

CONTRACTOR NOTES:

- DRAWING TO BE READ IN CONJUNCTION WITH CONTRACT DRAWINGS AND SPECIFICATIONS.
- THE REQUIREMENTS HEREIN SHALL BE COMPLIED WITH, WHETHER BY THE HEAD CONTRACTOR OR ELECTRICAL SUB-CONTRACTOR. CONTRACTORS SHOULD BE EXPERIENCED IN THIS WORK AND SHALL MEET LISTED WP QUALIFICATIONS.
- SUPPLY & INSTALL ALL WORKS AS SHOWN ON THESE DRAWINGS, TO PROVIDE A COMPLETE AND WORKING SYSTEM. COMPLETE ALL ASSOCIATED WORKS.
- ALL WORKS SHALL COMPLY WITH WESTERN POWER (WP) POLICIES, INCLUDING THE UDS, WASIR, DDC, DSPM, DCSD, UCIM AND EARTHING FAQ. ALL MATERIALS USED MUST BE APPROVED WESTERN POWER MATERIALS.
- COMPLY WITH ALL REQUIREMENTS OF THE LOCAL GOVERNMENT AUTHORITY (LGA) AND MAIN ROADS WA (MRWA) IF APPLICABLE.
- VERIFY ALL MATERIAL QUANTITIES AGAINST SITE CONDITIONS PRIOR TO TENDER AND ADVISE THE PRINCIPAL OF ANY VARIATIONS IN TENDER OFFER.
- PREPARE AND COMPLY WITH A SITE SAFETY MANAGEMENT PLAN INCORPORATING REQUIREMENTS OF WP'S ESR AND ALL APPLICABLE LAWS & REGULATIONS.
- FOR ALL WORKS IN PROXIMITY OF EX SERVICES AND ASSETS, ACQUIRE CURRENT DRYD DRAWINGS, LOCATE UG SERVICES AS NECESSARY USING APPROPRIATE TECHNIQUES (GROUND PENETRATING RADAR, HAND & VACUUM POT-HOLING ETC). COMPLY WITH THE REQUIREMENTS OF ALL SERVICE PROVIDERS FOR WORKS IN PROXIMITY TO THEIR SERVICES AND ACQUIRE REQUIRED PERMITS FOR WORK, PLAN FOR AND PROTECT EXISTING SERVICES IN THE VICINITY OF ALL WORKS. DO NOT ENCRoACH MINIMUM APPROACH DISTANCES FOR UG OR OH SERVICES.
- LIASE WITH WP AS REQUIRED. ATTEND PRE-HANDBOVER INSPECTION WITH WP AND RECTIFY ALL DEFECTS. COMPLETE HANDOVER PROCESS FOR ALL NETWORK TO WP.
- LIASE WITH SUPERINTENDENT AND NOMINATED ELECTRICAL INSPECTOR AS REQUIRED. HOST A PRE-START MEETING AND FACILITATE PERIODIC ON SITE WORK PROGRESS QA INSPECTIONS WITH SUPERINTENDENT AND/OR INSPECTOR.
- TRENCH, BACKFILL AND RE-INSTATE (MAKE GOOD) ALL SURFACES.
- LEAVE SUFFICIENT CABLE COILED AT ALL INTERFACE POINTS (INCLUDING JOINTS, PILLAR TERMINATIONS & POLE TERMINATIONS) TO ALLOW WP TO COMPLETE INTERFACE WORKS. INSTALL END CAPS TO PROTECT CABLE. BRING NEW CABLE ADJACENT TO EXISTING CABLE AND POT-HOLE TO EXPOSE EXISTING CABLES FOR WP AT HANDOVER.
- WHERE RETAINING WALLS OR ANY WALL THAT COULD BE A COLLAPSE RISK DURING EXCAVATION ARE PROPOSED, INSTALL ALL ADJACENT CABLES IN CONDUITS, WHERE SUCH WALLS ARE EXISTING, DRILL CONDUITS PAST WALLS AND HAUL CABLE THROUGH CONDUITS.
- AT ALL POINTS WHERE CABLES ARE NOT IN CONDUIT ADJACENT TO A WALL (BENDS, JOINTS ETC) INSTALL DEEPENED WALL FOOTINGS TO AT LEAST THE DEPTH OF THE ADJACENT CABLES.
- ALL CABLES INSTALLED OUTSIDE OF 0-0.5m ALIGNMENT TO BE IN CONDUIT OR WITH CABLE SLABS ABOVE WHERE REQUIRED.
- INSTALL SUITABLE RUST-FREE DRAW WIRES IN ALL SPARE CONDUITS, INCLUDING CONSUMER-MAINS CONDUITS FROM PILLARS UNDER RETAINING WALLS.
- BORE UNDER EXISTING ROADS AND DRIVEWAYS, HAND PLUNK UNDER FOOTPATHS ETC WHERE SUITABLE.
- STREETLIGHT POLES MUST NOT BE INSTALLED IN FOOTPATHS. PEG POLE LOCATIONS PRIOR TO INSTALL AND NOTIFY THE SUPERINTENDENT OF CLASHES IN ADVANCE.
- STREETLIGHT POLES SHALL BE PLUMB VERTICAL AND GROUND AROUND POLES COMPACTED TO CIVIL SPECIFICATION AFTER INSTALL.
- WHERE REQUIRED, ERECT STREETLIGHT POLES ONLY AFTER NEARBY EXISTING OVERHEAD POWERLINES ARE REMOVED.
- COMPLETE SUBSTATION SITE PREPARATION AS PER WP REQUIREMENTS, CIVIL DRAWINGS AND THIS DRAWING, INCLUDING EXCAVATION, BACKFILL AND FINAL SURFACE TREATMENT.
- COMPLETE SUBSTATION EARTHING INSTALL TO WP UDS, DSPM & EARTHING FAQ REQUIREMENTS & TARGET COMBINED GRID RESISTANCE ON THIS DRAWING. IN TENDER PRICE, PROVIDE PROVISIONAL SUM RATES FOR EARTH ROD DRILLING BEYOND STANDARD ROD DEPTHS TO ACHIEVE TARGET RESISTANCE IF TARGET RESISTANCE NOT MET WITH DEEP RODS AT THE SUBSTATION, CONTACT THE ENGINEER PRIOR TO PROCEEDING WITH THE NEXT STEPS OF THE EARTHING FAQ.
- COMPLETE CLEARING/TRIMMING OF EXISTING VEGETATION AT WP INTERFACE WORKS LOCATIONS.
- COMPLETE ALL TESTING AS PER WP REQUIREMENTS AND PROVIDE TEST DOCUMENTATION AND HANDOVER CHECKLIST TO THE SUPERINTENDENT OR NOMINATED ELECTRICAL INSPECTOR.
- COMPLETE AS CONSTRUCTED PACKAGE AS PER UDS & PROVIDE TO THE SUPERINTENDENT. ENGAGE 3E TO PREPARE WP COMPLIANT CAD AS CON DRAWINGS. INCLUDE 3E'S COSTS FOR DRAFTING AS CON DRAWINGS IN TENDER PRICE. MAINTAIN AND PROVIDE COMPLETE CLEAR & LEGIBLE RED-LINE AS CON DRAWING MARK-UPS TO 3E.
- NO CHANGES TO DESIGN PERMITTED WITHOUT 3E APPROVAL. SUBMIT DESIGN CHANGE REQUESTS, RFIs OR TQ'S TO THE SUPERINTENDENT PRIOR TO MAKING ANY DESIGN CHANGES.
- INSTALL SPARE 150mm CONDUIT AND CABLE SLAB WHERE EXISTING 400HV IS PRESENT UNDER NEW ROADWAY, REFER CROSS SECTION D-D

WESTERN POWER SCOPE OF WORKS

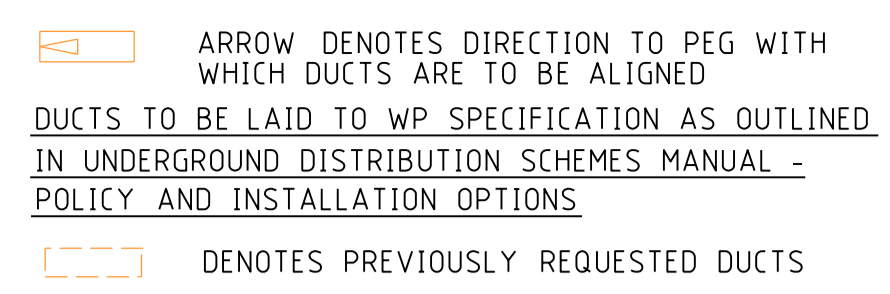
- WP TO COST TO CARRY OUT WORKS DESCRIBED HERE, INCLUDING ALL ASSOCIATED WORKS AND SUPPLY OF ALL MATERIALS.
- A** REMOVE EX W/END AND STRAIGHT JOINT NEW 240LV CABLE TO EX 240LV CABLE. EXCAVATE & BACKFILL JOINT BAY & SUPPLY JOINT.
 - B** REMOVE EX W/END AND STRAIGHT JOINT NEW 35HV CABLE TO EX 35HV CABLE. EXCAVATE & BACKFILL JOINT BAY & SUPPLY JOINT.
 - C** INSTALL NEW FUSE IN EXISTING RMU ON LOT 2675 SAPPHIRE ROAD TO SUIT NEW 630kVA TRANSFORMER ON LOT 555. WP TO SUPPLY FUSE

