ROAD DESIGN PRESENTATION STANDARDS

DP018 INTELLIGENT TRANSPORT SYSTEMS (ITS)

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DEPARTMENT FOR INFRASTRUCTURE AND TRANSPORT

Government of South Australia
Department for Infrastructure and Transport

Document Amendment Record

Rev	Change Description	Date	Author	Checked	Authorised
1	Initial Issue	21 Oct 2019	Yanyan Xiao	Joanna Davies	Joanna Davis
2	Example drawings added for ITS equipment housed in traffic signal controller extension housing	8 Sep 2022	Yolanda Zhao	Yanyan Xiao	Colin Boulden

Document Management

To be read in conjunction with CAD Manual & Presentation Guidelines DP001

DP018 INTELLIGENT TRANSPORT SYSTEMS

1 Purpose

1.1 The ITS drawing set is used to show details of the Intelligent Transport Systems Design. The drawing is also used to show mounting and maintenance access detail, which needs to be read in conjunction with Maintenance Access Strategy Report.

1.2 For examples of this standard see attached drawings.

1.3 ITS equipment, including CCTV, Bluetooth and the associated electrical and communication network equipment, housed in a traffic signal controller extension housing shall be considered as part of the ITS design. The presentation of extension housing network connection, single line diagram, cabinet layout and equipment schedule shall be presented as per the attached extension housing example drawings.

2 Content

2.1 The ITS design drawings shall comply with the Department Design Standards: RD-ITS-D1 “Intelligent Transport Systems Design” and RD-EL-D3 “Conduit Design for Road Lighting, Traffic Signals and ITS”.

2.2 The ITS drawing set shall include the following information at a minimum:

a) Detailed layout drawings showing all equipment including pit and conduit location details;

   i. Road geometric including chainage details

   ii. Location and depth of service trenches, containing ITS infrastructure;

   iii. Layout of and size of ITS conduits and pits;

   iv. Location and designation of Field Cabinets;

   v. Location of Earth Points including the measured earth resistances;

   vi. Maintenance access

b) ITS Network Architecture/Topology overview diagram

c) Schematic diagrams for optical fibre installations (including splicing schedule).

d) ITS field Cabinet details including detailed schematic shop drawings and wiring diagrams for power, control, and communications;

e) detailed drawings of any purpose built poles, bracketry, cabinets, and mechanical connections for all equipment;

f) Schedules with GPS coordinates

   i. The Department asset ID schedule;

      Note: The Department asset number shall be proposed by the Design Manager and be approved by Traffic Management Centre and Road and Marine Asset Management in accordance with RD-ITS-D1.

   ii. Camera mounting schedule; and

   iii. Pit and cable schedule.

g) Capacity and type of power cables including communication cables used for ITS purposes;

h) Cable termination and testing results including OTDR test results; and

i) detailed drawings of site specific installation arrangements including aiming and alignment details;

j) CER layout and elevation drawings; and

k) “As Constructed” drawings, including location data (Specific identification codes & GPS co-ordinates in a format determined by the Principal).

2.3 The ITS drawing set shall ensure power and communication information interconnectivity between different design packages.

2.4 Reference to network architecture, system connection diagrams, ITS cabinet general arrangement, electrical and communication schematics, equipment schedule, detail design/construction drawing and other relevant drawings shall be properly indexed and cross-referenced with the Department drawing and sheet number.

2.5 Schematic drawings for ITS field cabinet shall have the Department ITSxxx (Asset ID) number identified on the ITS drawing title block.

3 CAD Presentation

3.1 Layers to be shown as per the Department Layer Matrix (DP 001)

3.2 The following CAD entities are required:

a) All information in DP 001 - General Requirements;

b) Text describing features to be removed, reinstated, relocated, replaced or abandoned. (layer = “D-ENHA-General Notes”) (Paper Space text height = 2.5mm);

c) Text describing features to be installed. Include cross references to installation details if appropriate. (layer = “D-ENHA-General Notes”) (Paper Space text height = 2.5mm);

d) Dimensions to assist interpretation of the design. (layer = “D-ENHA-Dimensions”); and

e) Symbols showing new ITS equipment (layer = “D-ELEC-ITS”, blocks / line style provided)

3.3 Survey on the ITS Drawing shall be untrimmed (i.e. survey detail should extend across the design area).

GENERAL NOTES

1. ALL DRAWINGS MUST BE PRINTED IN COLOUR AND WITH TRANSPARENCY ON, UN-CONTROLLED COPY WHEN PRINTED IN BLACK AND WHITE.
2. ALL LANE USE MANAGEMENT SIGNS (LUS) TO BE TYPE C UNLESS OTHERWISE STATED.
3. ELECTRICAL POINTS OF SUPPLY SHOWN FOR INFORMATION ONLY. SEE LIGHTING PACKAGE 65C FOR DETAILS.
4. ALL VARIABLE MESSAGE SIGNS (VMS) TO BE MOUNTED AT A HEIGHT SO THE UNDERSIDE OF THE SIGN IS 5.6m ABOVE THE FINAL PAVEMENT SURFACE, UNLESS SHOWN OTHERWISE.
5. THE DRAWINGS SHALL BE READ IN CONJUNCTION WITH DPTI SPECIFICATIONS AND AUSTRALIAN STANDARDS.
6. ALL INSTALLATIONS SHALL CONFORM WITH THE FOLLOWING TECHNICAL STANDARDS:
   - AP-R341/09 AUSTROADS GUIDE FOR FREEWAY DESIGN PARAMETERS FOR FULLY MANAGED OPERATIONS.
   - AP-R344/09 AUSTROADS BEST PRACTICE FOR VARIABLE SPEED LIMITS: BEST PRACTICE RECOMMENDATIONS.
   - AS 4852, VARIABLE MESSAGE SIGNS.
   - AS 1044, RADIO DISTURBANCE CHARACTERISTICS.
   - AS 1170.1, STRUCTURAL DESIGN ACTIONS - PERMANENT, IMPOSED AND OTHER ACTIONS.
   - AS 1664, ALUMINIUM STRUCTURES.
   - AS 1768, LIGHTNING PROTECTION.
   - AS 2578, TRAFFIC SIGNAL CONTROLLERS - PHYSICAL AND ELECTRICAL COMPATIBILITY.
   - AS 2648.1, UNDERGROUND MARKING TAPE PART 1: NON-DETECTABLE TAPE.
   - AS 3000, ELECTRICAL INSTALLATION - BUILDING STRUCTURE AND PREMISES (WIRING RULES).
   - AS 3085.1, COMMUNICATIONS INSTALLATIONS - ADMINISTRATION OF COMMUNICATIONS CABLING SYSTEMS - BASIC REQUIREMENTS.
   - AS 3990, MECHANICAL EQUIPMENT - STEELWORK.
   - AS 4055, WIND LOADS FOR HOUSING.
   - AS 4070, RECOMMENDED PRACTICES FOR LOW-VOLTAGE ELECTRICAL INSTALLATIONS AND EQUIPMENT IN "MEN" SYSTEMS FROM TRANSIENT OVER-VOLTAGES.
   - AS 60038, STANDARD VOLTAGES.
   - AS 60529, DEGREES OF PROTECTION PROVIDED BY ENCLOSURES (IP CODE).
   - AS 61508, FUNCTIONAL SAFETY FOR ELECTRICAL / ELECTRONIC / PROGRAMMABLE ELECTRONIC SAFETY RELATED SYSTEMS.
   - AS/ACIF S008, REQUIREMENTS FOR CUSTOMER CABLING PRODUCTS.
   - AS/ACIF S009, INSTALLATION REQUIREMENTS FOR CUSTOMER CABLING.
   - AS 3100, APPROVAL AND TEST - GENERAL REQUIREMENTS FOR ELECTRICAL EQUIPMENT.
   - AS 7799.2, INFORMATION SECURITY MANAGEMENT - SPECIFICATION FOR INFORMATION SECURITY MANAGEMENT SYSTEMS.
   - AS 17799, INFORMATION TECHNOLOGY - CODE OF PRACTICE FOR INFORMATION SECURITY MANAGEMENT.
7. FOR PARKING RESTRICTIONS AROUND MAINTENANCE ACCESS AREAS SEE PACKAGE 66A TRAFFIC CONTROL.
8. FOR T2TA TO DPTI ASSET ID CONVERSION SCHEDULE SEE PACKAGE 15E SHEET 6920.

ENVIRONMENTAL AND SUSTAINABILITY NOTES

1. WORKS TO BE IN ACCORDANCE WITH THE CONSTRUCTION ENVIRONMENT MANAGEMENT PLAN (CEMP).
2. SOIL CONTAMINATION MAY BE PRESENT IN SOME AREAS. SPOIL WILL BE WASTE CLASSIFIED PRIOR TO REMOVAL FROM SITE. EXCAVATION AND DISPOSAL OF MATERIALS ARE TO BE IN ACCORDANCE WITH THE EXCAVATION AND DISPOSAL PLAN ISSUED FOR THE AREA OF WORKS.
3. ALL STORMWATER ENTRY POINTS IN THE VICINITY OF THE WORKS SHALL BE PROTECTED FROM DISCHARGE OF SEDIMENT-AFFECTED RUNOFF.
4. DAMAGE TO TREES (INCLUDING ROOTS) SHALL BE MINIMISED AND NO TREE REMOVAL SHALL BE CARRIED OUT WITHOUT ENVIRONMENT TEAM APPROVAL.
5. VEGETATION TO BE PROTECTED IS DOCUMENTED IN THE CEMP.

ITS DEVICES

1. ALL ITS DEVICES SHALL HAVE CURRENT STREAMS CERTIFICATION TO A MINIMUM LEVEL OF 1 AS DETAILED IN THE TRANSMAX STREAMS CERTIFICATION OVERVIEW DOCUMENT. IF THE CONTRACTOR PROPOSES AN ITEM OF EQUIPMENT THAT DOES NOT CURRENTLY HOLD A MINIMUM OF LEVEL 1 STREAMS CERTIFICATION THEN THE CONTRACTOR SHALL INCLUDE ALL WORKS NECESSARY TO ATTAIN LEVEL 1 STREAMS CERTIFICATION. STREAMS CERTIFICATION SHALL BE SUPPLIED IMMEDIATELY AFTER FAT TESTING.
2. ALL ITS DEVICES SHALL BE APPROVED BY DPTI, AS PER HOLD POINT.

CONDUITS AND PITS

1. CONDUITS AND PITS SHOWN ON THESE DRAWINGS ARE FOR INFORMATION ONLY, BASED ON DESIGN INFORMATION FROM PACKAGES 67A AND 67B SERVICES INTERFACE AND 65A TRAFFIC SIGNALS. THE CONDUITS SHOWN WILL BE INSTALLED IN A TRENCH THAT IS SHARED WITH OTHER SERVICES SUCH AS GAS, SAPN, LV, TELSTRA ETC. CHANGES TO THESE PACKAGES WILL AFFECT THE CONDUIT ROUTES SHOWN. THE INSTALLATION OF CONDUITS AND PITS IS TO BE IN ACCORDANCE WITH PACKAGE PACKAGE 1A COMMON SERVICE TRENCH SPECIFICATION T2T-T2TA-P01-01A-SP-CC-DO0002.
2. THE SYMBOLS SHOWN ON THESE ARE DRAWINGS ARE APPROXIMATE LOCATIONS FOR INFORMATION ONLY AND DO NOT FORM PART OF THIS DESIGN PACKAGE. SEE PACKAGES 65A, 67A AND 67B FOR ACCURATE LOCATIONS.
3. FOR CONDUIT DIAMETER AND QUANTITIES SEE PACKAGES 1A AND 17F COMMON SERVICES TRENCH.
4. ALL PIT LIDS SHOWN ON THESE DRAWINGS SHALL BE SECURE UNLESS SHOWN OTHERWISE.
5. PITS LOCATED IN SHARED PATHS SHALL HAVE NON-SLIP PIT LIDS INSTALLED
6. DEPTH OF COVER FOR COMMUNICATIONS AND ELECTRICAL CONDUITS SHALL COMPLY WITH DPTI SPECIFICATION PART R53 'SUPPLY AND INSTALLATION OF CONDUITS AND PITS'. WHERE REQUIRED DEPTH OF COVER CANNOT BE MET SEEK OTR APPROVAL. A CONCRETE PROTECTIVE COVERING SHALL BE INSTALLED ABOVE THE CONDUITS IN ACCORDANCE WITH AS 3000.
7. THE CONTRACTOR SHALL DETERMINE AND COORDINATE WORKS WITH ALL EXISTING UNDERGROUND SERVICES AND INFRASTRUCTURE, AND MAINTAIN REQUIRED CLEARANCES TO EXISTING SERVICES AS SPECIFIED BY RELEVANT SERVICE PROVIDERS AND AUSTRALIAN STANDARDS.
8. DRAW CORDS SHALL BE INSTALLED IN ALL CONDUITS TO ENABLE PULLING OF CABLES. ALL DRAW CORDS SHALL COMPLY WITH DPTI SPECIFICATION PART R53 'SUPPLY AND INSTALLATION OF CONDUITS AND PITS'.
9. ALL CONDUITS SHALL BE INSTALLED WITH PERMANENT BELL MOUTHS ON CONDUIT ENDS TO ASSIST IN CABLE PULLING AND PREVENT CABLE DAMAGE DURING INSTALLATION.
10. MARKING TAPE SHALL COMPLY WITH THE REQUIREMENTS OF AS 2648.1. TAPE SHALL BE MARKED "ELECTRICAL CABLE" OR "TELECOMMUNICATIONS CABLE" AND INSTALLED FOR THE FULL LENGTH OF ALL CONDUIT TRENCHES, 300mm ABOVE THE CONDUIT, CENTRALLY IN THE TRENCH. FOR CONDUIT TRENCHES EXCEEDING 500mm WIDTH, ADDITIONAL MARKING TAPE SHALL BE INSTALLED ALONGSIDE.
11. BEND RADIUS FOR CONDUITS TO BE MINIMUM 760mm AND MAXIMUM 90° ANGLE OF BEND.
12. ALL CONDUITS TO BE MANDRELLED TO ENSURE NO DEFORMATION OF, OR OBSTRUCTIONS WITHIN CONDUIT FOLLOWING INSTALLATION.
13. ALL ITS ELECTRICAL CONDUITS (ITS) SHALL BE RIGID SMOOTH WALLED HEAVY DUTY PVC, COLOURED ORANGE AND MARKED "ELECTRICAL" AND SHALL COMPLY WITH AS 2053. CONDUITS SHALL BE Ø100mm UNLESS SHOWN OTHERWISE.
14. ALL COMMUNICATIONS CONDUITS (C) SHALL BE RIGID SMOOTH WALLED HEAVY DUTY PVC, COLOURED WHITE AND MARKED "COMMUNICATIONS" AND SHALL COMPLY WITH AS 2053. CONDUITS SHALL BE Ø100mm UNLESS SHOWN OTHERWISE.
15. FOR PIT DETAILS SEE DPTI STANDARD DRAWING NO. S-4055 SHEETS 66 - 70.
16. ALL PITS TO BE INSTALLED AS PER ORIENTATION SHOWN ON THE DRAWINGS.

