

DIV 26 SPECIFICATIONS:

12.0 FIRESTOPPING (CONTINUED)

.05 ALL FIRE RESISTANCE RATED ASSEMBLIES (I.E. WALLS CEILINGS, ETC.) WHICH CONTAIN PANELBOARDS, BACK BOXES, RECESSED LIGHTING FIXTURES, ETC. SHALL BE C/W FIRE RATED BACKING TO MAINTAIN THE INTEGRITY OF THE FIRE RESISTANCE. ELECTRICAL EQUIPMENT BACK BOARDS SHALL BE 3/4" THICK PLYWOOD PAINTED WITH FIRE RETARDANT PAINT (GREY) ON ALL SIX FACES. OPENINGS FOR STEEL ELECTRICAL BOXES NOT EXCEEDING 16 SQUARE INCHES ARE PERMITTED PROVIDED OPENINGS DO NOT AGGREGATE MORE THAN 100 SQUARE INCHES FOR ANY 100 SQUARE FEET OF WALL OR PARTITION OUTLET BOXES ON OPPOSITE SIDES OF WALLS OR PARTITIONS MUST BE SEPARATED BY A HORIZONTAL DISTANCE OF 24 INCHES.

13.0 STRUCTURAL PATCHING

.01 PATCH EXISTING FLOOR, WALL, CEILING ASSEMBLIES, ETC. WHERE REQUIRED DUE TO DEMOLITION/RENOVATION WORK TO MATCH EXISTING CONSTRUCTION, MATERIALS, TEXTURES AND FINISHES UNLESS NOTED OR PERMITTED OTHERWISE.

.02 USE ONLY NEW MATERIALS TO BLEND WITH EXISTING EXCEPT WHERE THE USE OF SALVAGED EXISTING MATERIALS WOULD BE DESIRABLE AND IS PERMITTED BY THE DESIGN ENGINEER.

.03 EXISTING ASSEMBLIES THAT ARE DAMAGED OR WEAKENED IN ANY WAY DUE TO DEMOLITION AND RENOVATION WORK, SHALL BE RESTORED TO THEIR FORMER STATE BY REINFORCING, REBUILDING, OR REPLACEMENT, TO THE SATISFACTION OF THE OWNER.

.04 PATCHED WALL AREAS SHALL BE PAINTED TO INCLUDE THE ENTIRE SURFACE PLANE TO THE NEAREST CORNERS AND WALL AND CEILING INTERFACES UNLESS PERMITTED OTHERWISE.

.05 PENETRATIONS THROUGH EXTERIOR BUILDING ENVELOPE ASSEMBLIES TO BE PATCHED TO ENSURE VAPOUR BARRIER IS SEALED AT PENETRATION, INSULATION IS CONTINUOUS, AND AIR AND WATER INFILTRATION IS PREVENTED.

.06 ALL PENETRATIONS THROUGH FIRE SEPARATIONS SHALL BE FIRESTOPPED USING A TESTED AND APPROVED FIRESTOP SYSTEM TO PROVIDE THE SAME FIRE-RATING AS THE ASSEMBLY BEING SEALED.

.07 ALL FIRESTOP SYSTEMS SHALL ULC LISTED AND TESTED IN ACCORDANCE WITH CAN/ULC-S115-2011.

.08 CONTRACTOR SHALL PROVIDE FIRE STOP SYSTEM SHOP DRAWINGS FOR REVIEW PRIOR TO CONSTRUCTION. SHOP DRAWINGS SHALL INDICATE THE FIRE STOP SYSTEM LOCATIONS, ULC LISTINGS AND FIRE-RESISTANCE RATINGS.

----- END OF SPECIFICATION -----

DIV 27 SPECIFICATIONS:

1.0 STRUCTURED CABLING

.01 THE CONTRACTOR SHALL SUPPLY AND INSTALL A COMPLETE CATEGORY 6 STRUCTURED CABLING SYSTEM AS SHOWN ON DRAWINGS AND AS SPECIFIED HEREIN. ALL COMPONENTS OF THE STRUCTURED CABLING SYSTEM SHALL BE OF THE SAME MANUFACTURER UNLESS OTHERWISE SHOWN OR STATED.

.02 THE SYSTEM SHALL BE USED FOR THE FOLLOWING SYSTEMS:
- DATA NETWORK
- TELEPHONE
- CCTV (IP CAMERAS)
- SYSTEM EQUIPMENT SHALL BE SUPPLIED BY OTHERS UNLESS OTHERWISE SPECIFIED.