CLIENT SCOPE/NOTES:

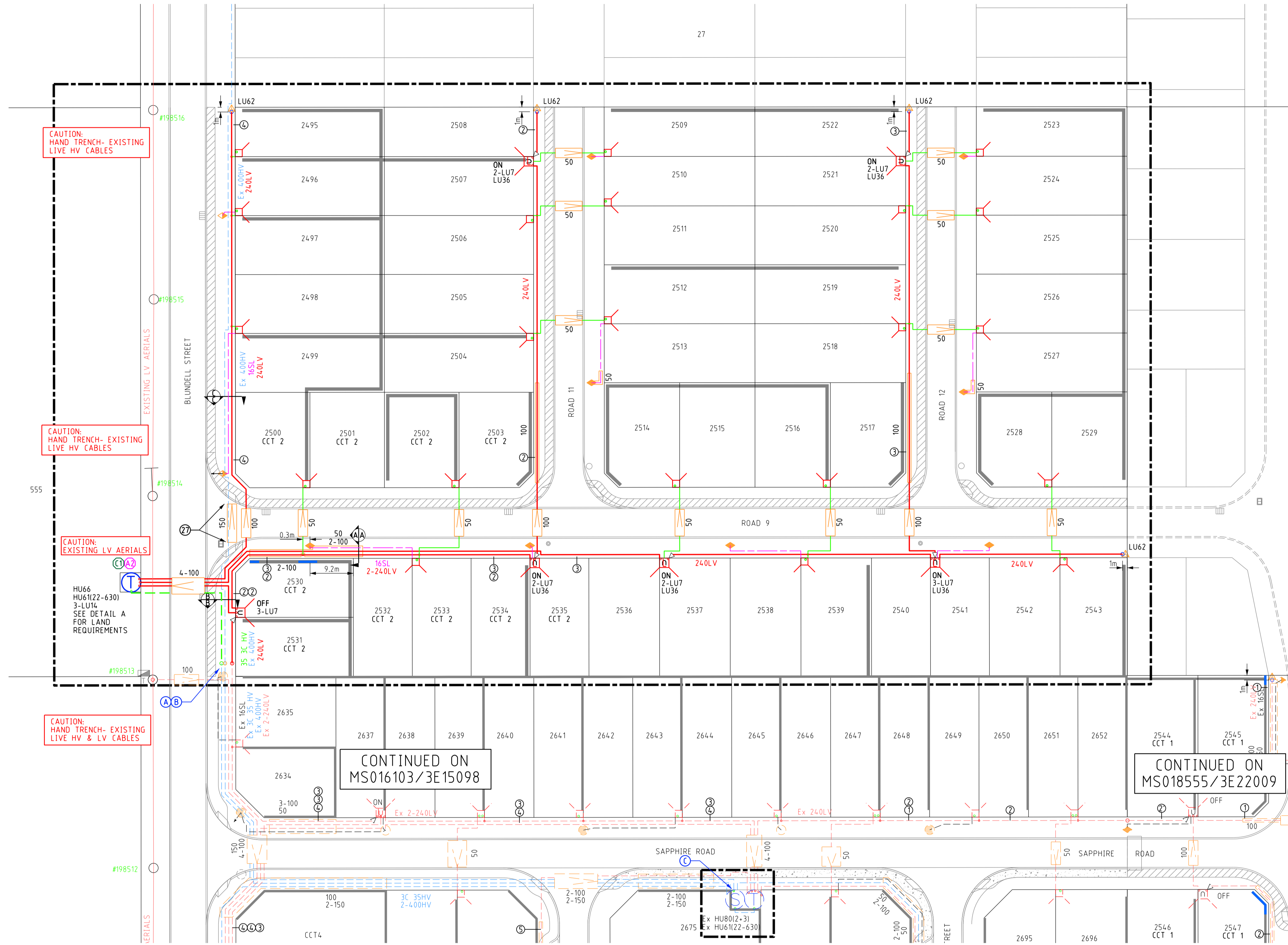
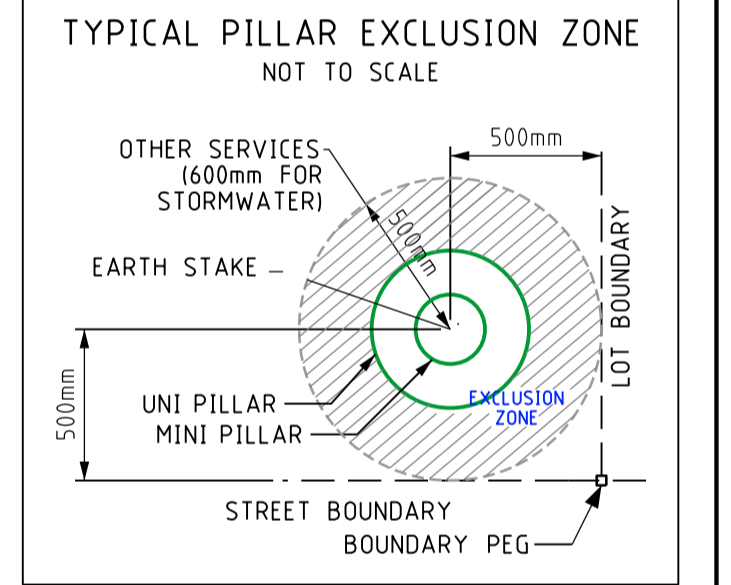
- PROJECT SURVEYOR REQUIREMENTS -
 - a) LOT BOUNDARY CREATION/MODIFICATION, INCLUDING ANY ROAD RESERVE EXTENSIONS FOR SUBSTATION SITES AND LIGHT POLES AS SHOWN ON THIS DRAWING.
 - b) CREATION OF ANY EASEMENTS, TITLE NOTIFICATIONS & RESTRICTIVE COVENANTS ETC AS SHOWN ON THIS DRAWING.
- OBTAIN ALL RELEVANT ENVIRONMENTAL APPROVALS AND/OR CLEARING PERMITS FOR CLEARING OF FLORA IN AREA OF WP WORKS, AT AREAS SHOWN ON THIS DRAWING.

THIRD PARTY APPROVALS:

- CITY OF SWAN TO CONFIRM ACCEPTANCE OF NEW LIGHT POLE TYPES, LUMINAIRE TYPES & WATTAGES AND POLE POSITIONS, AS SHOWN ON THE DRAWINGS & UMS TABLE.
- CITY OF SWAN TO CONFIRM ACCEPTANCE OF NEW TRANSFORMER LOCATION ON LOT 555, AS SHOWN ON THE DRAWING.



LEGEND		
SCHEME BOY:		
RETAINING WALL	---	
RETAINING WALL EXTRA FOOTING	---	
RESTRICTED ZONE	---	
EASEMENT	---	
HV CABLES		
CN53 - 400mm2 (3X1c)	---	
CN49 - 240mm2 (3X1c)	---	
CN48 - 185mm2 (3X1c)	---	
CN50 - 95mm2 (3X1c)	---	
CN51 - 50mm2 (3X1c)	---	
CN46 - 35mm2 (3X1c)	---	
CN47 - 35mm2 (1c)	---	
EXISTING HV CABLES (SIZE AND TYPE INDICATED)	---	
LV-SL CABLES		
CN45 - 240mm2 (1X3c)	---	
CN44 - 185mm2 (1X3c)	---	
CN43 - 120mm2 (1X3c)	---	
CN42 - 25mm2 (1X3c)	---	
CN41 - 16mm2 SL (1c)	---	
EXISTING LV CABLES (SIZE AND TYPE INDICATED)	---	
STREET LIGHTS		
LEGEND DEFINES TYPE & WATTAGE - NOT COLOUR		
ROAD FLAIR LED 3000K	ROAD GRADE LED 4000K	DECORATIVE LED 4000K
15W IE	20W IL	17W 1A
43W 2E	53W 2L	42W 3A
28W 3E	36W 3L	80W 4C
70W 4E	80W 4L	100W 5C
100W 5E	160W 5L	155W 6C
15W 8E	170W 6L	
42W CFL	70W HPS	70W MH
80W HV	150W HPS	150W MH
125W HV	250W HPS	250W MH
EXISTING	EXISTING	EXISTING
PILLARS / PITS / ETC		
MINI (WORKING END)	UMS PIT	
UNIVERSAL	CONCRETE HV CABLE PIT	
MINI	PA - TYPE	
LINK	B/D - TRAFFICABLE	
STANDARD WP MARKER POST	LID RATING	
CUSTOM FOOTPATH CABLE MARKER PLATE	100/200AMP CUTOUT	
CONDUIT / POLY PIPE	SERVICED UNCLEARED DE-ENERGISED LOT	
	EXISTING SUIT. LOT TO BE ENERGISED NOW	
TRANSFORMER EXISTING SWITCHGEAR		
AERIAL CONDUCTORS AND POLES		
NEW POLE (ANY TYPE AS INDICATED)	EXISTING POLE (ANY TYPE AS INDICATED)	
EXISTING HV	EXISTING LV	
EXISTING AERIAL CONDUCTORS	EXISTING AERIAL CONDUCTORS (SIZE AND TYPE INDICATED)	



