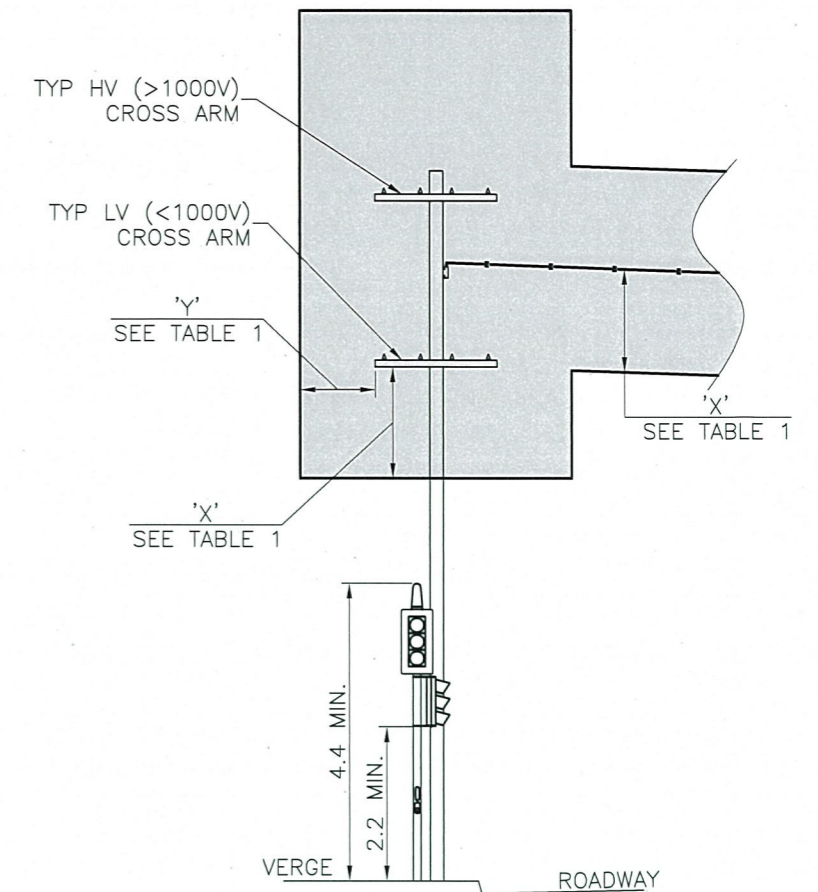


TYPE C
(2.5m, 5.0m, 6.5m, 8.5m
& 11.0m OUTREACH)



TYPE C
(VMS SIGN)



SIGNAL POST

TABLE 1

PHASE TO PHASE VOLTAGE OF POWER LINE	VERTICAL DIMENSION 'X'	HORIZONTAL DIMENSION 'Y'
LOW VOLTAGE INSULATED NOT EXCEEDING 1000 VOLTS	0.6	0.3
LOW VOLTAGE SERVICE CABLES	1.2	1.2
LOW VOLTAGE UNINSULATED NOT EXCEEDING 1000 VOLTS	1.5	1.5
NOT EXCEEDING 33,000 VOLTS	1.5	1.5
EXCEEDING 33,000 VOLTS	REFER TO ELECTRICITY AUTHORITY CONCERNED	REFER TO ELECTRICITY AUTHORITY CONCERNED

NOTES

1. THE RELEVANT ELECTRICITY DISTRIBUTION ENTITY SHOULD BE CONSULTED WHENEVER THERE IS ANY DOUBT AS TO WHETHER SAFETY CLEARANCES COULD BE ADEQUATELY MAINTAINED.
2. HIGH VOLTAGE (HV, >1000 VOLTS) LINES ARE GENERALLY POSITIONED ABOVE LOW VOLTAGE (LV, <1000 VOLTS) LINES IF THEY ARE SUPPORTED ON THE SAME POLES. IF THEY ARE SEPARATED, CONSULT THE RELEVANT ELECTRICAL DISTRIBUTION ENTITY IF THERE IS ANY DOUBT ON WHETHER THE LINE IS OF HIGH OR LOW VOLTAGE.
3. THIS PLAN SHOWS THE MINIMUM CLEARANCES AS REQUIRED BY THE QUEENSLAND ELECTRICAL SAFETY LEGISLATION. CONSIDERATION SHOULD BE GIVEN TO THE REQUIREMENTS OF AS 1418.10 S.A.A. CRANE CODE, THE WORKPLACE HEALTH SAFETY ACT (1995), WORKPLACE HEALTH SAFETY CODE OF PRACTICES, WORKPLACE HEALTH SAFETY REGULATION (2008).
4. ALL CREW WORKING NEAR OR WITHIN THE NOMINATED EXCLUSION ZONES TO BE SUITABLY TRAINED AND FULLY AWARE OF THE REQUIREMENTS OF THE RELEVANT LEGISLATION AND CODES OF PRACTICE.
5. ALL DIMENSIONS IN METRES (U.N.O.).

LEGEND

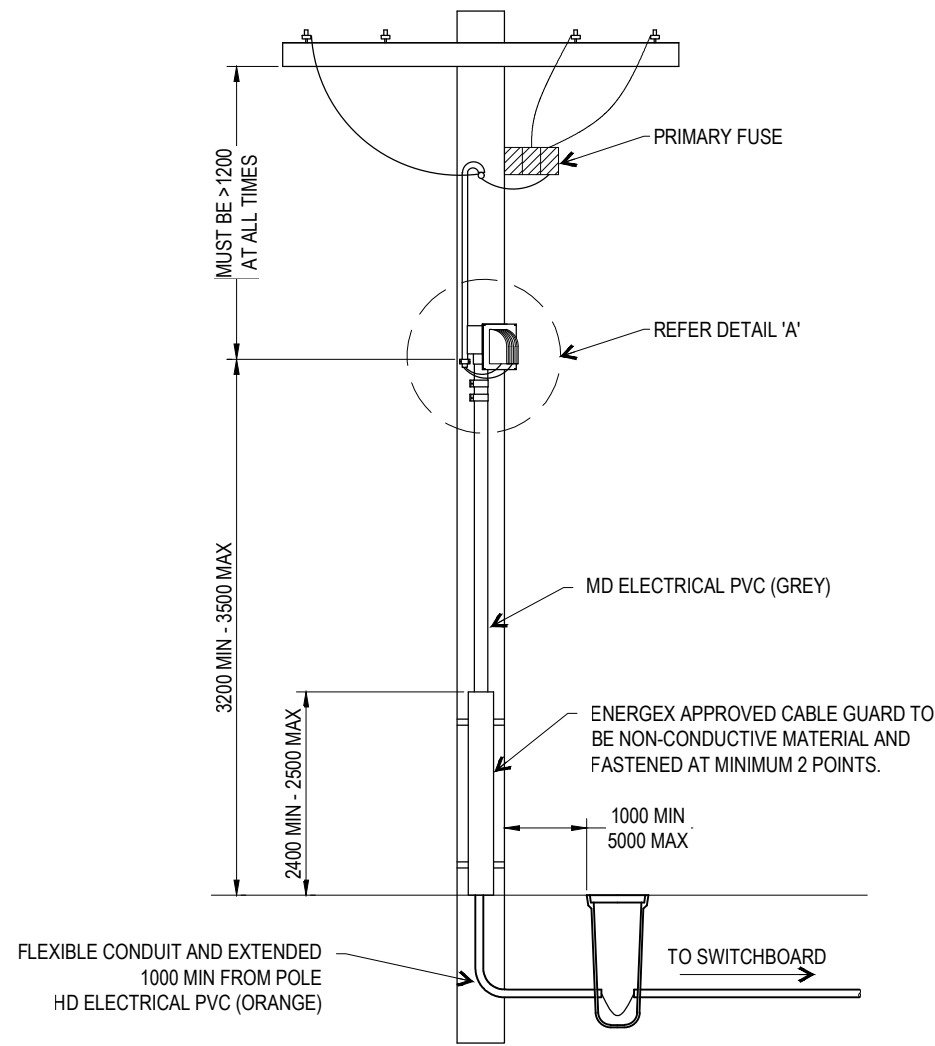


B	CABLE CLEARANCES AMENDED	<i>B.W. 5/1/16</i>	<i>A.W. 5/1/16</i>	<i>M.K. 1/1/16</i>
A	Drawing Converted from UMS Series April 2014	APR '14	APR '14	APR '14
ISSUE	AMENDMENT	DRAWN DATE	CHK'D DATE	APPR'D DATE

DRAWING AUTHORISED FOR PUBLICATION B. BALL SIGNATURE ON ORIGINAL DATED 29/6/01			
DESIGN	Std Dwgs WG	DATE	April '01
DRAWN	CPD - P&D	DATE	April '01
CHECKED	R. WILSON	DATE	May '01
DRAWING FILENAME	BSD-4001.dwg		
ASSOCIATED PLANS	SUPERSEDES UMS-600-010		
MANAGER ASSET SUPPORT - R.P.E.Q: 3 8 5 2 DESIGN APPROVED K. MEMORY SIGNATURE ON ORIGINAL DATED 27/6/01 SENIOR PROGRAM OFFICER NETWORK OPERATIONS - R.P.E.Q: 4 7 6 1			

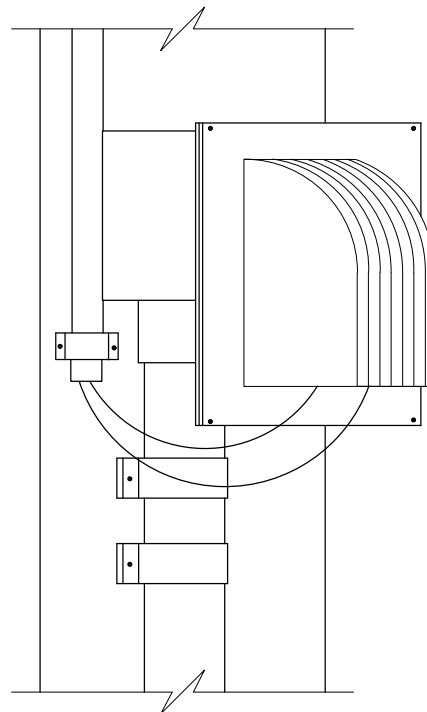


BRISBANE CITY COUNCIL STANDARD DRAWING	
ELECTRICAL CABLE DESIGN CLEARANCES	
SCALE	NOT TO SCALE
DWG No.	BSD-4001
ORIGINAL SIZE	A3
REVISION	B



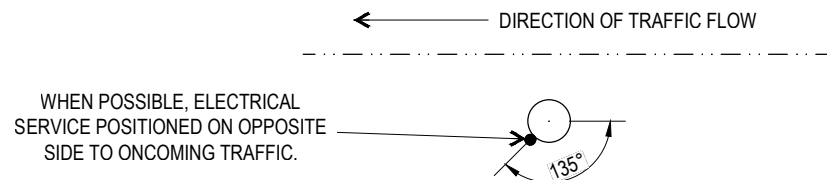
OVERHEAD SERVICE

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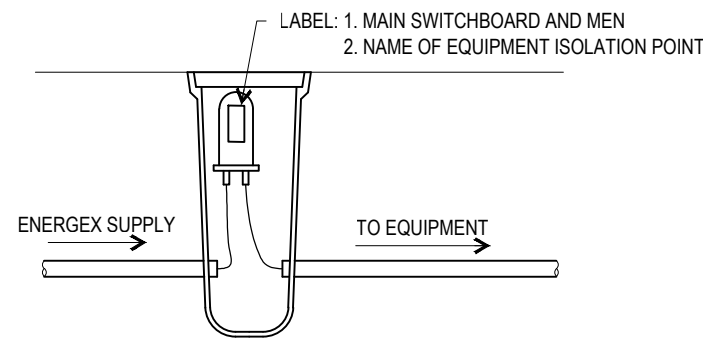
DETAIL 'A'

NOT TO SCALE



POSITION OF SERVICE

NOT TO SCALE



UNDERGROUND FUSED SWITCHBOARD

NOT TO SCALE

NOTES:

1. ELECTRICAL DISTRIBUTION ENTITIES RESPONSIBILITIES IN PROVIDING THE SERVICE ARE AS FOLLOWS:
 - (a) TO SUPPLY, INSTALL AND MAINTAIN A PRIMARY FUSED SERVICE TO THE BRISBANE CITY COUNCIL MAINS CONNECTION BOX;
 - (b) TO TEST POLARITY OF SERVICE AND CONNECT ENERGEX SERVICE TO INSTALLATION.
2. ASSET OWNERS RESPONSIBILITIES ARE AS FOLLOWS:
 - (a) TO MAKE APPLICATION FOR SUPPLY OF ELECTRICITY TO ENERGEX.
3. CONTRACTORS RESPONSIBILITIES ARE AS FOLLOWS:
 - (a) TO CARRY OUT INSTALLATION WORK IN ACCORDANCE WITH AS3000 "SAA WIRING RULES" AND TELECOMMUNICATIONS ACT (1995) (FEDERAL);
 - (b) TO SUBMIT AN EWR TO ENERGEX;
 - (c) TO SUBMIT TO THE DISTRIBUTION ENTITY A DISCONNECTION NOTICE WHEN THE SUPPLY IS NO LONGER REQUIRED;
 - (d) TO SUBMIT TO ENERGEX A SCHEDULE OF LOADING;
 - (e) TO SUPPLY AND INSTALL SERVICE POLE (IF REQUIRED);
 - (f) TO INSPECT AND PERFORM THE MANDATORY TESTING OF THE ELECTRICAL INSTALLATION IN ACCORDANCE WITH AS3000 "SAA WIRING RULES";
 - (g) RECORD AND SUPPLY TEST RESULTS; AND
 - (h) SUPPLY A CERTIFICATE OF TESTING.
 - (i) CONTRACTOR NEEDS TO BE AN ENERGEX/ENERGY QUEENSLAND AUTHORISED PERSON WHEN PERFORMING WORKS UNDER NOTES 7,8 AND 9 BELOW.
4. DIMENSIONS IN MILLIMETRES (U.N.O.).
5. TYPE 4 PIT SHALL BE USED FOR ALL LIGHTING INSTALLATIONS. TYPE 8 OR ROUND PITS WHERE 51 CORE CABLE IS USED, SHALL BE USED FOR TRAFFIC SIGNAL ROAD CROSSINGS.
6. CABLE SIZE TO BE A MINIMUM OF 16mm² AND SELECTED TO COMPLY WITH AS:3000 VOLTAGE DROP, CURRENT RATING AND EARTH FAULT LOOP IMPEDANCE REQUIREMENTS.
7. **DROPDOWN WITH MAINS CONNECTION BOX ON ENERGEX POLE:**
 FOR NEW METERED CONNECTIONS, MAINS CONNECTION BOXES ON ENERGEX POLES ARE NOT PERMISSIBLE WITHOUT WRITTEN EXEMPTION.
 FOR NEW UNMETERED CONNECTIONS, CONTRACTOR TO INSTALL NEW MAINS CONNECTION BOX ON ENERGEX POLE, RUN NEW MAINS, CONNECT IN NEW MAINS CONNECTION BOX AND HAVE CABLE IN SWITCHBOARD TAPED UP AND READY FOR TESTING AND INSTALLATION DURING ENERGEX SITE VISIT. CONTRACTOR TO SUBMIT EWR AND HAVE ENERGEX COME OUT TO CONNECT NEW MAINS WITH CONTRACTOR PRESENT.
 FOR MODIFICATIONS TO AN EXISTING UNMETERED SERVICE, IF THE EXISTING MAINS CONNECTION BOX AND DROPDOWN SERVICES ARE SUITABLE AND TO CURRENT INSTALLATION STANDARDS, CONTRACTOR TO RUN NEW MAINS AND CAN CONNECT TO LOAD SIDE OF EXISTING MAINS CONNECTION BOX. IF THE EXISTING MAINS CONNECTION BOX OR DROPDOWN SERVICE IS NOT SUITABLE AND REQUIRES MODIFICATIONS, A NEW MAINS CONNECTION BOX INSTALLATION WILL BE REQUIRED - REFER TO NEW UNMETERED CONNECTIONS PROCESS ABOVE.
8. **ENERGEX SUPPLY PILLAR:**
 CONTRACTOR TO RUN NEW MAINS CABLE EITHER UTILISING EXISTING CONDUIT OR INSTALL NEW CONDUIT, LEAVE NEW CABLE IN PILLAR TAGGED OUT READY FOR ENERGEX CONNECTION AND HAVE CABLE IN SWITCHBOARD TAPED UP READY FOR TESTING AND INSTALLATION DURING ENERGEX SITE VISIT. CONTRACTOR TO SUBMIT EWR AND HAVE ENERGEX COME OUT TO CONNECT NEW MAINS WITH CONTRACTOR PRESENT.
9. **BELL JOINT OFF DIRECT ENERGEX FEED:**
 CONTRACTOR TO RUN NEW MAINS CABLE TO POINT OF SUPPLY BELL JOINT LOCATION, LEAVE NEW CABLE IN PIT TAGGED OUT READY FOR CONNECTION AND HAVE CABLE IN SWITCHBOARD TAPED UP READY FOR TESTING AND INSTALLATION DURING ENERGEX SITE VISIT. CONTRACTOR TO SUBMIT EWR AND HAVE ENERGEX COME OUT TO CONNECT NEW MAINS WITH CONTRACTOR PRESENT.

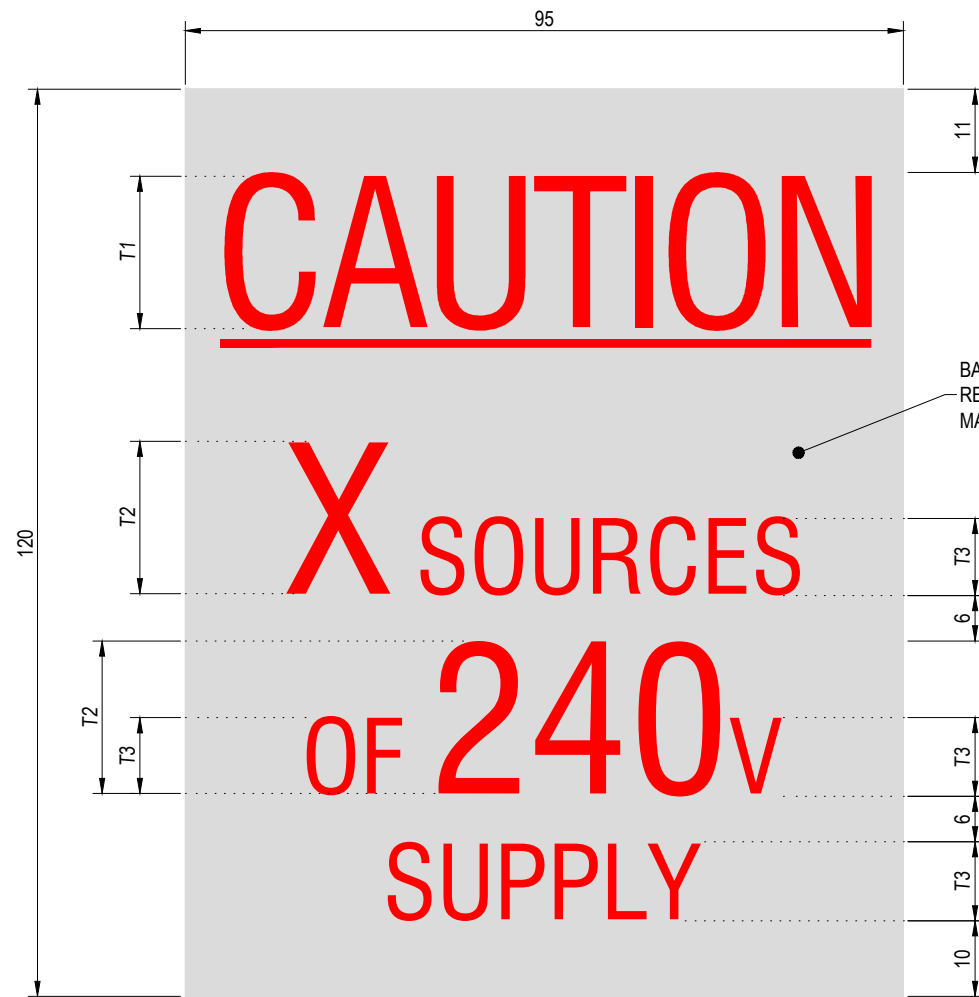
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BRISBANE CITY COUNCIL STANDARD DRAWING

MAINS CONNECTION TO
ENERGEX EQUIPMENT

PUBLISH DATE		JUN 2023
SCALE		NOT TO SCALE
DRAWING NUMBER		BSD-4002
ORIGINAL SIZE	REVISION	
A3	C	



BACKGROUND TO BE CLASS 2 RETROREFLECTIVE SHEETING MATERIAL. REFER NOTE 1

BACKGROUND TO BE CLASS 2 RETROREFLECTIVE SHEETING MATERIAL. REFER NOTE 1

LETTERING LEGEND:

- T1: 20 HIGH RED ARIAL UNDERLINED, WITH CHARACTER SPACING 90% OF SPACE WIDTH.
- T2: 20 HIGH RED ARIAL, WITH CHARACTER SPACING 100% OF SPACE WIDTH.
- T3: 10 HIGH RED ARIAL, WITH CHARACTER SPACING 100% OF SPACE WIDTH.
- T4: 24 HIGH RED ARIAL BOLD, WITH CHARACTER SPACING 100% OF SPACE WIDTH.
- T5: 20 HIGH RED ARIAL BOLD, WITH CHARACTER SPACING 100% OF SPACE WIDTH.
- T6: 12 HIGH BLACK ARIAL BOLD, WITH CHARACTER SPACING 100% OF SPACE WIDTH.

WARNING LABEL 1

CAUTION

X SOURCES OF 240V SUPPLY

(X = 2 OR 3 DEPENDING UPON LOCATION REQUIREMENTS)



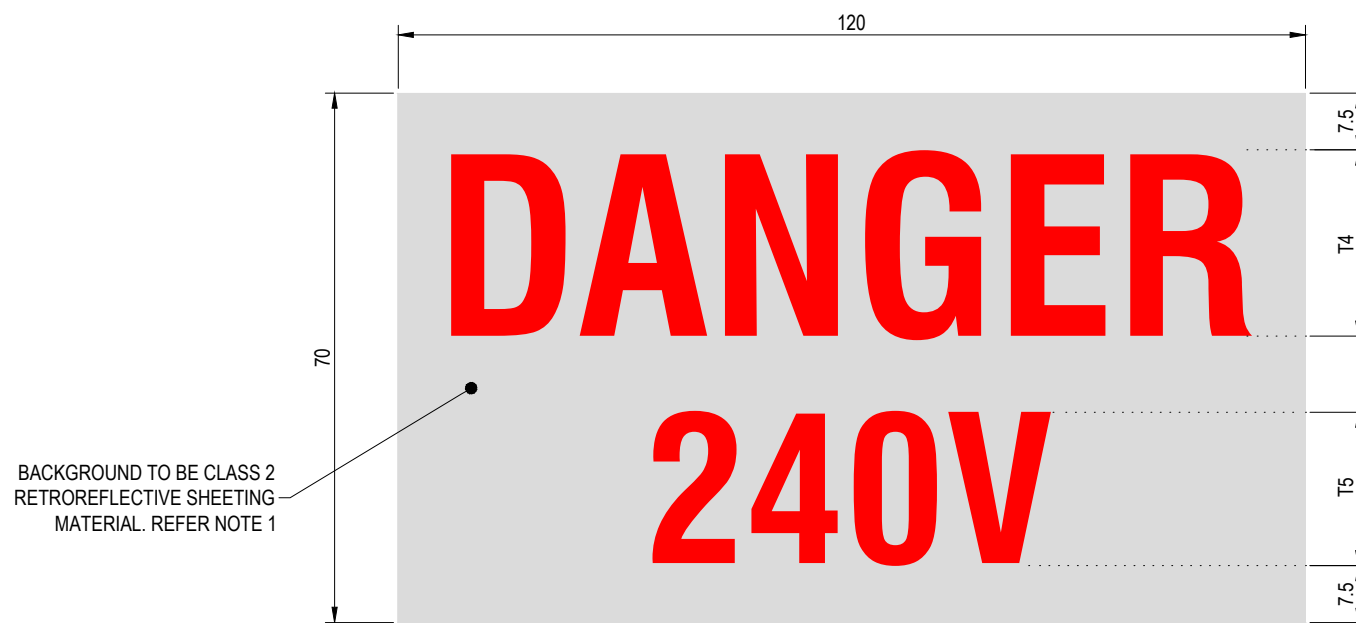
WARNING LABEL 3

CAUTION

LEFT TURN ON RED

NOTES:

1. BACKGROUND SHEETING TO BE SELF-ADHESIVE RETROREFLECTIVE CLASS 2 MATERIAL TO AS1906.1.
2. RED LETTERING TO BE SCREENED WITH 'TRAFFIC SIGN RED' OR EQUIVALENT PRODUCT RECOMMENDED BY THE SHEETING MANUFACTURER.
3. SCREENING INK SHALL BE COMPATIBLE WITH RETROREFLECTIVE SHEETING USED. THE SCREENING INK FILM SHALL BE APPLIED USING MATERIALS AND TECHNIQUES RECOMMENDED BY THE SHEETING MANUFACTURER.
4. LETTERING TO 'ARIAL' TYPE FONT OR APPROVED EQUIVALENT AT TEXT HEIGHTS SHOWN.
5. ALL DIMENSIONS IN MILLIMETRES (U.N.O.).




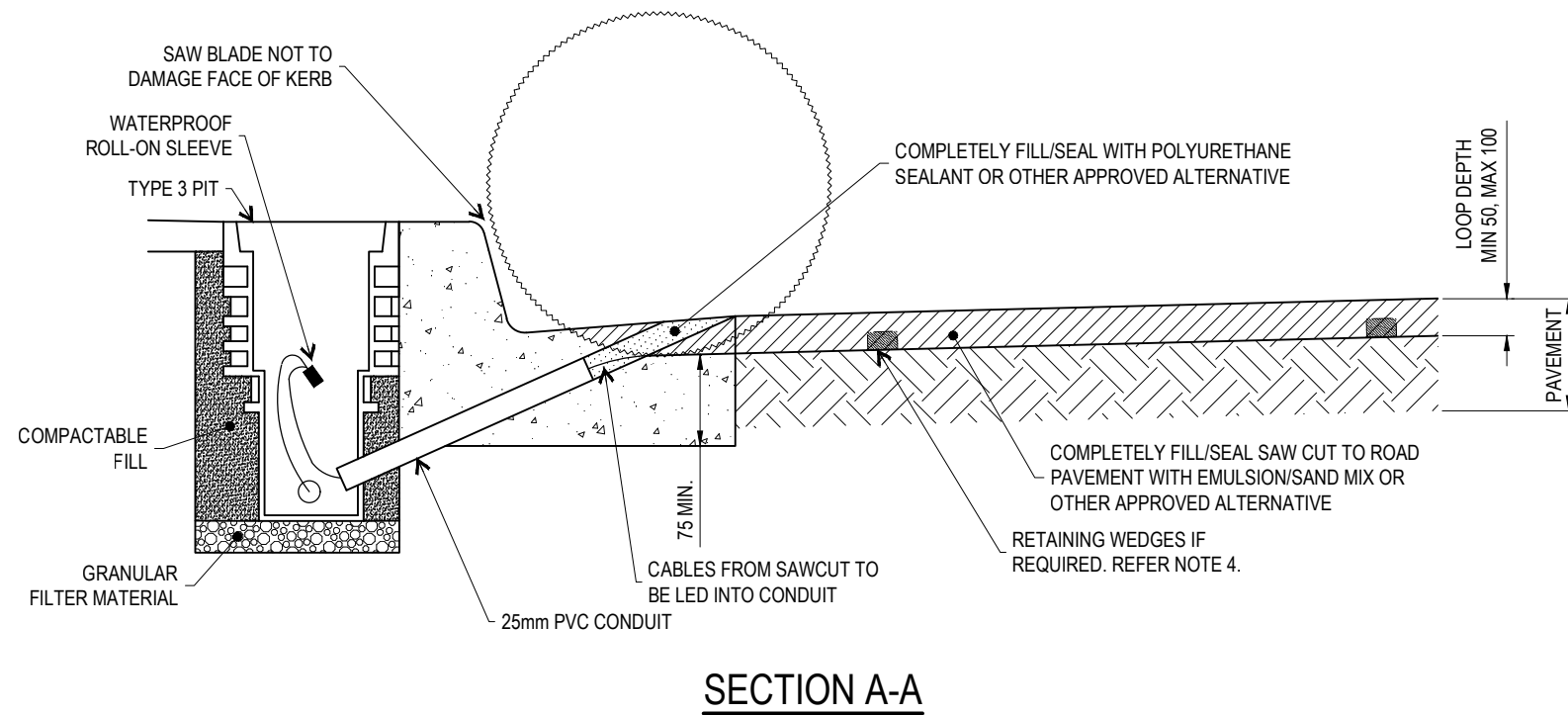
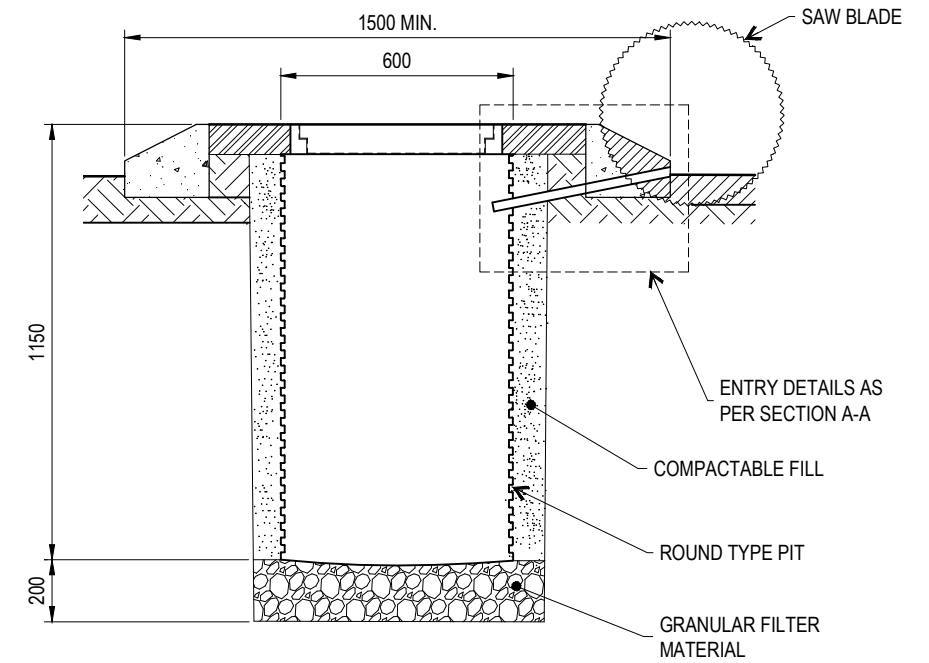
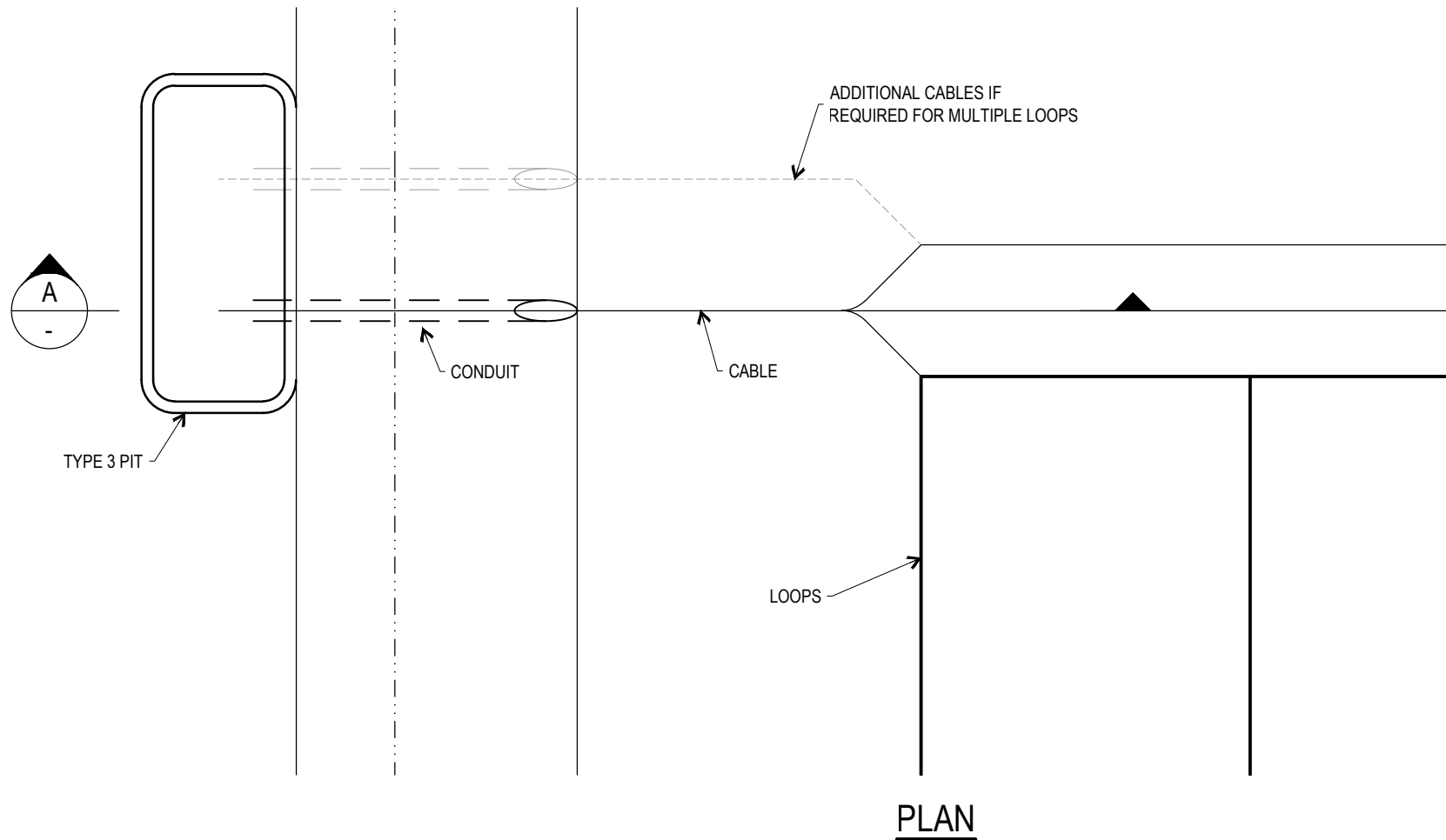
BACKGROUND TO BE CLASS 2 RETROREFLECTIVE SHEETING MATERIAL. REFER NOTE 1

WARNING LABEL 2

DANGER 240V

THE FITNESS FOR PURPOSE OF THIS STANDARD DRAWING FOR A SPECIFIC PROJECT SHALL BE ASSESSED AND ACCEPTED BY A SUITABLY QUALIFIED REGISTERED PROFESSIONAL ENGINEER OF QUEENSLAND (RPEQ).

	BRISBANE CITY COUNCIL STANDARD DRAWING		PUBLISH DATE	Mar '21
	TRAFFIC SIGNAL/LIGHTING POLE ELECTRICITY SUPPLY AND 'LEFT TURN ON RED' WARNING LABELS		SCALE	1:1
			DRAWING NUMBER	BSD-4003
	ORIGINAL SIZE	A3	REVISION	A



NOTES:

1. THE NUMBER OF CABLE INLETS INSTALLED IN THE PAVEMENT JUNCTION BOX SHALL VARY TO SUIT INDIVIDUAL SITES.
2. SAW CUT WIDTH TO BSD-4012.
3. INSIDE OF PIT TO HAVE A SMOOTH FINISH.
4. IF REQUIRED, FIT RETAINING WEDGES AT 300-400mm SPACING TO ENSURE LOOP CABLE DOES NOT MOVE WHILE SEALANT IS APPLIED. THE WEDGE MATERIAL TO BE RESILIENT AND IMPERVIOUS TO WATER AT THE INSTALLATION TECHNICIANS DISCRETION.
5. LOOPS NOT TO BE CUT TO MEDIAN IF MEDIAN LESS THAN 1500mm.
6. DIMENSIONS IN MILLIMETRES (U.N.O.).

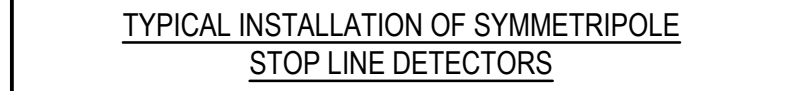
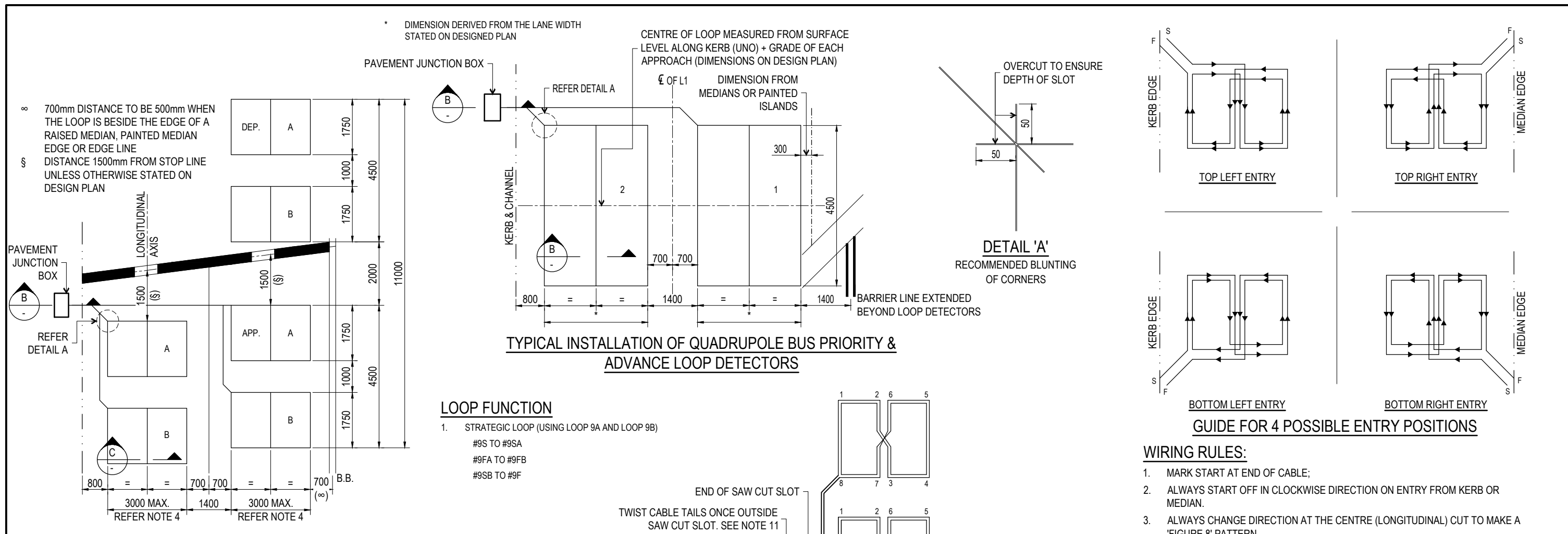
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BRISBANE CITY COUNCIL STANDARD DRAWING

GENERAL ARRANGEMENT FOR
ACCESS TO CABLE JOINTING PIT
(SAW CUT ENTRY)

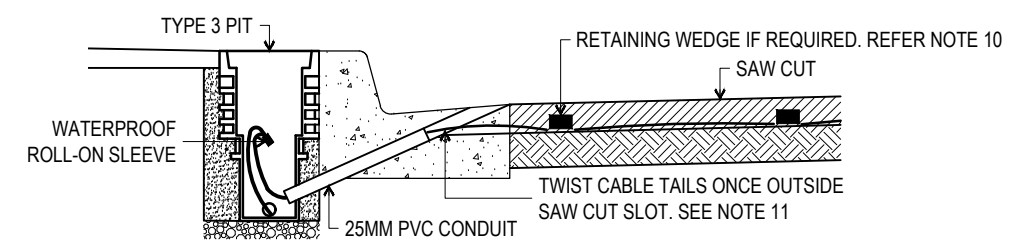
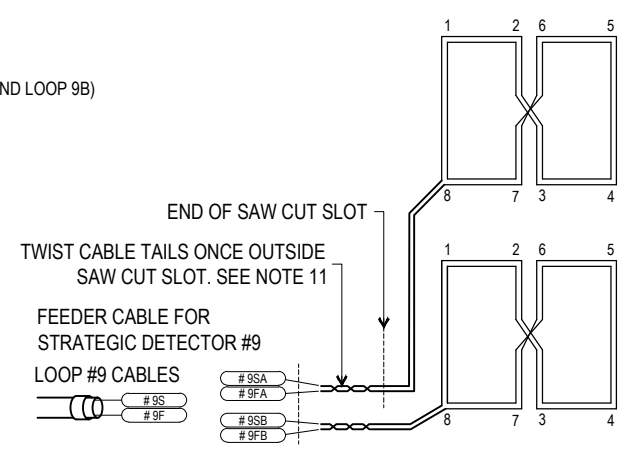
PUBLISH DATE		JUN 2023
SCALE		NOT TO SCALE
DRAWING NUMBER		BSD-4011
ORIGINAL SIZE	REVISION	
A3	C	



LOOP FUNCTION

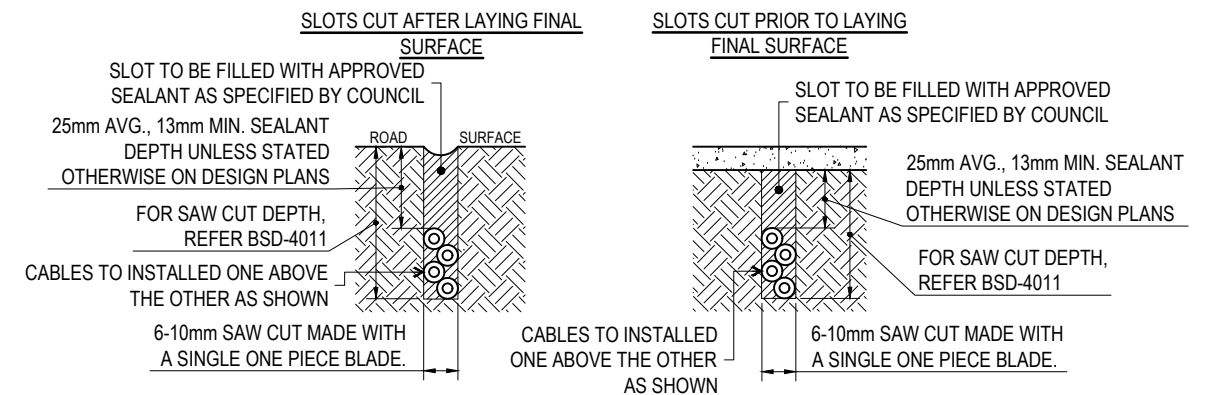
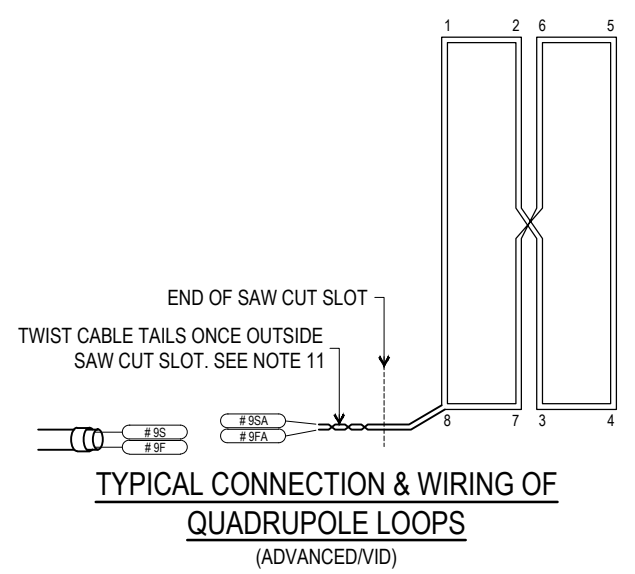
1. STRATEGIC LOOP (USING LOOP 9A AND LOOP 9B)


#9S TO #9SA
#9FA TO #9FB
#9SB TO #9F

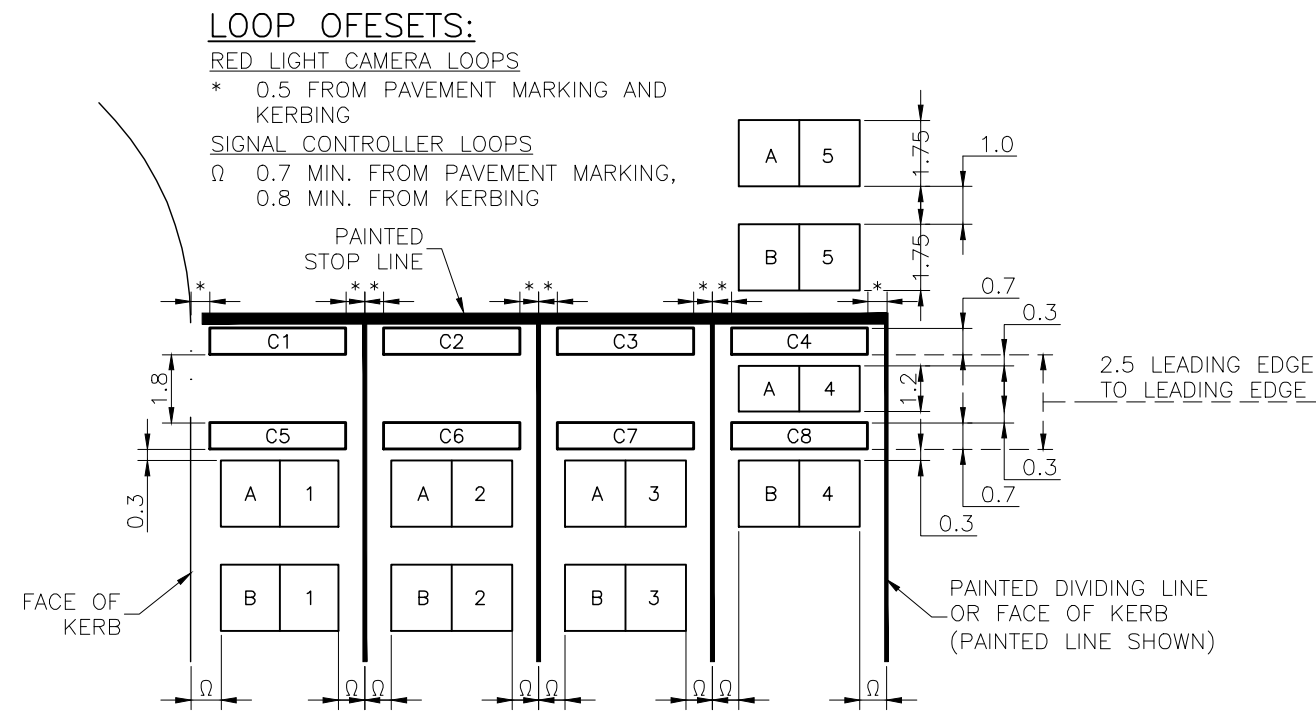


NOTES:

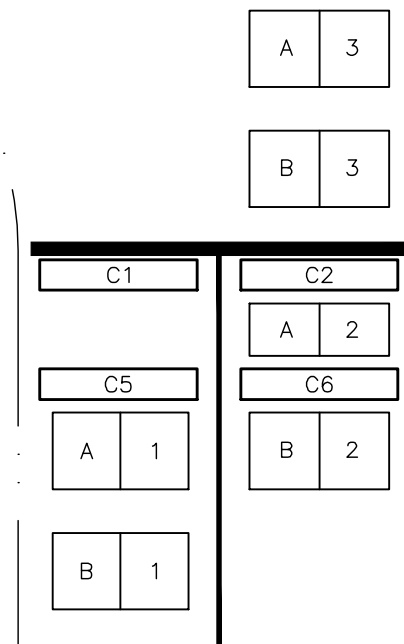
1. LOOP DETECTOR CABLE & FEEDER TO BE JOINTED USING A WATERPROOF BUTT END CONNECTOR IN ASSIGNED PITS. EACH JOINT MUST BE SEPARATELY INSULATED. ALL JOINTS TO BE SEALED USING A WATERPROOF INSULATING SPLICE COVER (TYCO RVC-1V-[B5] OR APPROVED EQUIVALENT) TO PREVENT THE INGRESS OF MOISTURE.
2. LOOP CABLE SHALL COMPLY WITH AS2276 PART 3.
3. LOOP FEEDER CABLE SHALL COMPLY WITH AS2276 PART 2.
4. WIDTH OF LOOP NOT TO EXCEED 3000mm. DIMENSION DERIVED FROM THE LANE WIDTH STATED ON DESIGNED PLAN.
5. ALL LOOPS MAY BE INSTALLED UP TO 5m FROM THE STOPLINE IF ROAD PAVEMENT IS UNSATISFACTORY (EXCEPT FOR NON-LOCK AND PRESENCE TIMED DETECTORS).
6. ALL LOOP CABLE ENDS TO BE LABELLED WITH HELAGRIP MARKERS (HG2-5) OR EQUIVALENT, START (S), FINISH (F) AND NUMBERED AS PER THE TYPICAL INSTALLATION ie. FROM FRONT TO REAR, LEFT TO RIGHT IN NUMERICAL ORDER REGARDLESS THE PHASE OR P.J. BOX POSITION.
7. ALL FEEDERS CABLES TO BE CONTINUOUS AND LABELLED (HELAGRIP HG4-9 OR EQUIVALENT) AT EACH END TO SHOW THE DETECTOR NUMBER AS PER DESIGN PLAN (eg. 1, etc)
8. THE LOOP CABLE SHALL BE CONTINUOUS (i.e. NO JOINTS PERMITTED) BETWEEN S AND F.
9. ALL LOOP CABLE LEADS SHALL RETURN TO A P.J. BOX IN THE FOOTPATH (OR MEDIAN IF A MIN 2.0m WIDE) EXCEPT THAT SEPARATION SHALL BE USED FOR ALL 11.0m LONG RIGHT TURN LOOPS OR THE 4.5m LONG LOOPS IN THE 2 LANES CLOSEST TO THE MEDIAN IN A FOUR (OR MORE) LANE APPROACH BY RETURNING TO A P.J. BOX IN THE MEDIAN (IF A MEDIAN POST IS REQUIRED).
10. IF REQUIRED, FIT RETAINING WEDGES AT 300-400mm SPACING TO ENSURE LOOP CABLE DOES NOT MOVE WHILE SEALANT IS APPLIED. THE WEDGE MATERIAL TO BE RESILIENT AND IMPERVIOUS TO WATER AT THE INSTALLATION TECHNICIANS DISCRETION.
11. LOOP TAILS (S AND F) TO EACH LOOP TO BE TWISTED TOGETHER (1 TURN PER 100mm) ONCE CABLE LEAVE SAW CUT SLOT.
12. ALL DIMENSIONS IN MILLIMETRES (U.N.O.).



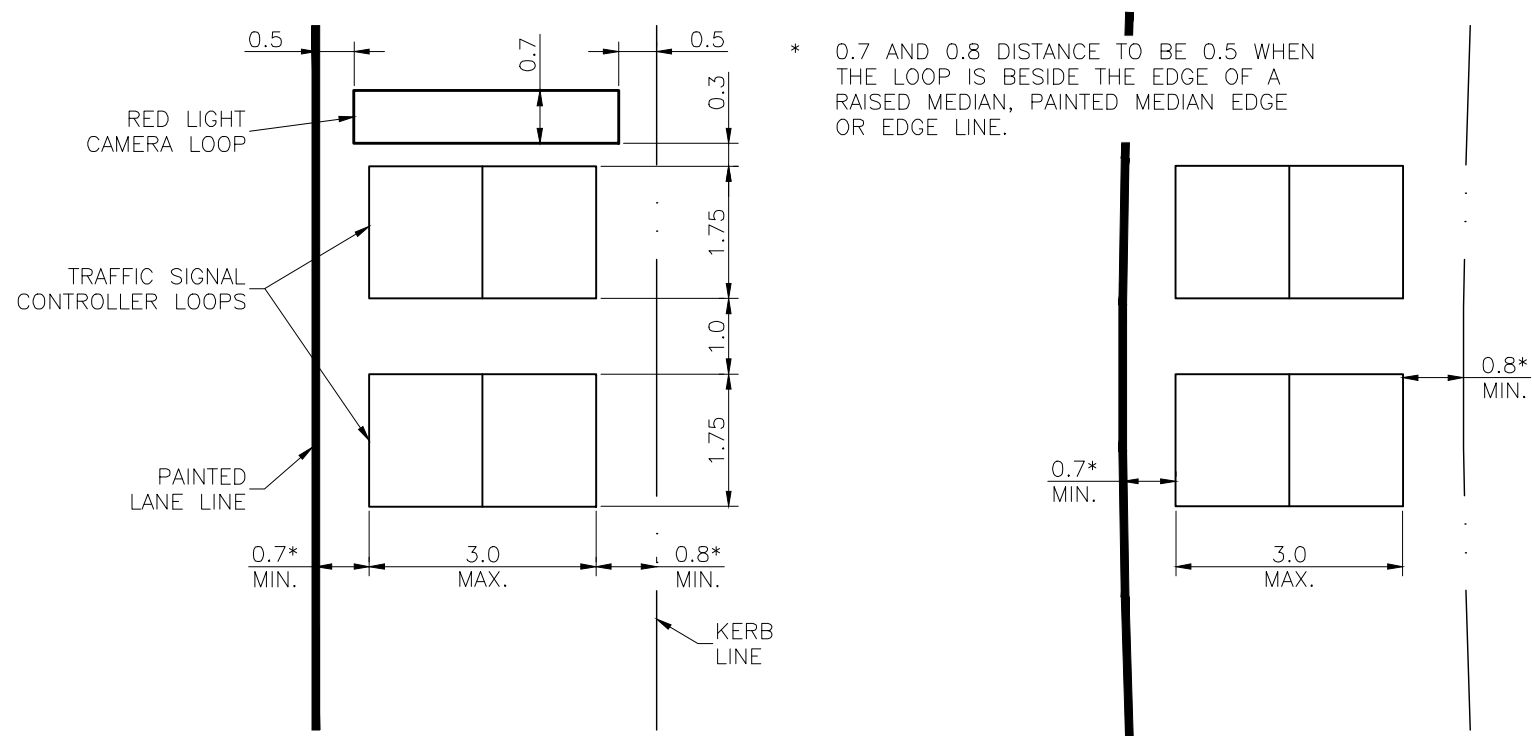
<p>THE PURPOSE OF THIS STANDARD DRAWING IS TO PROVIDE TYPICAL DETAILS THAT SUPPORT THE DESIRED OUTCOMES OF THE BRISBANE CITY PLAN 2014 AND ASSOCIATED PLANNING SCHEME POLICIES. THE FITNESS FOR PURPOSE OF THIS STANDARD DRAWING FOR A SPECIFIC PROJECT SHOULD BE ASSESSED AND ACCEPTED BY AN APPROPRIATELY QUALIFIED DESIGNER AND/OR REGISTERED PROFESSIONAL ENGINEER OF QUEENSLAND (RPEQ).</p> 	<p>BRISBANE CITY COUNCIL STANDARD DRAWING</p>		<p>PUBLISH DATE SEP 2024</p>
	<p>VEHICLE DETECTOR LOOP INSTALLATION DETAILS</p>		<p>SCALE NOT TO SCALE</p>
			<p>DRAWING NUMBER BSD-4012</p>
	<p>ORIGINAL SIZE A3</p>	<p>REVISION C</p>	



LAYOUT FOR RED LIGHT CAMERA LOOPS FOUR LANE INTERSECTION – SPEED TRIGGER MODE



LAYOUT FOR RED LIGHT CAMERA LOOPS TWO LANE INTERSECTION – SPEED TRIGGER MODE



LOOP SETOUT ON STRAIGHT

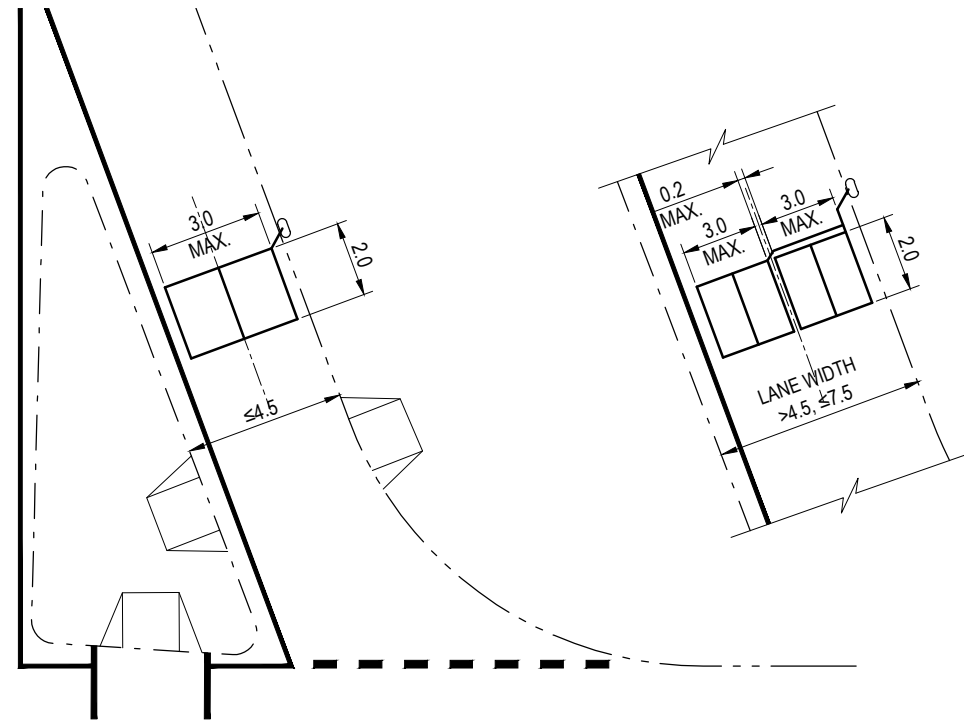
LOOP SETOUT ON CURVE

NOTES:

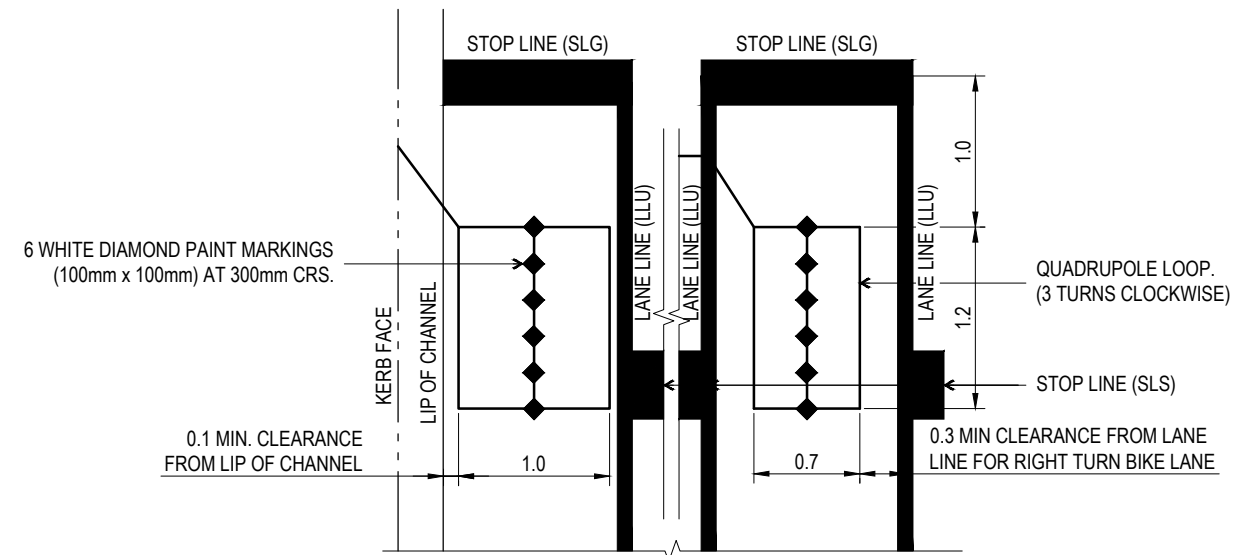
1. LOOPS A1 TO A5 AND B1 TO B5 ARE CONTROLLER LOOPS.
2. FOR RED LIGHT CAMERA CABLING DETAILS REFER MAIN ROADS STANDARD DRAWINGS 1703 AND 1704.
3. DIMENSIONS IN METRES (U.N.O.).

				DRAWING AUTHORISED FOR PUBLICATION B. BALL SIGNATURE ON ORIGINAL DATED 29/6/01				DESIGN	Std Dwg's WG	DATE	April '01	
				MANAGER ASSET SUPPORT - R.P.E.Q. 3 8 5 2				DRAWN	CPO - P&D	DATE	April '01	
				DESIGN APPROVED				CHECKED	R. WILSON	DATE	May '01	
				K. MEMORY SIGNATURE ON ORIGINAL DATED 27/6/01				DRAWING FILENAME	BSD-4013 (B) Vehicle detector loop installation details general use & red-light cameras.dwg			
				SENIOR PROGRAM OFFICER NETWORK OPERATIONS - R.P.E.Q. 4 7 6 1				ASSOCIATED PLANS	SUPERSEDES UMS-600-022			
B	Drawing Title Amended	JAN '16	JUL '16	JUL '16								
A	Drawing Converted from UMS Series April 2014	APR '14	APR '14	APR '14								
ISSUE	AMENDMENT	DRAWN DATE	CHK'D DATE	APPR'D DATE								
BRISBANE CITY COUNCIL STANDARD DRAWING												
VEHICLE DETECTOR LOOPS INSTALLATION DETAILS										SCALE	NOT TO SCALE	
GENERAL USE & REDLIGHT CAMERAS										DWG No.	BSD-4013	
										ORIGINAL SIZE	A3	
										REVISION	B	





TYPICAL PLACEMENT OF COUNTING LOOPS



BICYCLE LOOP DETAIL

NOTES:

1. COUNTING LOOPS IN SLIP LANES SHOULD BE LOCATED AWAY FROM PEDESTRIAN CROSSING.
2. BIKE LANE LOOP WIDTH TO REMAIN CONSTANT FOR WIDER LANES.
3. REFER BSD-3151 FOR LONGITUDINAL LINE AND BSD-3152 FOR TRANSVERSE LINE DIMENSIONS.
4. DIMENSIONS IN METRES (U.N.O.).

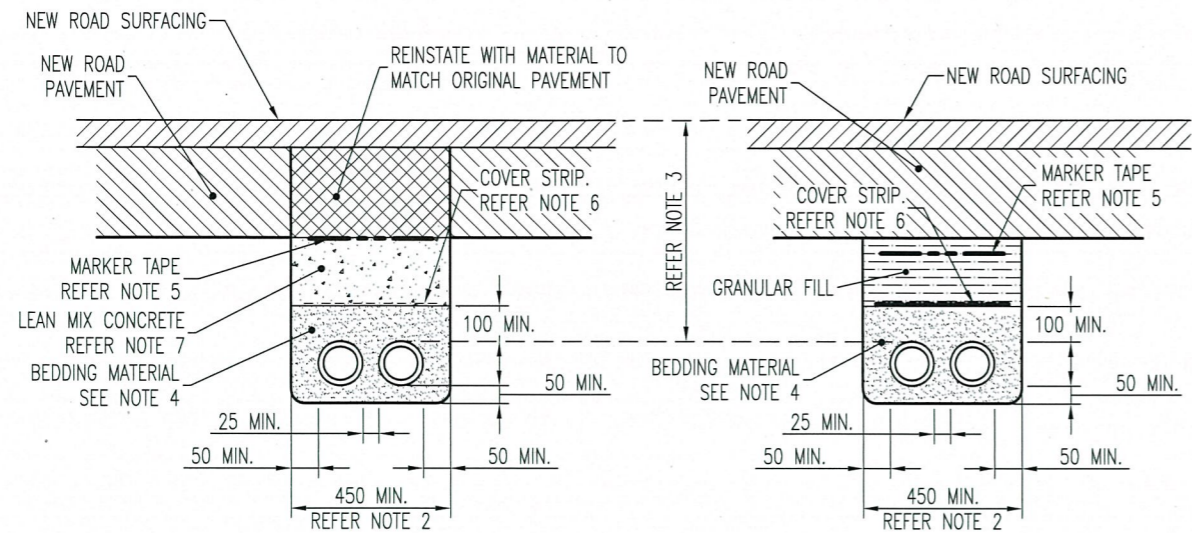
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BRISBANE CITY COUNCIL STANDARD DRAWING

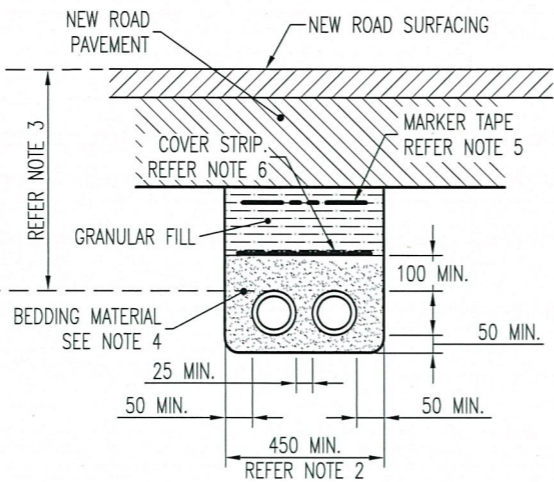
VEHICLE DETECTOR LOOPS
INSTALLATION DETAILS
COUNTING AND BICYCLE LOOPS

PUBLISH DATE	SEP 2024
SCALE	NOT TO SCALE
DRAWING NUMBER	BSD-4014
ORIGINAL SIZE	A3
REVISION	C



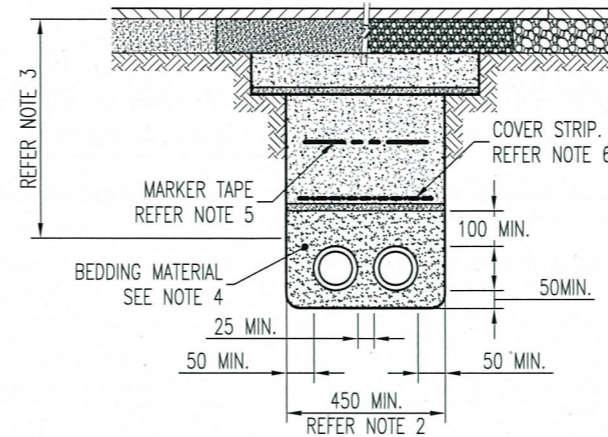
TYPE LV1A

NEW ROADWAY
(AFTER PAVEMENT CONSTRUCTION)



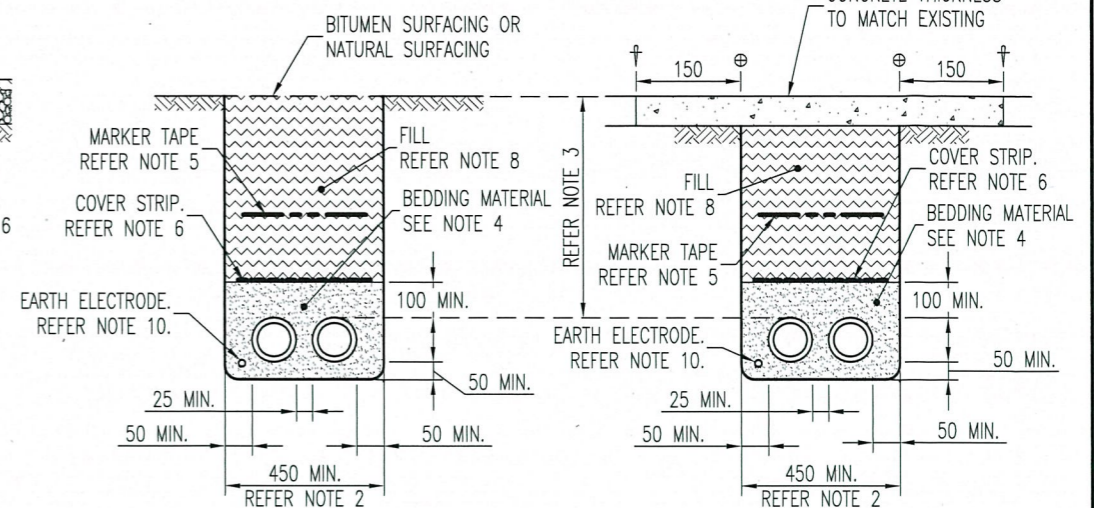
TYPE LV1B

NEW ROADWAY
(DURING PAVEMENT CONSTRUCTION)
ONLY APPLIES WHERE PAVEMENT IS REINSTATED BEFORE SURFACING IS UNDERTAKEN. OTHERWISE THE REQUIREMENTS AS PER NOTE 9 APPLY.



TYPE LV2

EXISTING ROADWAY
REFER TO NOTE 9 FOR REQUIREMENTS

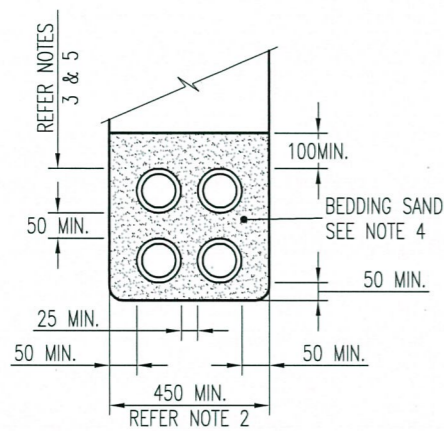


TYPE LV3

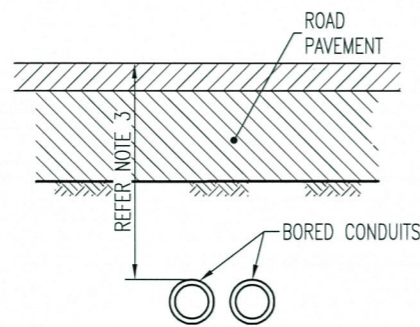
FOOTWAYS OR ISLANDS
(EARTH OR ASPHALT)

TYPE LV4

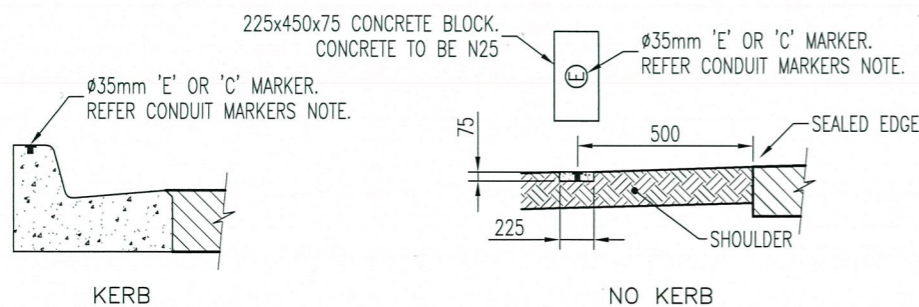
FOOTWAYS OR ISLANDS
(CONCRETE)



MULTIPLE CONDUITS



BORED CONDUITS



CONDUIT MARKERS

ALL CONDUIT ROAD CROSSING LOCATIONS SHALL BE CLEARLY MARKED WITH A 35mm STAINLESS STEEL OR BRASS 'E' MARKER FOR ELECTRICAL CONDUIT OR 'C' MARKER FOR COMMUNICATIONS CONDUIT. THE MARKERS SHALL BE SECURELY EMBEDDED IN THE KERB DIRECTLY ABOVE THE CONDUITS. WHERE NO KERB EXIST, MARKERS SHALL BE PLACED AS SHOWN ABOVE, DIRECTLY ABOVE CONDUITS.

NOTES:

- FOR TRAFFIC SIGNALS AND RATE 3 LIGHTING THE CONDUIT SYSTEM TO BE USED IS CATEGORY A CONDUIT TYPE (A) COMPLYING WITH AS3000 EXCEPT THE DEPTHS SHALL BE AS SHOWN IN NOTE 3.
- WITH THE APPROVAL OF THE SUPERINTENDENT THE MINIMUM WIDTH OF THE TRENCH MAY BE LESS THAN 450mm PROVIDED THAT AT LEAST 50mm CLEARANCE BETWEEN THE EDGE OF DUCT AND TRENCH WALL IS MAINTAINED.
- CONDUIT DEPTHS AS FOLLOWS:

	TRENCH		BORED	
	MINOR ROAD	MAJOR ROAD	MINOR ROAD	MAJOR ROAD
ROADWAY	750	1200	1500*	2000
FOOTWAY OR ISLAND	600	750	900	1100

* WHERE THE LOCATION OF THE PIT AT THE END OF THE ROAD CROSSING, OR THE CONDUIT PASSES UNDER A MEDIAN CONNECTION OR PIT, THE BORE MAY RISE TO A MINIMUM 1200 TO ALLOW CONDUITS TO ENTER THE PIT(S). PERMANENTLY MARK THE BORE LOCATION AT ALL KERB AND PAVEMENT EDGE LOCATIONS.

THE DEPTH MAY ONLY BE ALTERED AND/OR THE REDUCED COVER REQUIREMENTS USED WHERE ALL OF THE FOLLOWING CONDITIONS ARE MET:

- THE CONDUITS CANNOT BE INSTALLED IN ACCORDANCE WITH THE ABOVE TABLE;
- THE CONDUIT SYSTEM REMAINS CATEGORY A (AS DEFINED IN AS3000); AND
- IT IS APPROVED BY THE SUPERINTENDENT PRIOR TO INSTALLATION.

LEGEND

- ⊕ INITIAL SAWCUT FOR TRENCH
- † ADDITIONAL SAWCUT ON COMPLETION OF BACKFILL

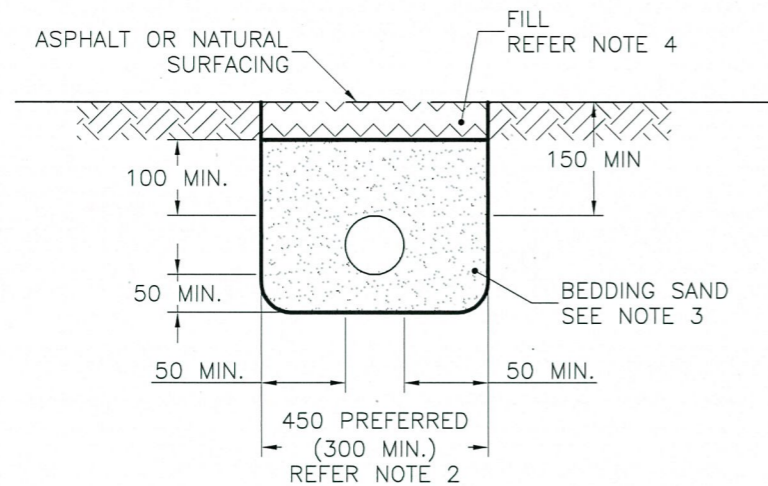
- BEDDING MATERIAL SHALL COMPLY WITH THE REQUIREMENTS OF BCC REFERENCE SPECIFICATIONS S140 AND S145.
- MARKER TAPE TO BE ORANGE AND IN COMPLIANCE WITH AS2648.1. THE TAPE SHALL BE LAID AT 180-200MM ABOVE THE CONDUIT OR ANY ADDITIONAL MECHANICAL PROTECTION.
- COVER STRIP TO BE 5mm THICK POLYMERIC CABLE PROTECTION COVER TO AS4702. COVER STRIP TO BE LAID CENTRALLY IN TRENCH ON TOP OF BEDDING MATERIAL LAYER AND BE LAPPED WHEN PLACED TOGETHER: MINIMUM 100mm LONGITUDINALLY AND 40mm TRANSVERSELY. COVER STRIP TO EXTEND MINIMUM 40mm PAST EXTERNAL EDGES OF CONDUITS.
- BACKFILL SHALL BE LEAN MIX (1:20) LOW SLUMP CONCRETE COMPACTED IN LIFTS OF 125-150mm TO 100% RDD.
- FILL MATERIAL SHALL BE MINIMUM CLASS 3 MATERIAL AS SPECIFIED IN BCC REFERENCE SPECIFICATIONS S140 AND S300 COMPACTED TO 100% RDD.
- REINSTATEMENT OF TRENCH IN EXISTING ROAD PAVEMENT TO BE IN ACCORDANCE WITH BSD-2042 AND COMPLY WITH THE REQUIREMENTS OF BCC REFERENCE SPECIFICATIONS S145 & S310.
- EARTH ELECTRODE AT THE BOTTOM OF THE TRENCH, 4m IN LENGTH.
- ALL DIMENSIONS ARE IN MILLIMETRES (U.N.O.).