ITS STRUCTURES

1. FOR OVERHEAD GANTRIES AND STATIC TES SIGNS ON PORTAL GANTRY STRUCTURAL DETAILS AND GENERAL ARRANGEMENTS SEE PACKAGE 63A ITS STRUCTURES SHEETS 4851 - 4924.
2. FOR DETAILS OF CAMERA POLES MOUNTED ON TOP OF WALL BARRIERS, GANTRY FOOTINGS AND PIT DETAILS SEE PACKAGE 61 TOP OF WALL BARRIERS SHEETS 4701 - 4830.
3. FOR BARRIER VOID DETAILS SEE PACKAGE 61 TOP OF WALL BARRIERS SHEETS 4701 - 4830 AND PACKAGE 62 RETAINING STRUCTURES SHEETS 2001 - 2113 FOR LOWERED ROAD BARRIER VOID DETAILS.
4. FOR TIRTL INSTALLATION DETAILS SEE PACKAGE 62 RETAINING STRUCTURES SHEET 2093.

SERVICES LEGEND

SYMBOL DESCRIPTION

COMMUNICATIONS
- INSPECTION COVER
- ISOLATION PILLAR
- JUNCTION BOX
- MARKER POST
- PILLAR
- TELEPHONE BOX
- UNDERGROUND CABLE

ELECTRICAL
- OVERHEAD CABLE (SAPN)
- ELECTRICITY PYLON
- UNDERGROUND CABLE (SAPN)
- UNDERGROUND CABLE (RAIL)

GAS
- INSPECTION COVER
- JUNCTION BOX
- MARKER POST
- METER
- UNDERGROUND PIPE

SEWER
- INSPECTION COVER
- JUNCTION BOX
- UNDERGROUND PIPE
- VENT

WATER
- FIRE PLUG MARKER POST
- FIRE PLUG MARKER REFLECTOR
- IRRIGATION CONTROL BOX
- HYDRANT
- INSPECTION COVER
- JUNCTION BOX
- METER
- TAP
- UNDERGROUND PIPE
- ABOVE GROUND PIPE

STORMWATER
- PIPE / CULVERT

NEW COMMUNICATIONS
- INSPECTION COVER
- UNDERGROUND CABLE

NEW ELECTRICAL
- UNDERGROUND CABLE (SAPN)
- OVERHEAD CABLE (SAPN)
- UNDERGROUND CABLE (DPTI) - NEW
- SWITCHING CUBICLE
- TRANSFORMER

NEW GAS
- JUNCTION BOX
- VALVE
- UNDERGROUND PIPE

NEW SEWER
- INSPECTION COVER
- JUNCTION BOX
- UNDERGROUND PIPE
- SLEEVED UNDERGROUND PIPE

NEW WATER
- DOUBLE HEADED FIRE HYDRANT
- BACKFLOW PREVENTION DEVICE
- ISOLATION VALVE
- BRANCH SCOUR VALVE
- UNDERGROUND PIPE

PROPOSED STORMWATER
- PROPOSED STORMWATER PIPE/CULVERT
- PROPOSED PUMPING MAIN

GENERAL LEGEND

SYMBOL DESCRIPTION

- EXISTING BOUNDARY
- NEW BOUNDARY
- TRAFFIC SIGNAL POLE
- COMBINATION LIGHTING / TRAFFIC SIGNAL POLE
- MAST ARM (3.5 / 5.5m OUTREACH)
- COMBINATION LIGHTING / TRAFFIC SIGNAL MAST ARM
- PUSH BUTTON POLE
- LIGHT POLE BASE - FOR INFORMATION ONLY
- SIGNAL CONTROLLER BASE
- KERB
- BITUMEN EDGE
- PORTAL GANTRY
- CANTILEVER GANTRY
- NOISE WALL
- RETAINING WALL
- W BEAM BARRIER
- SAFETY FENCE (1.2m HIGH)
- TAU-II CRASH CUSHION
- STOBIE POLE - EXISTING
- SP SUPPLY POINT - UNDERGROUND
- SP SUPPLY POINT - ON STOBIE POLE
- SWITCHBOARD: DPTI EARTHED
- BUS STOP TACTILE INDICATORS

ITS LEGEND

SYMBOL DESCRIPTION

- PTZ PAN, TILT, ZOOM (PTZ) CAMERA
- TID THERMAL INCIDENT DETECTION (TID) CAMERA
- VMS TYPE B VARIABLE MESSAGE SIGN
- 1 — 2 VEHICLE LOOP DETECTORS
- T R THE INFRA-RED TRAFFIC LOGGER (TIRTL)
  T - TRANSMITTER
  R - RECEIVER
- ITS FIELD CABINET
- LUS TYPE C LANE USE MANAGEMENT SIGN (LUS) / VARIABLE SPEED LIMIT SIGN (VSS)
- C P4 PIT - COMMUNICATIONS: SECURE
- C P4 PIT - COMMUNICATIONS: LOCKABLE
- C P7 PIT - COMMUNICATIONS: SECURE
- C P7 PIT - COMMUNICATIONS: LOCKABLE
- P4 P4 PIT - ITS POWER: SECURE
- P4 P4 PIT - ITS POWER: LOCKABLE
- P7 P7 PIT - ITS POWER: SECURE
- P7 P7 PIT - ITS POWER: LOCKABLE
- BV BARRIER VOID
- D CER INTERFACE PIT 'D' SIZE
- CONDUIT - INSTALL (ITS)
- CONDUIT - EXISTING
- ITS CONDUIT LABEL
  C - Ø100 COMMUNICATIONS
  ITS - Ø100 ITS ELECTRICAL
  ES - Ø100 ELECTRICAL SUPPLY
- BLUETOOTH RECEIVER
- POLE MOUNTED ENCLOSURE

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE

INDEX SHEET REFERENCE: 7350 SHEET 6401

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Government of South Australia
Department of Planning, Transport and Infrastructure

PROJECT No.: 14C022	FILE No.:
DESIGN No.: 201301224	SURVEY No.: 201301042
PROJECT START ROAD RUNNING DISTANCE:	MC50; CH 0948 = 9,38 km
PROJECT END ROAD RUNNING DISTANCE:	MC50; CH 4231 = 5,65 km
SCALES:	NOT TO SCALE

ROAD No. 06203
NORTH-SOUTH CORRIDOR
TORRENS ROAD TO RIVER TORRENS
NOTES AND LEGEND
INTELLIGENT TRANSPORT SYSTEMS

DESIGNED:	DRAFTED:	ACCEPTED FOR USE:	ACCEPTANCE FORM KNET No.:	DRAWING No.:	SHEET No.:	AMEND No.
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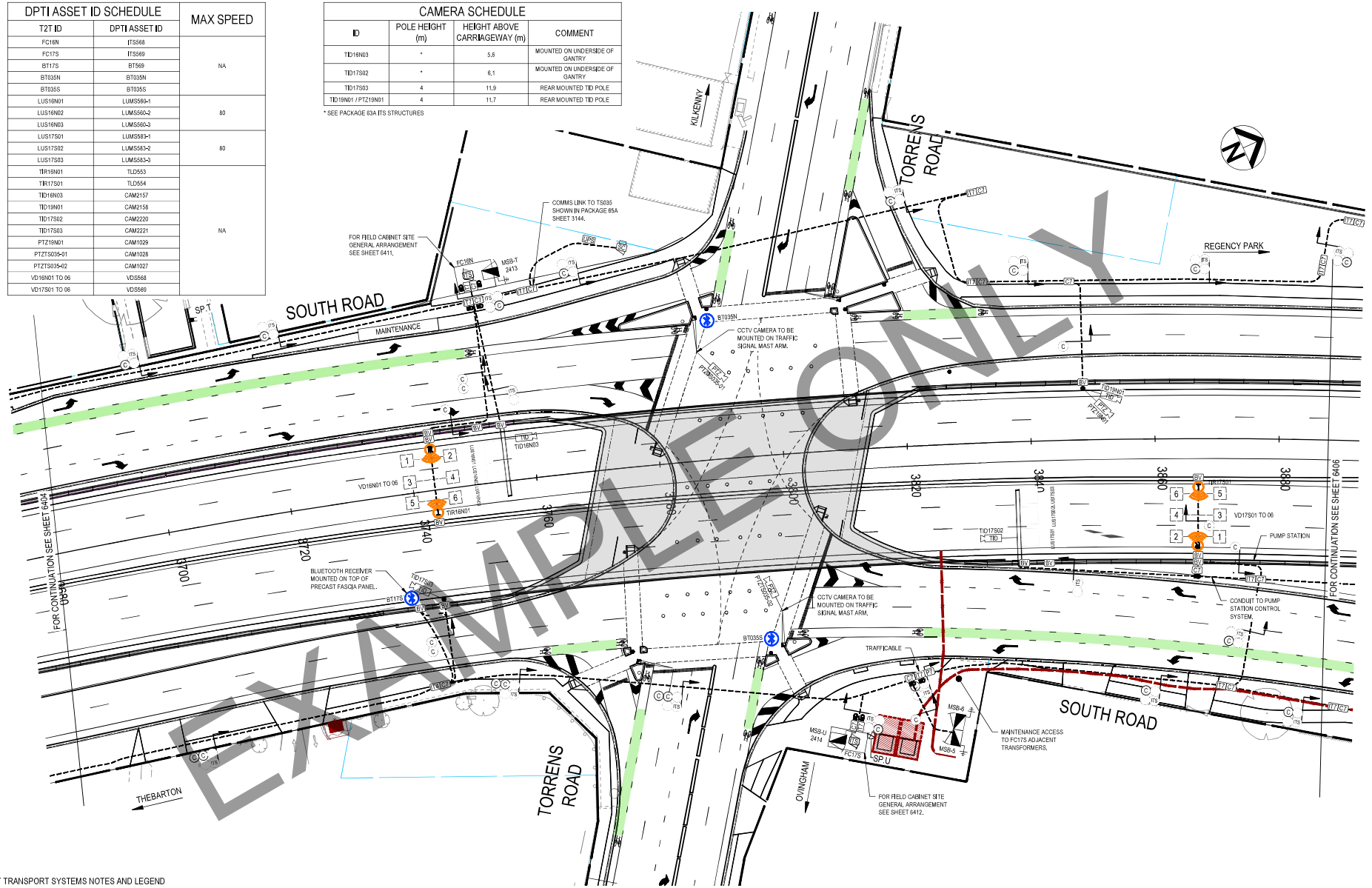
CHECKED: T2TA	CHECKED: T2TA	TITLE: DESIGN MANAGER	IN ACCORDANCE WITH DP015	SHEET LATITUDE -34,885247	SHEET LONGITUDE 138,570335	
		DATE: 07.06.16				