REV	DESCRIPTION	DATE	DRWN	CHKD
A	ISSUED TO CLIENT FOR COMMENT	31.03.22	DA	JH

3E CONSULTING ENGINEERS PTY LTD
 Electrical Engineering Excellence

Suite 1, Level 2, Condar Tower
 22 St George's Tce, Perth WA 6000
 PO Box 3184, East Perth WA 6892
 Tel: 08 6314 9000 Email: admin@3ecec.com.au

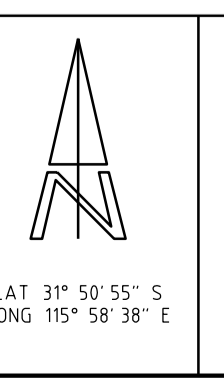
This document is the property of 3E Consulting Engineers Pty Ltd and may only be used in accordance with the terms of engagement for which it was commissioned. Unauthorised use of this document is prohibited. Any modification to this drawing will be subject to further technical input.

PRELIMINARY NOT FOR CONSTRUCTION

WORKSAFE

IF WORKING IN THE VICINITY OF EXISTING OVERHEAD TRANSMISSION LINES, REFER TO "WORKSAFE" REGULATION 344.

THE LOCATION OF EXISTING SERVICES IS APPROXIMATE ONLY. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN ALWAYS. REFER TO CURRENT UG DRAWINGS, CONFORM ASSESS LOCATIONS ON SITE BEFORE COMMENCEMENT OF WORK. REFER TO "WORKSAFE REGULATION 321"



Scale	1:500 @ A1 Original Paper Size
Base File Date	01-03-2022 H. Datum PCG94
Designed: DA	Drawn: DA Checked: JH Appr: JH
Western Power Reference No.	MS018610 WAPC No. 160731
Local Authority	CITY OF SWAN
Civil Consultant	TABEC

ST LEONARDS ESTATE, WEST SWAN - STAGE 1X
 49 RESIDENTIAL LOTS
 ELECTRICAL NETWORK

Sheet Of 3E Drawing Number 3E22014-01 Revision A

CONTRACTOR NOTES:

- DRAWING TO BE READ IN CONJUNCTION WITH CONTRACT DRAWINGS AND SPECIFICATIONS.
- THE REQUIREMENTS HEREIN SHALL BE COMPLIED WITH, WHETHER BY THE HEAD CONTRACTOR OR ELECTRICAL SUB-CONTRACTOR. CONTRACTORS SHOULD BE EXPERIENCED IN THIS WORK AND SHALL MEET LISTED WP QUALIFICATIONS.
- SUPPLY & INSTALL ALL WORKS AS SHOWN ON THESE DRAWINGS, TO PROVIDE A COMPLETE AND WORKING SYSTEM. COMPLETE ALL ASSOCIATED WORKS.
- ALL WORKS SHALL COMPLY WITH WESTERN POWER (WP) POLICIES, INCLUDING THE UDS, WASIR, DOC, DSPM, DC5H, UCIM AND EARTHING FAQ. ALL MATERIALS USED MUST BE APPROVED WESTERN POWER MATERIALS.
- COMPLY WITH ALL REQUIREMENTS OF THE LOCAL GOVERNMENT AUTHORITY (LGA) AND MAIN ROADS WATERWAYS IF APPLICABLE.
- VERIFY ALL MATERIAL QUANTITIES AGAINST SITE CONDITIONS PRIOR TO TENDER AND ADVISE THE PRINCIPAL OF ANY VARIATIONS IN TENDER OFFER.
- PREPARE AND COMPLY WITH A SITE SAFETY MANAGEMENT PLAN INCORPORATING REQUIREMENTS OF WP'S ESSR AND ALL APPLICABLE LAWS & REGULATIONS.
- FOR ALL WORKS IN PROXIMITY OF EX SERVICES AND ASSETS: ACQUIRE CURRENT OVDY DRAWINGS, LOCATE UG SERVICES AS NECESSARY USING APPROPRIATE TECHNIQUES (GROUND PENETRATING RADAR, HAND & VACUUM POT-HOLING ETC). COMPLY WITH THE REQUIREMENTS OF ALL SERVICE PROVIDERS FOR WORKS IN PROXIMITY TO THEIR SERVICES AND ACQUIRE REQUIRED PERMITS FOR WORK. PLAN FOR AND PROTECT EXISTING SERVICES IN THE VICINITY OF ALL WORKS. DO NOT ENCRoACH MINIMUM APPROACH DISTANCES FOR UG OR OH SERVICES.
- LIASE WITH WP AS REQUIRED. ATTEND PRE-HANDOVER INSPECTION WITH WP AND RECTIFY ALL DEFECTS. COMPLETE HANDOVER PROCESS FOR ALL NETWORK TO WP.
- LIASE WITH SUPERINTENDENT AND NOMINATED ELECTRICAL INSPECTOR AS REQUIRED. HOST A PRE-START MEETING AND FACILITATE PERIODIC ON SITE WORK PROGRESS QA INSPECTIONS WITH SUPERINTENDENT AND/OR INSPECTOR.
- TRENCH, BACKFILL AND RE-INSTATE (MAKE GOOD) ALL SURFACES.
- LEAVE SUFFICIENT CABLE COILED AT ALL INTERFACE POINTS (INCLUDING JOINTS, PILLAR TERMINATIONS & BOLT TERMINATIONS) TO ALLOW WP TO COMPLETE INTERFACE WORKS. INSTALL END CAPS TO PROTECT CABLE. BRING NEW CABLE ADJACENT TO EXISTING CABLE AND POT-HOLE TO EXPOSE EXISTING CABLES FOR WP AT HANDOVER.
- WHERE RETAINING WALLS OR ANY WALL THAT COULD BE A COLLAPSE RISK DURING EXCAVATION ARE PROPOSED, INSTALL ALL ADJACENT CABLES IN CONDUITS, WHERE SUCH WALLS ARE EXISTING, DRILL CONDUITS PAST WALLS AND HAUL CABLE THROUGH CONDUITS.
- AT ALL POINTS WHERE CABLES ARE NOT IN CONDUIT ADJACENT TO A WALL (BENDS, JOINTS ETC) INSTALL DEEPENED WALL FOOTINGS TO AT LEAST THE DEPTH OF THE ADJACENT CABLES.
- ALL CABLES INSTALLED OUTSIDE OF 0-0.5m ALIGNMENT TO BE IN CONDUIT OR WITH CABLE SLABS ABOVE WHERE REQUIRED.
- INSTALL SUITABLE RUST-FREE DRAW WIRES IN ALL SPARE CONDUITS, INCLUDING CONSUMER-MAINS CONDUITS FROM PILLARS UNDER RETAINING WALLS.
- BORE UNDER EXISTING ROADS AND DRIVEWAYS, HAND PLUNK UNDER FOOTPATHS ETC WHERE SUITABLE.
- STREETLIGHT POLES MUST NOT BE INSTALLED IN FOOTPATHS. PEG POLE LOCATIONS PRIOR TO INSTALL AND NOTIFY THE SUPERINTENDENT OF CLASHES IN ADVANCE.
- STREETLIGHT POLES SHALL BE PLUMB VERTICAL AND GROUND AROUND POLES COMPACTED TO CIVIL SPECIFICATION AFTER INSTALL.
- WHERE REQUIRED ERECT STREETLIGHT POLES ONLY AFTER NEARBY EXISTING OVERHEAD POWERLINES ARE REMOVED.
- COMPLETE SUBSTATION SITE PREPARATION AS PER WP REQUIREMENTS, CIVIL DRAWINGS AND THIS DRAWING, INCLUDING EXCAVATION, BACKFILL AND FINAL SURFACE TREATMENT.
- COMPLETE SUBSTATION EARTHING INSTALL TO WP UDS, DSPM & EARTHING FAQ REQUIREMENTS & TARGET COMBINED GRID RESISTANCE ON THIS DRAWING. IN TENDER PRICE, PROVIDE PROVISIONAL SUM RATES FOR EARTH ROD DRILLING BEYOND STANDARD ROD DEPTHS TO ACHIEVE TARGET RESISTANCE IF TARGET RESISTANCE NOT MET WITH DEEP RODS AT THE SUBSTATION, CONTACT THE ENGINEER PRIOR TO PROCEEDING WITH THE NEXT STEPS OF THE EARTHING FAQ.
- COMPLETE CLEARING/TRIMMING OF EXISTING VEGETATION AT WP INTERFACE WORKS LOCATIONS.
- COMPLETE ALL TESTING AS PER WP REQUIREMENTS AND PROVIDE TEST DOCUMENTATION AND HANDOVER CHECKLIST TO THE SUPERINTENDENT OR NOMINATED ELECTRICAL INSPECTOR.
- COMPLETE AS CONSTRUCTED PACKAGE AS PER UDS & PROVIDE TO THE SUPERINTENDENT. ENGAGE 3E TO PREPARE WP COMPLIANT CAD AS CON DRAWINGS, INCLUDE 3E'S COSTS FOR DRAFTING AS CON DRAWINGS IN TENDER PRICE. MAINTAIN AND PROVIDE COMPLETE CLEAR & LEGIBLE RED-LINE AS CON DRAWING MARK-UPS TO 3E.
- NO CHANGES TO DESIGN PERMITTED WITHOUT 3E APPROVAL. SUBMIT DESIGN CHANGE REQUESTS, RFIS OR TQ'S TO THE SUPERINTENDENT PRIOR TO MAKING ANY DESIGN CHANGES.
- INSTALL SPARE 150mm CONDUIT AND CABLE SLAB WHERE EXISTING 400HV IS PRESENT UNDER NEW ROADWAY, REFER CROSS SECTION D-D