ISSUE	AMENDMENT	DRAWN DATE	CHK'D DATE	APPR'D DATE
C	Note 10 removed			
B	Note 3 Updated	JAN '15	JUN '15	JUN '15
A	Drawing Converted from UMS Series April 2014	APR '14	APR '14	APR '14

DRAWING AUTHORIZED FOR PUBLICATION PAUL COTTON SIGNATURE ON ORIGINAL DATED 25/02/05	DESIGN	Std Dwg WG	DATE	Oct'04
MANAGER INFRASTRUCTURE MANAGEMENT R.P.E.O.: 2546	DRAWN	CPO - P&D	DATE	Nov'04
DESIGN APPROVED	CHECKED	UMD (T&T Signals)	DATE	Feb'04
ADRIAN GIBBONS SIGNATURE ON ORIGINAL DATED 02/05	DRAWING FILENAME	BSD-4015 (B) Traffic signal ducts installation detail low voltage (240V) conduits.dwg		
TEAM LEADER SIGNALS OPERATIONS	ASSOCIATED PLANS	SUPERSEDES UMS-600-024		

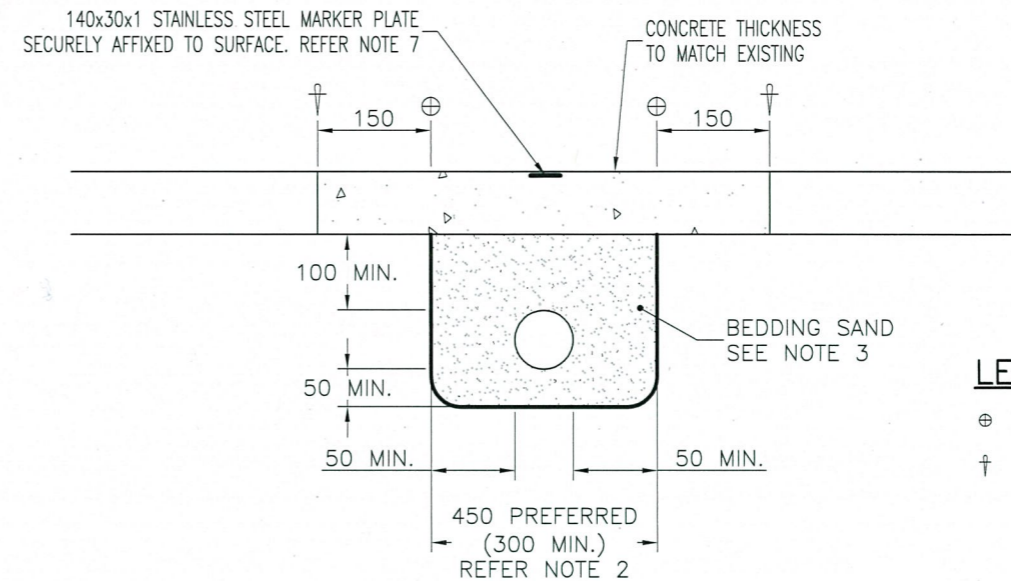


BRISBANE CITY COUNCIL STANDARD DRAWING	
TRAFFIC SIGNAL DUCTS INSTALLATION DETAIL LOW VOLTAGE (240V) CONDUITS	SCALE NOT TO SCALE
	DWG No. BSD-4015
ORIGINAL SIZE A3	REVISION C



TYPE ELV1

FOOTWAYS OR ISLANDS
(EARTH OR ASPHALT)



TYPE ELV2


FOOTWAYS OR ISLANDS
(CONCRETE)

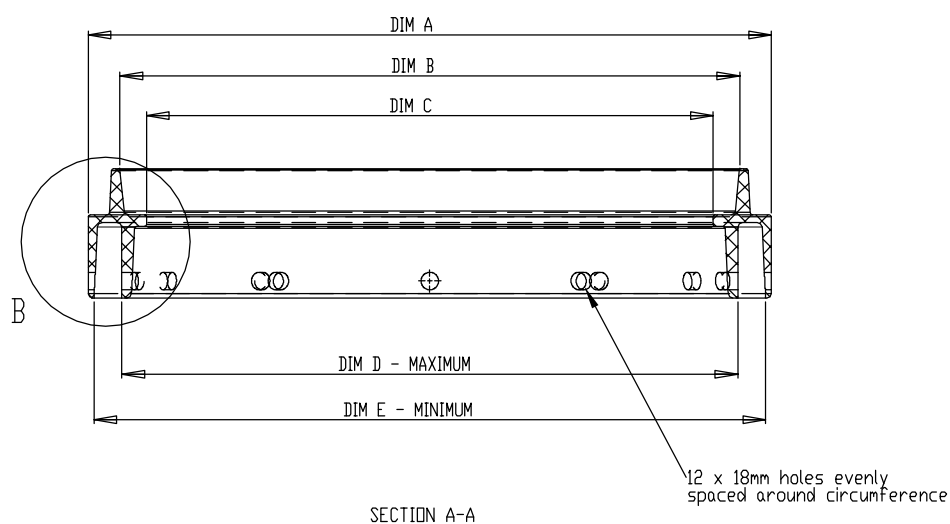
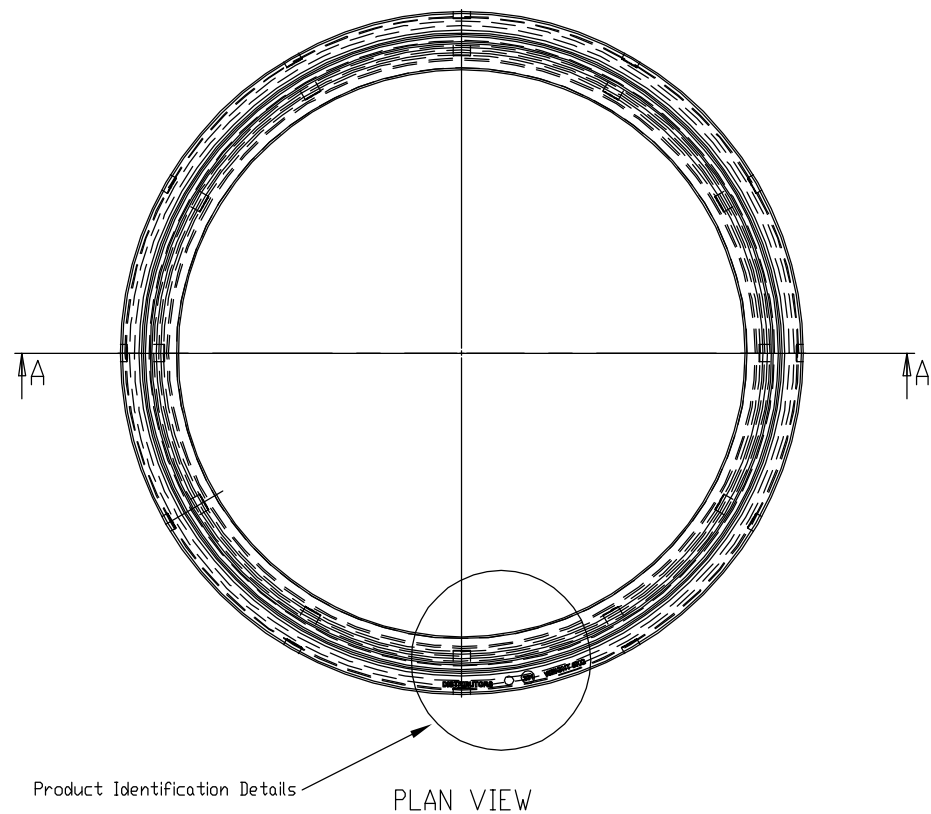
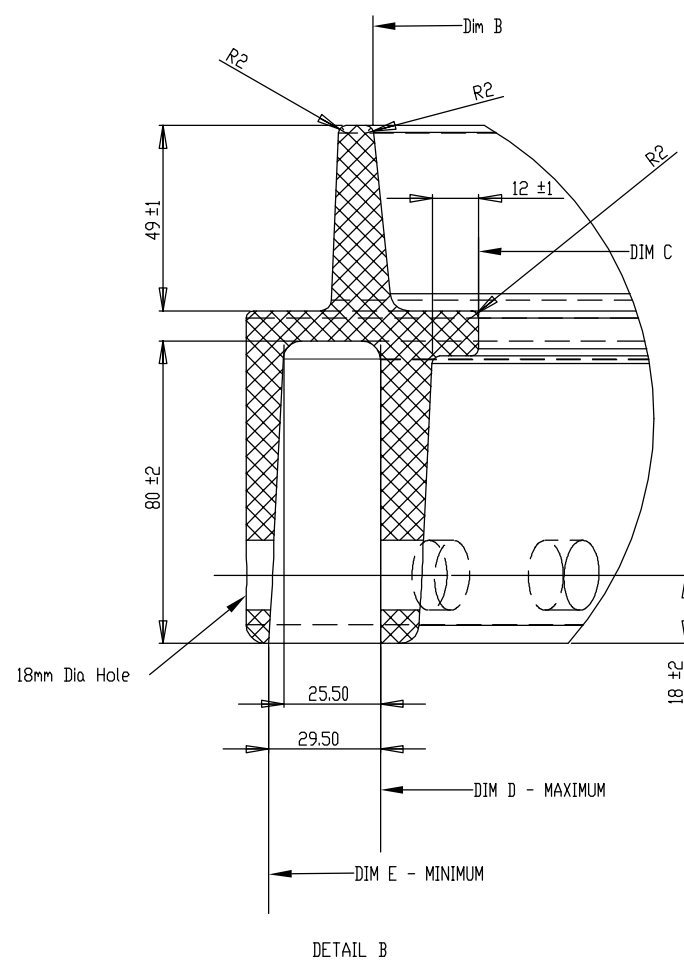
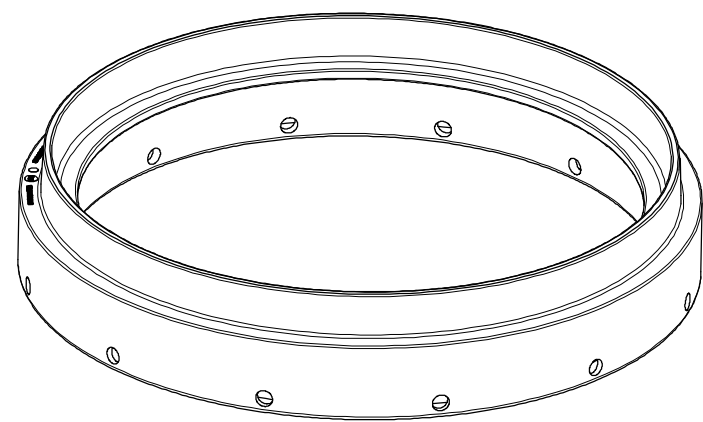
LEGEND

- ⊕ INITIAL SAWCUT FOR TRENCH
- † ADDITIONAL SAWCUT ON COMPLETION OF BACKFILL

NOTES:

1. FOR TRAFFIC SIGNALS AND RATE 3 LIGHTING THE CONDUIT SYSTEM TO BE USED IS CATEGORY A WIRING SYSTEM COMPLYING WITH AS3000 EXCEPT THE DEPTHS SHALL BE AS SHOWN IN ON THE DRAWING.
2. WITH THE APPROVAL OF THE SUPERINTENDENT THE MINIMUM WIDTH OF THE TRENCH MAY BE LESS THAN 450mm PROVIDED THAT AT LEAST 50mm CLEARANCE BETWEEN THE EDGE OF DUCT AND TRENCH WALL IS MAINTAINED.
3. BEDDING MATERIAL SHALL COMPLY WITH THE REQUIREMENTS OF BCC REFERENCE SPECIFICATIONS S140 AND S145.
4. FILL MATERIAL SHALL BE MINIMUM CLASS 3 MATERIAL AS SPECIFIED IN BCC REFERENCE SPECIFICATIONS S140 AND S300 COMPACTED TO 100% RDD.
5. FOR ASPHALT SURFACE RESTORATION, THE SURFACE OF THE LEAN MIX CONCRETE AND THE REMAINING SIDES OF THE TRENCH SHALL BE DRY AND GIVEN A THOROUGH BROOMING BEFORE BEING UNIFORMLY COVERED WITH A FINE SPRAYED BITUMEN EMULSION. THE BITUMEN EMULSION SHALL COMPLY WITH THE REQUIREMENTS OF BCC REFERENCE SPECIFICATION S330. THE ASPHALT PAVEMENT SURFACE LAYER FOR FOOTPATHS SHALL BE TYPE 1 ASPHALT AND COMPLY WITH THE REQUIREMENTS OF BCC REFERENCE SPECIFICATIONS S145 & S310.
6. FOR CONCRETE SURFACE RESTORATION, CONCRETE TO BE N32 CONCRETE TO COMPLY WITH THE REQUIREMENTS OF BCC REFERENCE SPECIFICATION S200 AND RELEVANT BCC STANDARDS FOR CONCRETE ISLAND INFILL.
7. REDUCED COVER MARKER PLATE TO BE 140x30x1 STAINLESS STEEL WITH THE WORDING 'WARNING! SHALLOW DEPTH CONDUIT'. MARKER PLATE TO BE PERMANENTLY AND SECURELY AFFIXED TO SURFACE.
8. ALL DIMENSIONS ARE IN MILLIMETRES (U.N.O.).

				DRAWING AUTHORISED FOR PUBLICATION P. COTTON SIGNATURE ON ORIGINAL				DESIGN	Std Dwgs WG	DATE	Aug'10	 BRISBANE CITY COUNCIL STANDARD DRAWING		
				MANAGER CITY ASSETS - R.P.E.Q: 2 5 4 6				DRAWN	CPD - P&D	DATE	Aug'10			SCALE
				DESIGN APPROVED I. CONDRIK SIGNATURE ON ORIGINAL DATED 01/11				CHECKED	I. Condric	DATE	Jan'11	TRAFFIC SIGNAL DUCTS INSTALLATION DETAIL		
				PRINCIPAL ENGINEER ROAD NETWORK INFRASTRUCTURE - R.P.E.Q: 8 5 9 1				DRAWING FILENAME	BSD-4016 (A) Traffic signal ducts installation detail extra low voltage conduits.dwg			BSD-4016		
								ASSOCIATED PLANS	SUPERSEDES UMS-600-026			ORIGINAL SIZE	A3	
													REVISION	B
B	Note reference corrected													
A	Drawing Converted from UMS Series April 2014	APR '14	APR '14	APR '14										
ISSUE	AMENDMENT	DRAWN DATE	CHK'D DATE	APPR'D DATE										



NOTES:

1. Product designed to meet requirements of the AS3996 Class B design load.
2. Collars are for circular pits that meet the requirements of DTMR standard drawing 1415.
3. The collar shall be placed on the pit prior to compaction of the backfill material to prevent elongation of the top of the pit.
4. All edges shall be free of flash and sharp edges.
5. 12 galvanised cuphead M16 bolts with washers to fit shall be supplied fitted to each collar. All nuts are to be galvanised and secured to the bolts on the outside of the collar/
6. A permanent moulded in identification label shall state "Manufacturers Name", "Date of manufacture", "Manufacturing batch no." and "weight of product".
7. Material - Polypropylene - High UV stabilised.
8. Dimensions are in millimeters unless otherwise stated.

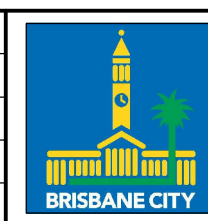
REFERENCED DOCUMENTS

Australian Standards:
AS 3996 Metal Access Covers, Road Grates and Frames

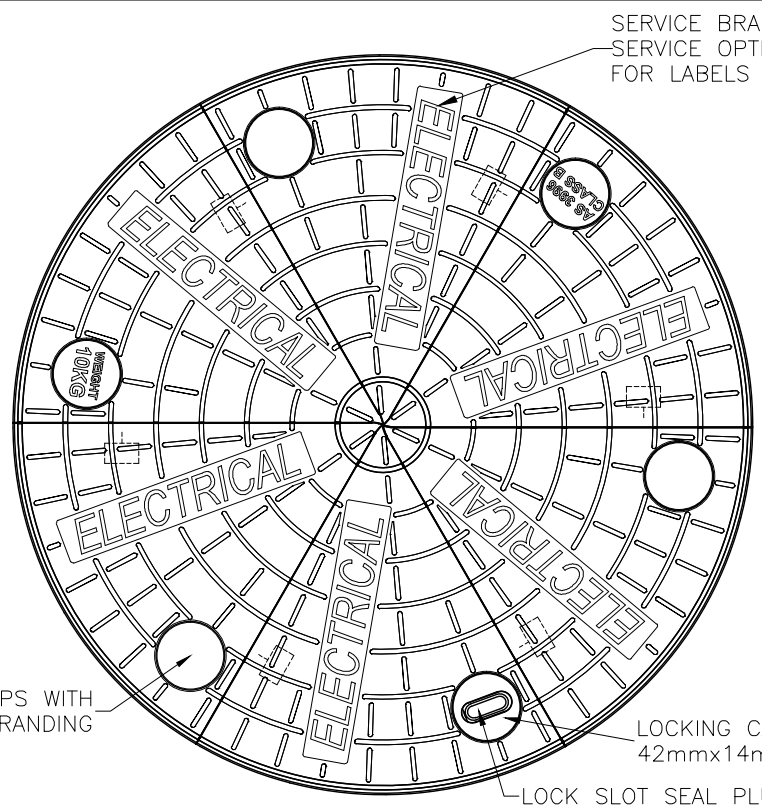
DIM	
A	ø 725
B	ø 656±2
C	ø 600±2
D	ø 655
E	ø 708

ISSUE	AMENDMENT	DRAWN DATE	CHK'D DATE	APPR'D DATE
B	Dimensions Corrected	JUL '16	JUL '16	JUL '16
A	ORIGINAL ISSUE	FEB '15	FEB '15	MAR '15

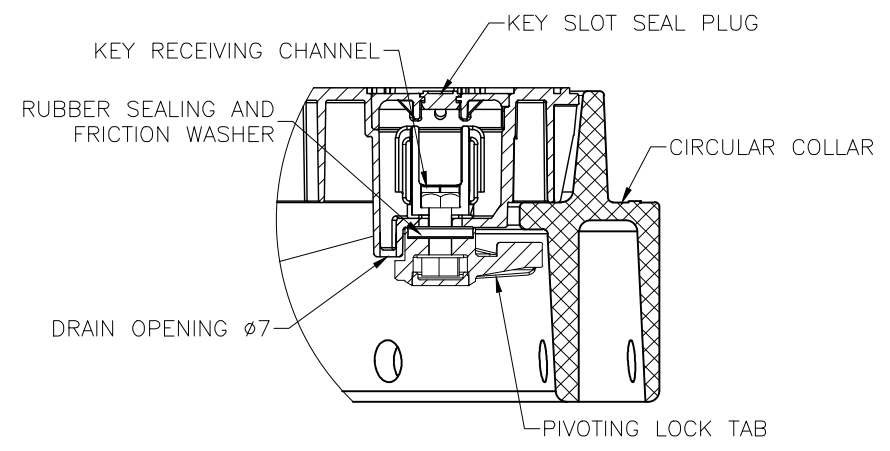
DRAWING AUTHORISED FOR PUBLICATION			
I. Condric Signature on Original			
ASSET ENGINEERING MANAGER STRATEGIC ASSET MANAGEMENT			
DESIGN APPROVED			
C. CALOS			
SENIOR TRAFFIC SYSTEMS ENGINEER CONGESTION REDUCTION UNIT			
DESIGN	RE	DATE	5.02.15
DRAWN	BW	DATE	5.02.15
CHECKED	CC	DATE	5.02.15
DRAWING FILENAME	BSD-4032.DWG		
ASSOCIATED PLANS			



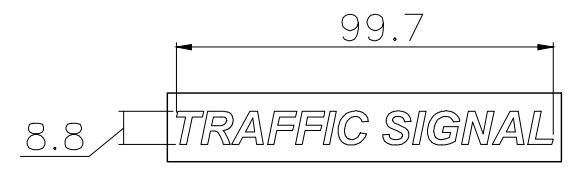
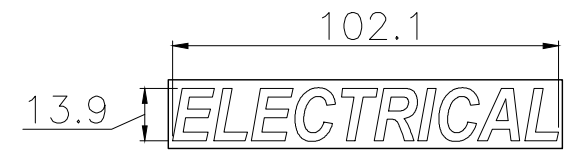
BRISBANE CITY COUNCIL STANDARD DRAWING	
CIRCULAR CABLE JOINTING PIT 600mm DIAMETER COLLAR	
SCALE	NOT TO SCALE
DWG No.	BSD-4032
ORIGINAL SIZE	REVISION
A3	B



SERVICE BRANDING – REFER SERVICE OPTIONS DETAILS FOR LABELS



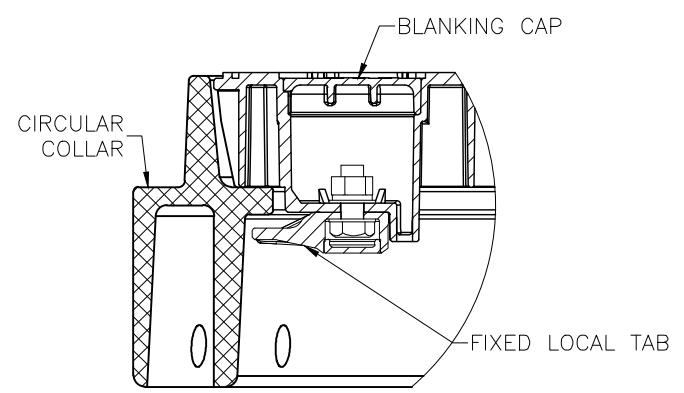
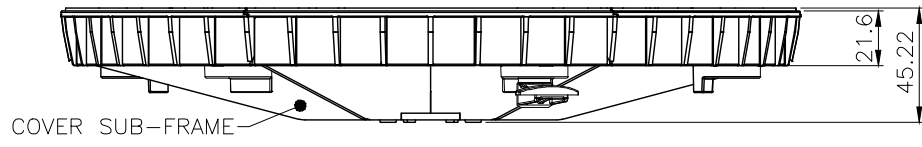
PIVOTING LOCK DETAIL



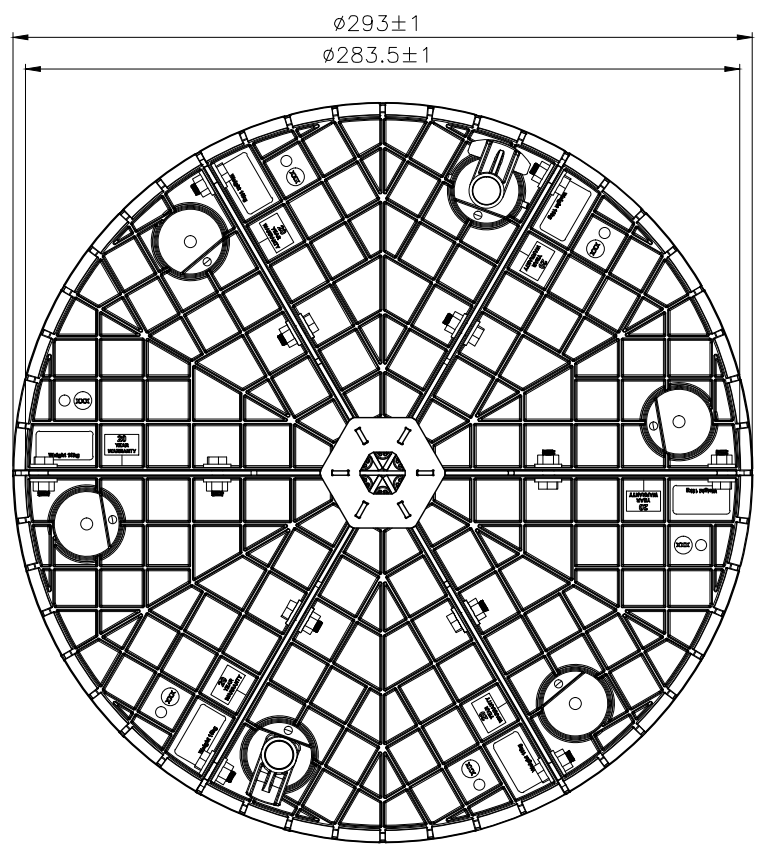
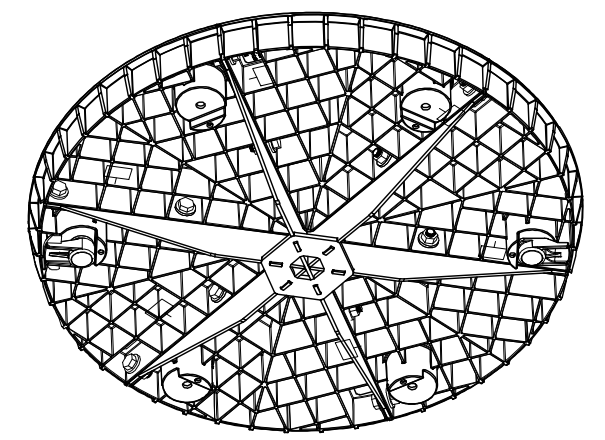
SERVICE LABEL OPTION DETAILS
ALL FONT ARIAL BOLD ITALIC UPPERCASE

BLANKING CAPS WITH OPTIONS FOR BRANDING

LOCKING CAP WITH 42mmx14mm LIFTING SLOT
LOCK SLOT SEAL PLUG



FIXED LOCK DETAIL

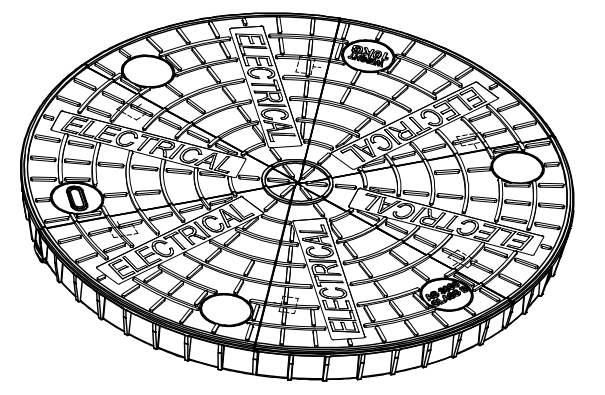


NOTES:

1. CIRCULAR COVER IS FOR CIRCULAR PITS THAT MEET THE REQUIREMENTS OF DTMR STANDARD DRAWING 1415.
2. CIRCULAR COVER MEETS AS3996 CLASS B DESIGN LOAD.
3. COVER SHALL NOT BE USED IN ROADWAYS.
4. TOTAL COVER LIFTING MASS LESS THAN 11kg.
5. STRUCTURAL STEEL PLATES GRADE 250 TO AS/NZ 3678 AND HOT DIPPED GALVANISED.
6. STRUCTURAL FASTENERS – GRADE BM GALVANISED.
7. LOCK FASTENERS STAINLESS STEEL – BOLTS AND WASHERS GRADE 304 AND NUTS GRADE 316.
8. BOLTS AND NUTS HAVE ISO COARSE PITCH METRIC THREAD.
9. PERMANENT SERVICE MARKINGS UPSTAND 2mm FROM TOP SERVICE OF PRODUCT.
10. A PERMANENT MOULDED IN IDENTIFICATION LABEL SHALL STATE 'MANUFACTURERS NAME', 'DATE OF MANUFACTURE', 'MANUFACTURING BATCH NO.' AND 'WEIGHT OF PRODUCT'.
11. DIMENSIONS ARE IN MILLIMETERS U.N.O.

REFERENCED DOCUMENTS

- AUSTRALIAN STANDARDS:
- AS 3996 METAL ACCESS COVERS, ROAD GRATES AND FRAMES

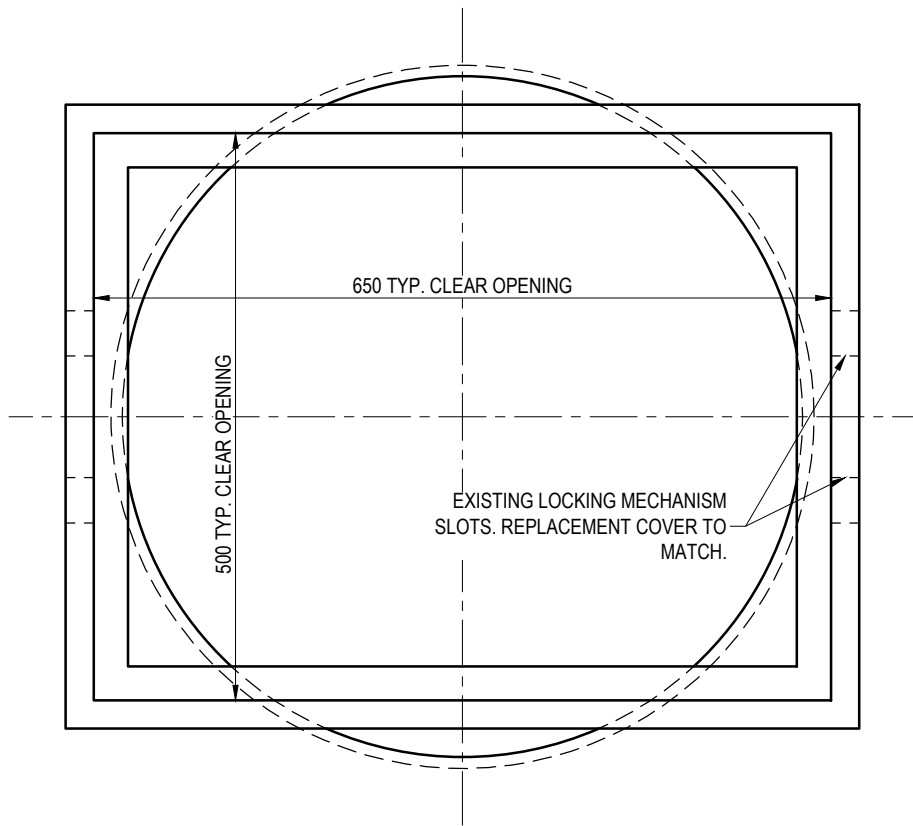


ISSUE	AMENDMENT	DATE	CHK'D DATE	APPR'D DATE
A	ORIGINAL ISSUE	FEB'15	FEB'15	FEB'15

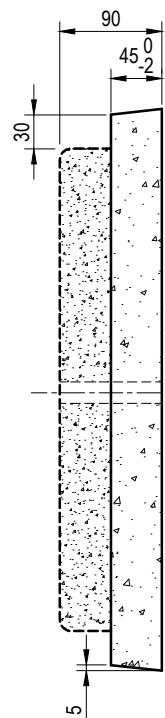
DESIGN	RE	DATE
DESIGN	RE	DATE
DRAWN	BW	DATE
CHECKED	CC	DATE
DRAWING FILENAME	BSD-4033 (A) Circular cable jointing pit 600 diameter - Cover.dwg	
ASSOCIATED PLANS		



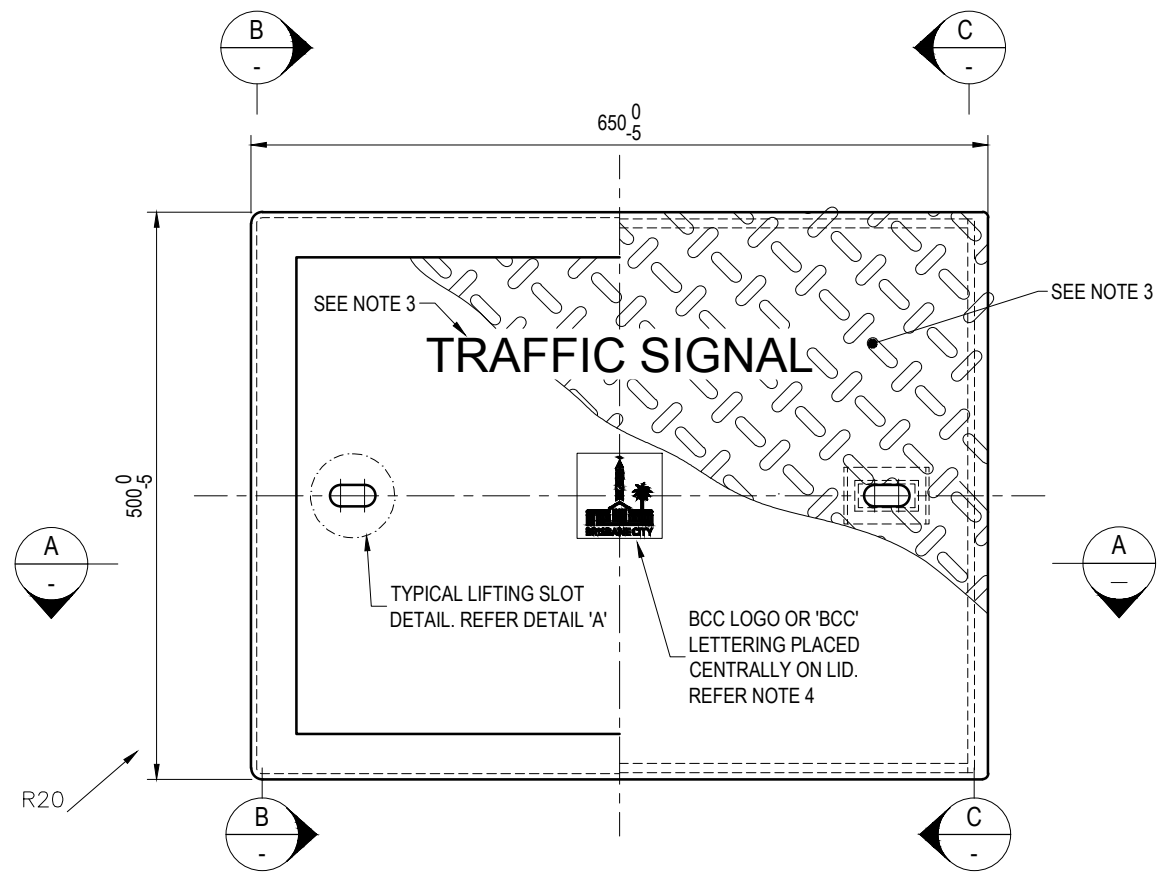
BRISBANE CITY COUNCIL STANDARD DRAWING	
CIRCULAR CABLE JOINTING PIT 600mm DIAMETER COVER	
SCALE	NOT TO SCALE
DWG No.	BSD-4033
ORIGINAL SIZE	A3
REVISION	A



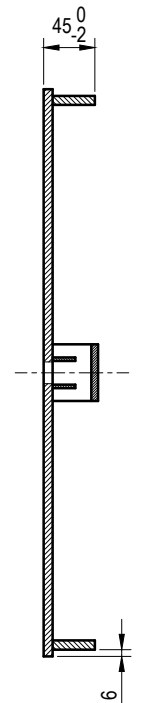
TYPICAL EXISTING PIT PLAN



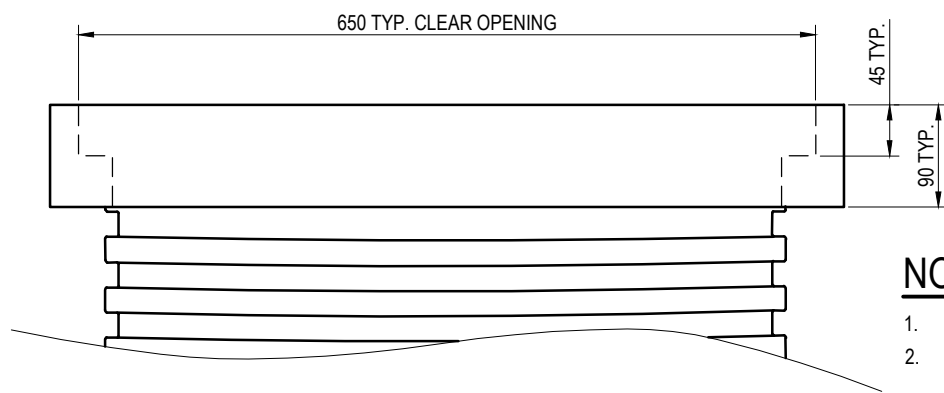
**SECTION B-B
TYPICAL CONCRETE
COVER SECTION**



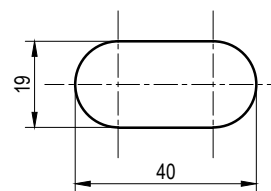
PLAN VIEW



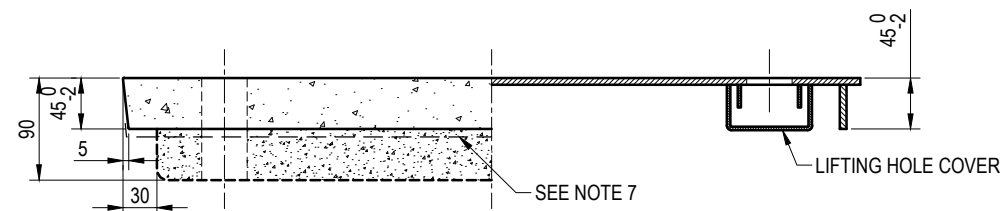
**SECTION C-C
TYPICAL STEEL
COVER SECTION**



TYPICAL EXISTING PIT ELEVATION



**DETAIL 'A'
TYPICAL LIFTING SLOT**




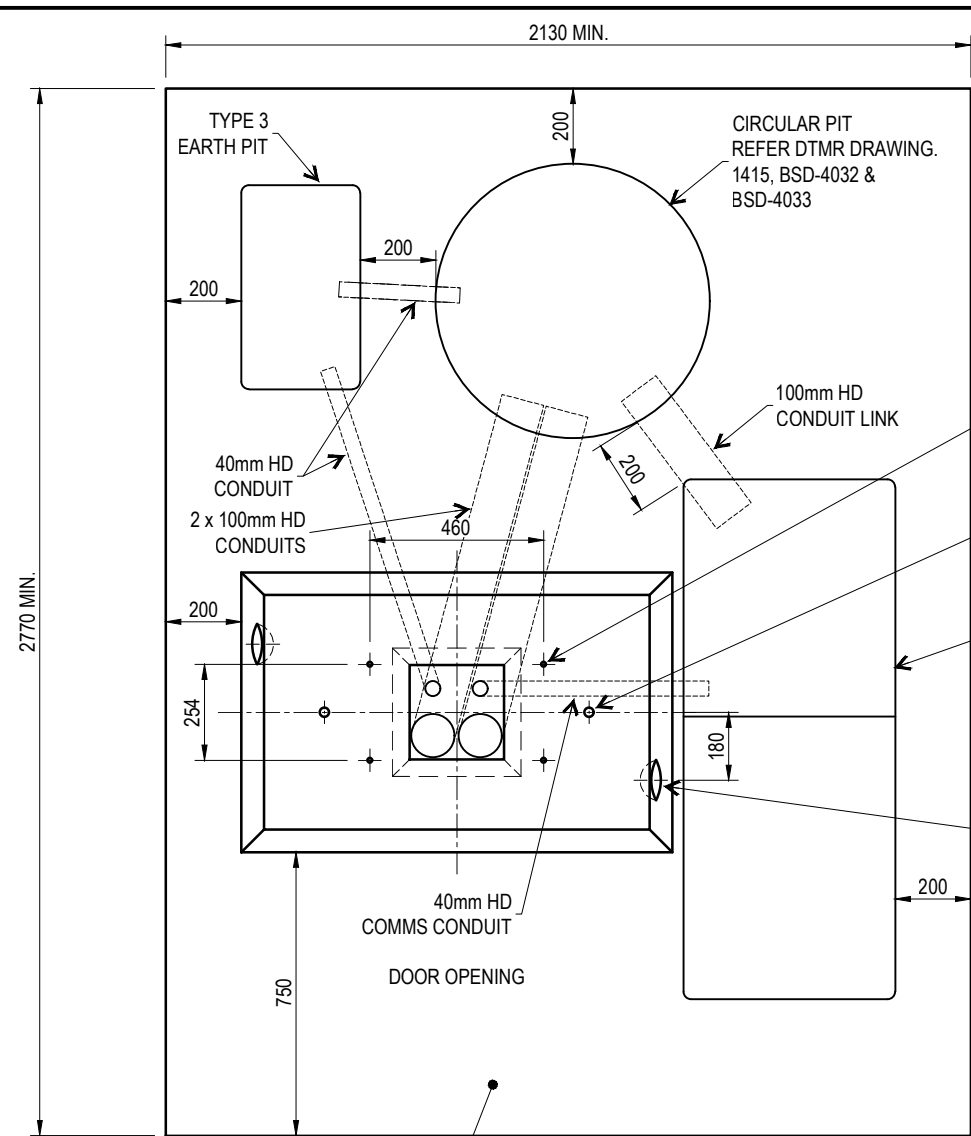
**SECTION A-A
TYPICAL FRONT SECTION**

NOTES:

- REPLACEMENT LID TO FIT EXISTING ROUND-TO-SQUARE PIT TO REPLACE EXISTING LID (AS PER SUPERSEDED DRAWING UMS 623).
- LID ONLY TO BE REPLACED ON PITS IN GOOD CONDITION. IF EXISTING PIT IS IN POOR CONDITION REMOVE EXISTING PIT AND REPLACE WITH NEW CIRCULAR PIT TO DTMR DRAWING 1415, AND ASSOCIATED COLLAR AND COVER TO BSD-4032 AND BSD-4033.
- PIT DESCRIPTION LETTERING ie. "TRAFFIC SIGNAL", "ELECTRICAL" AND "COMMUNICATIONS". TEXT MIN. 35 HIGH FOR ALL COVERS.
- ALL NEW LIDS TO HAVE 100 SQ BCC LOGO OR 100 HIGH 'BCC' LETTERING PERMANENTLY MARKED ON TOP OF COVER.
- NON-SLIP FINISH TO BE APPLIED TO TOP SURFACE OF LID.
- ALL CORNER RADII TO BE 20mm, UNLESS SHOWN OTHERWISE.
- PIT LID MATERIAL MAY BE, BUT NOT LIMITED TO, GALVANISED STEEL PLATE, CAST OR DUCTILE METAL, CONCRETE, GLASS REINFORCED CONCRETE OR POLYMER CONCRETE.
- PIT LID TO BE LOAD RATED TO CLASS 'B' TO AS3996 FOR USE IN GENERAL PEDESTRIAN AREAS. FOR PITS AND LIDS IN LOCALITIES AND CENTRES SUCH AS THE CBD AND CENTRES AS DEFINED BY AS 1742-2014, PIT LIDS ARE TO BE LOAD RATED TO CLASS 'C' TO AS3996.
- THE LIFTING HOLES SHALL BE DESIGNED TO PREVENT ENTRY OF FOREIGN OBJECTS (FOR EXAMPLE SYRINGES) INTO THE PIT BUT ALLOW SOIL TO PASS THROUGH SO LIFTING IS NOT IMPEDED. THE LIFTING HOLES SHALL BE COMPATIBLE WITH THE STANDARD LIFTING DEVICE.
- INSTALL CORFLUTE ('TELSTRA') GASKET UNDER PIT LID PROFILE WHERE THE REQUIREMENTS OF NOTE 9 CANNOT BE MET.
- ALL DIMENSIONS IN MILLIMETRES (U.N.O.).

DISCLAIMER
THIS STANDARD IS FOR THE RETRO-FITTING OF EXISTING 'ROUND-TO-SQUARE' PITS ONLY.
 ALL NEW CIRCULAR PIT INSTALLATIONS ARE TO BE TO DTMR DRAWING 1415, BSD-4032 AND BSD-4033. REFER NOTES 2, 3 & 4.

				DRAWING AUTHORISED FOR PUBLICATION B. BALL SIGNATURE ON ORIGINAL DATED 29/6/01		DESIGN	Std Dwgs WG	DATE	April '01		BRISBANE CITY COUNCIL STANDARD DRAWING	
C	Reference in Note 8 Updated to IDPSP	JAN '19	APR '19	APR '19	MANAGER ASSET SUPPORT - R.P.E.Q: 3, 8, 5, 2	DRAWN	CPO - P&D	DATE	April '01		SCALE NOT TO SCALE	
B	Added BSD Plan References To Note 2 & Disclaimer	BW 50/9/16	AMG 5/09/16	AMG 5/09/16	DESIGN APPROVED B. HANSEN SIGNATURE ON ORIGINAL DATED 27/6/01	CHECKED	M. STEER	DATE	May '01		DWG No. BSD-4034	
A	Drawing Converted from UMS Series April 2014	APR '14	APR '14	APR '14	PRINCIPAL ASSET OFFICER ROADS & DRAINAGE	DRAWING FILENAME	BSD-4034 (B) Replacement pit lid existing round to square pit types.dwg			ORIGINAL SIZE A3		
ISSUE	AMENDMENT	DRAWN DATE	CHK'D DATE	APPR'D DATE	ASSOCIATED PLANS		SUPERSEDES UMS-600-032			REVISION C		



150mm THICK CONCRETE SLAB REINFORCED WITH 1 LAYER OF SL62 MESH PLACED CENTRALLY. TYPICAL ARRANGEMENT ONLY, CAN BE ADJUSTED TO SUIT SITE

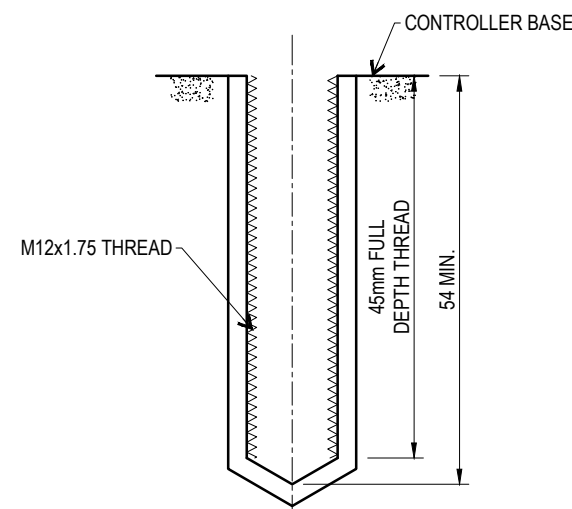
TOP VIEW

4 OFF M12x1.75 THREADED INSERTS (STAINLESS STEEL 316 GRADE) MIN. 54mm DEEP. REFER TO DETAIL

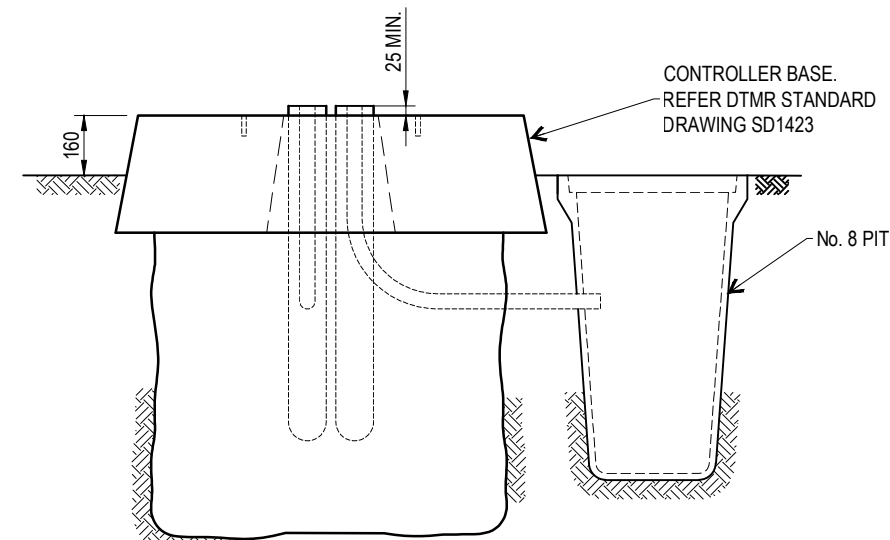
1.3T LIFTING ANCHOR (2 OFF) 700 APART

TYPE 8 PIT

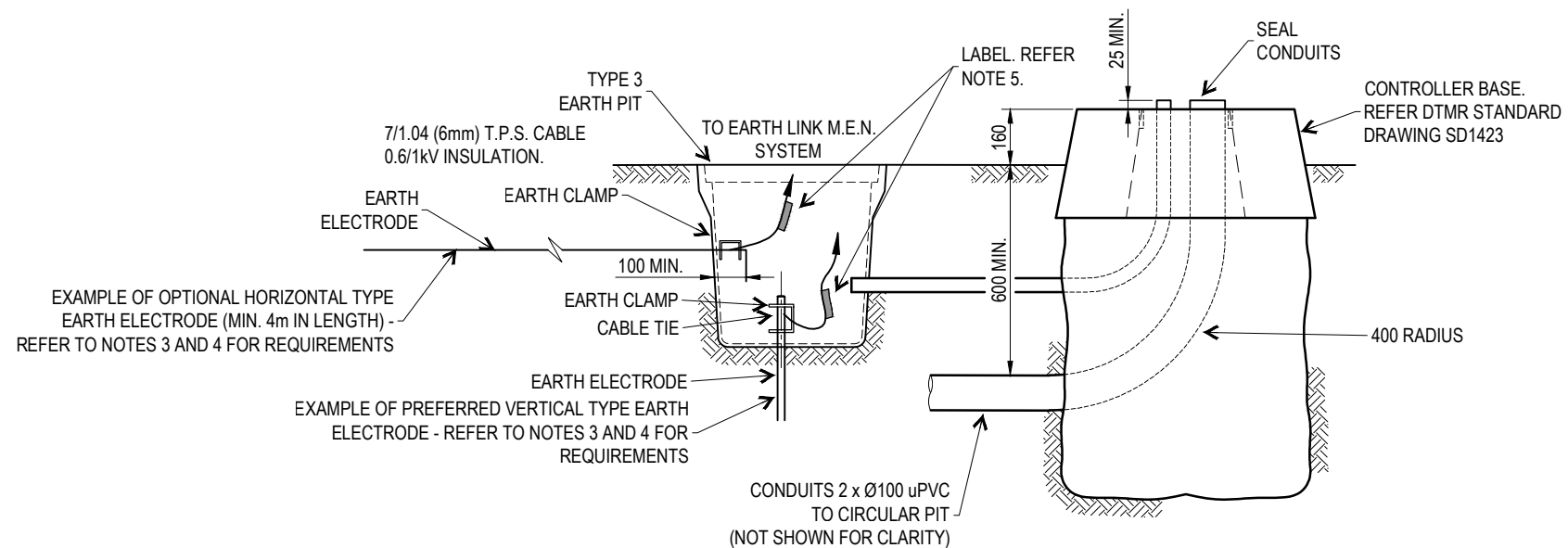
17mm GALVANISED UTILITY ANCHOR FOR GENERATOR (ONE EACH END)



THREAD DETAIL



CONTROLLER FOOTING FRONT VIEW



CONTROLLER FOOTING LEFT SIDE VIEW

EXAMPLE OF OPTIONAL HORIZONTAL TYPE EARTH ELECTRODE (MIN. 4m IN LENGTH) - REFER TO NOTES 3 AND 4 FOR REQUIREMENTS

EXAMPLE OF PREFERRED VERTICAL TYPE EARTH ELECTRODE - REFER TO NOTES 3 AND 4 FOR REQUIREMENTS

NOTES:

1. CONCRETE TO BE GRADE N32 MIN.
2. ALL CORNERS R20 EXCEPT BASE.
3. EARTH ELECTRODE - REFER AS/NZS3000, CLAUSE 5.3.6. PREFERRED OPTION IS 12mm VERTICAL STAINLESS EARTH STAKE, 1.8m IN LENGTH. FOR INSTALLATION REFER TO AS/NZS3000, TABLE 5.2 AND BSD-4015 TYPE LV3 AND TYPE LV4, AND HEAVY DUTY EARTH CLAMP.
4. TESTING TO ENSURE COMPLIANCE WITH AS/NZS3000, CLAUSE 8.3 IS MANDATORY.
5. FOR LEGIBLE WARNING LABEL REQUIREMENTS, REFER AS/NZS3000, CLAUSE 5.5.1.3.
6. DIMENSIONS IN MILLIMETRES (U.N.O.).
7. FINAL PIT POSITIONING CAN VARY BASED ON SITE CONDITIONS.

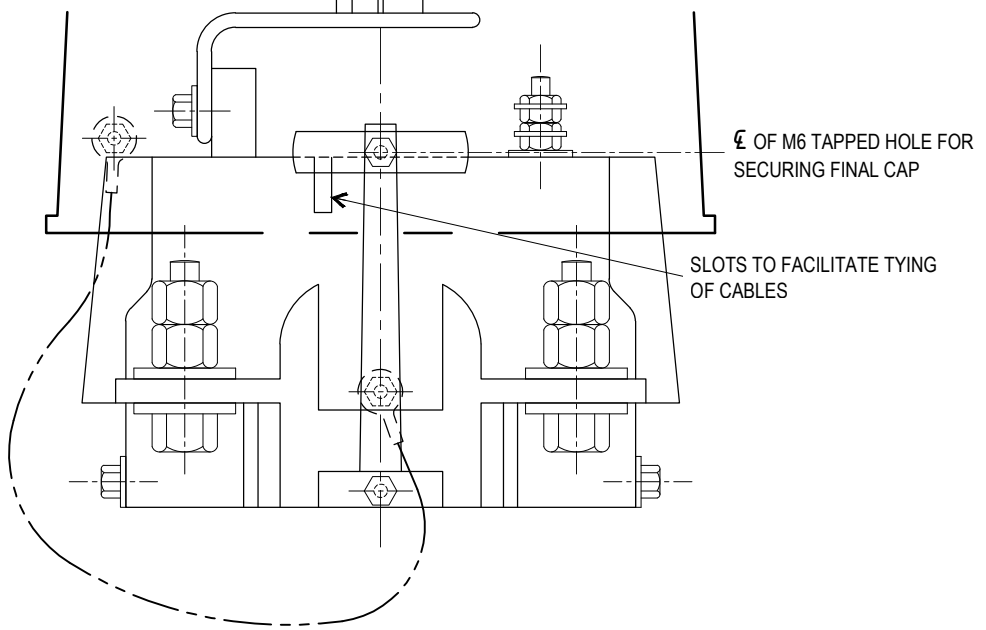
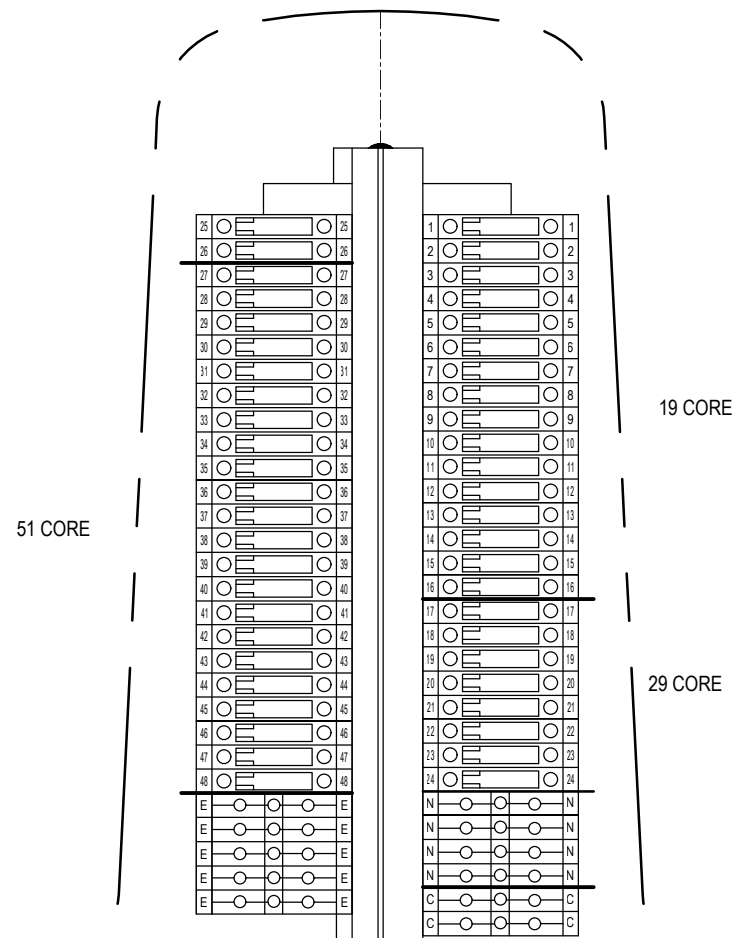
THE PURPOSE OF THIS STANDARD DRAWING IS TO PROVIDE TYPICAL DETAILS THAT SUPPORT THE DESIRED OUTCOMES OF THE BRISBANE CITY PLAN 2014 AND ASSOCIATED PLANNING SCHEME POLICIES. THE FITNESS FOR PURPOSE OF THIS STANDARD DRAWING FOR A SPECIFIC PROJECT SHOULD BE ASSESSED AND ACCEPTED BY AN APPROPRIATELY QUALIFIED DESIGNER AND/OR REGISTERED PROFESSIONAL ENGINEER OF QUEENSLAND (RPEQ).



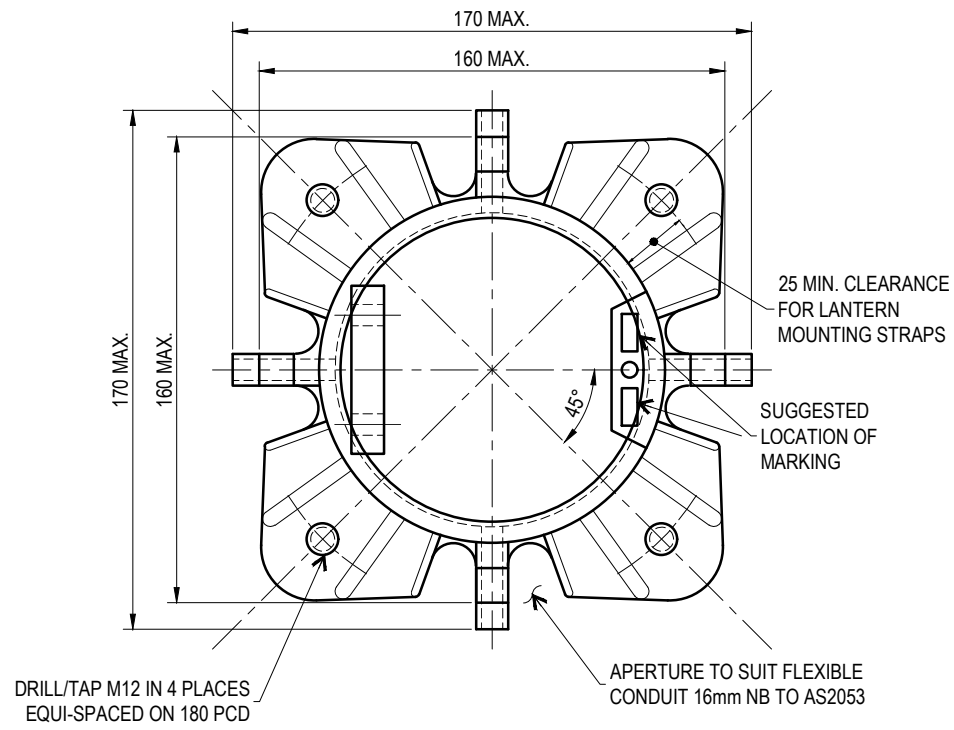
BRISBANE CITY COUNCIL STANDARD DRAWING

CONTROLLER BASE
INSTALLATION DETAILS

PUBLISH DATE	JUN 2023
SCALE	NOT TO SCALE
DRAWING NUMBER	BSD-4035
ORIGINAL SIZE	A3
REVISION	C

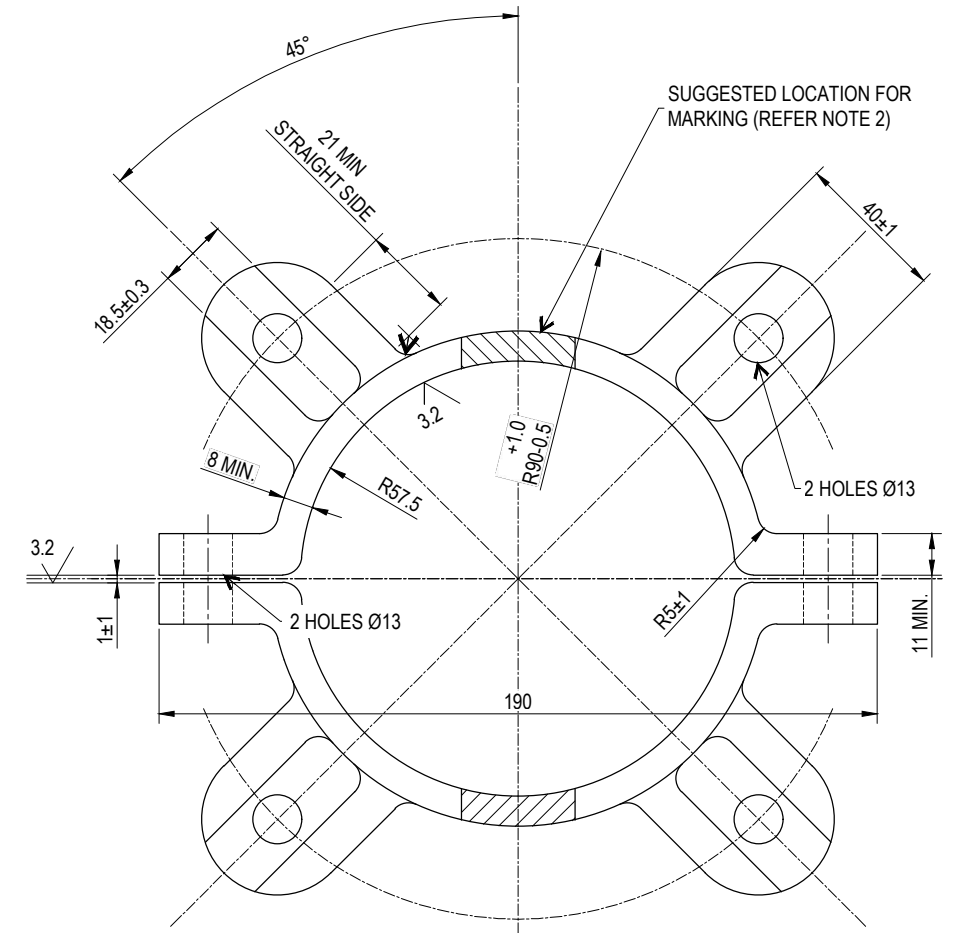


ELEVATION



PLAN

(SHOWING UPPER LANTERN SUPPORT BRACKET CASTING ONLY WITH ALL OTHER PARTS DELETED FOR CLARITY)

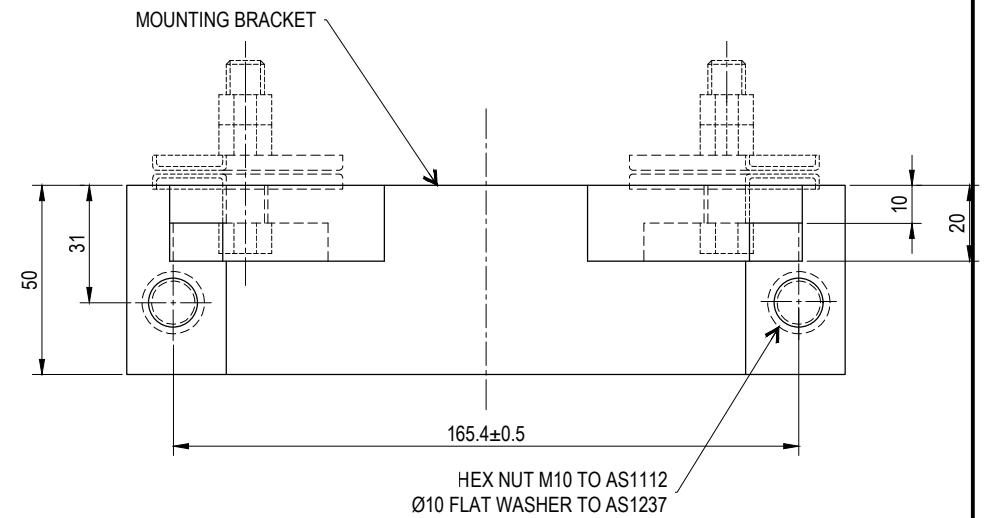


NOTES:

1. ALL EQUIPMENT MUST COMPLY WITH AS2339 "TRAFFIC SIGNAL POST & ATTACHMENTS".
2. MANUFACTURERS IDENTIFICATION & DATE OF MANUFACTURE SHALL BE MARKED ON THE CASTING CLEARLY, INDELIBLY AND WEATHER RESISTANT.
3. AN APPROVED ANTI-SEIZE COMPOUND CONTAINING ZINC DUST SHALL BE APPLIED TO ALL TAPPED HOLES IN THE CASTING.
4. NUMBERED TERMINALS SHALL BE ISOLATION TERMINALS.
5. FOR CABLE CONNECTIONS REFER BSD DRAWINGS LISTED IN TABLE 1 BELOW.
6. DIMENSIONS IN MILLIMETRES (U.N.O.).

TABLE 1

CABLE SIZE	DRAWING No.
19 CORE	BSD-4203
29 CORE	BSD-4204
51 CORE	BSD-4206



MOUNTING BRACKET DETAIL

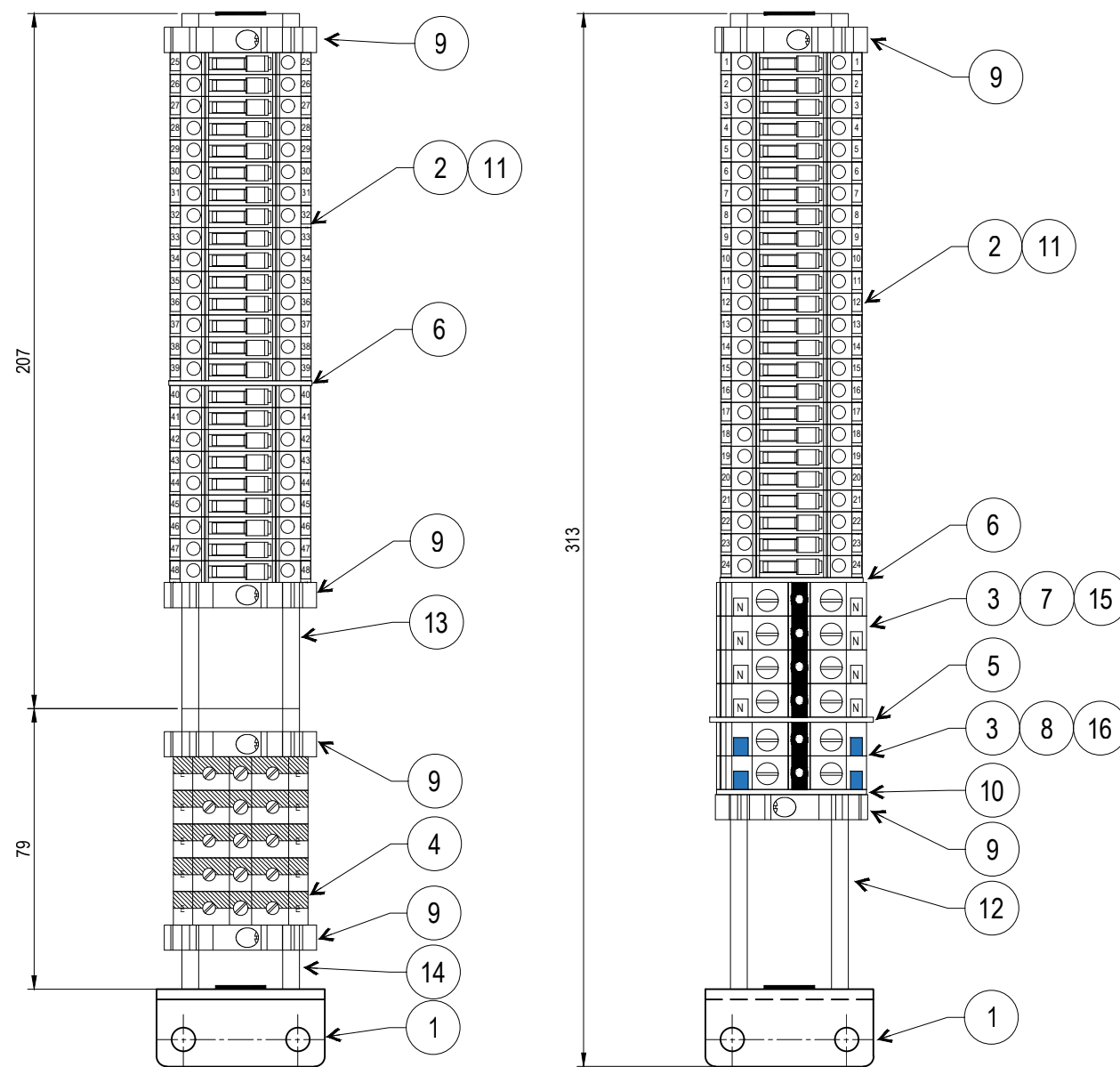
THE PURPOSE OF THIS STANDARD DRAWING IS TO PROVIDE TYPICAL DETAILS THAT SUPPORT THE DESIRED OUTCOMES OF THE BRISBANE CITY PLAN 2014 AND ASSOCIATED PLANNING SCHEME POLICIES. THE FITNESS FOR PURPOSE OF THIS STANDARD DRAWING FOR A SPECIFIC PROJECT SHOULD BE ASSESSED AND ACCEPTED BY AN APPROPRIATELY QUALIFIED DESIGNER AND/OR REGISTERED PROFESSIONAL ENGINEER OF QUEENSLAND (RPEQ).



BRISBANE CITY COUNCIL STANDARD DRAWING

TRAFFIC SIGNAL POST TOP ASSEMBLY
& LOWER MOUNTING BRACKET
SHEET 1 OF 2

PUBLISH DATE		JUN 2023
SCALE		NOT TO SCALE
DRAWING NUMBER		BSD-4101
ORIGINAL SIZE	REVISION	
A3	C	



REAR VIEW

FRONT VIEW

NOTES:

1. ASSEMBLY TO BE SEALED WITH COVER BAG (50 MICRON MINIMUM).

ITEM No.	PART No.	QTY.	DESCRIPTION.
16	160980CARD BLUE	4	DEK 5/5 BLUE TERMINAL MARKER
15	2007110000	8	DEK 5/5 TERMINAL MARKERS (N)
14	0236400000	1	TS35/15 ZINC STEEL - 79mm
13	0514300000	1	TS35/15 PVC RAIL - 207mm
12	0514300000	1	TS35/15 PVC RAIL - 283mm
11	2007120000	96	DEK 5/6 TERMINAL MARKERS
10	0117960000	1	END PLATE 2.5-10mm
9	1061200000	6	WEW 35/2 END BRACKET
8	0336700000	1	Q2 SCREWABLE CROSS CONNECT
7	0336900000	1	Q4 SCREWABLE CROSS CONNECT
6	0211360000	2	SAKR END PLATE
5	0130160000	1	SAK 4-10 PARTITION PLATE
4	0661160000	5	EK4/35 EARTH TERMINAL YELLOW/GREEN
3	0443660000	6	SAK 4/35 TERMINAL (BEIGE)
2	0172160000	48	SAKR DISCONNECT TERMINAL (BEIGE)
1	-	1	3mm 316 STAINLESS STEEL MOUNTING BRACKET
ITEM No.	PART No.	QTY.	DESCRIPTION.

THE PURPOSE OF THIS STANDARD DRAWING IS TO PROVIDE TYPICAL DETAILS THAT SUPPORT THE DESIRED OUTCOMES OF THE BRISBANE CITY PLAN 2014 AND ASSOCIATED PLANNING SCHEME POLICIES. THE FITNESS FOR PURPOSE OF THIS STANDARD DRAWING FOR A SPECIFIC PROJECT SHOULD BE ASSESSED AND ACCEPTED BY AN APPROPRIATELY QUALIFIED DESIGNER AND/OR REGISTERED PROFESSIONAL ENGINEER OF QUEENSLAND (RPEQ).



BRISBANE CITY COUNCIL STANDARD DRAWING

TRAFFIC SIGNAL
POST TOP ASSEMBLY
SHEET 2 OF 2

PUBLISH DATE	JUN 2023
SCALE	1:2
DRAWING NUMBER	BSD-4101
ORIGINAL SIZE	A3
REVISION	C

PARTS LIST

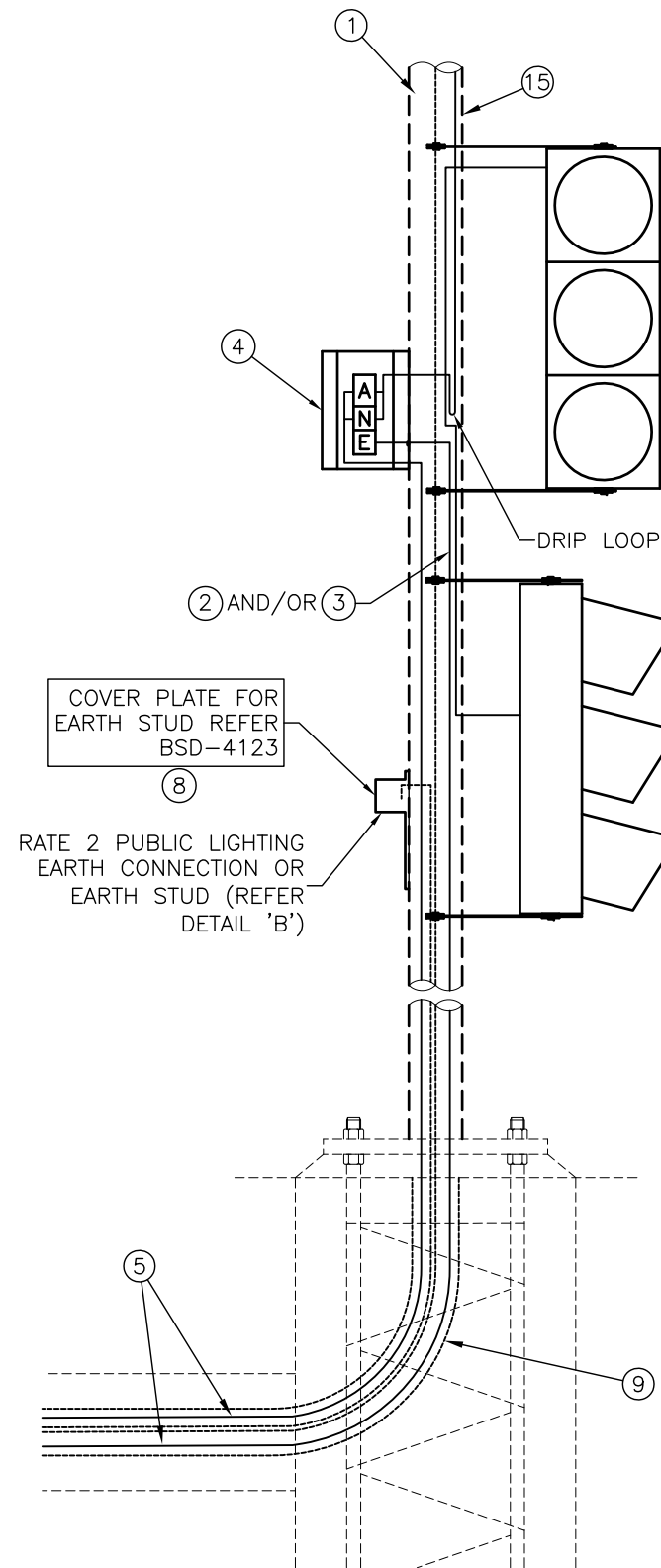
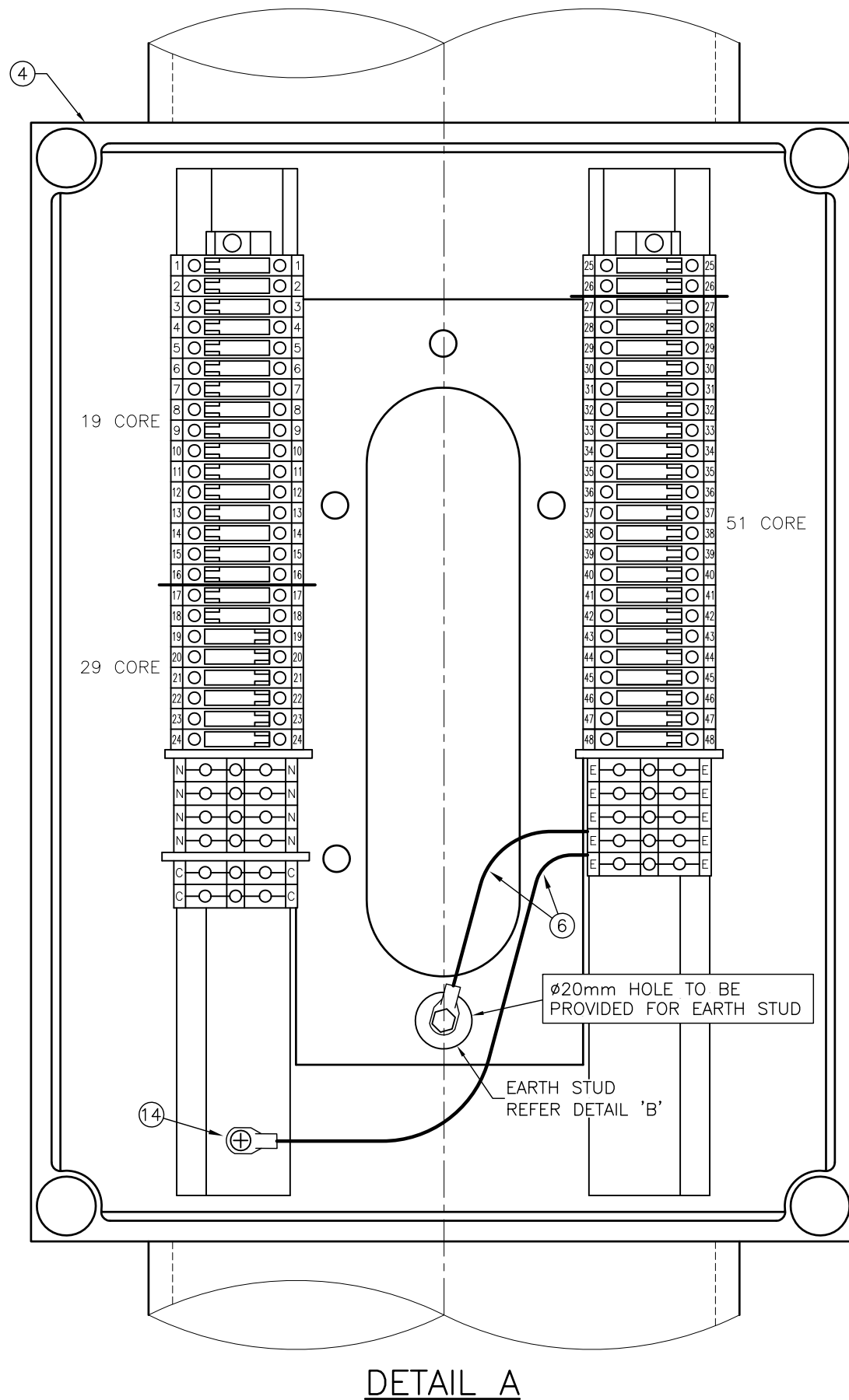
ITEM	DESCRIPTION	REMARKS
①	JOINT USE MAST ARM TRAFFIC SIGNAL AND ROAD LIGHTING POLE.	1 OFF
②	CABLE TO PEDESTRIAN LANTERN (S)	AS REQD.
③	CABLE TO TRAFFIC SIGNAL LANTERN (S)	AS REQD.
④	JUNCTION BOX MIMS - 3498	1 OFF
⑤	MULTICORE POWER CABLE AS PER AS2276.1	AS REQD.
⑥	CABLE, 6.0mm SQ. (7/1.04) 1C PVC GREEN/YELLOW	SEE NOTE 2
⑦	TERMINAL LUG, 6.0mm SQ. M8 HOLE	1 OFF
⑧	COVER PLATE FOR EARTH STUD FOR RATE 2 PUBLIC LIGHTING EARTH CABLE. REFER DETAIL 'B' & BSD-4123.	1 OFF
⑨	100mm NON - SLOTTED FLEXIBLE CONDUIT OR 100mm PVC HD U/G CONDUIT	AS REQD.
⑩	M8 x 1.25 HEX NUT - BRASS	AS REQD.
⑪	8 DIA. FLAT WASHER BRASS	AS REQD.
⑫	8 DIA. SPRING WASHER ZINC PLATED	AS REQD.
⑬	M8 x 1.25 BRASS BOOKER ROD 55mm LONG	1 or 2 AS REQD.
⑭	M5 x 15mm SCREW, FLAT WASHER, SPRING WASHER, AND NUT	1 OFF
⑮	CABLE TO TRAFFIC SIGNAL LANTERN ON MAST ARM OUTREACH	AS REQD.

NOTES:

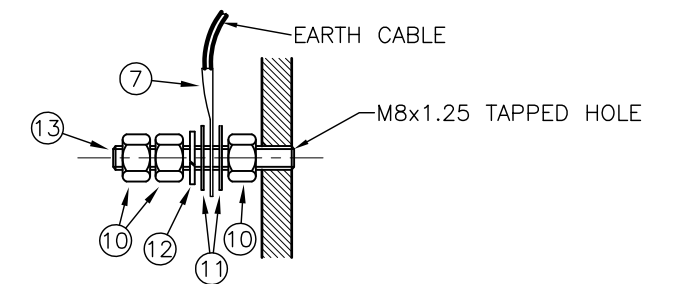
- MINIMUM CABLE SIZES AND COLOURS AS PER AS 3000 "SAA WIRING RULES".
- ENSURE EARTH CONNECTION IS PROPERLY TIGHTENED BEFORE INSTALLING TRAFFIC SIGNALS TERMINAL PANEL.
- NUMBERED TERMINALS SHALL BE ISOLATION TERMINALS.
- RATE 2 PUBLIC LIGHTING EARTH WIRE MUST NOT TERMINATE IN TRAFFIC SIGNAL JUNCTION BOX.

