

Part 1 General

1.1 SCOPE OR WORK

- .1 This Bid Opportunity defines minimum design standards for the following furnishings:
 - .1 Freestanding height adjustable workstations
 - .2 Panel supported height adjustable workstations.
 - .3 Combination panel and leg supported workstations.
 - .4 Panels
 - .5 Storage within Workstations
 - .6 Keyboard platforms
 - .7 Monitor support arms

1.2 RELATED REQUIREMENTS

- .1 Section 12 50 04: Office, Conference, Lunchroom, Lounge Seating

1.3 REFERENCES

- .1 American National Standards Institute (ANSI)
 - .1 ANSI A208.1-2009, Particleboard.
- .2 American National Standards Institute (ANSI)/Business and International Furniture Manufacturers Association (BIFMA) International
 - .1 ANSI/BIFMA X5.3-[12], American National Standard for Office Furnishings – Vertical Files.
 - .2 ANSI/BIFMA X5.5-[16], American National Standard for Office Furnishings – Desk Products.
 - .3 ANSI/BIFMA X5.6-[16], American National Standard for Office Furnishings - Panel Systems.
 - .4 ANSI/BIFMA X5.9-[10], American National Standard for Storage Units.
- .3 ASTM International
 - .1 ASTM C297/C297M-15, Standard Test Method for Flatwise Tensile Strength of Sandwich Constructions.
- .4 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-44.227-[2008], Freestanding Office Desk Products and Components.
- .5 CSA International
 - .1 CSA C22.2 No.9.0-96(R2011), General Requirements for Luminaires.
 - .2 CAN/CSA-C22.2 No.203-M91 (R2010), Modular Wiring Systems for Office Furniture.
- .6 Health Canada/Workplace Hazardous Materials Information System (WHMIS)

- .1 Material Safety Data Sheets (MSDS).
- .7 The Master Painters Institute (MPI)
 - .1 Architectural Painting Specification Manual - [current edition].
- .8 Underwriters' Laboratories Canada (ULC)
 - .1 CAN/ULC-S102-[2010], Standard Method of Test for Surfaces Burning Characteristics of Building Materials and Assemblies.

1.4 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for furniture and include product characteristics, performance criteria, physical size, finish and limitations.
 - .2 Submit 2 copies of WHMIS MSDS in accordance with Section D8 Material Safety Data Sheets.
- .2 Furniture Plan:
 - .1 Submit PDF of furniture plan populated with accurate sized items being provided as part of the Contractor's quotation for the Work.
 - .2 Plan must clearly identify conflicts with minimum dimensions requested on Furniture Plans F-1 and F-2 provided with Part E – Specifications of the Bid Opportunity.

1.5 CLOSEOUT SUBMITTALS

- .1 Operation and Maintenance Data: submit operation and maintenance data for furniture for incorporation into manual.
- .2 Supply part numbers of furniture to allow for replacement of worn or damaged furniture parts.
- .3 Supply instructions detailing procedures for repairing or replacing worn furniture parts.

1.6 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
 - .1 Store materials indoors, in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect furniture from nicks, scratches, and blemishes.
 - .3 Replace defective or damaged materials with new.

1.7 WARRANTY

- .1 Submit written assurance of a ten year warranty for goods identified herein.

- .2 Submit written assurance that replacement parts will be available for minimum of 5 years following discontinuation of product manufacture.
- .3 Ensure warranties provide for repair rather than replacement.

1.8 SPECIFIC INFORMATION FOR CONTRACTORS

- .1 Work to the building is expected to be completed prior to the delivery of furnishings to the site.
- .2 Contractors are required to site confirm dimensions of spaces scheduled to receive furnishings prior to placing order.
- .3 Workstations will be installed to three distinct areas of the building inclusive of the main floor, intermittent floor and second floor.
- .4 There is no elevator in the building. Access to the upper floor areas will be via dog leg stairs with a finished width of +/- 48".
- .5 Contractors shall confirm the clear path of travel to individual rooms and areas to ensure furniture can be moved without constraint.