WESTERN POWER SCOPE OF WORKS

- WP TO COST TO CARRY OUT WORKS DESCRIBED HERE, INCLUDING ALL ASSOCIATED WORKS AND SUPPLY OF ALL MATERIALS.
- REMOVE EX W/END AND STRAIGHT JOINT NEW 240LV CABLE TO EX 240LV CABLE. EXCAVATE & BACKFILL JOINT BAY & SUPPLY JOINT.
 - REMOVE EX W/END AND STRAIGHT JOINT NEW 35HV CABLE TO EX 35HV CABLE. EXCAVATE & BACKFILL JOINT BAY & SUPPLY JOINT.
 - INSTALL NEW FUSE IN EXISTING RMU ON LOT 2675 SAPPHIRE ROAD TO SUIT NEW 630kVA TRANSFORMER ON LOT 555. WP TO SUPPLY FUSE

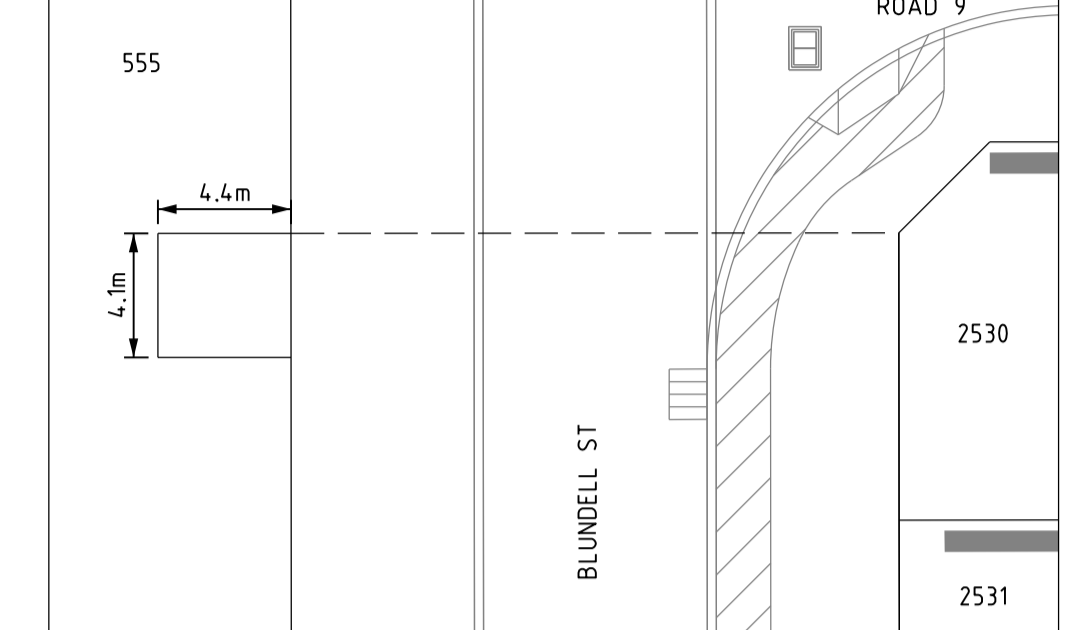
CLIENT SCOPE/NOTES:

- PROJECT SURVEYOR REQUIREMENTS -
 - LOT BOUNDARY CREATION/MODIFICATION, INCLUDING ANY ROAD RESERVE EXTENSIONS FOR SUBSTATION SITES AND LIGHT POLES AS SHOWN ON THIS DRAWING.
 - CREATION OF ANY EASEMENTS, TITLE NOTIFICATIONS & RESTRICTIVE COVENANTS ETC AS SHOWN ON THIS DRAWING.
- OBTAIN ALL RELEVANT ENVIRONMENTAL APPROVALS AND/OR CLEARING PERMITS FOR CLEARING OF FLORA IN AREA OF WP WORKS, AT AREAS SHOWN ON THIS DRAWING.

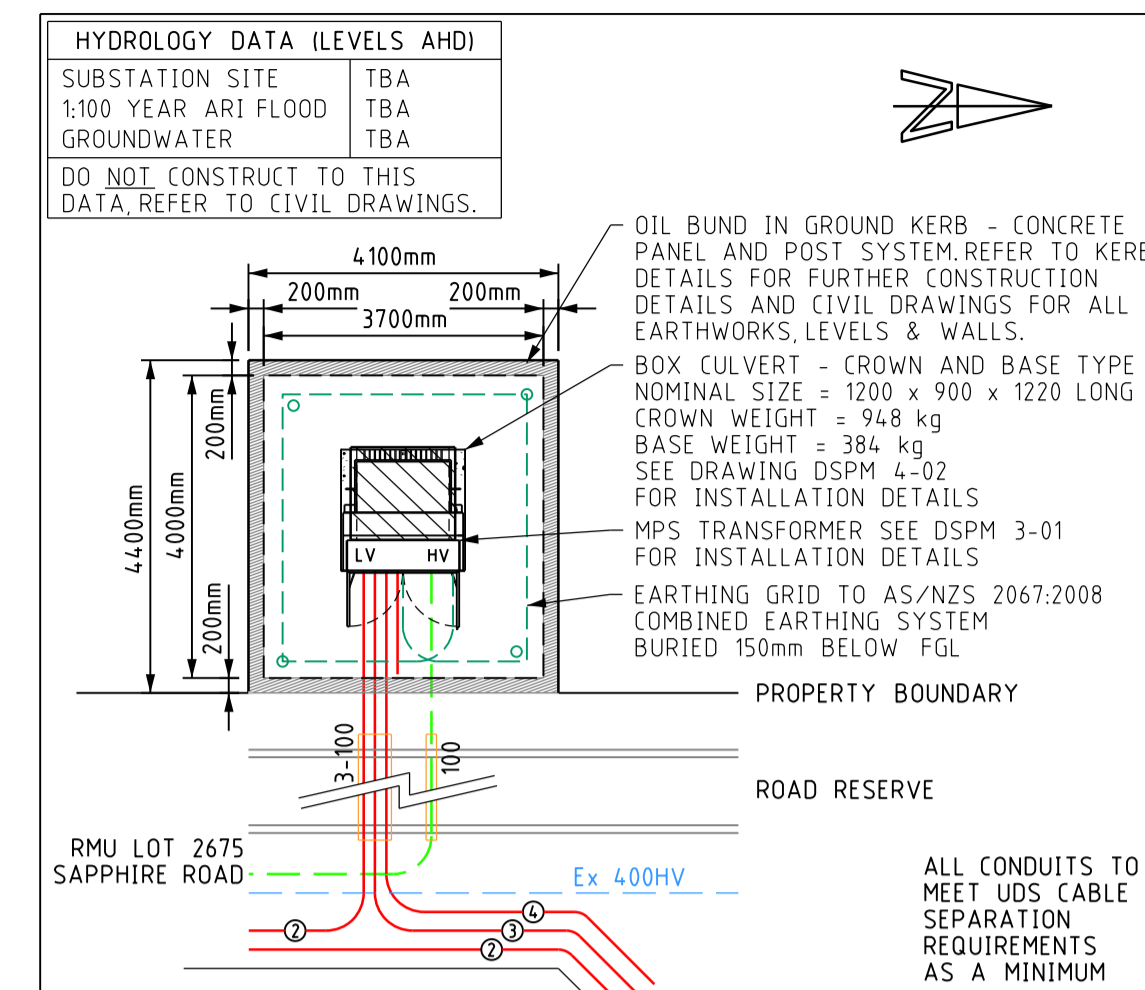
THIRD PARTY APPROVALS:

- CITY OF SWAN TO CONFIRM ACCEPTANCE OF NEW LIGHT POLE TYPES, LUMINAIRE TYPES & WATTAGES AND POLE POSITIONS, AS SHOWN ON THE DRAWINGS & UMS TABLE.
- CITY OF SWAN TO CONFIRM ACCEPTANCE OF NEW TRANSFORMER LOCATION ON LOT 555, AS SHOWN ON THE DRAWING.

THE SUBSTATION SITE MUST BE INCORPORATED AS AN EXTENSION OF ROAD RESERVE OR POS.

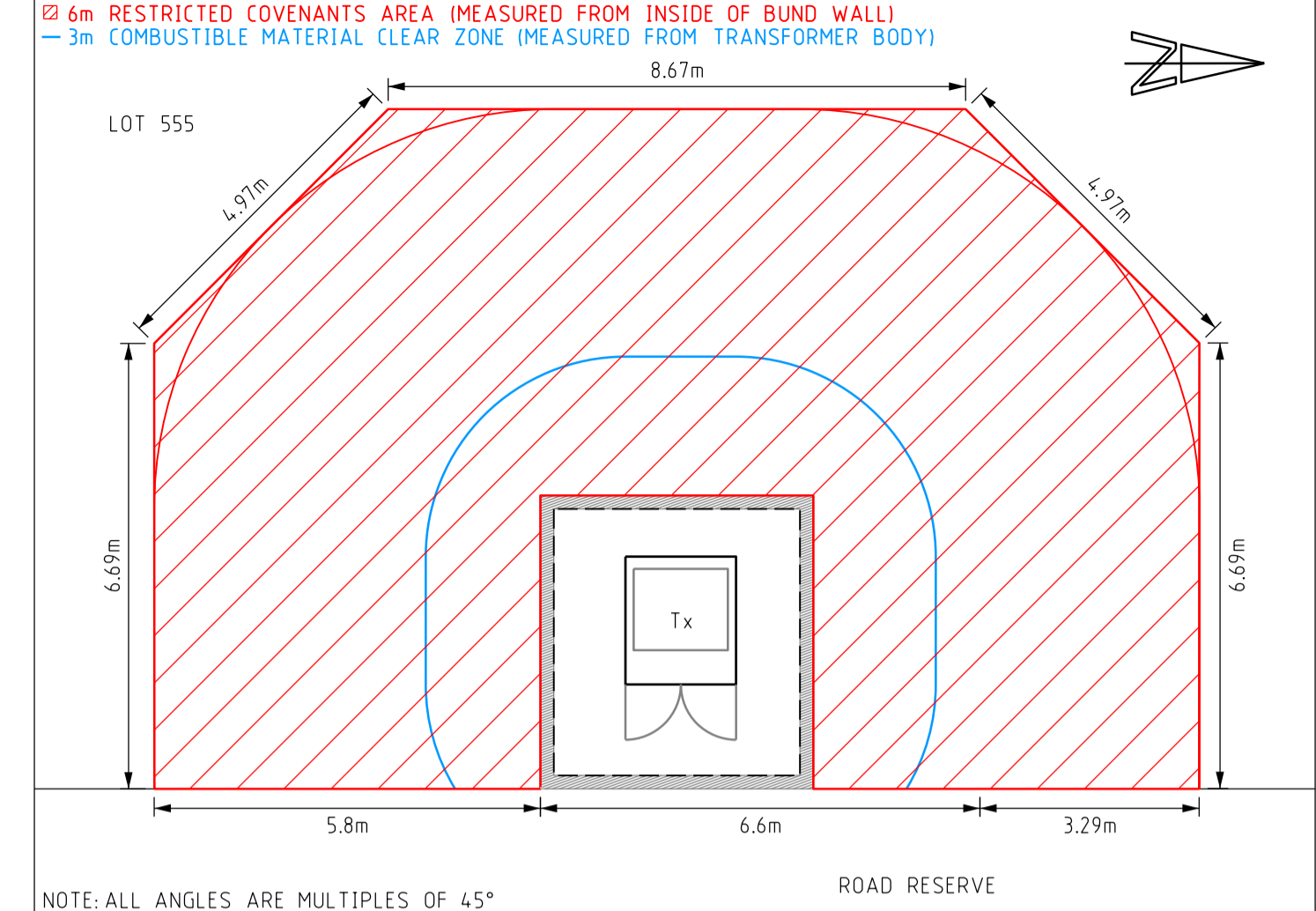


DETAIL A - SUBSTATION SITE LAND REQUIREMENTS
NOT TO SCALE

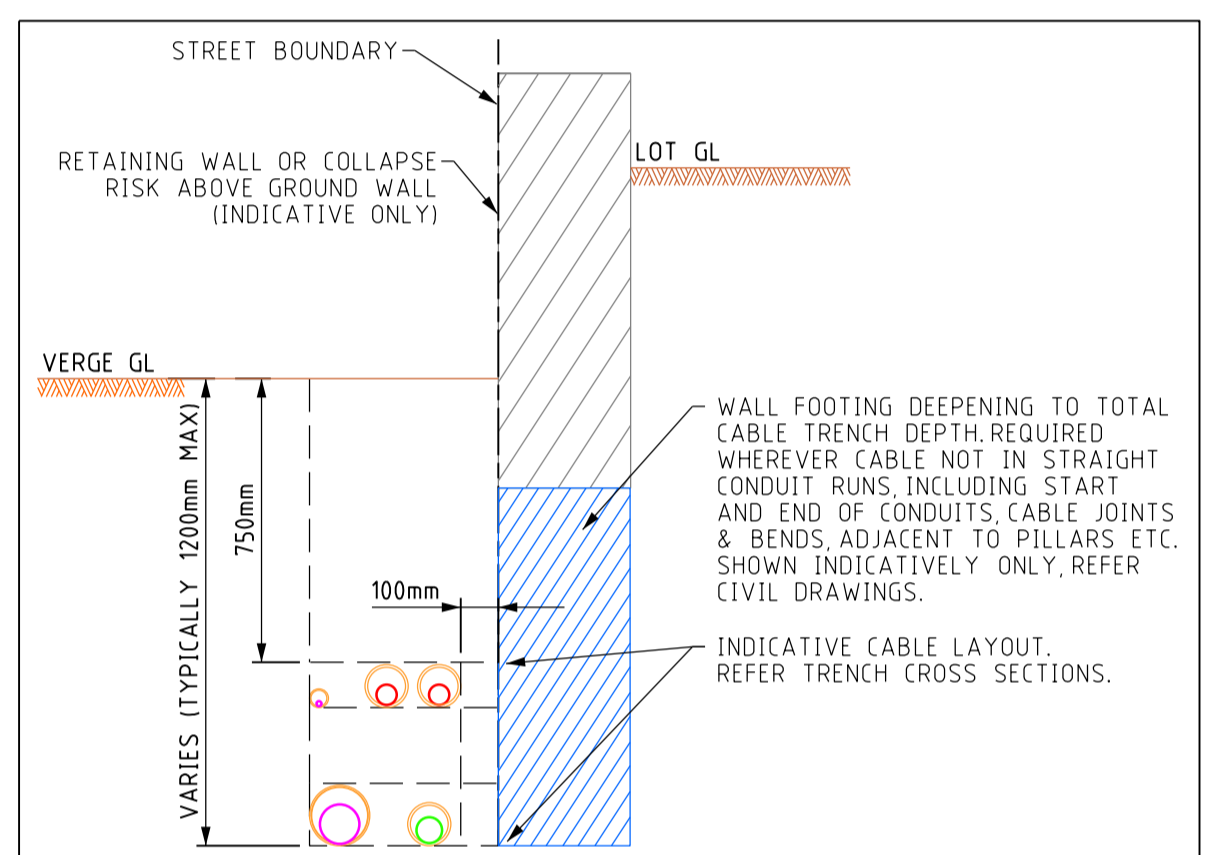


DETAIL B - LAYOUT OF 630kVA MPS TRANSFORMER LOCATED ON LOT 555
NOT TO SCALE