CAD FILE NAME: T2T-T2TA-P65-65B-DR-CC-T00021.DWG

DPTI ASSET ID SCHEDULE		MAX SPEED
T2T ID	DPTI ASSET ID	
FC16N	ITS568	NA
FC17S	ITS569	
BT17S	BT569	
BT035N	BT035N	
BT035S	BT035S	
LUS16N01	LUMS580-1	80
LUS16N02	LUMS580-2	
LUS16N03	LUMS580-3	
LUS17S01	LUMS583-1	80
LUS17S02	LUMS583-2	
LUS17S03	LUMS583-3	
TIR16N01	TLD553	NA
TIR17S01	TLD554	
TID16N03	CAM2157	
TID19N01	CAM2158	
TID17S02	CAM2220	
TID17S03	CAM2221	
PTZ19N01	CAM1029	
PTZTS035-01	CAM1028	
PTZTS035-02	CAM1027	
VD16N01 TO 06	VDS568	
VD17S01 TO 06	VDS569	

CAMERA SCHEDULE			
ID	POLE HEIGHT (m)	HEIGHT ABOVE CARRIAGEWAY (m)	COMMENT
TID16N03	*	5.6	MOUNTED ON UNDERSIDE OF GANTRY
TID17S02	*	6.1	MOUNTED ON UNDERSIDE OF GANTRY
TID17S03	4	11.9	REAR MOUNTED TID POLE
TID19N01 / PTZ19N01	4	11.7	REAR MOUNTED TID POLE

* SEE PACKAGE 63A ITS STRUCTURES



NOTES:

1. FOR INTELLIGENT TRANSPORT SYSTEMS NOTES AND LEGEND SEE SHEET 6402.

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE

INDEX SHEET REFERENCE: 7350 SHEET 6401

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Department of Planning, Transport and Infrastructure

PROJECT No.: 14C022	FILE No.:
DESIGN No.: 201301224	SURVEY No.: 201301042
PROJECT START ROAD RUNNING DISTANCE:	MC50; CH 0948 = 9.38 km
PROJECT END ROAD RUNNING DISTANCE:	MC50; CH 4231 = 5.65 km
SCALES:	6 0 3 6 9 12

ROAD No. 06203
NORTH-SOUTH CORRIDOR
TORRENS ROAD TO RIVER TORRENS
MC50; CH 3682 - CH 3888
INTELLIGENT TRANSPORT SYSTEMS

DESIGNED: T2TA	DRAFTED: T2TA	ACCEPTED FOR USE: COLIN BOULDEN	ACCEPTANCE FORM KNET No.: 9521845	DRAWING No.: 7350	SHEET No.: 6405	AMEND No.: 0
CHECKED: T2TA	CHECKED: T2TA	TITLE: DESIGN MANAGER	IN ACCORDANCE WITH DP013	SHEET LATITUDE -34.888456	SHEET LONGITUDE 138.569903	
		DATE: 07.06.16				

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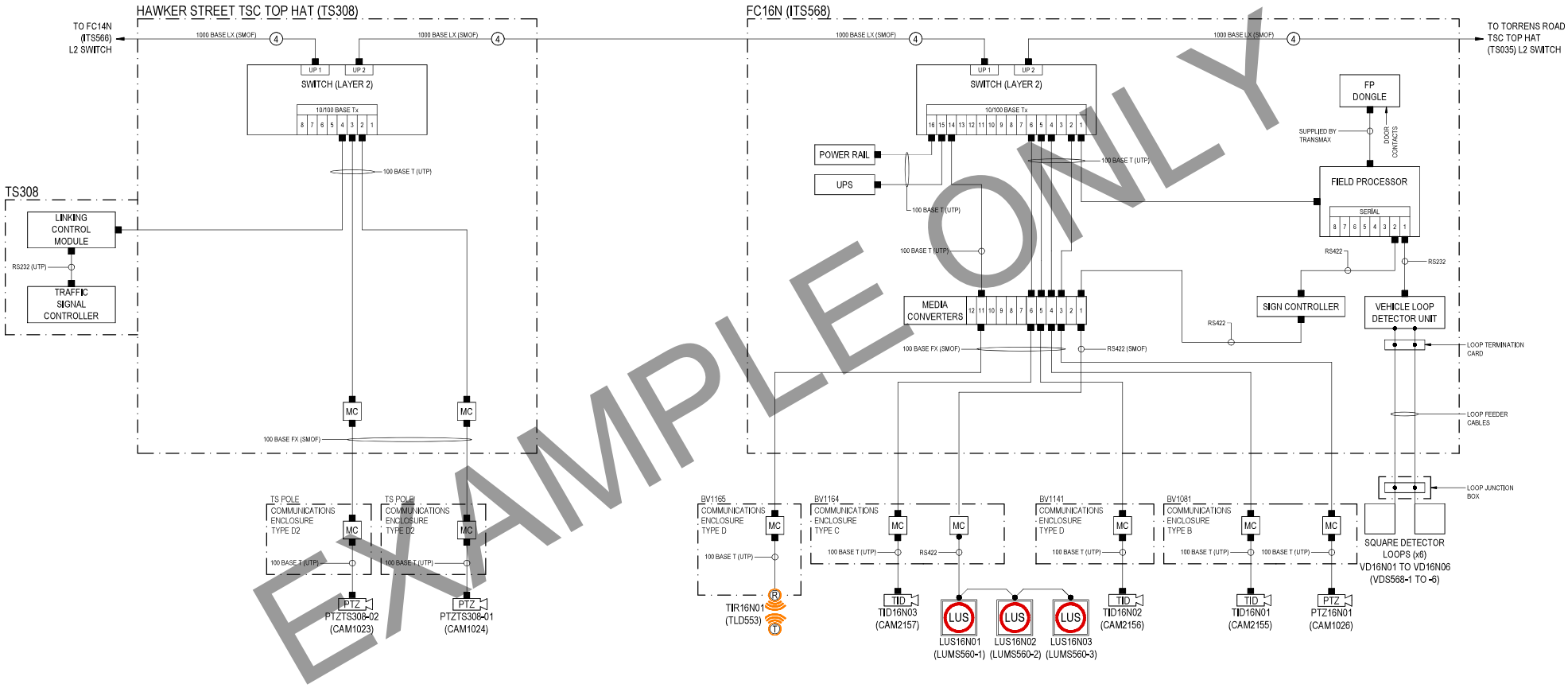

NOTES:

1. FOR NOTES AND LEGEND SEE SHEET 6504.
2. FOR ITS NETWORK TOPOLOGY SEE SHEET 6505.

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE

INDEX SHEET REFERENCE: 7350 SHEET 6501

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Government of South Australia
Department of Planning, Transport and Infrastructure

PROJECT No.: 14C022	FILE No.:
DESIGN No.: 201301224	SURVEY No.: 201301042
PROJECT START ROAD RUNNING DISTANCE:	MC50; CH 0948 = 9.38 km
PROJECT END ROAD RUNNING DISTANCE:	MC50; CH 4231 = 5.65 km
SCALES:	NOT TO SCALE

ROAD No. 06203
NORTH-SOUTH CORRIDOR
TORRENS ROAD TO RIVER TORRENS
TS308, FC16N (ITS568)
FIELD NETWORK EQUIPMENT OVERVIEW

DESIGNED:	DRAFTED:	ACCEPTED FOR USE:	ACCEPTANCE FORM KNET No.:	DRAWING No.:	SHEET No.:	AMEND No.
T2TA	T2TA	C.BOULDEN	9521845	7350	6518	0
CHECKED: T2TA	CHECKED: T2TA	TITLE: DESIGN MANAGER	IN ACCORDANCE WITH DP013	SHEET LATITUDE -34.899403	SHEET LONGITUDE 138.566942	
		DATE: 27.06.16				

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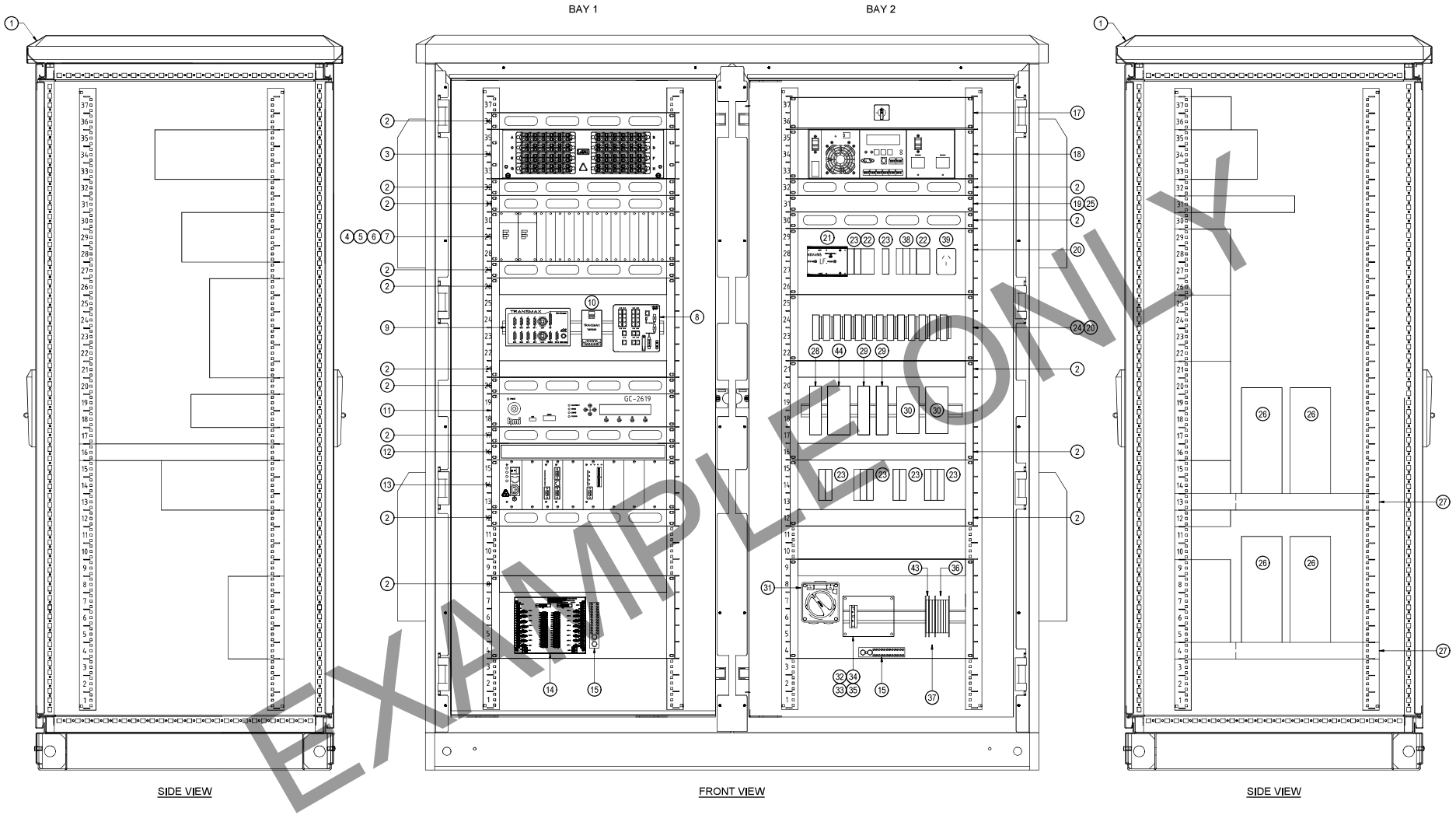

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE

INDEX SHEET REFERENCE: 7350 SHEET 6502

SAGE PRJ: 47890 | UNCONTROLLED WHEN PRINTED | 100 MILLIMETRES ON ORIGINAL DRAWING | DIMENSIONS IN MM UNLESS OTHERWISE SHOWN

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Department of Planning, Transport and Infrastructure

PROJECT No.: 14C022	FILE No.:
DESIGN No.: 201301224	SURVEY No.: 201301042
PROJECT START ROAD RUNNING DISTANCE:	MC50; CH 0948 = 9.38 km
PROJECT END ROAD RUNNING DISTANCE:	MC50; CH 4231 = 5.65 km
SCALES:	