Part 2 Products

2.1 MATERIALS

- .1 Adhesives used to apply plastic laminates capable of achieving tensile strength of 552 kPa minimum when tested to ASTM C297.

2.2 FREESTANDING DESK COMPONENTS

- .1 Office desks products and components: to CAN/CGSB-44.227.
- .2 Type of finish: to CAN/CGSB-44.227, high pressure laminates and paint.
- .3 Provide cord and cable management capability through scoops, grommets (with reusable covers) and horizontal trays mounted below the worksurfaces.
- .4 Workstations: General
 - .1 Specular gloss: no more than 45 units.
 - .2 Workstations are freestanding, partially freestanding (combination of panel supported and leg supported) or fully panel supported. Refer to furniture plans.
- .5 Worksurfaces to CAN/CGSB-44.227 – 1 ¼" (+/- ¼") finished thickness comprised of 45 lb density particleboard finished with .028 high pressure plastic laminate. Edging to be ABS, plastic, or PVC. Profile to allow for flush butting workstations together without gaps or recessed joints.
 - .1 Split surface curved corner units to have a height adjustable keyboard surface with rounded inside edge to create a cockpit design. Keyboard adjustment to be +/- 5" below the desk and +/- 7" above with a 10 degree tilt. Edges of corner units to accept return worksurfaces of 24" depth.

- .2 Transition worksurfaces shall transition from corner unit depth to a final depth of 30" and 36" and be available in widths of 24", 30", 36", 48", 54", 60" and 72".(all dimensions are +/- 1").
- .3 Straight worksurfaces shall be 1 1/4" +/- thick and available in the following width and depth dimensions (+/- 1" on depth and 1" on width):
 - .1 Depth: 24", 30", 36.
 - .2 Width: 18", 24", 30" and 36".
- .4 Worksurface height: 29" to the top surface when measured from the floor unless specifically noted otherwise.
- .5 Worksurfaces that are 60" or greater require a reinforcing channel below for added support.
- .6 Leg supports:
 - .1 For freestanding and partially freestanding workstations use pin height adjustable legs complete with levelling mechanism.
 - .1 Height adjustment to be no greater than 3/4" increments between 25 1/2" to 31 1/2".
 - .2 Legs to be constructed of telescoping round or square steel tubes. Upper tube to be 12 ga. steel with a series of vertical holes welded to a 10 ga. worksurface mounting plate. The bottom tube is 13 ga. with a spring loaded button to allow locking into vertical holes.
 - .3 Glides to be provided to bottom of legs. Glides to be suited to flooring which is a combination of carpet and resilient sheet vinyl.
- .7 Modesty panels: to CAN/CGSB-44.227 recessed from front edge of desk and finished with high density plastic laminate finish. 3/4 height.
- .8 Brackets and Supports: Provide under workstation supports and brackets as required to attach worksurfaces together and to provide sufficient support with minimal deflection. All attachments to be metal to metal attachments. Contractor to identify if worksurfaces are predrilled to accept accessories.
- .9 Under worksurface storage: to CAN/CGSB-44.227. Refer to the Furniture Plans for location and quantity of pedestals.
 - .1 Mobile Pedestal with Cushion Top: box over file configuration with complete bottom and back and upholstered cushion top. File drawer to have provision to accommodate both legal and letter sized filing systems with minimal adjustments. Pedestal to have interlocking device to stop both drawers being opened simultaneously and a counter weight to stop tipping.
 - .1 Cushion fabric to be selected from manufacturer's full range of fabrics one grade above entry level.
 - .2 Drawer slides: corrosion resistant and able to extend three quarters of length of drawer.
 - .3 Provide top box drawer will moveable pencil tray that extends full width of drawer.

