

24x36B
 File Name: F:\Projects\2006\06-0107-08\Elect\Drawings\06-0107-08E01.dwg - Tab: E1 Plotted By: B0ige 06/29/2006 [Thu 4:09pm]
 24x36 PLOT SCALE: 1"=1'

**ELECTRICAL SPECIFICATIONS
SCOPE OF WORK**

THE SCOPE OF WORK FOR THIS PROJECT IS TO SUPPLY AND INSTALL ALL REQUIRED ELECTRICAL ITEMS FOR A COMPLETE AND OPERATIONAL EMERGENCY GENERATOR/UPS SYSTEM IN ACCORDANCE WITH THE INTENT OF THESE SPECIFICATIONS AND DRAWINGS. THESE ITEMS INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING:

- EXISTING "NORMAL" LIGHTING FIXTURES ARE BEING RE-FED FROM THE NEW EMERGENCY GENERATOR (OR UPS) ELECTRICAL DISTRIBUTION SYSTEM TO ALLOW THEM TO SUPPLEMENT (AND EVENTUALLY REPLACE) THE EXISTING DC EMERGENCY LIGHTING. IN EACH DESIGNATED AREA A DESCRIPTION OF LIGHTING TO BE CONNECTED TO THE "NEW" SYSTEM IS INDICATED. LIGHTING CIRCUITS SHALL BE SEPARATED ELECTRICALLY FROM THE EXISTING DISTRIBUTION SYSTEM TO ENSURE THAT THE GROUND PATH TO OVERCURRENT PROTECTION IS DIRECT.
- SUPPLY AND INSTALL NEW COMPLETE SELF CONTAINED 125VA EXTERIOR GEN-SET WITH A WEATHERPROOF ENCLOSURE AND INTEGRATED DOUBLE WALL TANK. (SEE PRE-APPROVAL REQUIREMENTS)
- SUPPLY AND INSTALL A NEW 30KVA UPS LISTED FOR USE IN EMERGENCY LIGHTING. (SEE PRE-APPROVAL REQUIREMENTS)
- SUPPLY AND INSTALL NEW STARTERS FOR EXISTING MOTOR LOADS TO BE TRANSFERRED TO THE NEW EMERGENCY DISTRIBUTION SYSTEM.
- SUPPLY AND INSTALL ALL POWER CABLING AND FEEDERS AS REQUIRED.
- SUPPLY AND INSTALL ALL REQUIRED ADDITIONAL LIGHTING AND ACCESSORIES AS SHOWN AND AS REQUIRED.
- SUPPLY AND INSTALL ALL REQUIREMENTS FOR MECHANICAL EQUIPMENT (THESE INCLUDE THE TWO EXISTING SUMP PUMPS AND THE EXISTING COMPRESSOR).
- SUPPLY AND INSTALL NEW EMERGENCY POWER DISTRIBUTION AND BRANCH CIRCUIT PANELBOARDS AT THE LOCATIONS SHOWN.
- SUPPLY AND INSTALL ALL REQUIRED JUNCTION BOXES NEAR EXISTING PNAELBOARDS TO TRANSFER THE EXISTING LIGHTING CIRCUITS TO THE NEW EMERGENCY PANELS AS SHOWN.
- TRANSFER THE EXISTING MAN-LIFT CIRCUIT TO THE NEW EMERGENCY POWER PANEL.
- SUPPLY AND INSTALL NEW BREAKER IN EXISTING MAIN DISTRIBUTION.
- SUPPLY AND INSTALL TIE-INS TO METASYS SYSTEM.

AS-IS CONDITION

AS PART OF THIS CONTRACT, AND WITHIN TWO WEEKS OF AWARD, THE CONTRACTOR SHALL CREATE "AS-IS" DRAWING SHOWING FIXTURES, SWITCHING BRANCH CIRCUIT PANELS AND SPECIFIC CIRCUITS RELATED TO LIGHTING IN EACH DESIGNATED AREA. INCLUDE ALL PANELS SHOWN ON THESE DRAWINGS AS "EXISTING." ADDITIONAL COPIES OF DRAWINGS WILL BE PROVIDED FOR THIS "AS-IS" DRAWING SET. HAND-DRAWN MARK-UPS ARE SUFFICIENT - WHERE NEAT AND LEGIBLE. USE STRAIGHT EDGE AND CIRCLE TEMPLATE TO IMPROVE READABILITY. SUBMIT A FULL SET OF DRAWINGS TO THE CONTRACT ADMINISTRATOR FOR REVIEW.