REFERENCED DOCUMENTS

AUSTRALIAN STANDARDS:
 AS2276.1 SAA MULTICORE POWER CABLES
 AS 3000 SAA WIRING RULES



WIRING DETAILS



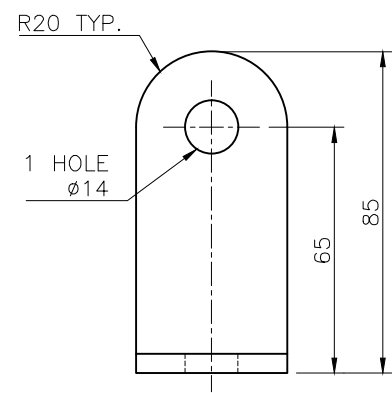
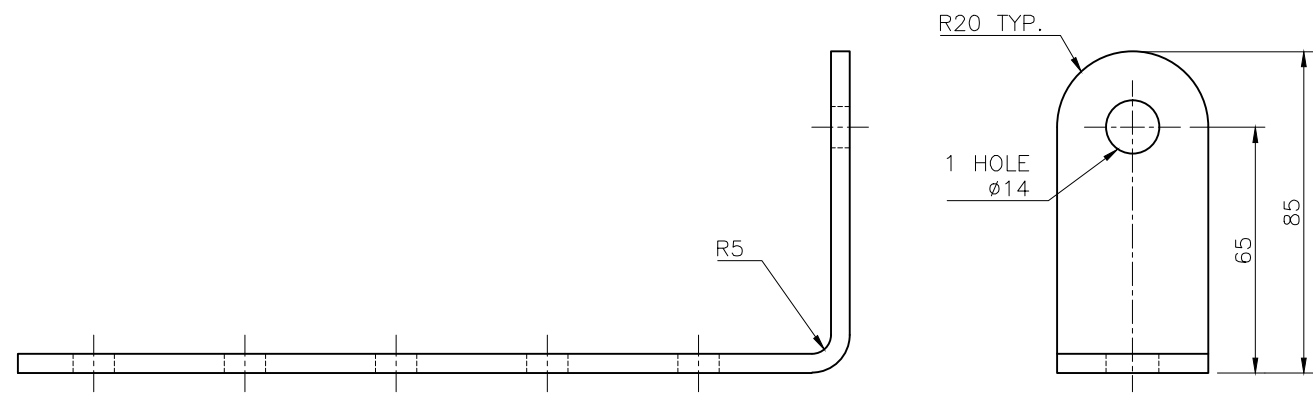
DETAIL B
 ASSEMBLY SEQUENCE FOR
 EARTH STUD

ISSUE	AMENDMENT	DRAWN DATE	CHK'D DATE	APPR'D DATE
B	DELETED 36 CORE CABLE NOTE, TERMINAL LAYOUT CHANGED	BW 8.06.16	AMG 8.06.16	AMG 8.06.16
A	ORIGINAL ISSUE	Oct '13	Oct '13	Oct '13

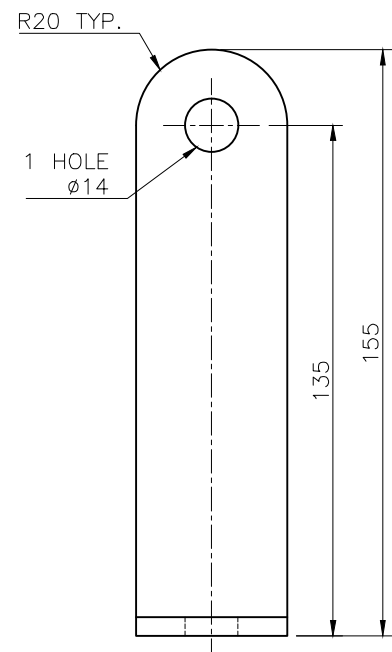
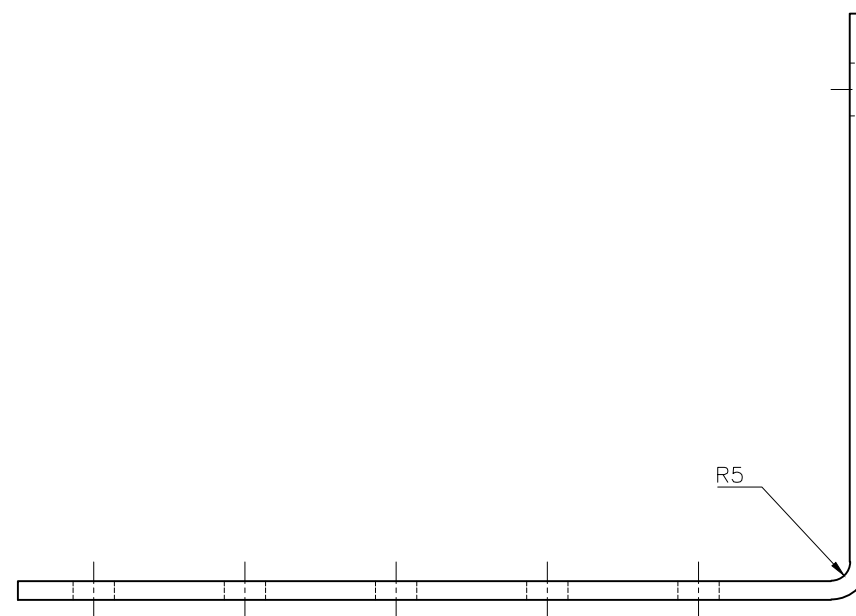
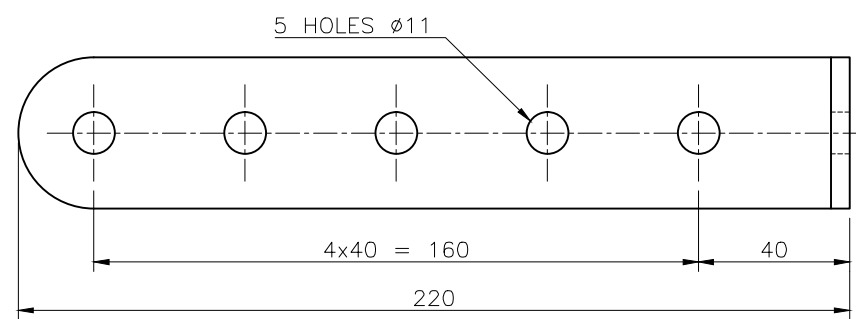
DESIGN	DATE
Std Dwgs WG	April '01
CPO - P&D	April '01
R. WILSON	May '01
BSD-4102.dwg	
SUPERSEDES UMS-600-041	



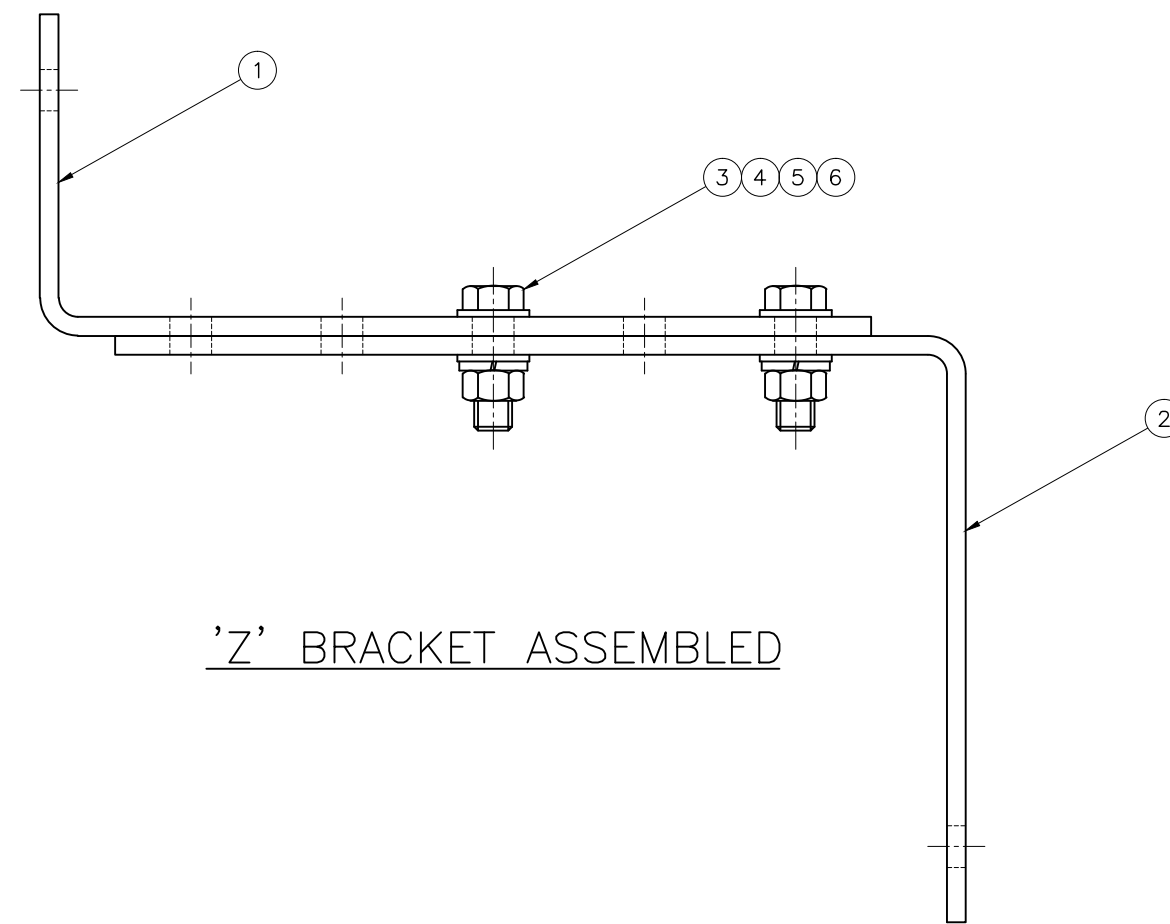
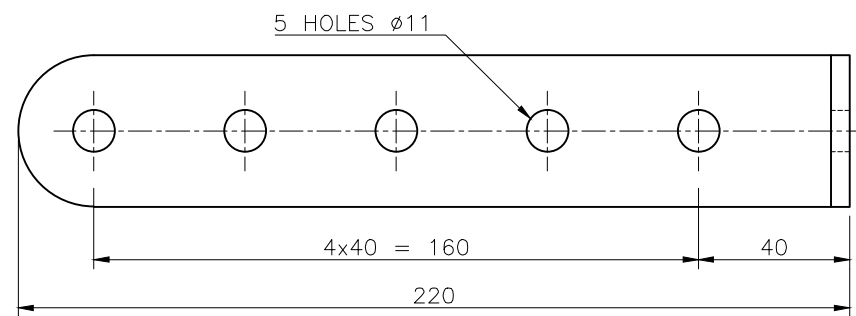
BRISBANE CITY COUNCIL STANDARD DRAWING	
TRAFFIC SIGNAL JUNCTION BOX AND EARTHING DETAIL JOINT USE POLE SHEET 1 OF 2	
SCALE: NOT TO SCALE	DWG No. BSD-4102
ORIGINAL SIZE: A3	REVISION: B



ITEM 1



ITEM 2



'Z' BRACKET ASSEMBLED

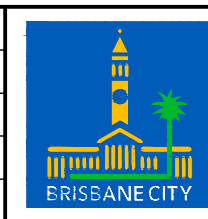
NOTES:

1. DEBURR AND REMOVE SHARP CORNERS AND EDGES.
2. GENERAL TOLERANCE ± 1.0 AND FOR HOLE CENTRES & HOLES ± 0.5
3. ALL ITEMS SHALL BE SUPPLIED & FITTED (AS SHOWN ABOVE) BY THE MANUFACTURER.
4. ITEMS 1 AND 2 TOLERANCES IN ACCORDANCE WITH AS3679.
5. ALL DIMENSIONS IN MILLIMETRES (U.N.O.).

ITEM	DESCRIPTION	MATERIAL	FINISH	QTY
6	FLAT WASHER M10 TO AS1237	STAINLESS STEEL	NATURAL	4
5	SPRING WASHER M10 TO AS1968	STAINLESS STEEL	NATURAL	2
4	HEX NUT M10 TO AS1112	STAINLESS STEEL	NATURAL	2
3	HEX HEAD SCREW M10x30 TO AS1111	STAINLESS STEEL	NATURAL	2
2	BRACKET ITEM 1 40x5 FLAT TO AS3679	MILD STEEL	HD GALV TO AS/NZS4680	1
1	BRACKET ITEM 2 40x5 FLAT TO AS3679	MILD STEEL	HD GALV TO AS/NZS4680	1

ISSUE	AMENDMENT	DRAWN DATE	CHK'D DATE	APPR'D DATE
A	ORIGINAL ISSUE	Oct '13	Oct '13	Oct '13

DRAWING AUTHORISED FOR PUBLICATION			
DESIGN	Std Dwgs WG	DATE	April '09
DRAWN	CPO - P&D	DATE	April '09
CHECKED	I. Condric	DATE	Dec '10
DRAWING FILENAME	BSD-4103 (A) Adjustable 'Z' bracket for 200mm lanterns.dwg		
ASSOCIATED PLANS	SUPERSEDES UMS-600-042		



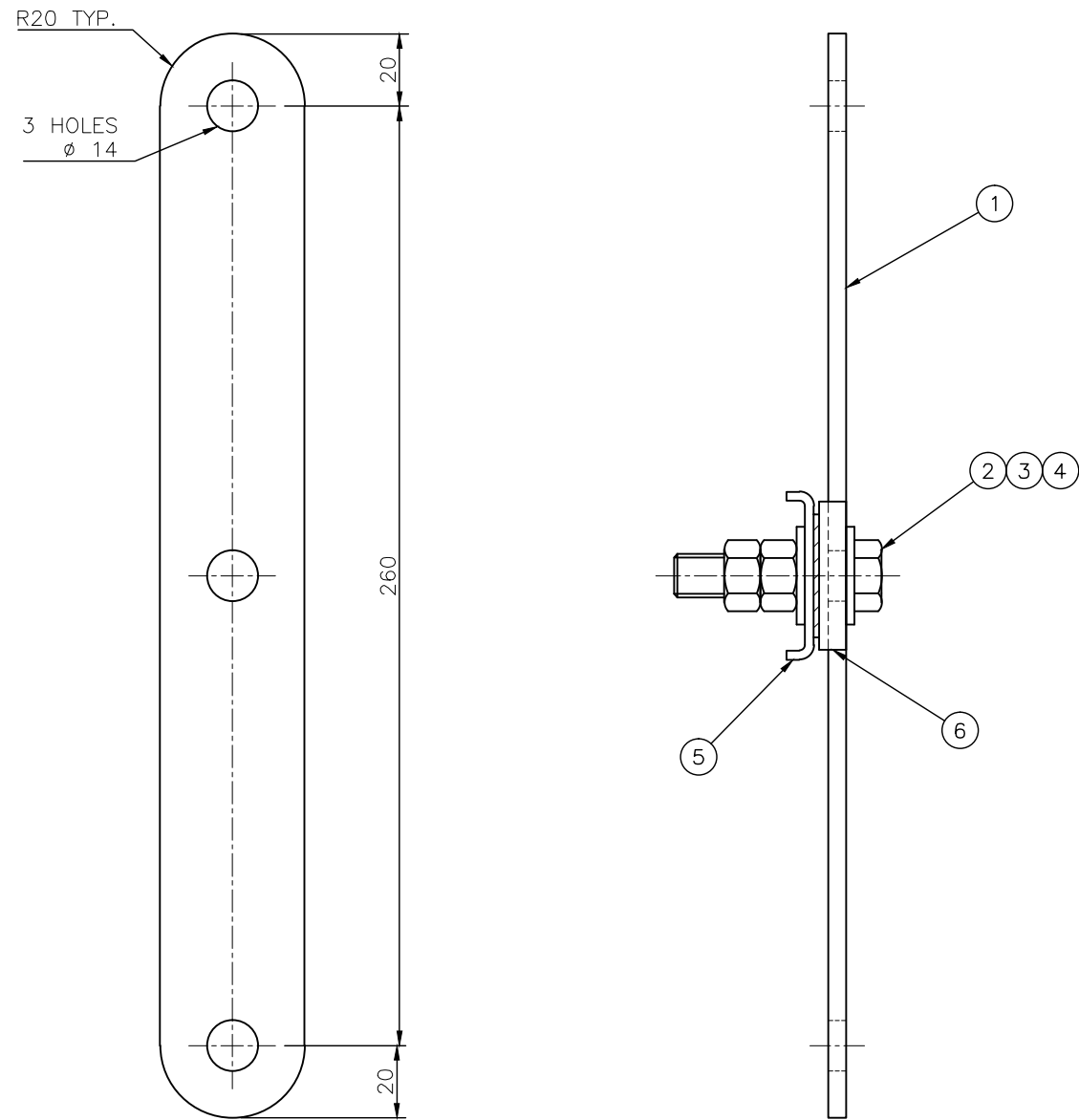
BRISBANE CITY COUNCIL STANDARD DRAWING

SCALE: NOT TO SCALE

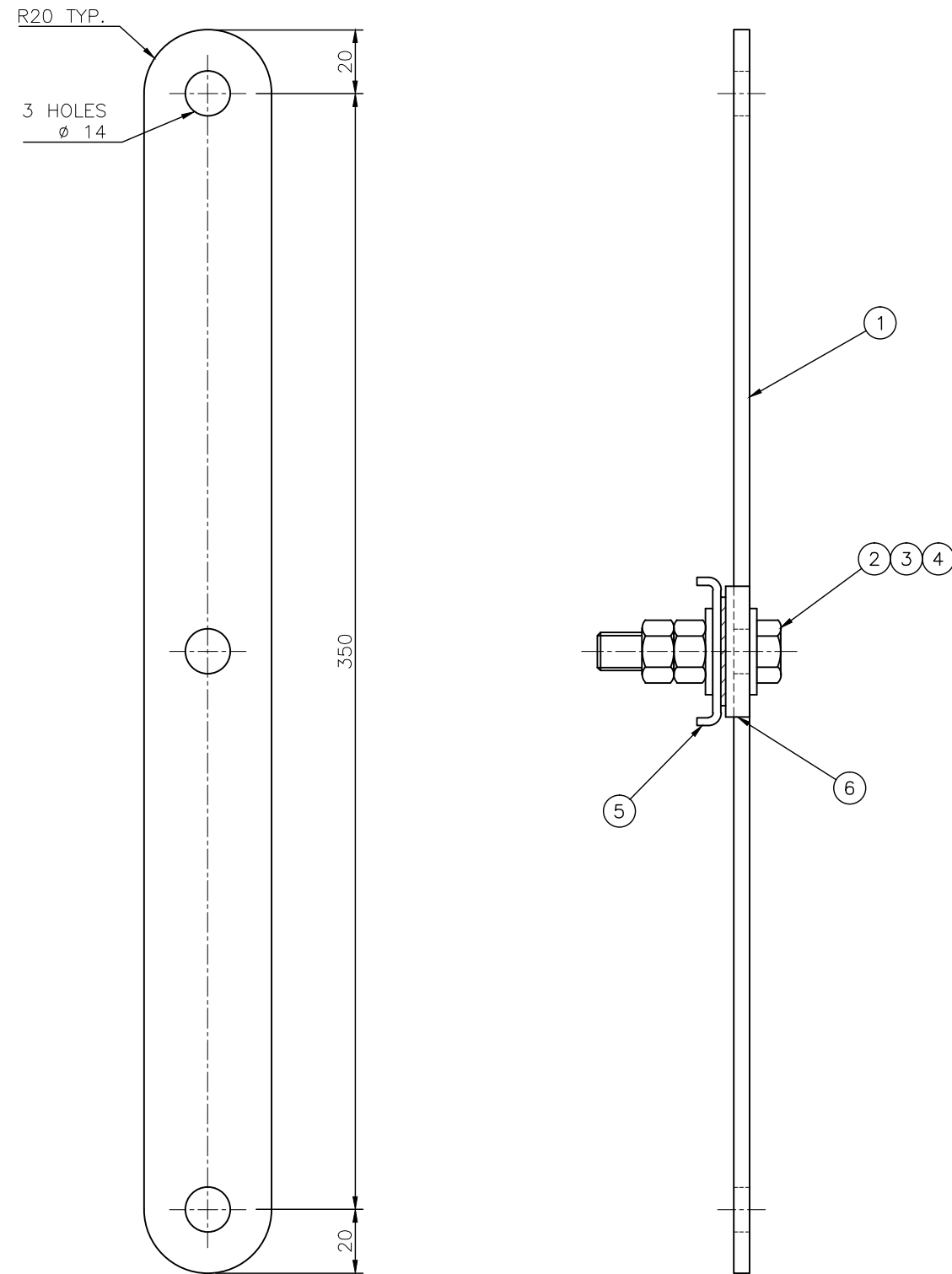
DWG No. **BSD-4103**

ORIGINAL SIZE: A3 REVISION: A

ADJUSTABLE 'Z' BRACKET FOR 200mm LANTERNS



FOR DUAL 200mm LANTERNS




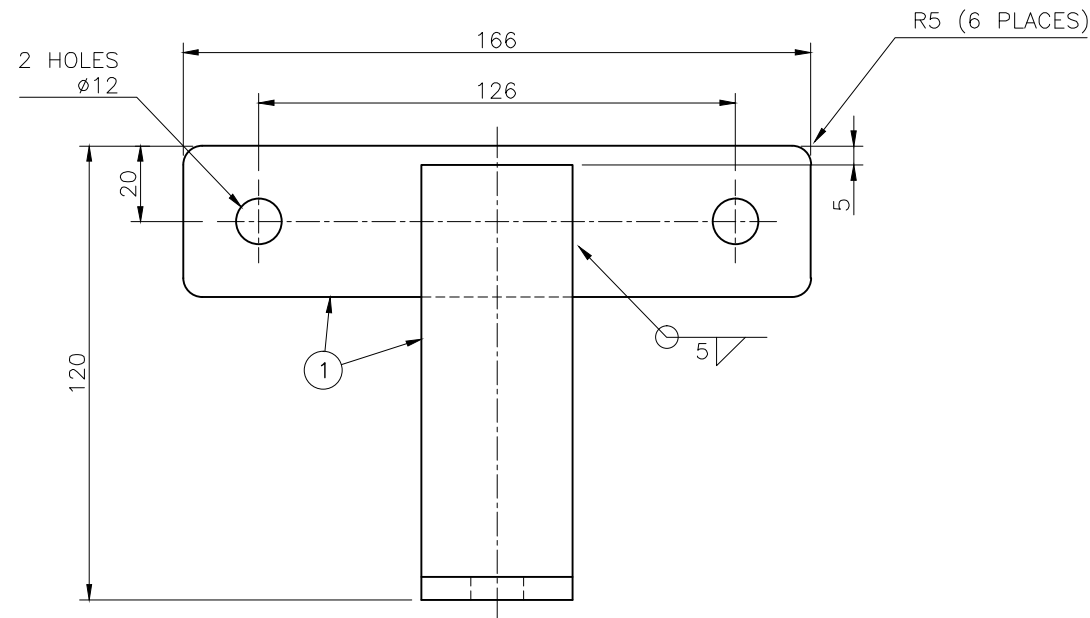
FOR DUAL 300mm LANTERNS

NOTES:

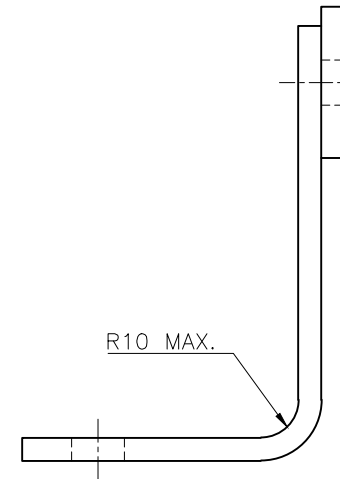
1. DEBURR AND REMOVE SHARP CORNERS AND EDGES.
2. GENERAL TOLERANCE ± 1.0 AND FOR HOLE CENTRES & HOLES ± 0.5
3. ALL ITEMS SHALL BE SUPPLIED AND FULLY ASSEMBLED (AS SHOWN) BY THE MANUFACTURER.
4. THE SPECIAL LOCK WASHER (ITEM 6) TO BE FITTED TO THE STRAP WITH THE STANDARD LOCK WASHER (ITEM 5), DIMPLE TO DIMPLE.
5. LOCK WASHERS TO BE MANUFACTURED TO BSD-4106.
6. ALL DIMENSIONS IN MILLIMETRES (U.N.O.).

ITEM	DESCRIPTION	MATERIAL	FINISH	QTY
6	SPECIAL LOCK WASHER (REFER BSD-4106)	STAINLESS STEEL	BLACK	1
5	STANDARD LOCK WASHER (REFER BSD-4106)	STAINLESS STEEL	NATURAL	1
4	HEX NUT M12 TO AS1112	STAINLESS STEEL	NATURAL	2
3	HEX HEAD BOLT M12x50 TO AS1111	STAINLESS STEEL	NATURAL	1
2	FLAT WASHER M12 LARGE SERIES TO AS1237	STAINLESS STEEL	NATURAL	2
1	STEEL FLAT BAR 40x5 TO AS3679	MILD STEEL	HD GALV TO AS/NZS4680	1

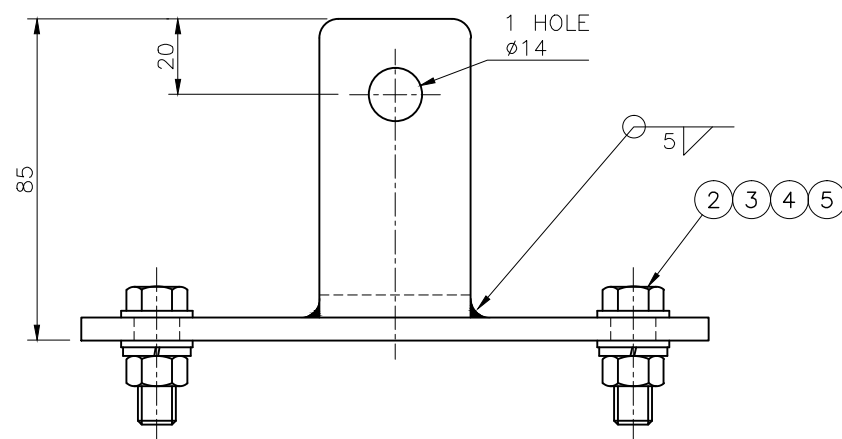
DRAWING AUTHORISED FOR PUBLICATION				DESIGN	Std Dwgs WG	DATE	April '09		BRISBANE CITY COUNCIL STANDARD DRAWING	
P COTTON SIGNATURE ON ORIGINAL				DRAWN	CPO - P&D	DATE	April '09		SCALE NOT TO SCALE	
MANAGER CITY ASSETS - R.P.E.Q. 2 5 4 6				CHECKED	I. Condric	DATE	Dec '10		DWG No. BSD-4104	
DESIGN APPROVED				DRAWING FILENAME	BSD-4104 (A) Tee-bar strap for dual lanterns.dwg				ORIGINAL SIZE	
I. CONDRC SIGNATURE ON ORIGINAL DATED 12/10				ASSOCIATED PLANS	SUPERSEDES UMS-600-043			REVISION		
PRINCIPAL ENGINEER ROAD NETWORK INFRASTRUCTURE - R.P.E.Q. 8 5 9 1								A3		A
A	Drawing Converted from UMS Series April 2014			APR '14	APR '14	APR '14				
ISSUE	AMENDMENT			DRAWN DATE	CHK'D DATE	APPR'D DATE				



TOP VIEW



SIDE VIEW



FRONT VIEW

NOTES:

1. ALL BURRS, SHARP EDGES AND WELDING SCALE TO BE REMOVED BEFORE GALVANISING.
2. GENERAL TOLERANCE ± 1.0 AND FOR HOLE CENTRES & HOLES ± 0.5
3. ON DELIVERY ITEMS 2, 3, 4 & 5 TO BE SUPPLIED FITTED AS SHOWN.
4. ALL DIMENSIONS IN MILLIMETRES (U.N.O.).

ITEM	DESCRIPTION	MATERIAL	FINISH	QTY
5	SPRING WASHER M10 TO AS1968	STAINLESS STEEL	NATURAL	2
4	FLAT WASHER M10 TO AS1237	STAINLESS STEEL	NATURAL	4
3	HEX NUT M10 TO AS1112	STAINLESS STEEL	NATURAL	2
2	HEX HEAD SCREW M10x30 TO AS1111	STAINLESS STEEL	NATURAL	2
1	BRACKET 40x6 THICK TO AS3679	MILD STEEL	HD GALV TO AS/NZS4680	1

ISSUE	AMENDMENT	DRAWN DATE	CHK'D DATE	APPR'D DATE
A	Drawing Converted from UMS Series April 2014	APR '14	APR '14	APR '14

DRAWING AUTHORISED FOR PUBLICATION			
P COTTON SIGNATURE ON ORIGINAL			
MANAGER CITY ASSETS - R.P.E.Q: 2 5 4 6			
DESIGN APPROVED			
I. CONDRIK SIGNATURE ON ORIGINAL DATED 12/10			
PRINCIPAL ENGINEER ROAD NETWORK INFRASTRUCTURE - R.P.E.Q: 8 5 9 1			
DESIGN	Std Dwgs WG	DATE	April '09
DRAWN	CPO - P&D	DATE	April '09
CHECKED	I. Condric	DATE	Dec '10
DRAWING FILENAME	BSD-4105(A) Mounting bracket for audio tactile housing on mast arms and Type 6 posts.dwg		
ASSOCIATED PLANS	SUPERSEDES UMS-600-044		



BRISBANE CITY COUNCIL STANDARD DRAWING

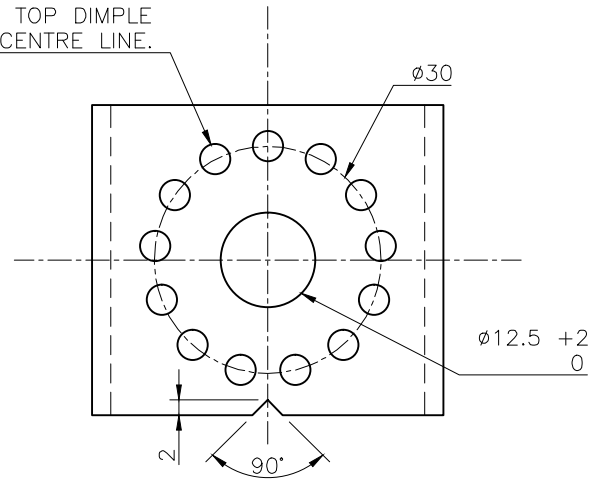
SCALE: NOT TO SCALE

DWG No. **BSD-4105**

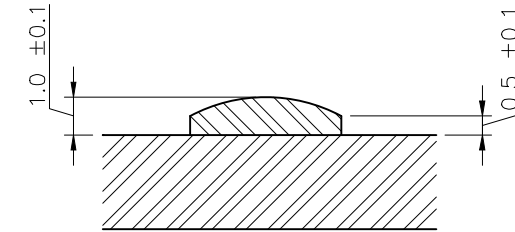
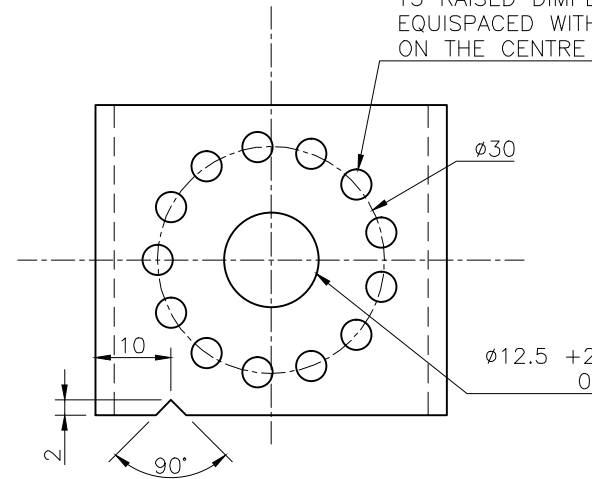
MOUNTING BRACKET FOR AUDIO TACTILE HOUSING ON MAST ARMS & TYPE 6 POSTS

ORIGINAL SIZE: A3 REVISION: A

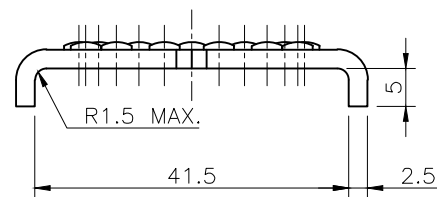
13 RAISED DIMPLES $\phi 4 \pm 0.1$
EQUISPACED WITH TOP DIMPLE
ON THE CENTRE LINE.



13 RAISED DIMPLES $\phi 4 \pm 0.1$
EQUISPACED WITH TOP DIMPLE
ON THE CENTRE LINE.

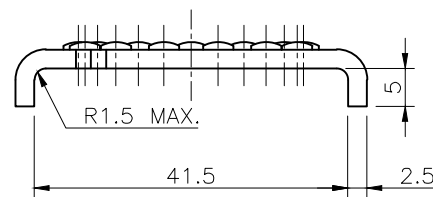


DIMPLE PROFILE
SCALE 1:5



TYPE 1 LOCK WASHER

STANDARD LOCK WASHER FOR LANTERN
MOUNTING STRAP AND LOWER MOUNTING
BRACKET



TYPE 2 LOCK WASHER

SPECIAL LOCK WASHER FOR T-BAR ASSEMBLIES
FOR DUAL LANTERNS
(REFER NOTE 5)

NOTES:

1. REMOVE SHARP CORNERS AND EDGES.
2. MATERIAL: STAINLESS STEEL GRADE 304 2B DULL.
3. FINISH: NATURAL.
4. TOLERANCE UNLESS OTHERWISE STATED:
 - GENERAL DIMENSIONS $\pm 0.5\text{mm}$
 - ANGULAR $\pm 1^\circ$
5. TYPE 2 LOCK WASHER TO BE USED ONLY FOR THE TEE-BAR ASSEMBLY FOR DUAL LANTERNS.
6. ALL DIMENSIONS IN MILLIMETRES (U.N.O.).

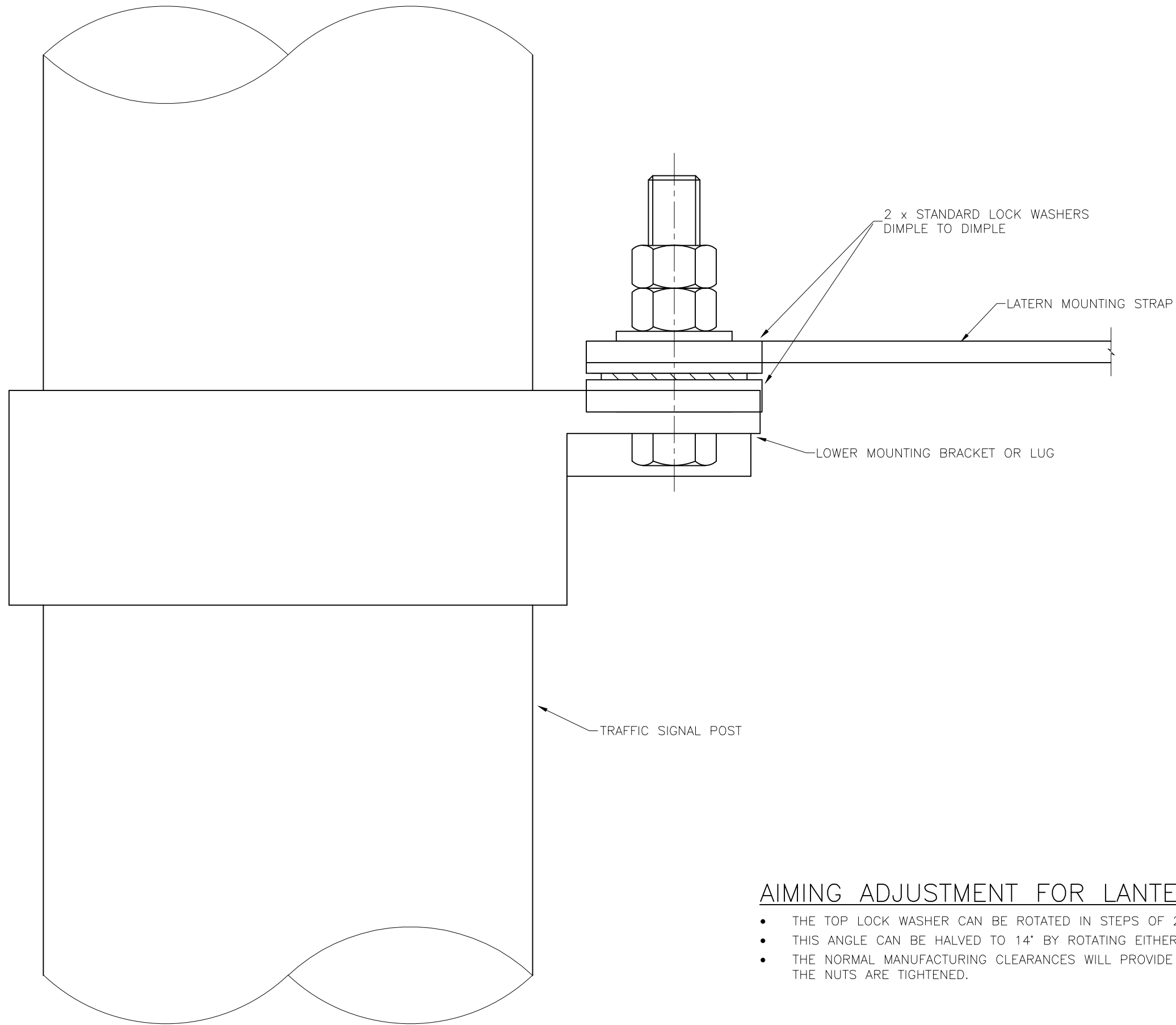
A	Drawing Converted from UMS Series April 2014	APR '14	APR '14	APR '14
ISSUE	AMENDMENT	DRAWN DATE	CHK'D DATE	APPR'D DATE

DRAWING AUTHORISED FOR PUBLICATION
P COTTON SIGNATURE ON ORIGINAL
MANAGER CITY ASSETS - R.P.E.Q: 2 5 4 6
DESIGN APPROVED
I. CONDRIK SIGNATURE ON ORIGINAL
DATED 12/10
PRINCIPAL ENGINEER
ROAD NETWORK INFRASTRUCTURE - R.P.E.Q: 8 5 9 1

DESIGN	Std Dwgs WG	DATE	April '09
DRAWN	CPO - P&D	DATE	April '09
CHECKED	I. Condric	DATE	Dec '10
DRAWING FILENAME	BSD-4106 (A) Lock washers.dwg		
ASSOCIATED PLANS	SUPERSEDES UMS-600-045		



BRISBANE CITY COUNCIL STANDARD DRAWING	
LOCK WASHERS	
SCALE	NOT TO SCALE
DWG No.	BSD-4106
ORIGINAL SIZE	A3
REVISION	A



AIMING ADJUSTMENT FOR LANTERN MOUNTING STRAPS

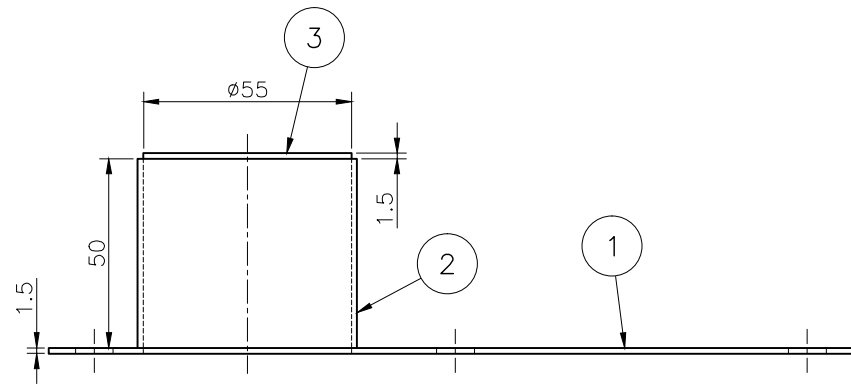
- THE TOP LOCK WASHER CAN BE ROTATED IN STEPS OF 28° (DIMPLE TO DIMPLE).
- THIS ANGLE CAN BE HALVED TO 14° BY ROTATING EITHER LOCKWASHER 180°.
- THE NORMAL MANUFACTURING CLEARANCES WILL PROVIDE AN ADJUSTMENT OF 5° EITHER WAY BEFORE THE NUTS ARE TIGHTENED.

A	Drawing Converted from UMS Series April 2014	APR '14	APR '14	APR '14
ISSUE	AMENDMENT	DRAWN DATE	CHK'D DATE	APPR'D DATE

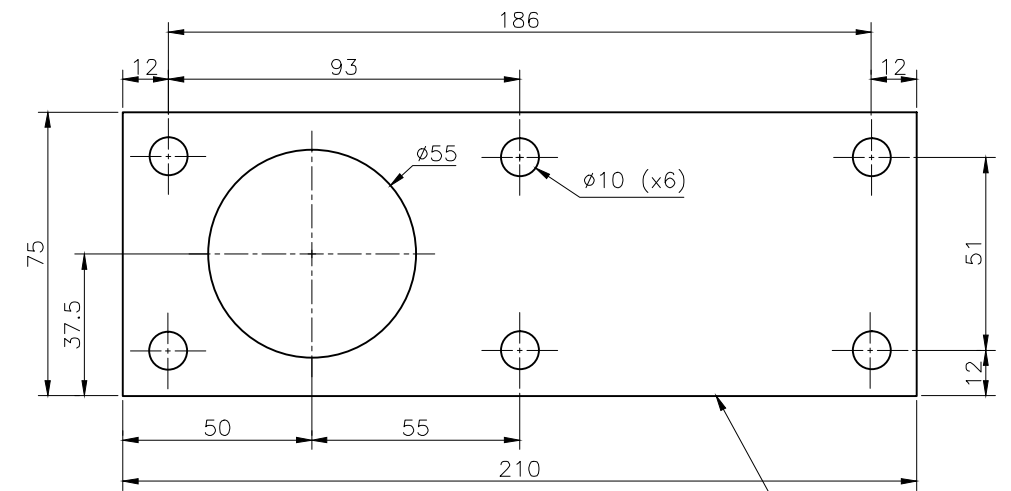
DRAWING AUTHORISED FOR PUBLICATION			
P COTTON SIGNATURE ON ORIGINAL			
MANAGER CITY ASSETS - R.P.E.Q: 2 5 4 6			
DESIGN APPROVED			
I. CONDRIK SIGNATURE ON ORIGINAL DATED 12/10			
PRINCIPAL ENGINEER ROAD NETWORK INFRASTRUCTURE - R.P.E.Q: 8 5 9 1			
DESIGN	Std Dwgs WG	DATE	April '09
DRAWN	CPO - P&D	DATE	April '09
CHECKED	I. Condric	DATE	Dec '10
DRAWING FILENAME	BSD-4107 (A) Assembly detail of lock washer.dwg		
ASSOCIATED PLANS	SUPERSEDES UMS-600-046		



BRISBANE CITY COUNCIL STANDARD DRAWING	
ASSEMBLY DETAIL OF LOCK WASHERS	
SCALE	NOT TO SCALE
DWG No.	BSD-4107
ORIGINAL SIZE	A3
REVISION	A

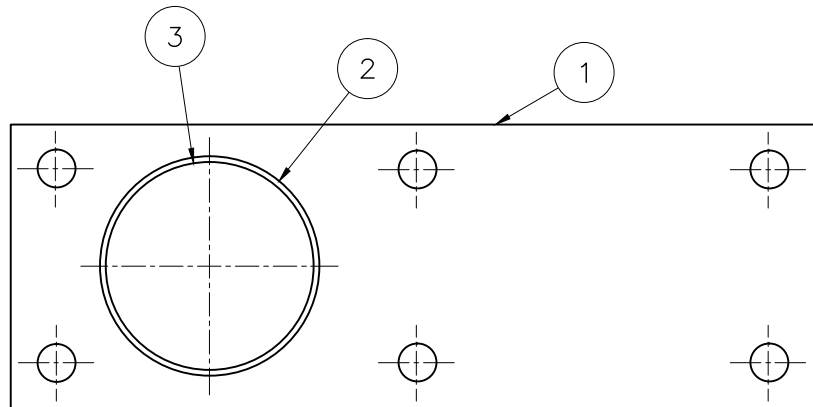


ASSEMBLY
SIDE VIEW

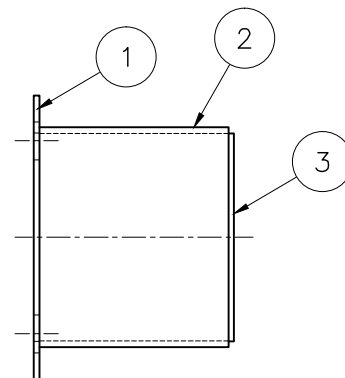


ITEM 1
TOP VIEW

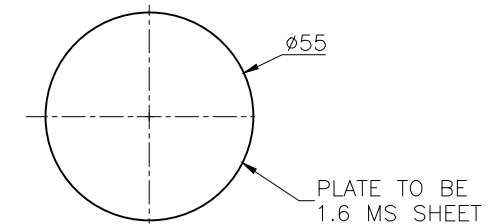
PLATE TO BE
1.6 MS SHEET



ASSEMBLY
TOP VIEW

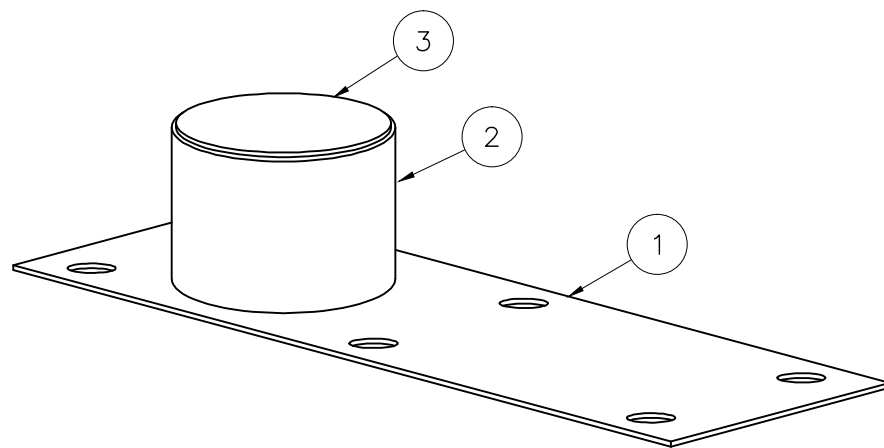


ASSEMBLY
END VIEW



ITEM 3
TOP VIEW

PLATE TO BE
1.6 MS SHEET



COMPLETED ASSEMBLY
ISOMETRIC VIEW

NOTES:

1. MATERIALS TO BE GALVANIZED FINISH.
2. ALL DIMENSIONS IN MILLIMETRES (U.N.O.).

COVER PLATE COMPONENTS

ITEM	PART NO.	REV.	DESCRIPTION	QTY.	MATERIAL	THICK	LENGTH	WIDTH	I.D.	REMARKS
1	FSG20100-1	A	BOTTOM PLATE	1	MILD STEEL	1.5	210	75		PROFILE
2	FSG20100-2	A	TUBE	1	MILD STEEL	1.5	50		ø55	CUT
3	FSG20100-3	A	TOP COVER	1	MILD STEEL	1.5			ø55	ø55 PROFILE

A	Drawing Converted from UMS Series April 2014	APR '14	APR '14	APR '14
ISSUE	AMENDMENT	DRAWN DATE	CHK'D DATE	APPR'D DATE

DRAWING AUTHORIZED FOR ISSUE G R BLAKEY SIGNATURE ON ORIGINAL - DATED 24/07/12				DESIGN	Fld Serv Group	DATE	Aug'11
ASSET ENGINEERING MANAGER STRATEGIC ASSET MANAGEMENT PLANNING				DRAWN	T. Aitenbicher	DATE	Aug,11
DESIGN APPROVED INGA CONDRC SIGNATURE ON ORIGINAL - DATED 24/04/12				CHECKED	G. Herbert (FSG)	DATE	Aug,11
PRINCIPAL ENGINEER STRATEGIC ASSET MANAGEMENT PLANNING				DRAWING FILENAME	BSD-4108.dwg		
				ASSOCIATED PLANS	SUPERSEDES UMS-600-047		



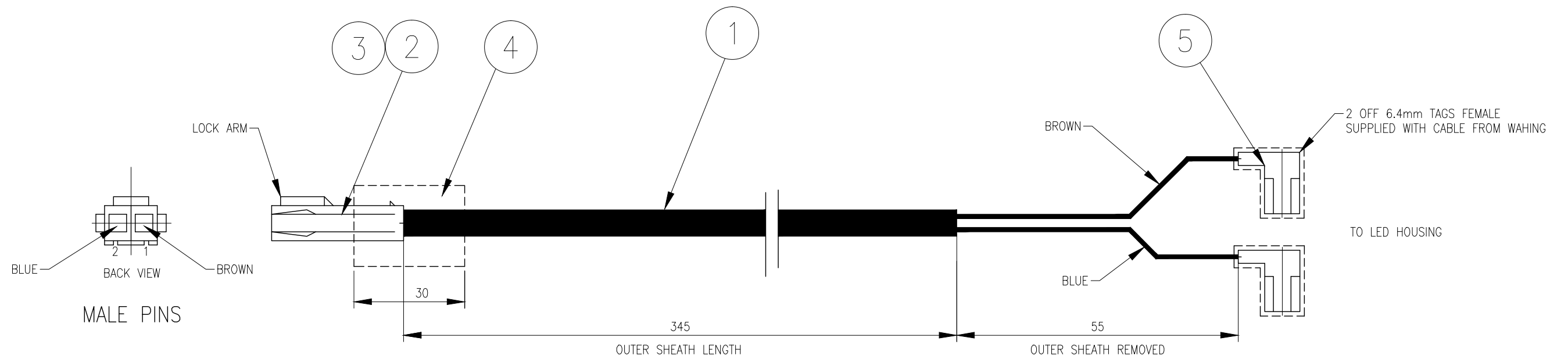
BRISBANE CITY COUNCIL STANDARD DRAWING

COVER PLATE ASSEMBLY
ON MAST ARM

SCALE: NOT TO SCALE

DWG No. **BSD-4108**

ORIGINAL SIZE: A3 REVISION: A



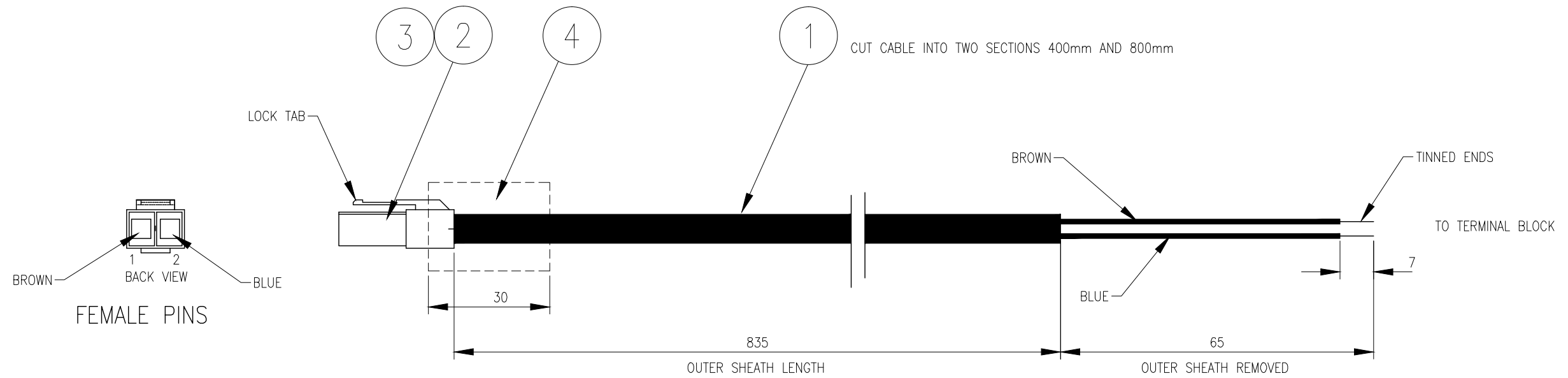
5	PC	TAG RIGHT ANGLE 6.4X0.8 WITH SLEEVE DOUBLE GRIP	CABAC FIQC1.25-6.4DG	2
4	PH	SELF AMALGAMATING TAPE BLACK -CABAC PT NO. SAT1/ALTERNATIVE HEATSHRINK 16mm WITH GLUE	SOANAR WH-5644	60mm/30mm
3	PC0595	CRIMP PIN (MALE)	JST PT NO SVM-61T-P2.0/OR EQUIVALENT	2
2	PC0592	REC HOUSING 2 WAY	JST PT NO VLR-02V/OR EQUIVALENT	1
1	PC1060	CABLE 24/0.2 (0.75mm SQ) BLACK OUTER INS. PVC V90		400mm
ITEM	PART NO	DESCRIPTION		QTY

ISSUE	AMENDMENT	DRAWN DATE	CHK'D DATE	APPR'D DATE
B	Drawing Title Amended	JAN '16	JUL '16	JUL '16
A	ORIGINAL ISSUE	BW 3.12.12	CJC 3.12.12	AH 11.12.12

DRAWING AUTHORISED FOR PUBLICATION I. CONDRIK APPROVED JUNE 2015				DESIGN	RE	DATE	3.12.14
For ASSET ENGINEERING MANAGER STRATEGIC ASSET MANAGEMENT				DRAWN	BW	DATE	3.12.14
DESIGN APPROVED				CHECKED	CJC	DATE	11.12.14
ANNA HEBRON, DEC 2014				DRAWING FILENAME	BSD-4109 (B) LED Lantern Cable -Lantern end - Sheet 1 of 2.dwg		
BRANCH MANAGER CONGESTION REDUCTION UNIT				ASSOCIATED PLANS			



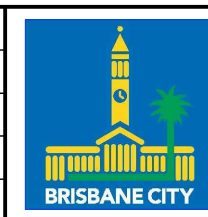
BRISBANE CITY COUNCIL STANDARD DRAWING	
LED LANTERN CABLE LANTERN END SHEET 1 OF 2	
SCALE	NOT TO SCALE
DWG No.	BSD-4109
ORIGINAL SIZE	REVISION
A3	B



ITEM	PART NO	DESCRIPTION	QTY
		SOANAR WH-5644	
4	PH	SELF AMALGAMATING TAPE BLACK - CABAC PT NO. SAT1 / ALTERNATIVE HEATSHRINK 16mm WITH GLUE SOANAR WH-5644	60mm/30mm
3	PC0596	CRIMP PIN (FEMALE) JST PT NO SVF-61T-P2.0/OR EQUIVALENT	2
2	PC0591	REC HOUSING 2 WAY JST PT NO VLP-02V/OR EQUIVALENT	1
1	PC1061	CABLE 24/0.2 (0.75MM SQ) BLACK OUTER INS. PVC V90.	900mm

ISSUE	AMENDMENT	DRAWN DATE	CHK'D DATE	APPR'D DATE
B	Drawing Title Amended	JAN '16	JUL '16	JUL '16
A	ORIGINAL ISSUE	BW 3.12.12	CJC 3.12.12	AH 11.12.12

DRAWING AUTHORISED FOR PUBLICATION I. CONDRIK APPROVED JUNE 2015				DESIGN	RE	DATE	3.12.14
For ASSET ENGINEERING MANAGER STRATEGIC ASSET MANAGEMENT				DRAWN	BW	DATE	3.12.14
DESIGN APPROVED				CHECKED	CJC	DATE	3.12.14
ANNA HEBRON, DEC 2014				DRAWING FILENAME	BSD-4109 (B) LED Lantern Cable - Terminal block end - Sheet 2 of 2DWG		
BRANCH MANAGER CONGESTION REDUCTION UNIT				ASSOCIATED PLANS			



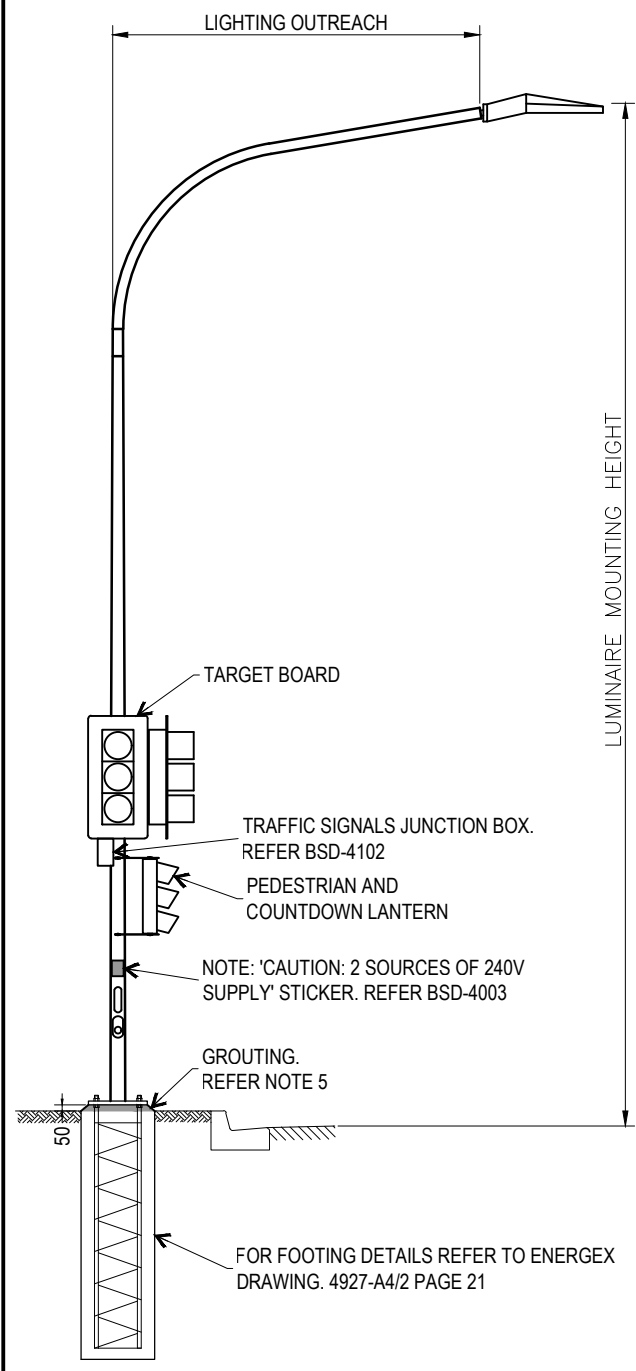
BRISBANE CITY COUNCIL STANDARD DRAWING

LED LANTERN CABLE
TERMINAL BLOCK END
SHEET 2 OF 2

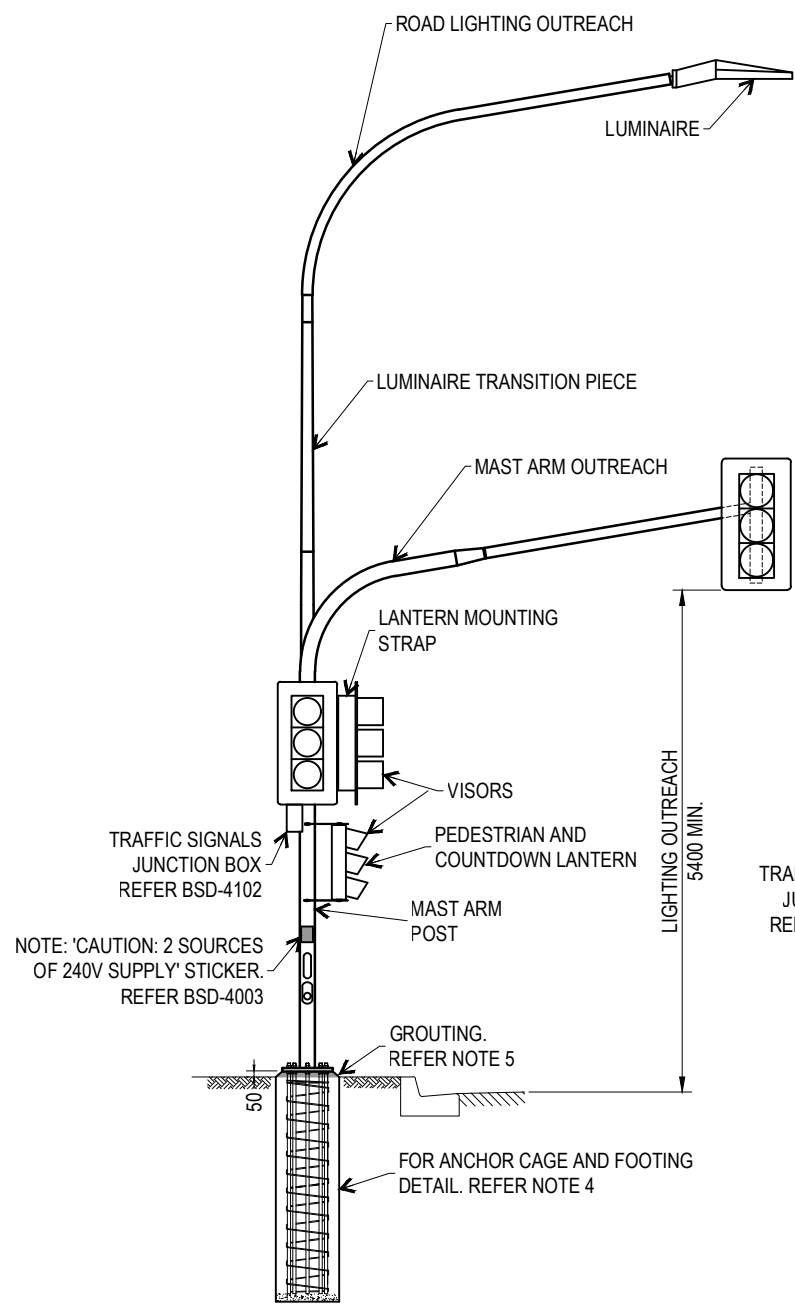
SCALE: NOT TO SCALE

DWG No. **BSD-4109**

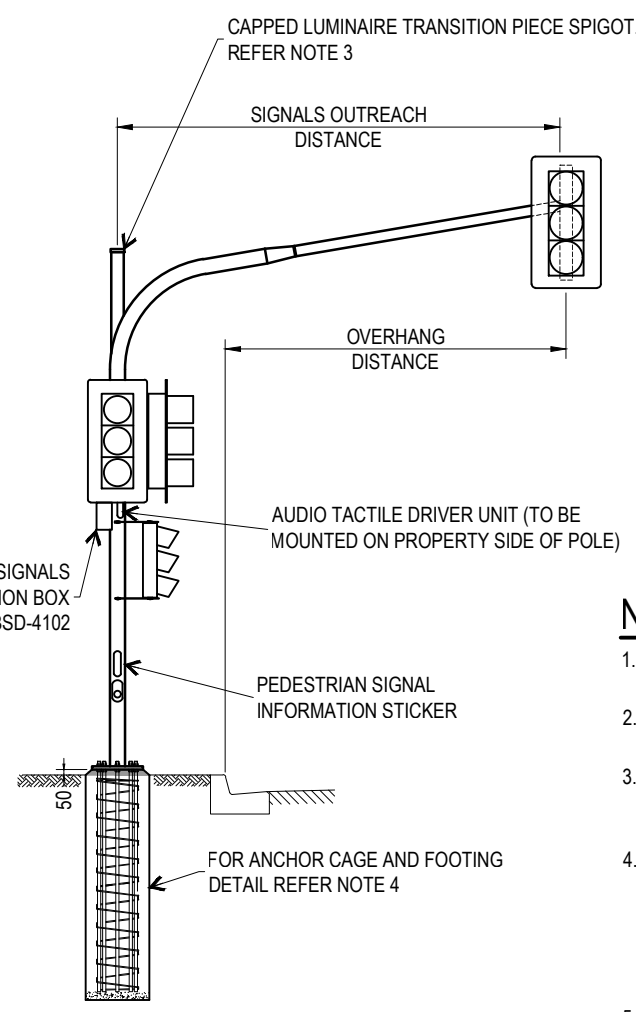
ORIGINAL SIZE: A3 REVISION: B



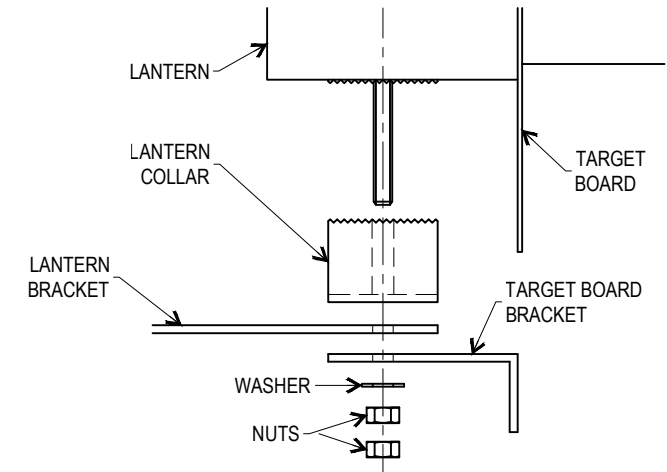
JOINT USE TRAFFIC SIGNAL & ROAD LIGHT POLE



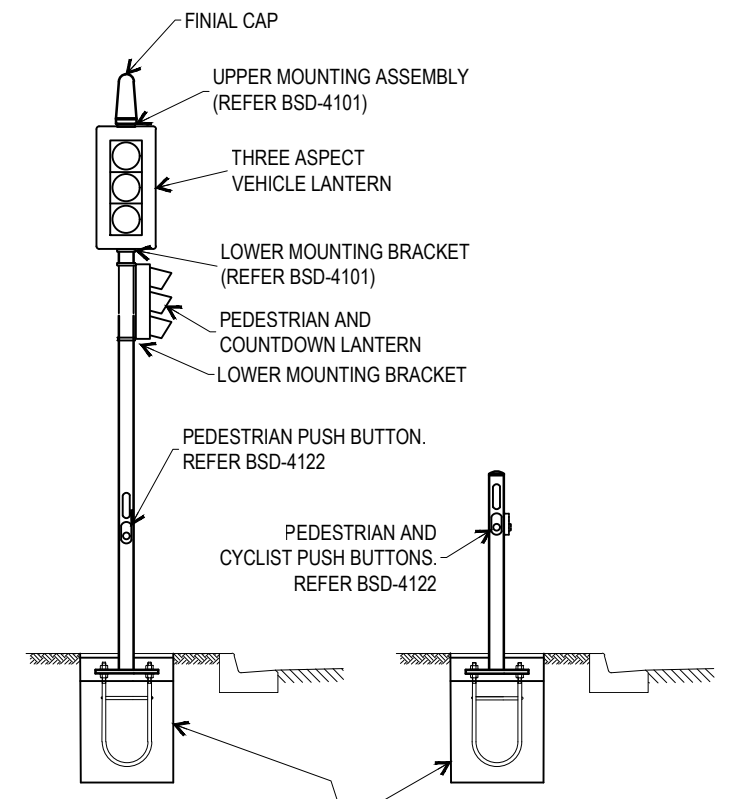
COMBINED JOINT USE TRAFFIC SIGNAL & ROAD LIGHT MAST ARM (MAINTAINED BY BCC)



TRAFFIC SIGNAL MAST ARMS



ATTACHMENT OF LANTERN TO MOUNTING BRACKET



FOR FOOTING DETAILS REFER TO BSD-4151

TRAFFIC SIGNAL POST

PUSH BUTTON POST

NOTES:

1. SEE AS2339 SECTION 3.2 FIG.3.2 FOR ARRANGEMENT OF FASTENERS USED FOR THE ATTACHMENT OF LANTERN MOUNTING STRAPS TO POST.
2. SEE EXPLODED VIEW FOR ATTACHMENT OF LANTERN TO MOUNTING BRACKET. LOCKING MECHANISM NOT TO BE CIRCUMVENTED.
3. TRAFFIC SIGNAL MAST ARM POLE MAY BE CONVERTED TO COMBINED JOINT USE TRAFFIC SIGNAL AND ROAD LIGHT MAST ARM BY REMOVING SPIGOT CAP AND INSTALLING LUMINAIRE TRANSITION PIECE AND LIGHTING OUTREACH.
4. FOOTINGS REQUIREMENT FOR JOINT USE AND TRAFFIC SIGNAL MAST ARMS:
 - FOR 2.5m & 5.0m MAST ARMS USING DTMR TYPE MAST ARM: USE BCC STANDARD DRAWING BSD-4154;
 - FOR 6.0m & 6.5m MAST ARMS: USE DTMR DRAWING SD1403.
 - FOR 8.5m & 11.0m MAST ARMS: USE BCC STANDARD DRAWING BSD-4155;
5. MIX SAND/CEMENT GROUT IN A 3:1 RATIO BY VOLUME. ADD ENOUGH WATER TO GIVE A WORKABLE MIX. PACK THE MIX BENEATH THE BASE PLATE. ON SQUARE BASE PLATE POLES, CHAMFER SIDES OF PACKED GROUT TO GROUND AT 45°.
6. ALL DIMENSIONS IN MILLIMETRES (U.N.O.).

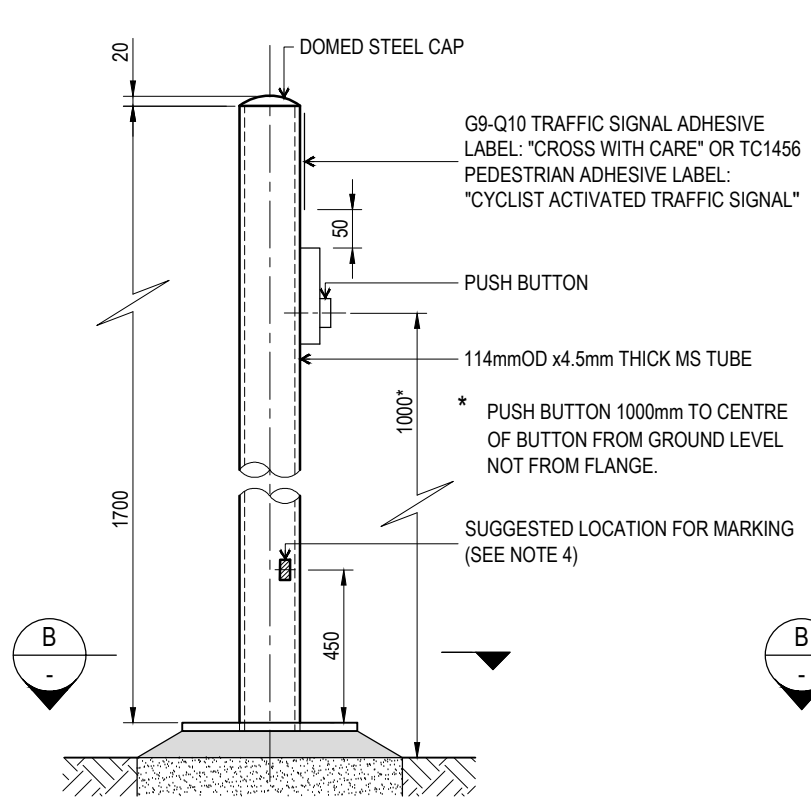
THE PURPOSE OF THIS STANDARD DRAWING IS TO PROVIDE TYPICAL DETAILS THAT SUPPORT THE DESIRED OUTCOMES OF THE BRISBANE CITY PLAN 2014 AND ASSOCIATED PLANNING SCHEME POLICIES. THE FITNESS FOR PURPOSE OF THIS STANDARD DRAWING FOR A SPECIFIC PROJECT SHOULD BE ASSESSED AND ACCEPTED BY AN APPROPRIATELY QUALIFIED DESIGNER AND/OR REGISTERED PROFESSIONAL ENGINEER OF QUEENSLAND (RPEQ).



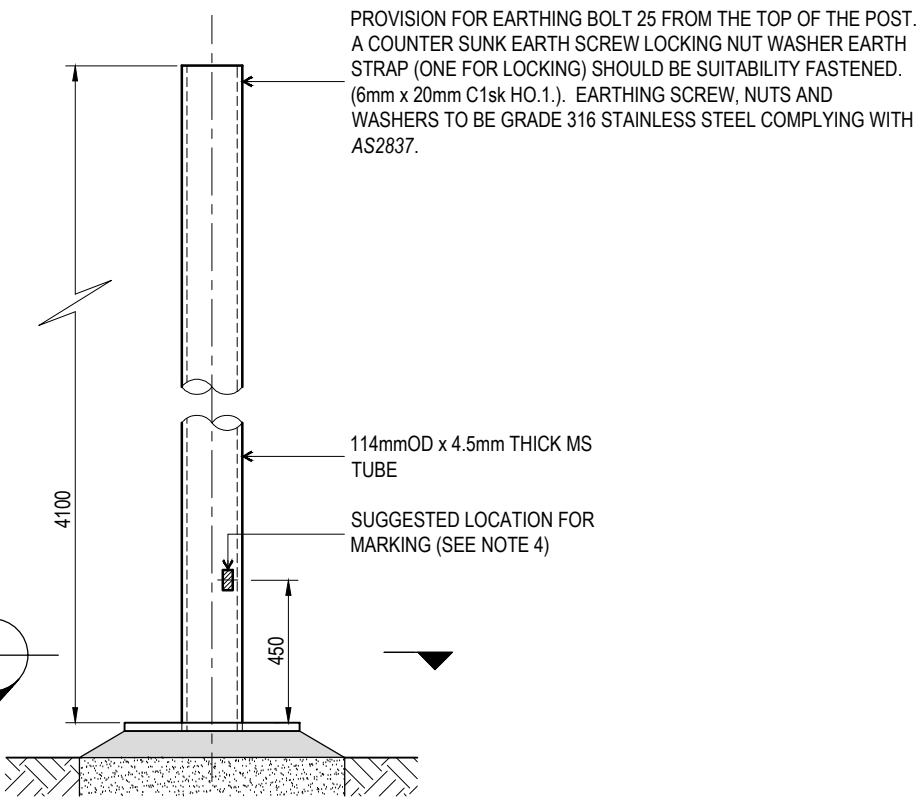
BRISBANE CITY COUNCIL STANDARD DRAWING

TRAFFIC SIGNAL POST & POLE INSTALLATION

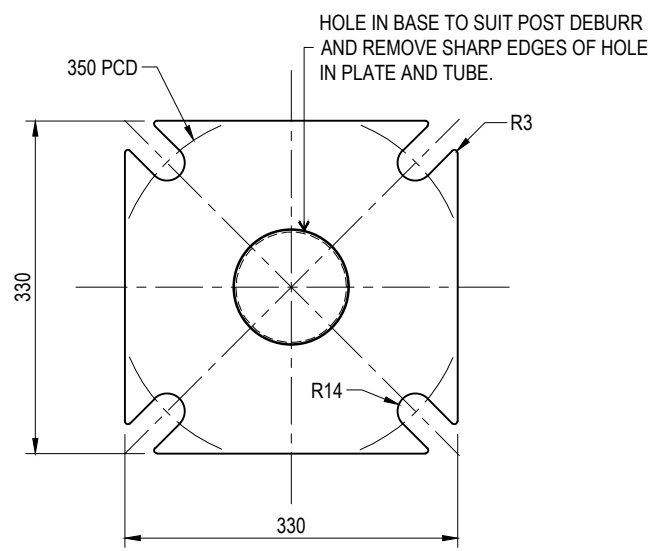
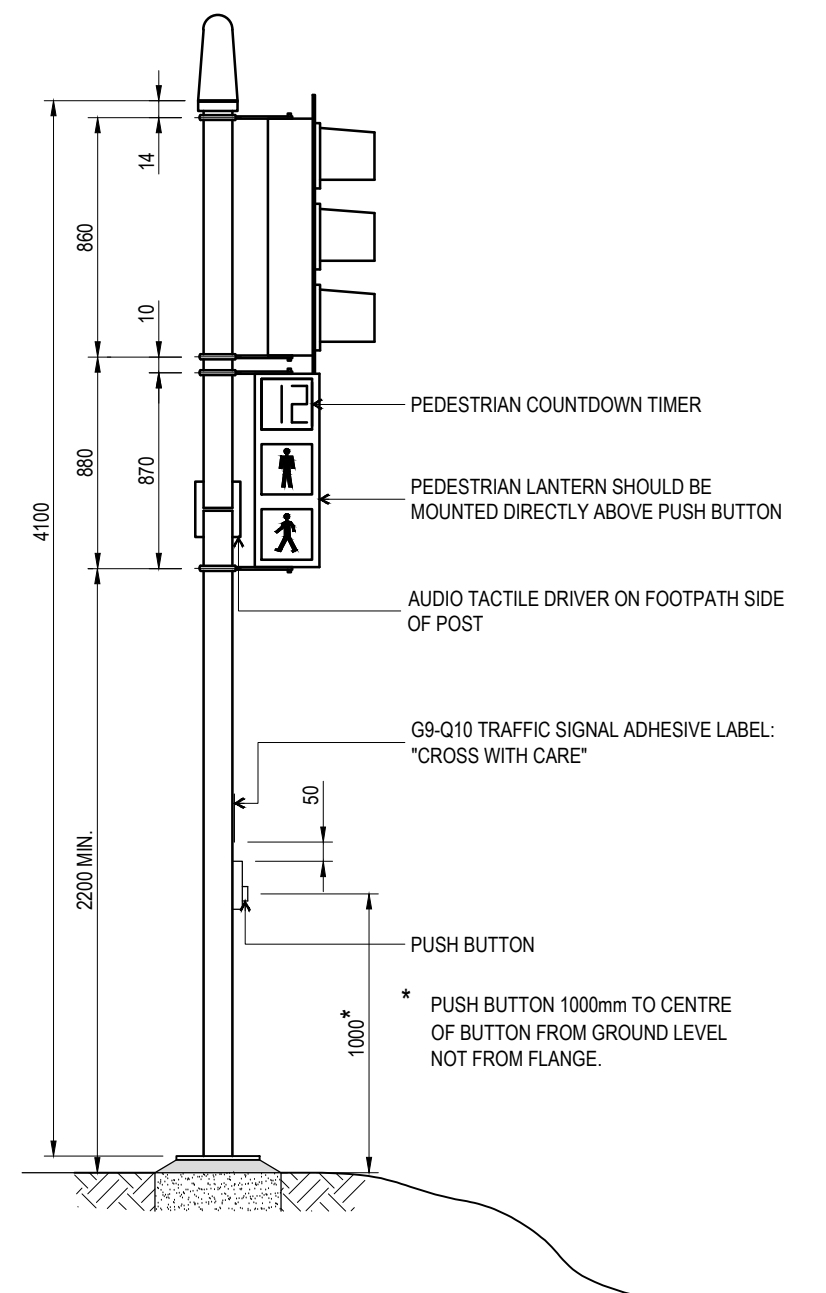
PUBLISH DATE		JUN 2023	
SCALE		NOT TO SCALE	
DRAWING NUMBER		BSD-4121	
ORIGINAL SIZE	REVISION	A3	C



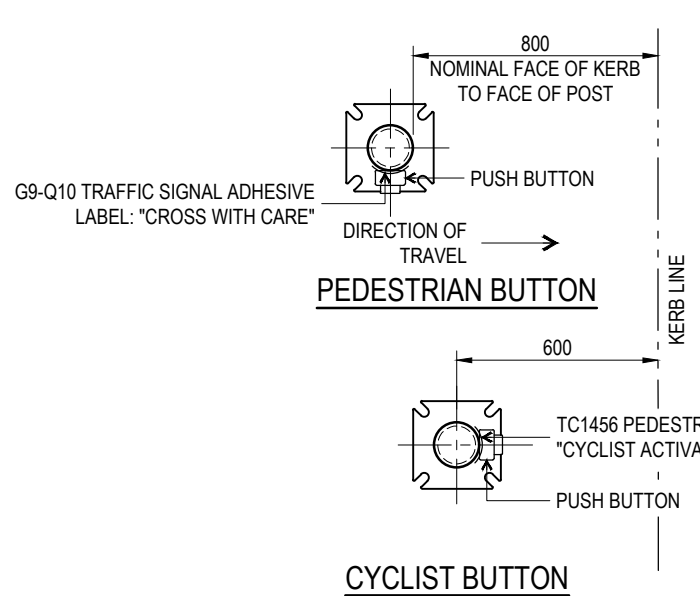
**PUSH BUTTON
PEDESTRIAN/CYCLIST POST**



**TRAFFIC SIGNAL POST
(4.1m)**



BASE PLATE DETAIL SECTION B-B
4 OF 28mm WIDE SLOTS ON 350mm PITCH CIRCLE DIAMETER
16mm THICK MILD STEEL.



PUSH BUTTON ORIENTATION

SIGNS



NOTES:

1. REMOVE ALL BURRS AND SHARP EDGES FROM HOLES THE SURFACE OF THE TUBULAR SECTION SHALL BE SMOOTH AND FREE FROM DAGS OR SHARP PROJECTIONS.
2. POST TO BE MANUFACTURED IN ACCORDANCE WITH AS2339 AND HOT DIPPED GALVANISED ITO AS/NZS4680.
3. PUSH BUTTON ASSEMBLIES TO AS2353.
4. MANUFACTURERS IDENTIFICATION AND DATE OF MANUFACTURE SHALL BE LEGIBLY AND DURABLY MARKED.
5. REFER TO BSD-4121 AND BSD-4151 FOR FOOTING DETAILS.
6. REFER TO QUEENSLAND MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND QUEENSLAND DEPARTMENT OF TRANSPORT AND MAIN ROADS DRAWING TC1456 FOR LABEL DETAILS.
7. DIMENSIONS IN MILLIMETRES (U.N.O.).