- .4 Drawer handle to be integrated full width or recessed.
- .5 Casters to be suitable for hard and soft surface. Two of the four castors to lock.
- .6 Pedestal unit to be equipped with a pull handle for ease of moving pedestal.
- .7 Pedestal unit to be equipped with a lock. Key each storage unit within a workstation or office alike.
- .8 Dimensions of pedestal to be sized to allow for parking below either return side of the workstation.
- .2 Mobile Pedestal: to CAN/CGSB-44.227.
 - .1 As described above for mobile pedestals with cushion tops except:
 - .1 the top of the cabinet will be steel and finished to match the sides, back and drawers.
 - .2 The pedestal will have a three drawer configuration of box over box over file. Pencil tray to top drawer only.
 - .3 Supporting pedestal: to CAN/CGSB-44.227.
 - .1 Same as described for pedestools except:
 - .1 the pedestal height will allow it to be fully placed under the worksurface to provide support in conjunction with panels or legs.
 - .2 Pedestal will have a three drawer configuration of box over box over file.
- .10 Overhead storage units: to CAN/CGSB-44.227],
 - .1 Overhead storage is to be mounted on system panels or on wall supports where no panels are provided.
 - .2 Bins to be constructed of roll formed steel. Top and horizontal shelf to be 18 gauge for storage units of 30" to 48" widths and 16 gauge for storage units of 60" to 72" widths.
 - .3 Doors to be 20 gauge painted steel or high pressure plastic laminate on outside face of ¾" medium particle board [to ANSI A 208.1] with paper backer on the inside and edge banding.
 - .4 Clear inside dimension of overhead storage shall be capable of accommodating A4 size binder storage – approximately 12" in height inclusive of storage units where the door recedes inside the case.
 - .5 End panels to be 16 gauge painted steel.
 - .6 Back of storage unit to be equipped with a backstop to reduce likelihood of papers falling through.
 - .7 Storage units to come equipped with hooks for mounting to panels or wall standards and have safety catches to lock the unit in place.
 - .8 Storage units to come equipped with one divider per 24" of storage space.

- .9 Each door to have a lock capable of being keyed alike to the other storage units within the workstation or office. Refer to general lock information below.
- .10 Underside of bin to be formed to accept a task light. Where task lights are provided include for vertical wire manager.
- .11 Dimensions:
 - .1 Widths to match to worksurface and panel dimensions as shown on the furniture plans.
 - .2 Heights to be 15"
 - .3 Depths to be 14 ½" +/- ½"
- .11 Task light fixtures: to CAN/CGSB-44.227,
 - .1 Energy efficient task light with T5 or T8 bulbs.
 - .2 Light fixture to be mounted beneath overhead storage cabinet to CSA C22.2 No.9.0, equipped with on/off switch and diffusion lens.
 - .3 Task lights to be sized to install below overhead storage units.
 - .4 Provide vertical wire manager where task lights are installed below wall mounted overhead storage units. Where storage units are on panels make sure cords can be concealed on vertical run.
 - .5 Cord lengths to be long enough to run from light fixture to outlet located on walls or in base of panels.
- .12 Locks: to CAN/CGSB-44.227, supply key-activated locks for doors and drawers.
 - .1 Provide 2 keys per lock.
 - .2 Lock to have adequate clearance to permit user to operate lock.
 - .3 Locking mechanism: key-activated locks require key to activate locking mechanism.
 - .4 Key all locks on storage units alike within individual offices and workstations.
 - .5 Make provision for tying into master key way for building locks.
- .13 Tackboards
 - .1 Provide fabric wrapped tackable surfaces for mounting to wall brackets below the overhead storage units.
 - .2 Conceal vertical wires behind panels.
 - .3 Tackboard to be approximately 21" high by width of overhead storage units.
 - .4 Tackable panels to be finished in material that meets flame spread rating and smoke developed classification when tested in accordance with CAN/ULC-S102.
 - .5 Fabric to match to be selected from manufacturer's full line of fabrics in grade one above entry level.
- .14 Freestanding Desk Descriptions
 - .1 **DK - 1:** 7' x 7' freestanding workstation complete with 2 – 42" wide wall mounted overhead storage cabinets with tasklight and tackboard below; 1

