

GENERAL NOTES

THESE DRAWINGS SHOW NEW LIGHTING TYPES AND LOCATIONS ONLY FOR THE LIGHTING SCOPE OF WORKS.
REFER TO ELECTRICAL ENGINEER'S DOCUMENTATION FOR ALL ELECTRICAL INFRASTRUCTURE AND DESIGN DETAILS INCLUDING LIGHTING CONTROLS ASSOCIATED WITH THESE WORKS.
REFER TO LANDSCAPE ARCHITECTURE AND CIVIL/ STRUCTURAL ENGINEER'S DOCUMENTATION FOR ALL DESIGN DETAILS ASSOCIATED WITH THESE WORKS.

AUTHORITIES AND STANDARDS

- a) ALL ENGINEERING SERVICES SHALL BE DESIGNED IN ACCORDANCE WITH ALL RELEVANT FEDERAL AND LOCAL GOVERNMENT REGULATIONS, ALL RELEVANT AUSTRALIAN STANDARDS AND UTILITY SUPPLY AUTHORITIES. RELEVANT STANDARDS AND CODES INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING:
 - I. LOCAL ELECTRICAL AUTHORITY INSTALLATION RULES.
 - III. AS/NZS 3000 WIRING RULES.
 - IV. AS/NZS 1158.WHERE SPECIFIC QUALITY REQUIREMENTS ARE NOT SPECIFIED, THE REQUIREMENTS OF THE RELEVANT AUSTRALIAN STANDARD SHALL BE CONSIDERED A MINIMUM PERFORMANCE LEVEL FOR THAT PART OF THE WORKS.

OBLIGATIONS OF THE INSTALLER

- IN WRITING THIS SCOPE OF WORK THE CLIENT EXPECTS AND RELIES UPON THE CONTRACTOR POSSESSING SPECIALIST TRADE EXPERTISE NECESSARY TO COMPLETE THE WORKS IN ACCORDANCE WITH DOCUMENTATION.
- IN ADDITION, THE CONTRACTOR HAS THE FOLLOWING OBLIGATIONS:
- a) TO RAISE IN GOOD TIME, ISSUES REQUIRING DESIGN INPUT OR CLARIFICATION FROM THE CONSULTING ENGINEER, PARTICULARLY IN RESPECT TO:-
 - I. INTERPRETATION AND CO-ORDINATION OF THE SPECIFICATION OR DRAWINGS.
 - II. PROBLEMS IN COMPLYING WITH THE SCOPE OF WORK.
 - III. EXCLUSIONS FROM THE TENDER DOCUMENTS.
 - b) TO ALLOW THE DESIGN VERIFICATION COSTS OF THE CONSULTING ENGINEER WHEN DEPARTING FROM THE SCOPE OF WORK.
 - c) TO CERTIFY COMPLIANCE WITH CONTRACT DOCUMENTS, INCLUDING ALL VARIATION INSTRUCTIONS, AT PRACTICAL COMPLETION.
 - d) TO CERTIFY COMPLIANCE WITH AUTHORITY REQUIREMENTS.
 - e) TO PAY ALL FEES APPLICABLE TO THE WORKS.
 - f) TO OBTAIN ALL AUTHORITY PERMITS AND CERTIFICATES TO ALLOW THE PROGRESS OF THE WORK.
 - g) TO PROVIDE MANUFACTURER'S AND CONSTRUCTION DRAWINGS.
 - h) TO COORDINATE ALL LIGHTING WORKS WITH LOCAL POWER SUPPLY AUTHORITIES.

CONTRACTOR'S DESIGN RESPONSIBILITIES

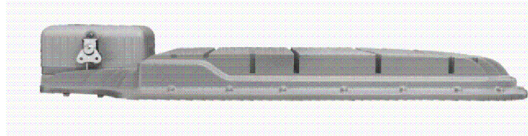
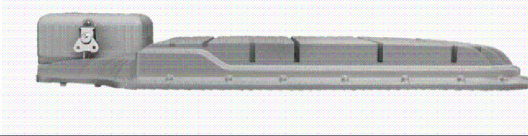

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DETAILED DESIGN ACTIVITIES LISTED BELOW, IN ADDITION TO THOSE ACTIVITIES NORMALLY UNDERTAKEN THROUGH THE CUSTOM AND PRACTICE OF THE INDUSTRY.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT THE DETAILED DESIGN, WHICH HE UNDERTAKES, IS FULLY CO-ORDINATED AND COMPATIBLE WITH THE REMAINDER OF THE PROJECT DESIGN.