EXECUTION SPECIFICATIONS

THE CONTRACT INCLUDES THE FURNISHING OF LABOUR, MATERIAL, EQUIPMENT, AND SERVICES NECESSARY FOR A COMPLETE ELECTRICAL SYSTEM AS SHOWN ON THE DRAWINGS AND OPERATING TO THE COMPLETE SATISFACTION OF THE ENGINEER.

NEW C.S.A. APPROVED EQUIPMENT OF UNIFORM MANUFACTURE THROUGHOUT.

COORDINATE ALL WORK WITH OTHER TRADES.

OBTAIN NECESSARY PERMITS AND PAY PERMIT FEES.

EXECUTE WORK IN A FIRST-CLASS AND WORKMANLIKE MANNER.

LEAVE PREMISES IN A CLEAN AND SATISFACTORY CONDITION ON COMPLETION OF ELECTRICAL WORK. PATCH AND REPAIR ALL FINISHED SURFACES TO ORIGINAL CONDITION.

DRAWING IS DIAGRAMMATIC ONLY, AND DOES NOT SHOW ALL DETAILS. INFORMATION INVOLVING ACCURATE MEASUREMENTS OF THE BUILDING, STRUCTURAL STEEL, EXISTING WALLS, ETC. ARE TO BE TAKEN IN THE FIELD. THE CONTRACTOR SHALL MAKE, WITHOUT ADDITIONAL EXPENSE TO THE CITY NECESSARY CHANGES OR ADDITIONS TO RUNS TO ACCOMMODATE STRUCTURAL CONDITIONS.

LOCATION OF DEVICES MAY BE ALTERED WITHOUT CHARGE TO THE CITY, PROVIDED THE CHANGE IS MADE BEFORE FINAL INSTALLATION, IT DOES NOT NECESSITATE ADDITIONAL MATERIALS, AND ALL SUCH CHANGES ARE RATIFIED BY CONTRACT ADMINISTRATOR. RECORD CHANGES ON RECORD SET OF DRAWINGS.

DRAWING SHOWS GENERAL LOCATION FOR EQUIPMENT AND CIRCUITS; INSTALL THEM IN SUCH A WAY AS TO CONSERVE HEADROOM AND INTERFERE AS LITTLE AS POSSIBLE WITH THE FREE USE OF SPACE THROUGH WHICH THEY PASS.

EXAMINE THE SITE, BUILDING AND LOCAL CONDITIONS AFFECTING WORK OF THIS CONTRACT. EXAMINE ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL CONDITIONS TO ENSURE WORK CAN BE PERFORMED WITHOUT CHANGES, AS SHOWN ON CONTRACT DRAWINGS. NO ALLOWANCE WILL BE MADE LATER FOR NECESSARY CHANGES.

CONTRACTOR SHALL KEEP AN ON-GOING SET OF 'RECORD' DRAWINGS ON SITE FOR REVIEW BY CONTRACT ADMINISTRATOR AT ANY TIME. DRAWINGS TO BE TURNED OVER UPON COMPLETION OF PROJECT.

CONDUITS SHALL NOT HAVE MORE THAN ONE VOLTAGE LEVEL OF WIRING RUNNING WITHIN THEM.

ALL PENETRATIONS THROUGH FIRE SEPARATIONS SHALL BE RATED TO MATCH FIRE RATING. OBTAIN APPROVAL OF FIRE STOPPING MATERIALS AND ARRANGE FOR INSPECTION BEFORE PAINTING.

PAINT ALL PATCHING. ALL PAINTING AND PATCHING SHALL BE DONE BY QUALIFIED LABOURERS.

CLEARLY LABEL CIRCUIT AND PANEL VIA LAMACOID ON ALL RECEPTACLES.

ANY PENETRATIONS ON FINISHED SURFACES SHALL BE FINISHED WITH TRIM. TRIM FINISHES SHALL BE BRUSHED STAINLESS STEEL AND SHALL INCLUDE TRIM RINGS, ETC. WHERE PENETRATIONS ARE MADE IN FIRE WALLS.

INSTALL ALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURERS' INSTRUCTIONS, THE CANADIAN ELECTRICAL CODE AND ALL OTHER AUTHORITIES HAVING JURISDICTION. CONTRACTOR SHALL COORDINATE WITH OTHER TRADES TO ENSURE PROPER INSTALLATION.