- mobile box/box/file pedestal, 18" deep front modesty panel and 1 - 12" deep end modesty panel to open end, horizontal wire management below desk.
- .2 **DK - 1M:** Identical to DK-1 except the front return is to be 36" wide.
 - .3 **DK - 2:** 6'-0" x 6'-0" freestanding workstation complete with 2- 36" wide wall mounted overhead storage cabinets with tasklight and tackboard below; 1 box/box/file mobile pedestal; 18" deep front modesty panel and 1 - 12" deep end modesty panel to open end. Horizontal wire management below desk.
 - .4 **DK - 2M:** Identical to DK-1 except front return is to be 24" wide and overhead storage is modified to 1 - 48" wide unit. Modify tackboard length to suit.
 - .5 **DK - 3:** 6'-6" x 6'-6" freestanding workstation complete with 1- 36" wide and 1 - 42" wide wall mounted overhead storage cabinet and with tasklight and tackboard below; 1 box/box/file mobile pedestal; 18" deep front modesty panel and 1 - 12" deep end modesty panel to open end. Horizontal wire management below desk.
 - .6 **DK - 4:** 8'-6" x 8'-0" freestanding workstation complete with 1 - 48" wide wall mounted overhead storage cabinet with tasklight and tackboard below; 1 - box/box/file mobile pedestal; 18" deep front modesty panel and 1 - 12" modesty panel to open end. Horizontal wire management below desk.
 - .7 **DK - 5:** 5'-6" x 7'-0" freestanding workstation complete with 1 mobile pedestal with box over file drawer configuration and cushion top with handle; 18" deep modesty panels to front of workstations where exposed and to side return and corner unit where exposed; 12" deep modesty to exposed ends. Horizontal wire management below desk.
 - .8 **DK - 6:** 7'-6" x 7'-6" freestanding workstation complete with 1 mobile pedestal with box over file drawer configuration and cushion top with handle. Horizontal wire management below desk.
 - .9 **DK - 7:** 7'-0" x 7'-6" freestanding workstation complete with 1 mobile pedestal with box over file drawer configuration and cushion top with handle; 2 - 42" wide wall mounted overhead storage cabinets with tasklight and tackboard below. Horizontal wire management below desk.
- .15 Quantity and Tagging:
- .1 DK - 1: Total of 7
 - .1 1 each to Lab Foreman Office, TMC Supervisor, Timings 1, Projects Manager Office; Supervisor Operations, Timings 1, Timings 5.
 - .2 DK - 1M: Total of 3
 - .1 1 each to Timings 2, Timings 3, Timings 4.
 - .3 DK - 2: Total of 2
 - .1 1 each to Forman 1 and Assets Analyst
 - .4 DK - 2M: Total of 1
 - .1 1 to Foreman 2.

- .5 DK - 3: Total of 1
 - .1 1 to Procurement.
- .6 DK - 4: Total of 2
 - 1 each to Traffic Signals Engineer Office and Assets Engineer Office.
- .7 DK - 5: Total of 2 to TMC Area
- .8 DK - 6: Total of 1 to TMC Area
- .9 DK - 7: Total of 1 to TMC Area

2.3 PANEL SYSTEM

- .1 General: to CAN/CGSB-44.227 and ANSI/BIFMA X5.6.
 - .1 Panels: tackable and acoustic monolithic and segmented panels. Panels to have minimum ratings of NRC.50 and STC of 5.
 - .2 Provide required wall starts, base power feeds, top power feeds, panel feet as required for a sound and stable installation.
 - .3 Worksurfaces: to be as described under 2.2 of this specification and as shown on Furniture Plans F-1 and F-2 provided with Part E of the Bid Opportunity.
 - .4 Finish: to CAN/CGSB-44.227.
- .2 Materials:
 - .1 Particleboard: to ANSI A208.1 grade 45 pound or greater.
- .3 Upholstered sections of any panel: one piece without any sewn or glued seams.
 - .1 Install upholstery fabric with concealed edges to prevent fraying and make them stable to prevent snags or wrinkles. Ensure warp of directional fabrics is applied with squareness tolerance of +/- 1/4" over space of 39".
- .4 Welds: to CAN/CGSB-44.227.
- .5 Use hardware in assembling components and connecting panels that allows for repeated assembly, disassembly and reconfiguration.
- .6 Allow clearance between vertically user adjustable surface and any adjacent surface, of 1" minimum.
 - .1 Clearance less than 3/8", is acceptable where clearance is maintained throughout travel of adjusting surface.
 - .2 Articulating keyboard support surfaces are exempt from this requirement.
- .7 Clearance under work surfaces: to CAN/CGSB-44.227.
- .8 Adhesives: for application of plastic laminates to achieve a tensile strength of 449 kPa when tested in accordance with ASTM C297.
- .9 Panels:
 - .1 Panels widths: within tolerance of +/- 1" shall be
 - .1 18", 24", 30", 36", 42", 48", 60".
 - .2 Panels heights:

- .1 36,42,48, 66"
- .2 Finished height of 66" comprised of one 66" high panel or a combination of one 48" high panel with an 18" stacking panel in glass. Glass stacking unit to be framed to match to the 48" panels.
- .3 Panels: stable, stand straight and plumb when interconnected.
 - .1 Height variance of same height panels when interconnected 1/8" maximum.
- .4 Panels: capable of accommodating industry standard communication modules with one knockout for communication modules on each side of panel.
- .5 Provide panel tops, panel end trims and corner covers that can be attached to panel without visible connecting devices, unless finish of panel top, ends and corner linking devices are integrated into panel design.
 - .1 System to provide homogenized look and uniform, uninterrupted line of sight.
- .10 Panel finishes:
 - .1 Fabric:
 - .1 Flammability to flame spread rating and smoke developed classification when tested in accordance with CAN/ULC-S102.
 - .2 Fabric to be the same on both sides of panels as selected from manufacturer's full range of fabrics from grade one above entry level.
 - .2 Glass:
 - .1 Clear tempered glass.
- .11 Load bearing panels: provide mounting system, integral with assembled panel, full height of both sides of panel at each end.
 - .1 Include slotted vertical uprights at 1 ¼" maximum centres for component attachment.
 - .2 Ensure system has no visual gaps when installed.
- .12 Equip each panel with two glides with a minimum vertical adjustment of 1 ¾".
 - .1 Include fastening device to secure glides designed to prevent panels coming loose or detached under normal use conditions of glides.
- .13 Worksurfaces and storage units shall be as described on the furniture plans and in 2.2 of this specification section.
- .14 Connector system: capable of connecting panels of different heights and at junction connecting combination of 2, 3 or 4 panels at various angles.
 - .1 Include flexible hinge connector system to meet or exceed applicable tests listed in UL 1286.
- .15 Electrical system: to CAN/CSA-C22.2, No.203.

- .1 Construct electrical system of modular components and capable of providing power only at needed locations, of being rearranged without altering or disassembling panel system.
 - .1 Provide receptacle accessible at base height.
- .2 Provide minimum 8 wire, three-circuit capability to support variety of electronic equipment, where number 10 neutral wire is required.
- .3 Powered panel:
 - .1 Panel 24" size provide with minimum of 1 duplex outlet per side and each powered panel.
 - .2 Panel 30" size or greater provide minimum of 2 duplex outlets per side.
 - .3 Receptacles: interchangeable anywhere along wiring harness.
- .4 Equip powered and non-powered panels with raceways capable of accommodating at least three 8 wire circuits and minimum of eight 25-pair data and telecommunications cables.
- .5 Raceways to provide sufficient space to allow for bend radius of at least 3" for installation of communications cables (especially fibre optics cables) both horizontal and vertical.
- .6 Non-powered raceways: capable of field conversion to powered raceways without requiring disassembly of workstation.
- .7 Raceways to provide for floor, ceiling and end of panel access.
- .8 Vertical wire management system: provide internal to conceal wires running from raceway base to desk height and above.
- .9 Energy efficient task lights: as described in 2.1 of this section.
- .16 Base covers: capable of being opened without use of special tools and closing tightly without gap; complete with knockouts to receive back-to-back electrical outlets as required.
- .17 Provide covers for unused knockouts/access points that are visible under normal use or installation, to prevent unsightly holes.
- .18 Paint: as selected from manufacturer's full range of paint finishes.
- .19 Colourization pigments: free from any toxic metals or their components.
- .20 Panel Supported Workstation Descriptions:
 - .1 **WS - 1:** 6'-6" x 7'-0" workstation, panel supported with the exception of the front return which shall be pin leg supported with 18" deep modesty panel to front and 12" deep modesty to side return. Panels along spine to be 66" high x 42" wide with upper storage mounted on work side with tasklight below. Panel on front to be 48" high with 18" glass stacking unit on top to reach an overall height of 66". Mobile pedestal with box over file drawer configuration and cushion to top with pull handle.
 - .2 **WS - 2:** 7'-0 x 7'-0 workstation supported by shared 66" high x 42" wide panels along spine and 48" high panels with 18" glass stacking unit along the front – 66" finished height. Mobile pedestal with box over file drawer configuration and cushion to top with pull handle. 2 – pin height adjustable legs to support corners of both returns.

