

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 SERVICE BUILDING IN ACCORDANCE WITH THE INTENT OF THESE SPECIFICATIONS AND DRAWINGS. THESE ITEMS INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING:

POWER SUPPLY

-ARRANGE WITH MANITOBA HYDRO FOR THE SUPPLY OF A NEW 600A 1P/3W 240V SERVICE. PAY ALL CONTRIBUTION COSTS.

GENERAL

- SUPPLY AND INSTALL NEW SERVICE ENTRANCE DISTRIBUTION PANEL.
- SUPPLY AND INSTALL NEW BREAKERS AS REQUIRED.
- SUPPLY AND INSTALL ALL REQUIRED DISTRIBUTION EQUIPMENT INCLUDING PANELBOARDS, CONDUIT WIRING ETC.
- SUPPLY AND INSTALL ALL POWER CABLING AND FEEDERS AS REQUIRED.
- SUPPLY AND INSTALL ALL REQUIRED ADDITIONAL LIGHTING AND ACCESSORIES.
- SUPPLY AND INSTALL ALL REQUIREMENTS FOR MECHANICAL EQUIPMENT.
- SUPPLY AND INSTALL ALL NECESSARY EQUIPMENT TO RELOCATED THE TELEPHONE DEMARCATION POINT TO THE LOCATION SHOWN. MAKE ALL REQUIRED ARRANGEMENTS WITH MTS.
- SUPPLY AND INSTALL A NEW SECURITY SYSTEM. ARRANGE FOR CONNECTION AND MONITORING FOR ONE YEAR. PAY ALL ASSOCIATED COSTS. CO-ORDINATE WITH CONTRACT ADMINISTRATOR.

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 CONTRACT ADMINISTRATOR.

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.

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 CONTRACT ADMINISTRATOR NECESSARY CHANGES OR ADDITIONS TO RUNS TO ACCOMMODATE STRUCTURAL CONDITIONS.

LOCATION OF DEVICES MAY BE ALTERED WITHOUT CHARGE TO CONTRACT ADMINISTRATOR, 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, UNLESS IT HAS BEEN BROUGHT TO CONTRACT ADMINISTRATOR'S ATTENTION IN WRITING, PRIOR TO CLOSING OF TENDERS.

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 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.

SUBMITTALS

SUBMIT PRODUCT DATA FOR ALL EQUIPMENT. ACCEPTABLE MATERIALS SHALL BE AS SPECIFIED, CODE APPROVED OR CONTRACT ADMINISTRATOR APPROVED. ALL MATERIAL SHALL BE NEW, UNLESS SPECIFIED OTHERWISE. LIGHTING FIXTURES LISTED ARE PREFERRED. SUBMIT SHOP DRAWINGS ON ALL CONTRACTOR PROVIDED EQUIPMENT. PROVIDE THREE (3) COPIES OF OPERATING AND MAINTENANCE MANUALS.

COORDINATION

THE CONTRACTOR IS RESPONSIBLE TO DETERMINE THE SCOPE OF THE WORK REQUIRED FOR EACH TRADE. WORK SHALL BE DONE BY THE APPROPRIATE SKILLED TRADE. ALL TRADES MUST COORDINATE WORK TO ENSURE THAT THE ENTIRE SCOPE OF THE PROJECT IS COVERED. THERE SHALL BE NO ALLOWANCES GIVEN FOR ITEMS WHICH RESULT AS A FAILURE OF CO-ORDINATION. THE CONTRACTOR WILL REVIEW THE DRAWINGS WITH ALL TRADES PRIOR TO TENDER SUBMISSION TO RESOLVE ALL COORDINATION ISSUES.

RESPONSIBILITY TO DETERMINE WHICH DIVISION OR SECTION PROVIDES VARIOUS PRODUCTS AND WORK, RESTS WITH THE CONTRACTOR. ADDITIONAL COMPENSATION WILL NOT BE CONSIDERED BECAUSE OF DIFFERENCES IN INTERPRETATION OF TECHNICAL PROVISIONS.