ROAD No. 06203

NORTH-SOUTH CORRIDOR

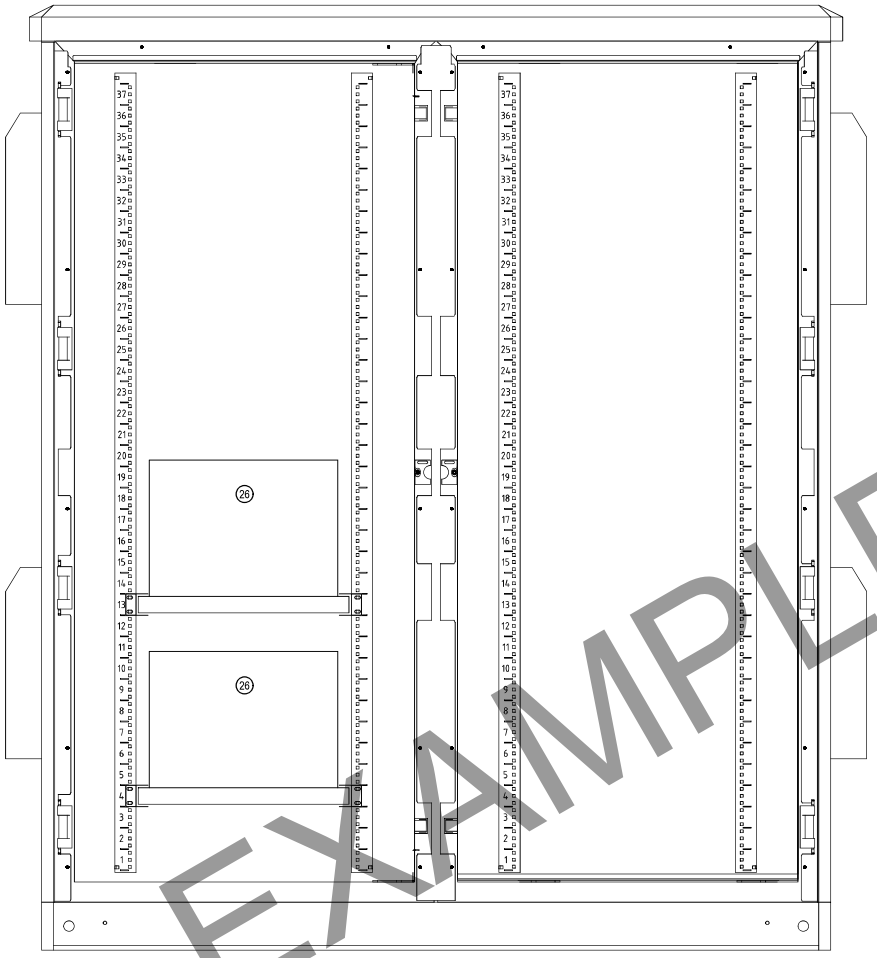
TORRENS ROAD TO RIVER TORRENS
ITS CABINET ITS568 (FC16N)
GENERAL ARRANGEMENT - FRONT AND SIDE

DESIGNED:	DRAFTED:	ACCEPTED FOR USE:	ACCEPTANCE FORM KNET No.:	DRAWING No.:	SHEET No.:	AMEND No.:
SAGE	DL	H. Carn	13716297	7512	568077	0
CHECKED: ES	CHECKED: ES	TITLE: DESIGN MANAGER	IN ACCORDANCE WITH DP013			
		DATE: 29.03.19				

SHEET LATITUDE -34.888554 SHEET LONGITUDE 138.569448

CAD FILE NAME 568077.DWG

BAY 2 BAY 1



REAR VIEW

EQUIPMENT LIST				
ITEM	DESCRIPTION	MANUFACTURER	PART NUMBER	QTY
1	ITS DOUBLE SKINNED CABINET (1800 x 800 x 1900)	RITTAL	TBC	WITH CABINET
2	19" RAIL MOUNT CABLE MANAGEMENT (1RU)	RITTAL	TBC	AS REQUIRED
3	60 PORT FIBRE OPTIC BREAKOUT TRAY	AFC	RF-4C1IGB3DL-A-Z	1
4	MEDIA CONVERTER CARD CHASSIS	OSD	OSD350	1
5	SINGLE VOLTAGE MEDIA CONVERTER PSU	OSD	OSD921	2
6	100BASET/FX MEDIA CONVERTER CARD	OSD	OSD2041	5
7	UNIVERSAL DATA TRANSCEIVER OSD	OSD	OSD136L	1
8	LAYER 2 SWITCH 16 PORT	CISCO	IE-2000-16TC-G-L	1
9	FIELD PROCESSOR	TRANSMAX	FP-IT-08	1
10	FIELD PROCESSOR SITE ID DONGLE	TRANSMAX	SUPPLIED WITH FP	1
11	LUMS CONTROLLER	HMI	GC-2610	1
12	TELESCOPIC SHELF	RITTAL	AU7144450	1
13	VEHICLE DETECTION UNIT	EXCEL	XL1000	1
14	LOOP TERMINATION CARD (16 LOOPS)	EXCEL	UDCLIF/BC	1
15	COPPER EARTH BLOCK	TBC	TBC	2
16	LUMS SURGE PROTECTION (RS422)	WEIDMULLER	8924670000 / 8924270000	0
17	UPS BYPASS SWITCH	ALPHA POWER	MBPSR-16	1
18	UPS	ALPHA NOVUS	FXM2000	1
19	19" 1RU RARITAN POWER RAIL	RARITAN	PX2-5260A4R	1
20	LOAD CENTRE ENCLOSURE	RITTAL	VARIOUS	AS REQUIRED
21	240V AC SURGE FILTER 100kA	NOVARIS	SFD1-32-100	1
22	RESIDUAL CURRENT DEVICE	NHP	VARIOUS	AS REQUIRED
23	CIRCUIT BREAKERS	NHP	VARIOUS	AS REQUIRED
24	RARITAN DISTRIBUTION MCBS	NHP	VARIOUS	AS REQUIRED
25	RARITAN SECURELOCK OUTLETS FOR RARITAN OUTLETS-1RU	RARITAN	RC-39-SN-100	12
26	BATTERY	ALPHA	APFT-12-110-GXD	4
27	BATTERY SHELF (REAR SHELF)	RITTAL	CUSTOM	2
28	12VDC POWER SUPPLY UNIT FOR TIRTL	WEIDMULLER	1478220000	1
29	24VDC POWER SUPPLY UNIT FOR LAYER 2 SWITCH	WEIDMULLER	1478100000	2
30	48VDC PSU FOR PTZ AND TIDS	WEIDMULLER	1469560000	2
31	SINGLE POLE ISOLATOR (63A)	CLIPSAL	56SW163	1
32	TERMINAL IDENTIFIER	WEIDMULLER	1640740000	TBC
33	TERMINAL RAIL END STOP	WEIDMULLER	1061200000	TBC
34	TERMINAL BLOCK (2.5 - 35)	WEIDMULLER	1020500000	TBC
35	PERSPEX COVER WITH STANDOFFS	TBC BY CABINET SUPPLIER	TBC	1
36	48VDC POWER SURGE SUPPRESSION (BOTTOM OF ITS CABINET)	WEIDMULLER	1064570000	5
37	TIRTL POWER SURGE SUPPRESSION (BOTTOM OF ITS CABINET)	WEIDMULLER	1064530000	2
38	LUMS POWER SURGE SUPPRESSION	WEIDMULLER	1351650000	3
39	DIN RAIL GPO	CLIPSAL	TBC	1
40	L3 SWITCH	CISCO	ME-3400EG-12CS-M	0
41	L3 SWITCH PSU-48VDC	WEIDMULLER	1469560000	0
42	VMS CONTROL EQUIPMENT	RMS	TBC	0
43	24VDC SURGE PROTECTOR FOR RS422 MEDIA CONVERTER	WEIDMULLER	1064540000	1
44	24VDC POWER SUPPLY FOR FIELD PROCESSOR / LIGHTS	WEIDMULLER	1478130000	1
45	PoE INJECTOR	OSD	OSD2971/DC	0
46	CAT6 SURGE PROTECTOR	WEIDMULLER	1348590000	0
47	BLUETOOTH CAPTURE STATION	DPTI	TBC	0
48	BLUETOOTH ANTENNA	TBC	TBC	0

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE

INDEX SHEET REFERENCE: 7350 SHEET 6502

SAGE PRJ: 47890 | UNCONTROLLED WHEN PRINTED | 100 MILLIMETRES ON ORIGINAL DRAWING | DIMENSIONS IN MM UNLESS OTHERWISE SHOWN

Government of South Australia
Department of Planning, Transport and Infrastructure

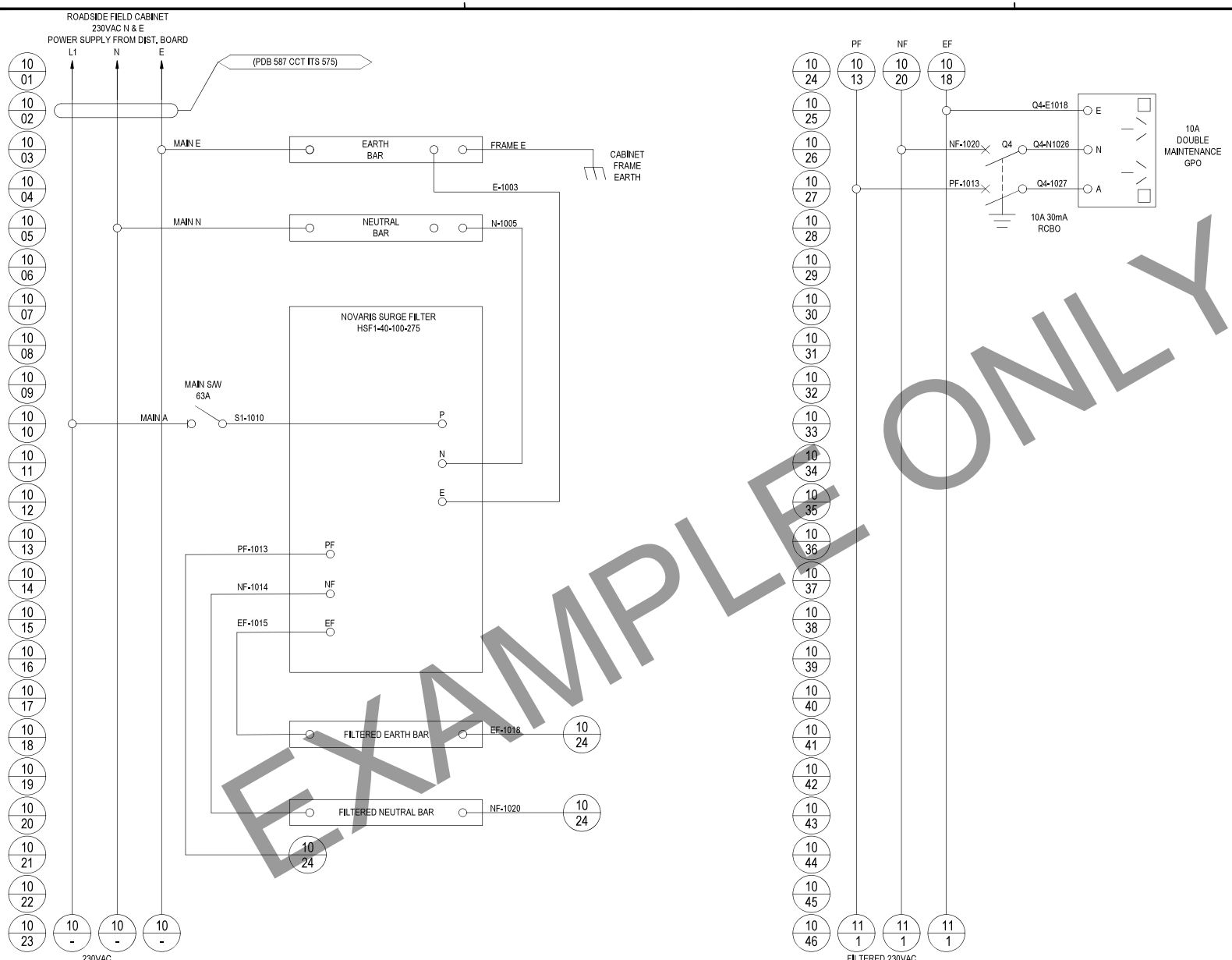
PROJECT No.: 14C022 | FILE No.:
DESIGN No.: 201301224 | SURVEY No: 201301042
PROJECT START ROAD RUNNING DISTANCE: MC50; CH 0948 = 9.38 km
PROJECT END ROAD RUNNING DISTANCE: MC50; CH 4231 = 5.65 km
SCALES:

ROAD No. 06203
NORTH-SOUTH CORRIDOR
TORRENS ROAD TO RIVER TORRENS
ITS CABINET ITS568 (FC16N)
GENERAL ARRANGEMENT - REAR

DESIGNED:	DRAFTED:	ACCEPTED FOR USE:	ACCEPTANCE FORM KNET No.:	DRAWING No.:	SHEET No.:	AMEND No.:
SAGE	DL	H. Carn	13716297	7512	568078	0
CHECKED: ES	CHECKED: ES	TITLE: DESIGN MANAGER DATE: 29.03.19	IN ACCORDANCE WITH DP013	SHEET LATITUDE -34,888554 SHEET LONGITUDE 138,569448		

CAD FILE NAME 568078DWG

Ref No.10



PROJECT DOCUMENT REFERENCE
VS-R2P-10320-DRG-1300-40-0054

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE

INDEX SHEET REFERENCE: 1300 SHEET 0045

DESIGNED
QUALIFICATION DATE:
REVIEWER
QUALIFICATION DATE:
INDEPENDENT DESIGN CERTIFIER (IF REQUIRED)
QUALIFICATION DATE:

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Government of South Australia
Department of Planning, Transport and Infrastructure

PROJECT No.: -
FILE No.:
DESIGN No.:
SURVEY No:
PROJECT START ROAD RUNNING DISTANCE: MC10; CH 2590 =3.16Km
PROJECT END ROAD RUNNING DISTANCE: MC10; CH000 = 5.75 Km
SCALES:

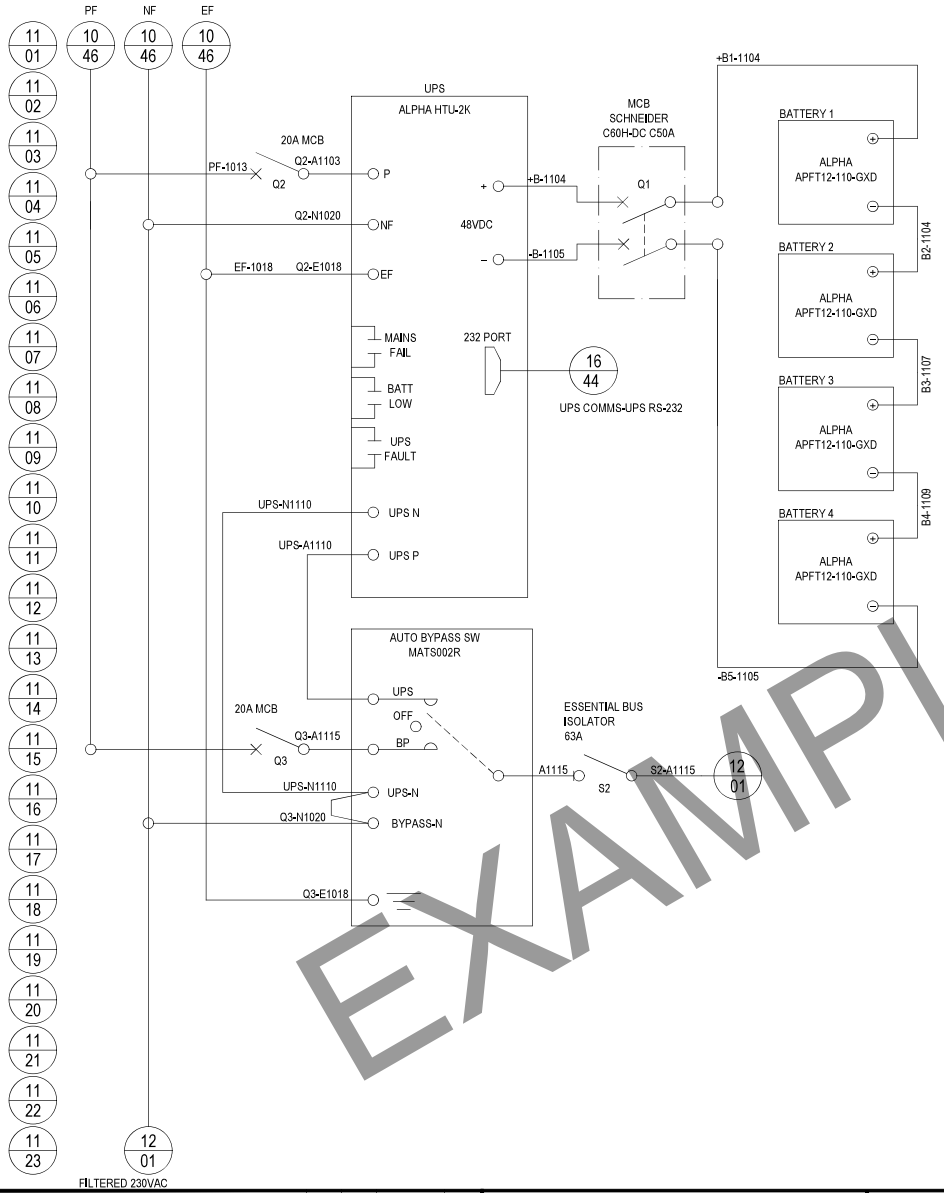
ROAD No. 6203
NORTH-SOUTH MOTORWAY
REGENCY ROAD TO PYM STREET
FCS08 / ITS 575 CABINET
230V AC POWER DISTRIBUTION

SIGNAL No.: ITS575

DESIGNED	DRAFTED	ACCEPTED FOR USE:	ACCEPTANCE FORM KNET No.:	DRAWING No.:	SHEET No.:	AMEND No.:
VPL	VPL	TITLE: DATE:	IN ACCORDANCE WITH DP013	1300	0054	1

SHEET LATITUDE | SHEET LONGITUDE

CAD FILE NAME: VS-R2P-10320-DRG-1300-40-0054.DWG



PROJECT DOCUMENT REFERENCE
VS-R2P-10320-DWG-1300-40-0055

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE

INDEX SHEET REFERENCE: 1300 SHEET 0045

DESIGNED
QUALIFICATION DATE:
REVIEWER
QUALIFICATION DATE:
INDEPENDENT DESIGN CERTIFIER (IF REQUIRED)
QUALIFICATION DATE:

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Government of South Australia
Department of Planning, Transport and Infrastructure

PROJECT No.: -
FILE No.:
DESIGN No.:
SURVEY No:
PROJECT START ROAD RUNNING DISTANCE: MC10; CH 2590 =3.16Km
PROJECT END ROAD RUNNING DISTANCE: MC10; CH000 = 5.75 Km
SCALES:

ROAD No. 6203
NORTH-SOUTH MOTORWAY
REGENCY ROAD TO PYM STREET
FCS08 / ITS575 CABINET
UPS AND BATTERIES CONNECTIONS

SIGNAL No.: ITS 575

DESIGNED	DRAFTED	ACCEPTED FOR USE:	ACCEPTANCE FORM KNET No.:	DRAWING No.:	SHEET No.:	AMEND No.:
VPL	VPL	TITLE: DATE:	IN ACCORDANCE WITH DP013	1300	0055	1

SHEET LATITUDE | SHEET LONGITUDE

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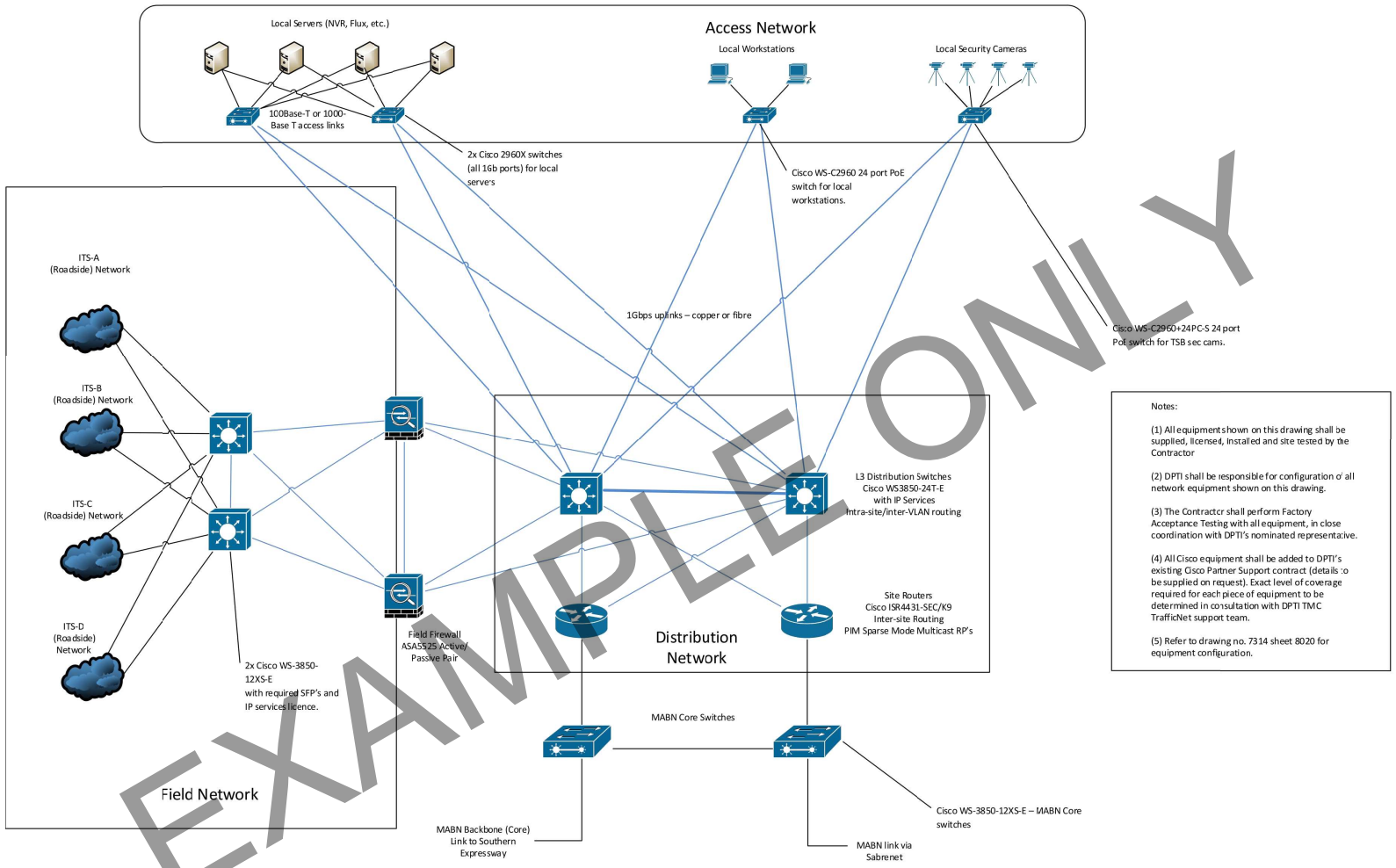

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE

INDEX SHEET REFERENCE: 7314 SHEET 8001

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Government of South Australia
Department of Planning, Transport and Infrastructure

PROJECT No.: 19129	FILE No.: 2015/01238
DESIGN No.: 201500407	SURVEY No.: 201401232
PROJECT START ROAD RUNNING DISTANCE: MC00; CH 0 = 0.00	
PROJECT END ROAD RUNNING DISTANCE: MC00; CH 2740 = 2.74	
SCALES:	

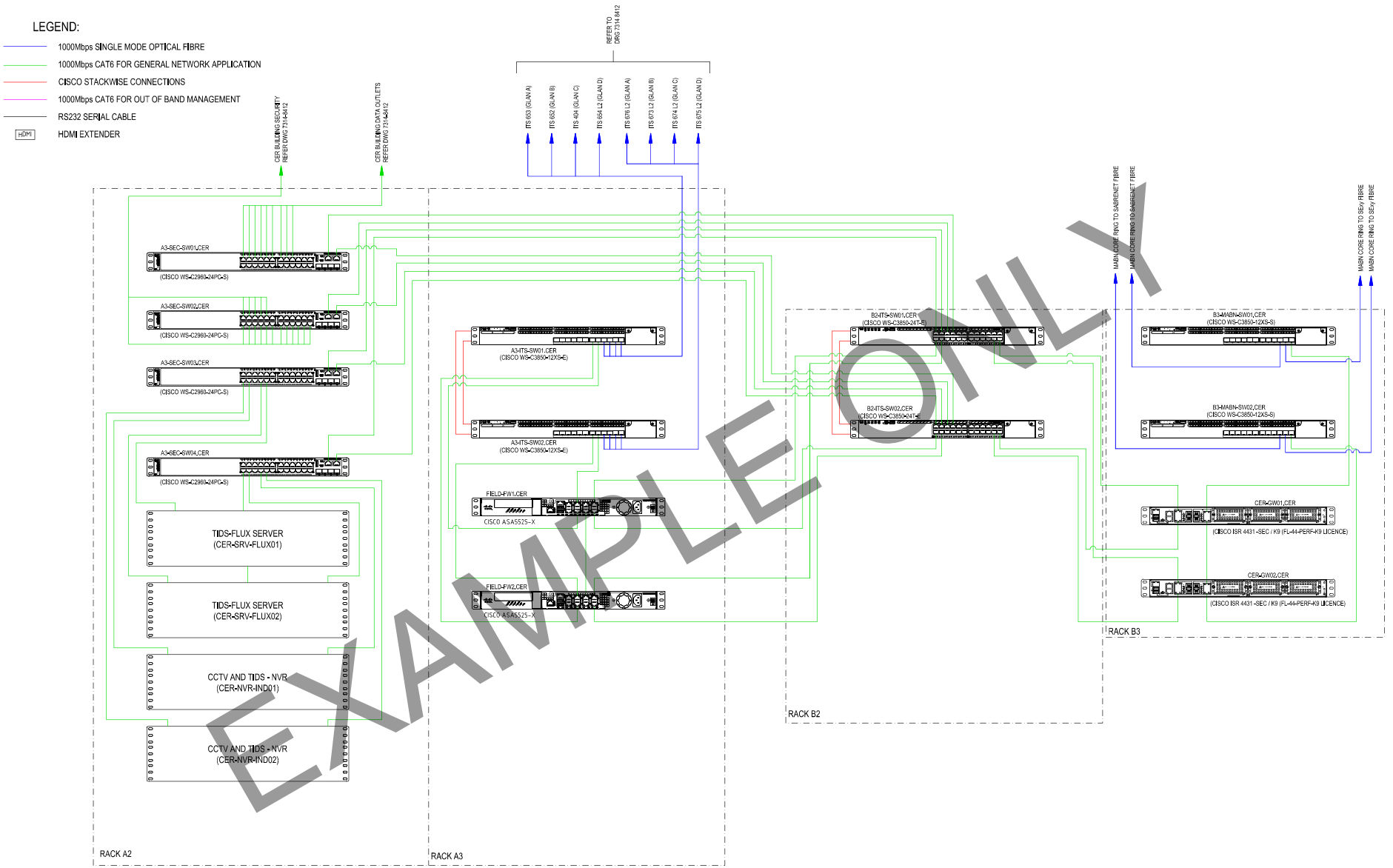
DESIGNED: GSDJV	DRAFTED: GSDJV	ACCEPTED FOR USE: H. CARN	ACCEPTANCE FORM KNET No.: 9002147	DRAWING No.: 7314
CHECKED: GSDJV	CHECKED: GSDJV	TITLE: PROJECT DIRECTOR	IN ACCORDANCE WITH DP013	SHEET No.: 8011
		DATE:		AMEND No.: 0

