

THREE YEAR CONTRACT FOR FURNITURE & SHELVING - FOR THE JEFFERSON PARISH LIBRARY DEPARTMENT:

SPECIFICATIONS

We extend this bid for a three (3) year contract to cover all labor, materials and equipment necessary for the delivery and installation of a quantity of furniture and shelving for the Jefferson Parish Library Department.

Section 1.0 Scope:

We extend this bid for a three (3) year contract to cover all labor, materials and equipment necessary for the delivery and installation of a quantity of furniture and shelving for the Jefferson Parish Library Department.

A quantity of furniture and shelving for the Jefferson Parish Library Department to be determined as the need arises over the next three (3) years. Listed on the attached bid is a representative group of furniture on which vendors will submit bids to determine the award of this bid.

Once a successful bidder is determined, a three (3) year contract will be entered into with the bidder to supply furniture and shelving for all items available on this bid and through the vendor's catalog and master price list. Prices for items not listed in this bid will be priced at the current catalog price.

Partial bids shall not be considered as an acceptable bid. Bid shall be based on total bid price.

All prices quoted shall include transportation and delivery, labor as required, installation, permits, licenses, and removal of all packaging, cartons, and miscellaneous things associated with the delivery and installation of the items.

Owner reserves the right to purchase additional quantities of all contract items in the vendor's current price list.

The successful bidder will include with this bid a current catalog and price list of all available items to include items covered on the attached bid.

Design services for configuring new areas of existing libraries or newly constructed libraries will be included in the contract price.

Item No. 1 (0001) – this cost will be used for labor required to reconfigure existing furniture in order to install newly purchased furniture, disassemble existing furniture, etc., but shall not be used to install new furniture.

NOTE: LABOR COST WILL BE USED IN DETERMINING THE AWARD OF THE BID.

NOTE: EACH PROJECT THAT INVOLVES LABOR WILL REQUIRE A QUOTE FROM THE VENDOR SPECIFYING THE NUMBER OF HOURS NEEDED TO COMPLETE THE PROJECT AND WILL NEED APPROVAL BY THE LIBRARY DEPARTMENT PRIOR TO BEGINNING THE PROJECT.

Quantities listed are for bidding purposes only. Actual requirements may be more or less than quantities listed.

Bidder must submit with his bid an organizational chart reflecting all personnel including interior and/or graphics design services.

Bidder must submit specifications and literature verifying compliance with bid specifications. Failure to provide these submittals with the bid will render the bid as non-responsive.

Section 2.0 Licensing

The Bidder must have a Louisiana State Contractor's License: Limited Specialty Services.

In accordance with RS 37:2163A, the contractor's License Number in the appropriate classifications must appear on the bid envelope.

Section 3.0 Bid Bond

Only electronic bid bonds are acceptable to the owner in an amount equal to at least five (5%) of the total amount bid and payable without conditions to the Owner as guarantee that the bidder, if awarded the contract, will promptly execute a contract in accordance with this proposal and all terms and conditions of the contract documents.

Section 4.0 Performance Bond

The successful Bidder will be required to furnish a 50% performance and payment bond from a surety licensed to conduct business in the State of Louisiana with a rating of “A” or better in the most current edition of the A.M. BEST INSURANCE REPORT.

Section 5.0 Permits

The Bidder shall obtain any and all permits as required by the Jefferson Parish Department of Inspection and Code Enforcement, the State of Louisiana, and/or the Federal Jurisdictions. The Contractor shall be responsible for the payment of these permits. The contractor shall conform to regulations of all public agencies, including the specific requirement of the City, Parish, State, and Federal Jurisdictions. All permits must be obtained prior to the start of the project.