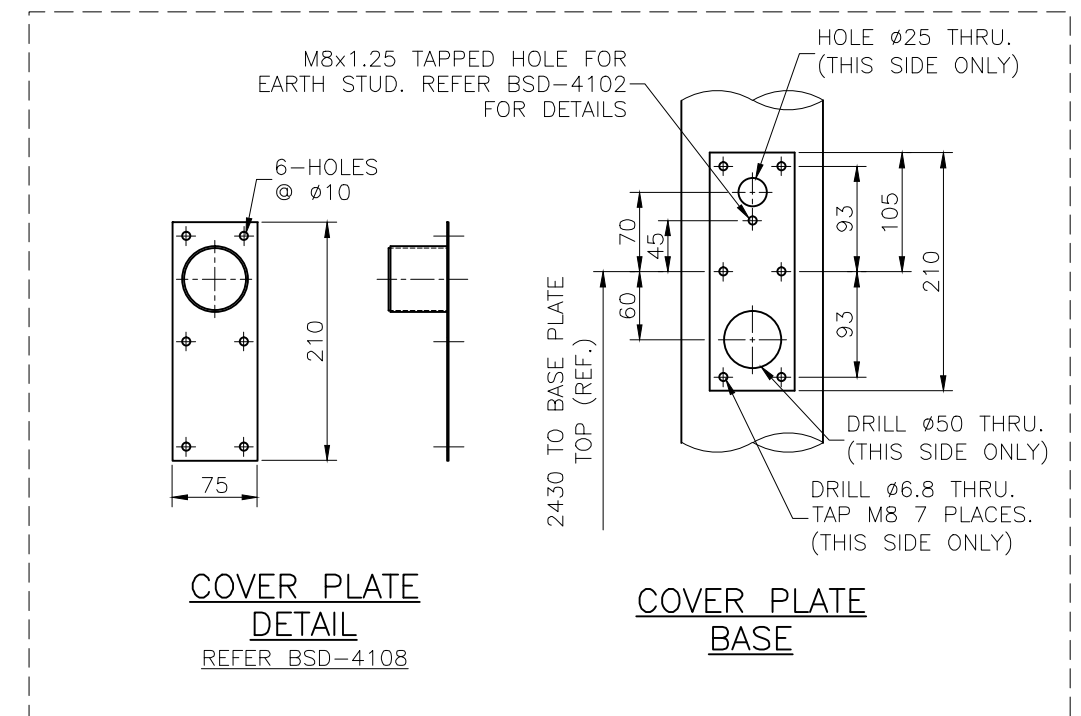
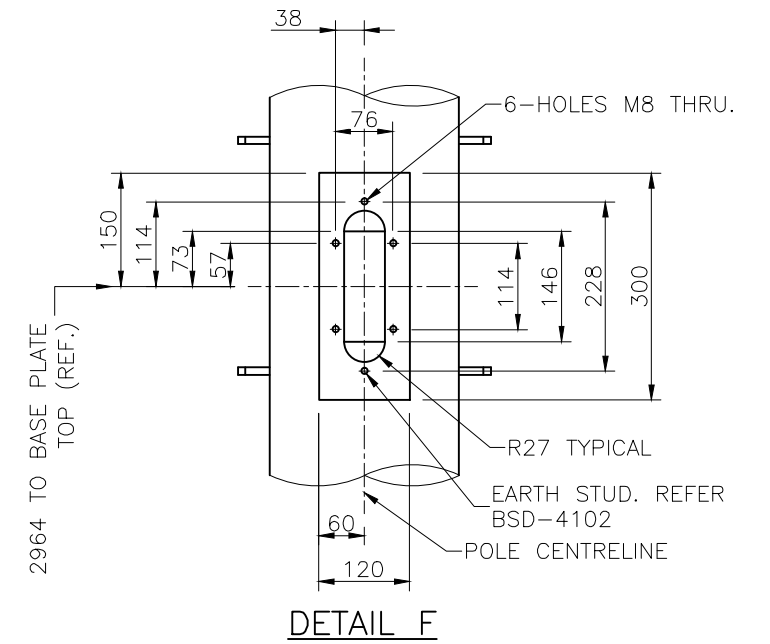
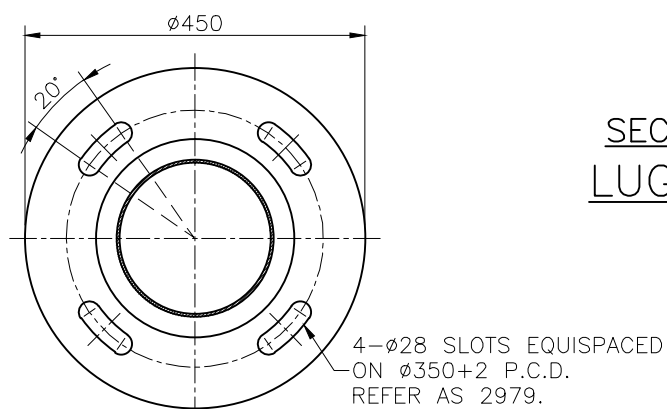
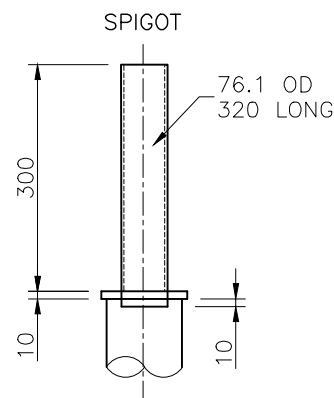
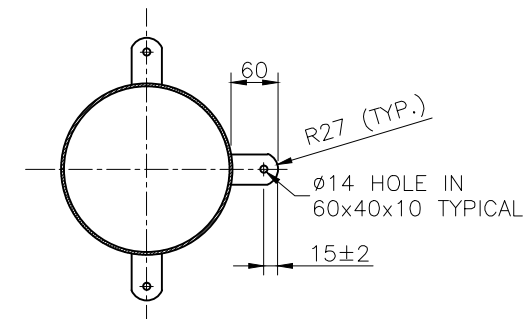
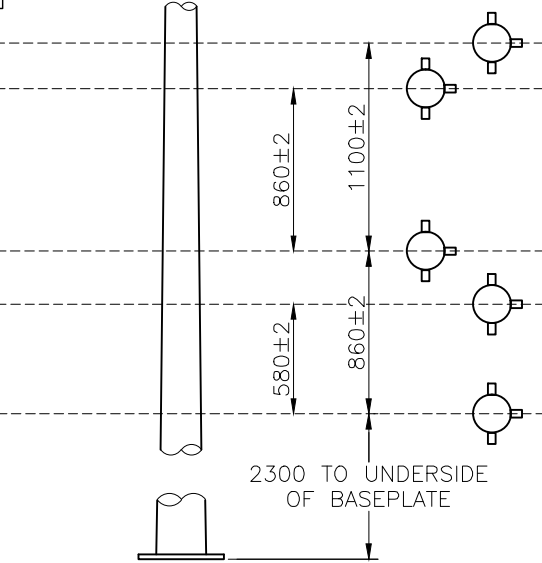
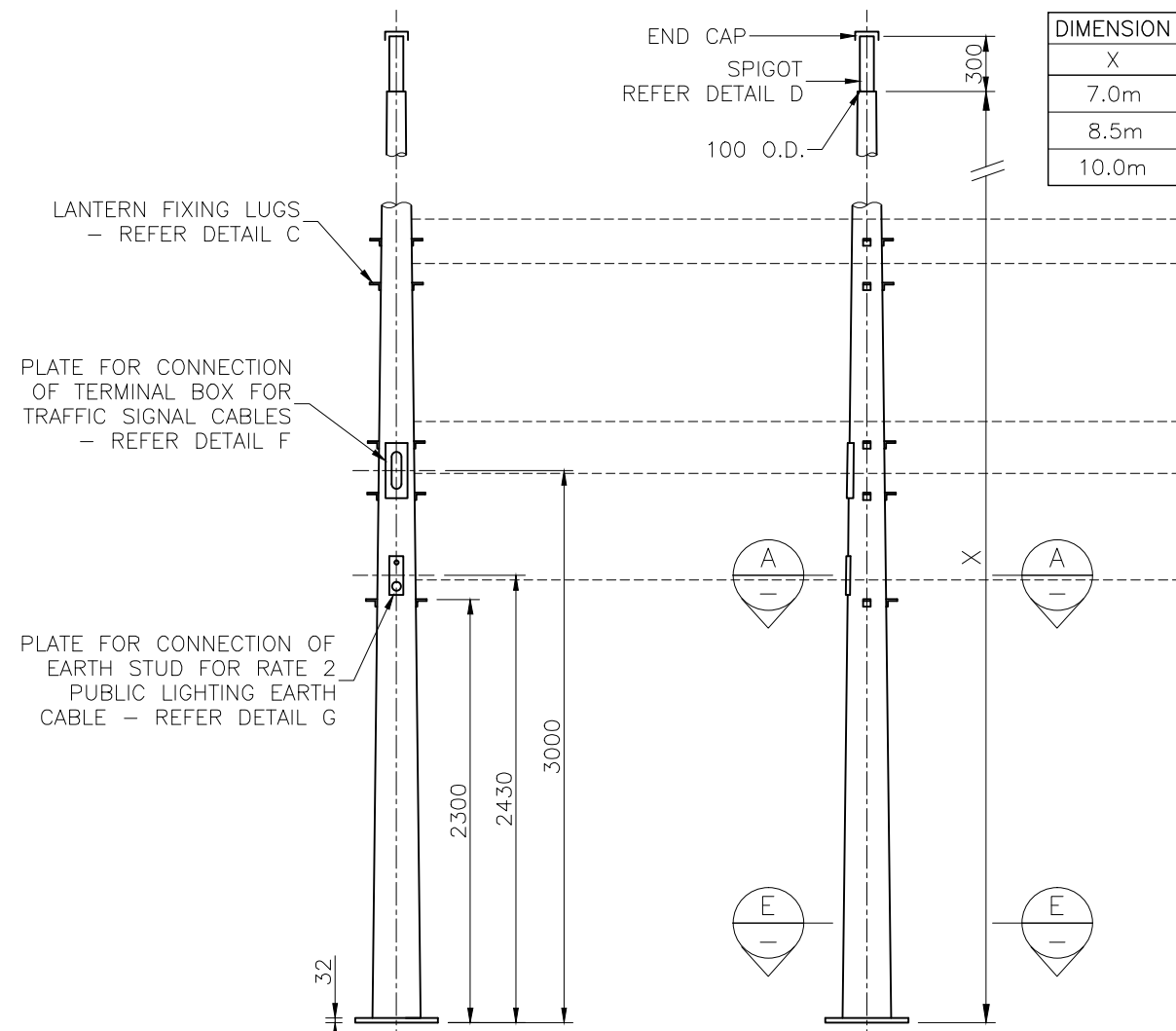
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BRISBANE CITY COUNCIL STANDARD DRAWING

POST DETAILS

PUBLISH DATE		SEP 2024
SCALE		NOT TO SCALE
DRAWING NUMBER		BSD-4122
ORIGINAL SIZE	REVISION	
A3	D	



NOTES:

1. DIMENSIONAL TOLERANCE ± 0.5 (U.N.O.).
2. STEEL PLATES TO COMPLY WITH AS3678 GRADE 250 U.N.O.
3. STEEL BARS AND SECTIONS TO COMPLY WITH AS3879 GRADE 250 U.D.N.
4. FILLET WELDS TO COMPLY WITH AS1554 PART 1 CATEGORY GP U.D.N.
5. ALL SHARP EDGES AND BURRS TO BE REMOVED.
6. ALL TAPERED LOCK JOINT LENGTHS ARE NOMINAL.
7. ALL STEEL TO BE FULLY HOT DIP GALVANISED AFTER FABRICATION IN ACCORDANCE WITH AS/NZS4680.
8. FOR FOOTING DETAILS, REFER ENERGEX DRAWING 4927-A4/2 PAGE 21.
9. DIMENSIONS IN MILLIMETRES (U.N.O.).

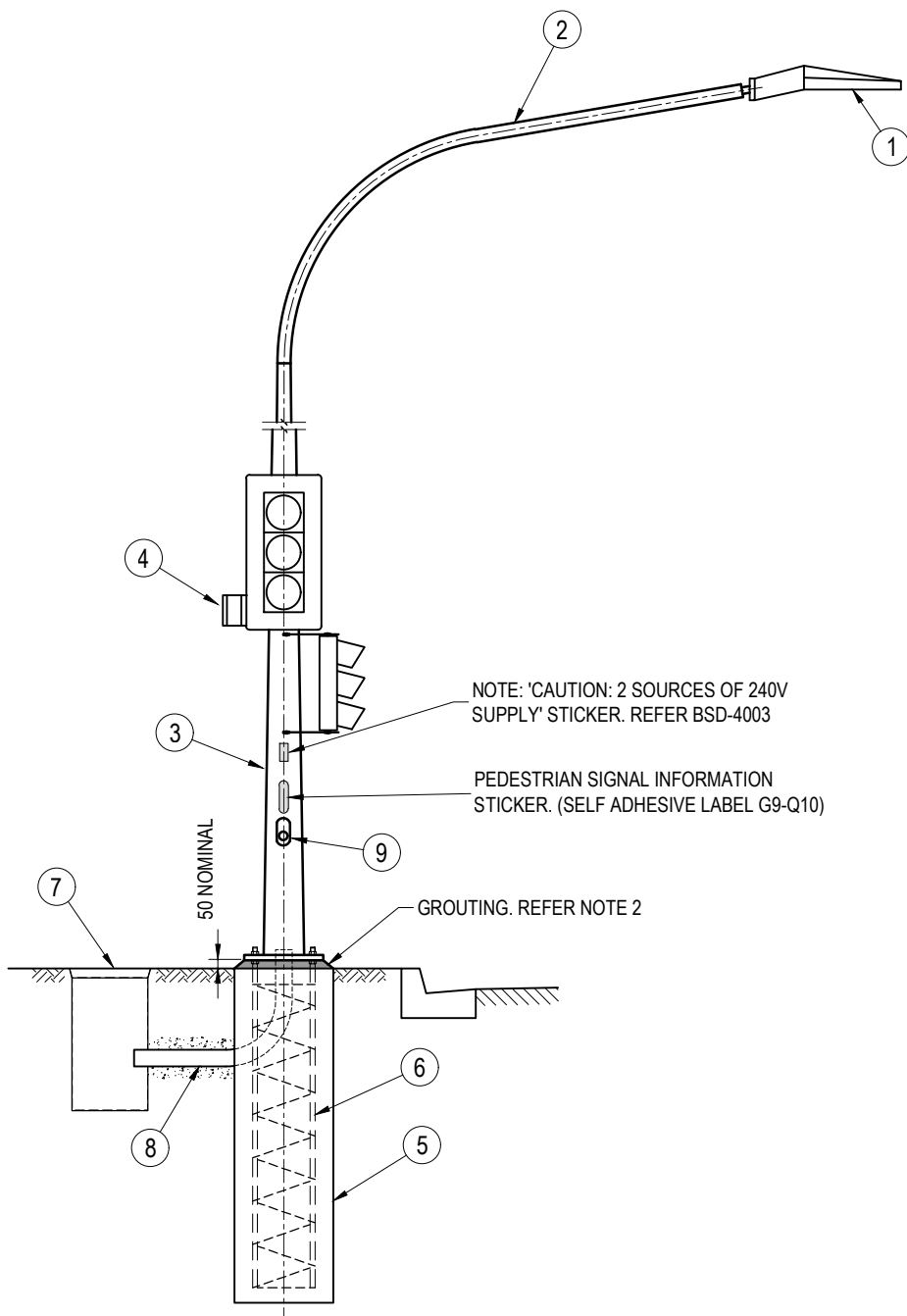
A	Drawing Converted from UMS Series April 2014	APR '14	APR '14	APR '14
ISSUE	AMENDMENT	DRAWN DATE	CHK'D DATE	APPR'D DATE

DRAWING AUTHORISED FOR PUBLICATION B. BALL SIGNATURE ON ORIGINAL DATED 29/6/01				DESIGN	Std Dwgs WG	DATE	April '01
MANAGER ASSET SUPPORT - R.P.E.Q. 3 8 5 2				DRAWN	CPO - P&D	DATE	April '01
DESIGN APPROVED K. MEMORY SIGNATURE ON ORIGINAL DATED 27/6/01				CHECKED	R. WILSON	DATE	May '01
SENIOR PROGRAM OFFICER NETWORK OPERATIONS - R.P.E.Q. 4 7 6 1				DRAWING FILENAME	BSD-4123 (A) Joint use column details (BCC type).dwg		
				ASSOCIATED PLANS	SUPERSEDES UMS-600-052		



BRISBANE CITY COUNCIL STANDARD DRAWING	
SCALE NOT TO SCALE	
DWG No. BSD-4123	
ORIGINAL SIZE A3	REVISION A

**JOINT USE COLUMN
DETAILS
(BCC TYPE)**



ITEM	DESCRIPTION	REFERENCE	APPROVED PRODUCT REFERENCE
1	ROAD LIGHT LUMINAIRE	RATE 2 ENERGEX CONTRACT (ENERGEX APPROVED LED LUMINAIRE) REFER TO APPROVED STREET LIGHT DESIGN	
2	ROAD LIGHTING POLE OUTREACH ARM	NPL 2 ENERGEX CONTRACT (NB OUTREACHES HAVE 2.0m UPLIFT TO GAIN MOUNTING HEIGHT)	
		1.5m	5734
		3.0m	5750
		4.5m	5757
3	ROAD LIGHT POLE	RATE 2 ENERGEX CONTRACT	
		7.0 BPM	5637
		8.5 BPM	5639
		10.0 BPM	
4	TRAFFIC SIGNAL JUNCTION BOX	BSD-4102	
		29 CORE	
		51 CORE	
5	FOOTING	DTMR STANDARD DRAWING SD1396	
6	ANCHOR CAGE	DTMR STANDARD DRAWING SD1328	
7	ELECTRICAL CABLE JOINTING PIT & LID	DTMR STANDARD DRAWING SD1415 AND BSD-4032 & BSD-4033	
8	100 uPVC HD U/G CONDUIT	STANDARD BCC CONTRACT	
9	PEDESTRIAN PUSH BUTTON UNIT a) PEDESTRIAN PUSH BUTTON UNIT b) 4-7/0.50 CABLES c) FIGURE 8 CABLE d) ADHESIVE LABEL "CROSS WITH CARE"	FROM PUSH BUTTON TO FINIAL (REQUIRED FOR STANDARD PUSH BUTTONS) FROM PUSH BUTTON TO FINIAL (SUPPLIED WITH AUDIO-TACTILE PUSH BUTTONS) LABEL TO BE PLACED 50mm ABOVE PEDESTRIAN PUSH BUTTON (G9-Q10)	

GENERAL NOTES

- 25mm MAX. HEIGHT OF THREAD TO BE LEFT PROTRUDING ABOVE BASE PLATE LOCK DOWN NUT.
- HIGH STRENGTH, NON-SHRINK GROUT (MIN. 32MPa) TO BE USED. PACK THE MIX BENEATH THE BASE PLATE AND CHAMFER SIDES OF PACKED GROUT TO GROUND AT 45°. INSTALL MIN. 12mm DIA. WEEP HOLE IN GROUT (RECOMMENDED 16DN CONDUIT).

ASSOCIATED DOCUMENTS

- ENERGEX PUBLIC LIGHTING MANUAL (CONSTRUCTION)
- ENERGEX PUBLIC LIGHTING MANUAL (POLICY)
- ENERGEX APPROVED PRODUCTS LIST (FORM 2020)

REFERENCED DOCUMENTS

STANDARD DRAWINGS:

- BSD-4003: 'TRAFFIC SIGNAL/LIGHTING POLE ELECTRICITY SUPPLY WARNING LABELS'.
- BSD-4102: 'TRAFFIC SIGNAL JUNCTION BOX'.
- BSD-4032: 'CIRCULAR CABLE JOINTING PIT 600mm DIAMETER - COLLAR'.
- BSD-4033: 'CIRCULAR CABLE JOINTING PIT 600mm DIAMETER - COVER'.
- DTMR STANDARD DRAWING SD1328: 'ANCHOR CAGE FABRICATION DETAILS'.
- DTMR STANDARD DRAWING SD 1396: 'JOINT USE TRAFFIC SIGNAL AND ROAD LIGHTING POLE AND FOOTING INSTALLATION DETAILS'.
- DTMR STANDARD DRAWING SD1415: 'TRAFFIC SIGNALS/ROAD LIGHTING - CIRCULAR CABLE JOINING PIT - 600 DIAMETER'.

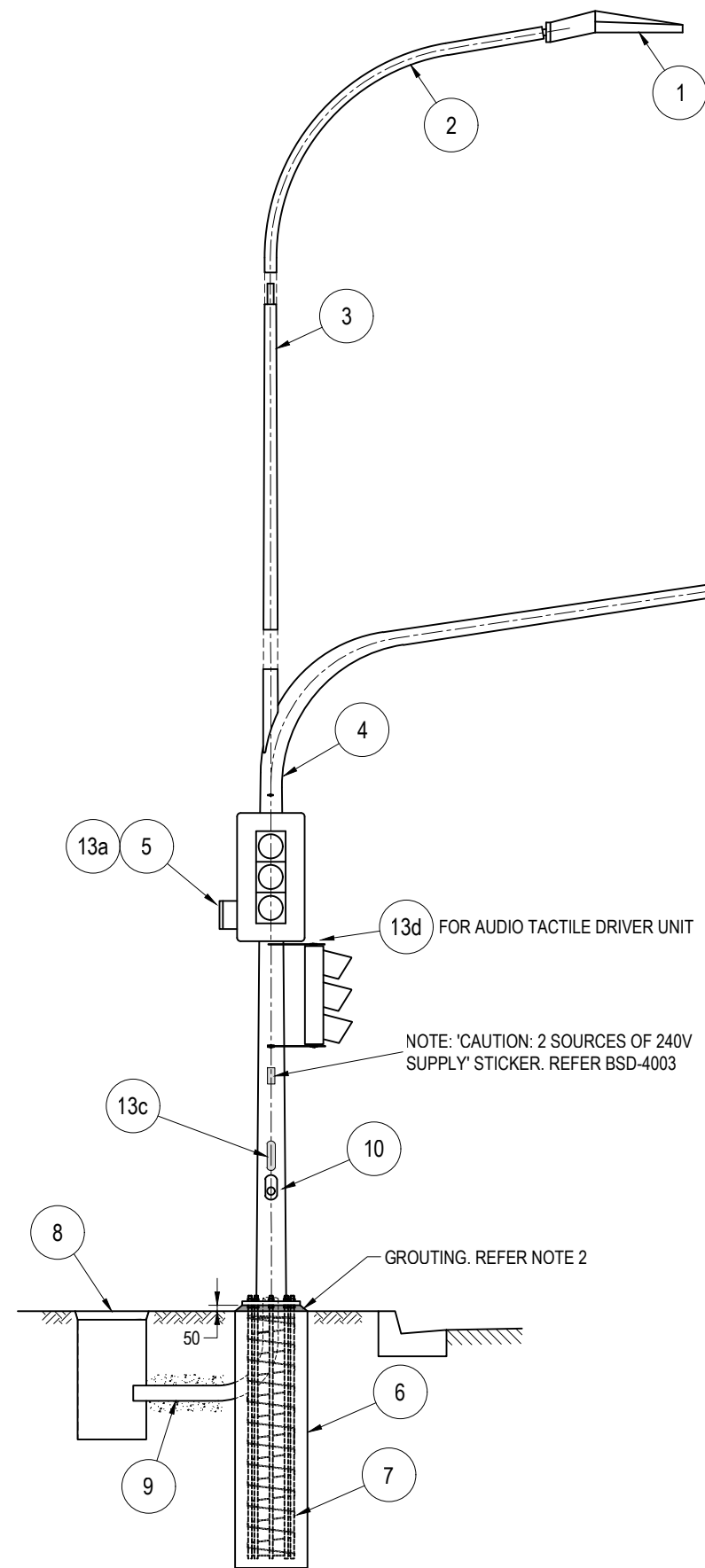
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BRISBANE CITY COUNCIL STANDARD DRAWING

JOINT USE TRAFFIC SIGNAL
AND ROAD LIGHTING POLE
(BCC TYPE)

PUBLISH DATE	JUN 2023
SCALE	NOT TO SCALE
DRAWING NUMBER	BSD-4125
ORIGINAL SIZE	A3
REVISION	E



ITEM	DESCRIPTION	REFERENCE	ENERGEX APPROVED PRODUCT REFERENCE
1	ROAD LIGHT LUMINAIRE	RATE 2 ENERGEX CONTRACT (SYLVANIA ROADSTAR) REFER TO APPROVED STREET LIGHT DESIGN	
2	ROAD LIGHTING POLE OUTREACH ARM	RATE 2 ENERGEX CONTRACT (NB OUTREACHES HAVE 2.0m UPLIFT TO GAIN MOUNTING HEIGHT)	
		1.5m	5734
		3.0m	5750
		4.5m	5757
3	LUMINAIRE TRANSITION PIECE	BCC STORES a) 9.0m MOUNTING HEIGHT (1400mm) b) 10.5m MOUNTING HEIGHT (2900mm) c) 12.0m MOUNTING HEIGHT (4400mm)	
4	TRAFFIC SIGNAL MAST ARM	BCC STORES 2.5m 5.0m 8.5m	
5	TRAFFIC SIGNAL JUNCTION BOX	BSD-4102 29 CORE 51 CORE	5438 5439
6	FOOTING	PILE DEPTH: BSD-4154	
7	ANCHOR CAGE	BSD-4154	
8	ELECTRICAL CABLE JOINTING PIT & LID	DTMR STANDARD DRAWING SD1415	
9	100 uPVC LD U/G CONDUIT		
10	PEDESTRIAN PUSH BUTTON UNIT a) PEDESTRIAN PUSH BUTTON UNIT b) 4-7/0.50 CABLES c) FIGURE 8 CABLE d) ADHESIVE LABEL "CROSS WITH CARE"	FROM PUSH BUTTON TO FINAL (REQUIRED FOR STANDARD PUSH BUTTONS) FROM PUSH BUTTON TO FINAL (SUPPLIED WITH AUDIO-TACTILE PUSH BUTTONS) LABEL TO BE PLACED 50mm ABOVE PEDESTRIAN PUSH BUTTON (G9-Q10)	
11	TARGET BOARD	a) SINGLE b) DOUBLE	
12	STRAPS	a) 260mm (PROVIDED WITH 300mm & PEDESTRIAN LANTERNS) b) 150mm (PROVIDED WITH 200mm LANTERNS) STRAPS OTHER THAN THOSE PROVIDED MAY BE USED AS REQUIRED.	
13	HARDWARE FIXING SCREWS & BOLTS	a) 4/M8 x 20mm ZINC PLATED PHILLIPS CHEESE HEAD SCREWS (WITH WASHERS) FIXING LIGHTING JUNCTION BOX TO POST. b) 2/M12 x 50mm GALVANISED BOLTS (WITH NUTS & WASHERS) FIXING LANTERN STRAPS TO POST LANTERN FIXING LUGS AND OVERHEAD LANTERN FIXING DISCS. c) 2/M8 x 25mm PLATED SET SCREWS FIXING PUSH BUTTON UNIT TO POST. d) 1/M12 x 50mm GALVANISED BOLT FIXING AUDIO-TACTILE DRIVER UNIT TO POST.	

GENERAL NOTES

- 25mm MAX. HEIGHT OF THREAD TO BE LEFT PROTRUDING ABOVE BASE PLATE LOCK DOWN NUT.
- MIX SAND/CEMENT GROUT IN A 3:1 RATIO BY VOLUME. ADD ENOUGH WATER TO GIVE A WORKABLE MIX. PACK THE MIX BENEATH THE BASE PLATE AND CHAMFER SIDES TO GROUND AT 45°.

ASSOCIATED DOCUMENTS

- ENERGEX PUBLIC LIGHTING MANUAL (CONSTRUCTION)
- ENERGEX PUBLIC LIGHTING MANUAL (POLICY)
- ENERGEX APPROVED PRODUCTS LIST (FORM 2020)
- AS2979 TRAFFIC SIGNAL MAST ARM
- AS3000 SAA WIRING RULES

REFERENCED DOCUMENTS

STANDARD DRAWINGS:

- BSD-4001: 'ELECTRICAL CABLE CLEARANCE PARTICULARLY TO MAST ARM'.
- BSD-4003: 'TRAFFIC SIGNAL/LIGHTING POLE ELECTRICITY SUPPLY WARNING LABELS'.
- BSD-4102: 'TRAFFIC SIGNAL JUNCTION BOX'.
- BSD-4124: 'MAST ARM DETAILS 2.5 & 5M OUTREACH'.
- BSD-4154: 'RAGBOLT ASSEMBLIES MAST ARM 2.5 & 5M OUTREACH'.
- QUEENSLAND DEPARTMENT OF TRANSPORT AND MAIN ROADS STANDARD DRAWING SD1415: 'TRAFFIC SIGNALS/ROAD LIGHTING - CIRCULAR CABLE JOINING PIT - 600 DIAMETER'.

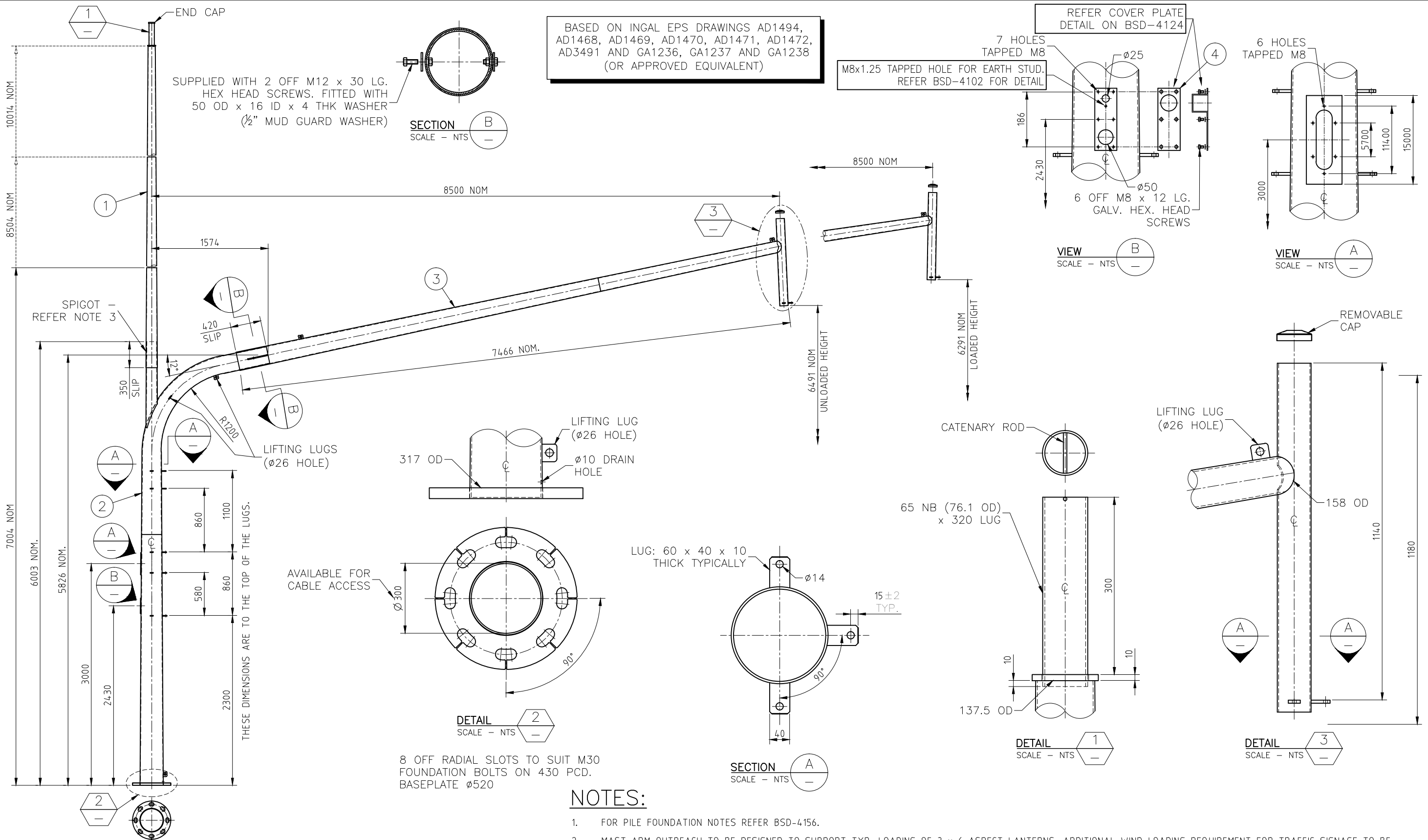
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BRISBANE CITY COUNCIL STANDARD DRAWING

JOINT USE TRAFFIC SIGNAL MAST ARM
2.5 & 5.0m OUTREACH
(RATE 2)

PUBLISH DATE	JUN 2023
SCALE	NOT TO SCALE
DRAWING NUMBER	BSD-4126
ORIGINAL SIZE	A3
REVISION	D



BASED ON INCAL EPS DRAWINGS AD1494, AD1468, AD1469, AD1470, AD1471, AD1472, AD3491 AND GA1236, GA1237 AND GA1238 (OR APPROVED EQUIVALENT)

SUPPLIED WITH 2 OFF M12 x 30 LG. HEX HEAD SCREWS. FITTED WITH 50 OD x 16 ID x 4 THK WASHER (1/2" MUD GUARD WASHER)

M8x1.25 TAPPED HOLE FOR EARTH STUD. REFER BSD-4102 FOR DETAIL

REFER COVER PLATE DETAIL ON BSD-4124

THESE DIMENSIONS ARE TO THE TOP OF THE LUGS.

8 OFF RADIAL SLOTS TO SUIT M30 FOUNDATION BOLTS ON 430 PCD. BASEPLATE Ø520

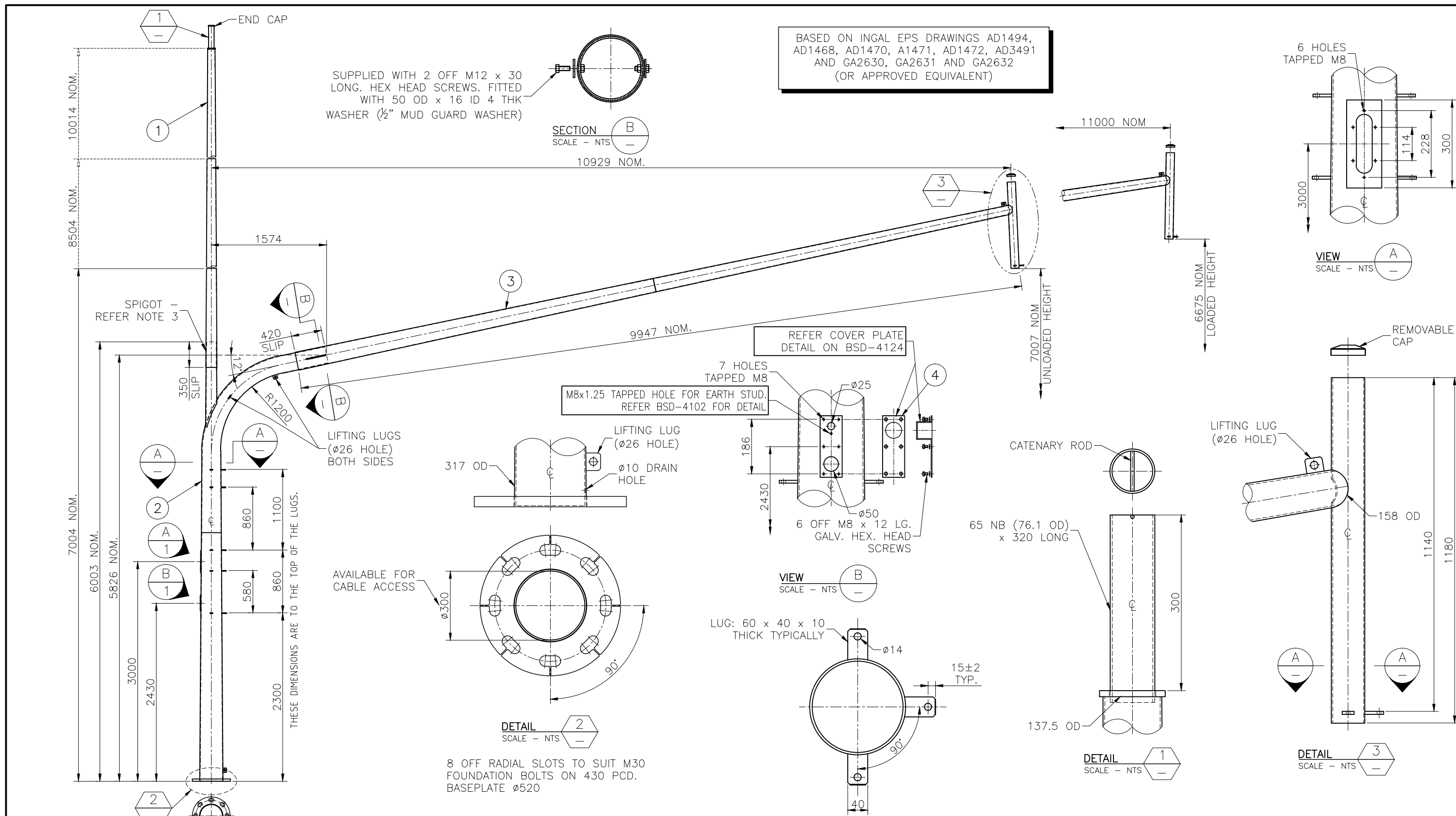
NOTES:

- FOR PILE FOUNDATION NOTES REFER BSD-4156.
- MAST ARM OUTREACH TO BE DESIGNED TO SUPPORT TYP. LOADING OF 3 x 6 ASPECT LANTERNS. ADDITIONAL WIND LOADING REQUIREMENT FOR TRAFFIC SIGNAGE TO BE CONSIDERED.
- TRAFFIC SIGNAL MAST ARM POLE TO BE SUPPLIED WITH CAPPED SPIGOT AND BE ABLE TO BE CONVERTED TO COMBINED JOINT USE TRAFFIC SIGNAL/ROAD LIGHT MAST ARM BY REMOVING SPIGOT CAP AND INSTALLING LUMINAIRE TRANSITION PIECE AND LIGHTING OUTREACH.
- ALL DIMENSIONS IN MILLIMETRES (U.N.O.).

AFTER LEVELLING POLE, A NON-SHRINKING GROUT IS TO BE APPLIED IN THE BASEPLATE SLOTS, AROUND THE BOLTS AND BETWEEN THE BASEPLATE AND THE FOOTING.

				DRAWING AUTHORISED FOR PUBLICATION				DESIGN		Std Dwg WG	DATE	Mar'07
				P. COTTON SIGNATURE ON ORIGINAL				DRAWN		CPD - P&D	DATE	May,07
				MANAGER CITY ASSETS - R.P.E.Q: 2 5 4 6				CHECKED		I. Condric	DATE	Jan'11
				DESIGN APPROVED				DRAWING FILENAME		BSD-4127(A) 8.5m outreach joint use mast arms baseplate mounted.dwg		
				I. CONDRIK SIGNATURE ON ORIGINAL DATED 01/11				ASSOCIATED PLANS		SUPERSEDES UMS-600-056		
				PRINCIPAL ENGINEER ROAD NETWORK INFRASTRUCTURE - R.P.E.Q: 8 5 2 1								
A	Drawing Converted from UMS Series April 2014			APR '14	APR '14	APR '14						
ISSUE	AMENDMENT			DRAWN DATE	CHK'D DATE	APPR'D DATE						
							<p align="center">BRISBANE CITY COUNCIL STANDARD DRAWING</p> <p align="center">8.5m OUTREACH JOINT USE MAST ARMS BASE PLATE MOUNTED</p>					
							<p align="center">SCALE NOT TO SCALE</p> <p align="center">DWG No. BSD-4127</p> <p align="center">ORIGINAL SIZE A3 REVISION A</p>					





SUPPLIED WITH 2 OFF M12 x 30 LONG. HEX HEAD SCREWS. FITTED WITH 50 OD x 16 ID 4 THK WASHER (1/2" MUD GUARD WASHER)

BASED ON INGAL EPS DRAWINGS AD1494, AD1468, AD1470, A1471, AD1472, AD3491 AND GA2630, GA2631 AND GA2632 (OR APPROVED EQUIVALENT)

THESE DIMENSIONS ARE TO THE TOP OF THE LUGS.

NOTES:

- FOR PILE FOUNDATION NOTES REFER BSD-4156.
- MAST ARM OUTREACH TO BE DESIGNED TO SUPPORT TYP. LOADING OF 3 x 6 ASPECT LANTERNS. ADDITIONAL WIND LOADING REQUIREMENT FOR TRAFFIC SIGNAGE TO BE CONSIDERED.

- TRAFFIC SIGNAL MAST ARM POLE TO BE SUPPLIED WITH CAPPED SPIGOT AND BE ABLE TO BE CONVERTED TO COMBINED JOINT USE TRAFFIC SIGNAL/ROAD LIGHT MAST ARM BY REMOVING SPIGOT CAP AND INSTALLING LUMINAIRE TRANSITION PIECE AND LIGHTING OUTREACH.
- ALL DIMENSIONS IN MILLIMETRES (U.N.O.).

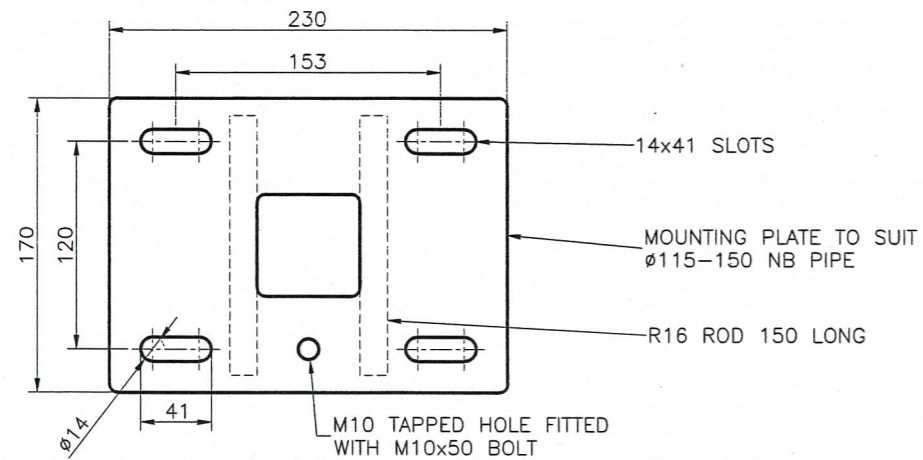
AFTER LEVELLING POLE, A NON-SHRINKING GROUT IS TO BE APPLIED IN THE BASEPLATE SLOTS, AROUND THE BOLTS AND BETWEEN THE BASEPLATE AND THE FOOTING.

ISSUE	AMENDMENT	DRAWN DATE	CHK'D DATE	APPR'D DATE
A	ORIGINAL ISSUE	Oct '13	Oct '13	Oct '13

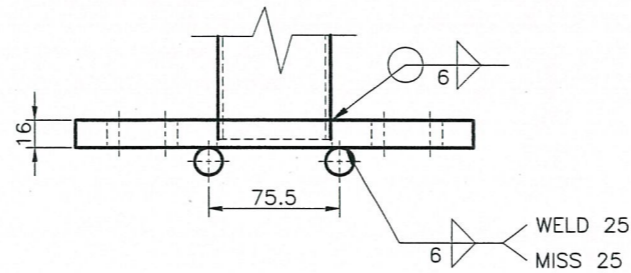
DRAWING AUTHORISED FOR PUBLICATION			
DESIGN	Std Dwg WG	DATE	Aug'09
DRAWN	CPD - P&D	DATE	Sept'09
CHECKED	I. Condric	DATE	Jan'11
DRAWING FILENAME	BSD-4128 (A) 110m outreach joint use mast arms baseplate mounted.dwg		
ASSOCIATED PLANS	SUPERSEDES UMS-600-057		



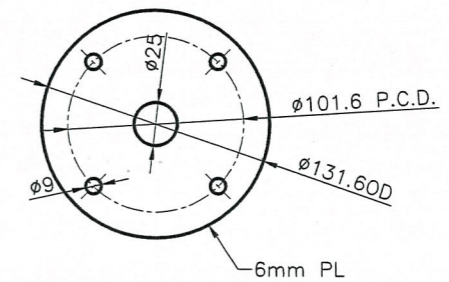
BRISBANE CITY COUNCIL STANDARD DRAWING	
11m OUTREACH JOINT USE MAST ARMS BASE PLATE MOUNTED	
SCALE	NOT TO SCALE
DWG No.	BSD-4128
ORIGINAL SIZE	A3
REVISION	A



PLAN

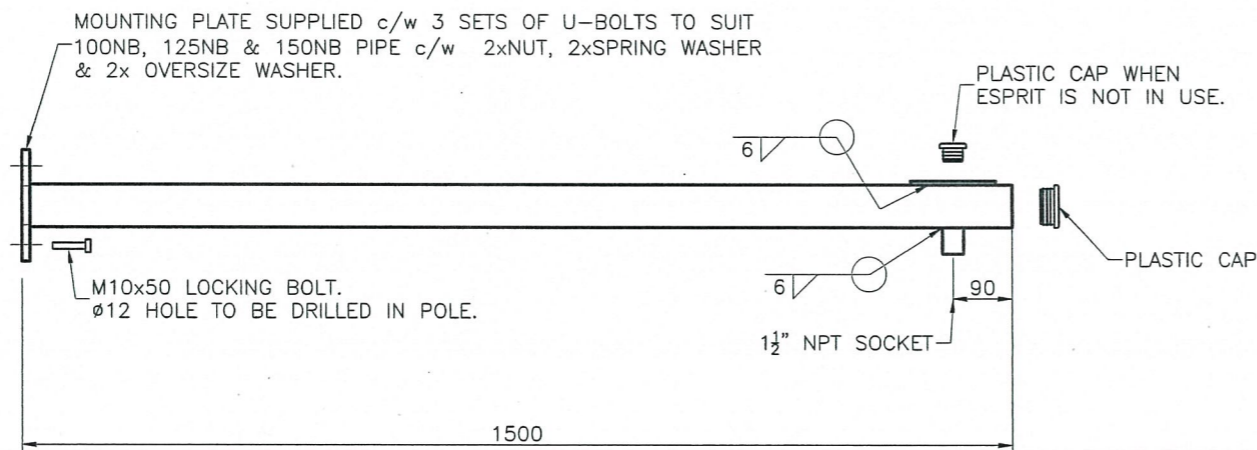


ELEVATION



**MOUNTING PLATE
FOR BOSCH MIC-DCA-HW**

MOUNTING PLATE



MOUNTING PLATE SUPPLIED c/w 3 SETS OF U-BOLTS TO SUIT 100NB, 125NB & 150NB PIPE c/w 2xNUT, 2xSPRING WASHER & 2x OVERSIZE WASHER.

M10x50 LOCKING BOLT.
Ø12 HOLE TO BE DRILLED IN POLE.

PLASTIC CAP WHEN
ESPRIT IS NOT IN USE.

PLASTIC CAP

SPECIAL NOTE:

STANDARD DRAWING BASED GM POLES PTY LTD
DRAWING WS38276B-1.
DESIGN CERTIFIED IN ENGINEERING STATEMENT DATED
12 APRIL 2010, SIGNED BY ROB WALTERS (RPEQ:
6228) ENGINEERING MANAGER, GM POLES PTY LTD.

DESIGN NOTES

DESCRIPTION:

1.5m OUTREACH FOR TRAFFIC CAMERA TO BE MOUNTED ONTO BCC JOINT-USE POLES OR BCC JOINT-USE MAST ARMS AT LOCATIONS WHERE THE POLE DIAMETER IS WITHIN 115-165mm.

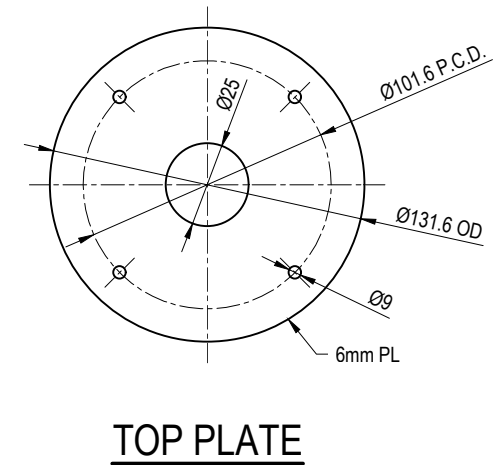
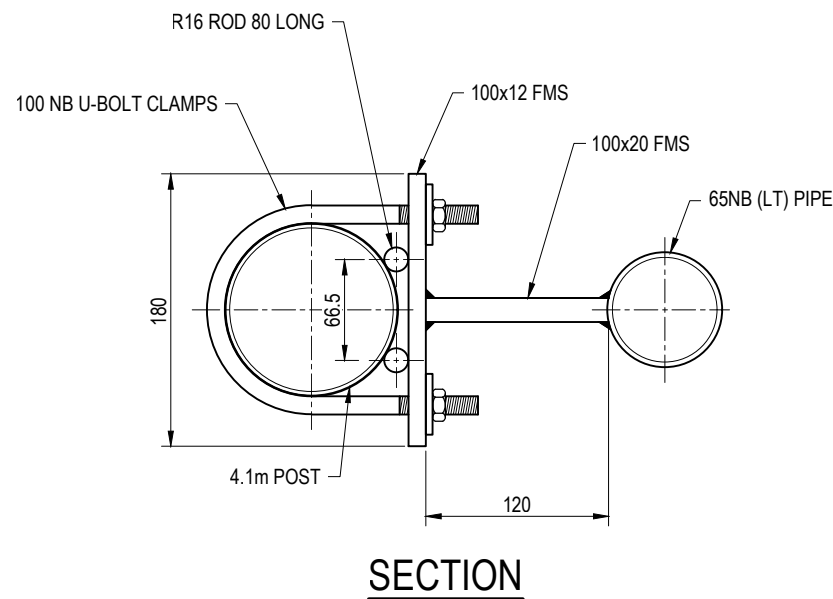
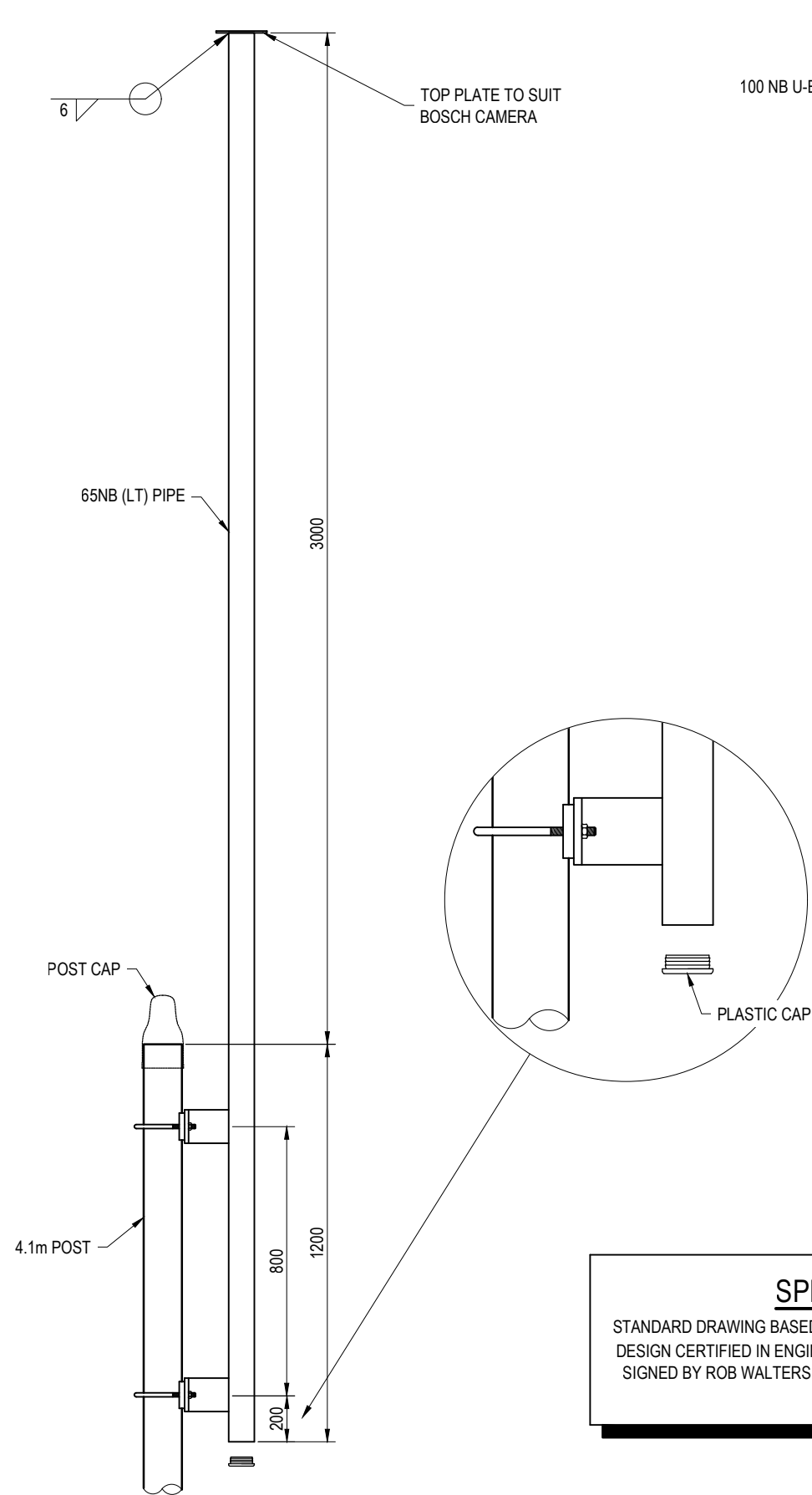
PERFORMANCE CRITERIA:

- TO BE USED ON 7m, 8.5m OR 10m BCC JOINT USE POLES OR BCC TAPERED ROUND JOINT USE MAST ARMS.
- POLES AND MAST ARMS TO HAVE SINGLE LUMINAIRE OUTREACHES ONLY.
- BRACKETS MUST BE MOUNTED AT LEAST 1.5m FROM THE TOP OF THE POLE (E.G. 8.5m FROM GROUND ON A 10m POLE).
- BRACKETS ARE CAPABLE OF SUPPORTING 1 X ONLY CAMERA.
 - BOSCH MIC 7000 SERIES;
 - ENCLOSURE WITH TOTAL MAXIMUM: SAIL AREA OF 0.1m² AND WEIGHT OF 15kg;
- BRACKETS MAY BE USED WITHIN BRISBANE CITY COUNCIL LIMITS AND ARE DESIGNED TO PERFORM SATISFACTORILY DURING BCC SPECIFIED ULTIMATE LIMIT STATE WIND SPEEDS.

MANUFACTURING NOTES

- PIPE TO AS1163, GRADE 250 OR 350
- RHS TO AS1163, GRADE 350
- PLATE TO AS3678, GRADE 300 U.N.O.
- STAINLESS STEEL FIXINGS GRADE 304
- WELDING TO AS1554.1 G.P. U.N.O.
- POLE INTEGRAL OUTREACHES TO BE OPPOSITE DOOR
- WELDING ELECTRODES E48XX OR W50X
- STEEL TO BE H.D.G. TO AS/NZS4680 AFTER FABRICATION
- WELDS TO BE 6MM FILLET U.N.O.
- TAP ALL THREADS AFTER GALVANISING.
- TOLERANCES AS PER STD001 U.N.O.
- PROVIDE VENT HOLES AT CONNECTIONS
- ALL DIMENSIONS IN MILLIMETRES (U.N.O.)

				DRAWING AUTHORISED FOR PUBLICATION				DESIGN		Std Dwgs WG		DATE		Marc'10	
				P COTTON SIGNATURE ON ORIGINAL				DRAWN		CPO - P&D		DATE		Oct'10	
				MANAGER CITY ASSETS, R.P.E.Q: 2 5 4 6				CHECKED		I. Condric		DATE		Jan'11	
B				Camera Mounting Plate and Camera Details amended		JUN '16		JUL '16		JUL '16					
A				Drawing Converted from UMS Series April 2014		APR '14		APR '14		APR '14					
ISSUE				AMENDMENT		DRAWN DATE		CHK'D DATE		APPR'D DATE					
								DESIGN APPROVED		I. CONDRC SIGNATURE ON ORIGINAL		DATED 01/11			
								PRINCIPAL ENGINEER		STRATEGIC ASSET MANAGEMENT		8 5 9 1			
								DRAWING FILENAME		BSD-4129.dwg		ASSOCIATED PLANS		SUPERSEDES UMS-600-058	
								BRISBANE CITY COUNCIL STANDARD DRAWING		UNIVERSAL 1.5m CAMERA OUTREACH FABRICATION DETAILS		SCALE		NOT TO SCALE	
												DWG No.		BSD-4129	
												ORIGINAL SIZE		A3	
												REVISION		B	



DESIGN NOTES

DESCRIPTION:

3m EXTENSION TO BRISBANE CITY COUNCIL 4.1m TRAFFIC SIGNAL POSTS FOR MOUNTING TRAFFIC CAMERAS.

PERFORMANCE CRITERIA:

- TO BE USED ON BRISBANE CITY COUNCIL 4.1m TRAFFIC SIGNAL POSTS.
- POSTS MUST BE MOUNTED ON STANDARD BRISBANE CITY COUNCIL 4-M24, 350P.C.D. x 2m DEEP FOOTING AS PER BSD-4151. WHERE BRACKET IS TO BE MOUNTED ON POSTS WITH AN INFERIOR FOOTING, POST FOOTING MUST BE UPGRADED TO REQUIRED LEVEL.
- IN ADDITION TO THE CAMERA BRACKET PEDESTALS MAY SUPPORT EITHER OF THE FOLLOWING LOADS:
 - 2 x TWO ASPECT, SINGLE COLUMN DISPLAY, Ø300 LANTERNS;
 - 2 x THREE ASPECT, TWO COLUMN DISPLAY, Ø200 LANTERNS.
 - 2 x FOUR ASPECT, TWO COLUMN DISPLAY, Ø200 LANTERNS;
 - DISPLAYS WITH A LOWER SAIL AREA AND WEIGHT THAN ABOVE.
- BRACKETS ARE CAPABLE OF SUPPORTING 1 X ONLY CAMERA. CAMERA MUST BE HOUSED IN EITHER:
 - BOSCH MIC IP STARLIGHT;
 - ENCLOSURE WITH TOTAL MAXIMUM: SAIL AREA OF 0.1m² AND WEIGHT OF 15kg.
- BRACKETS MAY BE USED WITHIN BRISBANE CITY COUNCIL LIMITS AND ARE DESIGNED TO PERFORM SATISFACTORILY DURING BRISBANE CITY COUNCIL SPECIFIED ULTIMATE LIMIT STATE WIND SPEEDS.

FABRICATION NOTES

- PIPE TO AS1163, GRADE 250 OR 350.
- RHS TO AS1163, GRADE 350.
- PLATE TO AS3678, GRADE 300 U.N.O.
- STAINLESS STEEL FIXINGS GRADE 304.
- WELDING TO AS1554.1 G.P. U.N.O.
- POLE INTEGRAL OUTREACHES TO BE OPPOSITE DOOR.
- WELDING ELECTRODES E48XX OR W50X.
- STEEL TO BE H.D.G. TO AS/NZS4680 AFTER FABRICATION.
- WELDS TO BE 6mm FILLET U.N.O.
- TAP ALL THREADS AFTER GALVANISING.
- TOLERANCES AS PER STD001 U.N.O.
- PROVIDE VENT HOLES AT CONNECTIONS.
- ALL DIMENSIONS IN MILLIMETRES (U.N.O.).

SPECIAL NOTE:

STANDARD DRAWING BASED GM POLES PTY LTD DRAWING WS38276B-2.
 DESIGN CERTIFIED IN ENGINEERING STATEMENT DATED 12 APRIL 2010,
 SIGNED BY ROB WALTERS (RPEQ: 6228) ENGINEERING MANAGER, GM
 POLES PTY LTD.

THE PURPOSE OF THIS STANDARD DRAWING IS TO PROVIDE TYPICAL DETAILS THAT SUPPORT THE DESIRED OUTCOMES OF THE BRISBANE CITY PLAN 2014 AND ASSOCIATED PLANNING SCHEME POLICIES. THE FITNESS FOR PURPOSE OF THIS STANDARD DRAWING FOR A SPECIFIC PROJECT SHOULD BE ASSESSED AND ACCEPTED BY AN APPROPRIATELY QUALIFIED DESIGNER AND/OR REGISTERED PROFESSIONAL ENGINEER OF QUEENSLAND (RPEQ).



BRISBANE CITY COUNCIL STANDARD DRAWING

TRAFFIC CAMERA MOUNT
 OPTIONS - FAB. DETAILS
 3m PEDESTAL EXTENSION

PUBLISH DATE		JUN 2023
SCALE		NOT TO SCALE
DRAWING NUMBER		BSD-4130
ORIGINAL SIZE	REVISION	
A3	B	

STEELWORK NOTES:

- ALL WORKMANSHIP & MATERIALS SHALL BE IN ACCORDANCE WITH AS4100 & AS/NZS1554 AS APPROPRIATE.
- ALL STEEL SHALL BE IN ACCORDANCE WITH:
AS/NZS3679 GRADE 300 FOR HOT ROLLED SECTIONS
AS1163 GRADE C350L0 FOR RECTANGULAR AND SQUARE HOLLOW SECTIONS
AS1163 GRADE C350L0 FOR CIRCULAR HOLLOW SECTIONS UNO.
- ALL BOLTS TO BE METRIC HEXAGONAL TO AS/NZS1252 U.N.O.
ALL BOLTS TO BE M20 8.8/S TO AS/NZS 1252 U.N.O.
ALL BOLTS TO BE HOT DIP GALVANISED AS1214
ALL THREADS TO BE TREATED WITH 'LOC-TITE' TO RENDER TAMPER AND VIBRATION PROOF.
- THE CONTRACTOR SHALL SUBMIT RPEQ CERTIFICATION CONFIRMING THE FOLLOWING TOGETHER WITH THE RELEVANT MILL AND TEST CERTIFICATES TO THE SUPERINTENDENT FOR APPROVAL PRIOR TO COMMENCING FABRICATION.
 - THAT THE STRUCTURAL STEEL PRODUCTS SUPPLIED ARE FROM EITHER AN AUSTRALIAN OR OVERSEAS ACRS CERTIFIED MANUFACTURER. REFER www.steelcertification.com FOR CURRENT CERTIFICATE HOLDERS. ACRS REFERS TO "AUSTRALIAN CERTIFICATION AUTHORITY FOR REINFORCING AND STRUCTURAL STEELS".
 - THAT WHERE STRUCTURAL STEEL PRODUCTS ARE SOURCED FROM OVERSEAS FOR THIS PROJECT THE CERTIFYING ENGINEER HAS REVIEWED THE MILL AND TEST CERTIFICATES FROM THE SUPPLIERS OF THE STEEL PRODUCTS AND CONFIRMS THAT THEY COMPLY WITH THE RELEVANT AUSTRALIAN STANDARDS IN RELATION TO MATERIAL COMPOSITION AND STRENGTH.
 - THAT ALL BOLTS USED SHALL COMPLY WITH AS1252 AND THE CURRENT REQUIREMENTS OF THE AUSTRALIAN STEEL INSTITUTE ASI TECHNICAL NOTE TN001 VERSION 3.
- ALL CLEATS AND GUSSETS SHALL BE 10mm PLATE TO AS/NZS3678 GRADE 300 U.N.O.
- THE ENDS OF ALL TUBULAR MEMBERS ARE TO BE SEALED WITH 5mm THICK PLATES AND CONTINUOUS FILLED WELDED U.N.O.
- WHERE MEMBERS SHOWN ON THE STRUCTURAL DRAWINGS ARE TO BE BENT, CURVED OR ROLLED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE METHODS REQUIRED TO ACHIEVE THE REQUIRED SHAPES WITHOUT LOCALISED DISTORTION OF THE MEMBERS.
- BEFORE FABRICATION HAS COMMENCED, THE CONTRACTOR SHALL SUBMIT THREE (3) COPIES OF THE SHOP DRAWINGS TO THE SUPERINTENDENT FOR REVIEW. REVIEW DOES NOT INCLUDE CHECKING OF DIMENSIONS.
- ALL WELDS TO BE 6mm CONTINUOUS FILLET WELDS (CFW) STRUCTURAL PURPOSE (SP) WELDS U.N.O. ALL WELDS TO BE MADE USING E48XX OR W50X GRADE 1 (OR BETTER) ELECTRODES TO AS/NZS1554. GRIND ALL CORNERS & WELDS SMOOTH. A RPEQ CERTIFICATION CONFIRMING THAT ALL WELDING WORKS HAVE BEEN INSPECTED AND CERTIFIED AS COMPLYING WITH AS1554 BY A QUALIFIED WELDING INSPECTOR APPOINTED BY THE CONTRACTOR SHALL BE SUBMITTED TO THE SUPERINTENDENT FOR APPROVAL PRIOR TO THE STEELWORK BEING GALVANISED.
- ALL STEELWORK TO BE HOT DIP GALVANISED IN ACCORDANCE WITH AS/NZS2312 HDG600 SPECIFICATION. SURFACE PREPARATION FOR CORROSION PROTECTION COATING IS TO BE CLASS 2½ TO AS1627 AND PICKLED PRIOR GALVANISING. HOT DIPPED GALVANISED COATING SHALL BE IN ACCORDANCE WITH AS/NZS4680.
- THE PRINCIPAL CONTRACTOR SHALL CONFER WITH THE FABRICATOR AND GALVANISER TO ENSURE VENT HOLES ARE PROVIDED IN ACCORDANCE WITH AS/NZS 4680.
- PROTECTIVE COATINGS TO BE APPLIED AFTER ALL FABRICATION COMPLETED. NO WELDING ETC TO BE CARRIED OUT DURING OR AFTER APPLICATION OF COATING SYSTEM.
- ANY POST GALVANISING DAMAGE TO BE MADE GOOD WITH A HIGH QUALITY TWO PACK EPOXY ZINC RICH PAINT CONFORMING TO AS/NZS3750.9 WITH A MINIMUM DRY FILM THICKNESS OF 100 MICRONS. SURFACE PREPARATION AS PER PAINT MANUFACTURER'S RECOMMENDATIONS.

DESIGN CRITERIA

- DESIGN STANDARDS : AS5100 (2004), AS1170, AS3600 (2009), AS4100 (1998) INCLUDING SUPPLEMENTS AND AMENDMENTS.
- DESIGN LOADS : IN ACCORDANCE WITH AS5100, AS1170 AND 'DESIGN CRITERIA FOR BRIDGES AND OTHER STRUCTURES: 2012' PUBLISHED BY DEPARTMENT OF TRANSPORT AND MAIN ROADS (DTMR) QLD.
- DESIGN DATA : WIND LOADS
 - REGION: B
 - TERRAIN CATEGORY: 2
 - STRUCTURE HEIGHT: 8.0m
 - ARI: 2000 YRS (ULS) & 25 YRS (SLS)
 - REGIONAL WIND SPEED: $V_{2000} = 63\text{m/s}$ $V_{25} = 39\text{m/s}$
- WEIGHT OF CAMERAS, HOUSING AND BRACKET 60kg MAX. TOTAL SAIL AREA 0.6m²

DESIGN NOTES

- ARM AND BRACKET FOR THREE (3) TRAFFIC CAMERAS TO BE MOUNTED ONTO BCC VMS SUPPORT STRUCTURE TYPE BCC-VC.
- BRACKETS ARE CAPABLE OF SUPPORTING THREE (3) CAMERAS ONLY. CAMERAS SHALL BE:
 - 1 x PTZ ESPRIT ES40E/ES41E CAMERA OR AN APPROVED EQUAL;
 - 2 x 700TVL, TDN, D-WDR FIXED CAMERA OR AN APPROVED EQUAL;

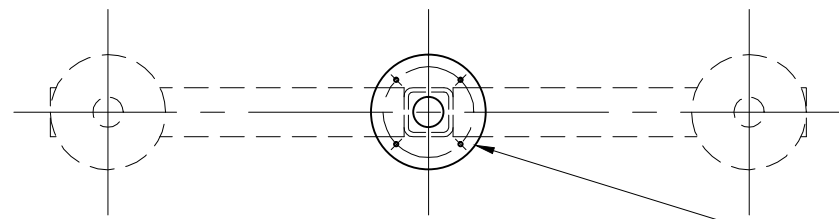
ISSUE	AMENDMENT	DRAWN DATE	CHK'D DATE	APPR'D DATE
B	Drawing Title Amended	JAN '16	JUL '16	JUL '16
A	ORIGINAL ISSUE	OCT 14	OCT 14	NOV 14

DRAWING AUTHORISED FOR PUBLICATION			
Inga Cendric 2015.06.16 10:20:32+10'00'			
FOR ASSET ENGINEERING MANAGER STRATEGIC ASSET MANAGEMENT DESIGN APPROVED			
E.Bradley Signature on Original June 2015			
INTELLIGENT TRANSPORT SYSTEMS MANAGER CONGESTION REDUCTION UNIT			

DESIGN	RH	DATE	OCT '14
DRAWN	GVF	DATE	OCT '14
CHECKED	LM	DATE	OCT '14
DRAWING FILENAME	BSD-4131(B) Arm and bracket for cameras on VMS gantry - Notes - Sheet 1 of 2.dwg		
ASSOCIATED PLANS	BSD-4131 SHEET 2 OF 2		

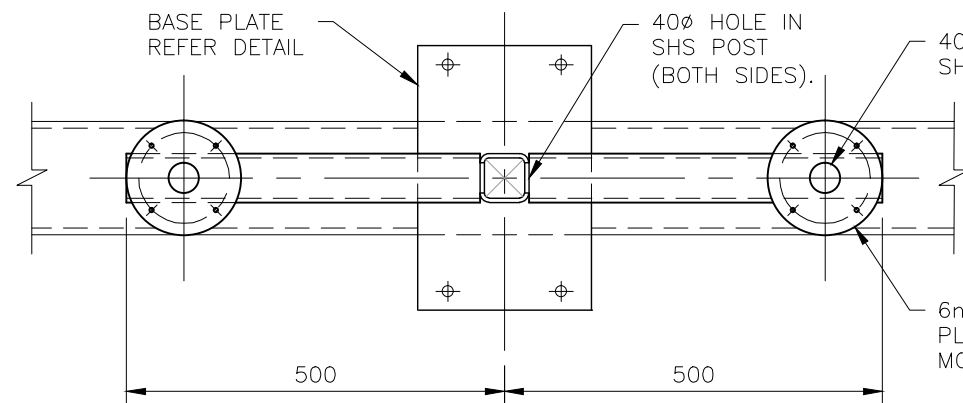


STRUCTURAL DESIGN CERTIFICATION		
DESIGN	DESIGN CHECK	AUTHORISED FOR ISSUE
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BRISBANE CITY COUNCIL STANDARD DRAWING		
ARM AND BRACKET FOR CAMERAS ON VMS GANTRY NOTES - SHEET 1 OF 2		SCALE NOT TO SCALE
DWG No. BSD-4131		REVISION
ORIGINAL SIZE A3	B	

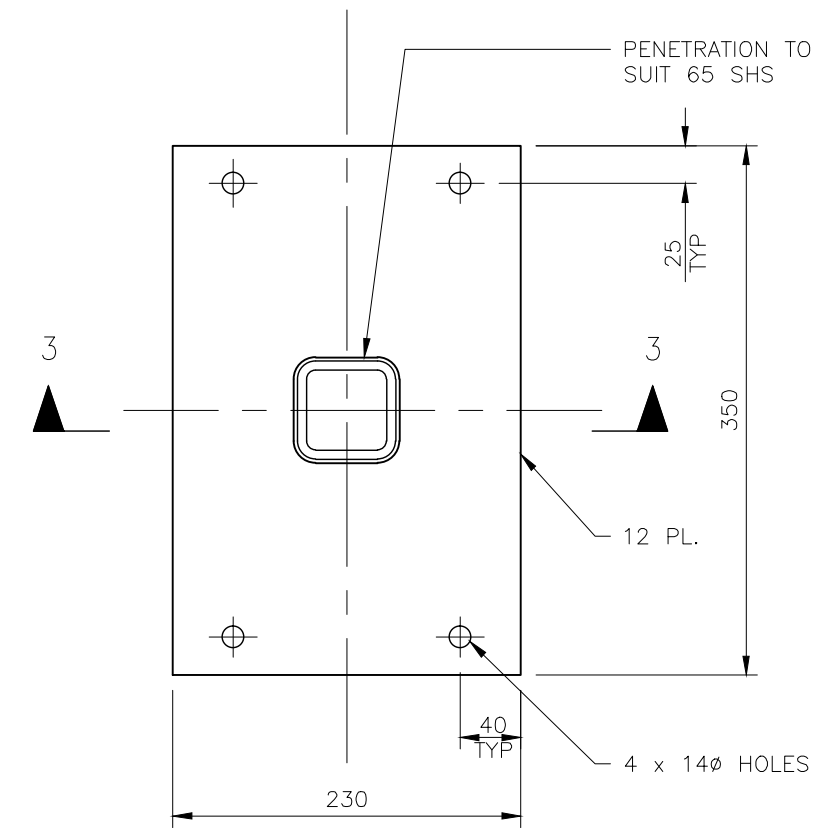


SECTION 2
SCALE 1:10

6mm FIXED CAMERA MOUNTING PLATE. REFER BDS-4129 ESPRIT MOUNTING PLATE FOR DETAILS.

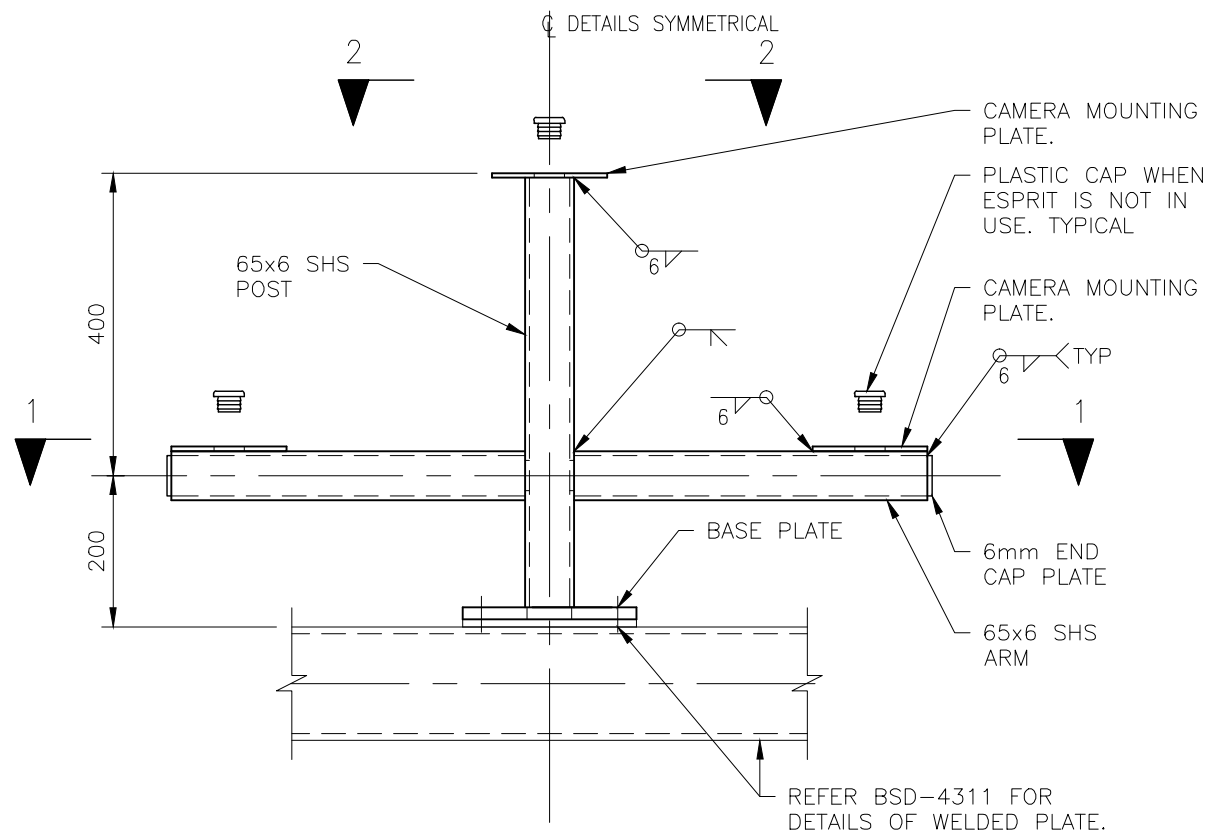


6mm FIXED CAMERA MOUNTING PLATE. REFER BDS-4129 ESPRIT MOUNTING PLATE FOR DETAILS.



POST BASE PLATE DETAIL
SCALE 1:5

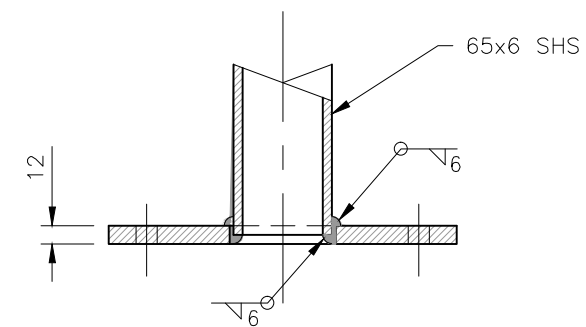
SECTION 1
SCALE 1:10



REFER BSD-4311 FOR DETAILS OF WELDED PLATE.

ARM AND BRACKET ELEVATION

SCALE 1:10



SECTION 3
SCALE 1:5

CONTRACTOR TO CONFIRM THE MAKE AND MODEL OF THE CAMERAS AND MOUNTING HOLE DETAILS PRIOR TO FABRICATING THE BRACKETS.

STRUCTURAL DESIGN CERTIFICATION

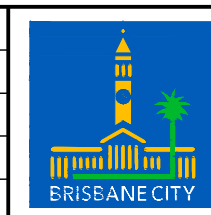
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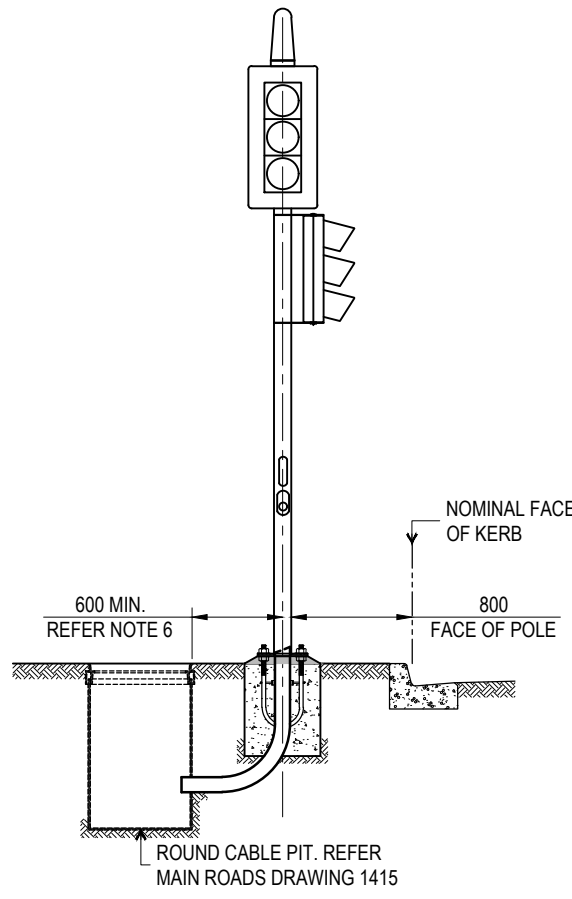
BRISBANE CITY COUNCIL STANDARD DRAWING

SCALE NOT TO SCALE	
DWG No. BSD-4131	
ORIGINAL SIZE A3	REVISION B

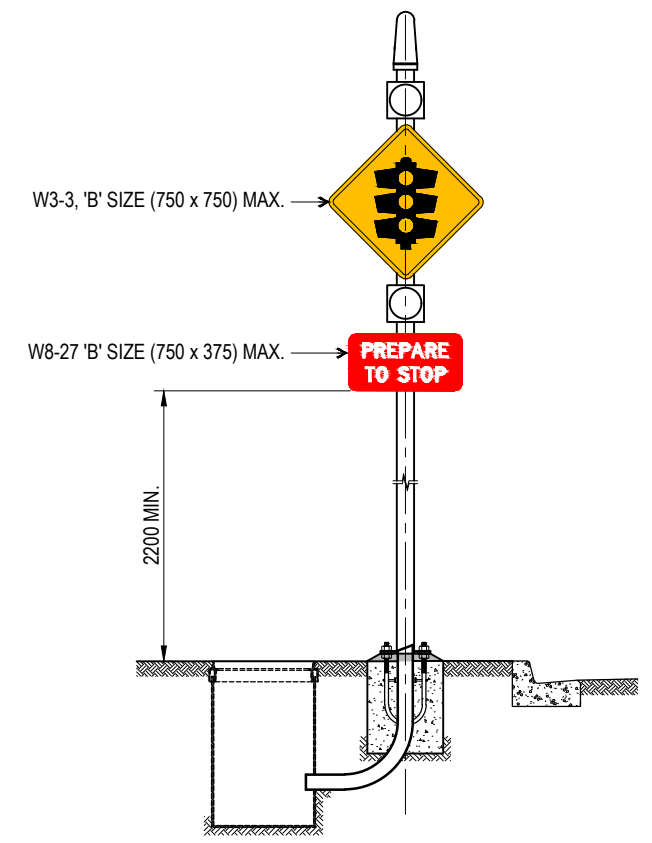
ISSUE	AMENDMENT	DRAWN DATE	CHK'D DATE	APPR'D DATE
B	Drawing Title Amended	JAN '16	JUL '16	JUL '16
A	ORIGINAL ISSUE	OCT 14	OCT 14	NOV 14

DRAWING AUTHORISED FOR PUBLICATION Inga Condric 2015.06.16 10:22:15+10'00'			
DESIGN	RH	DATE	OCT '14
DRAWN	GVF	DATE	OCT '14
CHECKED	LM	DATE	OCT '14
DRAWING FILENAME	BSD-4131(0) Arm and bracket for cameras on VMS gantry - Fabrication details - Sheet 2 of 2.dwg		
ASSOCIATED PLANS	BSD-4131 SHEET 1		

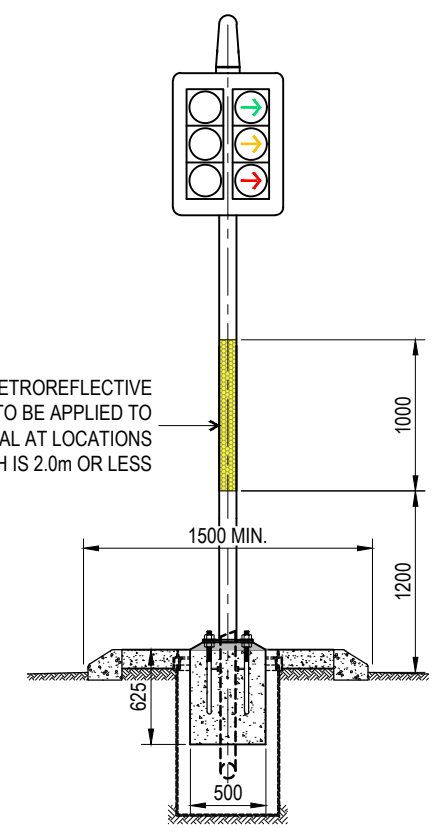




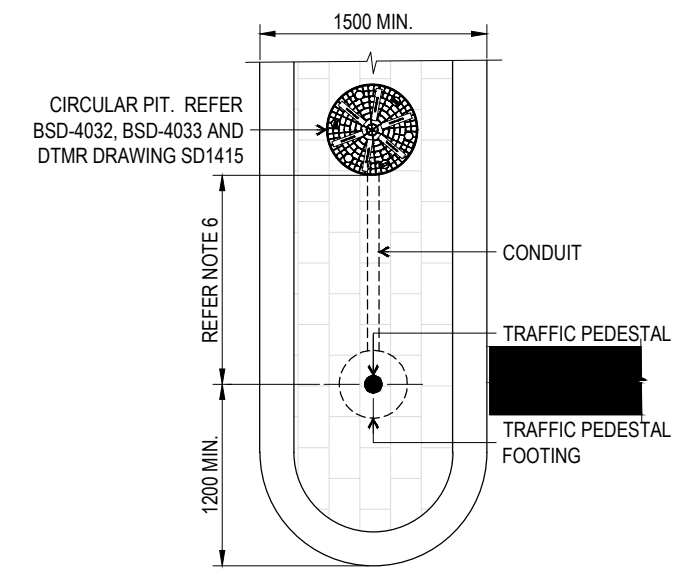
MINIMUM SET BACK DISTANCE FROM KERB



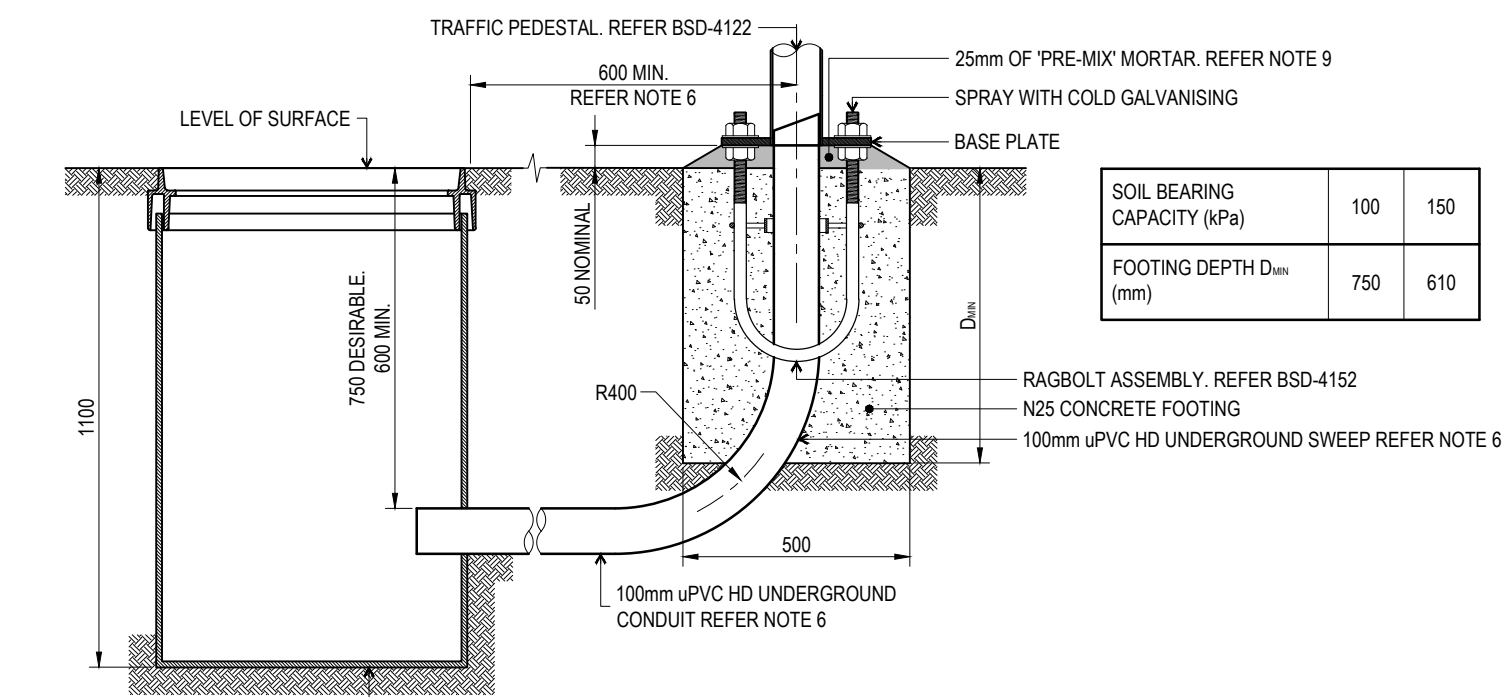
ADVANCED WARNING PEDESTAL ARRANGEMENT



MINIMUM MEDIAN WIDTH



MEDIAN SET OUT DETAILS PLAN VIEW



FOOTING DETAIL (SEALED SURFACE)
NOT TO SCALE

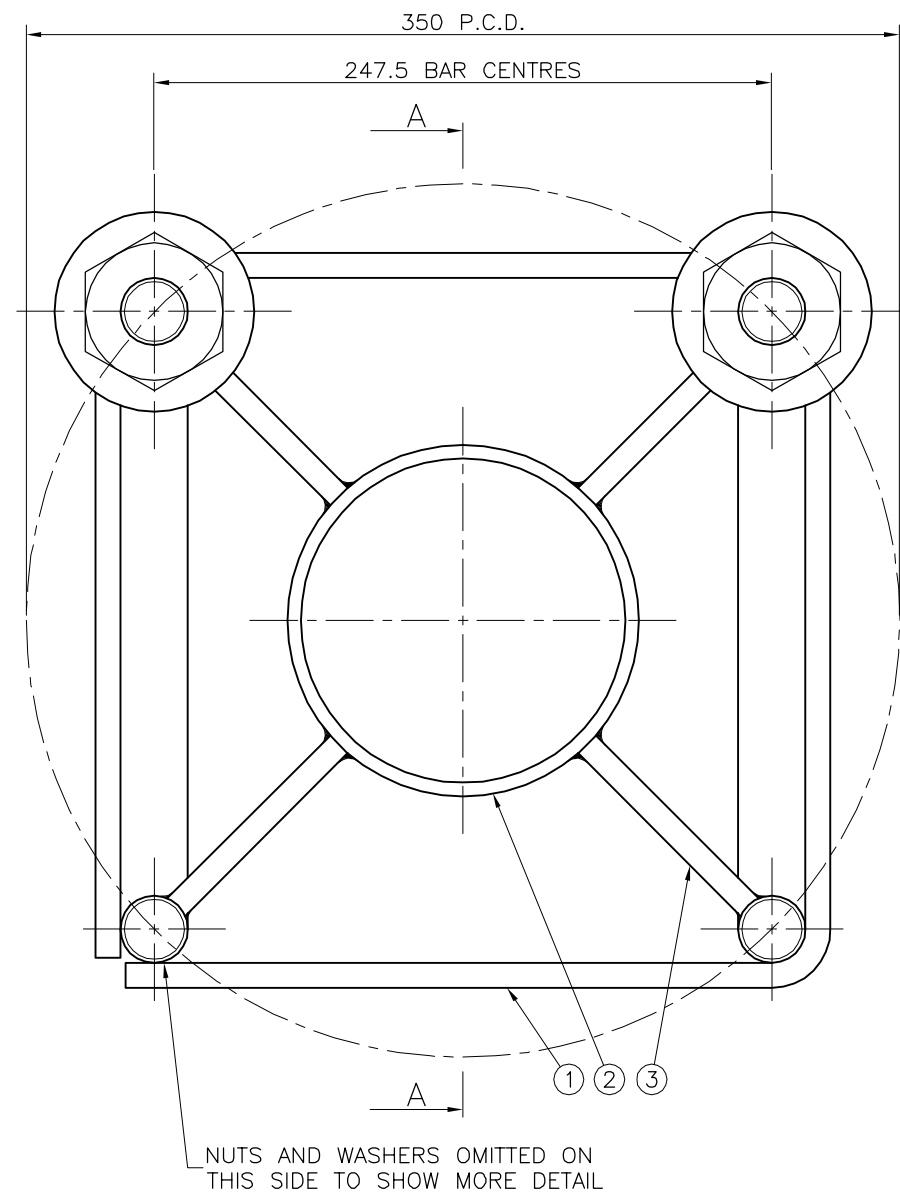
NOTES:

- DESIGN STANDARDS:
 - AS4676-2000, AS1170.2-2002 AND AS2144-2002;
 - TERRAIN CATEGORY 2.5;
 - IMPORTANCE FACTOR 2.
- FOR 1.7m POST AND 4.1m PEDESTAL - FOR DETAILS REFER BSD-4122.
- FOR RAG BOLT DETAILS REFER BSD-4152.
- A LICENSED ELECTRICAL WORKER SHALL SUPERVISE THE INSTALLATION OF CONDUIT AND SWEEPS.
- CONCRETE SHALL BE N25.
- PITS TO BE MINIMUM OF 600 TO A MAXIMUM OF 6000 FROM ASSOCIATED POST.
- HIGH STRENGTH, NON-SHRINK GROUT (MIN. 32MPa) TO BE USED. PACK THE MIX BENEATH THE BASE PLATE AND CHAMFER SIDES OF PACKED GROUT TO GROUND AT 45°.
- SPREAD FOOTING MAY BE USED WHERE REQUIRED REFER BSD-4153.
- 25mm MAX. HEIGHT OF THREAD TO BE LEFT PROTRUDING ABOVE BASE PLATE LOCK DOWN NUT.
- DIMENSIONS IN MILLIMETRES (U.N.O.).