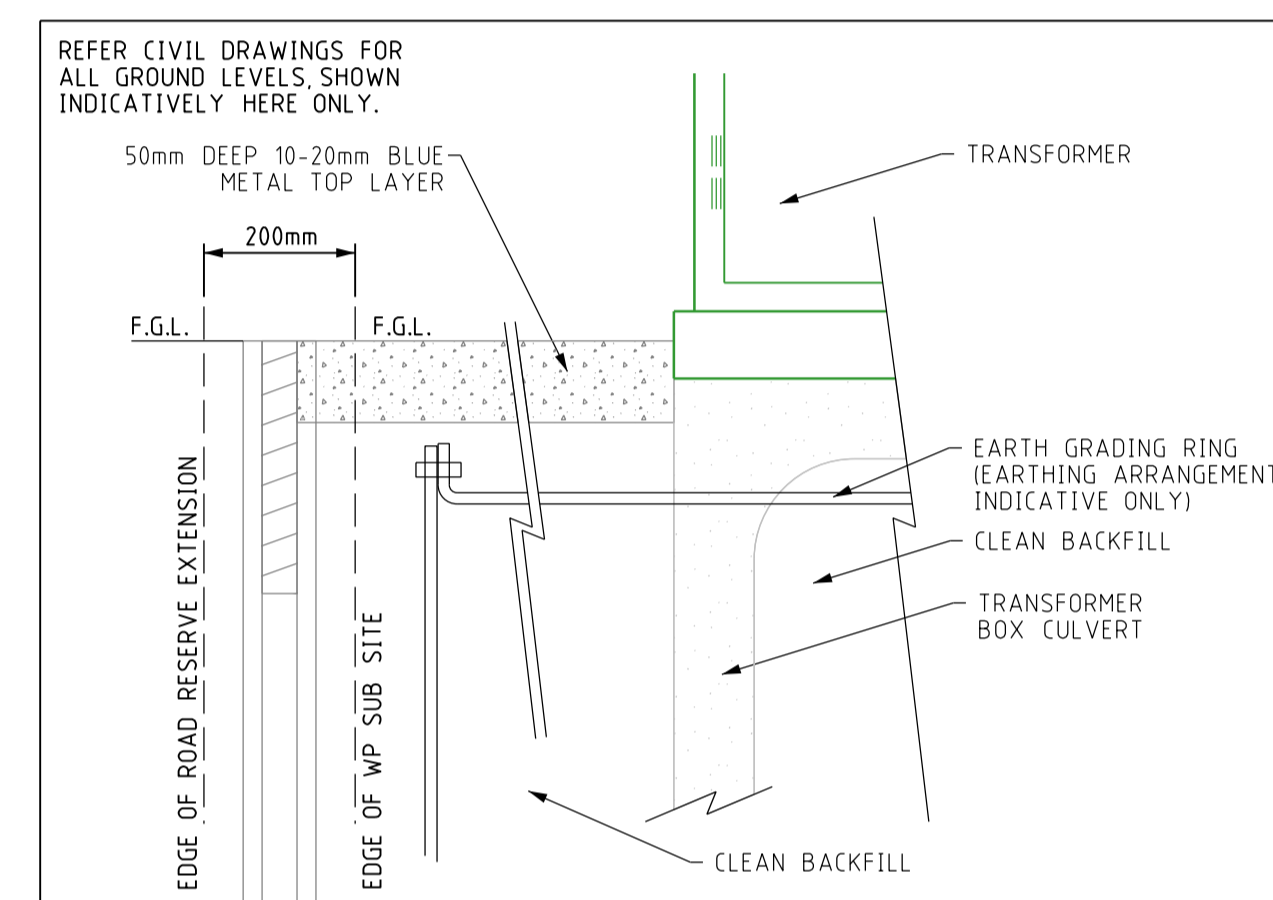
1298A RESTRICTED COVENANTS REQUIRED ON LOTS ADJACENT TO SUBSTATION SITE, AS SHOWN BELOW. FOR FIRE SEPARATION AS PER WP UDS MANUAL AND DSPM.



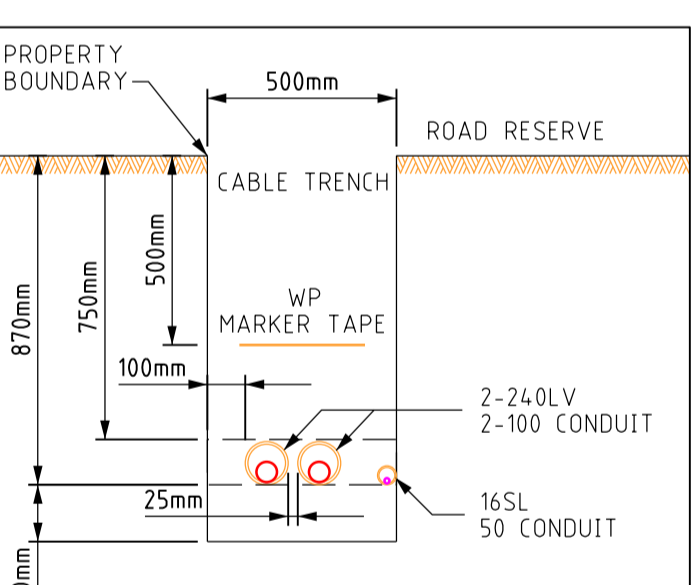
DETAIL C - RESTRICTED FIRE COVENANTS
SCALE 1:100



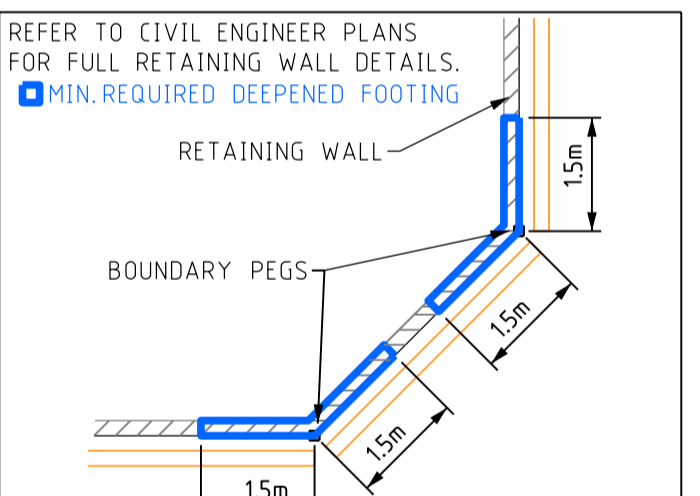
TYPICAL WALL FOOTING DEEPENING ARRANGEMENT
NOT TO SCALE



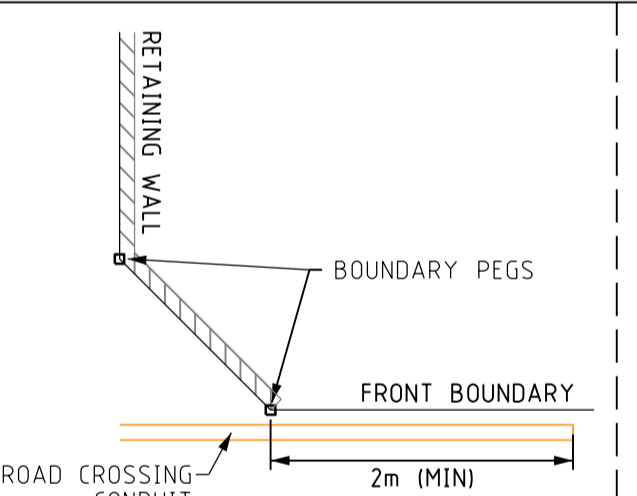
OIL BUND KERBING NORMAL SURFACE TREATMENT CONSTRUCTION DETAILS
NOT TO SCALE



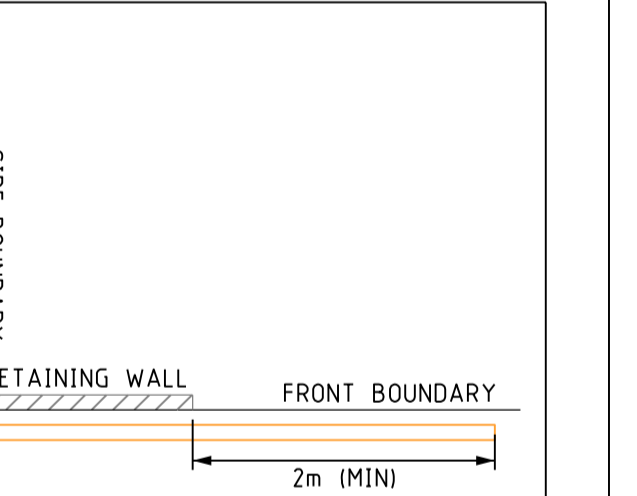
SECTION A-A: CABLE TRENCH LAYOUT
SCALE 1:20