CONTRACTOR SHALL SUPPLY ALL ELECTRICAL REQUIREMENTS FOR MECHANICAL EQUIPMENT.

CONTRACTOR SHALL ARRANGE WITH MANITOBA HYDRO FOR SERVICE ENTRANCE REQUIREMENTS AND AVAILABLE FAULT LEVELS.

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.
- MOUNT AT 36" AFF UNLESS OTHERWISE INDICATED.
- RECEPTACLES SHALL BE WHITE WITH BRUSHED STAINLESS STEEL COVER PLATES.

LIGHT SWITCHES

- ALL LIGHT SWITCHES SHALL BE SPECIFICATION GRADE STYLE WITH STAINLESS STEEL COVERPLATES. DRAWINGS SHOW GENERAL LOCATIONS OF SWITCHES ACTUAL QUANTITIES SHALL MEET REQUIREMENTS OF INTENT.

WIRING METHODS

ALL REGULAR WIRING SHALL BE RW90 IN EMT CONDUIT OR AC-90.

ALL WIRING SHALL BE CONCEALED.

ALL WIRE SIZING IS BASED ON COPPER WIRING.

MINIMUM WIRE SIZE #12 AWG.

LIGHTING

ALL NORMAL, EMERGENCY, EXIT AND EXTERIOR LIGHTS SHALL BE SPECIFICATION GRADE WITH PREMIUM BALLASTS. ALL NEW T-8 LAMPS SHALL BE 2700K LAMPS WITH A CRI OF 85 OR GREATER.

SUBMIT SHOP DRAWINGS.

ACCEPTABLE MANUFACTURERS: LITHONIA, LUMACELL, COOPER LIGHTING, CANLYTE

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 25 kA (SYMMETRICAL) INTERRUPTING CAPACITY OR AS INDICATED BY HYDRO.
- 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.
- PANEL SHALL BE 84 CIRCUIT IN ONE TUB.

ACCEPTABLE MANUFACTURER: SQUARE 'D', CUTLER HAMMER, FEDERAL PIONEER.
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: SQUARE 'D', CUTLER HAMMER, FEDERAL PIONEER.

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.

STARTERS

ALL STARTERS SHALL BE MAGNETIC TYPE WITH HOA SWITCHES AND LED INDICATING LIGHTS.

LABELLING

ALL VOICE AND POWER CONNECTIONS SHALL BE UNIQUELY LABELLED AND MARKED ON THE AS-BUILT DRAWINGS.

SECURITY SYSTEM

SYSTEM SHALL BE STANDARD COMMERCIAL GRADE MONITORED SYSTEM WITH A MOTION DETECTOR, DOOR CONTACTS, A KEYPAD, A HORN, A CENTRAL PANEL AND A HEAT DETECTOR FOR THE MECHANICAL ROOM.

ACCEPTABLE PROVIDERS: AAA, ADT.



B.M. ELEV.					
1	ISSUED FOR ADDENDUM 1	DEC.1/06	AP		
0	ISSUED FOR TENDER	NOV.16/06	AP		
NO.	REVISIONS	DATE	BY	DATE	

KGS GROUP CONSULTING ENGINEERS & PROJECT MANAGERS
WINNIPEG (204) 896-1209 THUNDER BAY (807) 345-2233

DESIGNED BY AP	CHECKED BY
DRAWN BY GCN	APPROVED BY
HOR. SCALE VERTICAL AS NOTED	RELEASED FOR CONSTRUCTION
DATE NOV. 2006	DATE



THE CITY OF WINNIPEG
PLANNING PROPERTY AND DEVELOPMENT
*SERVICES DEPARTMENT

RIVER PATROL BOAT STORAGE BUILDING
ELECTRICAL SPECIFICATIONS

SHEET 1 OF 2
CAD FILE DRAWING NUMBER 06-107-17E01
PROJECT NUMBER 2005-081

CONSULTANT DRAWING NO. 06-107-17-E1