- .3 **WS - 3:** 10'-0" x 5'-0" straight run workstation supported by a combination of 42" h x 30" wide panels. Two (2) rectangular worksurfaces 60 wide x 30" deep butt end to end with one end and the long edge panel supported and the other end supported by a pin leg. Provide a mobile pedestal with a box over file drawer configuration and top cushion with handle.
 - .4 **WS - 4:** 5'-0" x 5'-0" straight run workstation supported by a combination of 42" h x 30" wide panels. Rectangular worksurface 60 wide x 30" deep fully panel supported. Provide a mobile pedestal with a box over file drawer configuration and top cushion with handle.
 - .5 **WS - 5:** 7'-0" x 8'-6" workstation supported on the 8'-6" side by 66"h panels and on the 7'-0" side by pin height adjustable legs. Workstation to have 1 – 42" wide and 2- 30" wide overhead storage cabinets mounted to panels. 1 box over file mobile pedestal with cushion top and pull handle.
 - .6 **WS - 6:** 5'-6" x 7'-0" workstation partially panel supported and partially pin height leg supported. 66" w. x 30" deep front worksurface is supported by 48" high with 18" glass stacker panels across the long side and one 30" x 48" high panel on the open end. 48" wide x 24" deep return worksurface to be attached to front surface with flat brackets and supported on four corners with legs. Mount 1 – 48" wide overhead storage unit with tasklight on panels forming WS – 5. Storage cabinet will need to mount off module. 1 - box over file mobile pedestal with cushion top and pull handle.
 - .7 **WS – 7:** 5'-6" x 7'-0" workstation fully panel supported. 66" w. x 30" deep front worksurface is supported by 48" high with 18" glass stacker panels across the long side and 1 - 48" high x 30 wide panel on the open end and 30" x 66" high panel at wall end. 48" wide x 24" deep return worksurface to be attached to 1 – 66" high x 30" wide and 1 – 66" high x 42' wide panel. Mount 1 – 48" wide overhead storage unit with tasklight on 48" wide panel and one 30" wide overhead storage unit on the 30" wide panel. 1 - box over file mobile pedestal with cushion top and pull handle.
- .21 Quantity and Tagging:
- .1 WS - 1: Total of 3
 - .1 1 to each of Workstations identified as Senior Designer, Designer and Designer.
 - .2 WS - 2: Total of 1 to Workstation identified as Construction Coordinator.
 - .3 WS - 3: Total of 2.
 - .1 1 to each workstation identified as Student and tagged WS-3.
 - .4 WS - 4: Total of 5.
 - .1 1 to each workstation identified as Student and tagged WS-4.
 - .5 WS – 5: Total of 1 installed to Records.
 - .6 WS – 6: Total of 1 installed to Clerk 1.
 - .7 WS – 7: Total of 1 installed to Clerk 2.
 - .8 In addition provide to Records Workstation:
 - .1 Total of 1 66" high x 36" wide panel and
 - .2 1 – 66" high x 18" wide panel