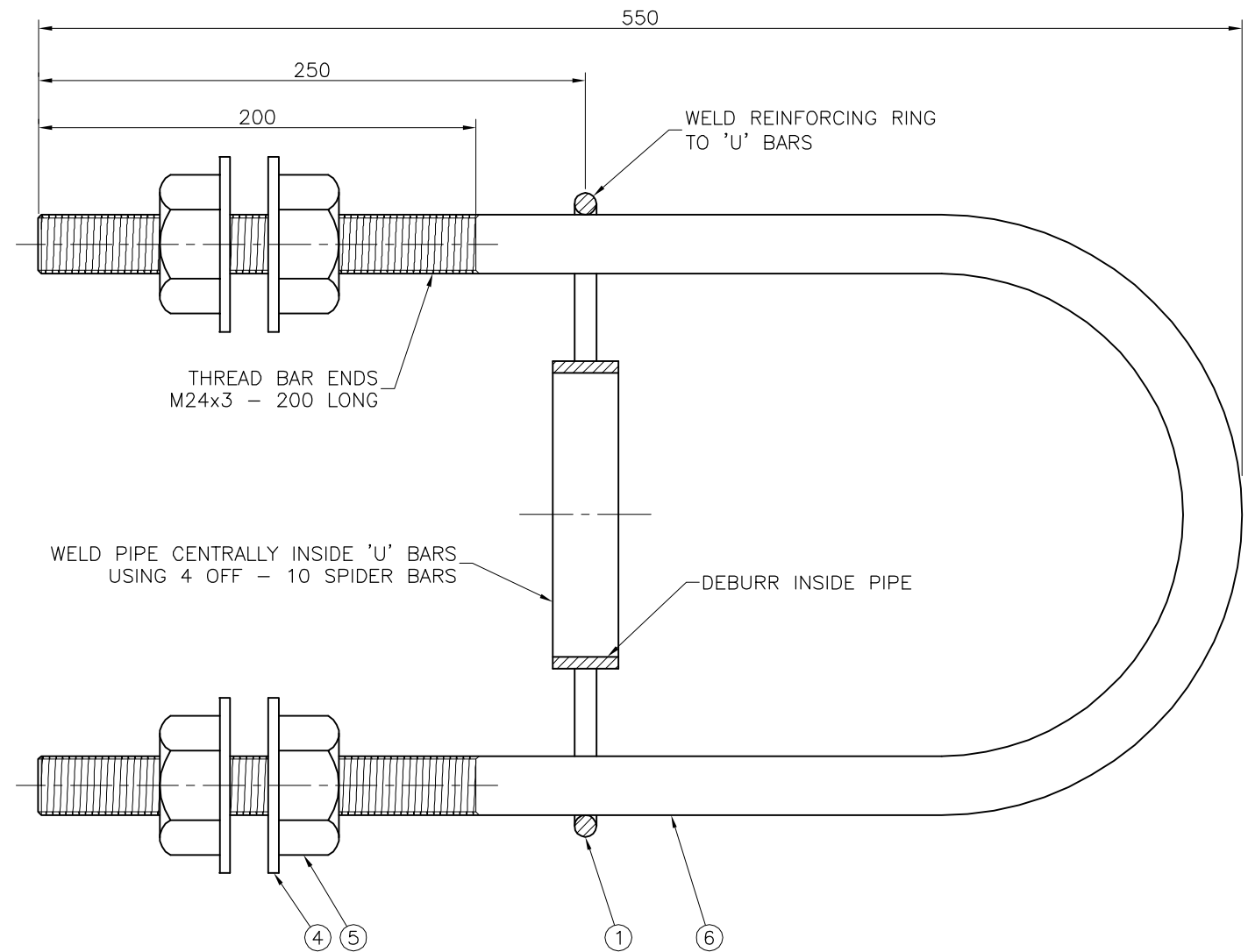
THE PURPOSE OF THIS STANDARD DRAWING IS TO PROVIDE TYPICAL DETAILS THAT SUPPORT THE DESIRED OUTCOMES OF THE BRISBANE CITY PLAN 2014 AND ASSOCIATED PLANNING SCHEME POLICIES. THE FITNESS FOR PURPOSE OF THIS STANDARD DRAWING FOR A SPECIFIC PROJECT SHOULD BE ASSESSED AND ACCEPTED BY AN APPROPRIATELY QUALIFIED DESIGNER AND/OR REGISTERED PROFESSIONAL ENGINEER OF QUEENSLAND (RPEQ).



BRISBANE CITY COUNCIL STANDARD DRAWING		PUBLISH DATE	
STANDARD 4.1m SIGNAL PEDESTAL FOOTING DETAILS		SEP 2024	
		SCALE	
		NOT TO SCALE	
		DRAWING NUMBER	
		BSD-4151	
ORIGINAL SIZE	REVISION		
A3	F		



END VIEW



SECTIONAL ELEVATION

MATERIALS LIST

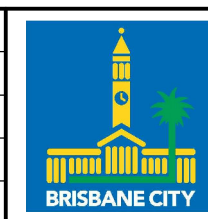
ITEM No.	No. OFF	ITEM DESCRIPTION	MATERIAL DESCRIPTION	LENGTH	GRADE
6	2	'U' SHAPED ANCHOR BAR	N28 BAR WITH M24 THREAD	1220mm	-
5	8	LEVELLING NUTS—REFER TO NOTES 1 & 3	M24 HEX GALV. NUT		8.8/S
4	8	GALVANISED WASHERS	Ø25mm x 5mm GALV. WASHERS		-
3	4	SPIDER BAR TIE	Ø10mm ROUND STEEL BAR	102mm	M.S.
2	1	SPIDER CENTRE RING	130NBx5.4mm WALL BLACK PIPE	30mm	Gr 250
1	1	REINFORCING RING	Ø10mm ROUND STEEL BAR	1110mm	M.S.

NOTES:

1. ALL NUTS TO CONFORM TO AS1112 AND AS1252 & HOT DIPPED GALVANISED TO AS1214.
2. ALL WASHERS TO BE HOT DIPPED GALVANISED TO AS1214.
3. SCREW ON EACH BAR TWO NUTS WITH TWO FLAT WASHERS BETWEEN THEM AFTER GALVANISING.
4. ANCHOR CAGE ASSEMBLY TO BE CLEANED AND THE WELDING SLAG REMOVE PRIOR TO BEING HOT DIP GALVANISED TO AS/NZS4680 AND AS1214.
5. THREADS SHOULD BE CLEAN AFTER GALVANISING AND A TEMPLATE PLACED OVER THREADED ENDS TO ENSURE THE ACCURACY OF THE P.C.D. OF BARS.
6. THIS 4 BAR GALVANISED CAGE WEIGHS 14kg.
7. TOLERANCES: DIMENSIONAL ±5.0 U.N.O., HOLE CENTRES ±1.0 U.N.O.
8. DIMENSIONS IN MILLIMETRES (U.N.O.).

B	BOTTOM STRAP TIE REMOVED	BW 18.11.15	CJC 18.11.15	AMG 18.11.15
A	ORIGINAL ISSUE	Oct '13	Oct '13	Oct '13
ISSUE	AMENDMENT	DRAWN DATE	CHK'D DATE	APPR'D DATE

DRAWING AUTHORISED FOR PUBLICATION B. BALL SIGNATURE ON ORIGINAL DATED 29/6/01				DESIGN	Std Dwgs WG	DATE	Apr'01
MANAGER ASSET SUPPORT - R.P.E.Q: 3 8 5 2				DRAWN	CPO - P&D	DATE	Apr'01
DESIGN APPROVED K. MEMORY SIGNATURE ON ORIGINAL DATED 27/6/01				CHECKED	R. WILSON	DATE	May'01
SENIOR PROGRAM OFFICER NETWORK OPERATIONS - R.P.E.Q: 4 7 6 1				DRAWING FILENAME	BSD-4152.dwg		
				ASSOCIATED PLANS	SUPERSEDES UMS-600-061		



BRISBANE CITY COUNCIL STANDARD DRAWING	
RAGBOLT ASSEMBLIES PEDESTAL	
SCALE NOT TO SCALE	DWG No. BSD-4152
ORIGINAL SIZE A3	REVISION B

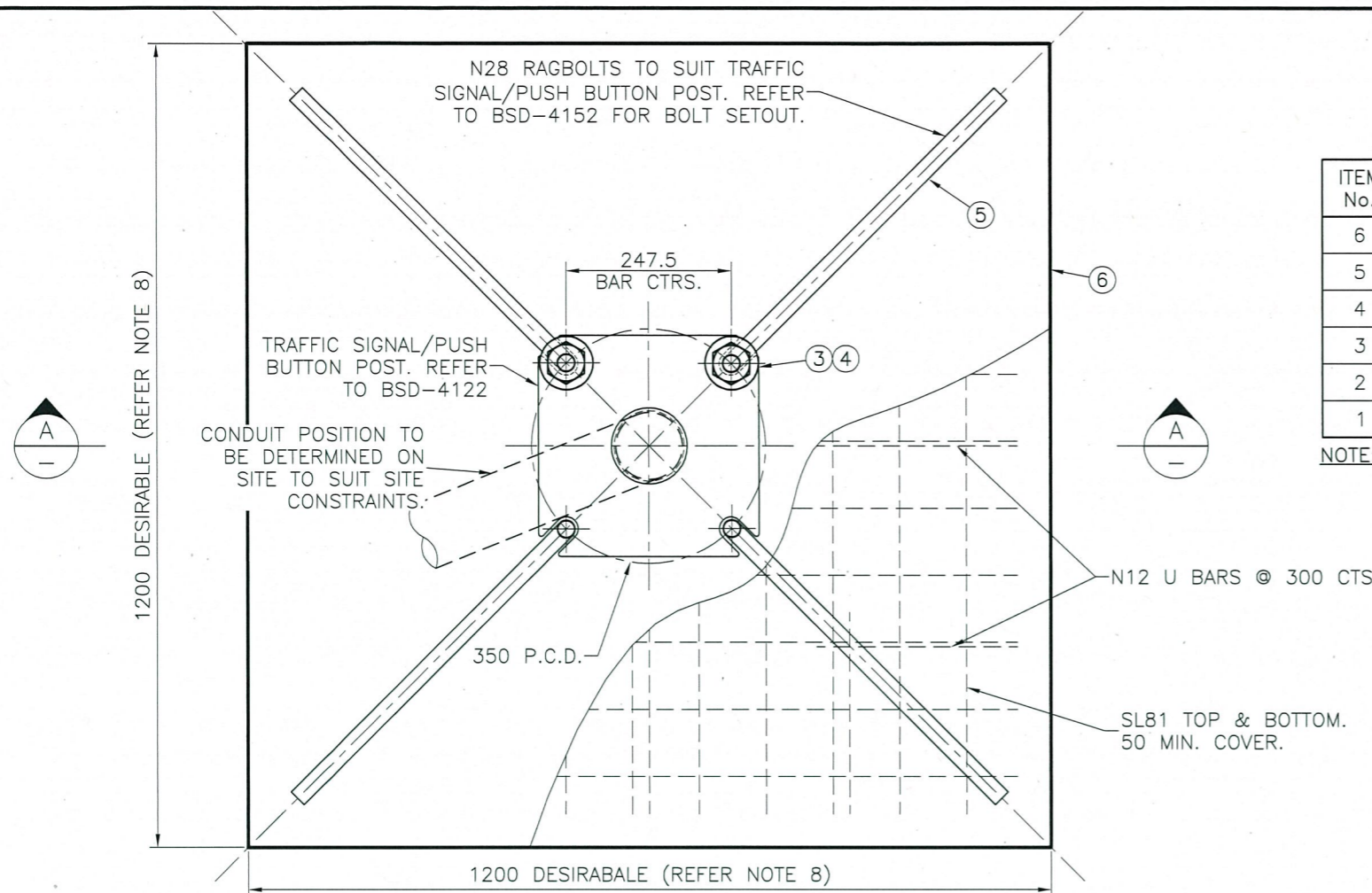
MATERIALS LIST

ITEM No.	No. OFF	ITEM DESCRIPTION	MATERIAL DESCRIPTION	QUANTITY	GRADE
6	1	CONCRETE	CONCRETE	0.46m ³ *	N32
5	4	'L' SHAPED ANCHOR BAR	N28 BAR WITH M24 THREAD	1010mm#	-
4	8	LEVELLING NUTS—REFER TO NOTES 1 & 3	M24 HEX GALV. NUT		8.8/S
3	8	GALVANISED WASHERS	25mm ϕ x 5mm GALV. WASHERS		-
2	2	REINFORCING MESH	SL81 MESH	1.2m ²	M.S.
1	12*	'U' BARS	N12 BAR	800mm	M.S.

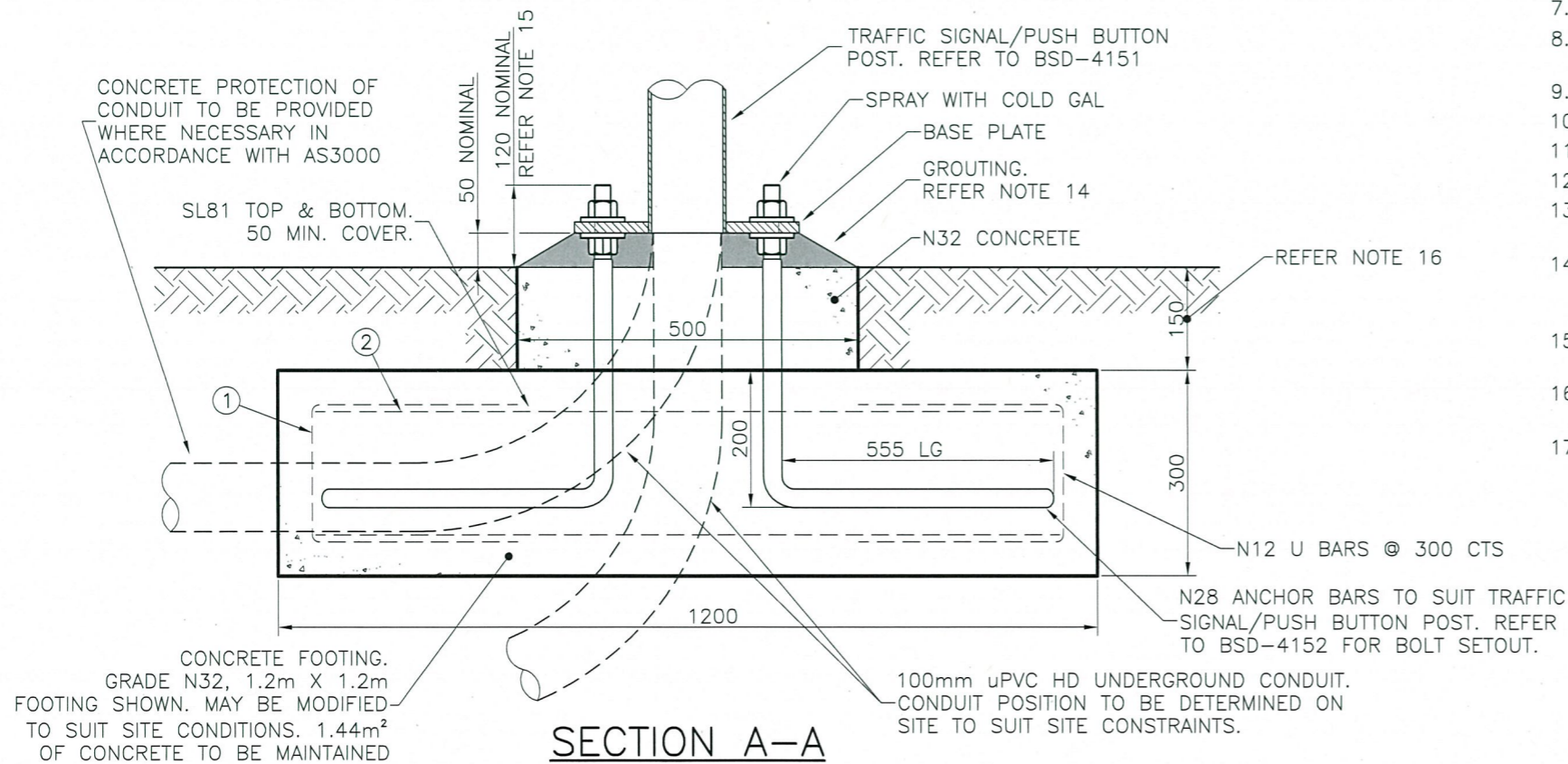
NOTE: * = 0.43m³ IF FOOTING INSTALLED AT SURFACE LEVEL.
= 860mm IF FOOTING INSTALLED AT SURFACE LEVEL.

NOTES

- ALL NUTS TO CONFORM TO AS1112 AND AS1252 & HOT DIPPED GALVANISED TO AS1214.
- ALL WASHERS TO BE HOT DIPPED GALVANISED TO AS1214.
- SCREW ON EACH BAR TWO NUTS WITH TWO FLAT WASHERS BETWEEN THEM AFTER GALVANISING.
- ANCHOR BARS TO BE CLEANED AND THE WELDING SLAG REMOVE PRIOR TO BEING HOT DIP GALVANISED TO AS/NZS4680 AND AS1214.
- THREADS SHOULD BE CLEAN AFTER GALVANISING AND A TEMPLATE PLACED OVER THREADED ENDS TO ENSURE THE ACCURACY OF THE P.C.D. OF BARS.
- TOLERANCES: DIMENSIONAL ± 5.0 (U.N.O).
- FOR 1.7m/4.1m POST RAG BOLT SETOUT DETAILS REFER BSD-4151 AND BSD-4152.
- DESIRABLE WIDTH OF FOOTING TO BE 1200mm x 1200mm, MINIMUM WIDTH OF FOOTING 900mm, HOWEVER 1.44m² TO BE MAINTAINED.
- CONCRETE SHALL BE N32.
- A LICENSED ELECTRICAL WORKER SHALL SUPERVISE THE INSTALLATION OF CONDUIT.
- BASE PLATE AS PER BSD-4152.
- FOR THE PROVISION OF RECTANGULAR FOOTING, LONGER DIMENSION TO BE ORIENTATED PARALLEL TO THE DIRECTION OF THE LANTERN FACE.
- MIX SAND/CEMENT GROUT IN A 3:1 RATIO BY VOLUME. ADD ENOUGH WATER TO GIVE A WORKABLE MIX. PACK THE MIX BENEATH THE BASE PLATE. CHAMFER SIDES OF PACKED GROUT TO GROUND AT 45°.
- 25mm MAX. HEIGHT OF THREAD TO BE LEFT PROTRUDING ABOVE BASE PLATE LOCK DOWN NUT.
- FOOTING CAN BE RAISED TO SURFACE LEVEL IF REQUIRED WHERE ADJACENT SURFACE IS PLAIN CONCRETE OR GRASS. ANCHOR BAR LENGTH TO BE ADJUSTED TO SUIT.
- ALL DIMENSIONS IN MILLIMETRES (U.N.O.).



PLAN VIEW



SECTION A-A

ISSUE	AMENDMENT	DRAWN DATE	CHK'D DATE	APPR'D DATE
B	BASEPLATE RAISED ABOVE GROUND LEVEL, ANCHOR BARS ALTERED TO SUIT	APR '14	APR '14	APR '14
A	Drawing Converted from UMS Series April 2014	APR '14	APR '14	APR '14

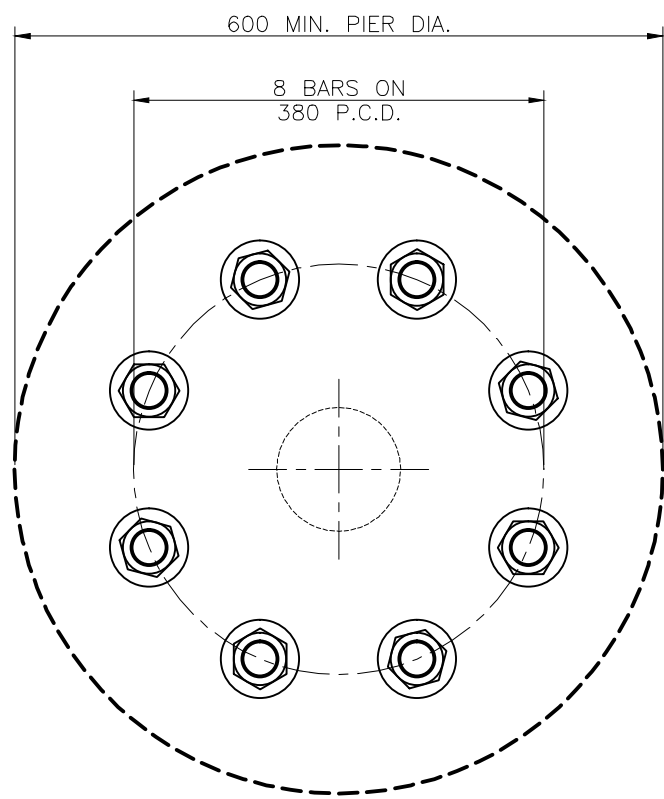
DRAWING AUTHORIZED FOR PUBLICATION P COTTON SIGNATURE ON ORIGINAL DATED 21/03/05				DESIGN	Std Dwgs WG	DATE	Aug,05
MANAGER INFRASTRUCTURE MANAGEMENT R.P.E.Q.: 2546				DRAWN	CPO - P&D	DATE	Aug '05
DESIGN APPROVED A GIBBONS SIGNATURE ON ORIGINAL DATED 09/12/05				CHECKED	T & T (Signals Man)	DATE	Nov '05
TEAM LEADER SIGNALS OPERATIONS				DRAWING FILENAME	BSD-4153.dwg		
				ASSOCIATED PLANS	SUPERSEDES UMS-600-062		



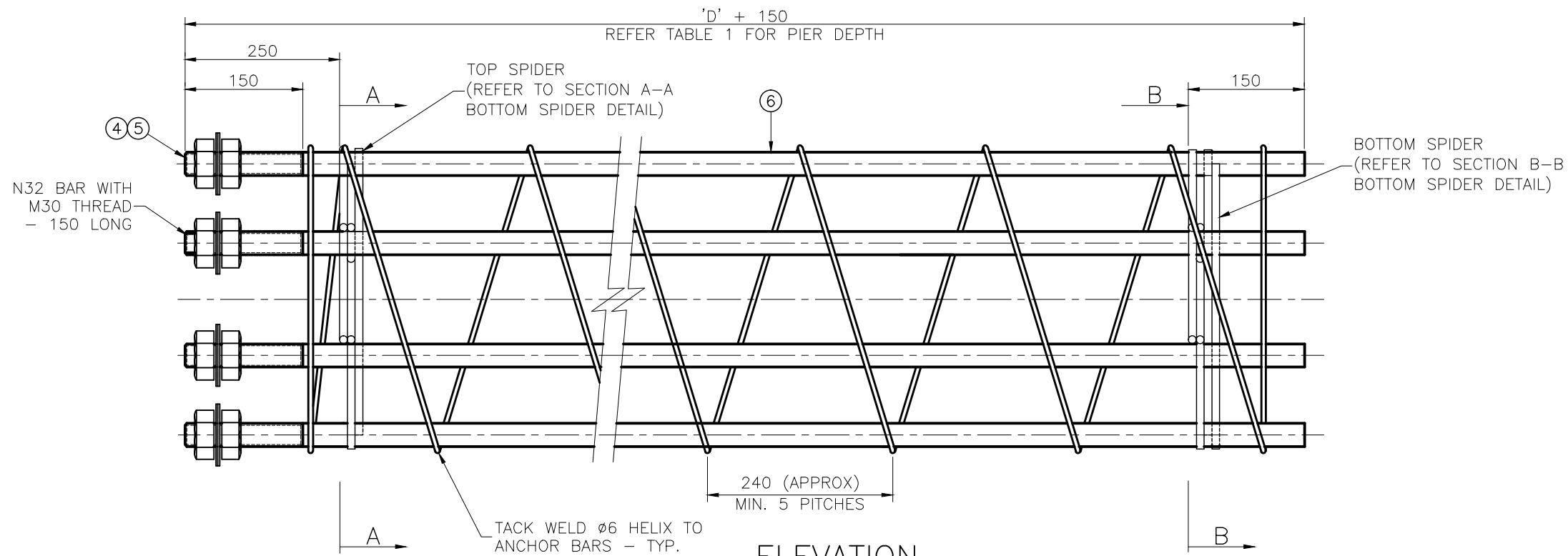
BRISBANE CITY COUNCIL STANDARD DRAWING

SPREAD FOOTING DETAILS
4.1m TRAFFIC SIGNAL AND
1.7m PUSH BUTTON POSTS

SCALE NOT TO SCALE	
DWG No. BSD-4153	
ORIGINAL SIZE A3	REVISION B



TOP ELEVATION



ELEVATION

TABLE 1 – BORED PIER DEPTH TABLE

SOIL CLASS	STRENGTH (f'b) (kPa)	EMBEDMENT DEPTH (D)	PILE LENGTH
SOFT (POOR)	80~100	2600	2700
FIRM (AVERAGE)	101~150	2100	2200

DESIGN ASSUMPTIONS MADE

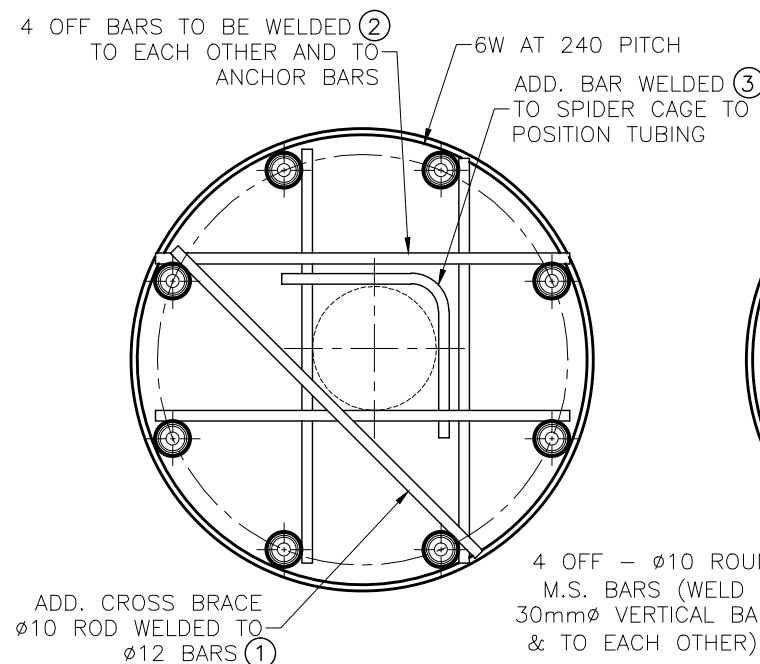
- ANY UNIDENTIFIED DIMENSIONS FOR THE MASTARM WERE SCALED FROM STANDARD DRAWING UMS 600/053. THESE DIMENSIONS WERE CONSIDERED SUFFICIENTLY ACCURATE FOR THE CALCULATIONS
- LUMINAIRE HEIGHT IS CONSIDERED TO BE 12.0m.

NOTES

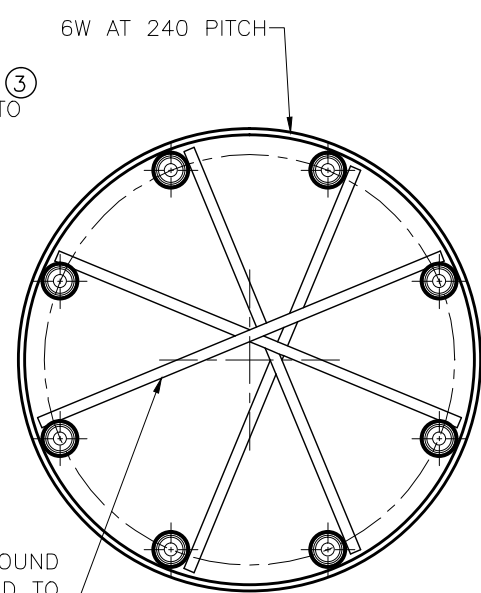
- ALL NUTS TO CONFORM TO AS1112 & HOT DIPPED GALVANISED TO AS1214.
- ALL WASHERS TO BE HOT DIPPED GALVANISED TO AS1214.
- SCREW ON EACH BAR TWO NUTS WITH TWO FLAT WASHERS BETWEEN THEM AFTER GALVANISING.
- ANCHOR CAGE ASSEMBLY TO BE CLEANED AND THE WELDING SLAG REMOVE PRIOR TO BEING HOT DIP GALVANISED TO AS/NZS4680.
- THREADS SHOULD BE CLEAN AFTER GALVANISING & A TEMPLATE PLACED OVER THREADED ENDS TO ENSURE THE ACCURACY OF THE P.C.D. OF BARS.
- THIS 8 BAR GALVANISED CAGE WEIGHS 152kg.
- TOLERANCES: DIMENSIONAL ±5.0 UNO, HOLE CENTRES ±1.0 UNO.
- MAINTAIN MIN. 100 CONCRETE COVER TO ALL STEEL. ALL CONCRETE IS TO HAVE A 28-DAY CHARACTERISTIC COMPRESSIVE STRENGTH (f'c) OF 32MPa (UNLESS OTHERWISE NOTED). THE MAXIMUM AGGREGATE SIZE SHALL BE 20mm, THE SLUMP SHALL BE 80mm-WATER IS NOT TO BE ADDED TO THE CONCRETE AFTER BATCHING, IF NECESSARY CHEMICAL ADDITIVES ARE TO BE USED TO ALTER THE CONSISTENCY OF THE CONCRETE, PROVIDED THEY DO NOT REDUCE THE SPECIFIED CONCRETE COMPRESSIVE STRENGTH. REFER TO BSD-4156 FOR ALL OTHER CONCRETE NOTES.
- DIMENSIONS IN MILLIMETRES (UNO).

TABLE 2 – MATERIALS LIST

ITEM No.	No. OFF	ITEM DESCRIPTION	MATERIAL DESCRIPTION	LENGTH	GRADE
7	4	BOTTOM SPIDER CROSS BAR	Ø10mm ROUND STEEL BAR	400mm	M.S.
6	8	ANCHOR BAR	N32 BAR	'D'+150mm	-
5	16	LEVELLING NUTS-REFER TO NOTES 1 & 3	M30 HEX GALV NUT		8.8/S
4	16	GALVANISED WASHERS-REFER TO NOTES 2 & 3	Ø31mm x 5mm GALV. WASHERS		-
3	1	TOP SPIDER POSITIONING BAR	Ø10mm ROUND STEEL BAR	275mm	M.S.
2	4	TOP SPIDER CROSS BAR	Ø12mm ROUND STEEL BAR	385mm	M.S.
1	1	TOP SPIDER CROSS BRACE	Ø10mm ROUND STEEL BAR	400mm	M.S.

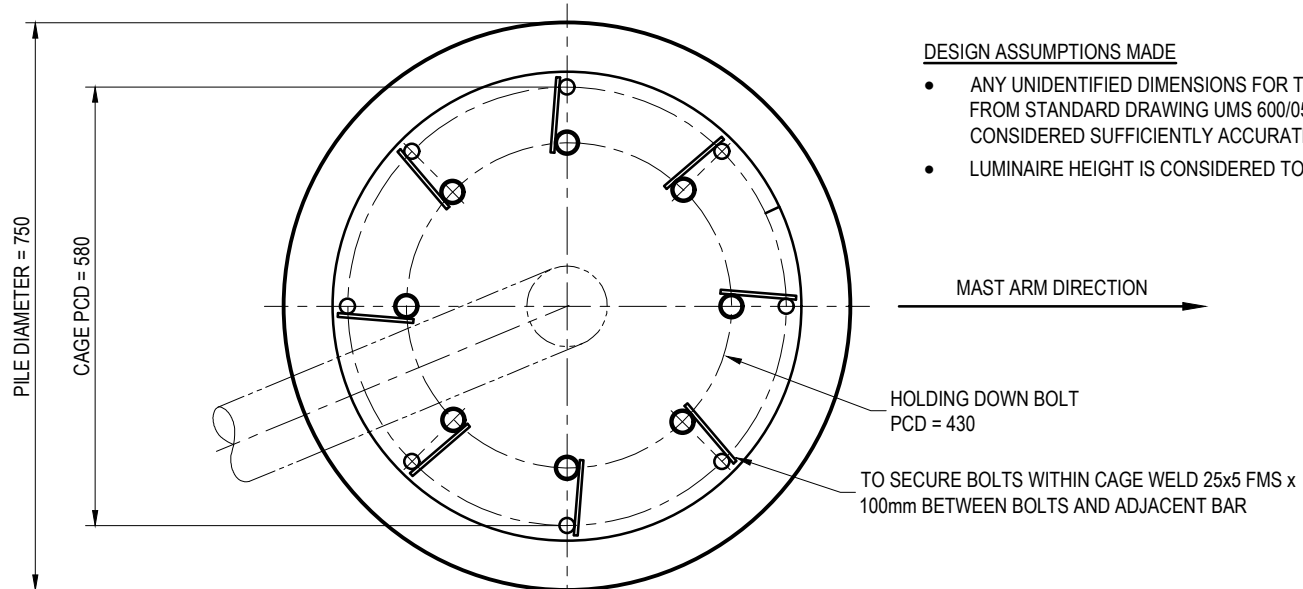


SECTION A-A
TOP SPIDER DETAILS



SECTION B-B
BOTTOM SPIDER DETAILS

DRAWING AUTHORISED FOR PUBLICATION B. BALL SIGNATURE ON ORIGINAL DATED 29/6/01 MANAGER ASSET SUPPORT - R.P.E.Q: 3 8 5 2 DESIGN APPROVED K. MEMORY SIGNATURE ON ORIGINAL DATED 27/6/01 SENIOR PROGRAM OFFICER NETWORK OPERATIONS - R.P.E.Q: 4 1 6 1				DESIGN: Std Dwgs WG DATE: Apr'01	DRAWN: LPO - P&D DATE: Apr'01	CHECKED: R. WILSON DATE: May'01	DRAWING FILENAME: BSD-4154 (A) Ragbolt assemblies mast arm 2.5m & 5m outreach.dwg ASSOCIATED PLANS: SUPERSEDES UMS-600-063		BRISBANE CITY COUNCIL STANDARD DRAWING RAGBOLT ASSEMBLIES MAST ARM 2.5 & 5.0m OUTREACH	SCALE: NOT TO SCALE DWG No: BSD-4154 ORIGINAL SIZE: A3 REVISION: A
A Drawing Converted from UMS Series April 2014 APR '14 APR '14 APR '14	AMENDMENT DRAWN DATE CHK'D DATE APPR'D DATE	APR '14 APR '14 APR '14	APR '14 APR '14 APR '14	ISSUE	AMENDMENT	DRAWN DATE CHK'D DATE APPR'D DATE	APR '14 APR '14 APR '14	APR '14 APR '14 APR '14	APR '14 APR '14 APR '14	



- DESIGN ASSUMPTIONS MADE**
- ANY UNIDENTIFIED DIMENSIONS FOR THE MAST ARM WERE SCALED FROM STANDARD DRAWING UMS 600/057. THESE DIMENSIONS WERE CONSIDERED SUFFICIENTLY ACCURATE FOR THE CALCULATIONS
 - LUMINAIRE HEIGHT IS CONSIDERED TO BE 12.0m.

FOOTING DETAILS

SOIL BEARING STRENGTH	DESCRIPTION	POOR	AVERAGE
	STRENGTH (kPa)	80-100	101-150
DESIGN JOINT USE MAST ARM REFER BSD-4127 AND BSD-4128 (BASED ON INGAL EPS DWGS GA1236 TO GA1238 AND GA2630 TO GA2632)	ULTIMATE MOMENT	119kNm MAX.	
	ULTIMATE SHEAR	14kN MAX.	
	ULTIMATE TORSION	58kNm MAX.	
	ULTIMATE AXIAL	16kN MAX.	
FOOTING AND REINFORCING DIMENSIONS	'X' - PILE LENGTH	4000	3200
	'Y' - REINFORCING CAGE LENGTH	3800	3000

GENERAL NOTES:

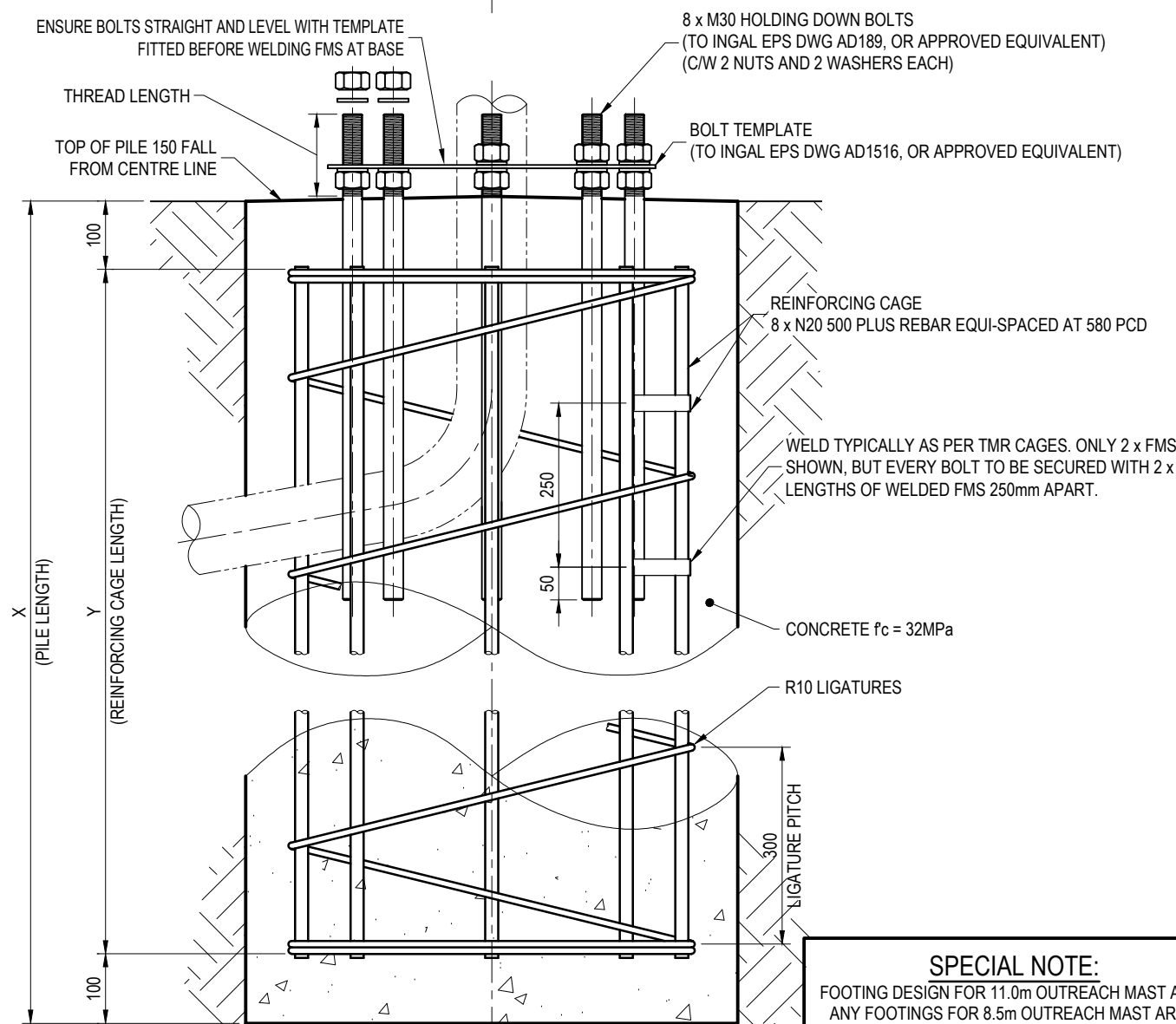
- UNLESS OTHERWISE SPECIFIED, THE FOLLOWING NOTES ARE APPLICABLE TO ALL PILE FOOTINGS FOR THE JOINT USE MAST ARMS SHOWN IN BSD-4127 AND BSD-4128.
- THE PILE FOUNDATION LENGTHS NOMINATED ARE BASED ON LIMIT STATE DESIGN LOADS.
- THESE FOUNDATION DESIGNS HAVE BEEN DEVELOPED BASED ON BROMS' THEORY AND AS/NZS4676 STRUCTURAL DESIGN REQUIREMENTS FOR UTILITY SERVICES POLES; APPENDIX I: FOOTINGS AND FOUNDATIONS.
- THESE FOUNDATION DESIGNS HAVE BEEN CREATED TO CONFORM TO THE FOLLOWING CODES: AS3600 CONCRETE STRUCTURES AND AS 2159 PILING - DESIGN AND INSTALLATION.
- THE NOMINATED PILE LENGTHS ARE BASED ON FOUNDATION DEFORMATIONS OF APPROXIMATELY 12mm UNDER SERVICEABILITY LOADS - FOUNDATIONS WITH A MORE STRINGENT DEFLECTION LIMIT REQUIREMENT MUST BE SUBJECTED TO MORE RIGOROUS DESIGN.
- IT IS RECOMMENDED WHERE A SOIL REPORT IS NOT AVAILABLE AND THE SOIL PROFILE AT A SITE IS NOT CLEARLY UNDERSTOOD THAT A FACTOR OF 1.3 BE APPLIED TO THE ULTIMATE LIMIT STATE LOADS IN SELECTING THE FINAL PILE LENGTH.
- THE ONUS FOR THE SELECTION OF SITE SOIL CONDITIONS, THE PARTICULAR FOUNDATION AND ANY FURTHER ENGINEERING DESIGN, CALCULATIONS AND VERIFICATION FOR THE FOUNDATION IS UPON THE PURCHASER/CONTRACTOR.
- THE SOIL TYPE SHOULD BE CHOSEN BASED ON WORST EXPECTED CONDITIONS FOR EACH SITE.
- CASING OF PILES MAY BE REQUIRED DURING CONSTRUCTION OF PILES ON ALL SITES CONTAINING EITHER LOOSE SANDS OR SOFT CLAY AND ANY SITE THAT HAS EITHER A HIGH WATER TABLE OR WATER SEEPAGE.
- THE LENGTH OF PILE SPECIFIED IS THE MINIMUM LENGTH OF THE PILE BELOW NATURAL GROUND LEVEL.
- THE TOP OF THE PILE MUST COINCIDE WITH THE FINAL FINISHED SURFACE LEVEL OF THE SITE.
- THESE FOUNDATION DESIGNS HAVE BEEN PREPARED BASED ON A DISTURBED SOIL DEPTH OF UP TO 200mm REFERENCE MUST BE MADE TO AN ENGINEER FOR ASSESSING SOIL STRENGTH WITH A DISTURBED SOIL LAYER GREATER THAN 200mm. SOIL TESTING AND CERTIFICATION BY SUITABLY QUALIFIED SOIL ENGINEER.
- WORKMANSHIP AND MATERIALS ARE TO BE IN ACCORDANCE WITH THE CURRENT RELEVANT SAA CODES AND THE LOCAL STATUTORY AUTHORITIES REGULATIONS.
- IF THE BASE OF THE EXCAVATION BECOMES WET PRIOR TO POURING CONCRETE THEN THE WATER AND ANY SOFTENED MATERIAL SHALL BE REMOVED PRIOR TO POURING THE FOUNDATION.
- NO EXCAVATION, DEEPER THAN 600mm SHALL BE MADE WITHIN 3m OF THE EDGE OF THE PILE WITHOUT FIRST SEEKING APPROVAL FROM A SUITABLY QUALIFIED ENGINEER.

CONCRETE NOTES:

- ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS3600 (CURRENT EDITION AMENDMENTS).
- FILLING OF THE PILES IS TO TAKE PLACE AS SOON AS POSSIBLE AFTER DRILLING- PILES ARE NOT TO BE LEFT OVERNIGHT BEFORE CONCRETING.
- ALL CONCRETE IS TO BE PLACED AND VIBRATED TO OPTIMUM COMPACTION.
- ALL CONCRETE IS TO HAVE A 28-DAY CHARACTERISTIC COMPRESSIVE STRENGTH (f_c) OF 32MPa (UNLESS OTHERWISE NOTED, REFER TO TABLE 1). THE MAXIMUM AGGREGATE SIZE SHALL BE 20mm- THE SLUMP SHALL BE 80mm-WATER IS NOT TO BE ADDED TO THE CONCRETE AFTER BATCHING, IF NECESSARY CHEMICAL ADDITIVES ARE TO BE USED TO ALTER THE CONSISTENCY OF THE CONCRETE, PROVIDED THEY DO NOT REDUCE THE SPECIFIED CONCRETE COMPRESSIVE STRENGTH.
- CONCRETE SHALL BE CURED FOR A MINIMUM OF 7 DAYS PRIOR TO INSTALLING THE POLE ONTO THE FOUNDATION.
- ENSURE THAT THE SIDES OF EXCAVATION DO NOT FALL IN DURING PLACEMENT OF CONCRETE.
- BAR CHAIRS AND WAGON WHEELS ARE TO BE USED, AS REQUIRED, TO ACHIEVE ADEQUATE COVER

STEEL NOTES:

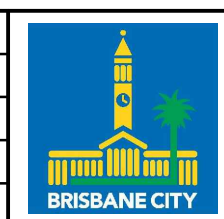
- COVER SHALL BE NO LESS THAN 65mm ALL AROUND. THIS COVER IS ADEQUATE FOR ALL SITUATIONS OTHER THAN EXPOSURE CLASSIFICATIONS C AND U AS DEFINED IN AS3600 (CLASS U APPLIES TO MEMBERS EXPOSED TO AGGRESSIVE SOILS AND CLASS C APPLIES TO MEMBERS EXPOSED TO WATER IN TIDAL OR SPLASH ZONES).
- THE HOLD DOWN BOLT CAGE AND REINFORCING CAGE IS TO BE PLACED CENTRALLY WITHIN THE PILE AND A MAXIMUM OF 150mm ABOVE THE BASE OF THE PILE.
- LIGATURES SHALL BE PROVIDED AROUND THE OUTSIDE OF THE ENTIRE LENGTH OF THE LONGITUDINAL REINFORCEMENT AS FOLLOWS: FOR PILE DIAMETERS UP TO AND INCLUDING 600mm, AN R6 SPIRAL LIGATURE AT 200mm PITCH SHALL BE USED; FOR PILE DIAMETERS 750mm AND ABOVE, AN R10 SPIRAL LIGATURE AT 300mm PITCH SHALL BE USED; ALL SPIRAL LIGATURES SHALL HAVE 2 FULL TURNS AT THE TOP AND BOTTOM.
- ALL STEEL BARS ARE TO BE 500PLUS REBAR AND ARE TO CONFORM TO THE REQUIREMENTS OF AS4671 STEEL REINFORCING MATERIALS.
- SPIRAL OR HOOP LIGATURES ARE PERMITTED.
- ALL NUTS AND WASHERS TO BE HOT DIPPED GALVANISED TO AS1214.
- REINFORCING CAGE, WITH ATTACHED HOLDING DOWN BOLTS, TO BE CLEANED AND WELDING SLAG REMOVED PRIOR TO BEING HOT DIPPED GALVANISED TO AS4680.
- THREADS SHOULD BE CLEAN AFTER GALVANISING AND BOLT TEMPLATE PLACED OVER THREADED ENDS TO ENSURE THE ACCURACY OF THE P.C.D. OF THE HOLDING DOWN BOLTS.



SPECIAL NOTE:
FOOTING DESIGN FOR 11.0m OUTREACH MAST ARM. ANY FOOTINGS FOR 8.5m OUTREACH MAST ARMS INSTALLED PRIOR TO OCTOBER 2009 MUST NOT BE USED FOR STANDING 11.0m OUTREACH MAST ARMS.

ISSUE	AMENDMENT	DRAWN DATE	CHK'D DATE	APPR'D DATE
B	Method of attaching hold down bolts to cage shown	9.10.17	JUL '18	NOV '18
A	Drawing Converted from UMS Series April 2014	APR '14	APR '14	APR '14

DRAWING AUTHORISED FOR PUBLICATION			
DESIGN	Std Dwg WG	DATE	Mar,07
DRAWN	CPD - P&D	DATE	May,07
CHECKED	I. Condric	DATE	Dec'10
DRAWING FILENAME	BSD-4156 (B) 8.5m & 11.0m joint use mast arms footing details and notes.dwg		
ASSOCIATED PLANS	SUPERSEDES UMS-600-064		

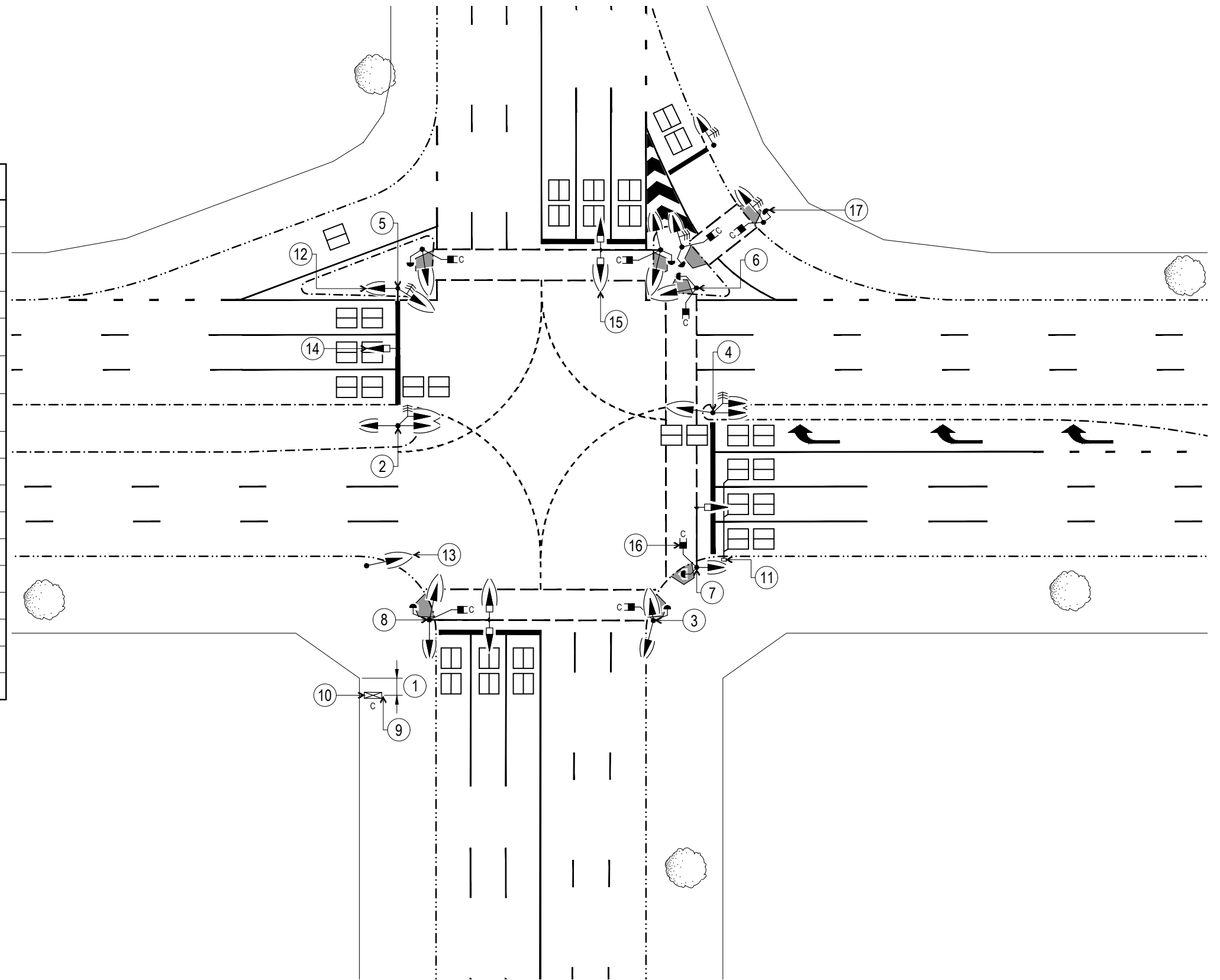


BRISBANE CITY COUNCIL STANDARD DRAWING	
8.5m & 11.0m JOINT USE MAST ARMS - FOOTING DETAILS AND NOTES	
SCALE	NOT TO SCALE
DWG No.	BSD-4156
ORIGINAL SIZE	A3
REVISION	B

NOTES:

1. LONG CLOSED VISORS TO BE 300mm IN LENGTH UNLESS SPECIFIED OTHERWISE.
2. ALL PEDESTRIAN PUSH BUTTONS TO BE AUDIO TACTILE TYPE UNLESS SPECIFIED OTHERWISE.
3. IF INSTALLED AT A SCRAMBLE CROSSING, PEDESTRIAN COUNTDOWN LANTERN TO HAVE A SHORT VISOR.

ITEM	DETAIL
1	DIMENSION TO CENTRE OF CONTROLLER
2	POST ON CENTRE LINE PROJECTION OF STOP BAR CENTRE LINE.
3	POST 0.8m FROM FACE OF KERB TO FACE OF POLE, 1.0m FROM KERB RAMP WING. REFER BSD-5233
4	POST 1.2m (MIN) FROM ROUNDED TIP
5	POST ON ISLAND 0.8m (NORMAL) FROM FACE OF KERB TO FACE OF POST, ON STOP LINE PROJECTION
6	POST ON ISLAND 0.8m (NORMAL) FROM FACE OF KERB TO FACE OF POST, 1.0M FROM KERB RAMP WING. REFER BSD-5233
7	MAST ARM 0.8m FROM FACE OF KERB TO FACE OF POLE, 1.0m FROM KERB RAMP WING. REFER BSD-5233
8	PEDESTRIAN PUSH BUTTON LABEL
9	CONTROLLER HOUSING LABELS
10	FOOTING FOR CONTROLLER HOUSING
11	TYPE 3 LOOP PIT TOUCHING BACK OF KERB.
12	GROUND PRIMARY LANTERN 200mm SHORT CLOSED VISOR.
13	GROUND SECONDARY LANTERN 200mm LONG CLOSED VISOR.
14	OVERHEAD PRIMARY LANTERN 300mm OPEN VISOR.
15	OVERHEAD SECONDARY LANTERN 300mm LONG CLOSED VISOR.
16	PEDESTRIAN LANTERN WITH COUNTDOWN TIMER. REFER NOTE 3.
17	PEDESTRIAN PUSH BUTTON (AUDIO TACTILE TYPE).



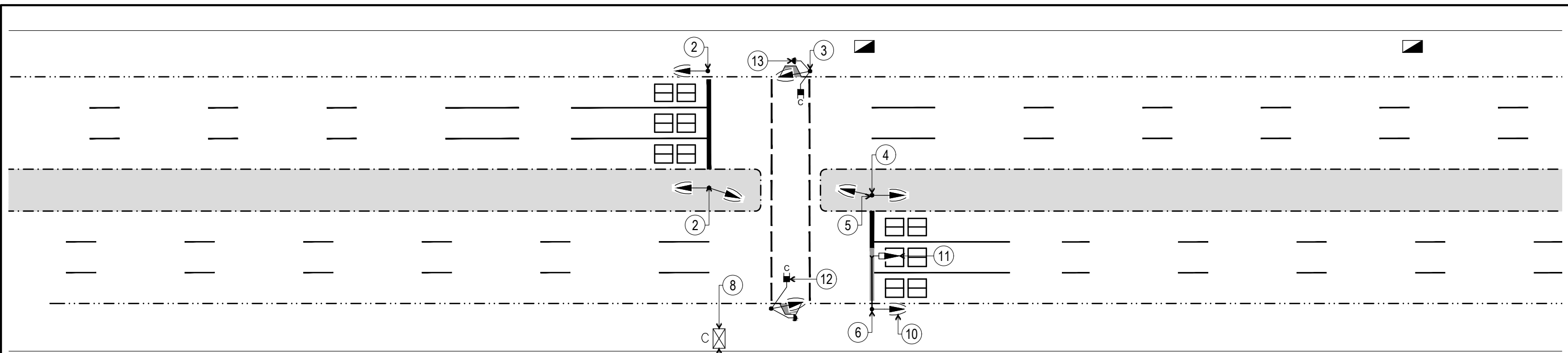
THE PURPOSE OF THIS STANDARD DRAWING IS TO PROVIDE TYPICAL DETAILS THAT SUPPORT THE DESIRED OUTCOMES OF THE BRISBANE CITY PLAN 2014 AND ASSOCIATED PLANNING SCHEME POLICIES. THE FITNESS FOR PURPOSE OF THIS STANDARD DRAWING FOR A SPECIFIC PROJECT SHOULD BE ASSESSED AND ACCEPTED BY AN APPROPRIATELY QUALIFIED DESIGNER AND/OR REGISTERED PROFESSIONAL ENGINEER OF QUEENSLAND (RPEQ).



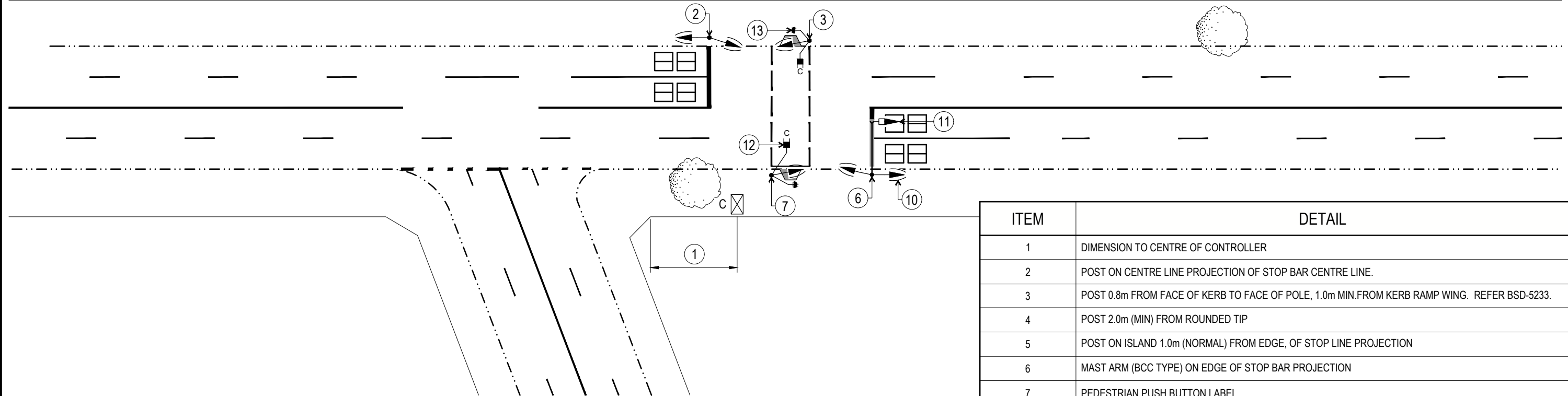
BRISBANE CITY COUNCIL STANDARD DRAWING

TYPICAL POSITIONING OF TRAFFIC SIGNAL COMPONENTS AT INTERSECTIONS

PUBLISH DATE		SEP 2024
SCALE		NOT TO SCALE
DRAWING NUMBER		BSD-4201
ORIGINAL SIZE	REVISION	
A3	D	



TYPICAL SITE WITH MEDIAN



TYPICAL SITE WITHOUT MEDIAN

ITEM	DETAIL
1	DIMENSION TO CENTRE OF CONTROLLER
2	POST ON CENTRE LINE PROJECTION OF STOP BAR CENTRE LINE.
3	POST 0.8m FROM FACE OF KERB TO FACE OF POLE, 1.0m MIN.FROM KERB RAMP WING. REFER BSD-5233.
4	POST 2.0m (MIN) FROM ROUNDED TIP
5	POST ON ISLAND 1.0m (NORMAL) FROM EDGE, OF STOP LINE PROJECTION
6	MAST ARM (BCC TYPE) ON EDGE OF STOP BAR PROJECTION
7	PEDESTRIAN PUSH BUTTON LABEL
8	CONTROLLER HOUSING LABELS
9	FOOTING FOR CONTROLLER HOUSING
10	ALL GROUND MOUNTED LANTERNS 200mm SHORT CLOSED VISORS.
11	ALL OVERHEAD MOUNTED LANTERNS 300mm OPEN VISORS.
12	PEDESTRIAN LANTERN WITH COUNTDOWN TIMER.
13	PEDESTRIAN PUSH BUTTON (AUDIO TACTILE TYPE UNLESS SPECIFIED OTHERWISE)

THE PURPOSE OF THIS STANDARD DRAWING IS TO PROVIDE TYPICAL DETAILS THAT SUPPORT THE DESIRED OUTCOMES OF THE BRISBANE CITY PLAN 2014 AND ASSOCIATED PLANNING SCHEME POLICIES. THE FITNESS FOR PURPOSE OF THIS STANDARD DRAWING FOR A SPECIFIC PROJECT SHOULD BE ASSESSED AND ACCEPTED BY AN APPROPRIATELY QUALIFIED DESIGNER AND/OR REGISTERED PROFESSIONAL ENGINEER OF QUEENSLAND (RPEQ).



BRISBANE CITY COUNCIL STANDARD DRAWING

TYPICAL POSITIONING OF
TRAFFIC SIGNAL COMPONENTS
AT MID-BLOCK LOCATIONS

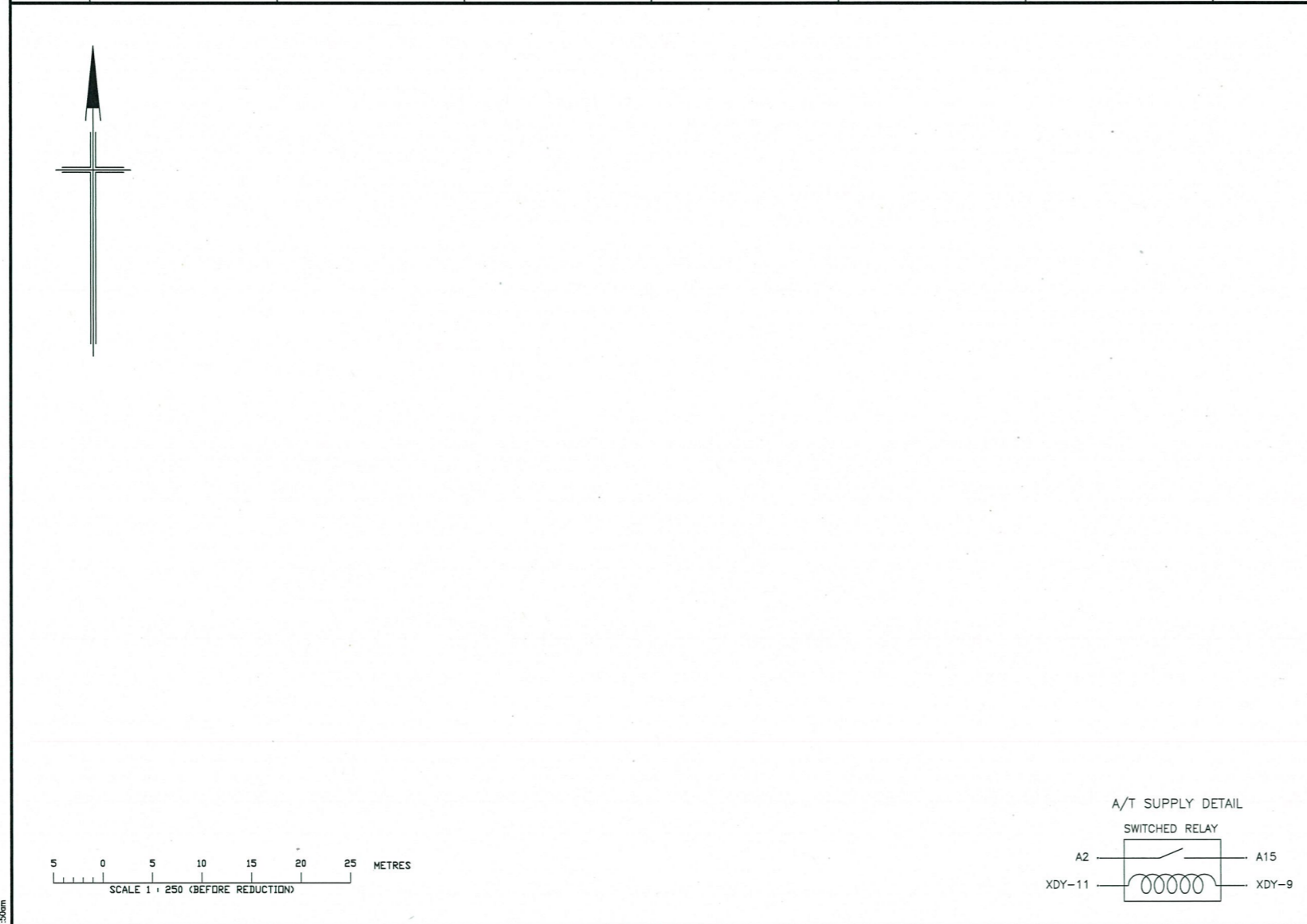
PUBLISH DATE	SEP 2024
SCALE	NOT TO SCALE
DRAWING NUMBER	BSD-4202
ORIGINAL SIZE	A3
REVISION	D

PHASE DIAGRAMS	A PHASE	B PHASE	C PHASE	D PHASE	E PHASE	F PHASE	G PHASE
SIGNAL GROUPS							
VEHICLE/PED							
LOGICAL INPUT							
CALL							
EXTEND							
INCREMENT							
SPECIAL CONDITIONS							

LEGEND
 ** UNLESS OTHERWISE STATED **
 --- 1x100DIA HD ORANGE
 --- 2x100DIA HD ORANGE
 --- 1x50DIA HD ORANGE
 --- EXISTING CONDUIT & PITS.
 ○ No.8 PIT NEW
 ○ No.4 PIT NEW
 ○ No.3 PIT NEW

NOTE:
 CABLE PITS AND CONDUITS ARE TO BE SUPPLIED & INSTALLED TO BCC SPECIFICATIONS

SIGNAL GROUPS	FUNCTION	CONTROLLER TERMINALS	RUN 1			RUN 2			RUN 3		
			CONNECTS	CONNECTS	CONNECTS	CONNECTS	CONNECTS	CONNECTS	CONNECTS	CONNECTS	CONNECTS
1	RED	A5	1	1	1						
	YELLOW	A4	2	2	2						
	GREEN	A3	3	3	3						
2	RED	AB	4	4	4						
	YELLOW	A7	5	5	5						
	GREEN	A6	6	6	6						



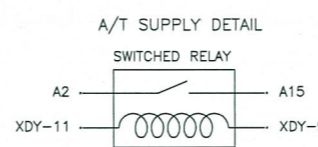
CONFLICT TABLE (X INDICATES CONFLICT)

VEHICLE GROUPS	VEHICLE GROUPS												PED GROUPS			
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4
1	X	X	X	X												X
2	X	X	X	X												X
3	X	X	X	X												X
4	X	X	X	X												X
5	X	X	X	X												X
6	X	X	X	X												X
7																
8																
9																
10																
11																
12																
1	X	X														
2		X	X													
3																
4																

DETECTOR TABLE

PHYSICAL LABEL	CONTROLLER TERMINAL	LOGICAL INPUT	LOOP/PB CONFIGURATION	DIST TO STOP LINE
LOOP 1	P1	1	STOP LINE	1.5
LOOP 2	P2	2	STOP LINE	1.5
LOOP 3	P3	3	STOP LINE	1.5
LOOP 4	P4	4	STOP LINE	1.5
LOOP 5	P5	5	STOP LINE	1.5
LOOP 6	P6	6	STOP LINE	1.5
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
EXT2	E6	15	PB2 - AUDIO	
EXT1	E5	16	PB1 - AUDIO	

8	RED	B14	7	7
P1	GREEN	B12	8	8
7	RED	B11	9	9
P2	GREEN	B9	10	10
A/T SUPPLY	A15	11	11	
240V SUPPLY	A2	12	12	
EXT2 DET	E6	15	15	
EXT1 DET	E5	16	16	
30V RETURN	E3	C	GY	
NEUTRAL	N	BK	BK	
SPARE CORES TO EARTH		13-14	7-16	
CABLE SIZE		19	19	
CONTROLLER TYPE	#####			
LANTERN TYPE	#####			



LEAVE THIS SPACE FREE FOR BCC USE	Issue	Amendment	Checked	Auth.	Works Order	Completion Date	Additional Information	Project	Title	Design	Drawn	Checked	Authorised for Issue
							A/T supply driven by XDY-11 via 24VDC relay.						
Signal Design Accepted ORIGINAL SIGNED BY: _____							Comments: (State 'No Comments' if none)		TRAFFIC SIGNAL INSTALLATION		Reference No. #####		Scale: #####
Traffic Signal Operations							Site No: #####		Project Number / Sheet: ##### / #####		Issue: #####		

Last Modified :- Aug 22, 2016 - 11:50am

XREFS :-

B	VID REMOVED	APR '14	APR '14	APR '14	DRAWING AUTHORIZED FOR PUBLICATION SIGNATURE ON ORIGINAL P. COTTON DATED 24/09/09	DESIGN	Signals TAC	DATE	April '09		BRISBANE CITY COUNCIL STANDARD DRAWING	SCALE	NOT TO SCALE
	A					Drawing Converted from UMS Series April 2014	DRAWN	Brisbane Infrastructure	DATE			April '09	DWG No.
ISSUE	AMENDMENT	DRAWN DATE	CHK'D DATE	APPR'D DATE	MANAGER CITY ASSETS - R.P.E.Q: 2546 STRATEGIC ASSET MANAGEMENT	CHECKED	I.Condric	DATE	Dec '10		STANDARD DRAWING SHEET FOR 19 CORE CABLE	ORIGINAL SIZE	A3
					DESIGN APPROVED SIGNATURE ON ORIGINAL I. CONDRIK DATED 12/10	DRAWING FILENAME	BSD-4203.dwg	ASSOCIATED PLANS	SUPERSEDES UMS-600/082			REVISION	B

PHASE DIAGRAMS	A PHASE	B PHASE	C PHASE	D PHASE	E PHASE	F PHASE	G PHASE
SIGNAL GROUPS							
VEHICLE/PED							
LOGICAL INPUT							
CALL							
EXTEND							
INCREMENT							
SPECIAL CONDITIONS							

LEGEND
 ** UNLESS OTHERWISE STATED **
 — 1x100DIA HD ORANGE
 = 2x100DIA HD ORANGE
 - - - 1x50DIA HD ORANGE
 — EXISTING CONDUIT & PITS.
 ○ No.8 PIT NEW
 ○ No.4 PIT NEW
 ○ No.3 PIT NEW

NOTE:
 CABLE PITS AND CONDUITS ARE TO BE SUPPLIED & INSTALLED TO BCC SPECIFICATIONS

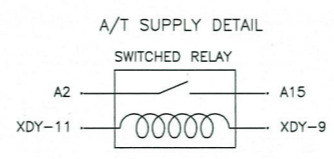
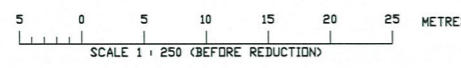
SIGNAL GROUPS	FUNCTION	CONTROLLER TERMINALS	RUN 1			RUN 2			RUN 3		
			CONNECTS	CONNECTS	CONNECTS	CONNECTS	CONNECTS	CONNECTS	CONNECTS	CONNECTS	CONNECTS
1	RED	A5	1	1	1						
	YELLOW	A4	2	2	2						
	GREEN	A3	3	3	3						
2	RED	A8	4	4	4						
	YELLOW	A7	5	5	5						
	GREEN	A6	6	6	6						
3	RED	A11	7	7	7						
	YELLOW	A10	8	8	8						
	GREEN	A9	9	9	9						
4	RED	A14	10	10	10						
	YELLOW	A13	11	11	11						
	GREEN	A12	12	12	12						
5	RED	B5	13	13	13						
	YELLOW	B4	14	14	14						
	GREEN	B3	15	15	15						
8	RED	B14	16	16	16						
P1	GREEN	B12	17	17	17						
7	RED	B11	18	18	18						
P2	GREEN	B9	19	19	19						
6	RED	B8	20	20	20						
P3	GREEN	B6	21	21	21						
A/T SUPPLY	A15	22	22	22							
240V SUPPLY	A2	23	23	23							
EXT3 DET 30	E7	24	24	24							
EXT2 DET 31	E6	25	25	25							
EXT1 DET 32	E5	26	26	26							
JOV RETURN	E3	C	GY								
NEUTRAL	A13	N	BK	BK							
SPARE CORES TO EARTH				16							
CABLE SIZE		29	19								
CONTROLLER TYPE	#####										
LANTERN TYPE	#####										

CONFLICT TABLE (X INDICATES CONFLICT)

VEHICLE GROUPS	VEHICLE GROUPS												PED GROUPS				
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	
1	X	X	X	X													X
2	X	X	X	X													X
3	X	X	X	X													X
4	X	X	X	X													X
5	X	X	X	X													X
6																	
7																	
8																	
9																	
10																	
11																	
12																	
1	X	X															
2		X	X														
3																	
4																	

DETECTOR TABLE

PHYSICAL LABEL	CONTROLLER TERMINAL	LOGICAL INPUT	LOOP/PB CONFIGURATION	DIST TO STOP LINE
LOOP 1	P1	1	STOP LINE	1.5
LOOP 2	P2	2	STOP LINE	1.5
LOOP 3	P3	3	STOP LINE	1.5
LOOP 4	P4	4	STOP LINE	1.5
LOOP 5	P5	5	STOP LINE	1.5
LOOP 6	P6	6	STOP LINE	1.5
LOOP 7	P7	7	STOP LINE	1.5
LOOP 8	P8	8	STOP LINE	1.5
LOOP 9	Q9	9	STOP LINE	1.5
LOOP 10	Q10	10	STOP LINE	1.5
LOOP 11	Q11	11	STOP LINE	1.5
LOOP 12	Q12	12	STOP LINE	1.5
		13		
		14		
		15		
		16		
		17		
		18		
		19		
		20		
		21		
		22		
		23		
		24		
		25		
		26		
		27		
		28		
		29		
EXT3	E7	30	PB3 - AUDIO	
EXT2	E6	31	PB2 - AUDIO	
EXT1	E5	32	PB1 - AUDIO	



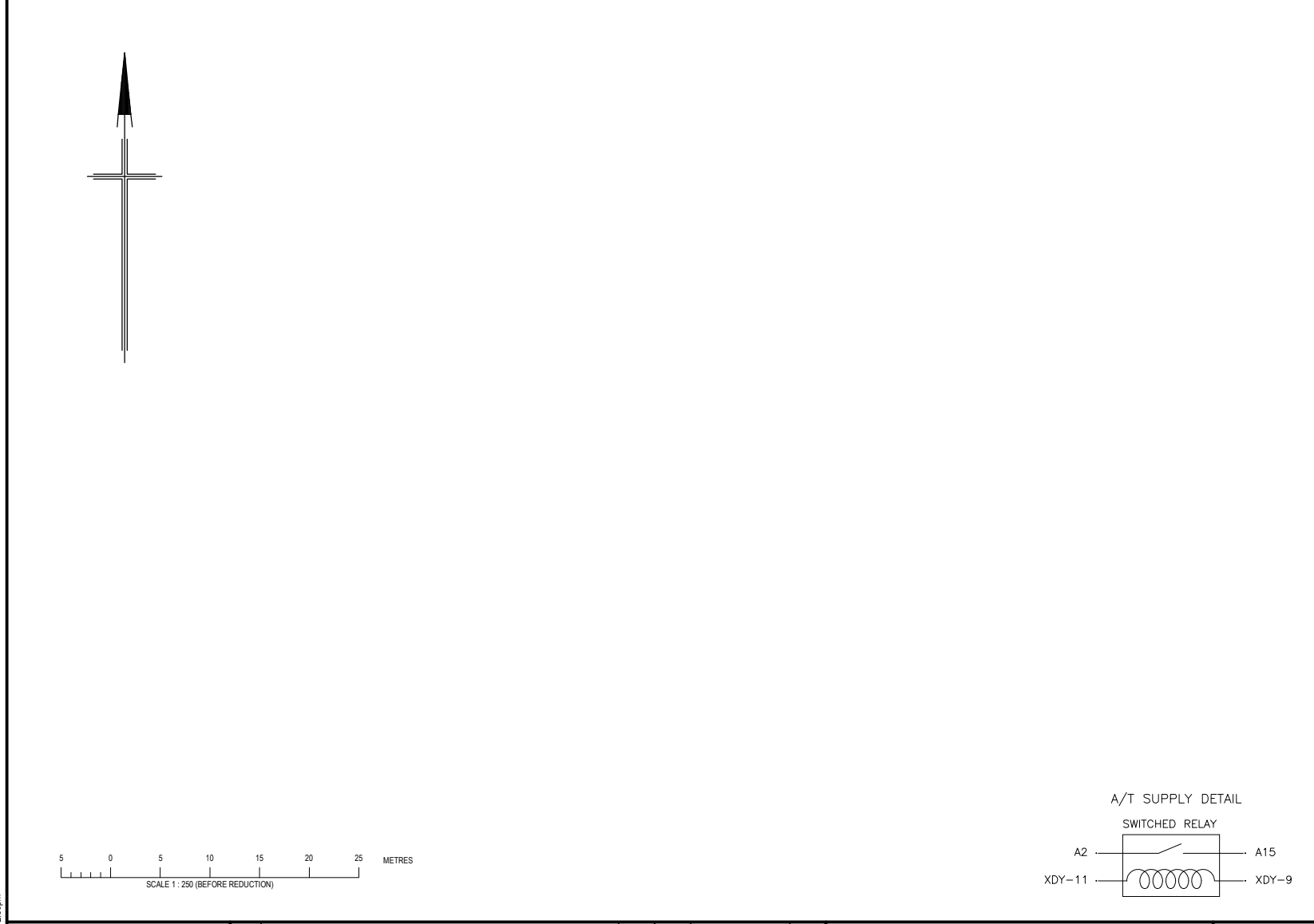
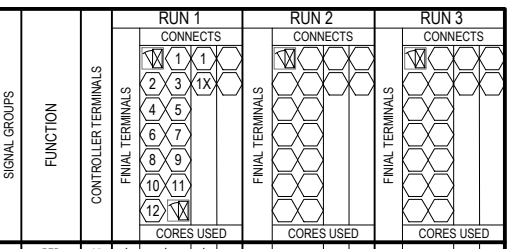
Last Modified :- Aug 22, 2016 - 11:51am

LEAVE THIS SPACE FREE FOR BCC USE	Issue	Amendment	Checked	Auth.	Works Order	Completion Date	Additional Information	Project	Title	Design	Drawn	Checked	Authorised for issue ORIGINAL SIGNED BY:
							A/T supply driven by XDY-11 via 24VDC relay.						
							Signal Design Accepted ORIGINAL SIGNED BY:	INSERT CONSULTANTS LOGO AND DETAILS	TRAFFIC SIGNAL INSTALLATION	#####	#####	#####	#####
							Comments: (State 'No Comments' if none)			Reference No.	Scale	Project Number / Sheet	Issue
							Traffic Signal Operations		Site No: #####	##### / #####	#####	##### / #####	####

B	VID REMOVED	APR '14	APR '14	APR '14	DRAWING AUTHORISED FOR PUBLICATION SIGNATURE ON ORIGINAL B. BALL DATED 29/6/01	DESIGN	Std Dwgs WG	DATE	April '01		BRISBANE CITY COUNCIL STANDARD DRAWING	SCALE	NOT TO SCALE
	A					Drawing Converted from UMS Series April 2014	MANAGER ASSET SUPPORT - R.P.E.Q: 3852 STRATEGIC ASSET MANAGEMENT	DRAWN	CPO - P&D			DATE	April '01
ISSUE	AMENDMENT	DRAWN DATE	CHK'D DATE	APPR'D DATE	DESIGN APPROVED SIGNATURE ON ORIGINAL K. MEMORY DATED 27/6/01	CHECKED	R.WILSON	DATE	May '01		STANDARD DRAWING SHEET FOR 29 CORE CABLE	ORIGINAL SIZE	A3
					SENIOR PROGRAM OFFICER NETWORK OPERATION - R.P.E.Q: 4761	ASSOCIATED PLANS	SUPERSEDES UMS-600/083					REVISION	B

PHASE DIAGRAMS	A PHASE	B PHASE	C PHASE	D PHASE	E PHASE	F PHASE	G PHASE
SIGNAL GROUPS							
VEHICLE/PED							
LOGICAL INPUT							
CALL							
EXTEND							
INCREMENT							
SPECIAL CONDITIONS							

LEGEND
 ** UNLESS OTHERWISE STATED **
 ——— 1x100DIA HD ORANGE
 = = = 2x100DIA HD ORANGE
 - - - 1x50DIA HD ORANGE
 — □ — EXISTING CONDUIT & PITS,
 No.8 PIT NEW
 ROUND PIT NEW
 No.4 PIT NEW
 No.3 PIT NEW
 NOTE:
 CABLE PITS AND CONDUITS ARE TO BE SUPPLIED & INSTALLED TO BCC SPECIFICATIONS



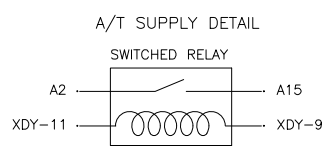
CONFLICT TABLE (X INDICATES CONFLICT)

VEHICLE GROUPS	VEHICLE GROUPS												PED GROUPS				
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	
1		X	X	X	X												X
2	X		X	X	X												X
3	X	X		X	X											X	
4	X	X	X		X											X	
5	X	X	X	X												X	
6	X	X	X	X												X	
7																	
8																	
9																	
10																	
11																	
12																	
13																	
14																	
15																	
16																	
P1																	
P2																	
P3																	
P4																	
P5																	
P6																	
P7																	
P8																	
P9																	
P10																	
P11																	
P12																	

DETECTOR TABLE

PHYSICAL LABEL	CONTROLLER TERMINAL	LOGICAL INPUT	LOOP/PB CONFIGURATION	DIST TO STOP LINE
LOOP 1	P1	1	STOP LINE	1.5
LOOP 2	P2	2	STOP LINE	1.5
LOOP 3	P3	3	STOP LINE	1.5
LOOP 4	P4	4	STOP LINE	1.5
LOOP 5	P5	5	STOP LINE	1.5
LOOP 6	P6	6	STOP LINE	1.5
LOOP 7	P7	7	STOP LINE	1.5
LOOP 8	P8	8	STOP LINE	1.5
LOOP 9	P9	9	STOP LINE	1.5
LOOP 10	Q10	10	STOP LINE	1.5
LOOP 11	Q11	11	STOP LINE	1.5
LOOP 12	Q12	12	STOP LINE	1.5
EXT8	E12	23	PBBIKE2	
EXT7	E11	24	PBBIKE1	
EXT6	E10	27	PB6 - AUDIO	
EXT5	E9	28	PB5 - AUDIO	
EXT4	E8	29	PB4 - AUDIO	
EXT3	E7	30	PB3 - AUDIO	
EXT2	E6	31	PB2 - AUDIO	
EXT1	E5	32	PB1 - AUDIO	

SIGNAL GROUPS	FUNCTION	CONTROLLER TERMINALS	RUN 1			RUN 2			RUN 3		
			CONNECTS	FINAL TERMINALS	CORES USED	CONNECTS	FINAL TERMINALS	CORES USED	CONNECTS	FINAL TERMINALS	CORES USED
1	RED	A5	1	1	1						
	YELLOW	A4	2	2	2						
	GREEN	A3	3	3	3						
	RED	A8	4	4	4						
2	YELLOW	A7	5	5	5						
	GREEN	A6	6	6	6						
	RED	A11	7	7	7						
3	YELLOW	A10	8	8	8						
	GREEN	A9	9	9	9						
	RED	A14	10	10	10						
4	YELLOW	A13	11	11	11						
	GREEN	A12	12	12	12						
	RED	B5	13	13	13						
5	YELLOW	B4	14	14	14						
	GREEN	B3	15	15	15						
	RED	B8	16	16	16						
6	YELLOW	B7	17	17	17						
	GREEN	B6	18	18	18						
	RED	B11	19	19	19						
7	YELLOW	B10	20	20	20						
	GREEN	B9	21	21	21						
	RED	B14	22	22	22						
8	YELLOW	B13	23	23	23						
	GREEN	B12	24	24	24						
	RED	D14	25	25	25						
P1	GREEN	D12	26	26	26						
	RED	D11	27	27	27						
P2	GREEN	D9	28	28	28						
14	RED	D8	29	29	29						
P3	GREEN	D6	30	30	30						
13	RED	D5	31	31	31						
P4	GREEN	D3	32	32	32						
12	RED	C14	33	33	33						
P5	GREEN	C12	34	34	34						
11	RED	C11	35	35	35						
P6	GREEN	C9	36	36	36						
	A/T SUPPLY	A15	37	37	37						
	240V SUPPLY	A2	38	38	38						
	EXT8 DET	E12	39	39	39						
	EXT7 DET	E11	40	40	40						
	EXT6 DET	E10	43	43	43						
	EXT5 DET	E9	44	44	44						
	EXT4 DET	E8	45	45	45						
	EXT3 DET	E7	46	46	46						
	EXT2 DET	E6	47	47	47						
	EXT1 DET	E5	48	48	48						
	30V RETURN	E3	C	GY							
	NEUTRAL	A15	N	BK	BK						
	SPARE CORES TO EARTH			41-42	16						
	CABLE SIZE			51	19						
	CONTROLLER TYPE	#####									
	LANTERN TYPE	#####									



LEAVE THIS SPACE FREE FOR BCC USE

Additional Information: A/T supply driven by XDY-11 via 24VDC relay.