ROAD No. 6780
SOUTHERN EXPRESSWAY
ST MARYS TO DARLINGTON
NETWORK ARCHITECTURE DIAGRAM
INTELLIGENT TRANSPORT SYSTEMS

SHEET LATITUDE -35.01576 SHEET LONGITUDE 138.57063

PLOTTED: Sunday, 24 September 2017 9:09:52 PM

CAD FILE NAME: GSDJV-DOT-S-DRG-7314-12-8010.DWG



No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE

INDEX SHEET REFERENCE: 7314 SHEET 8001

UNCONTROLLED COPY WHEN PRINTED ◄ 100 MILLIMETRES ON ORIGINAL DRAWING ► ALL DIMENSIONS ARE IN METRES UNLESS SHOWN OTHERWISE

Government of South Australia
Department of Planning, Transport and Infrastructure

PROJECT No.: 19129	FILE No.: 2015/01238
DESIGN No.: 201500407	SURVEY No.: 201401232
PROJECT START ROAD RUNNING DISTANCE: MC00; CH 0 = 0.00	
PROJECT END ROAD RUNNING DISTANCE: MC00; CH 2740 = 2.74	
SCALES:	

ROAD No. 6780
SOUTHERN EXPRESSWAY
ST MARYS TO DARLINGTON
ITS - NETWORK ARCHITECTURE DIAGRAM - CER
ITS - COMPUTER EQUIPMENT ROOM

DESIGNED: GSDJV	DRAFTED: GSDJV	ACCEPTED FOR USE: H. CARN	ACCEPTANCE FORM KNET No.: 9002147	DRAWING No.: 7314	SHEET No.: 8020	AMEND No.: 0
CHECKED: GSDJV	CHECKED: GSDJV	TITLE: PROJECT DIRECTOR DATE:	IN ACCORDANCE WITH DP013	SHEET LATITUDE -35.02265	SHEET LONGITUDE 138.56422	

PLOTTED: Sunday, 24 September 2017 9:09:59 PM

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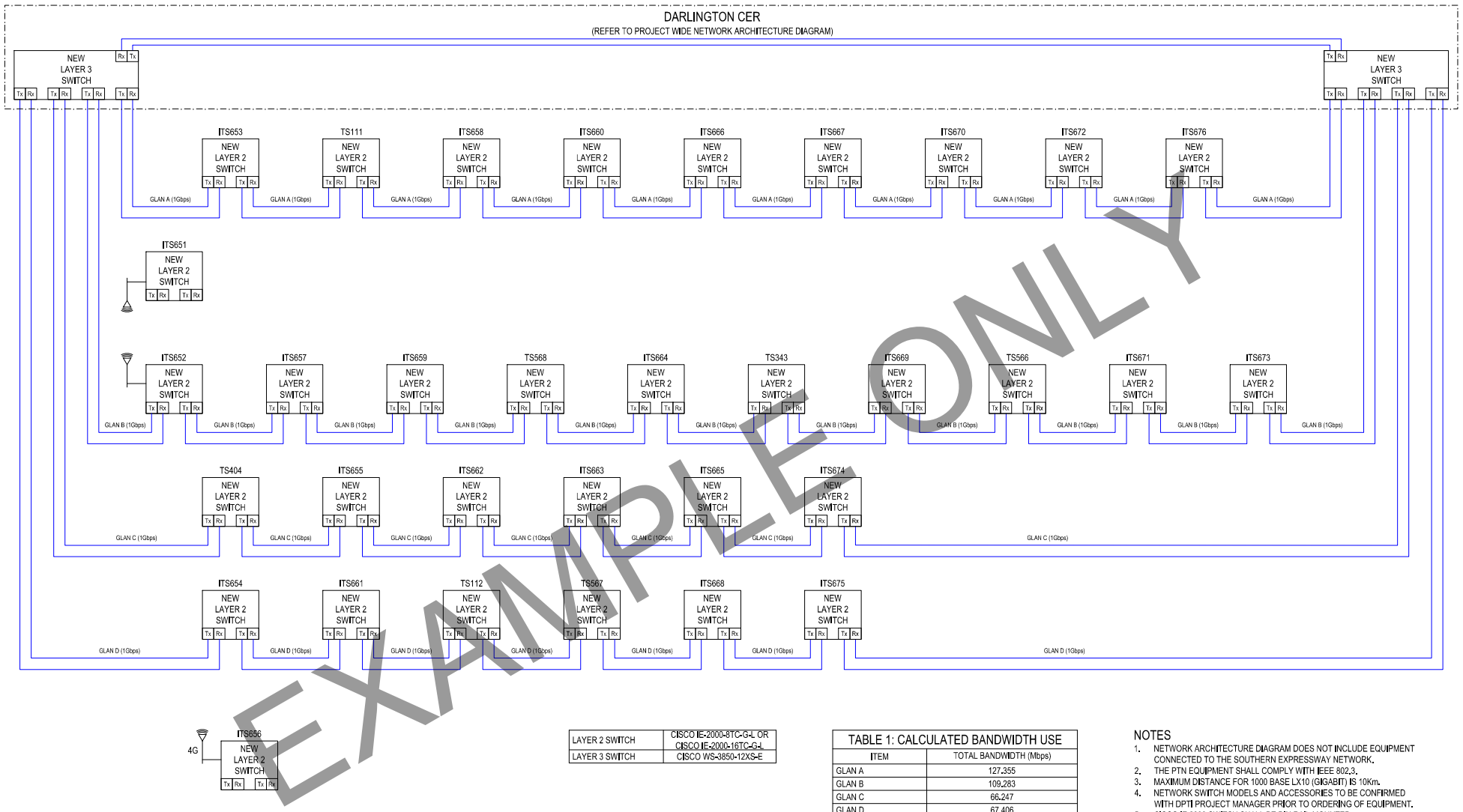


LAYER 2 SWITCH	CISCO IE-2000-8TC-G-L OR CISCO IE-2000-16TC-G-L
LAYER 3 SWITCH	CISCO WS-3850-12XS-E

TABLE 1: CALCULATED BANDWIDTH USE

ITEM	TOTAL BANDWIDTH (Mbps)
GLAN A	127.355
GLAN B	109.283
GLAN C	66.247
GLAN D	67.406
TOTAL (NOTE 1)	370.291

NOTES

1. NETWORK ARCHITECTURE DIAGRAM DOES NOT INCLUDE EQUIPMENT CONNECTED TO THE SOUTHERN EXPRESSWAY NETWORK.
2. THE PTN EQUIPMENT SHALL COMPLY WITH IEEE 802.3.
3. MAXIMUM DISTANCE FOR 1000 BASE LX10 (GIGABIT) IS 10Km.
4. NETWORK SWITCH MODELS AND ACCESSORIES TO BE CONFIRMED WITH DPTI PROJECT MANAGER PRIOR TO ORDERING OF EQUIPMENT.
5. CISCO IE 2000 SWITCH SHALL BE DIN RAIL MOUNTED.

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE

INDEX SHEET REFERENCE: 7314 SHEET 8001

UNCONTROLLED COPY WHEN PRINTED ◄ 100 MILLIMETRES ON ORIGINAL DRAWING ► ALL DIMENSIONS ARE IN METRES UNLESS SHOWN OTHERWISE

Government of South Australia
Department of Planning, Transport and Infrastructure

PROJECT No.: 19129	FILE No.: 2015/01238
DESIGN No.: 201500407	SURVEY No.: 201401232
PROJECT START ROAD RUNNING DISTANCE: MC00; CH 0 = 0.00	
PROJECT END ROAD RUNNING DISTANCE: MC00; CH 2740 = 2.74	
SCALES:	

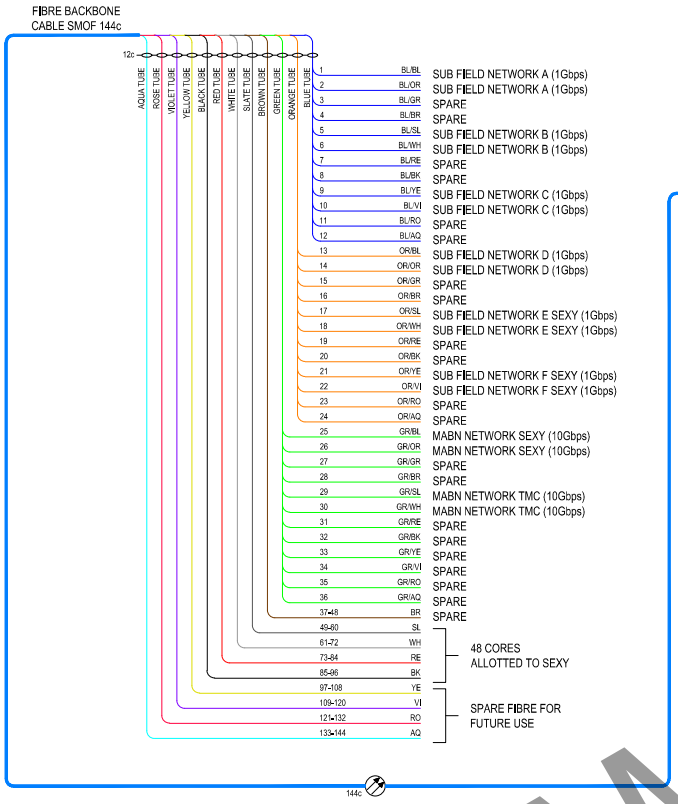
DESIGNED: GSDJV	DRAFTED: GSDJV	ACCEPTED FOR USE: H. CARN	ACCEPTANCE FORM KNET No.: 9002147	DRAWING No.: 7314
CHECKED: GSDJV	CHECKED: GSDJV	TITLE: PROJECT DIRECTOR	IN ACCORDANCE WITH DP013	SHEET No.: 8021
		DATE:		AMEND No.: 0

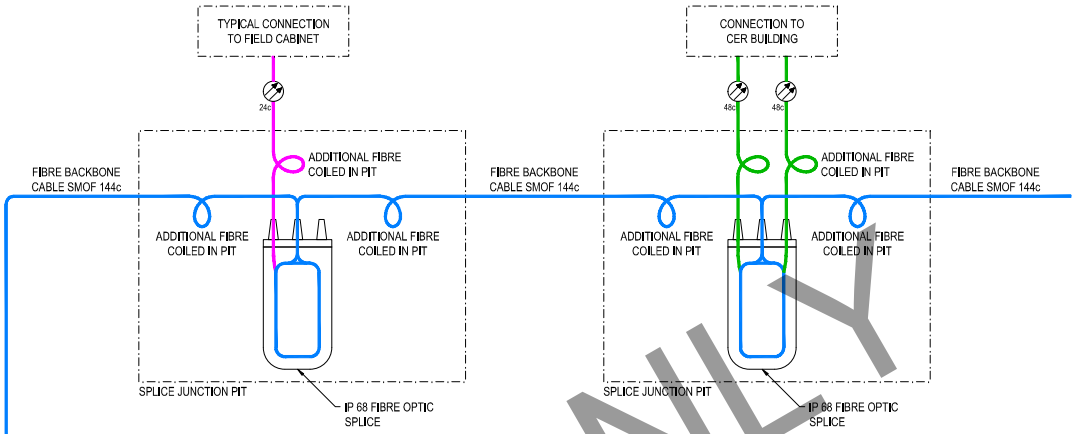
ROAD No. 6780
SOUTHERN EXPRESSWAY
ST MARYS TO DARLINGTON
NETWORK ARCHITECTURE DIAGRAM - ROADSIDE
INTELLIGENT TRANSPORT SYSTEMS