.03 DEFINITIONS
THE FOLLOWING ARE DEFINITIONS OF TERMS AND EXPRESSIONS USED IN THE SPECIFICATION AND DRAWINGS:
• AWG – AMERICAN WIRE GAUGE
• BICSI – BUILDING INDUSTRY CONSULTING SERVICE INTERNATIONAL
• CAT – CATEGORY
• CER – COMMUNICATIONS EQUIPMENT ROOM
• EIA – ELECTRONICS INDUSTRIES ASSOCIATION
• G15 – GOOD ONE SIDE
• IDC – INSULATION DISPLACEMENT CONNECTOR
• IP – INTERNET PROTOCOL
• OSP – OUTSIDE PLANT
• PoE – POWER OVER ETHERNET
• RU – RACK UNIT
• TDMM – TELECOMMUNICATIONS DISTRIBUTION METHODS MANUAL
• TIA – TELECOMMUNICATIONS INDUSTRY ASSOCIATION
• TC – TELECOMMUNICATIONS CLOSET
• TE – TELECOMMUNICATIONS ENCLOSURE
• TR – TELECOMMUNICATIONS ROOM
• UTP – UNSHIELDED TWISTED PAIR
• WAP – WIRELESS ACCESS POINT

.04 REFERENCE STANDARDS:
TIA-568-x.0 GENERIC TELECOMMUNICATIONS CABLING FOR CUSTOMER PREMISES
TIA-568-x.1 COMMERCIAL BUILDING TELECOMMUNICATIONS CABLING STANDARD
TIA-568-x.2 BALANCED TWISTED-PAIR TELECOMMUNICATIONS CABLING AND COMPONENTS STANDARDS
TIA-568-x.3 OPTICAL FIBRE CABLING COMPONENTS STANDARD
TIA-569x TELECOMMUNICATIONS PATHWAYS AND SPACES
TIA-606x ADMINISTRATION STANDARD FOR TELECOMMUNICATIONS INFRASTRUCTURE
TIA-607x GENERIC TELECOMMUNICATIONS BONDING AND GROUNDING (EARTHING) FOR CUSTOMER PREMISES

'x' – DENOTES LATEST REVISION

.05 UTP HORIZONTAL CABLING:
• CAT6 UTP, 24AWG, SOLID CONDUCTORS CMR PVC JACKET
• ALL UTP HORIZONTAL CABLES SHALL EXTEND FROM THE TELECOMMUNICATIONS OUTLET AT THE WORKSPACE BACK TO THE LOCAL TELECOMMUNICATIONS ROOM/CLOSET LOCATION. LENGTH OF CABLE SHALL NOT EXCEED 295' (90m) METERS AND CONTAIN NO SPLICES.

.06 COMMUNICATIONS ROOM TERMINATION HARDWARE:
• KEYSTONE TYPE CAT6 RJ45 FEMALE MODULAR CONNECTORS FOR TERMINATION AT AT THE PATCH PANELS

• RACK MOUNTED PATCH PANEL(S) MIN. 12 PORTS TO ACCOMMODATE ALL HORIZONTAL DATA CABLE TERMINATIONS.

.07 CABLE MANAGEMENT
• PROVIDE CABLE DROP-OUTS FROM THE CABLE TRAY TO THE COMMUNICATIONS RACK FOR CABLE SUPPORT AND TO MAINTAIN THE CABLE'S MINIMUM BENDING RADIUS.
• CABLES SHALL BE BUNDLED AND STRAPPED USING VELCRO TIE STRAPS ONLY. PLASTIC OR NYLON TIE STRAPS SHALL NOT BE USED.
• MINIMUM 1 RU RACK MOUNT CABLE MANAGER FRONT FACING C/W D-RINGS MOUNTED BELOW EACH PATCH PANEL.

.08 INTRA-BUILDING (RISER) BACKBONE CABLE:
• DATA RISER SHALL CONSIST OF CAT6 CABLES (REFER TO UTP HORIZONTAL CABLE FOR SPEC)
• FIBRE BACKBONE RISER SHALL CONSIST OF:
- MULTI-MODE FIBRE OPTIC CABLE, 2 STRANDS OF FIBRE, 10GB LASER
- OPTIMIZED OM3
- ALL FIBRE RISER CABLES SHALL BE INSTALLED IN AND c/w 2" INNERDUCT.