- .22 Acceptable Products:
 - .1 Freestanding desks shall be from the same statement of line as the panels and panel hung furniture and storage components.
 - .2 The following furniture lines are considered to meet the requirements of the Bid Opportunity as described above and on the furniture plans issued with Bid Opportunity.
 - .1 Steelcase Kick Solutions
 - .2 Knoll Dividends Horizon
 - .3 Haworth Compose
 - .4 Teknion Leverage
 - .5 Or approved equal in accordance with B7.

2.4 MONITOR ARMS

- .1 Monitor Arm supports: to CAN/CGSB-44.227.
 - .1 Provide monitor arm support to allow for universal VESA mounting of one, two, three or four flat screen monitors with integrated cable manager to keep all cords hidden.
 - .2 Monitor arm to have a pole for attaching to worksurface via a C clamp or grommet mount and be equipped with a quick release adaptor.
 - .3 Monitor arm for four 22" monitors with a beam for mounting in a straight horizontal line.
 - .4 Where arms are mounted below the overhead storage a clear maximum height of between 19" and 21" is available depending on the height to top of worksurface from finished floor.
 - .5 Adjustment: Monitor arms to support four monitors on a beam shall provide:
 - .1 Reach: 21"
 - .2 Pole Height: 17.75" with height adjustable beam.
 - .3 Dynamic Arm Height Adjustment: 7"
 - .4 Weight: 18 pounds per monitor.
 - .6 Finish:
 - .1 Black or silver.
 - .7 Quantity and Tagging:
 - .1 Quad Monitor Support Arm: total of 4
 - .1 1 to each workstation in TMC
 - .8 Acceptable Products:
 - .1 Four monitor arm:
 - .1 ISE Ma-4000
 - .2 Or an approved equal in accordance with B7.

2.5 FABRICATION

- .1 Manufacture furniture to allow for dismantling and replacing of worn or defective components and recycling options following first use.
 - .1 Fabricate furniture to allow for remanufacturing or refurbishing of furniture following first use.
 - .2 Seal exposed surfaces of particleboard constructed with urea formaldehyde adhesives to contain formaldehyde emissions.

2.6 SCHEDULE

- .1 Goods identified within this section of the Bid Opportunity Document are required to be on site no later than 6 to 8 weeks following receipt by the Contractor of final finishes and materials.

Part 3 Execution

3.1 SITE CONFIRMATION

- .1 Prior to placement of order the Contractor shall attend the place of Work
 - .1 to carry out onsite dimensioning of rooms and spaces to which the goods shall be installed.
 - .2 coordinate with electrical locations on site to ensure base power feeds are provided for connection to powered panels.
 - .3 confirm mounting heights for electrical to ensure access for power cords from workstations.

3.2 DELIVERY

- .1 Preparation for delivery: to CAN/CGSB-44.227 and in conformance with standard commercial delivery practice.

3.3 INSTALLATION

- .1 Contractor shall make arrangements to access the site for purpose of delivery and installation
 - .1 through contacting the City of Winnipeg Contract Administrator identified in the Bid Opportunity or
 - .2 where the Prime Contractor for the Building is still carrying out Work on site through contacting the site supervisor. Contact information will be provided if required.
- .2 Contractor shall deliver the goods to the location within the building using access doors and routes as identified by the City of Winnipeg Contract Administrator.
- .3 Contractor to review locations to receive goods at the start of the installation and identify conflicts which will disallow him / her from carrying out their Work.
- .4 Contractor shall report identified conflicts (which may include but not be limited to mechanical and electrical devices mounted on walls, insufficient wall space or

aisle space that could not be determined during pre order walk through) to the City of Winnipeg Contract Administrator.

- .5 Contractor shall install goods straight and level to locations indicated on Furniture Plans F-1 and F-2 provided in Part E - Specifications of the Bid Opportunity.

END OF SECTION