Section 6.0 Attachments

Below are the additional attachments for the bid specifications:

- Attachment A- Pavilion Workstations
(To Match and Intermember w/existing)
- Attachment B –Diametron Modular Workstations
(To match and intermember w/existing)
- Attachment C – Teraine Benching System
- Attachment D - Folio Genealogy Workstations
(To match and intermember w/existing)
- Attachment E – Children’s Desk add-on
(To match and intermember w/existing)
- Attachment F –Multimedia Display System
(To match and intermember w/existing)
- Attachment G –Curved Multimedia Display System
- Attachment H - Children’s Tables and Chairs
- Attachment I - Teen’s Tables and Chairs
- Attachment J - Computer Lab Stations
(To match and intermember w/existing)
- Attachment K - Adult Tables
- Attachment L- End Panels and Counter
(To match and intermember w/existing)
- Attachment M - End Panels

(To match and intermember w/existing)

Attachment N - Meeting Room and Stack Chairs

Attachment O- Meeting Room Mobile Chairs

Attachment P -Task Chairs and Stools

Attachment Q - Children's Furniture and Interactives

Attachment R - Personal Computer Seating and Tables

Attachment S - Workroom Furniture

Attachment T- Librarian's Office Furniture

Attachment U - Printed Acrylic End Panels

Attachment V - Animated Characters and End Panel Art

Attachment W – Mobile Tables and Seating

Attachment X – Wireless Charging Tables and Seats

Attachment Y – Modular Lounge

(To match and intermember w/existing)

Attachment Z - Steel Shelving

(To match and intermember w/existing)

Attachment AA – Compact Shelving Components

(To match and intermember w/existing)

Section 7.0 General Conditions

Timely delivery is an important factor to the Parish and is considered a part of this bid. Bids must include the cost of delivery and installation. All furniture and shelving items in this contract must be delivered no later than 120 days after the date of receipt of purchase order.

Unit prices quoted must include delivery to the specified library locations, unloading, inside delivery, unpacking, and assembly. All debris, packing materials, and cartons, shall be cleaned up and hauled off the premises.

Section 8.0 Quality

Quality – Contractors must supply items made by a manufacturer regularly engaged in the production of high quality library furniture and shelving of the type described in the specifications. All manufactures must have trained, experienced personnel and equipment capable of producing the quality and quantity of furniture and shelving required. In order to ensure the level of quality required by these specifications, proof of performance testing and UL listing for specific items are requested in detailed specifications.

Furniture that is defective beyond feasible job repair at the time of final inspection by the Library, will be retained by the Library and used by the occupants without payment by the Library until the contractor has replaced all such defective items with units conforming to the drawings and specifications.

Unless otherwise called for in the specifications. All products are to be new, current model and best quality as measured by accepted standards of the trade, and defects in any product may cause its rejection.

Wherever manufacturer's trade or brand name appears in the specifications, it is assumed that equal products will be considered unless otherwise specified. The use of a brand name is for the purpose of describing the standard of quality, performance and characteristics desired and is not intended to limit or restrict completion. Any bidder proposing equal products must submit with his/her bid, complete information including detailed specifications, brochures, underwriters laboratories fire ratings where required by code and pictures depicting the proposed equals. Failure to do so is cause and will cause rejection of a bid in its entirety.

If providing an equal the Jefferson Parish Library department may require samples and demonstration of the products, provided by bidder and delivered to the Jefferson Parish Library Administration within (10) days of request, after the bids are opened.

Where applicable, all products are to covered by standard factory warranty unless otherwise specified herein.

Section 9.0 Quantities/Inspection:

Bidders must inspect the site and perform their own site survey and measurements to determine the proper quantities of materials, equipment and labor required for this furniture/shelving on any and all orders placed under the terms of this contract.

Quantities listed are for bidding purposes only. Actual requirements may be more or less than quantities listed.

Section 10.0 Punch List

Upon completion of project contractor will provide a certificate of project completion, punch list of items to be corrected/resolved, and digital photographs showing the project site before and after the furniture/shelving installation.

Section 11.0 Prices

All prices quoted shall include transportation and delivery, labor as required, installation, permits, licenses and removal of all packaging, cartons, and miscellaneous things associated with the delivery and installation of the items.

Section 12.0 Cleaning Area and Safety

Job site must be kept clean and free of all litter and debris daily, and upon completion of the contract. Passageways must be kept clean and free of wrappings, rubbish, materials, equipment, and debris at all times. Inflammable material must be removed from the job site daily; inflammable materials storage will not be permitted on the premises.