SHEET LATITUDE -35.01576 SHEET LONGITUDE 138.57063

PLOTTED: Sunday, 24 September 2017 9:19:09 PM

CAD FILE NAME: GSDJV-001-E-DRG-7314-12-8021.DWG





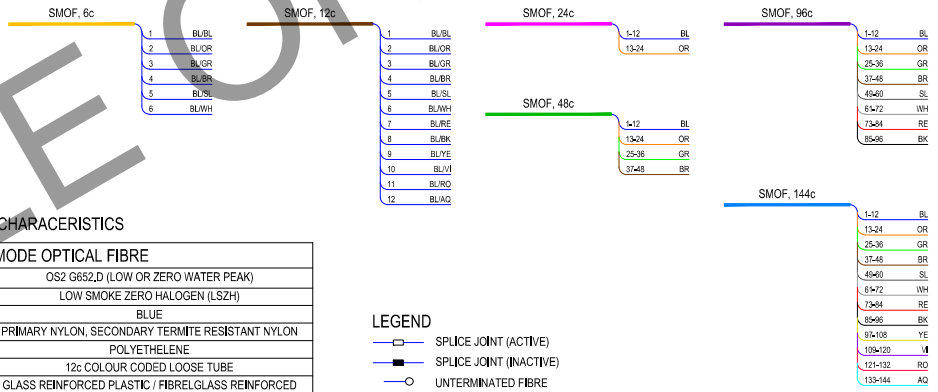


TABLE 1 - MINIMUM REQUIREMENTS

FIBRE OPTIC SUB UNIT COLOUR CODE TABLE		
FIBRE / TUBE No.	COLOUR	ABBREVIATION
1	BLUE	BL
2	ORANGE	OR
3	GREEN	GR
4	BROWN	BR
5	SLATE	SL
6	WHITE	WH
7	RED	RE
8	BLACK	BK
9	YELLOW	YE
10	VIOLET	VI
11	ROSE	RO
12	AQUA	AQ

TABLE 2 - FOC CONSTRUCTION CHARACERISTICS

SINGLE MODE OPTICAL FIBRE	
SMOF	OS2 G652.D (LOW OR ZERO WATER PEAK)
OUTER JACKET MATERIAL	LOW SMOKE ZERO HALOGEN (LSZH)
OUTER JACKET COLOUR	BLUE
NYLON SHEATHS	PRIMARY NYLON, SECONDARY TERMITE RESISTANT NYLON
SECONDARY INNER SHEATH	POLYETHELENE
BUFFER TUBE	12c COLOUR CODED LOOSE TUBE
STRENGTH MEMBER	GLASS REINFORCED PLASTIC / FIBRELGLASS REINFORCED PLASTIC (GRP/FRP)
MAXIMUM ATTENUATION	0.35dB/km AT 1310nm
	0.21dB/km AT 1550nm
CHROMATIC DISPERSION COEFFICIENT	≤ 3.5ps/nm /km AT 1310nm ≤ 19ps/nm /km AT 1550nm
MODE FIELD DIAMETER (MFD)	9.2 ± 0.4 MICRONS AT 1310nm 10.4 ± 0.5 MICRONS AT 1550nm
WATER BLOCKING (WITH TUBES)	THIXOTROPIC GEL
WATER BLOCKING (WITHIN CABLE)	DRY BLOCK OR THIXOTROPIC GEL
RATED TENSILE STRENGTH	1.5kN (MINIMUM)
MAXIMUM CRUSH RESISTANCE	2.0kN/100nm (MINIMUM)
CLADDING NON-CIRCULARITY	≤ 2.0%
OPERATING TEMPERATURE	-10°C TO +70°C
MINIMUM BEND RADIUS	15 x CABLE DIA (NO LOAD) 30 x CABLE DI (UNDER LOAD)

LEGEND

- SPLICE JOINT (ACTIVE)
- SPLICE JOINT (INACTIVE)
- UNTERMINATED FIBRE

NOTES

1. FIBRE OPTIC CABLE SHALL HAVE THE CHARACTERISTICS OF TABLE 2.
2. BACKBONE FIBRE OPTIC CABLE TO BE A MINIMUM OF 144c.
3. FIBRE / TUBE COLOUR CODING TO COMPLY WITH TIA/EIA-598, TABLE 1.
4. IP RATED SPLICE SHALL MEET THE FOLLOWING REQUIREMENTS:
   - IP RATING - IP68
   - NEMA RATING - 6P
   - PERFORMANCE TIA 568 - C.3
   - MINIMUM OF FOUR SEPARATE SPLICE TRAYS
   - EACH SPLICE TRAY MINIMUM CAPACITY FOR 24 SPLICES
6. NO SECTION OF THE FIBRE CORES SHALL BE EXPOSED OUTSIDE OF THE SEALED SPLICE.
7. ANY EXPOSED, UNUSED OR UNTERMINATED FIBRE OPTIC CABLES SHALL BE SEALED AS A SECONDARY PROTECTION AGAINST POSSIBLE INGRESS OF MOISTURE AND OTHER FOREIGN MATERIAL.
8. SPLICE ENCLOSURES TO BE ATTACHED AS HIGH AS POSSIBLE TO THE PIT WALLS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS TO MINIMISE LONG-TERM IMMERSION IN WATER.
9. FOR NETWORK ARCHITECTURE DIAGRAM, REFER TO SERIES NUMBER GSDJV-0021-0-DRG-7314-12-8021.

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE

INDEX SHEET REFERENCE: 7314 SHEET 8001

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Government of South Australia
epartment of Planning, nsport and Infrastructure

PROJECT No.: 19129	FILE No.: 2015/01238
DESIGN No.: 201500407	SURVEY No.: 201401232
PROJECT START ROAD RUNNING DISTANCE: MC00; CH 0 = 0.00	
PROJECT END ROAD RUNNING DISTANCE: MC00; CH 2740 = 2.74	
SCALES:	

DESIGNED: GSDJV	DRAFTED: GSDJV	ACCEPTED FOR USE: H. CARN	ACCEPTANCE FORM KNET No.: 9002147	DRAWING No.: 7314	SHEET No.: 8040	AMEND No.: 0
CHECKED: GSDJV	CHECKED: GSDJV	TITLE: PROJECT DIRECTOR	IN ACCORDANCE WITH DP013	SHEET LATITUDE -35.01576	SHEET LONGITUDE 138.57063	
		DATE:				

ROAD No. 6780
SOUTHERN EXPRESSWAY
ST MARYS TO DARLINGTON
FIBRE OPTIC BACKBONE DETAILS
INTELLIGENT TRANSPORT SYSTEMS

PLOTTED: Sunday, 24 September 2017 9:16:56 PM

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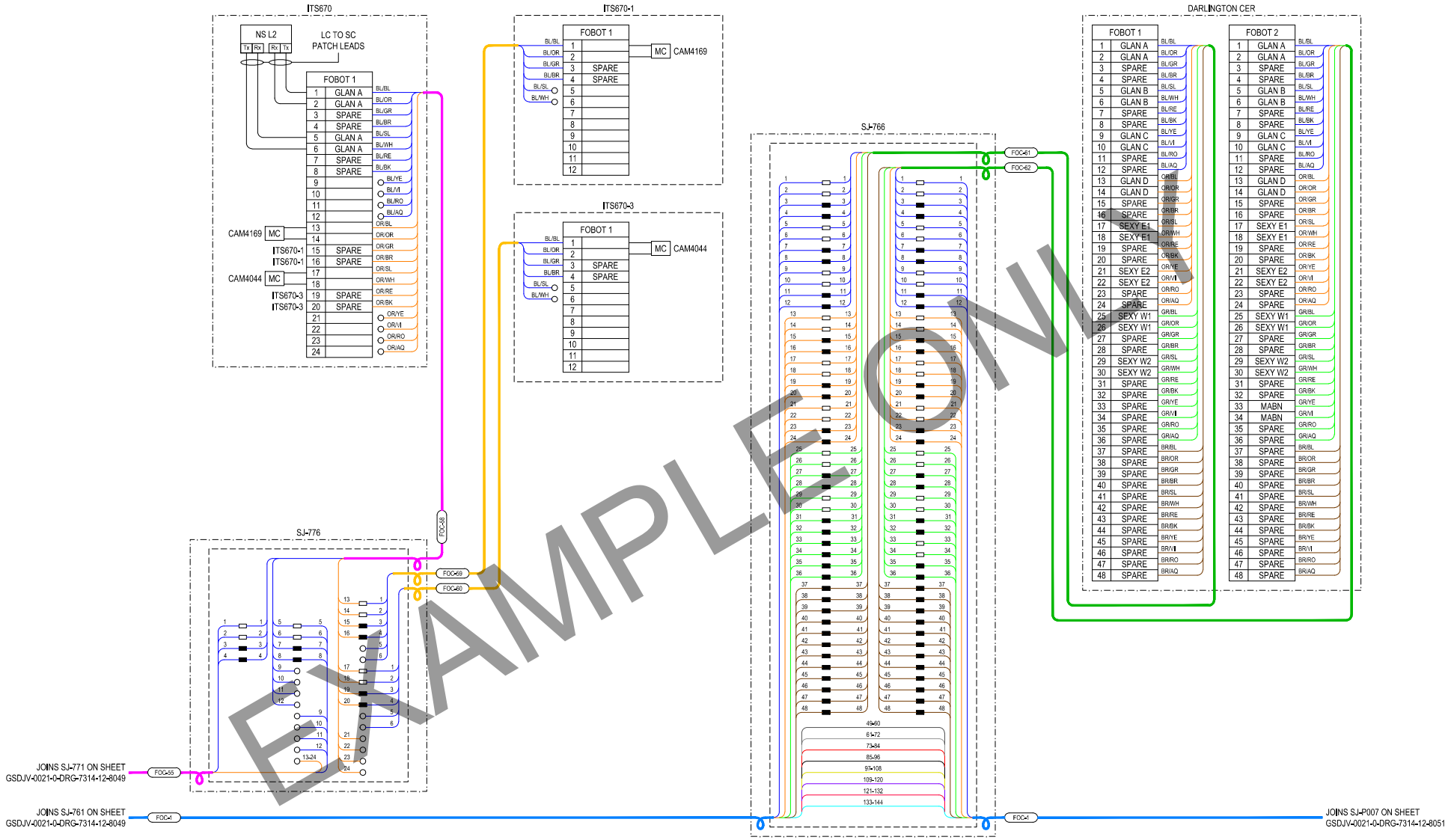

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE

INDEX SHEET REFERENCE: 7314 SHEET 8001

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Government of South Australia
Department of Planning, Transport and Infrastructure

PROJECT No.: 19129	FILE No.: 2015/01238
DESIGN No.: 201500407	SURVEY No.: 201401232
PROJECT START ROAD RUNNING DISTANCE: MC00; CH 0 = 0.00	
PROJECT END ROAD RUNNING DISTANCE: MC00; CH 2740 = 2.74	
SCALES:	

ROAD No. 6780
SOUTHERN EXPRESSWAY
ST MARYS TO DARLINGTON
FOC TERMINATION SCHEMATIC - SHEET 10
INTELLIGENT TRANSPORT SYSTEMS

DESIGNED: GSDJV	DRAFTED: GSDJV	ACCEPTED FOR USE: H. CARN	ACCEPTANCE FORM KNET No.: 9002147	DRAWING No.: 7314	SHEET No.: 8050	AMEND No.: 0
CHECKED: GSDJV	CHECKED: GSDJV	TITLE: PROJECT DIRECTOR	IN ACCORDANCE WITH DP013	SHEET LATITUDE -35.01576	SHEET LONGITUDE 138.57063	
		DATE:				