THE CONTRACTOR'S DESIGN OBLIGATIONS SHALL INCLUDE:

- a) INTERFACE DETAILS WITH OTHER TRADES AND EXISTING SERVICES.
- b) PHYSICAL COORDINATION OF INSTALLATION WITH OTHER TRADES.
- c) CO-ORDINATION OF THE CONSTRUCTION OF THE INSTALLATION
- d) EQUIPMENT AND LIGHT FITTINGS MOUNTING DETAILS AND FASTENERS.
- e) CABLE INSTALLATION DETAILS AND DERATING FACTORS.
- f) SETTINGS FOR PROTECTION EQUIPMENT, TIME DELAYS, TIME SWITCHES ETC.
- g) CAPACITY, DESIGN AND SIZING OF CABLE SUPPORT AND CONDUIT SYSTEMS WHERE THESE ARE NOT SPECIFIED.
- h) DETAILED DESIGN OF EARTHING AND BONDING REQUIREMENTS FOR ELECTRICAL ENGINEERING SERVICES.
- i) STREET LIGHT POLE FOOTING DESIGN

LUMINAIRE SCHEDULE

TYPE	MANUFACTURE	DESCRIPTION	IMAGE	LAMP				IP RATING	IK RATING	MOUNTING	NOTE
				LAMP TYPE	WATTAGE	CCT	CRI				
SL5	Alridge	V-LED MK11 – New LED pole mounted streetlight. V162100WT3N7PBP		LED	100w	4000K	<80	IP66	IK06	Mounted to existing pole and outreach	Coordinate with Contractor / electrical engineer for installation
SL7	Alridge	V-LED MK11 – New LED pole mounted streetlight. V162200WT3N7PBP		LED	200w	4000K	<80	IP66	IK06	Mounted to existing pole and outreach	Coordinate with Contractor / electrical engineer for installation
SL8	Eclatec – Gerard Lighting	Murena - Tabled 2 ERS, 400mA		LED	37w	4000K	<80	IP66	IK07	Pole mounted to custom Prince Alfred Park pole at 7 metre MH	Confirm structural requirements. Details with structural civil documentation. Coordinate with Contractor / electrical engineer for installation. Confirm structural requirements and footing details with structural / civil documentation by others.
SL8 pole	Ingal EPS Poles	FPM4FR-B436 + XOR25S45-B436 Prince Alfred Park custom tapered pole and finishes to match existing poles in Park.									7 metre mounting height
EX		Existing pole and luminaire to remain									