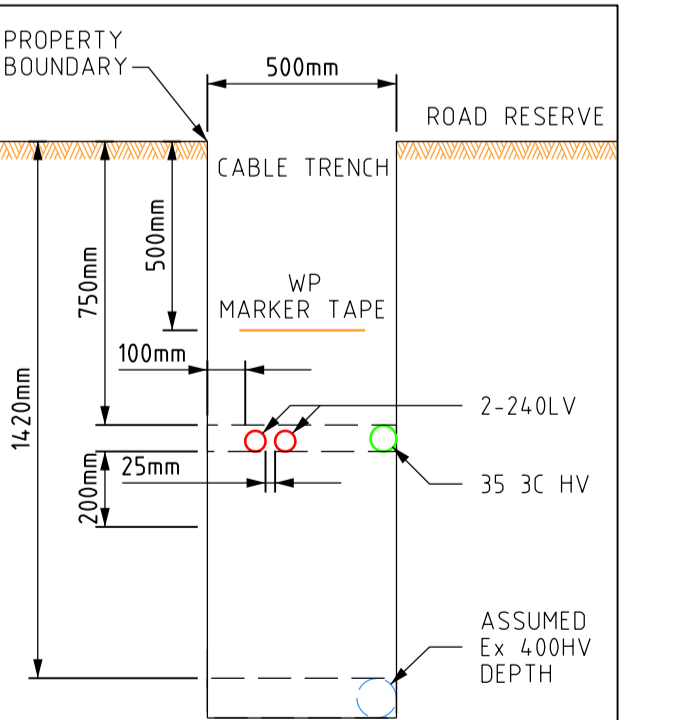
TYPICAL DETAIL FOR CABLE ADJACENT TO WALLS AT LOT TRUNCATIONS
NOT TO SCALE



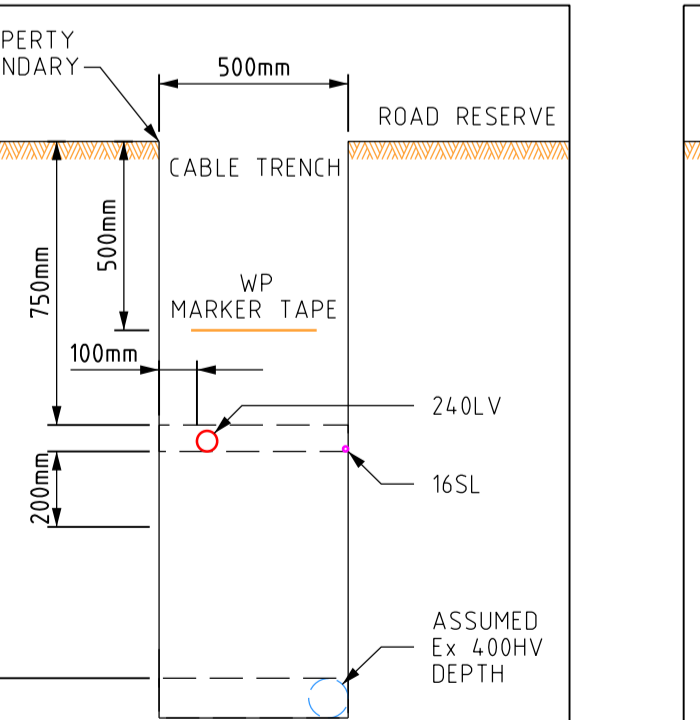
MINIMUM CONDUIT EXTENSION AT WALLS TO AVOID DEEPENED FOOTINGS
NOT TO SCALE



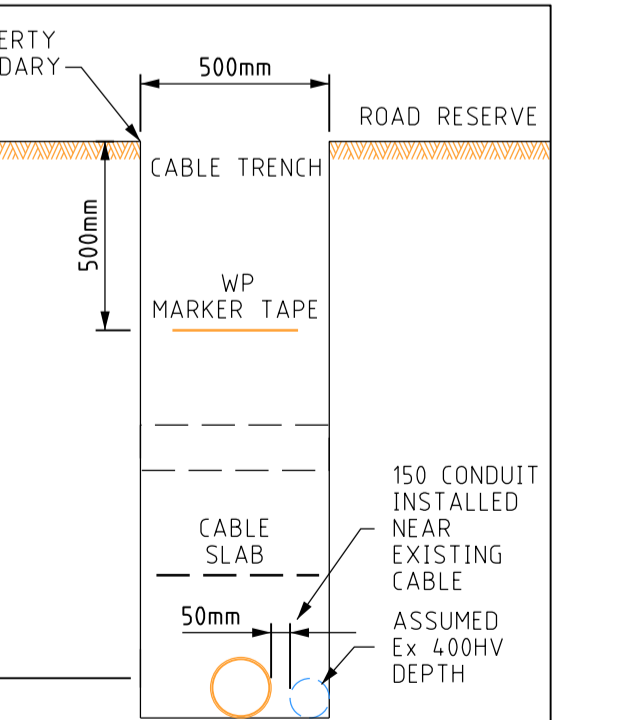
SL POLE CONDUIT TO AVOID DEEPENED FOOTINGS
NOT TO SCALE



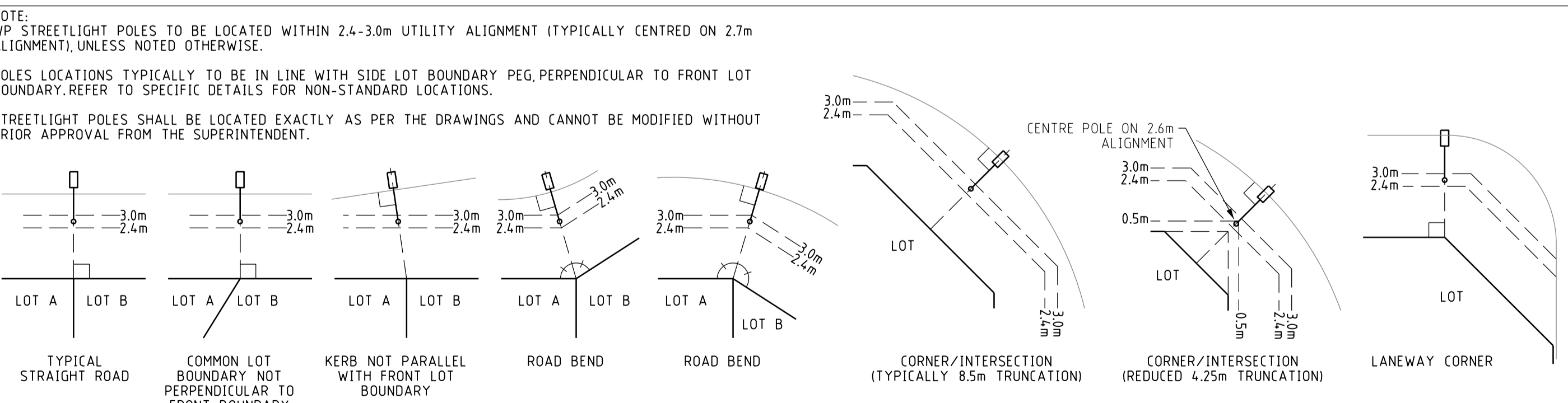
SECTION B-B: CABLE TRENCH LAYOUT
SCALE 1:20



SECTION C-C: CABLE TRENCH LAYOUT
SCALE 1:20



SECTION D-D: CABLE TRENCH LAYOUT
SCALE 1:20



TYPICAL STREETLIGHT POLE LOCATIONS
NOT TO SCALE

*ASTERISK DENOTES CHANGE IN LOAD ON AN EXISTING CIRCUIT

TRANSFORMER SPECIFICATIONS AND LOCATION	FUSEWAY NO.	CIRCUIT NO.	FUSE AMPS	CABLE mm²	CIRCUIT NAME	VOLT DROP	AMPS	TOTAL AMPS
630kVA Tx LOT 555 22kV (827A) ADM: 4.7kVA	1	1	315	240	-	-	-	-
	2	2	315	240	LES LOT 2508	4.94V	157A	-
	3	3	315	240	LES LOTS 2522 & 2543	7.70V	176A	353A
	4	4	315	240	LES LOT 2495	1.29V	59A	-
	5	5	315	240	-	-	-	-

NOTE: ALL UNMETERED SUPPLIES (INCLUDING CUSTOMER AND WESTERN POWER STREETLIGHTING ASSETS) CONNECTED TO UNDERGROUND SYSTEM IN CONTRACTOR'S SCOPE, FOR ANY UMS LIGHTS WITHIN WP'S SCOPE, REFER TO WP DRAWINGS FOR UMS LOAD DETAILS.