Signal Design Accepted ORIGINAL SIGNED BY: _____

Comments: (State 'No Comments' if none)

TRAFFIC SIGNAL INSTALLATION

Site No.: #####

Design: #####
 Drawn: #####
 Checked: #####
 Authorised for Issue ORIGINAL SIGNED BY: #####

Reference No.: ##### Scale: #####

Project Number / Sheet: ##### / ##### Issue: #####

Last Modified :- Sep 21, 2018 - 12:00pm

ISSUE	AMENDMENT	DRAWN DATE	CHK'D DATE	APPR'D DATE	DRAWING FILENAME	ASSOCIATED PLANS	DESIGN	DATE	BRISBANE CITY	BRISBANE CITY COUNCIL STANDARD DRAWING	
C	CONTROLLER TERMINALS FOR BIKE BUTTONS CHANGED	BW 31.10.17	DK 2.02.18	DK 2.02.18	BSD-4206 (C) Standard traffic signals installation drawing sheet for 36 core cable dwg	SUPERSEDES UMS-600/085	Std Dwgs WG	April '01		STANDARD DRAWING SHEET FOR 51 CORE CABLE	
B	VID REMOVED	BW 5.09.16	AMG 5.09.16	AMG 5.09.16			CP0 - P&D	April '01			
A	Drawing Converted from UMS Series April 2014	APR '14	APR '14	APR '14			R.WILSON	May '01			
DRAWING AUTHORISED FOR PUBLICATION SIGNATURE ON ORIGINAL B. BALL DATED 29/6/01 DESIGN APPROVED SIGNATURE ON ORIGINAL K. MEMORY DATED 27/6/01 SENIOR PROGRAM OFFICER NETWORK OPERATION - R.P.E.Q.: 4761										SCALE	NOT TO SCALE
										ORIGINAL SIZE	A3
										REVISION	C

SCOPE OF WORKS:

The following notes are as applicable. If in doubt please contact Brisbane City Council, Congestion Reduction Unit, Traffic Signal Operations at CRUcorrespondence@brisbane.qld.gov.au.

- SUPPLY AND INSTALL DUCTS AND PITS AS PER DRAWING COMPLETE WITH DRAW WIRE. REQUESTS TO BE SUBMITTED VIA CRUcorrespondence@brisbane.qld.gov.au.
- SUPPLY AND INSTALL TRAFFIC SIGNAL CONTROLLER AND TOPHAT WITH STANDARD BCC EQUIPMENT. CONTROLLER AND TOPHAT TO BE PURCHASED BY CONTRACTOR AND SUPPLIED TO CITY STANDARDS - TRAFFIC NETWORK SERVICES TO BE FITTED OUT TO BCC STANDARDS AT THE CONTRACTORS EXPENSE.
- SUPPLY AND INSTALL MINIMUM 16mm² CORE CONSUMER MAINS FROM ELECTRICAL POINT OF SUPPLY TO CONTROLLER.
- SUPPLY AND INSTALL TRAFFIC SIGNAL HARDWARE AS PER EQUIPMENT SCHEDULE.
- SUPPLY AND INSTALL NEW CABLE IN ACCORDANCE WITH CABLE CONNECTION DETAIL. ENSURE LOOP IS PROVIDED AT CONTROLLER TERMINALS FOR FAULT LOOP IMPEDANCE TESTING.
- SUPPLY AND INSTALL LOOP DETECTORS AND LOOP DETECTOR FEEDER CABLES FROM CONTROLLER TO ALL LOOPS AS SHOWN IN THE DRAWING.
- CYBERLOCK CYLINDER CL-PH30 TO BE INSTALLED IN THE DOORS OF BOTH CONTROLLER AND TOPHAT. CYLINDERS TO BE SUPPLIED AND CONFIGURED BY CITY STANDARDS - TRAFFIC NETWORK SERVICES AT THE CONTRACTORS EXPENSE. CONTRACTOR WILL REQUIRE A CYBERKEY TO ACCESS CABINETS DURING CONSTRUCTION AND DEFECTS PERIOD. CONTRACTOR TO PROVIDE CYBERKEY DETAILS TO TRAFFIC NETWORK SERVICES FOR ACCESS ENROLMENT.
- CUSTOM FOOTING REQUIRED FOR POST X. CONTRACTOR TO PROVIDE CERTIFIED FOOTING DESIGN AND A PHOTO OF THE EXCAVATED HOLE WITH A TAPE MEASURE SHOWING THE DEPTH.
- POST X REQUIRES 2m DEEP FOOTING FOR CAMERA INSTALLATION AS PER BSD-4130.
- INSTALL AND COMMISSION NEW CONTROLLER PERSONALITY.

NOTES:

- BRISBANE CITY COUNCIL TRAFFIC SIGNALS POINT OF CONTACT: CONGESTION REDUCTION UNIT - TRAFFIC NETWORKS - TELEPHONE: (07) 3403 8888.
- ALL LANTERNS TO BE 200mm CENTRAL LIGHT SOURCE (CLS) LED TYPE EXCEPT WHERE SPECIFIED OTHERWISE.
- ALL NEW MAST ARMS TO INCLUDE LUMINAIRE TRANSITION SPIGOT.
- UPPER MOUNTING ASSEMBLY TO INCLUDE PVC DIN RAIL, STAINLESS STEEL BRACKET, FINIAL COVER BAG AND OTHER COUNCIL SPECIFIC PARTS. REFER TO BSD-4101.
- PITS AND CONDUITS TO BE SUPPLIED AND INSTALLED TO BCC STANDARDS. LOOP JOINTING PITS TO BE NO.3 TYPE. ALL OTHERS TO BE CIRCULAR TYPE EXCEPT WHERE SPECIFIED OTHERWISE. ENTRY OF LOOP FEEDER CABLES INTO THE LOOP PITS SHALL BE AS PER SECTION A OF THE DTMR STANDARD DRAWING SD1424. INSTALLATION OF LOOPS IN THE ROAD TO CONFORM WITH BCC STANDARD DRAWINGS BSD-4012.
- INSTALL 1 X 100mm HEAVY DUTY ELECTRICAL CONDUIT FROM SIGNAL POST TO NEAREST PIT.
- INSTALL 1 X 80mm HEAVY DUTY ELECTRICAL CONDUIT FROM LOOP JOINTING PIT TO NEAREST SIGNAL PIT.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY SERVICE LOCATIONS PRIOR TO ANY EXCAVATION.
- ANY CONFLICTS BETWEEN EXISTING SERVICES AND SIGNAL CONDUITS TO BE RESOLVED BY THE CONTRACTOR IN CONSULTATION WITH THE PRINCIPAL. TRAFFIC SIGNAL PITS ARE GENERALLY DESIGNED TO BE INSTALLED IN THE ELECTRICAL ALIGNMENT (0-900 FROM RP). WHERE POSSIBLE THEY ARE TO BE INSTALLED 600MM FROM THE RP TO THE CENTRE OF PIT, THIS TO MAINTAIN MAXIMUM DISTANCE FROM EXISTING / PROPOSED ENERGEX ASSETS AND AVOID CONFLICTS. WHERE CONFLICTS ARISE WITH ENERGEX AND OTHER SERVICES, WITH PRINCIPAL APPROVAL, CIRCULAR PITS MAY BE SPLIT AND CUT SHALLOWER AND TYPE 8 PITS TO BE REPLACED WITH SHALLOWER TYPE 6 PITS (PROVIDED THAT CONDUITS ARE STILL AT DEPTH WHEN ENTERING AND EXITING PITS). THIS ENABLES PITS TO BE INSTALLED OVER ENERGEX ASSETS WITHOUT CONFLICT.
- BRISBANE CITY COUNCIL EQUIPMENT TO BE PURCHASED FROM BRISBANE CITY COUNCIL AT CONTRACTORS EXPENSE. CONTACT CITY STANDARDS - TRAFFIC NETWORK SERVICES - TRAFFIC SIGNAL OPERATIONS COORDINATOR - TELEPHONE: (07) 3403 8888 FOR COST ESTIMATION.
- THE CONTRACTOR TO SETUP A PRE-START MEETING BETWEEN THE CIVIL CONTRACTOR, ELECTRICAL CONTRACTOR, SUPERINTENDENT/REPRESENTATIVE AND CONGESTION REDUCTION UNIT. PRE-START MEETING TO BE COMPLETED 3 DAYS PRIOR TO STARTING ANY CIVIL WORKS ASSOCIATED WITH THE INSTALLATION OF TRAFFIC SIGNALS. REQUEST FOR THE PRE-START MEETING TO BE SENT TO CRUcorrespondence@brisbane.qld.gov.au.
- CONTROLLER PERSONALITY TO BE CONFIGURED BY BRISBANE CITY COUNCIL. CONTRACTOR TO SUBMIT PERSONALITY REQUEST FORM TO BRISBANE CITY COUNCIL, CONGESTION REDUCTION UNIT - TRAFFIC NETWORKS. MINIMUM 4 WEEKS NOTICE REQUIRED. BLANK FORM TO BE SOURCED FROM CONGESTION REDUCTION UNIT - TRAFFIC NETWORKS - TELEPHONE: (07) 3403 8888.
- THE CONTRACTOR IS TO PROVIDE A NOTIFICATION TO COUNCIL VIA THE SUPERINTENDENT'S REPRESENTATION OF THE EXPECTED DATE FOR REACHING PRACTICAL COMPLETION. THE SUPERINTENDENT'S REPRESENTATIVE WILL CARRY OUT ALL PRE-COMMISSIONING INSPECTIONS AND PROVIDE ALL INSPECTION REPORTS, DEFECT LISTS AND ELECTRICAL TEST RESULT TO CONGESTION REDUCTION UNIT. ALL DEFECTS DETERMINED BY THE SUPERINTENDENT'S REPRESENTATIVE OR CONGESTION REDUCTION TO BE SAFETY CRITICAL SHALL BE RECTIFIED PRIOR TO COMMISSIONING OF THIS SITE.
- LOOP DETECTORS TO BE INSTALLED PRIOR TO LAYING FINAL SURFACE. FOR MINIMUM DEPTH OF ASPHALT AT LOOP LOCATIONS REFER TO BSD-4011.
- INSTALLATION OF TRAFFIC SIGNALS TO BE IN ACCORDANCE WITH BRISBANE CITY COUNCIL STANDARD DRAWINGS AND AUSTRALIAN STANDARDS.
- ELECTRICAL POINT OF SUPPLY TO BE REQUESTED THROUGH BRISBANE CITY COUNCIL, MINIMUM 4 WEEKS NOTICE REQUIRED. REQUESTS TO BE SUBMITTED VIA CRUcorrespondence@brisbane.qld.gov.au.
- ELECTRICAL CONTRACTOR TO SUBMIT FORM 2 TO ENERGEX ON COMPLETION OF WORK.
- TRAFFIC SIGNALS CONTRACTOR TO ENSURE NO OBSTRUCTION TO PRIMARY LANTERN STOPPING SIGHT LINE OCCURS AS A RESULT OF INFRASTRUCTURE OR LANDSCAPING INSTALLATION DURING CONSTRUCTION.
- LONG CLOSED VISORS ARE 300mm LONG.
- ONLY 1M OF SLACK CABLE TO BE INSTALLED IN THE PIT AT EACH TRAFFIC SIGNAL POST.
- DRAINAGE OF PITS TO BE IN ACCORDANCE WITH DTMR STANDARD DRAWING SD1314.

Last Modified: -- Mar 10, 2023 -- 11:23am
XREFS: --

LEAVE THIS SPACE FREE FOR BCC USE				Project		Title		Design		Drawn		Checked		Authorised for Issue	
				INSERT CONSULTANTS LOGO AND DETAILS		TRAFFIC SIGNAL INSTALLATION DETAILS		#####		#####		#####		ORIGINAL SIGNED BY: #####	
				Signal Design Accepted ORIGINAL SIGNED BY:				Reference No.		Scale		Project Number / Sheet		Issue	
				Comments: (State 'No Comments' if none)				#####		####		##### / ####		###	
				Traffic Signal Operations		Site No.: #####									
Issue		Amendment		Checked		Auth.		Works Order		Completion Date					

THE PURPOSE OF THIS STANDARD DRAWING IS TO PROVIDE TYPICAL DETAILS THAT SUPPORT THE DESIRED OUTCOMES OF THE BRISBANE CITY PLAN 2014 AND ASSOCIATED PLANNING SCHEME POLICIES. THE FITNESS FOR PURPOSE OF THIS STANDARD DRAWING FOR A SPECIFIC PROJECT SHOULD BE ASSESSED AND ACCEPTED BY AN APPROPRIATELY QUALIFIED DESIGNER AND/OR REGISTERED PROFESSIONAL ENGINEER OF QUEENSLAND (RPEQ).



BRISBANE CITY COUNCIL STANDARD DRAWING
STANDARD TRAFFIC SIGNALS INSTALLATION DRAWING DETAILS SHEET

PUBLISH DATE		JUN 2023	
SCALE		NOT TO SCALE	
DRAWING NUMBER		BSD-4207	
ORIGINAL SIZE	REVISION	A3	E

CONNECTION CONFIGURATION

EB

36	DETECTOR 32
35	DETECTOR 31
34	DETECTOR 30
33	DETECTOR 29
32	DETECTOR 28
31	DETECTOR 27
30	DETECTOR 26
29	DETECTOR 25
28	DETECTOR 24
27	DETECTOR 23
26	DETECTOR 22
25	DETECTOR 21
24	DETECTOR 20
23	DETECTOR 19
22	DETECTOR 18
21	DETECTOR 17

EA

20	DETECTOR 16
19	DETECTOR 15
18	DETECTOR 14
17	DETECTOR 13
16	DETECTOR 12
15	DETECTOR 11
14	DETECTOR 10
13	DETECTOR 9
12	DETECTOR 8
11	DETECTOR 7
10	DETECTOR 6
9	DETECTOR 5
8	DETECTOR 4
7	DETECTOR 3
6	DETECTOR 2
5	DETECTOR 1
4	WAIT LAMP RETURN
3	32 V DETECTOR RETURN
2	240 V FOR LOOP DETECTORS NEUTRAL FOR LOOP DETECTORS
1	

D

16	SPARE	
15	WAIT 4	
14	RED	} SIGNAL GROUP 16
13	YELLOW	
12	GREEN	
11	RED	} SIGNAL GROUP 15
10	YELLOW	
9	GREEN	
8	RED	} SIGNAL GROUP 14
7	YELLOW	
6	GREEN	
5	RED	} SIGNAL GROUP 13
4	YELLOW	
3	GREEN	
2	LAMP ACTIVE (UNDIMMED)	
1	LAMP NEUTRAL	

C

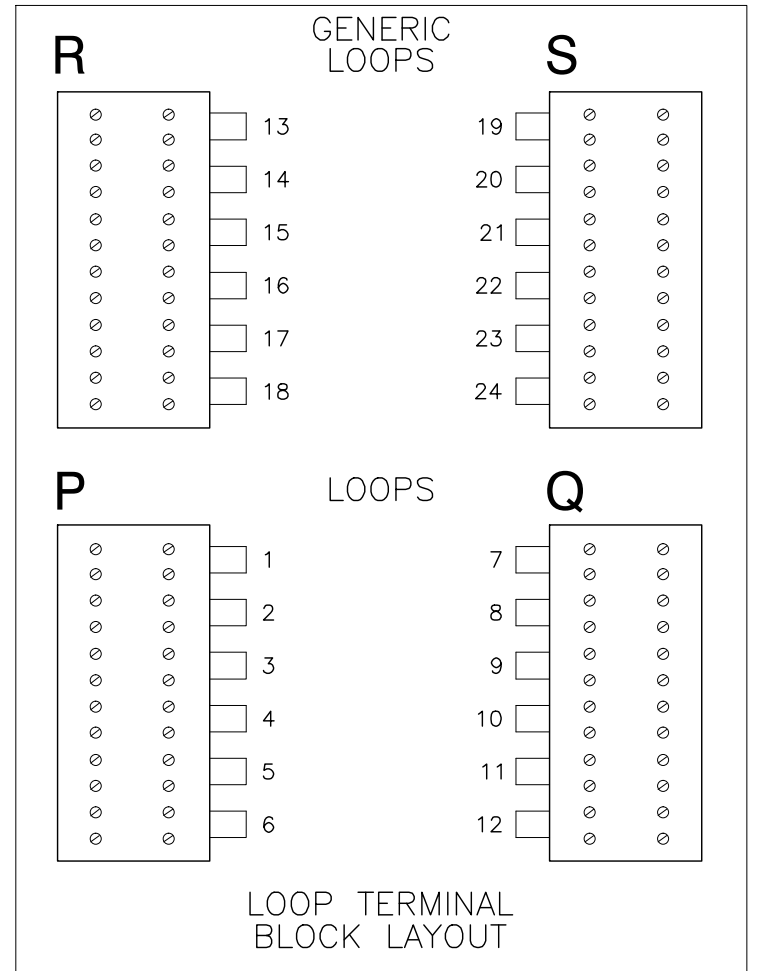
16	SPARE	
15	WAIT 4	
14	RED	} SIGNAL GROUP 12
13	YELLOW	
12	GREEN	
11	RED	} SIGNAL GROUP 11
10	YELLOW	
9	GREEN	
8	RED	} SIGNAL GROUP 10
7	YELLOW	
6	GREEN	
5	RED	} SIGNAL GROUP 9
4	YELLOW	
3	GREEN	
2	LAMP ACTIVE (UNDIMMED)	
1	LAMP NEUTRAL	


B

16	SPARE	
15	WAIT 4	
14	RED	} SIGNAL GROUP 8
13	YELLOW	
12	GREEN	
11	RED	} SIGNAL GROUP 7
10	YELLOW	
9	GREEN	
8	RED	} SIGNAL GROUP 6
7	YELLOW	
6	GREEN	
5	RED	} SIGNAL GROUP 5
4	YELLOW	
3	GREEN	
2	LAMP ACTIVE (UNDIMMED)	
1	LAMP NEUTRAL	

A

16	SPARE	
15	WAIT 4	
14	RED	} SIGNAL GROUP 4
13	YELLOW	
12	GREEN	
11	RED	} SIGNAL GROUP 3
10	YELLOW	
9	GREEN	
8	RED	} SIGNAL GROUP 2
7	YELLOW	
6	GREEN	
5	RED	} SIGNAL GROUP 1
4	YELLOW	
3	GREEN	
2	LAMP ACTIVE (UNDIMMED)	
1	LAMP NEUTRAL	



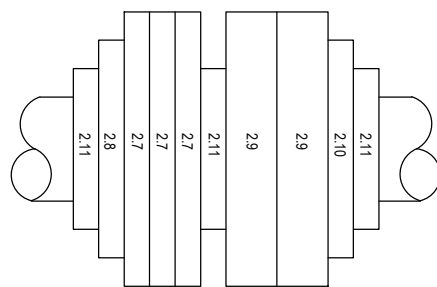
				DRAWING AUTHORISED FOR PUBLICATION SIGNATURE ON ORIGINAL B. BALL DATED 29/6/01				DESIGN	Std DwgS WG	DATE	April '01		BRISBANE CITY COUNCIL STANDARD DRAWING	
				MANAGER ASSET SUPPORT - R.P.E.Q: 3852 STRATEGIC ASSET MANAGEMENT				DRAWN	CPO - P&D	DATE	April '01		SCALE NOT TO SCALE	
				DESIGN APPROVED SIGNATURE ON ORIGINAL B. HANSEN DATED 27/6/01				CHECKED	M.STEER	DATE	May '01		DWG No. BSD-4208	
				PRINCIPAL ASSET OFFICER ROADS & DRAINAGE				DRAWING FILENAME	BSD-4208 (A) Controller terminal layout.dwg				ORIGINAL SIZE	REVISION
A	Drawing Converted from UMS Series April 2014			APR '14	APR '14	APR '14							A3	A
ISSUE	AMENDMENT			DRAWN DATE	CHK'D DATE	APPR'D DATE	ASSOCIATED PLANS		SUPERSEDES UMS-600/086					

TRAFFIC CONTROLLER TOP HAT - DUAL RACKS			
ITEM	DESCRIPTION	MODEL NUMBER	TOTAL
CCTV EQUIPMENT			
2.0			
2.1	FOBOT 1RU SM FULLY LOADED	TYCO RTCIGS-SCA-24-FS-A24-P24-Z-SM	1
2.2	24VDC, POWER SUPPLY	WEIDMULLER CP SNT 45W 12V 4A	1
2.3	24VAC, 100VA POWER SUPPLY	TRIDONTIC OMT75- ⁴⁵⁰ / ₂₄	1
2.4	G652d FIBRE PATCHLEAD DUPLEX	LC to SCA, 2m	1
2.5	CAT 5 PATCHLEAD	RJ45-RJ45	1
2.6	POWER CABLE	1.5mm ² 2C/2C+E	1
2.7	1.5mm ² - 4.5mm ² TERMINALS, FUSED1 THROUGH	KDKS/35	3
2.8	1.5mm ² - 4.5mm ² TERMINALS, EARTH	EK4/35	1
2.9	4.4mm ² - 16mm ² TERMINALS THROUGH	SAK16/EN	2
2.10	1.5mm ² - 6mm ² TERMINALS EARTH	EK/35	1
2.11	TERMINAL EDD STOP	AB1 AB8935	3

TRAFFIC CONTROLLER TOP HAT - DUAL RACKS			
ITEM	DESCRIPTION	MODEL NUMBER	TOTAL
COMMUNICATION EQUIPMENT			
1.0			
1.1	CISCO SWITCH	IE 2000U	1
1.2.1	CYBERTEC 3G MODEM/ROUTER	Model: 2100E / IP10.10.10	OPTIONAL 1
1.2.2	MuLOGIC MODEM/ROUTER	ADSL-2401D.SVr2-A	OPTIONAL 1
1.3	SFPs	SFP1G-LX20-C-DI	1
1.4	150	EIRM-EXTEND	1
1.5	CISCO AIRONET INSECTOR	AIRPWRINJ-BLR2	1
1.6	X - 310 WEB ENABLED I/O MODULE	Model: X-310-24I	1
1.7	FINDER 24V DC RELAY	17RZ IND. CONT. EQ. 4C SERIES	2
1.8	FINDER 24V DC RELAY BASE	TYPE 97.01	2

NOTE:

- SOME CONTROLLER TOPHATS WILL HAVE AD-HOC NON-STANDARD EQUIPMENT LOCATED IN SHELVES. e.g. VIDEO DETECTION UNITS OR DTMR FIELDS PROCESSORS.
- 6A CIRCUIT BREAKERS MAY BE REPLACED WITH 6A 30mA RCBO CIRCUIT BREAKERS AT SITES WITH RAPID SIGN CIRCUITS AS PART OF NEW SITE UPGRADES.
- * SECOND 24V D.C. POWER SUPPLY IF POWER OVER ETHERNET (POE) REQUIRED.
- * SFP IF REQUIRED AS PER ITEM 1.3.
- * ETHERNET EXTENDER IF REQUIRED.

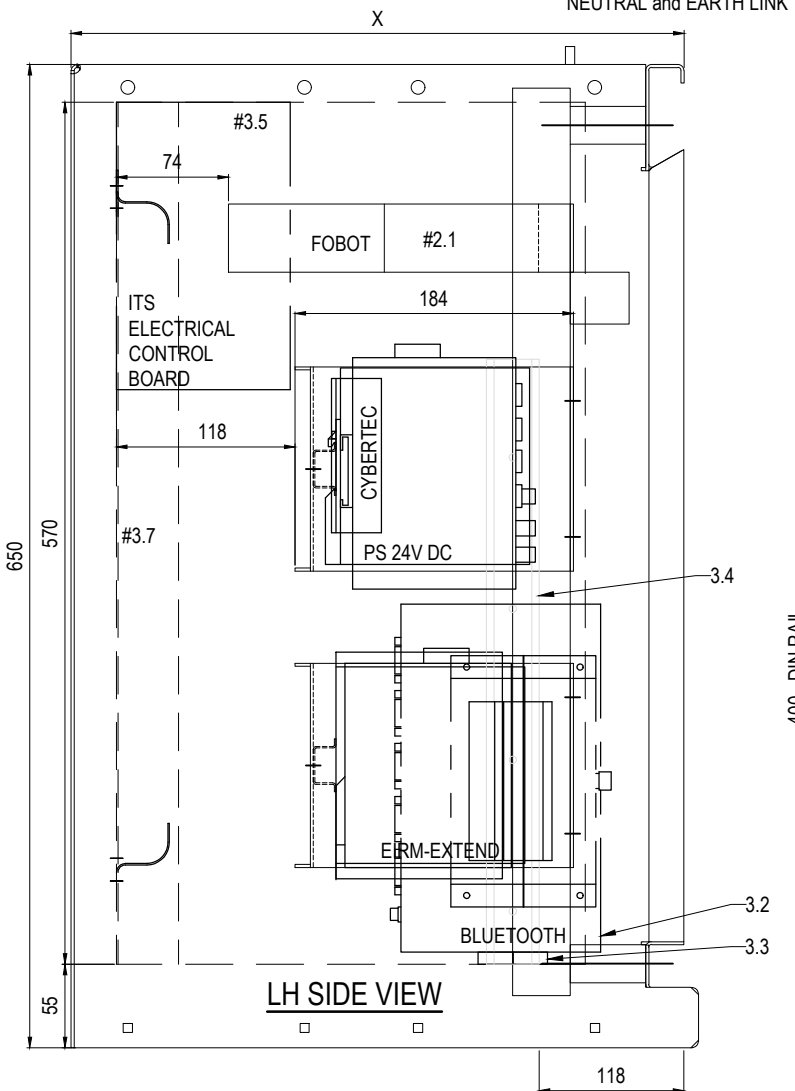


DETAIL A
N.T.S.

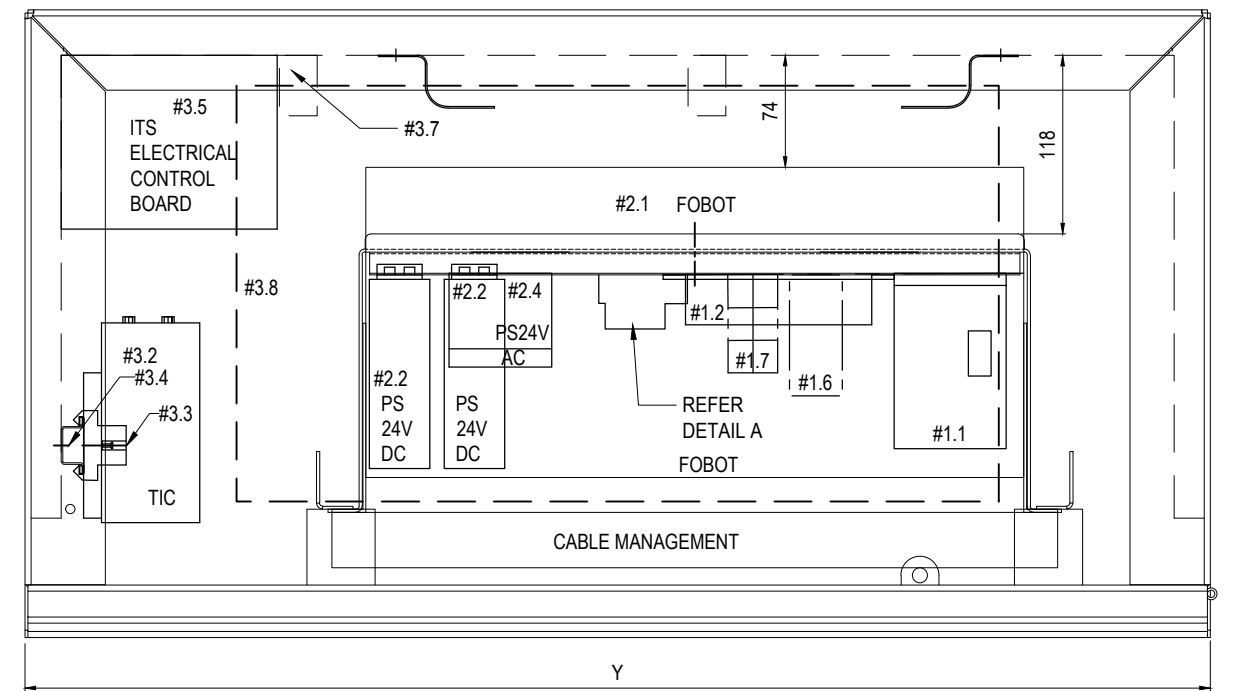
TRAFFIC CONTROLLER TOP HAT - DUAL RACKS			
ITEM	DESCRIPTION	MODEL NUMBER	TOTAL
TRAFFIC SIGNALS EQUIPMENT			
3.0			
3.1	TRAFFIC CONTROLLER TOP HAT	VARIOUS	1
3.2	TIC (TRAFFIC INFRASTRUCTURE CONTROL)	MODEL ECW-281BWD-R10-LK-MD 625 1GB	1
3.3	ENDSTOP DIN RAIL	TERMINAL END STOP	1
3.4	DIN RAIL - HAT TYPE, 3.5mm	GENERIC	400lg
3.5	COMMS CONTROL BOARD	4C 15 SERIES CLIPSAL	1
3.6	CIRCUIT BREAKER	240VAC, 6A, C CURVE	4
3.X	CIRCUIT BREAKER	10A C CURVE	1
3.7	LE GRAND SLOTTED DUCT	40 x 60	
3.8	HOLE CUT FOR ACCESS TO CONTROLLER CABINET		500 x 265 MIN

CONTROLLER TYPE	X	Y	Z
ECLIPSE ECI	405	784	650
ATSC4	420	807	665
QTC	415	780	650

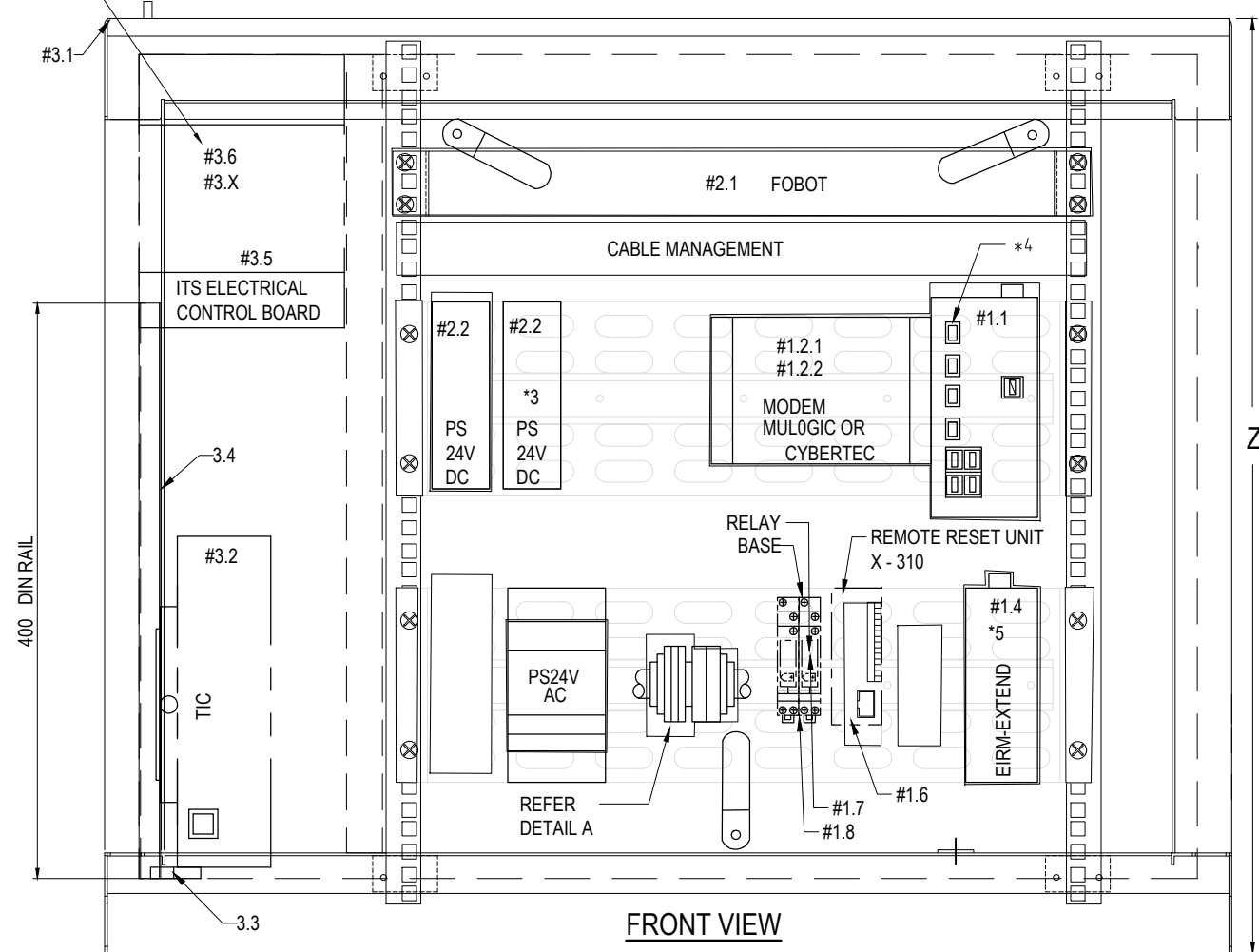
POWER BOX CLIPSAL 4C 15 SERIES
6 POLE ENCLOSURE or EQUIVALENT
WITH 4x6amp
1x10amp
"C" CURVE MINITURE CIRCUIT BREAKER
NEUTRAL and EARTH LINK



LH SIDE VIEW



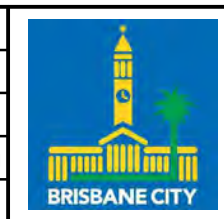
TOP VIEW



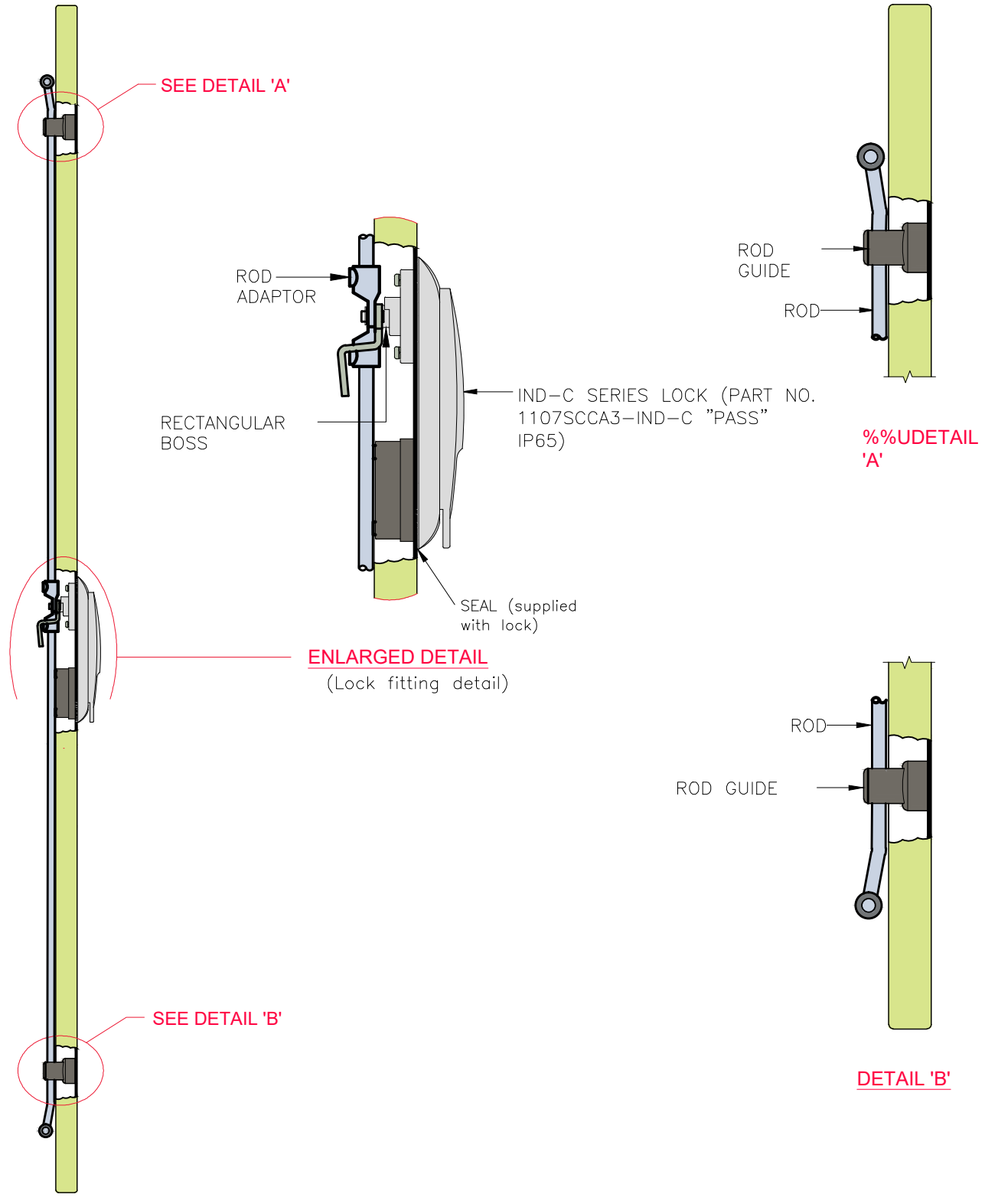
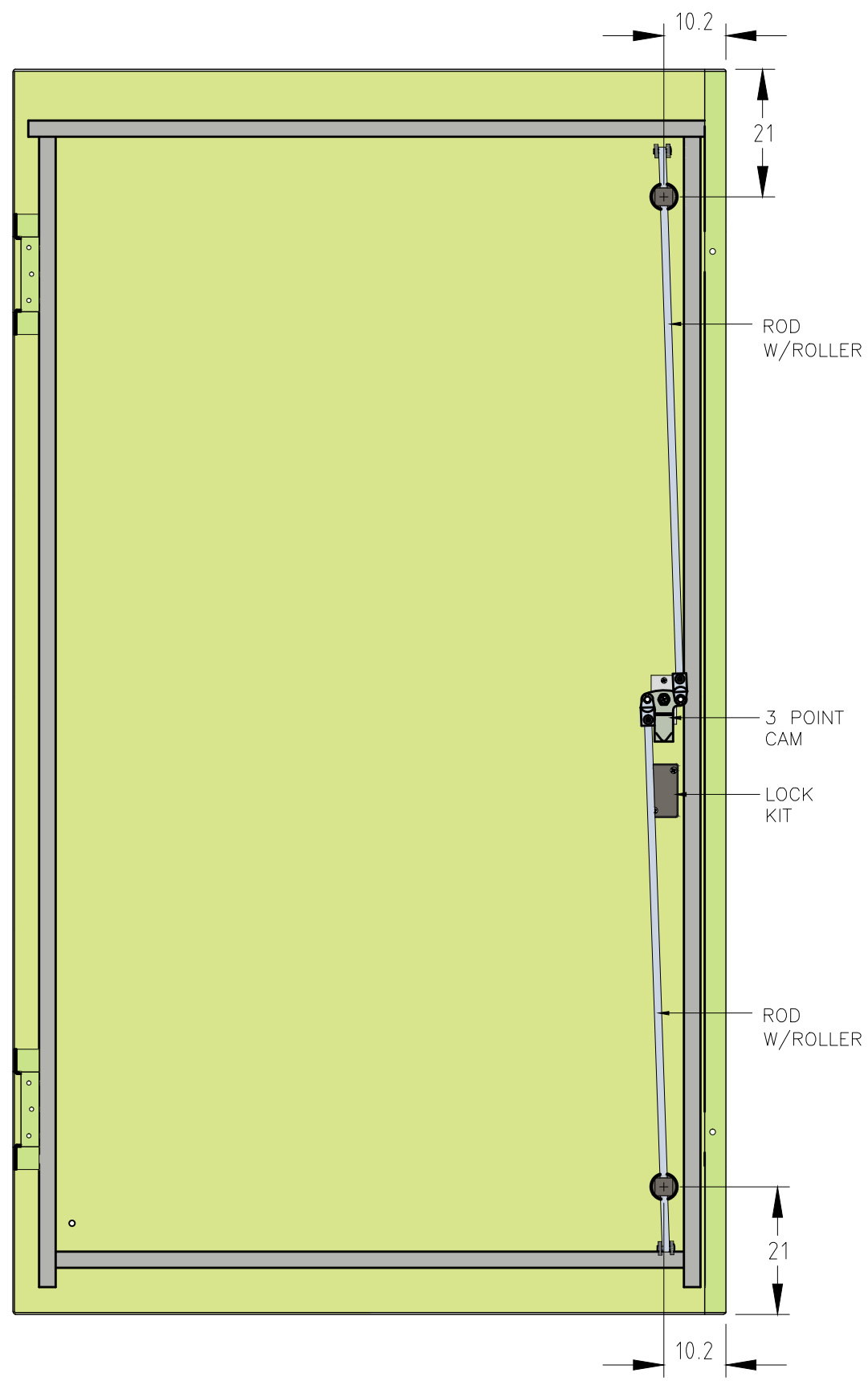
FRONT VIEW

ISSUE	AMENDMENT	DRAWN DATE	CHK'D DATE	APPR'D DATE
B	RENAME CONTROL BOARD, ADDITIONAL #NUMBERS	BW 8.02.18	DK Feb '18	DK Feb '18
A	ORIGINAL ISSUE	APR '14	APR '14	APR '14

DRAWING AUTHORISED FOR PUBLICATION			
DESIGN	CRU	DATE	Apr '14
DRAWN	CRU	DATE	Apr '14
CHECKED	CRU	DATE	Apr '14
DRAWING FILENAME	BSD-4209 (B) Dual rack controller top hat with equipment assembly-Equipment.dwg		
ASSOCIATED PLANS			



BRISBANE CITY COUNCIL STANDARD DRAWING	
DUAL RACK CONTROLLER TOP HAT WITH EQUIPMENT ASSEMBLY	
SCALE	NOT TO SCALE
DWG No.	BSD-4209
ORIGINAL SIZE	A3
REVISION	B

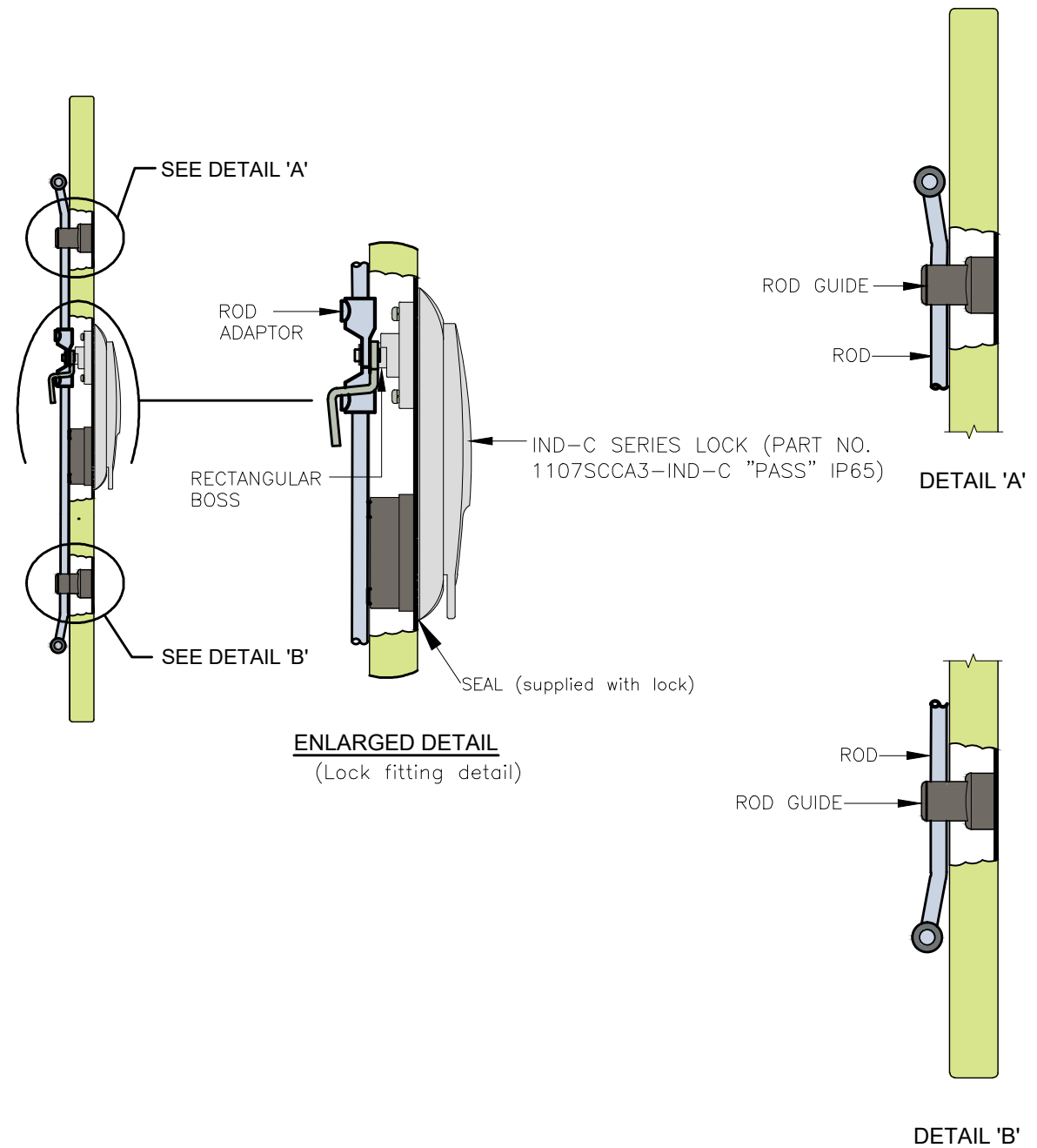
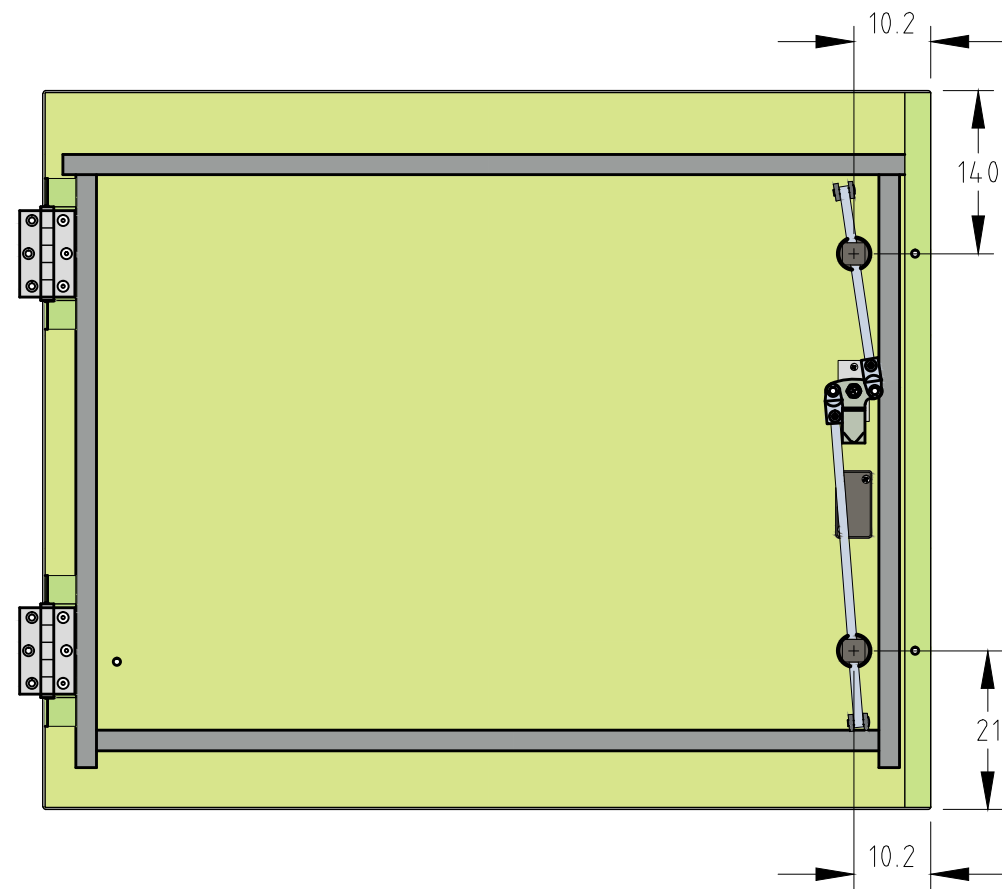


A	ORIGINAL ISSUE	JUN '15	JUN '15	JUN '15
ISSUE	AMENDMENT	DRAWN DATE	CHK'D DATE	APPR'D DATE

DRAWING AUTHORISED FOR PUBLICATION I.CONDRIC APPROVED JUNE 2015 for ASSET ENGINEERING MANAGER STRATEGIC ASSET MANAGEMENT DESIGN APPROVED Adrian Gibbons Signature on Original June 2015 TRAFFIC SIGNALS OPERATION MANAGER CONGESTION REDUCTION UNIT				DESIGN	BW	DATE	04/06/15
				DRAWN	BW	DATE	04/06/15
				CHECKED	SM	DATE	04/06/15
				DRAWING FILENAME	BSD-4210 (A) Controller door details.DWG		
				ASSOCIATED PLANS			



BRISBANE CITY COUNCIL STANDARD DRAWING	
CONTROLLER DOOR DETAILS	
SCALE	NOT TO SCALE
DWG No.	BSD-4210
ORIGINAL SIZE	A3
REVISION	A

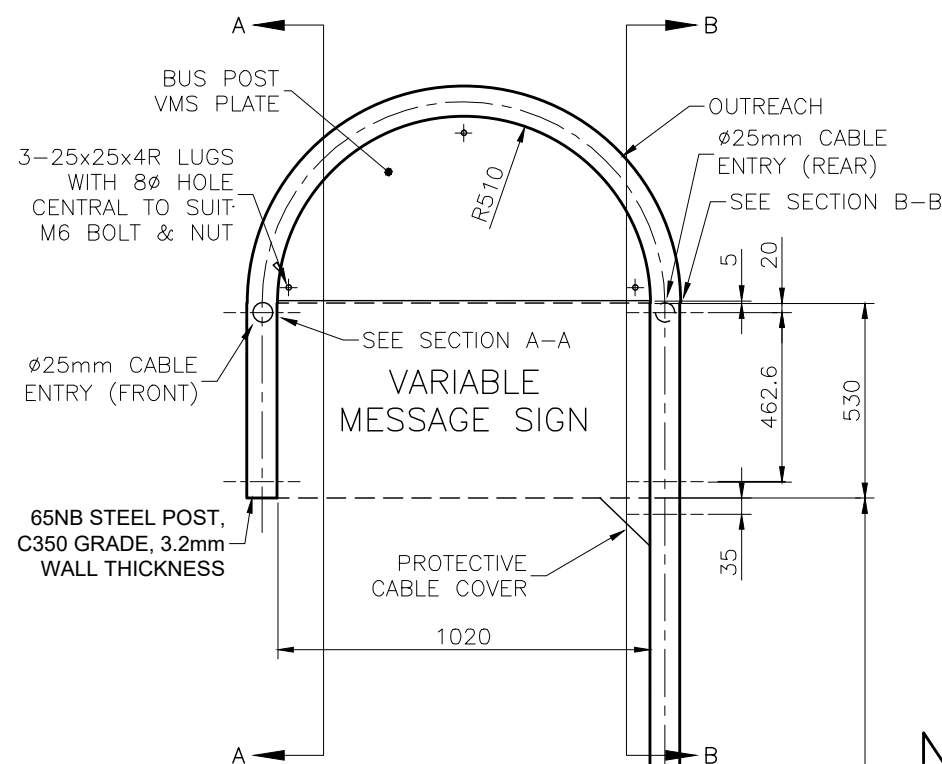


A	ORIGINAL ISSUE	JUN '15	JUN '15	JUN '15
ISSUE	AMENDMENT	DRAWN DATE	CHK'D DATE	APPR'D DATE

DRAWING AUTHORISED FOR PUBLICATION			
I.CONDRIC APPROVED			
JUNE 2015			
for ASSET ENGINEERING MANAGER			
STRATEGIC ASSET MANAGEMENT			
DESIGN APPROVED			
Adrian Gibbons Signature on Original			
June 2015			
TRAFFIC SIGNALS OPERATION MANAGER			
CONGESTION REDUCTION UNIT			
DESIGN	BW	DATE	04/06/15
DRAWN	BW	DATE	04/06/15
CHECKED	SM	DATE	04/06/15
DRAWING FILENAME	BSD-4210 (A) Controller Top Hat Door Details.dwg		
ASSOCIATED PLANS			



BRISBANE CITY COUNCIL STANDARD DRAWING	
CONTROLLER TOP HAT DOOR DETAILS	
SCALE	NOT TO SCALE
DWG No.	BSD-4211
ORIGINAL SIZE	A3
REVISION	A

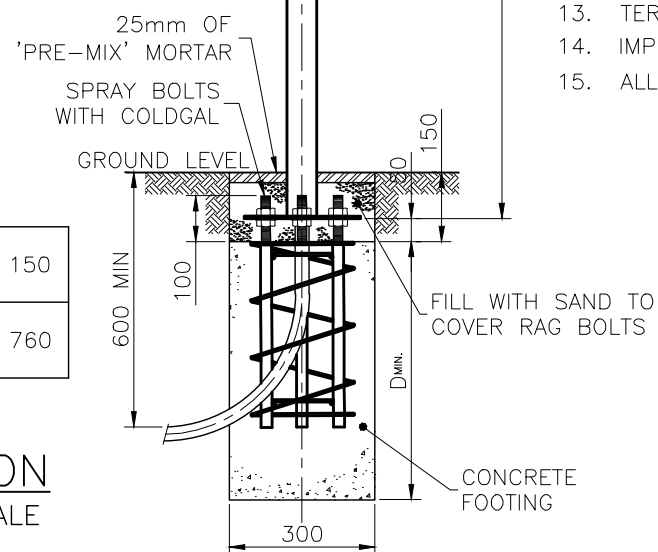


BUS POST VMS PLATE

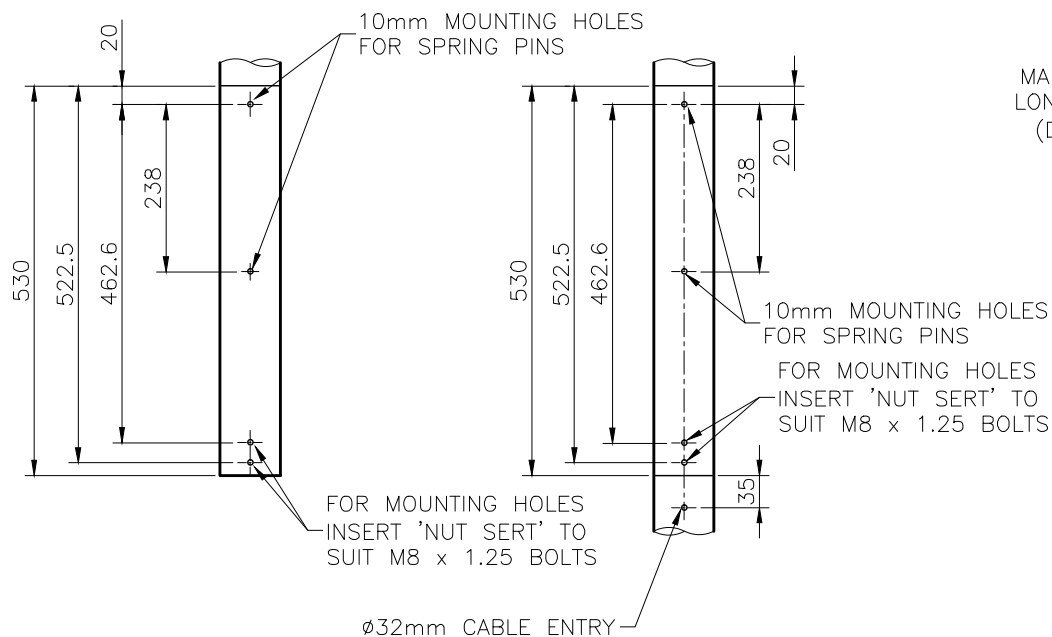
- * DOUBLE SIDED SIGN PLATE (SEMI-CIRCULAR)
- * POWDER COAT FINISH - WHITE
- * SCREEN PRINTED WITH BRISBANE TRANSPORT AND TRANSLINK LOGOS AND INFORMATION NUMBER.

SOIL BEARING CAPACITY (kPa)	100	150
FOOTING DEPTH D _{MIN} (mm)	940	760

ELEVATION
NOT TO SCALE



BASE PLATE
NOT TO SCALE

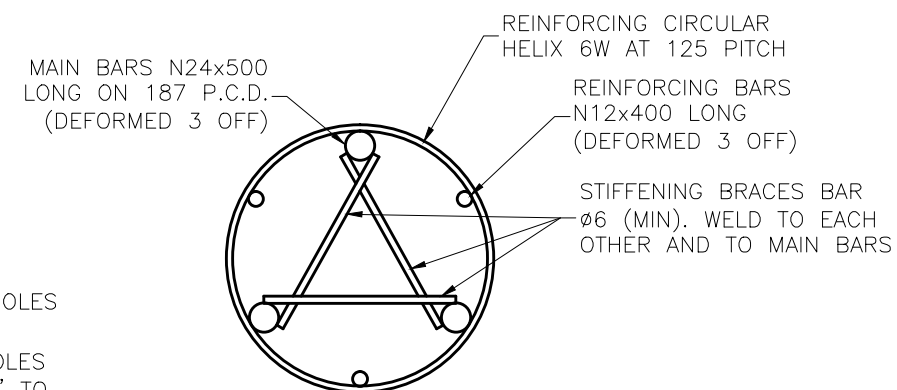


SECTION A-A
NOT TO SCALE

SECTION B-B
NOT TO SCALE

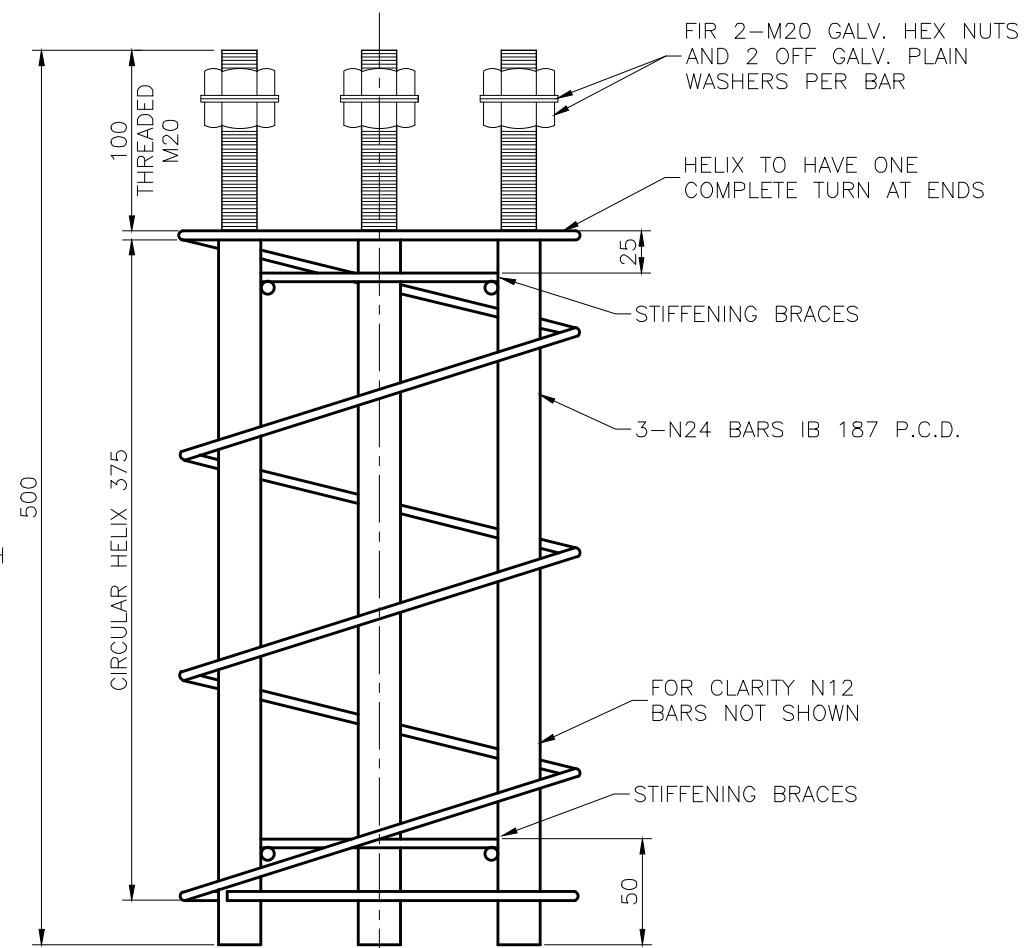
NOTES:

1. STEEL PLATES TO AS3678-250 U.N.O.
2. PIPE AND HOLLOW SECTIONS TO AS1163 GRADE C250 OR C350 U.N.O.
3. WELDS 6mm FILLET U.N.O. TO AS1554.1 GP, U.N.O.
4. GALVANISING TO AS1650.
5. AFTER GALVANISING REMOVE BURRS, SHARP EDGES AND TAP THREADS.
6. FLAT AND SECTIONS TO AS3679-250 U.N.O.
7. STAINLESS STEEL FITTINGS GRADE 304
8. FABRICATION TOLERANCES TO DWG No. W1-97-00 U.N.O.
9. CONCRETE SHALL BE N25.
10. A LICENSED ELECTRICAL WORKER SHALL SUPERVISE THE INSTALLATION OF THE CONDUIT.
11. WHERE EXISTING 16 CHARACTER SIGNS REQUIRE MAINTENANCE, REPLACE WITH NEW 20 CHARACTER SIGN.
12. DESIGN STANDARDS: AS4676-2000, AS1170.2-2002.
13. TERRAIN CATEGORY 2.5.
14. IMPORTANCE FACTOR 2.
15. ALL DIMENSIONS IN MILLIMETRES (U.N.O.).



FOUNDATION CAGE
(INVERTED PLAN VIEW)

NOT TO SCALE



FOUNDATION CAGE
NOT TO SCALE

ISSUE	AMENDMENT	DRAWN DATE	CHK'D DATE	APPR'D DATE
A	Drawing Converted from UMS Series April 2014	APR '14	APR '14	APR '14

DRAWING AUTHORISED FOR PUBLICATION			
SIGNATURE ON ORIGINAL	DESIGN	CPO (Traffic Sig)	DATE
P COTTON DATED 21/03/06	DRAWN	CPO (Traffic Sig)	DATE
MANAGER INFRASTRUCTURE MANAGEMENT R.P.E.Q. 2546 STRATEGIC ASSET MANAGEMENT	CHECKED	T & T (Signals Man)	DATE
DESIGN APPROVED	DRAWING FILENAME	BSD-4301 (A) Bus post for variable message sign (20 character sign).dwg	
SIGNATURE ON ORIGINAL	ASSOCIATED PLANS	SUPERSEDES UMS-600/070	
A GIBBONS DATED 09/12/05			
TEAM LEADER			
SIGNALS OPERATIONS			



BRISBANE CITY COUNCIL STANDARD DRAWING	
SCALE: NOT TO SCALE	
DWG No. BSD-4301	
ORIGINAL SIZE: A3	REVISION: A

GENERAL NOTES

1. THESE NOTES SHALL BE READ IN CONJUNCTION WITH DRAWINGS BSD-4311 SHEETS 3 TO 5, RELEVANT SPECIFICATIONS AND SUCH OTHER WRITTEN INSTRUCTIONS AS MAY BE ISSUED.
2. ANY DISCREPANCIES IN THE DRAWINGS SHALL BE REFERRED TO THE SUPERINTENDENT FOR DECISION BEFORE PROCEEDING WITH THE WORK.
3. ALL WORKMANSHIP AND MATERIALS SHALL COMPLY WITH THE APPROPRIATE AND CURRENT AUSTRALIAN STANDARDS, RELEVANT DTMR SPECIFICATIONS AND OTHER PROJECT SPECIFIC SPECIFICATIONS.
4. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE (U.N.O). DIMENSIONS SHALL NOT BE OBTAINED BY SCALING THE STRUCTURAL DRAWINGS.
5. SETTING OUT DIMENSIONS SHOWN ON PROJECT SPECIFIC DRAWINGS SHALL BE VERIFIED ON SITE BEFORE CONSTRUCTION COMMENCES.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING STABILITY OF THE STRUCTURE UNTIL CONSTRUCTION COMPLETION AND SHALL ENSURE THAT NO PART OF THE STRUCTURE IS OVERSTRESSED DURING CONSTRUCTION. ANY DAMAGE CAUSED BY THE CONTRACTOR SHALL BE MADE GOOD AT THE CONTRACTOR'S OWN COST.
7. ALL TEMPORARY WORKS AND TEMPORARY STRUCTURES ARE TO BE DESIGNED AND CERTIFIED BY THE CONTRACTOR'S STRUCTURAL ENGINEER (RPEQ). ALL TEMPORARY WORKS ARE TO BE REMOVED AT THE END OF THE PROJECT WITH GROUND MADE GOOD, ALL AT THE CONTRACTOR'S COST.
8. CONTRACTOR SHALL LOCATE ANY BURIED SERVICES AT THE SITE AND NOTIFY THE DESIGNER IF THERE ARE ANY CLASHES WITH THE FOUNDATION, AT LEAST 2 WEEKS PRIOR TO COMMENCEMENT OF CONSTRUCTION.

INSPECTION AND CONSTRUCTION CERTIFICATION NOTES

1. THE CONTRACTOR SHALL ARRANGE & PAY ALL COSTS FOR A STRUCTURAL ENGINEER (RPEQ) AND A GEOTECHNICAL ENGINEER (RPEQ) TO INSPECT AND CERTIFY ALL CONSTRUCTION WORK AS SPECIFIED IN THE CONTRACT.
2. THE CONSTRUCTION CERTIFICATION SHALL STATE THAT ALL CONSTRUCTION WORKS HAD BEEN CARRIED OUT AS PER THE MOST CURRENT ISSUE OF THE CONTRACT DOCUMENTS AND SITE INSTRUCTIONS/VARIATION ORDERS ISSUED DURING CONSTRUCTION BY CITY PROJECTS OFFICE.

DESIGN CRITERIA

1. DESIGN STANDARDS : AS5100 (2004), AS1170, AS3600 (2009), AS4100 (1998) INCLUDING SUPPLEMENTS AND AMENDMENTS.
2. DESIGN LOADS : IN ACCORDANCE WITH AS5100, AS1170 AND 'DESIGN CRITERIA FOR BRIDGES AND OTHER STRUCTURES: 2012' PUBLISHED BY DEPARTMENT OF TRANSPORT AND MAIN ROADS (DTMR) QLD.
3. DESIGN DATA : VMS PANEL WEIGHT: 300kg MAX. TRAFFIC CAMERA WEIGHT 20kg MAX.
 : WIND LOADS
 - REGION: B
 - TERRAIN CATEGORY: 2
 - STRUCTURE HEIGHT: 8.0m
 - ARI: 2000 YRS (ULS) & 20 YRS (SLS)
 - Vdes.θuls=58 m/s & Vdes.θsls=35 m/s
 : EARTHQUAKE LOADS
 - EARTHQUAKE ZONE HAZARD FACTOR Z = 0.05
 - DESIGN CATEGORY: EDC II
 : FATIGUE LOADS
 - THE STRUCTURE HAS BEEN DESIGNED FOR FATIGUE IN ACCORDANCE WITH SECTION 11 OF 'AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINARIES AND TRAFFIC SIGNALS' 5th EDITION 2009.
 : 100 YEAR DESIGN LIFE

CONCRETE NOTES

1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH DTMR SPECIFICATION MRTS70.
2. MANUFACTURE AND PLACEMENT OF CONCRETE SHALL BE IN ACCORDANCE WITH MRTS70.
3. CHAMFERS AND FILLETS - UNLESS NOTED OTHERWISE ON THE DRAWINGS, ALL EXPOSED CONCRETE EDGES HAVING A CONTAINED ANGLE OF LESS THAN 120° SHALL BE PROVIDED WITH 20mm CHAMFERS OR FILLETS AS APPROPRIATE.

CONCRETE NOTES CONTINUED

4. ALL CONCRETE SHALL BE PREMIXED BY AN APPROVED SUPPLIER
5. ALL CEMENT SHALL BE TYPE GP OR GB TO AS3972 UNLESS OTHERWISE SPECIFIED.
6. ADMIXTURES SHALL NOT BE USED UNLESS APPROVED IN WRITING BY THE SUPERINTENDENT.
7. TARGET SLUMP TO BE AS PER MRTS70.
8. CONCRETE STRENGTH AND CLEAR COVER TO REINFORCEMENT SHALL BE IN ACCORDANCE WITH THE FOLLOWING TABLE U.N.O. EXPOSURE CLASSIFICATION B2.

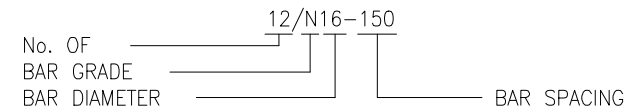
ELEMENT	CONCRETE GRADE	CLEAR COVER TO REINFORCEMENT
BORED PILE	S40/20	85
MASS / BLINDING CONCRETE	N20	N/A

REINFORCEMENT NOTES

1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH MRTS71.
2. THE CONTRACTOR SHALL SUBMIT MILL AND TEST CERTIFICATES FOR REINFORCING BARS TOGETHER WITH RPEQ CERTIFICATION CONFIRMING THE FOLLOWING, FOR APPROVAL OF THE SUPERINTENDANT PRIOR TO COMMENCEMENT OF CONSTRUCTION;
 - THAT REINFORCING BARS SUPPLIED BY EITHER AN AUSTRALIAN OR OVERSEAS SUPPLIER ARE ACRS CERTIFIED. REFER www.steelcertification.com FOR CURRENT CERTIFICATE HOLDERS. ACRS REFERS TO "AUSTRALIAN CERTIFICATION AUTHORITY FOR REINFORCING AND STRUCTURAL STEELS".
 - THAT WHERE REINFORCING BARS ARE SOURCED FROM OVERSEAS FOR THE PROJECT, THE CERTIFYING ENGINEER HAS REVIEWED THE MILL AND TEST CERTIFICATES FROM THE SUPPLIERS OF THE REINFORCING BARS AND CONFIRMS THAT THEY COMPLY WITH THE RELEVANT AUSTRALIAN STANDARDS IN RELATION TO MATERIAL COMPOSITION AND STRENGTH.

3. REINFORCEMENT SYMBOLS:
 R STRUCTURAL PLAIN ROUND BAR GRADE 250R TO AS4671
 N DEFORMED BAR GRADE D500N TO AS4671
 SL HARD DRAWN STEEL REINFORCING FABRIC GRADE D500L TO AS4671

REINFORCEMENT NOTATION



5. REINFORCEMENT IS SHOWN DIAGRAMMATICALLY ON THESE DRAWINGS AND DOES NOT DEPICT THE PRECISE POSITION OF BARS AND NOT NECESSARILY SHOWN IN TRUE PROJECTION OR SCALE.