PLOTTED: Sunday, 24 September 2017 9:16:42 PM

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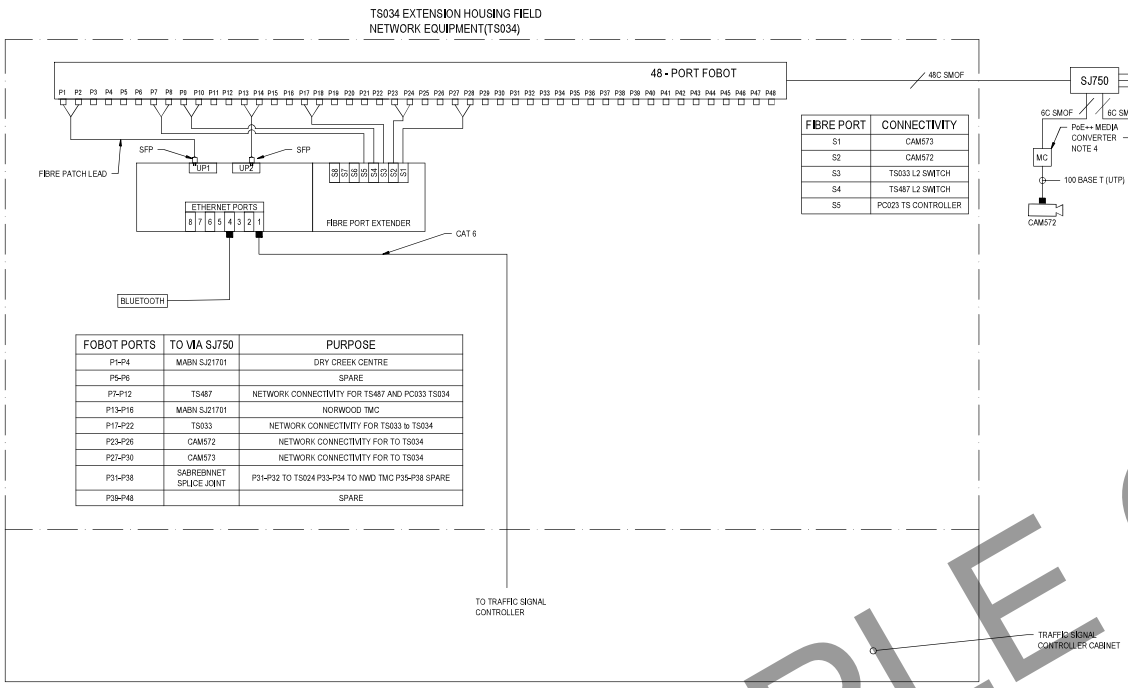
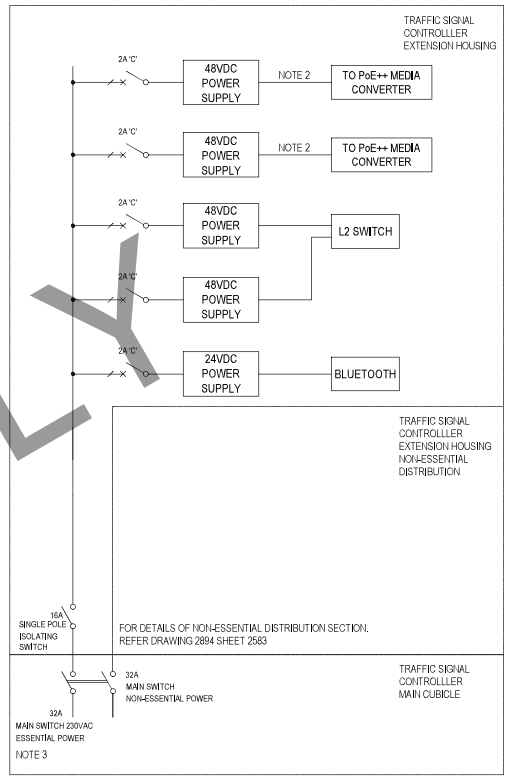


FIBRE PORT	CONNECTIVITY
S1	CAM573
S2	CAM572
S3	TS033 L2 SWITCH
S4	TS487 L2 SWITCH
S5	PC023 TS CONTROLLER

FOBOT PORTS	TO VIA SJ750	PURPOSE
P1–P4	MABN SJ21701	DRY CREEK CENTRE
P5–P6		SPARE
P7–P12	TS487	NETWORK CONNECTIVITY FOR TS487 AND PC033 TS034
P13–P16	MABN SJ21701	NORWOOD TMC
P17–P22	TS033	NETWORK CONNECTIVITY FOR TS033 to TS034
P23–P26	CAM572	NETWORK CONNECTIVITY FOR TO TS034
P27–P30	CAM573	NETWORK CONNECTIVITY FOR TO TS034
P31–P38	SABREBNNET SPLICE JOINT	P31–P32 TO TS024 P33–P34 TO NWD TMC P35–P38 SPARE
P39–P48		SPARE

FIELD NETWORK EQUIPMENT CONNECTION DIAGRAM



TRAFFIC SIGNAL EXTENSION HOUSING SINGLE LINE DIAGRAM

LEGEND

SINGLE POLE ISOLATING SWITCH

CIRCUIT BREAKER

DOUBLE POLE ISOLAING SWITCH

NOTES:

1. FOBOT PORTS SHOULD MAKE PROVISION FOR ANGLED CONNECTORS FOR PATCH LEADS.
2. POWER SUPPLY TO THE LAYER 2 SWITCH SHALL BE ADJUSTED TO ABOVE 54VDC AND LESS THAN 55VDC.
3. SUPPLY ESSENTIAL DISTRIBUTION FROM ESSENTIAL POWER (UPS BACKED) WITHIN THE TRAFFIC SIGNAL CONTROLLER MAIN CUBICLE USING MINIMUM 4MM² CONDUCTORS.
4. PoE++ MEDIA CONVERTER MUST BE HOUSED IN THE TRAFFIC SIGNAL POLE ON WHICH THE CAMERA IS INSTALLED.

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE

INDEX SHEET REFERENCE: 2894 SHEET 7001

DESIGNED
QUALIFICATION DATE:
REVIEWER
QUALIFICATION DATE:
INDEPENDENT DESIGN CERTIFIER (IF REQUIRED)
QUALIFICATION DATE:

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Government of South Australia
Department for Infrastructure and Transport

PROJECT No.:	FILE No.:
277580-00	2020/06933/01
DESIGN No.:	SURVEY No: 202000432
PROJECT START ROAD RUNNING DISTANCE: MC10, CH 0 = 7.03 km	
PROJECT END ROAD RUNNING DISTANCE: MC10, CH 964 = 7.97 km	
SCALES: NOT TO SCALE	

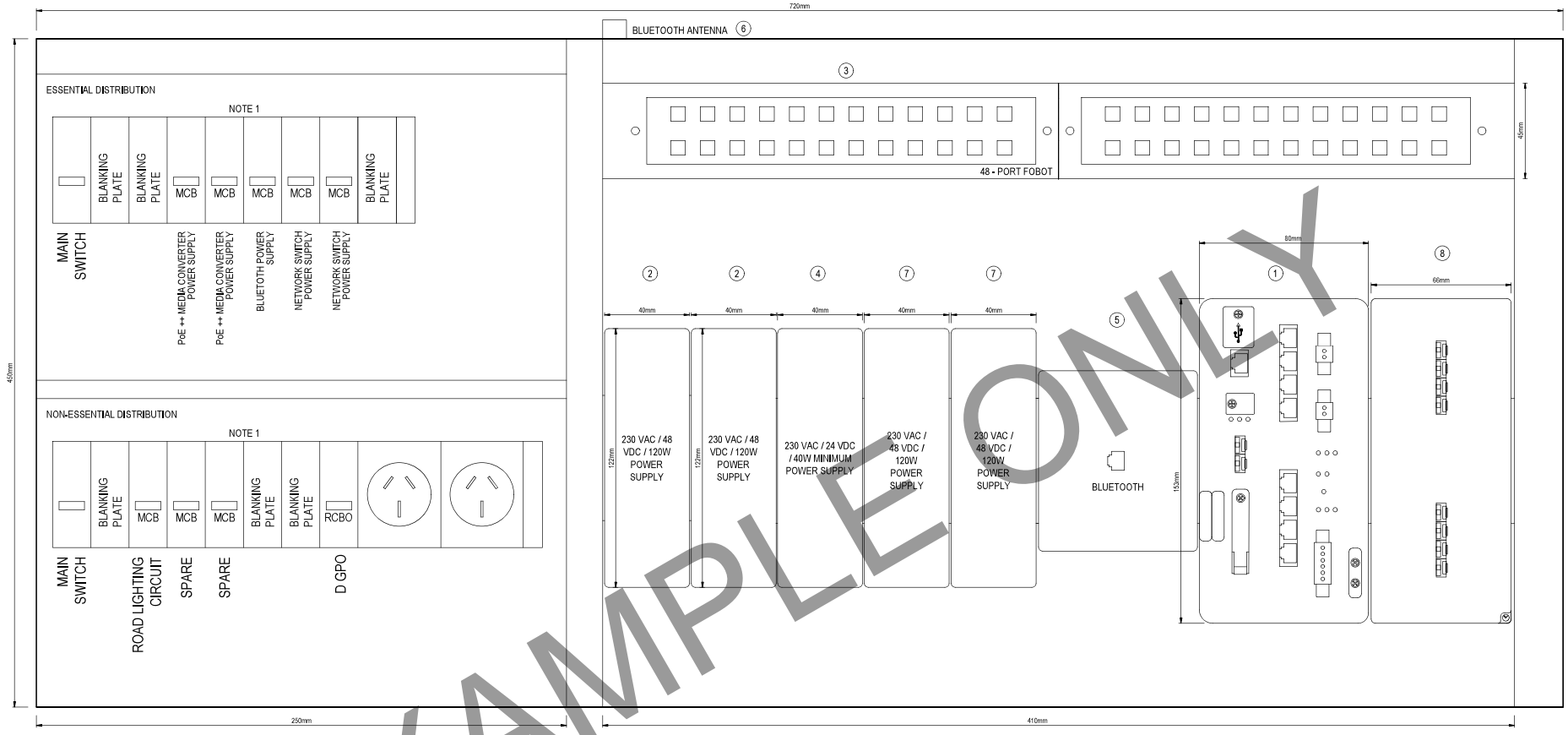
DESIGNED:	DRAFTED:	ACCEPTED FOR USE:	ACCEPTANCE FORM KNET No.:	DRAWING No.:	SHEET No.:	AMEND No.:
PTPA	PTPA	TITLE: DATE:	IN ACCORDANCE WITH DPD13	2894	7073	0

ROAD No. 5639

TORRENS ROAD

TS034 TORRENS ROAD & CHURCHILL ROAD EXTENSION HOUSING FIELD NETWORK EQUIPMENT CONNECTION DIAGRAM AND SINGLE LINE DIAGRAM

SHEET LATITUDE -34.89706 SHEET LONGITUDE 138.58497



EXTENSION HOUSING CABINET LAYOUT

EQUIPMENT SCHEDULE		
DESCRIPTION	ITEM NUMBER	QUANTITY
MEANWELL NDR120-48	2	2
INDUSTRIAL ETHERNET SWITCH (NON POE) (CISCO IE3200-8T2S-E)	1	1
ETHERNET SURGE PROTECTOR	NOT SHOWN TO BE INSTALLED IN TS CABINET	2
SFP SINGLE MODE DUPLEX	NOT SHOWN	7
SFP SINGLE MODE DUPLEX MIN 20KM (2 IN LAYER2 SWITCH IN THIS CABINET AND 1 AT DRY CREEK TMC AND 1 AT NORWOOD TMC)	NOT SHOWN	4
48-PORT FOBOT	3	1

EQUIPMENT SCHEDULE		
DESCRIPTION	ITEM NUMBER	QUANTITY
BLUETOOTH MONITORING STATION	5	1
BLUETOOTH ANTENNA	6	1
MEANWELL NDR 120-24VDC	4	1
CISCO IEM-3300-8S (FIBRE PORT EXPANDER)	8	1
MEANWELL NDR 120 48VDC	7	2
PoE++ MEDIA CONVERTER (OSD2251EP/60W)	NOT SHOWN	2

NOTE:
1. FOR CONNECTION DIAGRAM AND SLD SEE DRAWING No. 2894 SHEET 7073.
2. ANGLED SCA FIBREOPTIC CONNECTORS SHALL BE USED.

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE

INDEX SHEET REFERENCE: 2894 SHEET 7001

DESIGNED
QUALIFICATION
DATE:
REVIEWER
QUALIFICATION
DATE:
INDEPENDENT DESIGN CERTIFIER (IF REQUIRED)
QUALIFICATION
DATE:

UNCONTROLLED COPY WHEN PRINTED ◄ 100 MILLIMETRES ON ORIGINAL DRAWING ► ALL DIMENSIONS ARE IN METRES UNLESS SHOWN OTHERWISE

Government of South Australia
Department for Infrastructure and Transport

PROJECT No.: 277580-00	FILE No.: 2020/06933/01
DESIGN No.:	SURVEY No.: 202000432
PROJECT START ROAD RUNNING DISTANCE:	MC10, CH 0 = 7.03 km
PROJECT END ROAD RUNNING DISTANCE:	MC10, CH 964 = 7.97 km
SCALES:	NOT TO SCALE

ROAD No. 5639
TORRENS ROAD
TS034 TORRENS ROAD & CHURCHILL ROAD
EXTENSION HOUSING
CABINET LAYOUT AND EQUIPMENT SCHEDULE

DESIGNED	DRAFTED	ACCEPTED FOR USE:	ACCEPTANCE FORM KNET No.	DRAWING No.:	SHEET No.:	AMEND No.:
PTPA	PTPA	TITLE: DATE:	IN ACCORDANCE WITH DPD13	2894	7063	0

SHEET LATITUDE -34.89706 SHEET LONGITUDE 138.58497