TYPE OF EQUIPMENT	SYMBOL	NO OF UNITS	UNIT WATTAGE	TOTAL WATTAGE	DAILY HRS OPERATION	WP Asset Yes / No
6.5m STANDARD POLE + ROAD FLAIR 16W 1E	◆	8	16W	128W	DUSK/DAWN	YES
6.5m STANDARD POLE + ROAD FLAIR 43W 2E	◇	2	43W	86W	DUSK/DAWN	YES

LEGEND

SCHEME BODY:

- RETAINING WALL
- RETAINING WALL EXTRA FOOTING
- RESTRICTED ZONE
- EASEMENT

HV CABLES

- CN53 - 400mm2 (3X1c)
- CN49 - 240mm2 (3X1c)
- CN48 - 185mm2 (3X1c)
- CN50 - 95mm2 (3X1c)
- CN51 - 50mm2 (3X1c)
- CN46 - 35mm2 (3X1c)
- CN47 - 35mm2 (1c)

EXISTING HV CABLES (SIZE AND TYPE INDICATED)

LV-SL CABLES

- CN45 - 240mm2 (1x3c)
- CN44 - 185mm2 (1x3c)
- CN43 - 120mm2 (1x3c)
- CN42 - 25mm2 (1x3c)
- CN41 - 16mm2 SL (1c)

EXISTING LV CABLES (SIZE AND TYPE INDICATED)

40 C PILOT

EXISTING LV CABLES (SIZE AND TYPE INDICATED)

STREET LIGHTS

LEGEND DEFINES TYPE & WATTAGE - NOT COLOUR

ROAD FLAIR LED 3000K	ROAD GRADE LED 4000K	DECORATIVE LED 4000K
◆ 16W 1E	◇ 16W 1L	◇ 17W 1A
◆ 43W 2E	◇ 42W 2L	◇ 42W 3A
◆ 28W 3E	◇ 27W 3L	◇ 80W 4C
◆ 70W 4E	◇ 68W 4L	◇ 100W 5C
◆ 100W 5E	◇ 195W 5L	◇ 155W 6C
◆ 165W 6E	◇ 155W 6L	

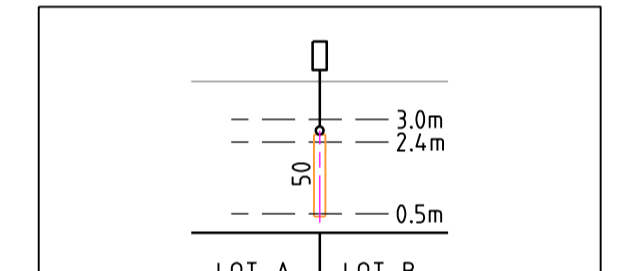
◆ 42W CFL ◇ 70W HPS △ 70W MH
 ○ 80W HV ○ 150W HPS △ 150W MH
 ○ 125W HV ○ 250W HPS △ 250W MH
 ○ EXISTING ○ EXISTING ○ EXISTING

PILLARS / PITS / ETC

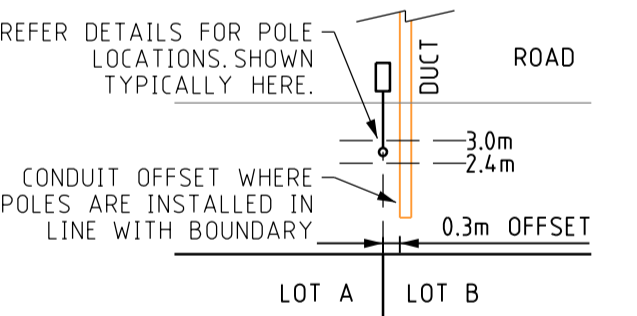
- MINI (WORKING END)
- UNIVERSAL
- MINI
- LINK
- STANDARD WP MARKER POST
- CUSTOM FOOTPATH CABLE MARKER PLATE
- CONDUIT / POLY PIPE
- UMS PIT
- CONCRETE HV CABLE PIT
- PA - TYPE
- B/D - TRAFFICABLE
- LID RATING
- 100/200AMP C/CUTOUT
- SERVICED UNCLEARED DE-ENERGISED LOT
- EXISTING SUIT. LOT TO BE DE-ENERGISED NOW

TRANSFORMER EXISTING SWITCHGEAR

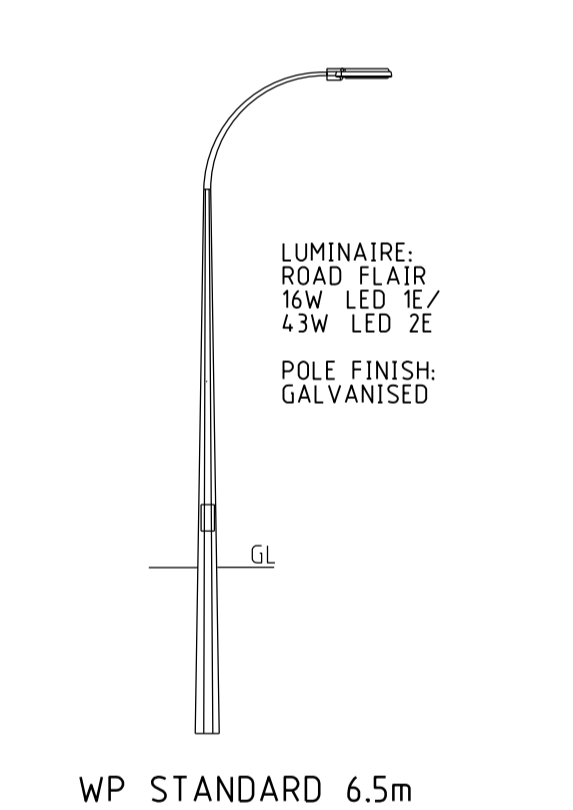
- ⊕ AERIAL CONDUCTORS AND POLES
- NEW POLE (ANY TYPE AS INDICATED)
- EXISTING POLE (ANY TYPE AS INDICATED)
- EXISTING AERIAL CONDUCTORS (SIZE AND TYPE INDICATED)



TYPICAL CONDUIT FOR SL CABLE OUTSIDE OF 0-0.5m ALIGNMENT
NOT TO SCALE



TYPICAL ROAD CROSSING NEAR LIGHT POLE ARRANGEMENT
NOT TO SCALE



WP STANDARD 6.5m SINGLE OUTREACH POLE
NOT TO SCALE

REV	DESCRIPTION	DATE	DRWN	CHKD
A	ISSUED TO CLIENT FOR COMMENT	31.03.22	DA	JH

3E CONSULTING ENGINEERS PTY LTD
Electrical Engineering Excellence

Suite 1, Level 2, Condar Tower
22 St George's Tce, Perth WA 6000
PO Box 3184, East Perth WA 6892
Tel: 08 6314 9000 Email: admin@3eeca.com.au

This document is the property of 3E Consulting Engineers Pty Ltd and may only be used in accordance with the terms of engagement for which it was commissioned. Unauthorised use of this document is prohibited. Any modification to this drawing will be subject to further technical input.

PRELIMINARY NOT FOR CONSTRUCTION

SAFETY

IF WORKING IN THE VICINITY OF EXISTING OVERHEAD DISTRIBUTION OR TRANSMISSION LINES, REFER TO "WORKSAFE" REGULATION 344.

THE LOCATION OF EXISTING SERVICES IS APPROXIMATE ONLY. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN ALWAYS. REFER TO CURRENT LOCATION DRAWINGS FOR PRELIMINARY LOCATIONS ON SITE BEFORE COMMENCEMENT OF WORK. REFER TO "WORKSAFE" REGULATION 321.

Scale 1:500 @ A1 Original Paper Size

Base File Date 01-03-2022 H. Datum PCG94

Designed: DA Drawn: DA Checked: JH Appr: JH

Western Power Reference No. MS018610 WAPC No. 160731

Local Authority CITY OF SWAN

Civil Consultant TABEC

ST LEONARDS ESTATE, WEST SWAN - STAGE 1X
49 RESIDENTIAL LOTS ELECTRICAL NETWORK

Sheet 01 of 2
3E Drawing Number 3E22014-01
Revision A