LIGHTING

- a. CONTRACTOR SHALL VISIT THE SITE AND BECOME CONVERSANT WITH THE EXISTING SITE CONDITIONS AND SCOPE OF WORK REQUIRED UNDER THIS CONTRACT AND MAKE ALL THE REQUIRED ALLOWANCES TO COMPLETE THE WORKS.
- b. FINAL LOCATIONS AND COLOUR SELECTION OF ALL FITTINGS, ACCESSORIES AND COMPONENTS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE LUMINAIRE SCHEDULE, DETAILS AND MANUFACTURER'S INSTRUCTIONS.
- c. EQUIPMENT SHALL BE LOCATED WITH DUE ALLOWANCE FOR AIR VENTILATION AROUND THE EQUIPMENT.
- d. ALL LUMINAIRES SHALL BE CLEANED AT PRACTICAL COMPLETION.
- e. THE ELECTRICAL CONTRACTOR SHALL PROGRESSIVELY REMOVE FROM THE SITE ALL RUBBISH, DEBRIS, MATERIAL CUTTINGS AND OTHER REDUNDANT MATERIALS, WHICH RESULT FROM THE WORKS OF THE CONTRACT. IN PARTICULAR REDUNDANT CABLING AND OBSOLETE EQUIPMENT SHALL BE DISCONNECTED AND REMOVED FROM THE SITE.
- f. PROVIDE A CERTIFICATE OF ELECTRICAL SAFETY ON COMPLETION OF THE WORKS.
- g. PROVIDE 7 WORK DAYS NOTICE OF ANY TESTS AND COMMISSIONING SO THAT THE CONSULTANT MAY WITNESS.
- h. CONTRACTOR TO NOTIFY THE ELECTRICAL ENGINEER/LIGHTING DESIGNER OF ANY DISCREPANCIES BETWEEN THE LIGHTING LAYOUTS AND SITE CONDITIONS.
- i. ALLOW FOR A FINAL INSPECTION WITH ALL LIGHTING OPERATIONAL TO TAKE PLACE, AFTER SUNSET, ON SITE IN THE PRESENCE OF THE ELECTRICAL CONTRACTOR. THE ELECTRICAL CONTRACTOR SHALL PROVIDE THE NECESSARY PERSONNEL AND EQUIPMENT TO PERMIT SUCH PROCEDURES.
- j. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATION WITH AND OBTAINING ASSET NUMBERS FROM POWER SUPPLY AUTHORITY, INCLUDING PAYMENT OF RELEVANT FEES. ALLOW SUFFICIENT TIME FOR THIS PROCESS TO BE UNDERTAKEN IN TIME FOR PRACTICAL COMPLETION.

AS INSTALLED DOCUMENTATION

WORK AS EXECUTED DRAWINGS WILL BE PRODUCED AS PER CITY OF SYDNEY AND THE POWER AUTHORITY REQUIREMENTS. THESE SHALL INCLUDE, BUT NOT BE LIMITED TO:

- ALL RELEVANT DETAILS OF LUMINAIRES AND COLUMNS
- DRAWINGS TO INCLUDE DETAILS OF ALL INSTALLED EQUIPMENT, INCLUDING CONDUIT TYPES AND SIZES, CABLE TYPES AND SIZES, ANY PITS, CABLE CONNECTION POINTS ETC.
- FOR ALL CONDUIT RUNS, INCLUDE DEPTHS & OFFSET FROM KERBS

SCOPE OF WORKS:

THE WORKS COMPRISE THE SUPPLY, DELIVERY, INSTALLATION, COMMISSIONING, TESTING, PLACING INTO SERVICE AND MAINTENANCE OF LIGHTING SERVICES AND WILL INCLUDE BUT NOT BE LIMITED TO:

- a) BEFORE COMMENCING ANY CONSTRUCTION WORK, THE CONTRACTOR SHALL PERFORM A DIAL-BEFORE-YOU-DIG INVESTIGATION AND OBTAIN ALL NECESSARY CLEARANCES AND LOCATIONS OF EXISTING SERVICES.
- b) CO-ORDINATE WITH HEAD CONTRACTOR FOR LAYING OF ELECTRICAL/LIGHTING CONDUITS IN SHARED TRENCHES EXCAVATED BY OTHERS.
- c) SUPPLY AND INSTALLATION OF ALL LIGHT FITTINGS AND ELECTRICAL EQUIPMENT.
- d) PROVISION OF PITS, POLE FOUNDATIONS, CONDUITS, CONDUIT ROUTE MARKERS, CABLING AND CABLE PITS AS INDICATED ON THE ELECTRICAL ENGINEER AND OTHER SERVICES DRAWINGS BY OTHERS.
- e) PROVISION OF FOOTING DESIGN INCLUDING INDEPENDENT STRUCTURAL ENGINEER'S CERTIFICATES FOR THE LIGHTING POLE FOUNDATIONS AND MOUNTING LOCATIONS BY OTHERS.
- f) COORDINATION WITH ALL RELEVANT AUTHORITIES AND OBTAIN APPROVALS FOR THE COMPLETE INSTALLATION BY ELECTRICAL ENGINEER/ ELECTRICAL CONTRACTOR.
- g) COORDINATION WITH ALL OTHER IN-GROUND SERVICES FOR THE INSTALLATION. REFER TO SET-OUT DRAWINGS ISSUED BY THE CIVIL ENGINEER.
- h) PROVISION FOR SUBMITTING CERTIFICATE OF ELECTRICAL SAFETY AND LETTERS OF COMPLIANCE.
- i) PROVISION OF PRODUCT DATA & AS-INSTALLED DRAWINGS IN BOTH HARD COPY AND ELECTRONIC FORMAT.
- j) THE CONTRACTOR SHALL MAKE GOOD ALL BITUMEN, CONCRETE, FOOTPATH AND LANDSCAPING DISTURBED BY THE WORKS.
- k) TESTING, COMMISSIONING, WARRANTY AND PREVENTATIVE MAINTENANCE (12 MONTHS) OF THE INSTALLED LIGHTING SYSTEM.
- l) VERIFY NORTHING AND EASTING COORDINATES FOR ALL NEW COLUMNS. LIAISE WITH CIVIL CONTRACTOR. COORDINATES TO BE ADDED TO ASSET SCHEDULE AND INCLUDED ON WORK AS EXECUTED DRAWINGS. PAYMENT OF ASSET TAG FEES.
- m) SUBMISSION OF ALL FORMS AND PAYMENT OF ALL FEES TO ALL OTHER RELEVANT AUTHORITIES.
- n) LIAISON WITH THE SUPPLY AUTHORITY FOR ALL DISCONNECTIONS AND RECONNECTIONS OF POWER SUPPLIES REQUIRED AND PAYMENT OF ALL ASSOCIATED FEES.