.09 FIBRE CONNECTORS / FIBER PATCH PANEL
• FIBRE CONNECTORS SHALL BE LC TYPE DUPLEX.
• FIBRE PATCH PANELS SHALL BE:
- MINIMUM 1RU
- WALL MOUNTED
- 12 PORTS
- COMPLETE WITH SPLICE/STORAGE TRAY AND FRONT HINGED COVER
- COMPLETE WITH FIBRE BREAKOUT KIT OR FAN-KIT AS REQUIRED

.10 PATCH CORDS AND CROSS-CONNECT WIRES:
• PROVIDE ALL PATCH CORDS, ONLY PRE-MANUFACTURED PATCH CORDS C/W DUST BOOT AT EACH END.
• THE TOTAL NUMBER OF DATA PATCH CORDS SHALL EQUAL THE TOTAL NUMBER OF HORIZONTAL UTP DATA CABLES.
• THE TOTAL NUMBER OF VOICE PATCH CORDS SHALL EQUAL THE TOTAL NUMBER HORIZONTAL UTP OF VOICE CABLES.
• WHERE CAT6 VOICE CABLES ARE TERMINATED ON IDC BLOCKS AND THE OWNER'S VOICE CROSS-CONNECT IS ALSO ON IDC BLOCKS, PROVIDE CROSS-CONNECT WIRES TO CONNECT ALL VOICE CABLES.
• WHERE CAT6 VOICE CABLES ARE TERMINATED ON PATCH PANELS AND THE OWNERS VOICE CROSS-CONNECT IS ON ID/BIXC BLOCKS, PROVIDE PATCH CORDS WITH DUST BOOT ON ONE END (PATCH PANEL END) AND PIG-TAILS ON THE OTHER END (IDC BLOCK).

.11 CONDUITS AND RACEWAYS
• ALL CABLING SHALL BE INSTALLED IN CONDUIT/CABLE TRAY, BE SUPPORTED BY A CABLE TRAY SYSTEM AND/OR J-HOOKS. THE MANUFACTURER'S MINIMUM RECOMMENDED BEND RADIUS OF EACH CABLE SHALL BE MAINTAINED AND NOT EXCEEDED.

.12 LABELING AND IDENTIFICATION
• ALL LABELING SHALL COMPLY WITH OWNER'S STANDARD
• WHERE THE OWNER'S STANDARD IS NOT APPLICABLE OR AVAILABLE, TIA-606 ADMINISTRATION STANDARD FOR TELECOMMUNICATIONS INFRASTRUCTURE (LATEST REVISION) SHALL BE USED.
• MACHINE PRINTED LABELING SHALL BE USED ONLY, (I.E. BROTHER P-TOUCH OR EQUIVALENT).


2.0 SUBMITTALS

.01 GENERAL
• SUBMIT PRODUCT DATA FOR ALL EQUIPMENT. ACCEPTABLE MATERIALS SHALL BE AS SPECIFIED, CODE APPROVED OR OWNER APPROVED. ALL MATERIAL SHALL BE NEW, UNLESS SPECIFIED OTHERWISE.
• SHOP DRAWINGS FOR EQUIPMENT/MATERIALS SHALL BE SUBMITTED FOR REVIEW BY THE CONTRACT ADMINISTRATOR BEFORE INSTALLATION CAN PROCEED. ALL INTENDED OPTIONS SHALL BE CLEARLY MARKED AND IDENTIFIED. PRODUCT BROCHURES AND/OR ADVERTISEMENTS ARE UNACCEPTABLE AND SHALL BE REJECTED.
• SUBMIT TO THE CONTRACT ADMINISTRATOR UPON COMPLETION OF THE CONTRACT, TWO MARKED UP SETS OF RECORD DRAWINGS AND THREE SETS OF MAINTENANCE MANUALS. AFTER WORK IS COMPLETED, FURNISH TO OWNER A WRITTEN GUARANTEE THAT FOR ONE YEAR FROM DATE OF ACCEPTANCE, ANY DEFECTS IN MATERIALS OR WORKMANSHIP WILL BE CORRECTED AT NO COST TO THE OWNER. SUBMIT COPY OF GUARANTEE TO CONTRACT ADMINISTRATOR.

----- END OF SPECIFICATION -----

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NO.	DRAWING NUMBER	REFERENCE DRAWING TITLE
REFERENCE DRAWINGS		



B.M. ELEV.				<div>KGS GROUP</div>				ENGINEER'S SEAL		<div></div> <div>THE CITY OF WINNIPEG TRANSIT DEPARTMENT ENGINEERING DIVISION</div>	
CONSTRUCTION COMPLETION DATE: YYYY MM DD											
				DESIGNED BY CLR		CHECKED BY		<div>WINNIPEG TRANSIT – FORT ROUGE FACILITY HYDROGEN REFUELLING STATION ELECTRICAL SPECIFICATION SHEET 2</div>			
				DRAWN BY DIS		APPROVED BY					
				SCALE: AS SHOWN		RELEASED FOR CONSTRUCTION					
				DATE 2024 07 22		DATE					
0 ISSUED FOR CONSTRUCTION 2025 07 08				DATE		DATE		CONSULTANT DRAWING NUMBER 24-0107-04_E05		CITY DRAWING NUMBER 465-2025-E0005	
NO. REVISIONS				DATE		BY		PLOT DATE: 2025 07 08		BID OPPORTUNITY: 465-2025 CONTRACT NUMBER: -	
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