Precautions must be exercised at all times to safeguard the safety and welfare of the general public, the employees of Jefferson Parish, and Parish officials, and their property.

Driveways must be kept clear of supplies, equipment, and debris at all times. Trash and debris shall be cleaned-up and removed daily. Contractor may not use the Library's dumpster, trash cans, etc. for debris removal.

Section 13.0 Security -Limited Access

The work for these projects are located at the Jefferson Parish Library facilities and access to and from the sites will be safeguarded as such. All contractors' personnel working on this contract shall possess an identification badge with the company name, and the individuals' name. Each identification badge shall be worn in a conspicuous area of the individual's shirtfront, left side.

The contractor's employees may use the public restroom facilities for personal use only, provided they help maintain cleanliness. The cleaning of equipment or tools in lavatories or any misuse of any kind in the restroom facilities will not be tolerated. Any damages incurred by contractor's personnel shall remain the sole responsibility of the bidder.

The Bidder must consider the security and integrity of the Library before, during and after daily installation and repair and/or project work. Prevent access by the public to materials, tools, ladders, equipment, etc. during the course of this contract. Tools, equipment, materials, and

miscellaneous supplies are the responsibility of the Bidder, and must be protected and secured at all times, to the satisfaction of the Owner.

Section 14.0 Contract Award and Reservations

The project will be awarded to the lowest responsible bidder. The Department may only reject any and all bids pursuant to Louisiana Public Bid Law.

PARTIAL BIDS SHALL NOT BE CONSIDERED AS AN ACCEPTABLE BID.

Section 15.0 Contract Period

This contract will be for a three (3) year period.

Section 16.0 Warranty:

The successful bidder will issue the standard factory warranty, or a one (1) year warranty, whichever is longer.

Attachment "A"
Pavilion Workstations
(to match and intermember w/existing)

Vertical Panels:

The panels shall be 1-3/16" thick 3-ply particleboard construction with premium grade "A" oak veneers face and back. The panels shall be banded on the top and bottom with 1/8" solid oak. The vertical edges shall be fitted with 1-1/2" wide, 12-gauge steel straps powder coated with a color as selected by owner. The strap shall be secured to the universal panel connector with 1/16" thick stand-off washers and shoulder screws, and to the panels with spring tension Mod-eez® clips. Panels 24" wide or less shall have one pass-through edge grommet and cover. Panels 30" wide and over shall have two pass-through edge grommets and covers. The grommets shall be three-sided 3-5/8" wide x 3-3/4" high constructed of .90" thick PVC UL rated 94 HB or better. The grommet shall fit within slots machined in the panels and shall be incapable of removal after final installation. The cover shall be 3-3/4" wide x 4" high formed 16-gauge metal with thirty six 5/32" diameter holes perforated on 1/2" centers. The cover shall be screwed to the inside face of the universal panel connector and panel to provide tamper resistance, and to lock panels to the universal panel connector. The cover shall be capable of being installed vertically horizontally to provide a pass-through. The cover shall be powder coated.

Universal Panel Connector:

The universal panel connector shall be an aluminum extruded cruciform 1-1/2" x 1-1/2" with 1" slots on 1" centers machined the entire height of the leg along the recess on each of the four corners. The top of the universal panel connector shall have a die cast aluminum cap matching the profile of the universal panel connector and secured with a tamper proof grater-type clip. The bottom shall be fitted with a glide insert and an adjustable glide with a black 3" diameter aluminum contact surface and a 1/4-20 x 1" threaded stem. All four sides of the universal panel connector shall be pre-machined for panel and strap attachment. The universal panel connectors and cap shall be powder coated.