COLUMN INSTALLATION

- a. ALL COLUMNS / POLES SHALL BE MOUNTED FOR TRUE VERTICAL ALIGNMENT. MOVEMENT DUE TO THE WEIGHT OF THE OUTREACH ARM AND THE LUMINAIRE SHALL BE FULLY CONSIDERED IN THE COLUMN INSTALLATION TO ENSURE ADEQUATE ALIGNMENT.
- b. SUPPLY AND INSTALL NEW LUMINAIRES AND COLUMNS AS INDICATED ON THE DRAWINGS.
- c. PROVIDE INTEGRAL PHOTO ELECTRIC CELLS WITHIN LUMINAIRES TO SWITCH THE SUPPLY TO ALL LUMINAIRES.

TESTING, COMMISSIONING AND MAINTENANCE

- a. THE INSTALLATION SHALL BE TESTED TO THE SATISFACTION OF THE RELEVANT AUTHORITIES PRIOR TO THE ACCEPTANCE OF THE INSTALLATION AND THE COMMENCEMENT OF THE DEFECTS LIABILITY PERIOD, WHICH IS 12 MONTHS.
- b. THE TESTS SHALL COMPRISE A THOROUGH INSPECTION OF THE ENTIRE INSTALLATION AND THE OPERATIONAL AND PERFORMANCE TEST TO CONFIRM COMPLIANCE WITH THE SPECIFICATION AND THE AUSTRALIAN STANDARDS.
- c. CARRY OUT ALL COMMISSIONING TESTS NECESSARY TO PUT THE SYSTEMS INTO COMMERCIAL USE AND TO APPROVAL BEFORE PRACTICAL COMPLETION IS GRANTED.
- d. A FORMAL LETTER SHALL BE PROVIDED TO THE PRINCIPAL DETAILING THE TESTING AND COMMISSIONING IS COMPLETE TO ENABLE PRACTICAL COMPLETION TO BE GRANTED.

DO NOT SCALE

P1	06.02.2020	AW	DESIGN DEVELOPMENT	FXV	AXL
REV	DATE	BY	DESCRIPTION	CHK	APD
DRAWING STATUS:					
DESIGN DEVELOPMENT					
REFERENCE COORDINATION DRAWINGS					
DESCRIPTION		DRAWING NO.		REV	CHK
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CLIENT: HANSEN YUNCKEN					
ARCHITECT: FJMT					
PROJECT: INNER SYDNEY HIGH SCHOOL PUBLIC LIGHTING UPGRADE					
TITLE: ELECTRICAL SERVICES SPECIFICATIONS					
SCALE @ A1: NTS		CHECKED: DN		APPROVED: FXV	
PROJECT No: PS113077		DRAWN: CAD		DATE: JANUARY 2020	
DRAWING No: PS113777-LIG-ISHS-000					REV: P1
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