PRODUCT SPECIFICATIONS:

NORMAL RECEPTACLES
 SINGLE RECEPTACLES, DUPLEX RECEPTACLES, CSA TYPE 5-15 R, 125 V, 15 A, U GROUND
 - SUITABLE FOR NO. 10 AWG FOR BACK AND SIDE WIRING.
 - BREAK-OFF LINKS FOR USE AS SPLIT RECEPTACLES.
 - ALL RECEPTACLES SHALL BE SPECIFICATION GRADE DECORA STYLE.
 - MOUNT AT 6" ABOVE COUNTER HEIGHT OR 12" AFF UNLESS OTHERWISE INDICATED.
 - RECEPTACLES SHALL BE WHITE WITH BRUSHED STAINLESS STEEL COVER PLATES.

LIGHT SWITCHES

- ALL LIGHT SWITCHES SHALL BE SPECIFICATION GRADE WHITE DECORA STYLE WITH STAINLESS STEEL COVERPLATES. DRAWINGS SHOW GENERAL LOCATIONS OF SWITCHES ACTUAL QUANTITIES SHALL MEET REQUIREMENTS OF INTENT. WHERE DIMMERS ARE USED THEY SHALL BE LUTRON NOVA-T STYLE RATED FOR THE PURPOSE.

WIRING METHODS

ALL REGULAR WIRING SHALL BE COPPER, TECK90 OR RW90 IN EMT CONDUIT WITH WATERTIGHT STEEL COMPRESSION CONNECTIONS

ALL WIRING SHALL BE CONCEALED. WHERE WIRING CAN NOT BE CONCEALED OBTAIN APPROVAL FROM THE CONTRACT ADMINISTRATOR BEFORE ROUGH-IN. INCLUDE PRIME AND PAINTING TO MATCH WALLS.

PANELBOARDS

PANELBOARDS: PRODUCT OF ONE MANUFACTURER.
 - INSTALL CIRCUIT BREAKERS IN PANELBOARDS BEFORE SHIPMENT.
 - IN ADDITION TO CSA REQUIREMENTS MANUFACTURER'S NAMEPLATE SHALL SHOW FAULT CURRENT THAT PANEL INCLUDING BREAKERS HAS BEEN BUILT TO WITHSTAND.
 - PANELBOARDS: BUS AND BREAKERS RATED FOR 10 kA (SYMMETRICAL) INTERRUPTING CAPACITY OR AS INDICATED.
 - SEQUENCE PHASE BUSSING WITH ODD NUMBERED BREAKERS ON LEFT AND EVEN ON RIGHT, WITH EACH BREAKER IDENTIFIED BY PERMANENT NUMBER IDENTIFICATION AS TO CIRCUIT NUMBER AND PHASE. PANELBOARDS: MAINS, NUMBER OF CIRCUITS, AND NUMBER AND SIZE OF BRANCH CIRCUIT BREAKERS AS INDICATED.
 - TWO KEYS SHALL BE PROVIDED FOR EACH PANELBOARD AND PANELBOARDS SHALL BE KEYED ALIKE FOR THE ENTIRE SITE.
 - COPPER BUS WITH NEUTRAL OF SAME AMPERE RATING AS MAINS
 - MAINS: SUITABLE FOR BOLT-ON BREAKERS
 - TRIM WITH CONCEALED FRONT BOLTS AND HINGES AND DOOR
 - TRIM AND DOOR FINISH: BAKED GRAY ENAMEL
 - PROVIDED WITH SPRINKLER HOODS
 - PANELS SHALL MOUNT SURFACE ON WALL.
 - PANELS SHALL BE 24 OR 30 CIRCUIT AS INDICATED.

ACCEPTABLE MANUFACTURER: CUTLER HAMMER, SCHNEIDER CANADA, SIEMENS. SUBMIT SHOP DRAWINGS.

BREAKERS

BOLT-ON MOLDED CASE CIRCUIT BREAKER: QUICK-MAKE, QUICK-BREAK TYPE, FOR MANUAL AND AUTOMATIC OPERATION WITH TEMPERATURE COMPENSATION FOR 40C AMBIENT.
 - COMMON-TRIP BREAKERS: WITH SINGLE HANDLE FOR MULTI-POLE APPLICATIONS.
 - MAGNETIC INSTANTANEOUS TRIP ELEMENTS IN CIRCUIT BREAKERS TO OPERATE ONLY WHEN VALUE OF CURRENT REACHES SETTING. TRIP SETTINGS ON BREAKERS WITH ADJUSTABLE TRIPS TO RANGE FROM 3-8 TIMES CURRENT RATING. MOLDED CASE CIRCUIT BREAKER TO OPERATE AUTOMATICALLY BY MEANS OF MAGNETIC TRIPPING DEVICES TO PROVIDE INSTANTANEOUS TRIPPING FOR SHORT CIRCUIT PROTECTION.