Inline Work Surface:

The work surface shall be 1-1/4" thick 3-ply particleboard construction with .050" thick high pressure laminate face and .028" thick backer on the underside. All four edges shall be externally banded with 5/16" solid oak applied to the core after lamination of the HPL face. The band shall be set flush to the HPL without the use of reveals or vein lines. The entire perimeter shall be shaped to a 1/2" x 3/16" chamfered bead profile. The back edge shall have a grommet 2-1/8" deep x 3-5/8" wide at the back corners and 2-1/8" deep x 3-3/4" wide intermediate grommet (one on 90" wide tops and two on 84" and 96" wide tops). The grommets shall be of the same material and profile as the panel grommets and shall be non-removable after assembly of work surfaces.

Each of the four corners shall be pre-drilled to accept 9" brackets positioned in either front-to-back or side-to-side positions. The working side corners shall be fitted with threaded inserts for leg plate attachment, and pre-drilled for joiner plate attachment. Work surfaces 60" wide or wider,

shall be pre-drilled for two additional 18" long brackets positioned at various universal panel connector location possibilities.

Work surfaces shall provide an integral structure that is adjustable from 25" above the floor to the top of the panel and after installation enables the work station to be lifted by work surface without disengagement or loosening.

Peninsula Work Surface:

Peninsula work surface shall be half round, constructed the same as standard work surfaces except rounded edges shall be externally banded with 5/16" thick steam bent oak. One edge grommet, 2-1/8" deep x 3-3/4" wide shall be provided on the back edge of 30", 36" and 42" deep work surfaces, and 3-5/8" deep x 6-1/4" wide edge grommets shall be provided on 36", 48", and 60" deep work surfaces.

Peninsula work surfaces shall be pre-drilled to accept a pair of brackets at the ends. The connecting corners shall be fitted with threaded inserts for leg plates, and pre-drilled for joiner plate.

Brackets:

The brackets shall be 9" or 18" long 12 gauge, laser cut, steel formed in left and right hand configurations. Brackets shall have a mounting flange with bi-directional key slots. The 9" long brackets shall have two key slots and three hooks on center for connection to the post. The 18" long brackets shall have a welded 12-gauge reinforcing overlay at the back, three key slots and six hooks on 1" center. Brackets shall be powder-coated. Brackets shall be held in place by a black locking clip and secured to the work surface with #12 x 1 PHSM screws.

Joiner Plate:

The joiner plate shall be 4" x 5" constructed of 12-gauge steel powder coated black. The plate shall be secured to the adjoining work surface by means of six #12 x 1 PHSM screws engaging pre-drilled holes.

Table Leg:

The leg shall be a cruciform shape consisting of a post, a plate, four channels, and a glide. The post shall be 1-1/2" square 16-gauge steel welded from the inside to a 1/4" thick x 6-1/2" diameter steel plate. Each channel shall be a "U" -shape, 1/2" x 1-1/2" constructed of 16-gauge steel and secured to the post with #8 -32 x 1 RHM screws and spacers holding the channel 1/16" off of post. The channels shall be designed to be repositioned to create cable chases and separation of power and data cables. The bottom of the post shall be fitted with a glide insert and an adjustable glide with a black 3" diameter aluminum contact surface and a 1/4-20 x 1" threaded stem. Each leg shall be secured to the work surface with four 5/16-18 x 1 THM screws screwed into threaded inserts embedded in the underside of the work surface. Table legs shall be powder coated.

Free-Standing Work Surfaces:

The work surface shall be 1-1/4" thick 3-ply particleboard construction with .050" thick high pressure laminate face and .028" thick backer on the underside. All four edges shall be externally banded with 5/16" solid oak, applied to the core after lamination of the HPL face. The band shall be set flush to the HPL without the use of reveals or vein lines. The entire perimeter shall be shaped to a 1/2" x 3/16" chamfered bead profile. On work surfaces 60" long or longer a V-shaped 14-gauge steel keel shall be screwed to the underside. On tables 42" wide or wider, and 60" long or longer, two parallel steel keels shall be provided. Each work surface shall be provided with four legs (ordered separately) secured to the work surface with 5/16-18 x 1 THM screws screwed into metal inserts embedded in the underside of the work surface.