MINIMUM DEVELOPMENT AND SPLICING LENGTHS, UNLESS NOTED OTHERWISE

BAR SIZE	N12	N16	N20	N24	N28	N32	N36	FABRIC
MINIMUM LAP LENGTH	500	650	800	1050	1400	1750	2150	350

7. SPLICES IN REINFORCEMENT SHALL BE MADE ONLY IN THE POSITIONS SHOWN OR AS APPROVED BY THE SUPERINTENDENT.
8. WELDING OR SITE BENDING OF THE REINFORCEMENT IS NOT PERMITTED WITHOUT THE DESIGNER'S APPROVAL.
9. ALL REINFORCEMENT SHALL BE SECURELY SUPPORTED IN ITS CORRECT POSITION DURING CONCRETING BY APPROVED BAR CHAIRS, SPACERS OR SUPPORT BARS. THE BAR CHAIR MATERIAL SHALL SUIT THE EXPOSURE CLASSIFICATION.
10. COGS, CRANKS AND HOOKS ARE STANDARD UNLESS NOTED OTHERWISE AND SHALL BE IN ACCORDANCE WITH AS 5100-2004.

STRUCTURAL DESIGN CERTIFICATION		
DESIGN <small>Dilan Rowel RPEQ:8455 2013.10.22 13:21:05 +10'00'</small>	DESIGN CHECK <small>Lenita Mendis RPEQ: 8950 2013.10.22 15:28:09 +10'00'</small>	AUTHORISED FOR ISSUE <small>Bala Balakumar RPEQ: 3963 2013.10.22 15:54:18+10'00'</small>

ISSUE	AMENDMENT	DRAWN DATE	CHK'D DATE	APPR'D DATE	DRAWING AUTHORIZED FOR PUBLICATION Signature on Original Inga Condric Dated 15/04/14 FOR ASSET ENGINEERING MANAGER STRATEGIC ASSET MANAGEMENT DESIGN APPROVED Eric Bradley Signature on Original Dec 2013 Intelligent Transport Systems Manager	DESIGN	D.R.	DATE	Oct '13	DRAWN	D.M.	DATE	Oct '13	CHECKED	L.M.	DATE	Oct '13	DRAWING FILENAME	VBSD-4311 (C) Vms support structure type BCCVC - Notes - Sheet 1 of 5.dwg	ASSOCIATED PLANS	BSD-4311 SHEETS 2,3, 4 & 5
C	Drawing Title Amended	JAN '16	JUL '16	JUL '16																	
B	NOTES AMENDED	SEPT '14	SEPT '14	SEPT '14																	
A	ORIGINAL ISSUE	Oct '13	Oct '13	Oct '13																	

BRISBANE CITY COUNCIL STANDARD DRAWING	
<p>VMS SUPPORT STRUCTURE TYPE BCCVC-NOTES SHEET 1 OF 5</p>	<p>SCALE NOT TO SCALE</p> <p>DWG No. BSD-4311</p> <p>ORIGINAL SIZE A3 REVISION C</p>



BORED PILE NOTES

- MATERIAL AND WORKMANSHIP OF BORED PILES ARE TO BE IN ACCORDANCE WITH MRTS63.
- BORED PILES SHALL BE LOCATED IN THE POSITIONS SHOWN ON THE PROJECT DRAWINGS, WITHIN THE FOLLOWING TOLERANCE (WHICHEVER MINIMUM)
 - THE MAXIMUM LATERAL DISPLACEMENT OF THE PILE HEAD IN ANY DIRECTION FROM ITS CORRECT POSITION SHALL NOT EXCEED 75mm
 - MAXIMUM VARIATION FROM VERTICAL SHALL NOT EXCEED 20mm PER METER.
- THE CONTRACTOR SHALL DETERMINE THE REQUIREMENT FOR A TEMPORARY OR PERMANENT LINER FOR THE PILE BORE PRIOR TO EXCAVATION. THE PILE LENGTH SHOWN IN THE TABLE IN DRG BSD-4311 SHEET 5 IS THE LENGTH COMMENCING BELOW THE BOTTOM OF THE PERMANENT LINER.
- BOTTOM OF PILE IS TO BE CLEANED BEFORE CONCRETING BY THE CONTRACTOR TO THE SATISFACTION OF A REGISTERED GEOTECHNICAL ENGINEER (RPEQ) APPOINTED BY THE CONTRACTOR.
- CONCRETE SHALL BE PLACED, AS SOON AS POSSIBLE AFTER DRILLING AND APPROVAL HAS BEEN GIVEN, THROUGH A SUITABLE LENGTH AND DIAMETER DELIVERY PIPE AND SHALL BE COMPACTED AS SPECIFIED IN MRTS63.
- BORED HOLES SHALL BE KEPT FREE OF WATER AT ALL TIMES BY BAILING AND PUMPING IF NECESSARY, PARTICULARLY PRIOR TO CONCRETING. CONCRETE SHALL NOT BE PLACED IN WATER UNLESS APPROVED BY THE DESIGNER. THE TOP OF HOLE SHALL BE PROPERLY COVERED TO PREVENT SURFACE WATER OR RAINFALL FROM ENTERING THE HOLES.
- SAFETY PRECAUTIONS SHALL BE TAKEN TO AVOID INJURY TO PEOPLE. THE UNATTENDED HOLE SHALL BE COVERED OR FENCED OFF AT ALL TIMES.
- PILE SHALL NOT BE FOUNDED HIGHER THAN THE LEVELS SHOWN ON DRG BSD-4311 SHEET 5 UNLESS APPROVED BY THE DESIGNER.
- REFER DRG BSD-4311 SHEET 5 FOR ADDITIONAL NOTES AND INSTRUCTIONS TO THE CONTRACTOR.

HOLD DOWN BOLT NOTES

- EACH EXPOSED THREAD PROJECTION SHALL BE SUPPLIED WITH ONE HOLD DOWN BOLT NUT, ONE HALF HEIGHT LOCK NUT, ONE LEVELLING NUT AND TWO FLAT WASHERS ASSEMBLED AS SHOWN IN THE DETAILS ON THIS DRAWING SET. ALL NUTS SHALL BE STANDARD HEIGHT AND SHALL COMPLY WITH AS 1112. ALL SCREW THREADS SHALL BE TO AS1275, BOLTS AND NUTS TO BE HOT DIP GALVANISED TO AS1214 AND WASHER HOT DIP GALVANISED TO AS/NZS4680.
- THE LOCATION OF THE BOLTS SHALL BE CONFIRMED BY ON SITE MEASUREMENT BEFORE CONCRETE PLACEMENT.
- ALL HOLD DOWN BOLTS SHALL BE GRADE 4.6/S UNLESS OTHERWISE NOTED.
- HOLD DOWN BOLTS AND ALL OTHER METALLIC CAST-IN ITEMS ARE NOT TO BE IN CONTACT WITH THE STEEL REINFORCEMENT.
- THE CAST-IN PORTION OF THE BOLT SHALL BE COATED WITH MEGAPOXY HT (1.0mm DRY FILM THICKNESS) AS SPECIFIED, IMMEDIATELY PRIOR TO CONCRETE PLACEMENT.
- BASE PLATE SHALL BE GROUTED USING GOOD QUALITY FLOWABLE, SELF LEVELLING, NON SHRINK GROUT ("EPIREZ" SUPER-GROUT 65 OR APPROVED EQUIVALENT) HAVING A MINIMUM CHARACTERISTIC COMPRESSIVE STRENGTH $f_c=65\text{MPa}$. THE CONTRACTOR SHALL ENSURE THAT H.D. BOLTS ARE FULL ENCAPSULATED WITH GROUT.

STEELWORK NOTES

- ALL WORKMANSHIP & MATERIALS SHALL BE IN ACCORDANCE WITH DTMR SPECIFICATION MRTS 78.
- THE CONTRACTOR SHALL SUBMIT MILL AND TEST CERTIFICATES FOR STRUCTURAL STEEL PRODUCTS TOGETHER WITH RPEQ CERTIFICATION CONFIRMING THE FOLLOWING, FOR APPROVAL OF THE SUPERINTENDENT PRIOR TO COMMENCEMENT OF FABRICATION;
 - THAT THE STRUCTURAL STEEL PRODUCTS SUPPLIED BY EITHER AN AUSTRALIAN OR OVERSEAS SUPPLIER ARE ACRS CERTIFIED. REFER www.steelcertification.com FOR CURRENT CERTIFICATE HOLDERS. ACRS REFERS TO "AUSTRALIAN CERTIFICATION AUTHORITY FOR REINFORCING AND STRUCTURAL STEELS".
 - THAT WHERE STRUCTURAL STEEL PRODUCTS ARE SOURCED FROM OVERSEAS FOR THE PROJECT, THE CERTIFYING ENGINEER HAS REVIEWED THE MILL AND TEST CERTIFICATES FROM THE SUPPLIERS OF THE STEEL PRODUCTS AND CONFIRMS THAT THEY COMPLY WITH THE RELEVANT AUSTRALIAN STANDARDS IN RELATION TO MATERIAL COMPOSITION AND STRENGTH.
 - THAT ALL BOLTS USED COMPLY WITH AS1252 AND THE CURRENT REQUIREMENTS OF THE AUSTRALIAN STEEL INSTITUTE - ASI TECHNICAL NOTE TN001 VERSION 3.

STEELWORK NOTES CONTINUED

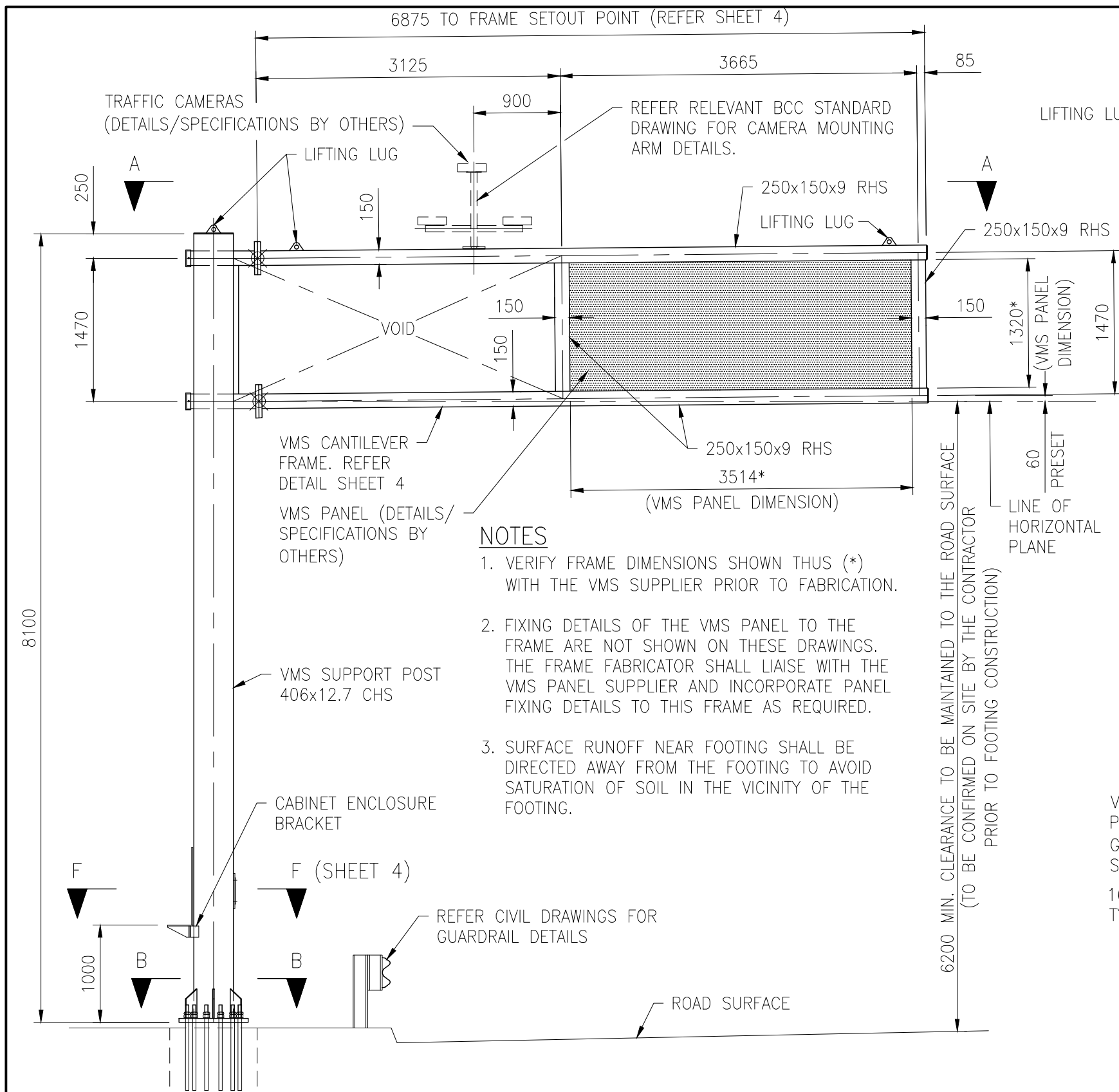
- THE CONTRACTOR SHALL SUBMIT A SEPARATE RPEQ CERTIFICATION CONFIRMING THAT ALL WELDING WORKS HAVE BEEN INSPECTED AND CERTIFIED AS COMPLYING WITH AS1554 BY A QUALIFIED WELDING INSPECTOR APPOINTED BY THE CONTRACTOR, TO THE SUPERINTENDENT FOR APPROVAL PRIOR TO THE STEELWORK BEING GALVANISED.
- ALL STEELWORK SHALL BE HOT DIP GALVANISED IN ACCORDANCE WITH AS/NZS 4680 AFTER FABRICATION. PROTECTIVE COATING SYSTEM AND SURFACE FINISH FOR STRUCTURAL ELEMENTS AS FOLLOWS:
 - VMS SUPPORT POST - HOT DIP GALVANISED TO HDG600 SPECIFICATION IN AS/NZS 2312.
 - VMS CANTILEVER FRAME -
 - HOT DIP GALVANISED TO HDG600 SPECIFICATION IN AS/NZS 2312
 - POWDER COATED IN MATT BLACK. POWDER COATING TO LAST MIN. 10 YEARS. PRETREAT HDG SURFACES AS PER AS4506 PRIOR TO POWDER COATING.
- THE STEELWORK FABRICATION CONTRACTOR SHALL PREPARE AND SUBMIT DETAILED FABRICATION DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO COMMENCING WORK. ALLOW MINIMUM TEN (10) WORKING DAYS FOR ENGINEERS APPROVAL.
- PRIOR TO COMMENCING WORK, THE STEELWORK FABRICATION CONTRACTOR SHALL VERIFY ALL DESIGN SETOUT INFORMATION ON SITE. THE SUPPORT POST SHALL BE LOCATED CONCENTRICALLY OVER THE FOOTING.
- UNLESS NOTED OTHERWISE ON THE DRAWINGS, THE STEEL SHALL COMPLY WITH THE FOLLOWING:
 - HOT ROLLED STEEL SECTIONS - GRADE 300 TO AS3679.1
 - HOT ROLLED STEEL PLATE - GRADE 300 TO AS3678
 - SQUARE AND RECTANGULAR HOLLOW SECTIONS - GRADE C350L0 TO AS1163
 - CIRCULAR HOLLOW SECTIONS - GRADE C350L0 TO AS1163
- CARRY OUT WELDING IN ACCORDANCE WITH AS1554 AND AS FOLLOWS:
 - ALL WELDS TO BE COMPLETE PENETRATION BUTT WELDS U.N.O.
 - WELDS TO BE SHOP WELDED U.N.O.
 - WELDS TO BE CATEGORY SP
 - BUTT WELD DENOTED AS CPBW ON THE DRAWINGS SHALL BE COMPLETE PENETRATION U.N.O.
 - ELECTRODES TO BE CLASSIFICATION E48XX U.N.O., PRE-APPROVED TO AS1554
 - EXTENT OF WELD INSPECTION AND TESTING TO BE AS PER MRTS78
- BOLTS AT SPLICE CONNECTION SHALL BE GRADE 8.8/TF HIGH STRENGTH STRUCTURAL BOLTS, NUTS AND WASHERS TO AS/NZS1252
 - S - DENOTES SNUG TIGHT
 - TB - DENOTES BEARING MODE JOINT, BOLTS FULLY TENSIONED
 - TF - DENOTES FRICTION MODE JOINT, BOLTS FULLY TENSIONED (CONTACT SURFACES OF CONNECTIONS TO BE UNCOATED)
- THE BOLT TYPE AND TIGHTENING PROCEDURE ARE DESIGNATED: NUMBER, SIZE STRENGTH GRADE / TIGHTENING PROCEDURES, eg: 4M24 8.8/TF = 4 OFF, 24 DIAMETER, METRIC HIGH STRENGTH STRUCTURAL BOLTS, FULLY TENSIONED IN FRICTION MODE.
- U.N.O., ON THE DRAWINGS, HOT DIP GALVANISE BOLTS, SCREWS, NUTS AND WASHERS TO AS1214. TAP NUTS OVERSIZE TO SUIT GALVANISED THREADS AND OIL FOR PROTECTION. INSTALL WASHERS UNDER BOLT HEAD AND NUT.
- FRICTION GRIP BOLTS SHALL BE TENSIONED TO THE FORCES SPECIFIED USING METHODS DESCRIBED IN MRTS78. SLIP FACTOR ASSUMED FOR FRICTION TYPE BOLTS = 0.35.
- ENSURE MEMBERS ARE CONCENTRIC AT CONNECTIONS (GRAVITY OR GAUGE LINES TO INTERSECT) U.N.O.
- STEEL MEMBERS SHALL BE MADE FROM WHOLE LENGTHS.
- PROVIDE VENT/DRAIN HOLES IN ACCORDANCE WITH AS/NZS4680 AS REQUIRED. VENT / DRAIN HOLES ARE TO BE DETAILED ON THE WORKSHOP DRAWINGS FOR APPROVAL BY THE ENGINEER. ALL VENT/DRAIN HOLES ARE TO BE SEALED WITH APPROVED PLASTIC PLUGS PRIOR TO DELIVERY OF THE STEELWORK TO SITE.

STRUCTURAL DESIGN CERTIFICATION		
DESIGN <small>Dilan Rowel RPEQ:8455 2013.10.22 13:23:23 +10'00'</small>	DESIGN CHECK <small>Lenita Mendis RPEQ: 8950 2013.10.22 15:36:25 +10'00'</small>	AUTHORISED FOR ISSUE <small>Bala Balakumar RPEQ 3963 2013.10.22 15:55:50+10'00'</small>

					DRAWING AUTHORISED FOR PUBLICATION Signature on Original Inga Condric Dated 15/04/14	DESIGN	D.R.	DATE	Oct '13
					FOR ASSET ENGINEERING MANAGER STRATEGIC ASSET MANAGEMENT	DRAWN	D.M.	DATE	Oct '13
					DESIGN APPROVED Eric Bradley Signature on Original Dec 2013	CHECKED	L.M.	DATE	Oct '13
					Intelligent Transport Systems Manager	DRAWING FILENAME	BSD-4311 (I) Vms support structure type BCCVC - Notes - Sheet 2 of 5.dwg		
						ASSOCIATED PLANS	BSD-4311 SHEETS 1,3, 4 & 5		
C	Drawing Title Amended	JAN '16	JUL '16	JUL '16					
B	NOTES AMENDED	SEPT '14	SEPT '14	SEPT '14					
A	ORIGINAL ISSUE	Oct '13	Oct '13	Oct '13					
ISSUE	AMENDMENT	DRAWN DATE	CHK'D DATE	APPR'D DATE					

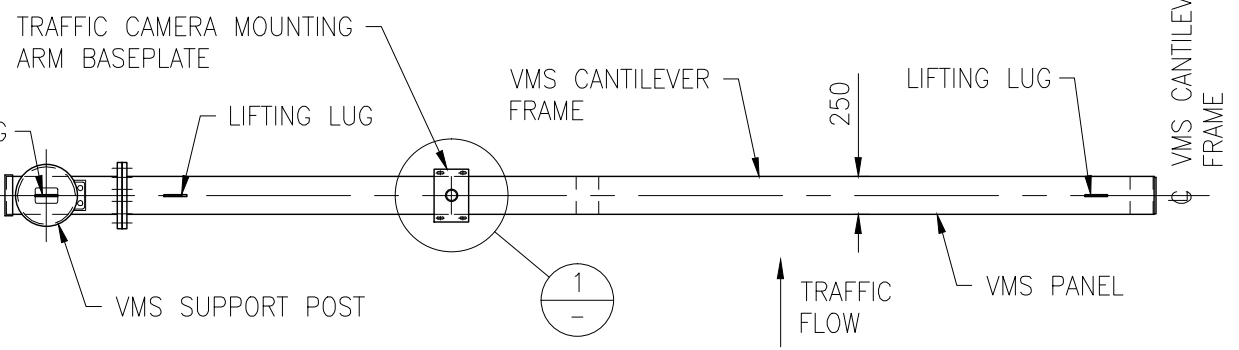
BRISBANE CITY COUNCIL STANDARD DRAWING	
<p>VMS SUPPORT STRUCTURE TYPE BCCVC - NOTES SHEET 2 OF 5</p>	<p>SCALE: NOT TO SCALE</p> <p>DWG No. BSD-4311</p> <p>ORIGINAL SIZE: A3 REVISION: C</p>



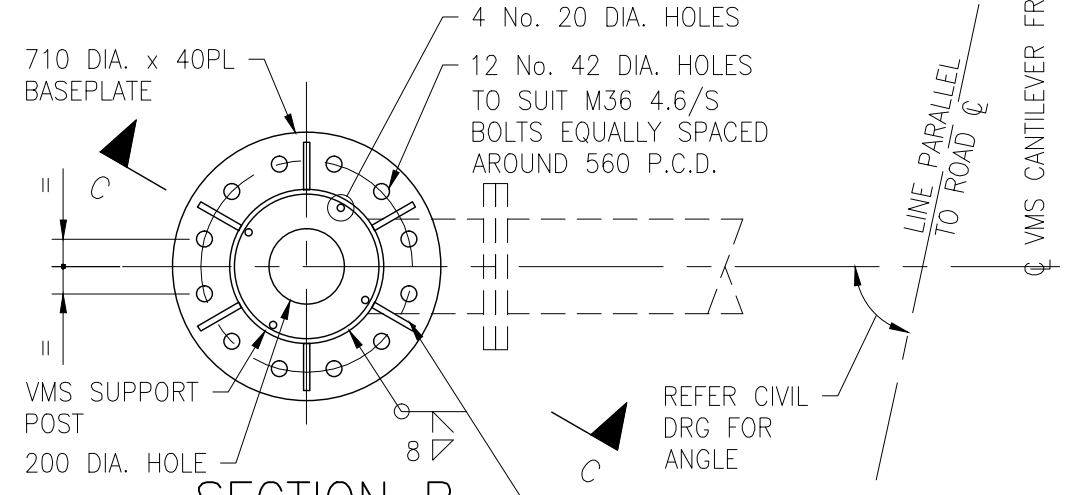


ELEVATION – VMS SUPPORT STRUCTURE
(VIEW FACING SIGN)
SCALE 1:50

- NOTES**
1. VERIFY FRAME DIMENSIONS SHOWN THUS (*) WITH THE VMS SUPPLIER PRIOR TO FABRICATION.
 2. FIXING DETAILS OF THE VMS PANEL TO THE FRAME ARE NOT SHOWN ON THESE DRAWINGS. THE FRAME FABRICATOR SHALL LIAISE WITH THE VMS PANEL SUPPLIER AND INCORPORATE PANEL FIXING DETAILS TO THIS FRAME AS REQUIRED.
 3. SURFACE RUNOFF NEAR FOOTING SHALL BE DIRECTED AWAY FROM THE FOOTING TO AVOID SATURATION OF SOIL IN THE VICINITY OF THE FOOTING.

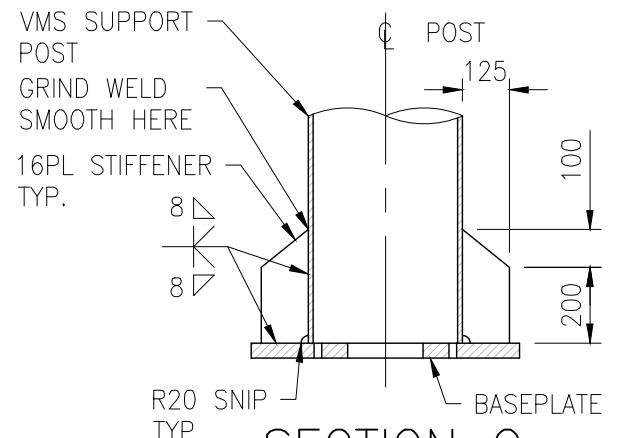


VIEW A
SCALE 1:50

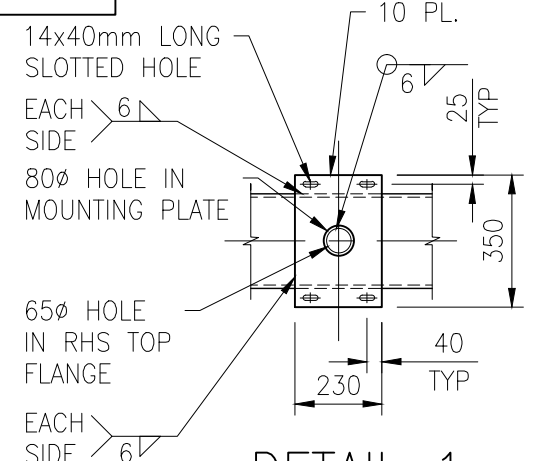


SECTION B
SCALE 1:20

NOTE: ORIENT THE HOLD DOWN BOLT CAGE EXACTLY AS SHOWN ON SECTION B, PRIOR TO CONCRETING THE BORED PILE



SECTION C
SCALE 1:20



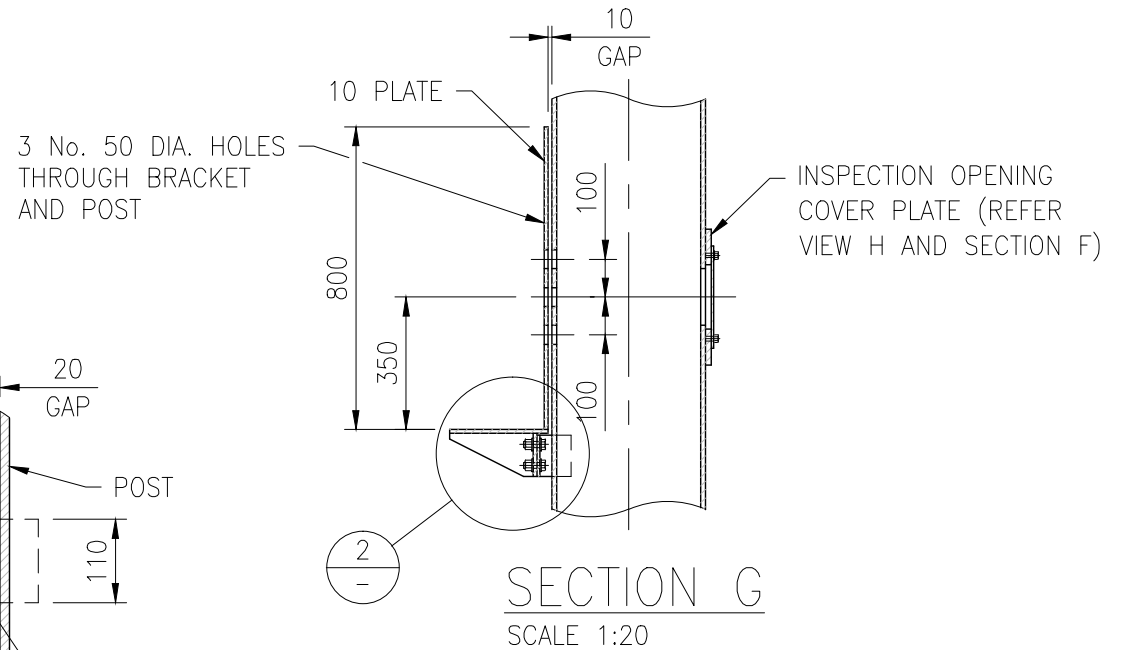
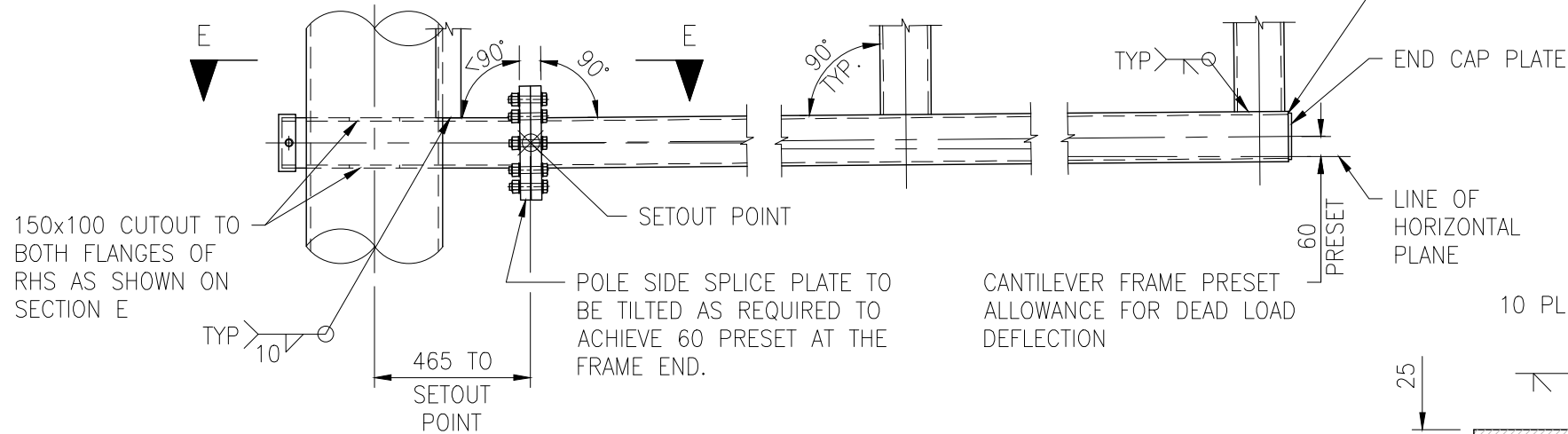
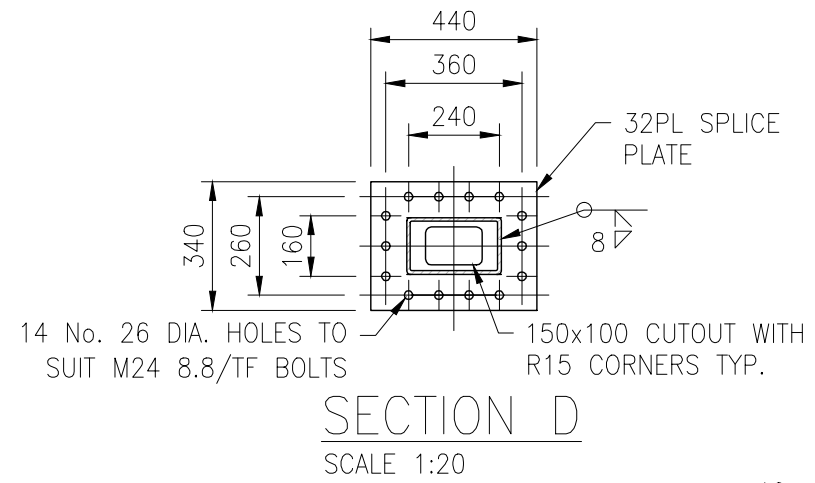
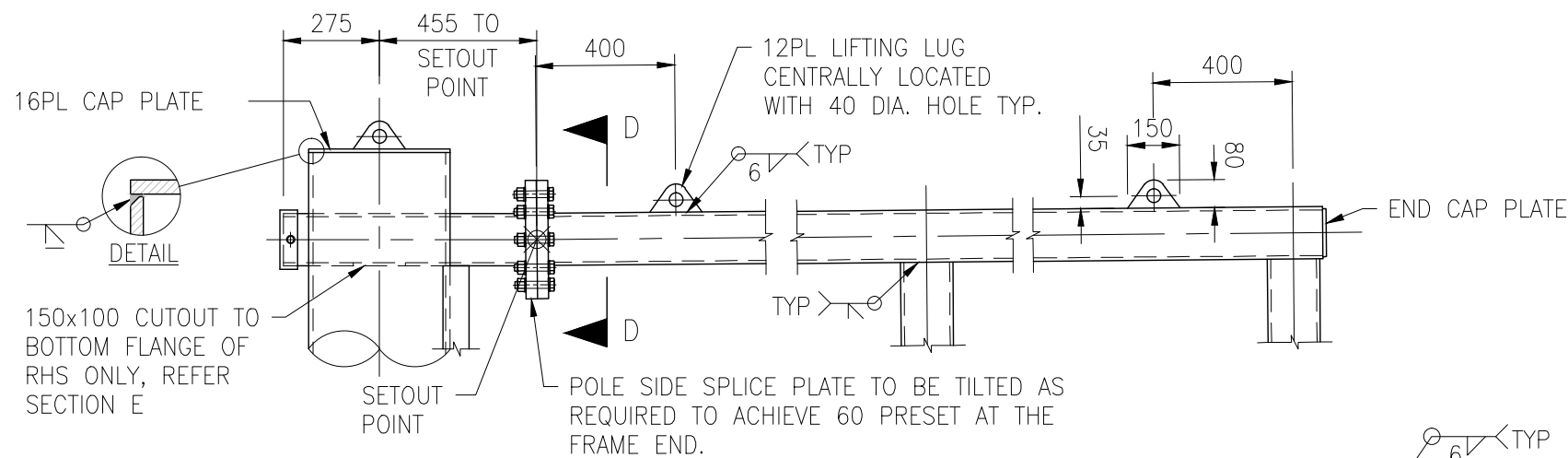
DETAIL 1
SCALE 1:20

ISSUE	AMENDMENT	DRAWN DATE	CHK'D DATE	APPR'D DATE
C	Drawing Title Amended	JAN '16	JUL '16	JUL '16
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DESIGN APPROVED Eric Bradley Signature on Original Dec 2013				CHECKED	L.M.	DATE	Oct '13
Intelligent Transport Systems Manager				DRAWING FILENAME	BSD-4311 (I) VMS support structure Type BCCVC - Frame arrangement - Sheet 3 of 5.dwg		
				ASSOCIATED PLANS	BSD-4311 SHEETS 1, 2, 4 & 5		



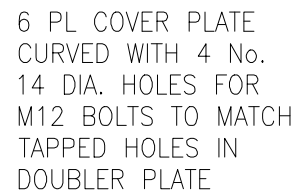
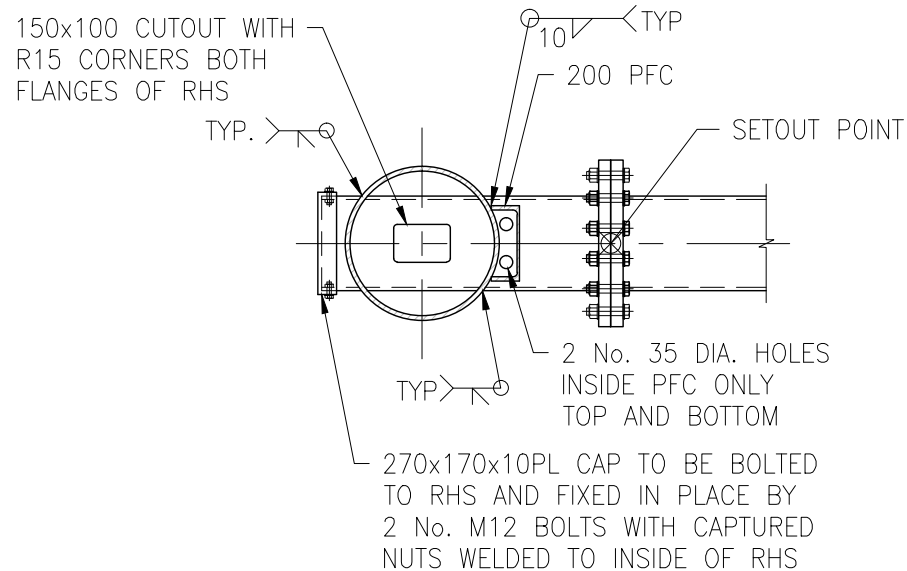
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BRISBANE CITY COUNCIL STANDARD DRAWING		
VMS SUPPORT STRUCTURE TYPE BCCVC – FRAME ARRANGEMENT SHEET 3 OF 5		SCALE NOT TO SCALE DWG No. BSD-4311 ORIGINAL SIZE A3 REVISION C



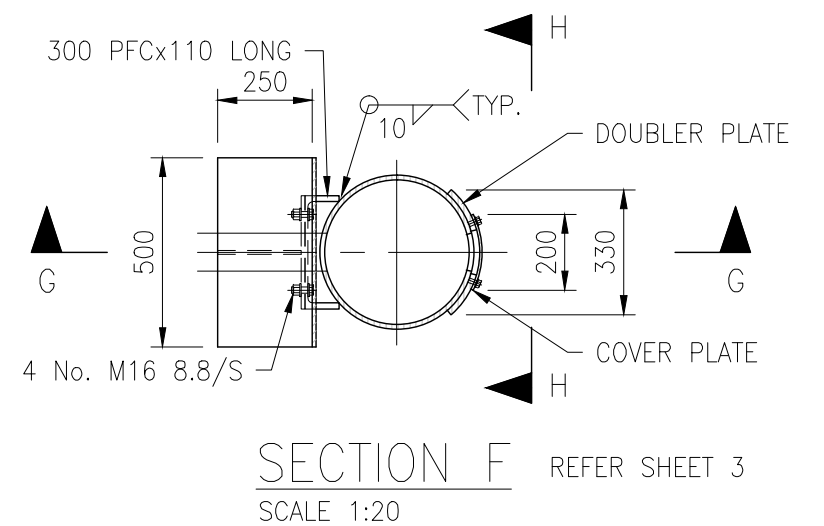
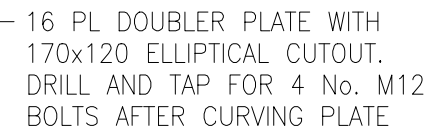
VMS CANTILEVER FRAME DETAIL
SCALE 1:20

DETAIL 2
SCALE 1:10

SECTION G
SCALE 1:20



VIEW H
SCALE 1:20



SECTION F REFER SHEET 3
SCALE 1:20

SECTION E
SCALE 1:20

STRUCTURAL DESIGN CERTIFICATION		
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B	GENERAL REVISIONS. CLARIFICATION OF SETOUT	Sept '14	Sept '14	Sept '14
A	ORIGINAL ISSUE	Oct '13	Oct '13	Oct '13

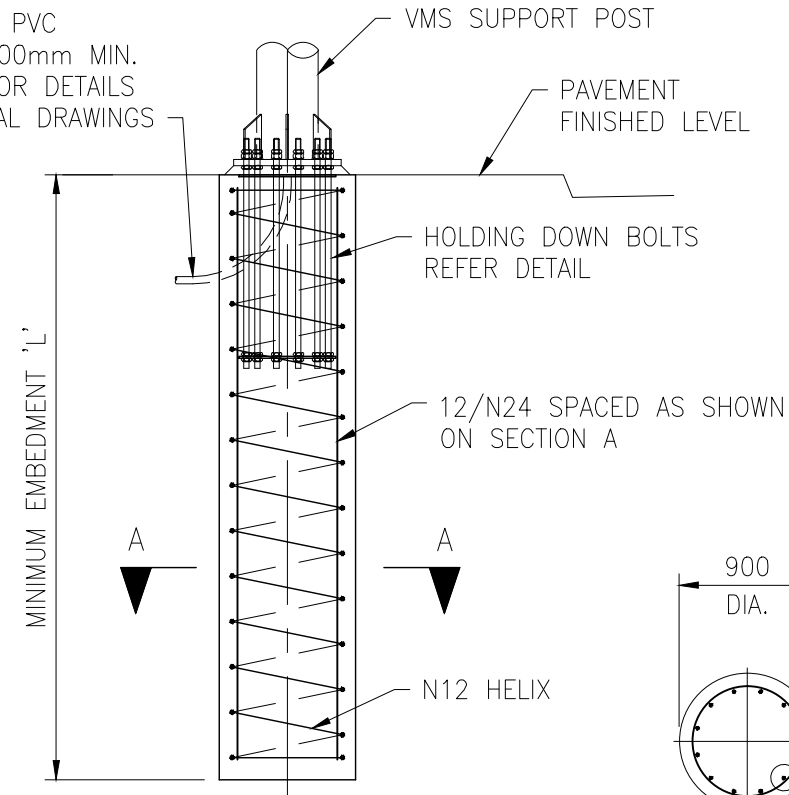
DRAWING AUTHORISED FOR PUBLICATION Signature on Original Inga Condric Dated 15/04/14				DESIGN	D.R.	DATE	Oct '13
FOR ASSET ENGINEERING MANAGER STRATEGIC ASSET MANAGEMENT				DRAWN	D.M.	DATE	Oct '13
DESIGN APPROVED Eric Bradley Signature on Original Dec 2013				CHECKED	L.M.	DATE	Oct '13
Intelligent Transport Systems Manager				DRAWING FILENAME	BSD (C) VMS support structure Type BCCVC - Frame details - Sheet 4 of 5.dwg		
				ASSOCIATED PLANS	BSD-4311 SHEETS 1,2,3 & 5		



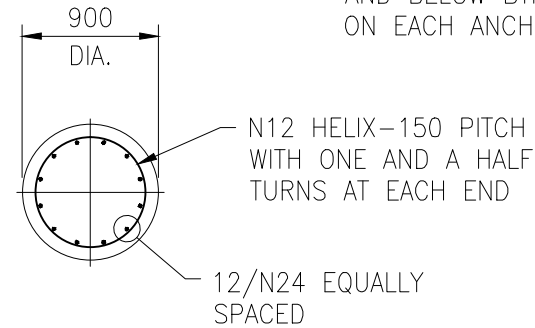
BRISBANE CITY COUNCIL STANDARD DRAWING	
SCALE NOT TO SCALE	
DWG No. BSD-4311	
ORIGINAL SIZE A3	REVISION C

VMS SUPPORT STRUCTURE
TYPE BCCVC - FRAME DETAILS
SHEET 4 OF 5

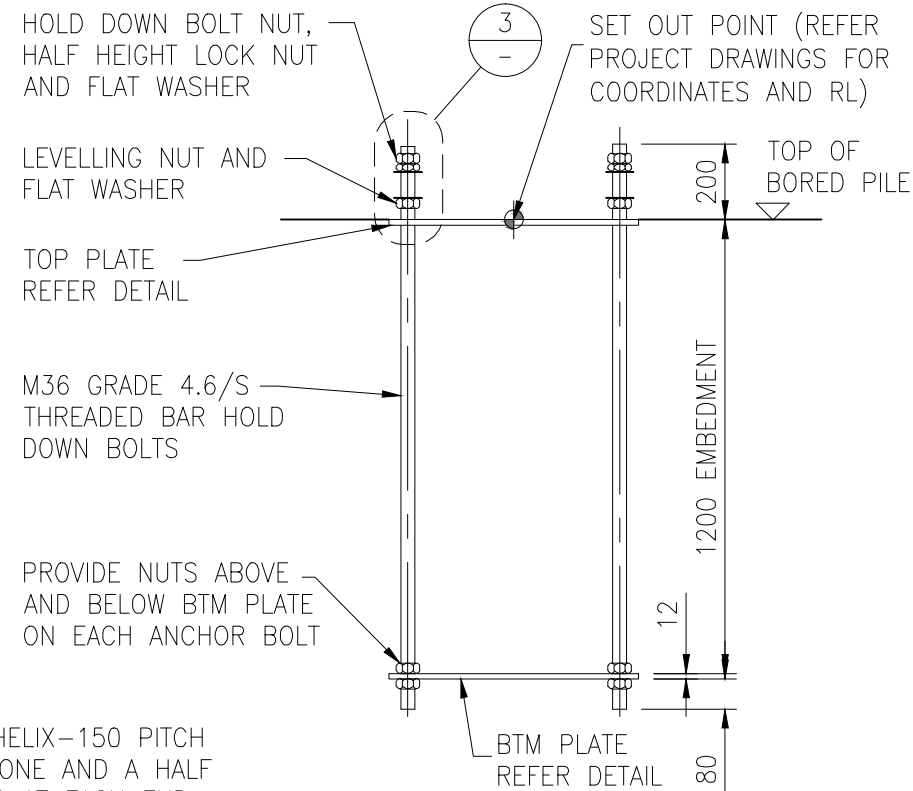
50 DIA. ORANGE PVC CONDUIT WITH 600mm MIN. BEND RADIUS. FOR DETAILS REFER ELECTRICAL DRAWINGS



VMS SUPPORT STRUCTURE BORED PILE DETAIL
SCALE 1:50



SECTION A
SCALE 1:50

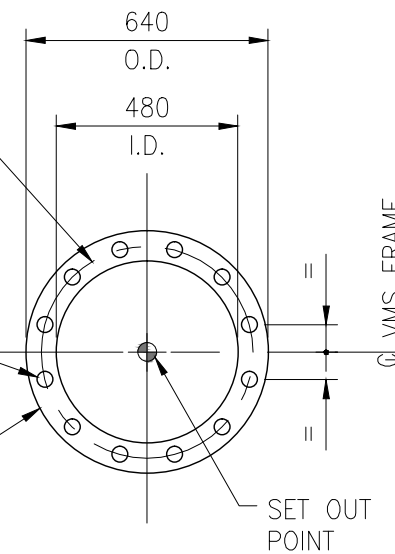


HOLDING DOWN BOLT DETAIL
SCALE 1:20

PLACE BOLT GROUP CONCENTRIC WITH THE FOOTING. REFER SHEET 3 FOR ORIENTATION.

12 No 39 DIA. HOLES

12mm THK TOP AND BOTTOM PLATE FOR HOLD DOWN BOLT ARRANGEMENT

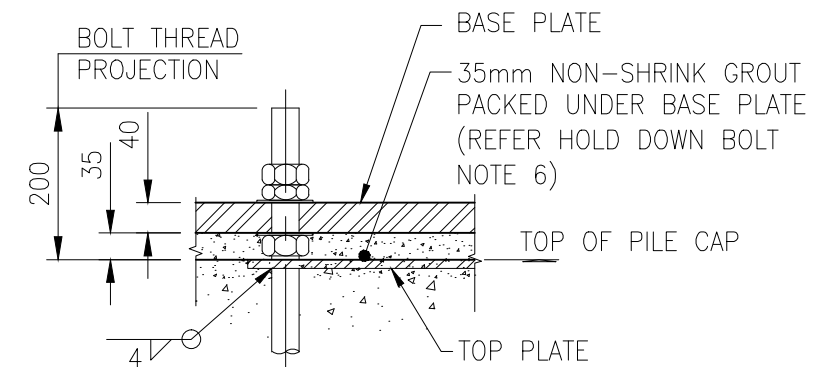


H.D. BOLT TOP AND BOTTOM CAST IN PLATE DETAIL
SCALE 1:20

NOTES

1. BORED PILE SHALL BE INSTALLED AT THE LOCATION SHOWN ON THE RELEVANT PROJECT DRAWINGS. THE FOUNDING MATERIAL SHALL BE ASSESSED AND CONFIRMED ON SITE BY AN EXPERIENCED GEOTECHNICAL ENGINEER (RPEQ) APPOINTED BY THE CONTRACTOR.
2. THE EMBEDMENT LENGTHS 'L' SHOWN IN THE TABLE ARE BASED ON THE ASSUMPTION THAT THERE ARE NO TRENCHES OR PITS ADJACENT TO THE BORED PILE. IF THERE ARE SUCH EXCAVATIONS WITHIN A RADIUS OF 3m FROM THE CENTRE OF THE PILE, THE EMBEDMENT LENGTHS SHOWN IN THE TABLE SHALL BE INCREASED BY AN AMOUNT EQUAL TO THE DEPTH OF THE EXCAVATION UNLESS ADVISED OTHERWISE BY THE DESIGNER.
3. IF PERMANENT LINERS ARE USED TO INSTALL THE BORED PILE, THE EMBEDMENT DEPTH SHALL BE MEASURED FROM THE BOTTOM OF THE STEEL LINER.
4. CONTRACTOR IS REQUIRED TO CARRY OUT A BORE HOLE INVESTIGATION AT EACH SITE TO ASSESS PROPERTIES OF THE FOUNDING MATERIALS. THE DEPTH OF THE BORE HOLE SHALL BE AT LEAST EQUAL TO THE EMBEDMENT DEPTH OF THE PILE.
5. THE DESIGN PARAMETERS SHOWN ARE FOR COHESIVE TYPE SOILS ONLY. IF COHESIONLESS SOIL OR SOILS HAVING UNDRAINED COHESION VALUES LESS THAN 50kPa ARE ENCOUNTERED AT SITE, THE CONTRACTOR SHALL NOTIFY AND SEEK ADVICE FROM THE DESIGNER BEFORE PROCEEDING WITH WORKS. THE NOTIFICATION SHALL ACCOMPANY BORE HOLE LOGS OBTAINED FOR THE RELEVANT SITE.

FOUNDING MATERIAL			MINIMUM EMBEDMENT 'L' (mm)
GENERAL CLASSIFICATION	MATERIAL TYPE	UNDRAINED COHESION Cu (kPa) RANGE $\phi_g=0.45$	
POOR	FIRM TO STIFF CLAY	50 - 100	9500
MEDIUM	STIFF TO VERY STIFF/HARD CLAY	100 - 200	5500
GOOD	VERY STIFF / HARD CLAY OR VERY LOW / LOW STRENGTH ROCK	> 200	4500



DETAIL 3
SCALE 1:10

STRUCTURAL DESIGN CERTIFICATION		
DESIGN	DESIGN CHECK	AUTHORISED FOR ISSUE
Dilan Rowel RPEQ:8455 2013.10.22 13:28:30 +10'00'	Lenita MendisRPEQ: 8950 2013.10.22 15:35:23 +10'00'	Bala Balakumar RPEQ: 3963 2013.10.22 16:00:28 +10'00'
BRISBANE CITY COUNCIL STANDARD DRAWING		
VMS SUPPORT STRUCTURE TYPE BCCVC - FOOTING DETAILS SHEET 5 OF 5		SCALE: NOT TO SCALE DWG No. BSD-4311 ORIGINAL SIZE: A3 REVISION: C

ISSUE	AMENDMENT	DRAWN DATE	CHK'D DATE	APPR'D DATE
C	Drawing Title Amended	JAN '16	JUL '16	JUL '16
B	SETOUT CLARIFICATION	Sept '14	Sept '14	Sept '14
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DESIGN APPROVED Eric Bradley Signature on Original Dec 2013				CHECKED	L.M.	DATE	Oct '13
Intelligent Transport Systems Manager				DRAWING FILENAME	BSD-4311 (I) VMS support structure Type BCCVC - Footing details - Sheet 5 of 5.dwg		
				ASSOCIATED PLANS	BSD-4311 SHEETS 1,2,3 & 4		



GENERAL NOTES

- THESE NOTES SHALL BE READ IN CONJUNCTION WITH DRAWINGS BSD-4312 SHEETS 3 TO 5, RELEVANT SPECIFICATIONS AND SUCH OTHER WRITTEN INSTRUCTIONS AS MAY BE ISSUED.
- ANY DISCREPANCIES IN THE DRAWINGS SHALL BE REFERRED TO THE SUPERINTENDENT FOR DECISION BEFORE PROCEEDING WITH THE WORK.
- ALL WORKMANSHIP AND MATERIALS SHALL COMPLY WITH THE APPROPRIATE AND CURRENT AUSTRALIAN STANDARDS, RELEVANT DTMR SPECIFICATIONS AND OTHER PROJECT SPECIFIC SPECIFICATIONS.
- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE (U.N.O). DIMENSIONS SHALL NOT BE OBTAINED BY SCALING THE STRUCTURAL DRAWINGS.
- SETTING OUT DIMENSIONS SHOWN ON PROJECT SPECIFIC DRAWINGS SHALL BE VERIFIED ON SITE BEFORE CONSTRUCTION COMMENCES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING STABILITY OF THE STRUCTURE UNTIL CONSTRUCTION COMPLETION AND SHALL ENSURE THAT NO PART OF THE STRUCTURE IS OVERSTRESSED DURING CONSTRUCTION. ANY DAMAGE CAUSED BY THE CONTRACTOR SHALL BE MADE GOOD AT THE CONTRACTOR'S OWN COST.
- ALL TEMPORARY WORKS AND TEMPORARY STRUCTURES ARE TO BE DESIGNED AND CERTIFIED BY THE CONTRACTOR'S STRUCTURAL ENGINEER (RPEQ). ALL TEMPORARY WORKS ARE TO BE REMOVED AT THE END OF THE PROJECT WITH GROUND MADE GOOD, ALL AT THE CONTRACTOR'S COST.
- CONTRACTOR SHALL LOCATE ANY BURIED SERVICES AT THE SITE AND NOTIFY THE DESIGNER IF THERE ARE ANY CLASHES WITH THE FOUNDATION, AT LEAST 2 WEEKS PRIOR TO COMMENCEMENT OF CONSTRUCTION.

INSPECTION AND CONSTRUCTION CERTIFICATION NOTES

- THE CONTRACTOR SHALL ARRANGE & PAY ALL COSTS FOR A STRUCTURAL ENGINEER (RPEQ) AND A GEOTECHNICAL ENGINEER (RPEQ) TO INSPECT AND CERTIFY ALL CONSTRUCTION WORK AS SPECIFIED IN THE CONTRACT.
- THE CONSTRUCTION CERTIFICATION SHALL STATE THAT ALL CONSTRUCTION WORKS HAD BEEN CARRIED OUT AS PER THE MOST CURRENT ISSUE OF THE CONTRACT DOCUMENTS AND SITE INSTRUCTIONS/VARIATION ORDERS ISSUED DURING CONSTRUCTION BY CITY PROJECTS OFFICE.

DESIGN CRITERIA

- DESIGN STANDARDS : AS5100 (2004), AS1170, AS3600 (2009), AS4100 (1998) INCLUDING SUPPLEMENTS AND AMENDMENTS.
- DESIGN LOADS : IN ACCORDANCE WITH AS5100, AS1170 AND 'DESIGN CRITERIA FOR BRIDGES AND OTHER STRUCTURES: 2012' PUBLISHED BY DEPARTMENT OF TRANSPORT AND MAIN ROADS (DTMR) QLD.
- DESIGN DATA : VMS PANEL WEIGHT: 300kg MAX. TRAFFIC CAMERA WEIGHT 20kg MAX.
WIND LOADS
- REGION: B
- TERRAIN CATEGORY: 2
- STRUCTURE HEIGHT: 5.5m
- ARI: 2000 YRS (ULS) & 20 YRS (SLS)
- Vdes.0uls=55 m/s & Vdes.0sls=33 m/s

: EARTHQUAKE LOADS
- EARTHQUAKE ZONE HAZARD FACTOR Z = 0.05
- DESIGN CATEGORY: EDC II

: FATIGUE LOADS
- THE STRUCTURE HAS BEEN DESIGNED FOR FATIGUE IN ACCORDANCE WITH SECTION 11 OF 'AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINARIES AND TRAFFIC SIGNALS' 5th EDITION 2009.

: 100 YEAR DESIGN LIFE

CONCRETE NOTES

- ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH DTMR SPECIFICATION MRTS70.
- MANUFACTURE AND PLACEMENT OF CONCRETE SHALL BE IN ACCORDANCE WITH MRTS70.
- CHAMFERS AND FILLETS – UNLESS NOTED OTHERWISE ON THE DRAWINGS, ALL EXPOSED CONCRETE EDGES HAVING A CONTAINED ANGLE OF LESS THAN 120° SHALL BE PROVIDED WITH 20mm CHAMFERS OR FILLETS AS APPROPRIATE.

CONCRETE NOTES – CONTINUED

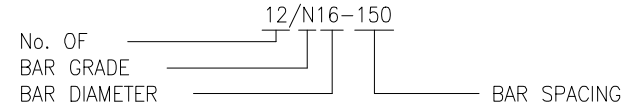
- ALL CONCRETE SHALL BE PREMIXED BY AN APPROVED SUPPLIER
- ALL CEMENT SHALL BE TYPE GP OR GB TO AS3972 UNLESS OTHERWISE SPECIFIED.
- ADMIXTURES SHALL NOT BE USED UNLESS APPROVED IN WRITING BY THE SUPERINTENDENT.
- TARGET SLUMP TO BE AS PER MRTS70.
- CONCRETE STRENGTH AND CLEAR COVER TO REINFORCEMENT SHALL BE IN ACCORDANCE WITH THE FOLLOWING TABLE U.N.O. EXPOSURE CLASSIFICATION B2.

ELEMENT	CONCRETE GRADE	CLEAR COVER TO REINFORCEMENT
BORED PILE	S40/20	85
MASS / BLINDING CONCRETE	N20	N/A

REINFORCEMENT NOTES

- ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH MRTS71.
- THE CONTRACTOR SHALL SUBMIT MILL AND TEST CERTIFICATES FOR REINFORCING BARS TOGETHER WITH RPEQ CERTIFICATION CONFIRMING THE FOLLOWING, FOR APPROVAL OF THE SUPERINTENDANT PRIOR TO COMMENCEMENT OF CONSTRUCTION;
 - THAT REINFORCING BARS SUPPLIED BY EITHER AN AUSTRALIAN OR OVERSEAS SUPPLIER ARE ACRS CERTIFIED. REFER www.steelcertification.com FOR CURRENT CERTIFICATE HOLDERS. ACRS REFERS TO "AUSTRALIAN CERTIFICATION AUTHORITY FOR REINFORCING AND STRUCTURAL STEELS".
 - THAT WHERE REINFORCING BARS ARE SOURCED FROM OVERSEAS FOR THE PROJECT, THE CERTIFYING ENGINEER HAS REVIEWED THE MILL AND TEST CERTIFICATES FROM THE SUPPLIERS OF THE REINFORCING BARS AND CONFIRMS THAT THEY COMPLY WITH THE RELEVANT AUSTRALIAN STANDARDS IN RELATION TO MATERIAL COMPOSITION AND STRENGTH.
- REINFORCEMENT SYMBOLS:
R STRUCTURAL PLAIN ROUND BAR GRADE 250R TO AS4671
N DEFORMED BAR GRADE D500N TO AS4671
SL HARD DRAWN STEEL REINFORCING FABRIC GRADE D500L TO AS4671

REINFORCEMENT NOTATION



REINFORCEMENT IS SHOWN DIAGRAMMATICALLY ON THESE DRAWINGS AND DOES NOT DEPICT THE PRECISE POSITION OF BARS AND NOT NECESSARILY SHOWN IN TRUE PROJECTION OR SCALE.

MINIMUM DEVELOPMENT AND SPLICING LENGTHS, UNLESS NOTED OTHERWISE

BAR SIZE	N12	N16	N20	N24	N28	N32	N36	FABRIC
MINIMUM LAP LENGTH	500	650	800	1050	1400	1750	2150	350

- SPLICES IN REINFORCEMENT SHALL BE MADE ONLY IN THE POSITIONS SHOWN OR AS APPROVED BY THE SUPERINTENDENT.
- WELDING OR SITE BENDING OF THE REINFORCEMENT IS NOT PERMITTED WITHOUT THE DESIGNER'S APPROVAL.
- ALL REINFORCEMENT SHALL BE SECURELY SUPPORTED IN ITS CORRECT POSITION DURING CONCRETING BY APPROVED BAR CHAIRS, SPACERS OR SUPPORT BARS. THE BAR CHAIR MATERIAL SHALL SUIT THE EXPOSURE CLASSIFICATION.
- COGS, CRANKS AND HOOKS ARE STANDARD UNLESS NOTED OTHERWISE AND SHALL BE IN ACCORDANCE WITH AS 5100-2004.

STRUCTURAL DESIGN CERTIFICATION		
DESIGN <small>Dilan Rowel RPEQ:8455 2013.10.29 16:01:36 +10'00'</small>	DESIGN CHECK <small>santo.potane@brisbane.qld.gov.au 2013.10.22 16:28:14+10'00'</small>	AUTHORISED FOR ISSUE <small>bala.balakumar@brisbane.qld.gov.au 2013.10.30 08:23:03 +10'00'</small>
BRISBANE CITY COUNCIL STANDARD DRAWING		
VMS SUPPORT STRUCTURE TYPE BCCVA – NOTES SHEET 1 OF 5		SCALE: NOT TO SCALE DWG No. BSD-4312 ORIGINAL SIZE: A3 REVISION: C

ISSUE	AMENDMENT	DRAWN DATE	CHK'D DATE	APPR'D DATE	DESIGN	D.R.	DATE
C	Drawing Title Amended	JAN '16	JUL '16	JUL '16	DESIGN	D.R.	Oct '13
B	NOTES AMENDED	SEPT '14	SEPT '14	SEPT '14	DRAWN	D.M.	Oct '13
A	ORIGINAL ISSUE	OCT '13	OCT '13	OCT '13	CHECKED	S.P.	OCT '13
DRAWING AUTHORISED FOR PUBLICATION Signature on Original Inga Condric Dated 15/04/14 FOR ASSET ENGINEERING MANAGER STRATEGIC ASSET MANAGEMENT DESIGN APPROVED Eric Bradley Signature on Original Dec 2013 Intelligent Transport Systems Manager					DRAWING FILENAME	BSD-4312 (C) VMS support structure type BCCVA - Notes - Sheet 1 of 5.dwg	
					ASSOCIATED PLANS	BSD-4312 SHEETS 2,3, 4 & 5	



BORED PILE NOTES

- MATERIAL AND WORKMANSHIP OF BORED PILES ARE TO BE IN ACCORDANCE WITH MRTS63.
- BORED PILES SHALL BE LOCATED IN THE POSITIONS SHOWN ON THE PROJECT DRAWINGS, WITHIN THE FOLLOWING TOLERANCE (WHICHEVER MINIMUM)
 - THE MAXIMUM LATERAL DISPLACEMENT OF THE PILE HEAD IN ANY DIRECTION FROM ITS CORRECT POSITION SHALL NOT EXCEED 75mm
 - MAXIMUM VARIATION FROM VERTICAL SHALL NOT EXCEED 20mm PER METER.
- THE CONTRACTOR SHALL DETERMINE THE REQUIREMENT FOR A TEMPORARY OR PERMANENT LINER FOR THE PILE BORE PRIOR TO EXCAVATION. THE PILE LENGTH SHOWN IN THE TABLE IN DRG BSD-4312 SHEET 5 IS THE LENGTH COMMENCING BELOW THE BOTTOM OF THE PERMANENT LINER.
- BOTTOM OF PILE IS TO BE CLEANED BEFORE CONCRETING BY THE CONTRACTOR TO THE SATISFACTION OF A REGISTERED GEOTECHNICAL ENGINEER (RPEQ) APPOINTED BY THE CONTRACTOR.
- CONCRETE SHALL BE PLACED, AS SOON AS POSSIBLE AFTER DRILLING AND APPROVAL HAS BEEN GIVEN, THROUGH A SUITABLE LENGTH AND DIAMETER DELIVERY PIPE AND SHALL BE COMPACTED AS SPECIFIED IN MRTS63.
- BORED HOLES SHALL BE KEPT FREE OF WATER AT ALL TIMES BY BAILING AND PUMPING IF NECESSARY, PARTICULARLY PRIOR TO CONCRETING. CONCRETE SHALL NOT BE PLACED IN WATER UNLESS APPROVED BY THE DESIGNER. THE TOP OF HOLE SHALL BE PROPERLY COVERED TO PREVENT SURFACE WATER OR RAINFALL FROM ENTERING THE HOLES.
- SAFETY PRECAUTIONS SHALL BE TAKEN TO AVOID INJURY TO PEOPLE. THE UNATTENDED HOLE SHALL BE COVERED OR FENCED OFF AT ALL TIMES.
- PILE SHALL NOT BE FOUNDED HIGHER THAN THE LEVELS SHOWN ON DRG BSD-4312 SHEET 5 UNLESS APPROVED BY THE DESIGNER.
- REFER DRG BSD-4312 SHEET 5 FOR ADDITIONAL NOTES AND INSTRUCTIONS TO THE CONTRACTOR.

HOLD DOWN BOLT NOTES

- EACH EXPOSED THREAD PROJECTION SHALL BE SUPPLIED WITH ONE HOLD DOWN BOLT NUT, ONE HALF HEIGHT LOCK NUT, ONE LEVELLING NUT AND TWO FLAT WASHERS ASSEMBLED AS SHOWN IN THE DETAILS ON THIS DRAWING SET. ALL NUTS SHALL BE STANDARD HEIGHT AND SHALL COMPLY WITH AS 1112. ALL SCREW THREADS SHALL BE TO AS1275, BOLTS AND NUTS TO BE HOT DIP GALVANISED TO AS1214 AND WASHER HOT DIP GALVANISED TO AS/NZS4680.
- THE LOCATION OF THE BOLTS SHALL BE CONFIRMED BY ON SITE MEASUREMENT BEFORE CONCRETE PLACEMENT.
- ALL HOLD DOWN BOLTS SHALL BE GRADE 4.6/S UNLESS OTHERWISE NOTED.
- HOLD DOWN BOLTS AND ALL OTHER METALLIC CAST-IN ITEMS ARE NOT TO BE IN CONTACT WITH THE STEEL REINFORCEMENT.
- THE CAST-IN PORTION OF THE BOLT SHALL BE COATED WITH MEGAPOXY HT (1.0mm DRY FILM THICKNESS), IMMEDIATELY PRIOR TO CONCRETE PLACEMENT.
- BASE PLATE SHALL BE GROUTED USING GOOD QUALITY FLOWABLE, SELF LEVELLING, NON SHRINK GROUT ("EPIREZ" SUPER-GROUT 65 OR APPROVED EQUIVALENT) HAVING A MINIMUM CHARACTERISTIC COMPRESSIVE STRENGTH $F_c = 65$ MPa. THE CONTRACTOR SHALL ENSURE THAT H.D. BOLTS ARE FULL ENCAPSULATED WITH GROUT.

STEELWORK NOTES

- ALL WORKMANSHIP & MATERIALS SHALL BE IN ACCORDANCE WITH DTMR SPECIFICATION MRTS 78.
- THE CONTRACTOR SHALL SUBMIT MILL AND TEST CERTIFICATES FOR STRUCTURAL STEEL PRODUCTS TOGETHER WITH RPEQ CERTIFICATION CONFIRMING THE FOLLOWING, FOR APPROVAL OF THE SUPERINTENDANT PRIOR TO COMMENCEMENT OF FABRICATION;
 - THAT THE STRUCTURAL STEEL PRODUCTS SUPPLIED BY EITHER AN AUSTRALIAN OR OVERSEAS SUPPLIER ARE ACRS CERTIFIED. REFER www.steelcertification.com FOR CURRENT CERTIFICATE HOLDERS. ACRS REFERS TO "AUSTRALIAN CERTIFICATION AUTHORITY FOR REINFORCING AND STRUCTURAL STEELS".
 - THAT WHERE STRUCTURAL STEEL PRODUCTS ARE SOURCED FROM OVERSEAS FOR THE PROJECT, THE CERTIFYING ENGINEER HAS REVIEWED THE MILL AND TEST CERTIFICATES FROM THE SUPPLIERS OF THE STEEL PRODUCTS AND CONFIRMS THAT THEY COMPLY WITH THE RELEVANT AUSTRALIAN STANDARDS IN RELATION TO MATERIAL COMPOSITION AND STRENGTH.
 - THAT ALL BOLTS USED COMPLY WITH AS1252 AND THE CURRENT REQUIREMENTS OF THE AUSTRALIAN STEEL INSTITUTE - ASI TECHNICAL NOTE TN001 VERSION 3.

STEELWORK NOTES – CONTINUED

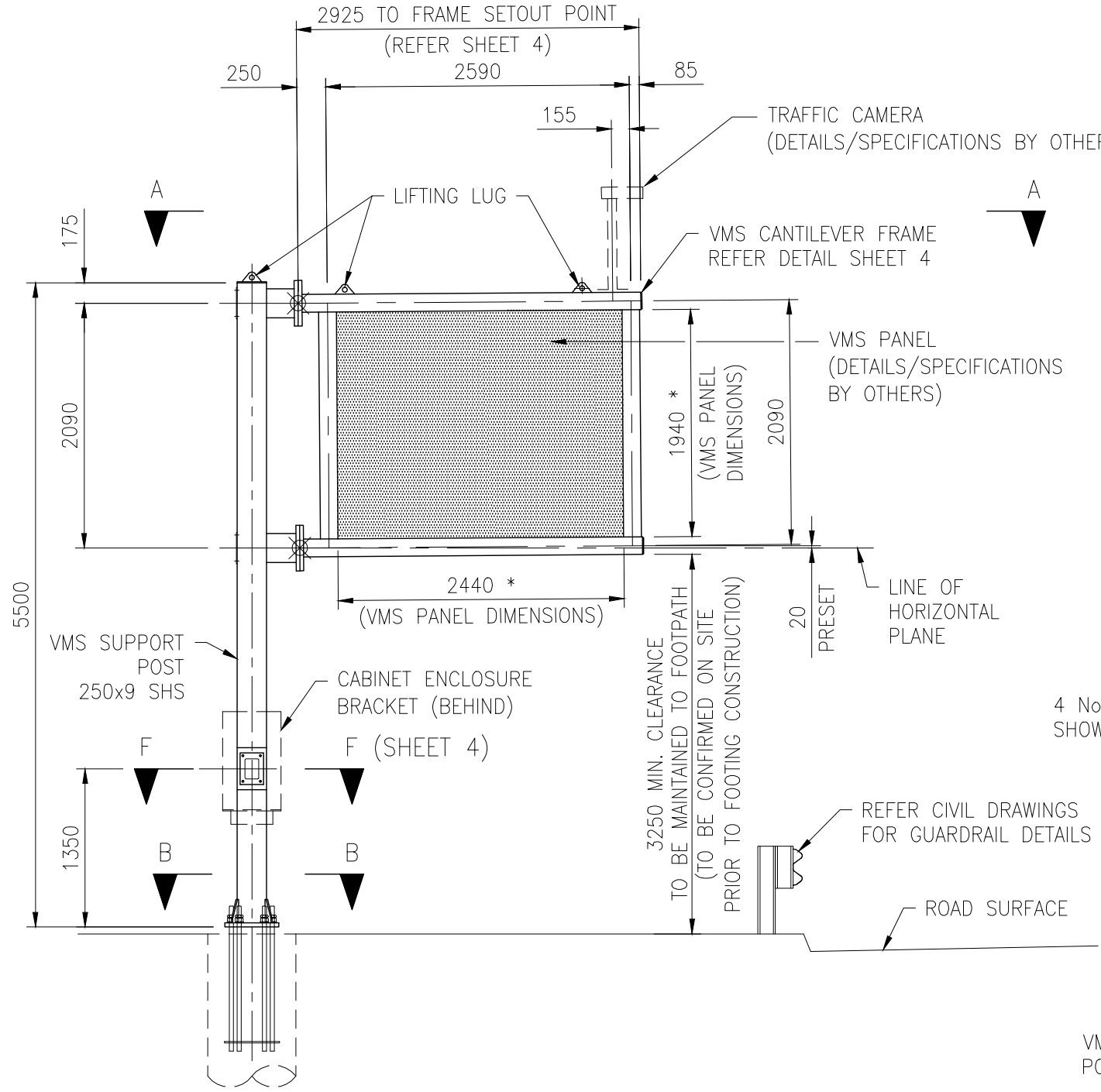
- THE CONTRACTOR SHALL SUBMIT A SEPARATE RPEQ CERTIFICATION CONFIRMING THAT ALL WELDING WORKS HAVE BEEN INSPECTED AND CERTIFIED AS COMPLYING WITH AS1554 BY A QUALIFIED WELDING INSPECTOR APPOINTED BY THE CONTRACTOR, TO THE SUPERINTENDENT FOR APPROVAL PRIOR TO THE STEELWORK BEING GALVANISED.
- ALL STEELWORK SHALL BE HOT DIP GALVANISED IN ACCORDANCE WITH AS/NZS 4680 AFTER FABRICATION. PROTECTIVE COATING SYSTEM AND SURFACE FINISH FOR STRUCTURAL ELEMENTS AS FOLLOWS:
 - VMS SUPPORT POST – HOT DIP GALVANISED TO HDG600 SPECIFICATION IN AS/NZS 2312.
 - VMS CANTILEVER FRAME –
 - HOT DIP GALVANISED TO HDG600 SPECIFICATION IN AS/NZS 2312
 - POWDER COATED IN MATT BLACK. POWDER COATING TO LAST MIN. 10 YEARS. PRETREAT HDG SURFACES AS PER AS4506 PRIOR TO POWDER COATING.
- THE STEELWORK FABRICATION CONTRACTOR SHALL PREPARE AND SUBMIT DETAILED FABRICATION DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO COMMENCING WORK. ALLOW MINIMUM TEN (10) WORKING DAYS FOR ENGINEERS APPROVAL.
- PRIOR TO COMMENCING WORK, THE STEELWORK FABRICATION CONTRACTOR SHALL VERIFY ALL DESIGN SETOUT INFORMATION ON SITE. THE SUPPORT POST SHALL BE LOCATED CONCENTRICALLY OVER THE FOOTING.
- UNLESS NOTED OTHERWISE ON THE DRAWINGS, THE STEEL SHALL COMPLY WITH THE FOLLOWING:
 - HOT ROLLED STEEL SECTIONS – GRADE 300 TO AS3679.1
 - HOT ROLLED STEEL PLATE – GRADE 300 TO AS3678
 - SQUARE AND RECTANGULAR HOLLOW SECTIONS – GRADE C350L0 TO AS1163
 - CIRCULAR HOLLOW SECTIONS – GRADE C350L0 TO AS1163
- CARRY OUT WELDING IN ACCORDANCE WITH AS1554 AND AS FOLLOWS:
 - ALL WELDS TO BE COMPLETE PENETRATION BUTT WELDS U.N.O.
 - WELDS TO BE SHOP WELDED U.N.O.
 - WELDS TO BE CATEGORY SP
 - BUTT WELD DENOTED AS CPBW ON THE DRAWINGS SHALL BE COMPLETE PENETRATION U.N.O.
 - ELECTRODES TO BE CLASSIFICATION E48XX U.N.O., PRE-APPROVED TO AS1554
 - EXTENT OF WELD INSPECTION AND TESTING TO BE AS PER MRTS78
- BOLTS AT SPLICE CONNECTION SHALL BE GRADE 8.8/TF HIGH STRENGTH STRUCTURAL BOLTS, NUTS AND WASHERS TO AS/NZS1252
 - S – DENOTES SNUG TIGHT
 - TB – DENOTES BEARING MODE JOINT, BOLTS FULLY TENSIONED
 - TF – DENOTES FRICTION MODE JOINT, BOLTS FULLY TENSIONED (CONTACT SURFACES OF CONNECTIONS TO BE UNCOATED)
- THE BOLT TYPE AND TIGHTENING PROCEDURE ARE DESIGNATED: NUMBER, SIZE STRENGTH GRADE / TIGHTENING PROCEDURES, eg: 4M24 8.8/TF = 4 OFF, 24 DIAMETER, METRIC HIGH STRENGTH STRUCTURAL BOLTS, FULLY TENSIONED IN FRICTION MODE.
- U.N.O., ON THE DRAWINGS, HOT DIP GALVANISE BOLTS, SCREWS, NUTS AND WASHERS TO AS1214. TAP NUTS OVERSIZE TO SUIT GALVANISED THREADS AND OIL FOR PROTECTION. INSTALL WASHERS UNDER BOLT HEAD AND NUT.
- FRICTION GRIP BOLTS SHALL BE TENSIONED TO THE FORCES SPECIFIED USING METHODS DESCRIBED IN MRTS78. SLIP FACTOR ASSUMED FOR FRICTION TYPE BOLTS = 0.35.
- ENSURE MEMBERS ARE CONCENTRIC AT CONNECTIONS (GRAVITY OR GAUGE LINES TO INTERSECT) U.N.O.
- STEEL MEMBERS SHALL BE MADE FROM WHOLE LENGTHS.
- PROVIDE VENT/DRAIN HOLES IN ACCORDANCE WITH AS/NZS4680 AS REQUIRED. VENT / DRAIN HOLES ARE TO BE DETAILED ON THE WORKSHOP DRAWINGS FOR APPROVAL BY THE ENGINEER. ALL VENT/DRAIN HOLES ARE TO BE SEALED WITH APPROVED PLASTIC PLUGS PRIOR TO DELIVERY OF THE STEELWORK TO SITE.

C	Drawing Title Amended	JAN '16	JUL '16	JUL '16
B	NOTES AMENDED	SEPT '14	SEPT '14	SEPT '14
A	ORIGINAL ISSUE	Oct '13	Oct '13	Oct '13
ISSUE	AMENDMENT	DRAWN DATE	CHK'D DATE	APPR'D DATE

DRAWING AUTHORISED FOR PUBLICATION Signature on Original Inga Condric Dated 15/04/14			
DESIGN	D.R.	DATE	Oct '13
FOR ASSET ENGINEERING MANAGER STRATEGIC ASSET MANAGEMENT			
DRAWN	D.M.	DATE	Oct '13
DESIGN APPROVED			
CHECKED	S.P.	DATE	Oct '13
Eric Bradley Signature on Original Dec 2013			
DRAWING FILENAME	BSD-4312 (I) VMS support structure type BCCVA - Notes - Sheet 2 of 5.dwg		
ASSOCIATED PLANS	BSD-4312 SHEETS 1,3, 4 & 5		

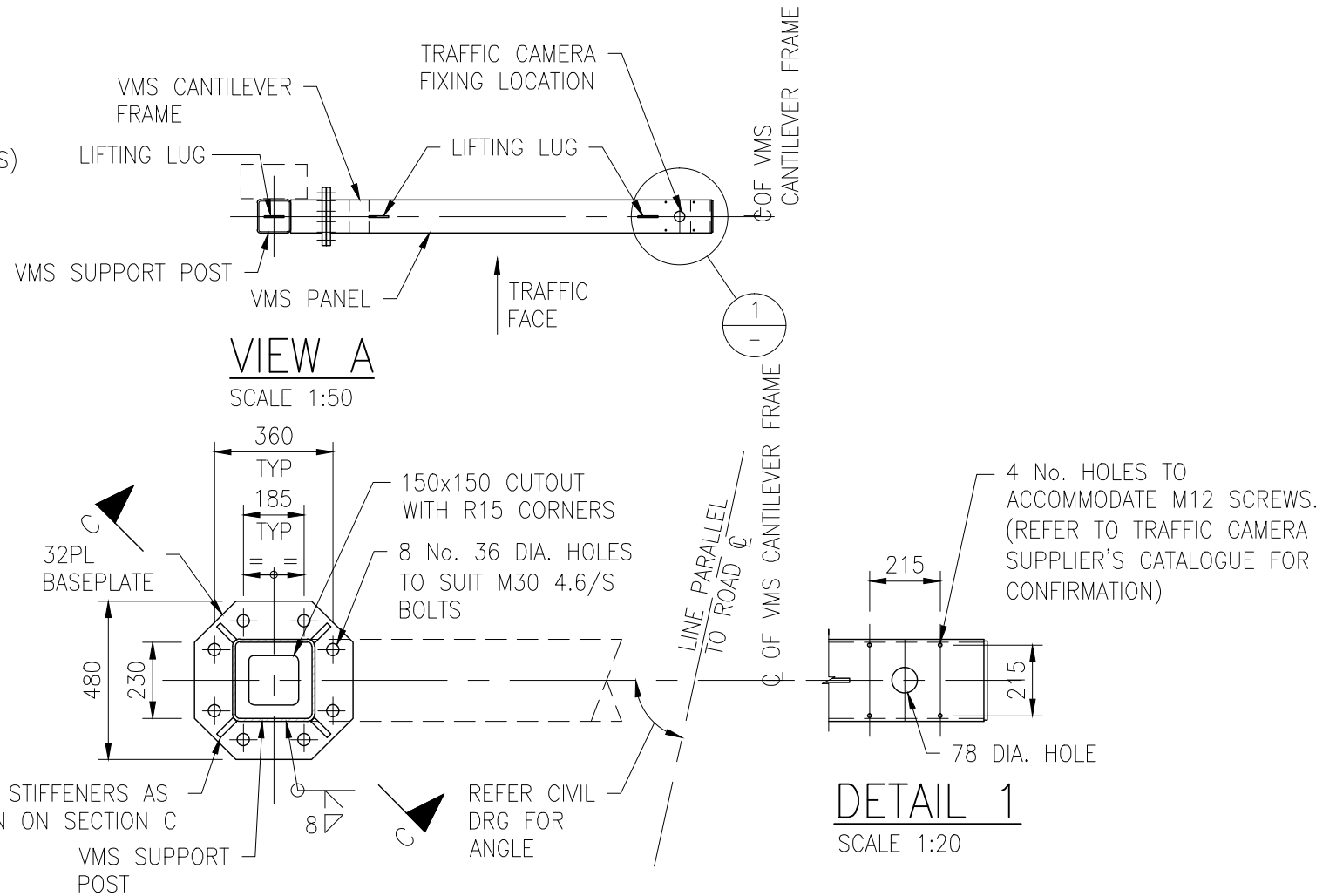


STRUCTURAL DESIGN CERTIFICATION		
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BRISBANE CITY COUNCIL STANDARD DRAWING		
VMS SUPPORT STRUCTURE TYPE BCCVA – NOTES SHEET 2 OF 5		SCALE NOT TO SCALE
		DWG No. BSD-4312
ORIGINAL SIZE A3	REVISION C	



ELEVATION – VMS SUPPORT STRUCTURE

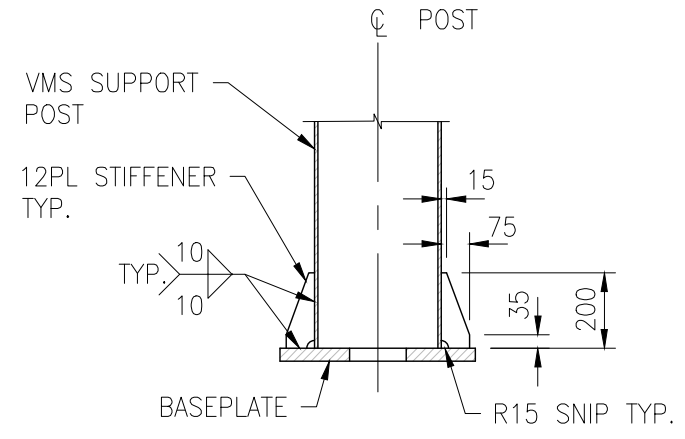
(VIEW FACING SIGN)
SCALE 1:50



SECTION B

SCALE 1:20

NOTE: ORIENT THE HOLD DOWN BOLT CAGE EXACTLY AS SHOWN ON SECTION B, PRIOR TO CONCRETING THE BORED PILE



SECTION C

SCALE 1:20

NOTES

1. VERIFY FRAME DIMENSIONS SHOWN THUS (*) WITH THE VMS SUPPLIER PRIOR TO FABRICATION.
2. FIXING DETAILS OF THE VMS PANEL TO THE FRAME ARE NOT SHOWN ON THESE DRAWINGS. THE FRAME FABRICATOR SHALL LIAISE WITH THE VMS PANEL SUPPLIER AND INCORPORATE PANEL FIXING DETAILS TO THIS FRAME AS REQUIRED.
3. SURFACE RUNOFF NEAR FOOTING SHALL BE DIRECTED AWAY FROM THE FOOTING TO AVOID SATURATION OF SOIL IN THE VICINITY OF THE FOOTING.