BREAKERS USED FOR LIGHTS SHALL BE RATED FOR SWITCHING THAT DUTY.

ACCEPTABLE MANUFACTURER: CUTLER HAMMER, SCHNEIDER CANADA, SIEMENS

DISCONNECT SWITCHES

NON-FUSIBLE, HORSEPOWER RATED DISCONNECT SWITCH IN CSA (WEATHERPROOF WHERE INSTALLED OUTSIDE) ENCLOSURE.
 - PROVISION FOR PADLOCKING IN SWITCH OFF POSITION.
 - MECHANICALLY INTERLOCKED DOOR TO PREVENT OPENING WHEN HANDLE IN ON POSITION
 - QUICK-MAKE, QUICK-BREAK ACTION
 - ON-OFF SWITCH POSITION INDICATION ON SWITCH ENCLOSURE COVER.
 ACCEPTABLE MANUFACTURER: SQUARE 'D', CUTLER HAMMER. SUBMIT SHOP DRAWINGS.

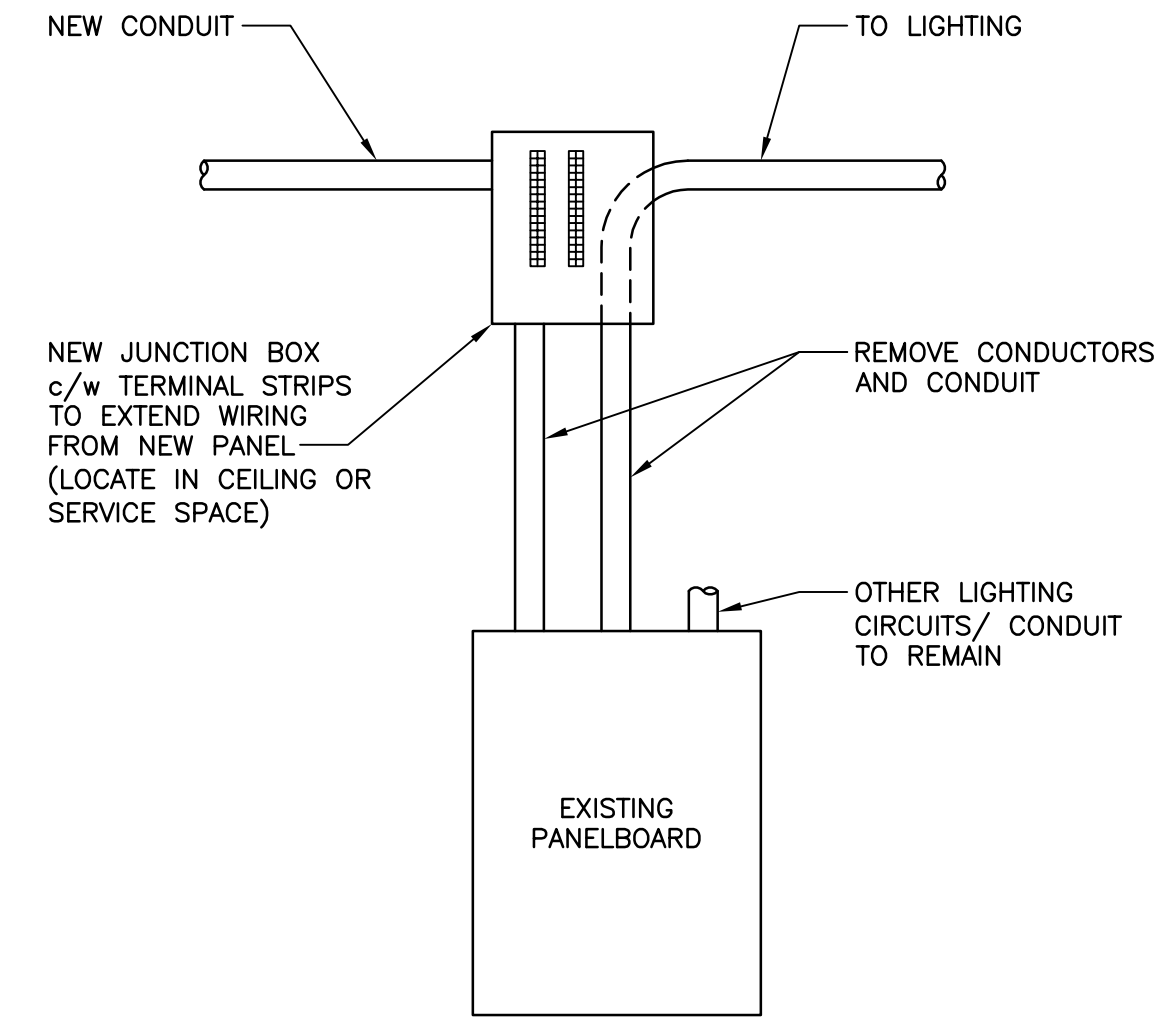
GENERATOR SET

GENSET SHALL BE OUTDOOR PAD MOUNTED AND FACTORY HOUSED IN A SOUND ATTENUATED, WEATHERPROOF ENCLOSURE. PROVIDE BLOCK HEATER, SNOW HOOD, GRAVITY DAMPER. FUEL TANK SHALL BE DOUBLE-WALLED SUB-BASE MOUNTED AND SIZED FOR 12 HOURS OF FULL LOAD RUNNING. SOUND ATTENUATION SHALL LIMIT SOUND TO 80dB AT FULL LOAD. GENERATOR SHALL BE:
 -125kVA, 100kW, 347/600V, DIESEL FUEL
 -c/w 150A OUTPUT BREAKER
 -175A 3P AUTOMATIC TRANSFER SWITCH, DOUBLE-SIDED MANUAL BYPASS
 -PROVIDE CONTROL AND MONITORING PANELS-REMOTE AND ON UNIT
 -CSA - C282 CONFORMANCE
 -SUGGESTED MANUFACTURERS: KOHLER, TOROMONT, ONAN

UPS
 UPS SHALL BE SELF CONTAINED, ON-LINE (STATIC), INDOOR, FLOOR MOUNTED IN ONE ENCLOSURE.
 -30KVA