STRUCTURAL DESIGN CERTIFICATION

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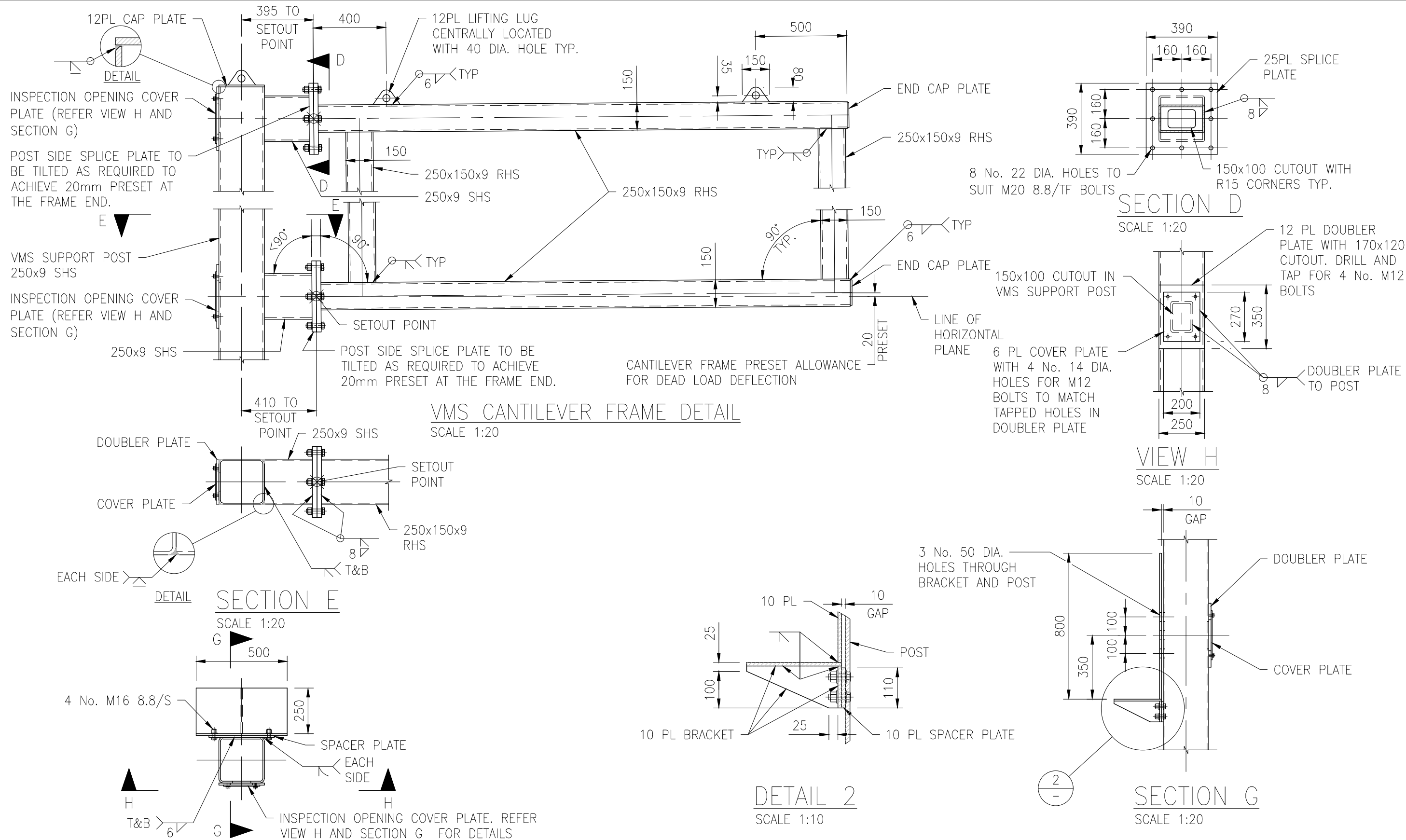
BRISBANE CITY COUNCIL STANDARD DRAWING

VMS SUPPORT STRUCTURE TYPE BCCVA – FRAME ARRANGEMENT		SCALE NOT TO SCALE
SHEET 3 OF 5		DWG No. BSD-4312
ORIGINAL SIZE A3	REVISION C	

DRAWING AUTHORISED FOR PUBLICATION Signature on Original Inga Condric Dated 15/04/14				DESIGN	D.R.	DATE	Oct '13
FOR ASSET ENGINEERING MANAGER STRATEGIC ASSET MANAGEMENT				DRAWN	D.M.	DATE	Oct '13
DESIGN APPROVED Eric Bradley Signature on Original Dec 2013				CHECKED	S.P.	DATE	Oct '13
Intelligent Transport Systems Manager				DRAWING FILENAME	BSD-4312 (C) VMS support structure Type BCCVA - Frame arrangement - Sheet 3 of 5.dwg		
				ASSOCIATED PLANS	BSD-4311 SHEETS 1, 2, 4 & 5		

ISSUE	AMENDMENT	DRAWN DATE	CHK'D DATE	APPR'D DATE
C	Drawing Title Amended	JAN '16	JUL '16	JUL '16
B	NOTES ADDED TO CLARIFY SETOUT	SEPT '14	SEPT '14	SEPT '14
A	ORIGINAL ISSUE	Oct '13	Oct '13	Oct '13





STRUCTURAL DESIGN CERTIFICATION		
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BRISBANE CITY COUNCIL STANDARD DRAWING

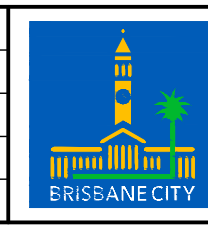
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VMS SUPPORT STRUCTURE TYPE BCCVA – FRAME DETAILS
SHEET 4 OF 5

DWG No. **BSD-4312**

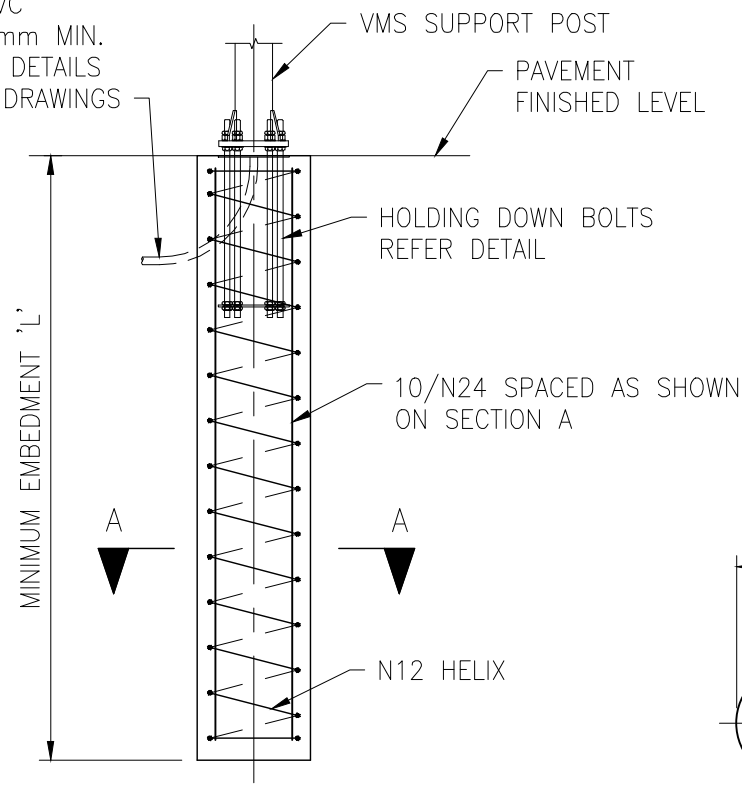
ORIGINAL SIZE: A3 REVISION: C

DRAWING AUTHORISED FOR PUBLICATION Signature on Original Inga Condric Dated 15/04/14				DESIGN	D.R.	DATE	Oct '13
FOR ASSET ENGINEERING MANAGER STRATEGIC ASSET MANAGEMENT				DRAWN	D.M.	DATE	Oct '13
DESIGN APPROVED Eric Bradley Signature on Original Dec 2013				CHECKED	S.P.	DATE	Oct '13
Intelligent Transport Systems Manager				DRAWING FILENAME	\BSD-4312-Sheet 4 (B).dwg		
				ASSOCIATED PLANS	BSD-4311 SHEETS 1, 2, 3 & 5		

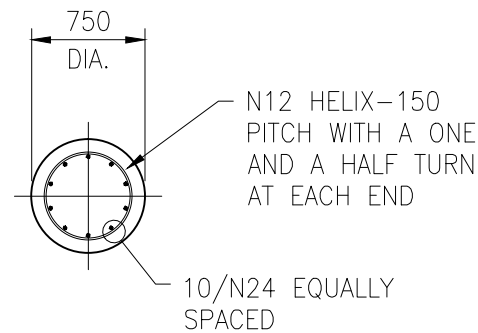


ISSUE	AMENDMENT	DRAWN DATE	CHK'D DATE	APPR'D DATE
C	Drawing Title Amended	JAN '16	JUL '16	JUL '16
B	SETOUT CLARIFIED WITH ADDITIONAL NOTES	SEPT '14	SEPT '14	SEPT '14
A	ORIGINAL ISSUE	Oct '13	Oct '13	Oct '13

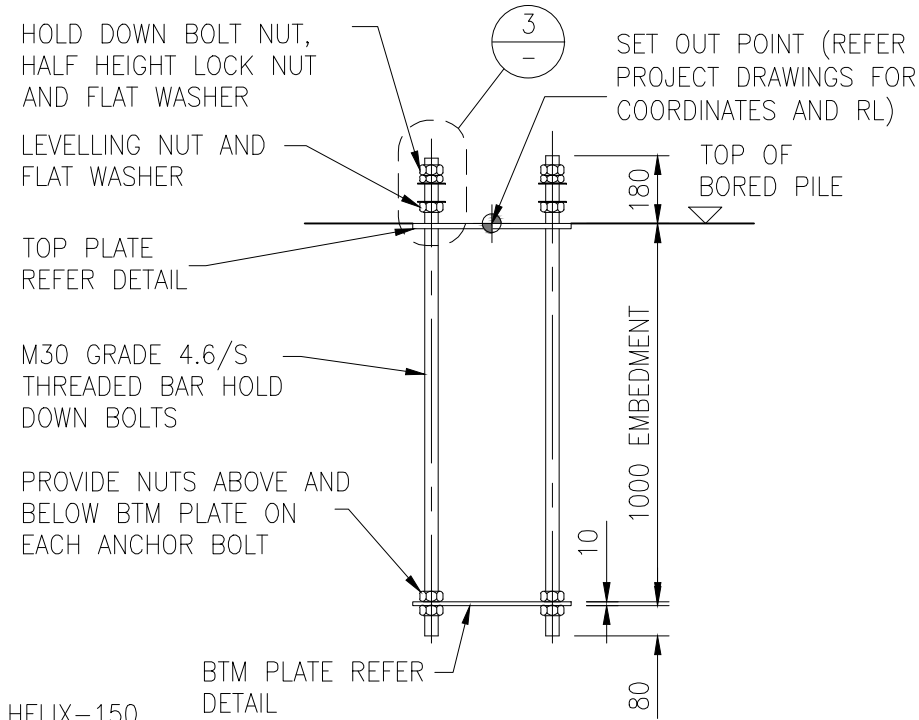
50 DIA. ORANGE PVC CONDUIT WITH 600mm MIN. BEND RADIUS. FOR DETAILS REFER ELECTRICAL DRAWINGS



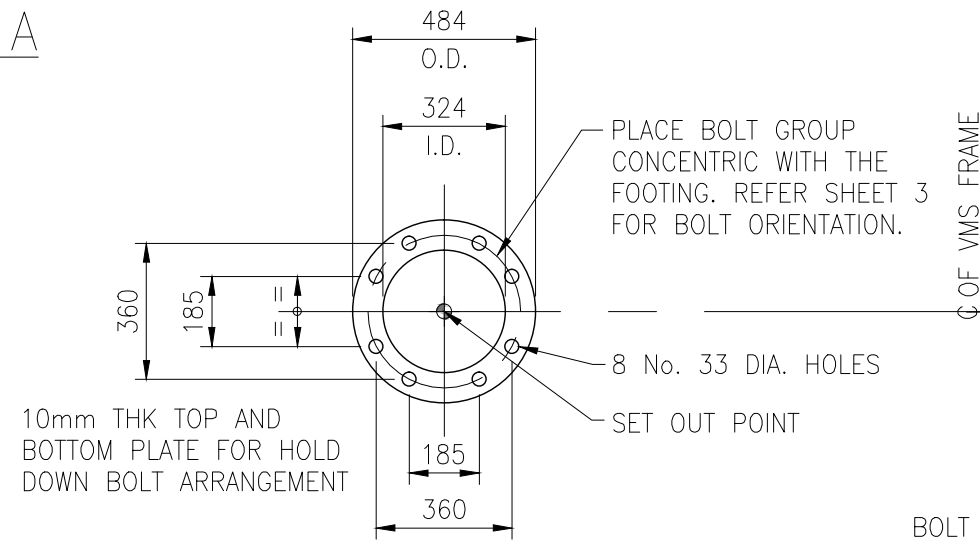
VMS SUPPORT STRUCTURE BORED PILE DETAIL
SCALE 1:50



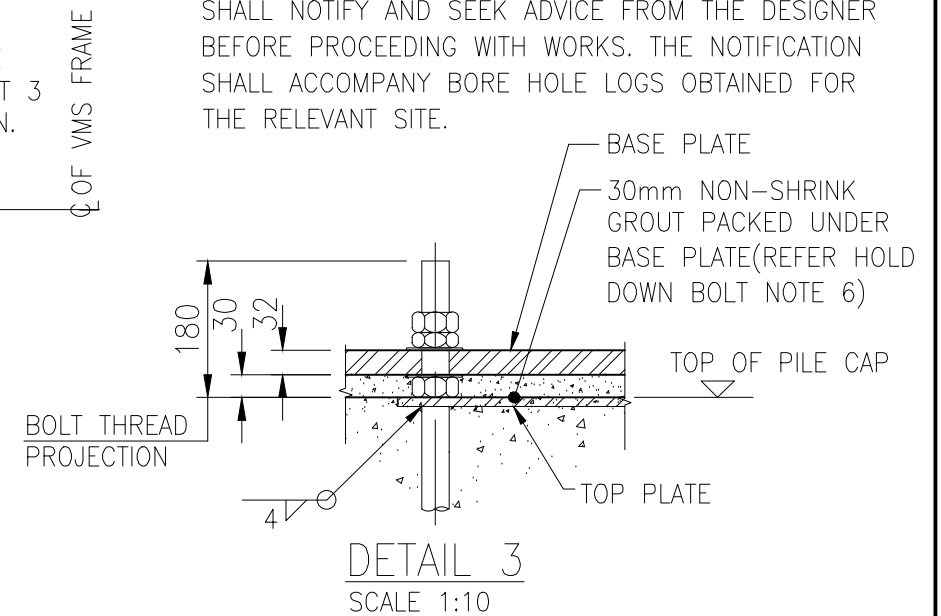
SECTION A
SCALE 1:50



HOLDING DOWN BOLT DETAIL
SCALE 1:20



H.D. BOLT TOP AND BOTTOM CAST IN PLATE DETAIL
SCALE 1:20



DETAIL 3
SCALE 1:10

NOTES

1. BORED PILE SHALL BE INSTALLED AT THE LOCATION SHOWN ON THE RELEVANT PROJECT DRAWINGS. THE FOUNDING MATERIAL SHALL BE ASSESSED AND CONFIRMED ON SITE BY AN EXPERIENCED GEOTECHNICAL ENGINEER (RPEQ) APPOINTED BY THE CONTRACTOR.
2. THE EMBEDMENT LENGTHS 'L' SHOWN IN THE TABLE ARE BASED ON THE ASSUMPTION THAT THERE ARE NO TRENCHES OR PITS ADJACENT TO THE BORED PILE. IF THERE ARE SUCH EXCAVATIONS WITHIN A RADIUS OF 3m FROM THE CENTRE OF THE PILE, THE EMBEDMENT LENGTHS SHOWN IN THE TABLE SHALL BE INCREASED BY AN AMOUNT EQUAL TO THE DEPTH OF THE EXCAVATION UNLESS ADVISED OTHERWISE BY THE DESIGNER.
3. IF PERMANENT LINERS ARE USED TO INSTALL THE BORED PILE, THE EMBEDMENT DEPTH SHALL BE MEASURED FROM THE BOTTOM OF THE STEEL LINER.
4. CONTRACTOR IS REQUIRED TO CARRY OUT A BORE HOLE INVESTIGATION AT EACH SITE TO ASSESS PROPERTIES OF THE FOUNDING MATERIALS. THE DEPTH OF THE BORE HOLE SHALL BE AT LEAST EQUAL TO THE EMBEDMENT DEPTH OF THE PILE.
5. THE DESIGN PARAMETERS SHOWN ARE FOR COHESIVE TYPE SOILS ONLY. IF COHESIONLESS SOIL OR SOILS HAVING UNDRAINED COHESION VALUES LESS THAN 50kPa ARE ENCOUNTERED AT SITE, THE CONTRACTOR SHALL NOTIFY AND SEEK ADVICE FROM THE DESIGNER BEFORE PROCEEDING WITH WORKS. THE NOTIFICATION SHALL ACCOMPANY BORE HOLE LOGS OBTAINED FOR THE RELEVANT SITE.

FOUNDING MATERIAL			MINIMUM EMBEDMENT 'L' (mm)
GENERAL CLASSIFICATION	MATERIAL TYPE	UNDRAINED COHESION Cu (kPa) RANGE $\phi_g=0.45$	
POOR	FIRM TO STIFF CLAY	50 - 100	4500
MEDIUM	STIFF TO VERY STIFF/HARD CLAY	100 - 200	3500
GOOD	VERY STIFF / HARD CLAY OR VERY LOW / LOW STRENGTH ROCK	> 200	3000

STRUCTURAL DESIGN CERTIFICATION		
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BRISBANE CITY COUNCIL STANDARD DRAWING		
VMS SUPPORT STRUCTURE TYPE BCCVA - FOOTING DETAILS		SCALE: NOT TO SCALE
SHEET 5 OF 5		DWG No. BSD-4312
ORIGINAL SIZE: A3	REVISION: C	

ISSUE	AMENDMENT	DRAWN DATE	CHK'D DATE	APPR'D DATE
C	Drawing Title Amended	JAN '16	JUL '16	JUL '16
B	NOTES AMENDED	SEPT '14	SEPT '14	SEPT '14
A	ORIGINAL ISSUE	Oct '13	Oct '13	Oct '13

DRAWING AUTHORISED FOR PUBLICATION
Signature on Original
Inga Condric Dated 15/04/14

FOR ASSET ENGINEERING MANAGER
STRATEGIC ASSET MANAGEMENT

DESIGN APPROVED
Eric Bradley Signature on Original
Dec 2013

Intelligent Transport Systems Manager

DESIGN	D.R.	DATE	Oct '13
DRAWN	D.M.	DATE	Oct '13
CHECKED	S.P.	DATE	Oct '13
DRAWING FILENAME	BSD-4312 (C) VMS support structure Type BCCVA - Footing details - Sheet 5 of 5.dwg		
ASSOCIATED PLANS	BSD-4311 SHEETS 1, 2, 3 & 4		



GENERAL NOTES

1. THESE NOTES SHALL BE READ IN CONJUNCTION WITH DRAWINGS BSD-4313 SHEETS 3 TO 5, RELEVANT SPECIFICATIONS AND SUCH OTHER WRITTEN INSTRUCTIONS AS MAY BE ISSUED.
2. ANY DISCREPANCIES IN THE DRAWINGS SHALL BE REFERRED TO THE SUPERINTENDENT FOR DECISION BEFORE PROCEEDING WITH THE WORK.
3. ALL WORKMANSHIP AND MATERIALS SHALL COMPLY WITH THE APPROPRIATE AND CURRENT AUSTRALIAN STANDARDS, RELEVANT DTMR SPECIFICATIONS AND OTHER PROJECT SPECIFIC SPECIFICATIONS.
4. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE (U.N.O). DIMENSIONS SHALL NOT BE OBTAINED BY SCALING THE STRUCTURAL DRAWINGS.
5. SETTING OUT DIMENSIONS SHOWN ON PROJECT SPECIFIC DRAWINGS SHALL BE VERIFIED ON SITE BEFORE CONSTRUCTION COMMENCES.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING STABILITY OF THE STRUCTURE UNTIL CONSTRUCTION COMPLETION AND SHALL ENSURE THAT NO PART OF THE STRUCTURE IS OVERSTRESSED DURING CONSTRUCTION. ANY DAMAGE CAUSED BY THE CONTRACTOR SHALL BE MADE GOOD AT THE CONTRACTOR'S OWN COST.
7. ALL TEMPORARY WORKS AND TEMPORARY STRUCTURES ARE TO BE DESIGNED AND CERTIFIED BY THE CONTRACTOR'S STRUCTURAL ENGINEER (RPEQ). ALL TEMPORARY WORKS ARE TO BE REMOVED AT THE END OF THE PROJECT WITH GROUND MADE GOOD, ALL AT THE CONTRACTOR'S COST.
8. CONTRACTOR SHALL LOCATE ANY BURIED SERVICES AT THE SITE AND NOTIFY THE DESIGNER IF THERE ARE ANY CLASHES WITH THE FOUNDATION, AT LEAST 2 WEEKS PRIOR TO COMMENCEMENT OF CONSTRUCTION.

INSPECTION AND CONSTRUCTION CERTIFICATION NOTES

1. THE CONTRACTOR SHALL ARRANGE & PAY ALL COSTS FOR A STRUCTURAL ENGINEER (RPEQ) AND A GEOTECHNICAL ENGINEER (RPEQ) TO INSPECT AND CERTIFY ALL CONSTRUCTION WORK AS SPECIFIED IN THE CONTRACT.
2. THE CONSTRUCTION CERTIFICATION SHALL STATE THAT ALL CONSTRUCTION WORKS HAD BEEN CARRIED OUT AS PER THE MOST CURRENT ISSUE OF THE CONTRACT DOCUMENTS AND SITE INSTRUCTIONS/VARIATION ORDERS ISSUED DURING CONSTRUCTION BY CITY PROJECTS OFFICE.

DESIGN CRITERIA

1. DESIGN STANDARDS: : AS5100 (2004), AS1170, AS3600 (2009), AS4100 (1998) INCLUDING SUPPLEMENTS AND AMENDMENTS.
2. DESIGN LOADS : IN ACCORDANCE WITH AS5100, AS1170 AND 'DESIGN CRITERIA FOR BRIDGES AND OTHER STRUCTURES 2012' PUBLISHED BY DEPARTMENT OF TRANSPORT AND MAIN ROADS (DTMR) QLD.
3. DESIGN DATA : VMS PANEL WEIGHT: 300kg MAX, TRAFFIC CAMERA WEIGHT: 20kg MAX.
: WIND LOADS
- REGION: B
- TERRAIN CATEGORY: 2
- STRUCTURE HEIGHT: 7.5m
- ARI: 2000 YRS (ULS) & 20 YRS (SLS)
- Vdes.θuls=57 m/s & Vdes.θsls=34 m/s

: EARTHQUAKE LOADS
- EARTHQUAKE ZONE HAZARD FACTOR Z = 0.05
- DESIGN CATEGORY: EDC II

: FATIGUE LOADS
- THE STRUCTURE HAS BEEN DESIGNED FOR FATIGUE IN ACCORDANCE WITH SECTION 11 OF 'AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINARIES AND TRAFFIC SIGNALS' 5th EDITION 2009, WITH INTERIMS TO 2011.

: 100 YEAR DESIGN LIFE

CONCRETE NOTES

1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH DTMR SPECIFICATION MRTS70.
2. MANUFACTURE AND PLACEMENT OF CONCRETE SHALL BE IN ACCORDANCE WITH MRTS70.
3. CHAMFERS AND FILLETS – UNLESS NOTED OTHERWISE ON THE DRAWINGS, ALL EXPOSED CONCRETE EDGES HAVING A CONTAINED ANGLE OF LESS THAN 120° SHALL BE PROVIDED WITH 20mm CHAMFERS OR FILLETS AS APPROPRIATE.

CONCRETE NOTES CONTINUED

4. ALL CONCRETE SHALL BE PREMIXED BY AN APPROVED SUPPLIER
5. ALL CEMENT SHALL BE TYPE GP OR GB TO AS3972 UNLESS OTHERWISE SPECIFIED.
6. ADMIXTURES SHALL NOT BE USED UNLESS APPROVED IN WRITING BY THE SUPERINTENDENT.
7. TARGET SLUMP TO BE AS PER MRTS70.
8. CONCRETE STRENGTH AND CLEAR COVER TO REINFORCEMENT SHALL BE IN ACCORDANCE WITH THE FOLLOWING TABLE U.N.O. EXPOSURE CLASSIFICATION B2.

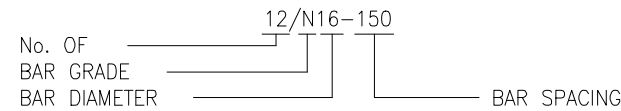
ELEMENT	CONCRETE GRADE	CLEAR COVER TO REINFORCEMENT
BORED PILE	S40/20	85
MASS / BLINDING CONCRETE	N20	N/A

REINFORCEMENT NOTES

1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH MRTS71.
2. THE CONTRACTOR SHALL SUBMIT MILL AND TEST CERTIFICATES FOR REINFORCING BARS TOGETHER WITH RPEQ CERTIFICATION CONFIRMING THE FOLLOWING, FOR APPROVAL OF THE SUPERINTENDANT PRIOR TO COMMENCEMENT OF CONSTRUCTION;
 - THAT REINFORCING BARS SUPPLIED BY EITHER AN AUSTRALIAN OR OVERSEAS SUPPLIER ARE ACRS CERTIFIED. REFER www.steelcertification.com FOR CURRENT CERTIFICATE HOLDERS. ACRS REFERS TO "AUSTRALIAN CERTIFICATION AUTHORITY FOR REINFORCING AND STRUCTURAL STEELS".
 - THAT WHERE REINFORCING BARS ARE SOURCED FROM OVERSEAS FOR THE PROJECT, THE CERTIFYING ENGINEER HAS REVIEWED THE MILL AND TEST CERTIFICATES FROM THE SUPPLIERS OF THE REINFORCING BARS AND CONFIRMS THAT THEY COMPLY WITH THE RELEVANT AUSTRALIAN STANDARDS IN RELATION TO MATERIAL COMPOSITION AND STRENGTH.

3. REINFORCEMENT SYMBOLS:
R STRUCTURAL PLAIN ROUND BAR GRADE 250R TO AS4671
N DEFORMED BAR GRADE D500N TO AS4671
SL HARD DRAWN STEEL REINFORCING FABRIC GRADE D500L TO AS4671

4. REINFORCEMENT NOTATION



5. REINFORCEMENT IS SHOWN DIAGRAMMATICALLY ON THESE DRAWINGS AND DOES NOT DEPICT THE PRECISE POSITION OF BARS AND NOT NECESSARILY SHOWN IN TRUE PROJECTION OR SCALE.

6. MINIMUM DEVELOPMENT AND SPLICING LENGTHS, UNLESS NOTED OTHERWISE

BAR SIZE	N12	N16	N20	N24	N28	N32	N36	FABRIC
MINIMUM LAP LENGTH	500	650	800	1050	1400	1750	2150	350

7. SPLICES IN REINFORCEMENT SHALL BE MADE ONLY IN THE POSITIONS SHOWN OR AS APPROVED BY THE SUPERINTENDENT.
8. WELDING OR SITE BENDING OF THE REINFORCEMENT IS NOT PERMITTED WITHOUT THE DESIGNER'S APPROVAL.
9. ALL REINFORCEMENT SHALL BE SECURELY SUPPORTED IN ITS CORRECT POSITION DURING CONCRETING BY APPROVED BAR CHAIRS, SPACERS OR SUPPORT BARS. THE BAR CHAIR MATERIAL SHALL SUIT THE EXPOSURE CLASSIFICATION.
10. COGS, CRANKS AND HOOKS ARE STANDARD UNLESS NOTED OTHERWISE AND SHALL BE IN ACCORDANCE WITH AS 5100-2004.

STRUCTURAL DESIGN CERTIFICATION		
DESIGN <small>Dilan Rowel RPEQ:8455 2013.11.12 08:45:00 +10'00'</small>	DESIGN CHECK <small>Zhuangzhi Hu RPEQ:13885 2013.11.08 14:03:16 +10'00'</small>	AUTHORISED FOR ISSUE <small>Bala Balakumar RPEQ:3963 2013.11.12 09:21:21 +10'00'</small>
BRISBANE CITY COUNCIL STANDARD DRAWING		
VMS SUPPORT STRUCTURE TYPE BCCVB – NOTES SHEET 1 OF 5		SCALE NOT TO SCALE
		DWG No. BSD-4313
ORIGINAL SIZE A3	REVISION C	

DRAWING AUTHORISED FOR PUBLICATION				
Signature on Original Inga Condric Dated 15/04/14				
FOR ASSET ENGINEERING MANAGER STRATEGIC ASSET MANAGEMENT				
DESIGN APPROVED Eric Bradley Signature on Original Dec 2013				
Intelligent Transport Systems Manager				
DESIGN	D.R.	DATE	Oct '13	
DRAWN	D.M.	DATE	Oct '13	
CHECKED	R.H.	DATE	Oct '13	
DRAWING FILENAME	BSD-4313 (C) VMS support structure type BCCVB - Notes - Sheet 1 of 5.dwg			
ASSOCIATED PLANS	BSD-4313 SHEETS 2,3, 4 & 5			
C	Drawing Title Amended	JAN '16	JUL '16	JUL '16
B	NOTES AMENDED	SEPT '14	SEPT '14	SEPT '14
A	ORIGINAL ISSUE	Oct '13	Oct '13	Oct '13
ISSUE	AMENDMENT	DRAWN DATE	CHK'D DATE	APPR'D DATE



BORED PILE NOTES

- MATERIAL AND WORKMANSHIP OF BORED PILES ARE TO BE IN ACCORDANCE WITH MRTS63.
- BORED PILES SHALL BE LOCATED IN THE POSITIONS SHOWN ON THE PROJECT DRAWINGS, WITHIN THE FOLLOWING TOLERANCE (WHICHEVER MINIMUM)
 - THE MAXIMUM LATERAL DISPLACEMENT OF THE PILE HEAD IN ANY DIRECTION FROM ITS CORRECT POSITION SHALL NOT EXCEED 75mm
 - MAXIMUM VARIATION FROM VERTICAL SHALL NOT EXCEED 20mm PER METER.
- THE CONTRACTOR SHALL DETERMINE THE REQUIREMENT FOR A TEMPORARY OR PERMANENT LINER FOR THE PILE BORE PRIOR TO EXCAVATION. THE PILE LENGTH SHOWN IN THE TABLE IN DRG BSD-4313 SHEET 5 IS THE LENGTH COMMENCING BELOW THE BOTTOM OF THE PERMANENT LINER.
- BOTTOM OF PILE IS TO BE CLEANED BEFORE CONCRETING BY THE CONTRACTOR TO THE SATISFACTION OF A REGISTERED GEOTECHNICAL ENGINEER (RPEQ) APPOINTED BY THE CONTRACTOR.
- CONCRETE SHALL BE PLACED, AS SOON AS POSSIBLE AFTER DRILLING AND APPROVAL HAS BEEN GIVEN, THROUGH A SUITABLE LENGTH AND DIAMETER DELIVERY PIPE AND SHALL BE COMPACTED AS SPECIFIED IN MRTS63.
- BORED HOLES SHALL BE KEPT FREE OF WATER AT ALL TIMES BY BAILING AND PUMPING IF NECESSARY, PARTICULARLY PRIOR TO CONCRETING. CONCRETE SHALL NOT BE PLACED IN WATER UNLESS APPROVED BY THE DESIGNER. THE TOP OF HOLE SHALL BE PROPERLY COVERED TO PREVENT SURFACE WATER OR RAINFALL FROM ENTERING THE HOLES.
- SAFETY PRECAUTIONS SHALL BE TAKEN TO AVOID INJURY TO PEOPLE. THE UNATTENDED HOLE SHALL BE COVERED OR FENCED OFF AT ALL TIMES.
- THE PILE SHALL NOT BE FOUNDED HIGHER THAN THE LEVELS SHOWN ON DRG 4313 SHEET 5 UNLESS APPROVED BY THE DESIGNER.
- REFER DRG BSD-4313 SHEET 5 FOR ADDITIONAL NOTES AND INSTRUCTIONS TO THE CONTRACTOR.

HOLD DOWN BOLT NOTES

- EACH EXPOSED THREAD PROJECTION SHALL BE SUPPLIED WITH ONE HOLD DOWN BOLT NUT, ONE HALF HEIGHT LOCK NUT, ONE LEVELLING NUT AND TWO FLAT WASHERS ASSEMBLED AS SHOWN IN THE DETAILS ON THIS DRAWING SET. ALL NUTS SHALL BE STANDARD HEIGHT AND SHALL COMPLY WITH AS 1112. ALL SCREW THREADS SHALL BE TO AS1275, BOLTS AND NUTS TO BE HOT DIP GALVANISED TO AS1214 AND WASHER HOT DIP GALVANISED TO AS/NZS4680.
- THE LOCATION OF THE BOLTS SHALL BE CONFIRMED BY ON SITE MEASUREMENT BEFORE CONCRETE PLACEMENT.
- ALL HOLD DOWN BOLTS SHALL BE GRADE 4.6/S UNLESS OTHERWISE NOTED.
- HOLD DOWN BOLTS AND ALL OTHER METALLIC CAST-IN ITEMS ARE NOT TO BE IN CONTACT WITH THE STEEL REINFORCEMENT.
- THE CAST-IN PORTION OF THE BOLT SHALL BE COATED WITH MEGAPOXY HT (1.0mm DRY FILM THICKNESS), IMMEDIATELY PRIOR TO CONCRETE PLACEMENT.
- BASE PLATE SHALL BE GROUTED USING GOOD QUALITY FLOWABLE, SELF LEVELLING, NON SHRINK GROUT ("EPIREZ" SUPER-GROUT 65 OR APPROVED EQUIVALENT) HAVING A MINIMUM CHARACTERISTIC COMPRESSIVE STRENGTH $F'_c=65\text{MPa}$. THE CONTRACTOR SHALL ENSURE THAT HOLD DOWN BOLTS ARE FULL ENCAPSULATED WITH GROUT.


STEELWORK NOTES

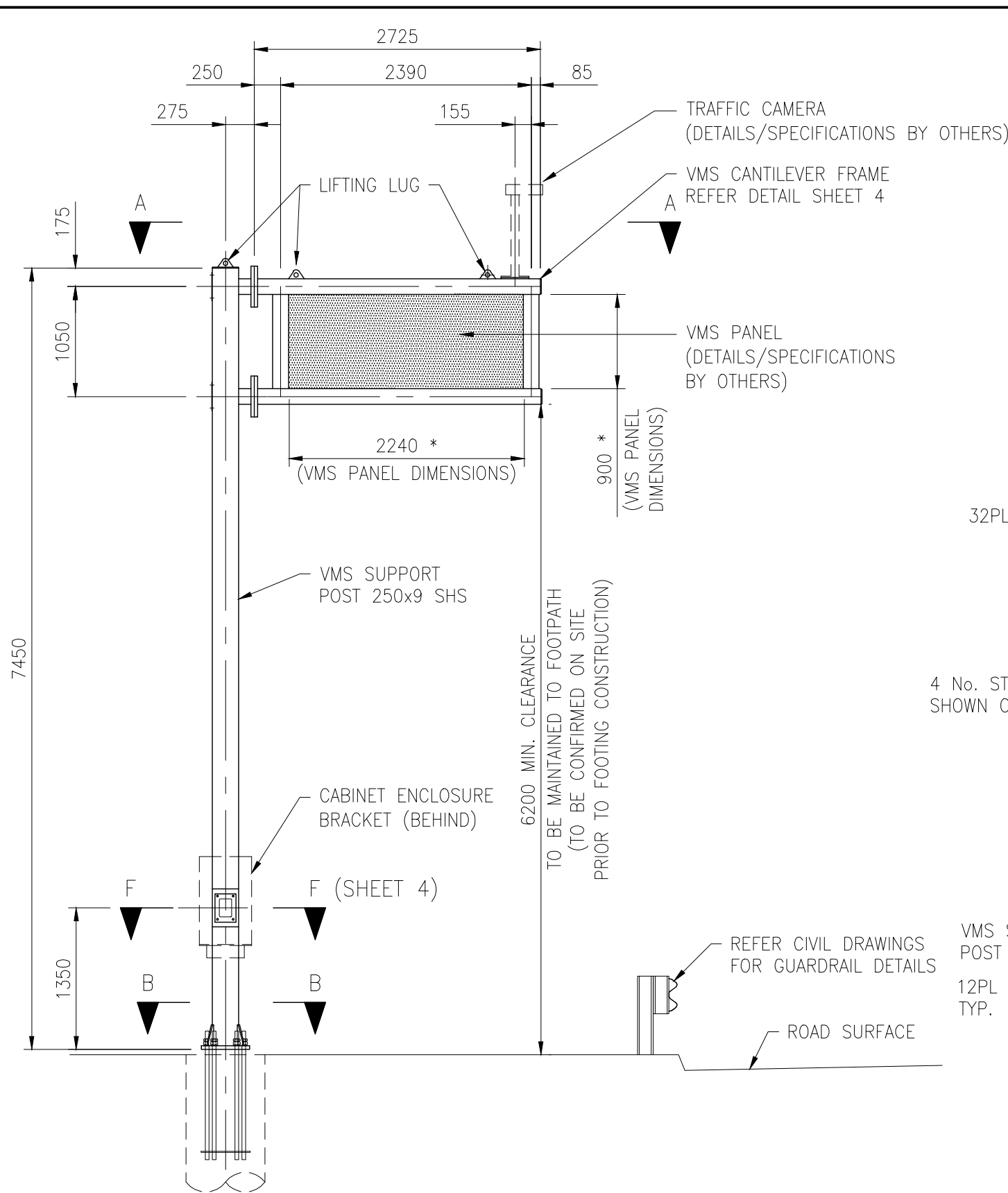
- ALL WORKMANSHIP & MATERIALS SHALL BE IN ACCORDANCE WITH DTMR SPECIFICATION MRTS78.
- THE CONTRACTOR SHALL SUBMIT MILL AND TEST CERTIFICATES FOR STRUCTURAL STEEL PRODUCTS TOGETHER WITH RPEQ CERTIFICATION CONFIRMING THE FOLLOWING, FOR APPROVAL OF THE SUPERINTENDANT PRIOR TO COMMENCEMENT OF FABRICATION;
 - THAT THE STRUCTURAL STEEL PRODUCTS SUPPLIED BY EITHER AN AUSTRALIAN OR OVERSEAS SUPPLIER ARE ACRS CERTIFIED. REFER www.steelcertification.com FOR CURRENT CERTIFICATE HOLDERS. ACRS REFERS TO "AUSTRALIAN CERTIFICATION AUTHORITY FOR REINFORCING AND STRUCTURAL STEELS".
 - THAT WHERE STRUCTURAL STEEL PRODUCTS ARE SOURCED FROM OVERSEAS FOR THE PROJECT, THE CERTIFYING ENGINEER HAS REVIEWED THE MILL AND TEST CERTIFICATES FROM THE SUPPLIERS OF THE STEEL PRODUCTS AND CONFIRMS THAT THEY COMPLY WITH THE RELEVANT AUSTRALIAN STANDARDS IN RELATION TO MATERIAL COMPOSITION AND STRENGTH.
 - THAT ALL BOLTS USED COMPLY WITH AS1252 AND THE CURRENT REQUIREMENTS OF THE AUSTRALIAN STEEL INSTITUTE - ASI TECHNICAL NOTE TN001 VERSION 3.

STEELWORK NOTES CONTINUED

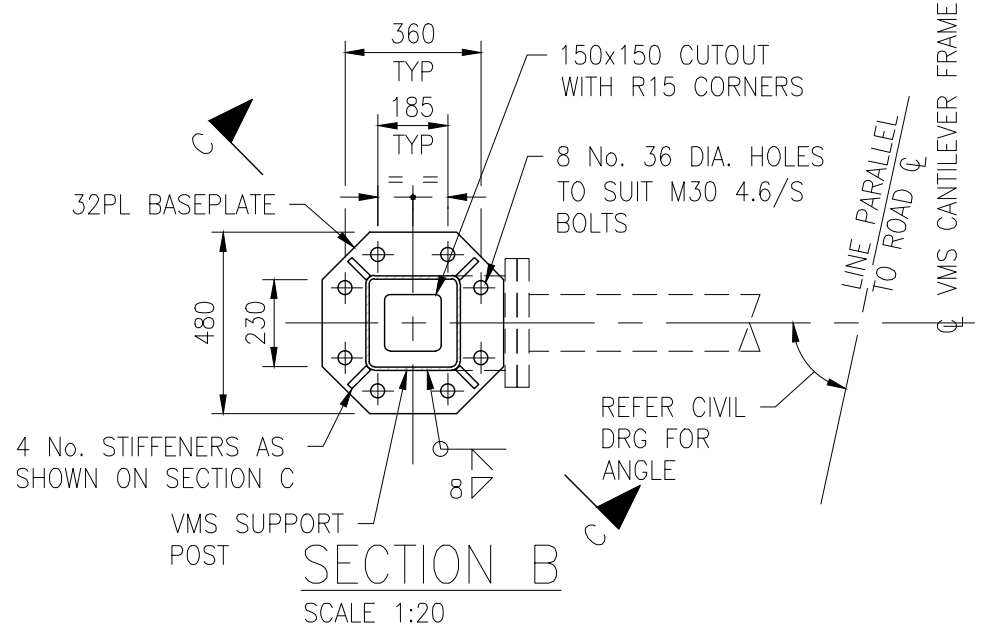
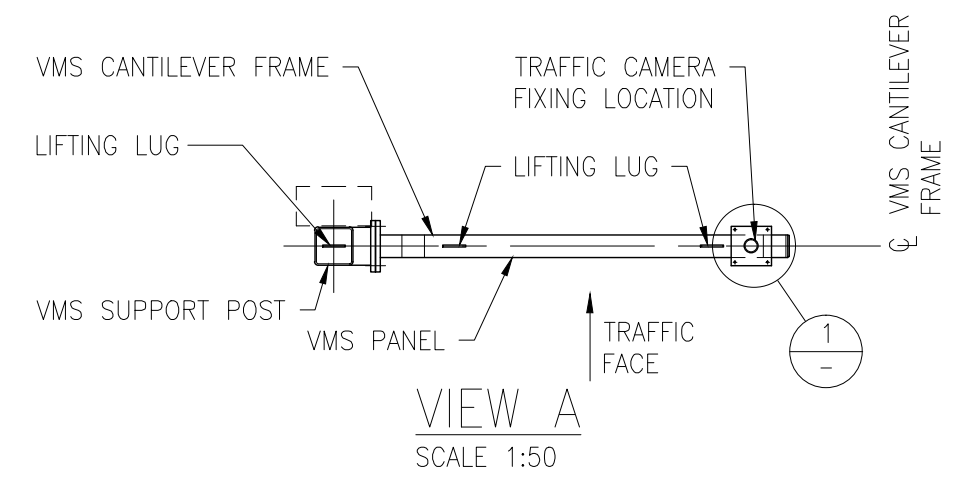
- THE CONTRACTOR SHALL SUBMIT A SEPARATE RPEQ CERTIFICATION CONFIRMING THAT ALL WELDING WORKS HAVE BEEN INSPECTED AND CERTIFIED AS COMPLYING WITH AS1554 BY A QUALIFIED WELDING INSPECTOR APPOINTED BY THE CONTRACTOR, TO THE SUPERINTENDENT FOR APPROVAL PRIOR TO THE STEELWORK BEING GALVANISED.
- ALL STEELWORK SHALL BE HOT DIP GALVANISED IN ACCORDANCE WITH AS/NZS 4680 AFTER FABRICATION. PROTECTIVE COATING SYSTEM AND SURFACE FINISH FOR STRUCTURAL ELEMENTS AS FOLLOWS:
 - VMS SUPPORT POST - HOT DIP GALVANISED TO HDG600 SPECIFICATION IN AS/NZS 2312.
 - VMS CANTILEVER FRAME -
 - HOT DIP GALVANISED TO HDG600 SPECIFICATION IN AS/NZS 2312
 - POWDER COATED IN MATT BLACK. POWDER COATING TO LAST MIN. 10 YEARS. PRETREAT HDG SURFACES AS PER AS4506 PRIOR TO POWDER COATING.
- THE STEELWORK FABRICATION CONTRACTOR SHALL PREPARE AND SUBMIT DETAILED FABRICATION DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO COMMENCING WORK. ALLOW MINIMUM TEN (10) WORKING DAYS FOR ENGINEERS APPROVAL
- PRIOR TO COMMENCING WORK, THE STEELWORK FABRICATION CONTRACTOR SHALL VERIFY ALL DESIGN SETOUT INFORMATION ON SITE. THE SUPPORT POST SHALL BE LOCATED CONCENTRICALLY OVER THE FOOTING.
- UNLESS NOTED OTHERWISE ON THE DRAWINGS, THE STEEL SHALL COMPLY WITH THE FOLLOWING:
 - HOT ROLLED STEEL SECTIONS - GRADE 300 TO AS3679.1
 - HOT ROLLED STEEL PLATE - GRADE 300 TO AS3678
 - SQUARE AND RECTANGULAR HOLLOW SECTIONS - GRADE C350L0 TO AS1163
 - CIRCULAR HOLLOW SECTIONS - GRADE C350L0 TO AS1163
- CARRY OUT WELDING IN ACCORDANCE WITH AS1554 AND AS FOLLOWS:
 - ALL WELDS TO BE COMPLETE PENETRATION BUTT WELDS U.N.O.
 - WELDS TO BE SHOP WELDED U.N.O.
 - WELDS TO BE CATEGORY SP
 - BUTT WELD DENOTED AS CPBW ON THE DRAWINGS SHALL BE COMPLETE PENETRATION U.N.O.
 - ELECTRODES TO BE CLASSIFICATION E48XX U.N.O., PRE-APPROVED TO AS1554
 - EXTENT OF WELD INSPECTION AND TESTING TO BE AS PER MRTS78
- BOLTS AT SPLICE CONNECTION SHALL BE GRADE 8.8/TF HIGH STRENGTH STRUCTURAL BOLTS, NUTS AND WASHERS TO AS/NZS1252
 - S - DENOTES SNUG TIGHT
 - TB - DENOTES BEARING MODE JOINT, BOLTS FULLY TENSIONED
 - TF - DENOTES FRICTION MODE JOINT, BOLTS FULLY TENSIONED (CONTACT SURFACES OF CONNECTIONS TO BE UNCOATED)
- THE BOLT TYPE AND TIGHTENING PROCEDURE ARE DESIGNATED: NUMBER, SIZE STRENGTH GRADE / TIGHTENING PROCEDURES, eg: 4M24 8.8/TF = 4 OFF, 24 DIAMETER, METRIC HIGH STRENGTH STRUCTURAL BOLTS, FULLY TENSIONED IN FRICTION MODE.
- U.N.O., ON THE DRAWINGS, HOT DIP GALVANISE BOLTS, SCREWS, NUTS AND WASHERS TO AS1214. TAP NUTS OVERSIZE TO SUIT GALVANISED THREADS AND OIL FOR PROTECTION. INSTALL WASHERS UNDER BOLT HEAD AND NUT.
- FRICTION GRIP BOLTS SHALL BE TENSIONED TO THE FORCES SPECIFIED USING METHODS DESCRIBED IN MRTS78. SLIP FACTOR ASSUMED FOR FRICTION TYPE BOLTS = 0.35.
- ENSURE MEMBERS ARE CONCENTRIC AT CONNECTIONS (GRAVITY OR GAUGE LINES TO INTERSECT) U.N.O.
- STEEL MEMBERS SHALL BE MADE FROM WHOLE LENGTHS.
- PROVIDE VENT/DRAIN HOLES IN ACCORDANCE WITH AS/NZS4680 AS REQUIRED. VENT/DRAIN HOLES ARE TO BE DETAILED ON THE WORKSHOP DRAWINGS FOR APPROVAL BY THE ENGINEER. ALL VENT/DRAIN HOLES ARE TO BE SEALED WITH APPROVED PLASTIC PLUGS PRIOR TO DELIVERY OF THE STEELWORK TO SITE.

STRUCTURAL DESIGN CERTIFICATION		
DESIGN <small>Dilan Rowel RPEQ:8455 2013.11.12 08:45:33 +10'00'</small>	DESIGN CHECK <small>Zhuangzhi Hu RPEQ:13885 2013.11.12 08:50:53 +10'00'</small>	AUTHORISED FOR ISSUE <small>Bala Balakumar RPEQ:3963 2013.11.12 09:22:37 +10'00'</small>
BRISBANE CITY COUNCIL STANDARD DRAWING		
VMS SUPPORT STRUCTURE TYPE BCCVB - NOTES SHEET 2 OF 5		SCALE: NOT TO SCALE DWG No: BSD-4313 ORIGINAL SIZE: A3 REVISION: C

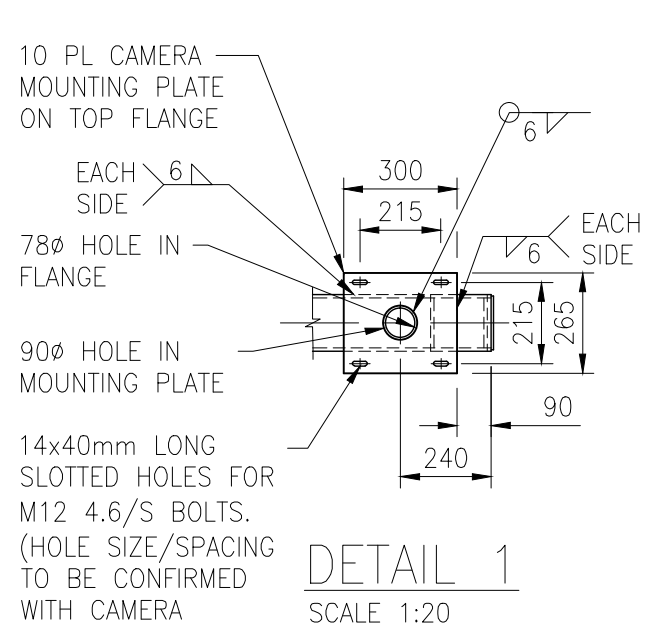
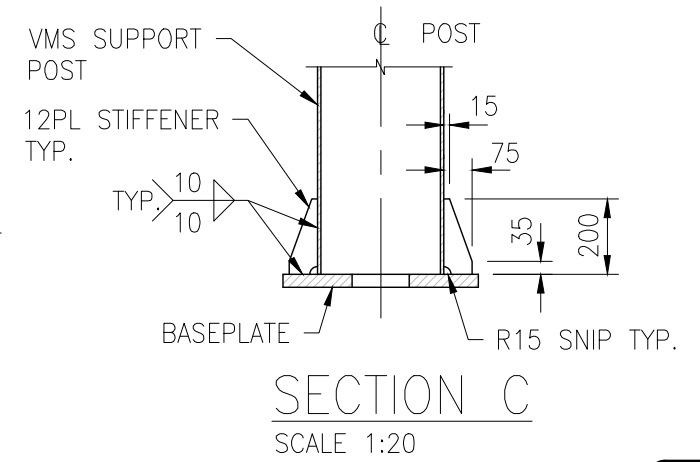
					DRAWING AUTHORISED FOR PUBLICATION Signature on Original Inga Condric Dated 15/04/14 FOR ASSET ENGINEERING MANAGER STRATEGIC ASSET MANAGEMENT DESIGN APPROVED Eric Bradley Signature on Original Dec 2013 Intelligent Transport Systems Manager	DESIGN	D.R.	DATE	Oct '13	
						DRAWN	D.M.	DATE	Oct '13	
						CHECKED	R.H.	DATE	Oct '13	
						DRAWING FILENAME	BSD-4313 (C) VMS support structure type BCCVB - Notes - Sheet 2 of 5.dwg			
ISSUE	AMENDMENT	DRAWN DATE	CHK'D DATE	APPR'D DATE		ASSOCIATED PLANS	BSD-4313 SHEETS 1,3, 4 & 5			



ELEVATION – VMS SUPPORT STRUCTURE
(VIEW FACING SIGN)
SCALE 1:50



NOTE: ORIENT THE HOLD DOWN BOLT CAGE EXACTLY AS SHOWN ON SECTION B, PRIOR TO CONCRETING THE BORED PILE

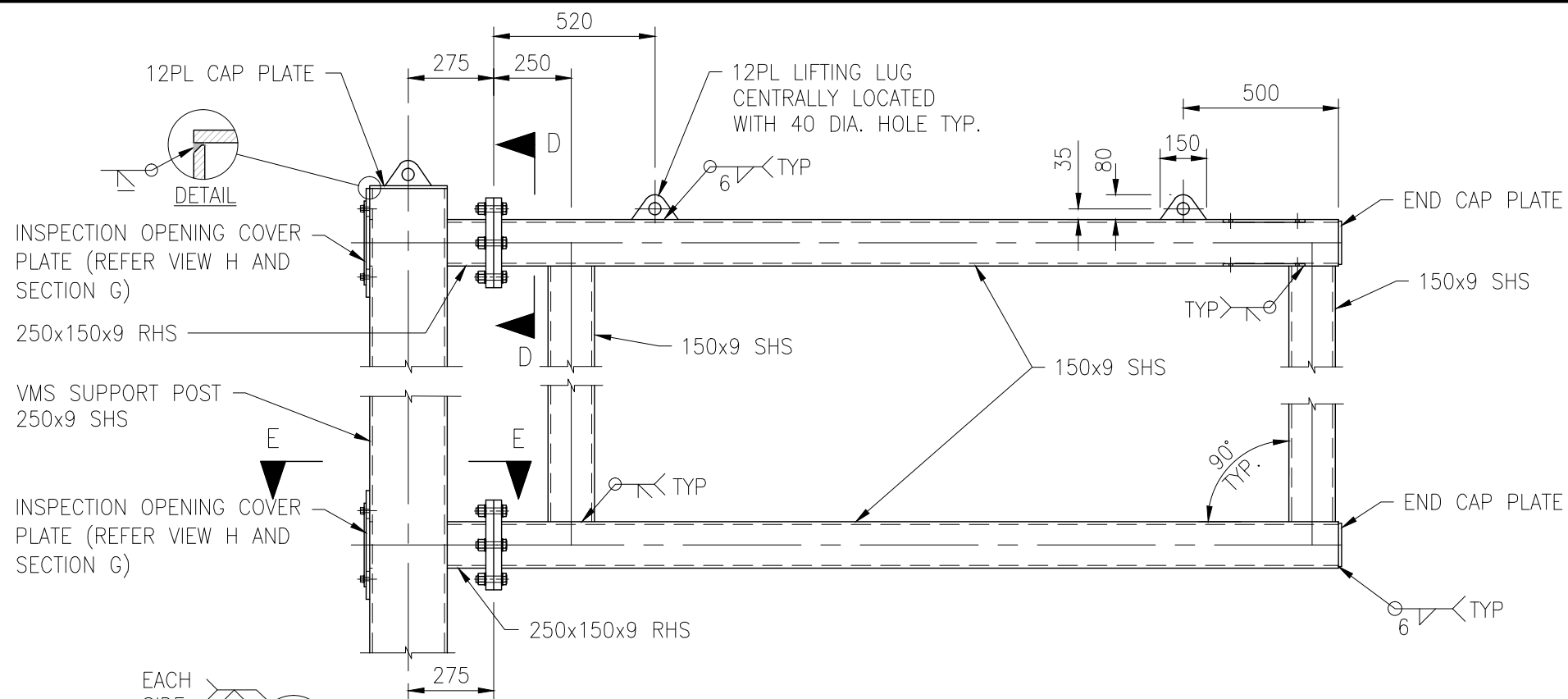


- NOTES**
1. VERIFY FRAME DIMENSIONS SHOWN THUS (*) WITH THE VMS SUPPLIER PRIOR TO FABRICATION.
 2. FIXING DETAILS OF THE VMS PANEL TO THE FRAME ARE NOT SHOWN ON THESE DRAWINGS. THE FRAME FABRICATOR SHALL LAISE WITH THE VMS PANEL SUPPLIER AND INCORPORATE PANEL FIXING DETAILS TO THIS FRAME AS REQUIRED.
 3. SURFACE RUNOFF NEAR FOOTING SHALL BE DIRECTED AWAY FROM THE FOOTING TO AVOID SATURATION OF SOIL IN THE VICINITY OF THE FOOTING.

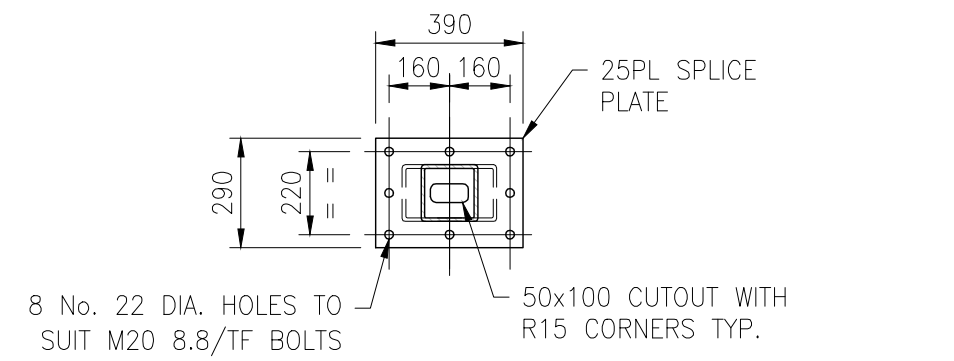
STRUCTURAL DESIGN CERTIFICATION		
DESIGN	DESIGN CHECK	AUTHORISED FOR ISSUE
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BRISBANE CITY COUNCIL STANDARD DRAWING		
VMS SUPPORT STRUCTURE TYPE BCCVB – FRAME ARRANGEMENT		SCALE NOT TO SCALE
SHEET 3 OF 5		BSD-4313
ORIGINAL SIZE A3	REVISION C	

DRAWING AUTHORISED FOR PUBLICATION Signature on Original Inga Condric Dated 15/04/14				DESIGN	D.R.	DATE	Oct '13
FOR ASSET ENGINEERING MANAGER STRATEGIC ASSET MANAGEMENT				DRAWN	D.M.	DATE	Oct '13
DESIGN APPROVED Eric Bradley Signature on Original Dec 2013				CHECKED	R.H.	DATE	Oct '13
Intelligent Transport Systems Manager				DRAWING FILENAME	BSD-4313(C) VMS support structure Type BCCVB - Frame arrangement - Sheet 3 of 5.dwg		
				ASSOCIATED PLANS	BSD-4313 SHEETS 1, 2, 4 & 5		
C	Drawing Title Amended	JAN '16	JUL '16	JUL '16			
B	SETOUT CLARIFIED	SEPT '14	SEPT '14	SEPT '14			
A	ORIGINAL ISSUE	Oct '13	Oct '13	Oct '13			
ISSUE	AMENDMENT	DRAWN DATE	CHK'D DATE	APPR'D DATE			

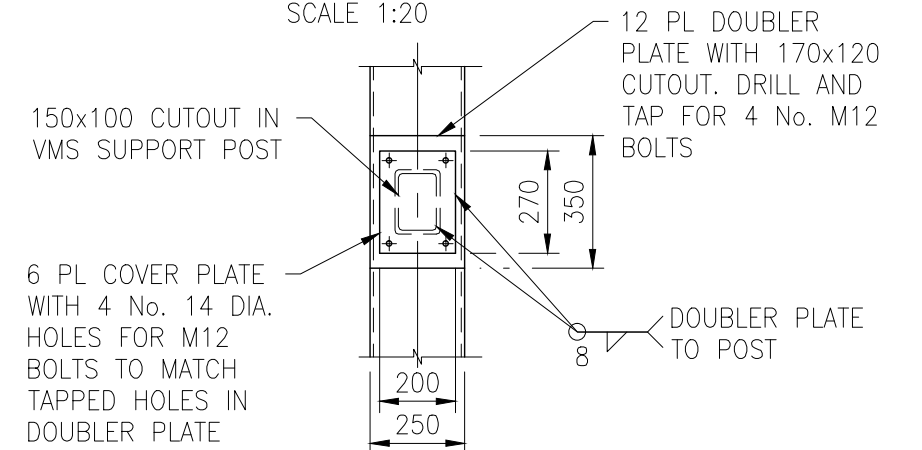




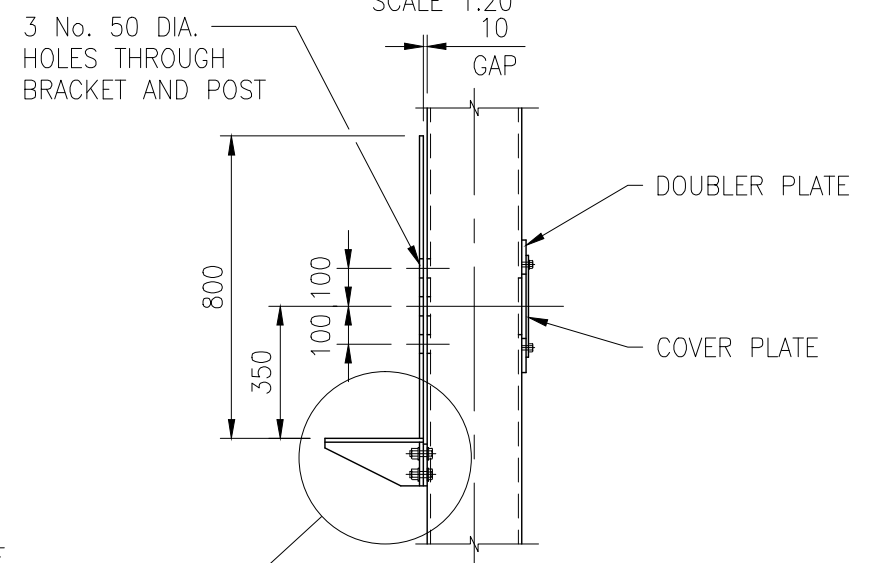
VMS CANTILEVER FRAME DETAIL
SCALE 1:20



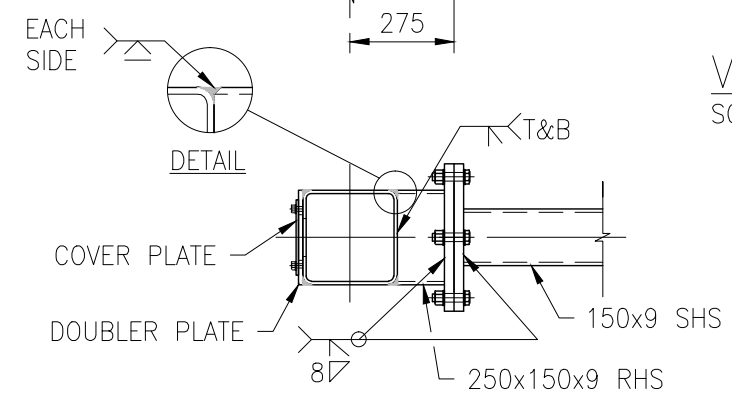
SECTION D
SCALE 1:20



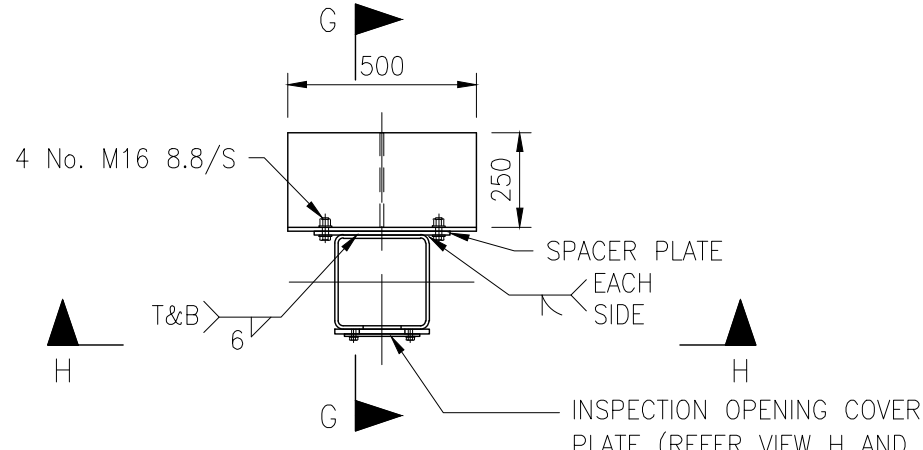
VIEW H
SCALE 1:20



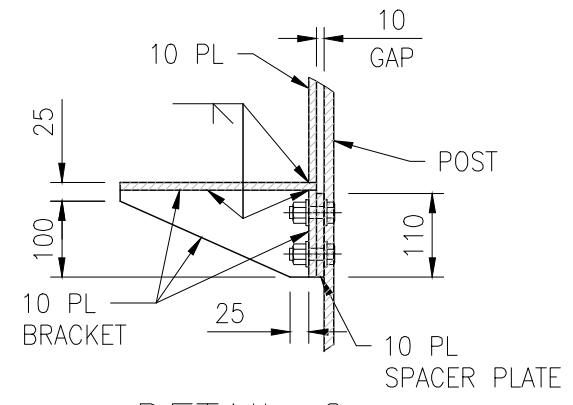
SECTION G
SCALE 1:20



SECTION E
SCALE 1:20



SECTION F
SCALE 1:20
REFER SHEET 3



DETAIL 2
SCALE 1:10

STRUCTURAL DESIGN CERTIFICATION		
DESIGN	DESIGN CHECK	AUTHORISED FOR ISSUE
Dilan Rowel RPEQ:8455 2013.11.12 08:46:29 +10'00'	Zhuangzhi Hu RPEQ:13885 2013.11.08 08:51:58 +10'00'	Bala Balakumar RPEQ:3963 2013.11.12 09:25:57 +10'00'

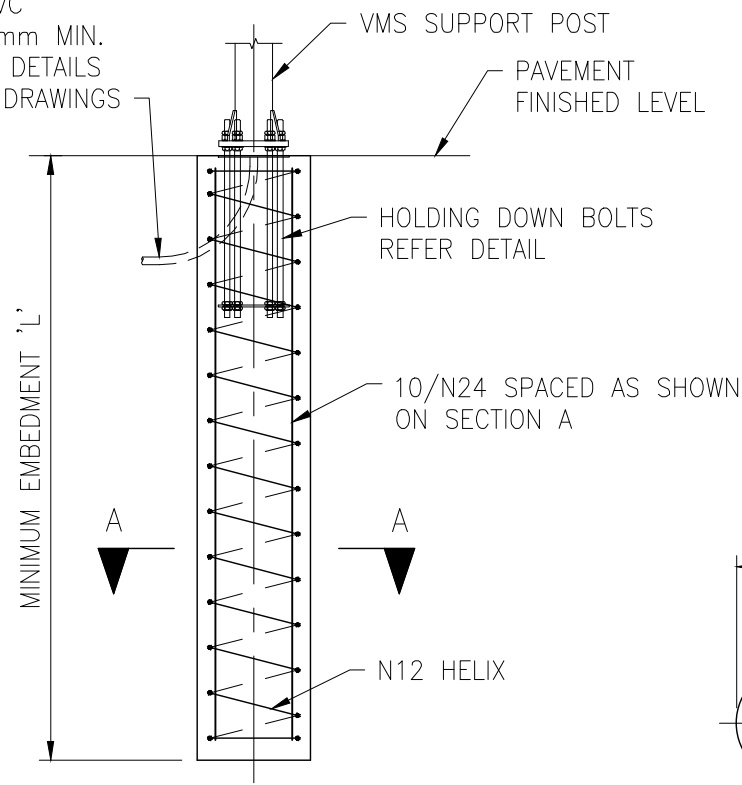
BRISBANE CITY COUNCIL STANDARD DRAWING	
SCALE NOT TO SCALE	DWG No. BSD-4313
VMS SUPPORT STRUCTURE TYPE BCCVB - FRAME DETAILS SHEET 4 OF 5	
ORIGINAL SIZE A3	REVISION C

ISSUE	AMENDMENT	DRAWN DATE	CHK'D DATE	APPR'D DATE
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B	NOTES AMENDED	SEPT '14	SEPT '14	SEPT '14
A	ORIGINAL ISSUE	Oct '13	Oct '13	Oct '13

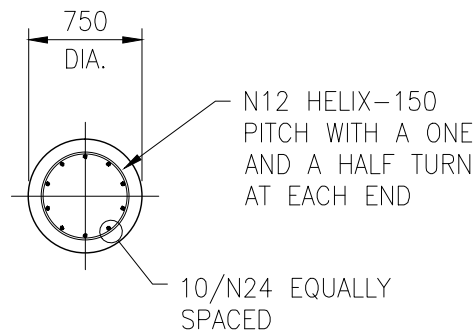
DRAWING AUTHORISED FOR PUBLICATION Signature on Original Inga Condric Dated 15/04/14				DESIGN	D.R.	DATE	Oct '13
FOR ASSET ENGINEERING MANAGER STRATEGIC ASSET MANAGEMENT				DRAWN	D.M.	DATE	Oct '13
DESIGN APPROVED Eric Bradley Signature on Original Dec 2013				CHECKED	R.H.	DATE	Oct '13
Intelligent Transport Systems Manager				DRAWING FILENAME	BSD-4313 (C) VMS support structure Type BCCVB - Frame details - Sheet 4 of 5.dwg		
				ASSOCIATED PLANS	BSD-4313 SHEETS 1, 2, 3 & 5		



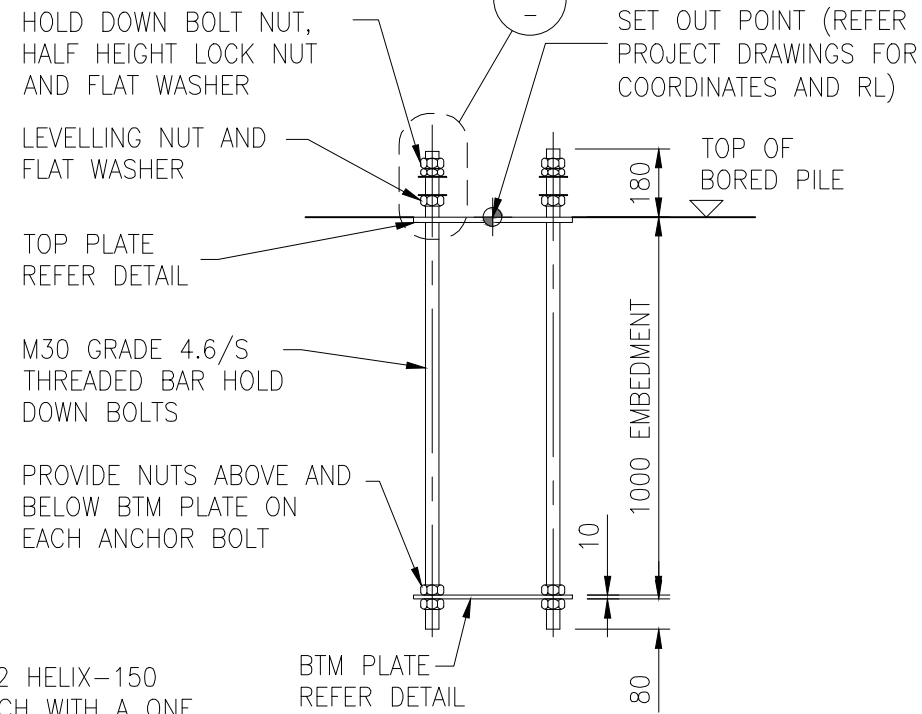
50 DIA. ORANGE PVC CONDUIT WITH 600mm MIN. BEND RADIUS. FOR DETAILS REFER ELECTRICAL DRAWINGS



VMS SUPPORT STRUCTURE BORED PILE DETAIL
SCALE 1:50

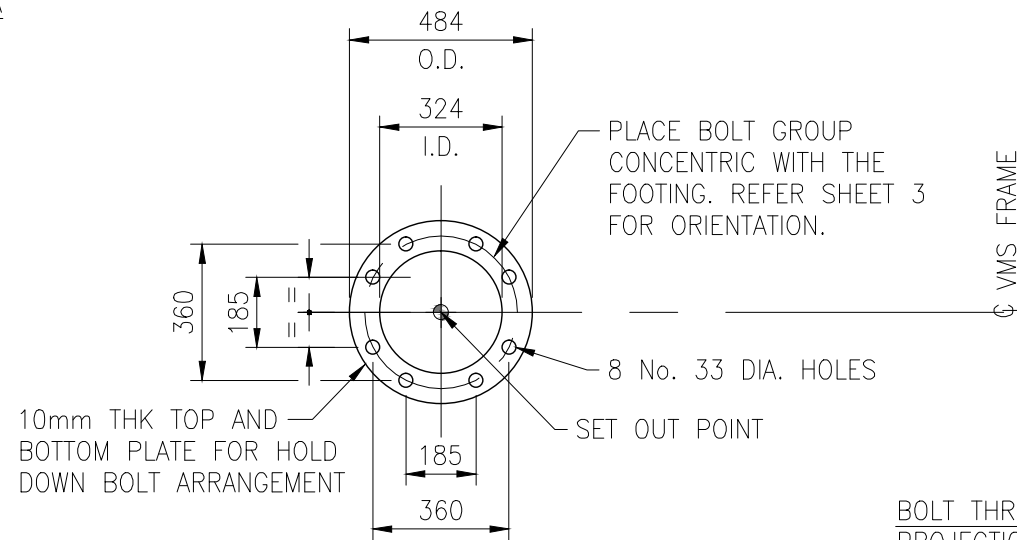


SECTION A
SCALE 1:50

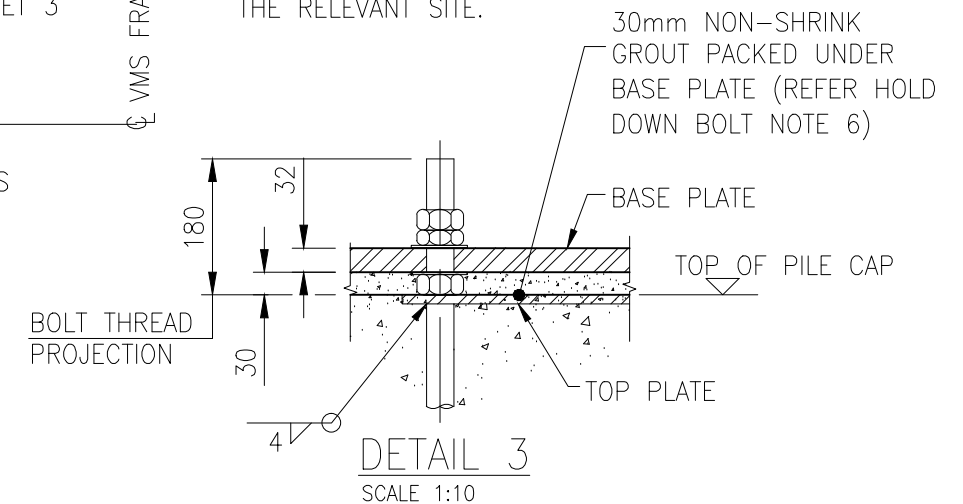


HOLDING DOWN BOLT DETAIL
SCALE 1:20

FOUNDING MATERIAL			MINIMUM EMBEDMENT 'L' (mm)
GENERAL CLASSIFICATION	MATERIAL TYPE	UNDRAINED COHESION Cu (kPa) RANGE $\phi_g=0.45$	
POOR	FIRM TO STIFF CLAY	50 - 100	4500
MEDIUM	STIFF TO VERY STIFF/HARD CLAY	100 - 200	3500
GOOD	VERY STIFF / HARD CLAY OR VERY LOW / LOW STRENGTH ROCK	> 200	3000



H.D. BOLT TOP AND BOTTOM CAST IN PLATE DETAIL
SCALE 1:20



DETAIL 3
SCALE 1:10

NOTES

1. BORED PILE SHALL BE INSTALLED AT THE LOCATION SHOWN ON THE RELEVANT PROJECT DRAWINGS. THE FOUNDING MATERIAL SHALL BE ASSESSED AND CONFIRMED ON SITE BY AN EXPERIENCED GEOTECHNICAL ENGINEER (RPEQ) APPOINTED BY THE CONTRACTOR.
2. THE EMBEDMENT LENGTHS 'L' SHOWN IN THE TABLE ARE BASED ON THE ASSUMPTION THAT THERE ARE NO TRENCHES OR PITS ADJACENT TO THE BORED PILE. IF THERE ARE SUCH EXCAVATIONS WITHIN A RADIUS OF 3m FROM THE CENTRE OF THE PILE, THE EMBEDMENT LENGTHS SHOWN IN THE TABLE SHALL BE INCREASED BY AN AMOUNT EQUAL TO THE DEPTH OF THE EXCAVATION UNLESS ADVISED OTHERWISE BY THE DESIGNER.
3. IF PERMANENT LINERS ARE USED TO INSTALL THE BORED PILE, THE EMBEDMENT DEPTH SHALL BE MEASURED FROM THE BOTTOM OF THE STEEL LINER.
4. CONTRACTOR IS REQUIRED TO CARRY OUT A BORE HOLE INVESTIGATION AT EACH SITE TO ASSESS PROPERTIES OF THE FOUNDING MATERIALS. THE DEPTH OF THE BORE HOLE SHALL BE AT LEAST EQUAL TO THE EMBEDMENT DEPTH OF THE PILE.
5. THE DESIGN PARAMETERS SHOWN ARE FOR COHESIVE TYPE SOILS ONLY. IF COHESIONLESS SOIL OR SOILS HAVING UNDRAINED COHESION VALUES LESS THAN 50KPa ARE ENCOUNTERED AT SITE, THE CONTRACTOR SHALL NOTIFY AND SEEK ADVICE FROM THE DESIGNER BEFORE PROCEEDING WITH WORKS. THE NOTIFICATION SHALL ACCOMPANY BORE HOLE LOGS OBTAINED FOR THE RELEVANT SITE.

STRUCTURAL DESIGN CERTIFICATION		
DESIGN	DESIGN CHECK	AUTHORISED FOR ISSUE
Dilan Rowel RPEQ:8455 2013.11.12 08:47:06 +10'00'	Zhuangzhi Hu RPEQ:13885 2013.11.08 08:52:39 +10'00'	Bala Balakumar RPEQ:3963 2013.11.12 09:28:48 +10'00'
BRISBANE CITY COUNCIL STANDARD DRAWING		
VMS SUPPORT STRUCTURE TYPE BCCVB - FOOTING DETAILS		SCALE NOT TO SCALE
SHEET 5 OF 5		DWG No. BSD-4313
ORIGINAL SIZE	REVISION	
A3	C	

ISSUE	AMENDMENT	DRAWN DATE	CHK'D DATE	APPR'D DATE
C	Drawing Title Amended	JAN '16	JUL '16	JUL '16
B	NOTE AMENDED	SEPT '14	SEPT '14	SEPT '14
A	ORIGINAL ISSUE	Oct '13	Oct '13	Oct '13

DRAWING AUTHORISED FOR PUBLICATION
Signature on Original
Inga Condric Dated 15/04/14

FOR ASSET ENGINEERING MANAGER
STRATEGIC ASSET MANAGEMENT

DESIGN APPROVED
Eric Bradley Signature on Original
Dec 2013

Intelligent Transport Systems Manager

DESIGN	D.R.	DATE	Oct '13
DRAWN	D.M.	DATE	Oct '13
CHECKED	R.H.	DATE	Oct '13
DRAWING FILENAME	BSD-4313 (C) VMS support structure Type BCCVB - Footing details - Sheet 5 of 5.dwg		
ASSOCIATED PLANS	BSD-4313 SHEETS 1, 2, 3 & 4		