 -BATTERIES SIZED FOR "GENERATOR" DUTY (MINIMUM 15 MINUTES ON FULL LOAD)
 -BUILT-IN SURGE SUPPRESSION
 -IGBT RECTIFIER WITH POWER FACTOR CORRECTION TO .99
 -INTERNAL MAINTENANCE BYPASS
 -ULC924 LISTED FOR EMERGENCY LIGHTING
 -600/120/208V INPUT TRANSFORMER WITHIN ENCLOSURE
 -120/208V OUTPUT c/w BREAKER
 -SUGGESTED MANUFACTURERS: TOSHIBA, MGE AND LIEBERT

CONNECTION TO METASYS

WHERE CONNECTORS TO METASYS BMS SYSTEM ARE INDICATED CONTRACTOR SHALL WIRE OUT A DRY CONTACT AND LEAVE SIX FEET OF CABLE COILED IN A JUNCTION BOX NEAR THE METASYS. FINAL TIE-IN WILL BE BY THE CITY.



1 INTERCEPT DETAIL
 SCALE: 1"=20'-0" 24"x36"
 1"=40'-0" 11"x17"

0	30/06/06	ISSUED FOR TENDER	
NO.	D / M / Y	DESCRIPTION	BY
REVISIONS / ISSUE			
A	A. SECTION LETTER OR DETAIL NUMBER IS DRAWN		A
B	B. DRAWING WHERE SECTION OR DETAIL WAS INDICATED		-
- SECTION OR DETAIL SHOWN ON SAME DRAWING			
KGS GROUP		CONSULTING ENGINEERS & PROJECT MANAGERS	
		WINNIPEG (204) 896-1209 THUNDER BAY (807) 345-2233	
CLIENT: CITY OF WINNIPEG PUBLIC WORKS DEPARTMENT			
PROJECT: INSTALLATION OF EMERGENCY GENERATOR AT PAN-AM POOL - 25 POSEIDON BAY TENDER No. 404-2006			
DWG. DESCRIPTION: ELECTRICAL SPECIFICATIONS AND LEGEND			
ENG. STAMP:	DESIGNED: BY: AP	DRAWN: BY: GCN	
	CHECKED:	CHECKED:	
APPROVED:			
SCALE: AS NOTED	DATE: JUN/2006		
KGS DWG. NO. 06-0107-08		E1	
CLIENT DWG. NO.			REV: 0