PAVILION ELECTRICAL SPECIFICATIONS:

J-Channel:

The assembly shall be 6" deep x 7-1/4" high mounted 15" above the floor. The assembly will have provisions for mounting without screws or other defacement of wood panels. The assembly shall consist of 4-1/2" deep, black mounting shelf, a 4" deep x 4" high channel for power cords management and distribution, and 4" deep x 1-1/4" high independent data cableway for data cable management and distribution. The J-channels shall be an extruded black plastic material UL rated 94 HB or better. The data cableway shall be designed to meet the bending radius requirements of the current TIA/EIA standards and to prevent pinching, crimping, or crushing of cables. The J-channels shall be suspended from the mounting shelf with brackets and locking pins.

J-Channel w/ Septum:

The assembly shall be the same as J-channel above except it includes a metal septum dividing the power and data compartments.

J-Channel w/ Septum & Data:

The assembly shall be the same as J-channel above except it includes a metal septum dividing the power and data compartments, and the data compartment has a data port with an extension bezel. The voice/data jacks will be specified elsewhere.

Mid-Range Adaptor:

The mid-range adaptor shall permit power entry devices to occur in other than end units of Pavilion Work Stations when power columns are used. The device shall have two female interconnects and one jumper harness with a male interconnect. The assembly shall be 20 amp rated and UL Listed under Office Furnishings Standard (QAWZ).

J-Channel w/ Duplex Outlet Port(s):

The assembly shall be 6" deep x 7-1/4" high, mounted 15" above the floor. The assembly must have provisions for mounting without screws or other defacement of the wood panels. The assembly shall consist of a 4-1/2" deep black mounting shelf, a 4" deep x 4" high channel with power distribution and cord management, and a 4" deep x 1-1/4" high independent data cableway for data management and distribution. The J-channels shall be an extruded black plastic material UL rated 94HB or better. The power distribution shall consist of a cable assembly with one or two double face duplex outlet ports (as specified in the equipment schedule) and a quick connect connector attached by means of flexible conduit. The cable assembly shall be an 8-wire 4-circuit system with provisions for 3 utility circuits and 1 isolated dedicated computer circuit having a separate neutral and an isolated ground. The duplex ports shall be molded directly onto a 9/16" diameter trade size oval metallic conduit and shall contain quick connect connectors. The opposite end of the cable shall have a housing to create a safety loop wire coil to allow the cable to expand or bend without placing strain on the wire or terminals. The wire shall be continuous from duplex port to the quick connect. Terminals shall be of 3-point contact design to ensure positive contact of mating terminals. All wires shall be 12 gauge except for the shared neutral which shall be 10 gauge to prevent overload. The system must have the capability to change circuit designations or add surge suppression without having to change the wiring. Duplex or surge suppression outlets and circuit designations shall be as described in the equipment schedule. The J-channel and duplex ports shall be suspended from mounting shelf with brackets and locking pins. The design of the system shall be such that the duplex ports and conduit will be hidden from view and protected by the J-channel with only the duplex outlet face being exposed. The assembly must be UL Listed under Office Furnishing Standard (QAWZ). When specified in the equipment schedule, the J-channel shall be furnished with a metal septum dividing the power and data channel and/or a data port with an extension bezel. The voice/data jacks shall be as specified in the equipment schedule.

Pass-Thru Channels:

The assembly shall be 6" deep x 7-1/4" high, mounted 15" above the floor. The assembly must have provisions for mounting without screws or other defacement of the wood panels. The assembly shall consist of a 4-1/2" deep black mounting shelf, a 4" deep x 4" high channel with power distribution and a 4" deep x 1-1/4" high independent data cableway for data management and distribution. The J-channels shall be an extruded black plastic material UL rated 94HB or better. The data cableway shall be designed to meet the bending radius requirements of the current TIA/EIA standards and to prevent pinching crimping or crushing of cables. The channel shall include a jumper cable with quick connect connectors on both ends and of sufficient length to connect to each other or to power assemblies at adjoining channels. The assembly must be UL Listed under Office Furnishing Standard (QAWZ). When specified in the equipment schedule, the channel shall be furnished with a metal septum dividing the power and data channels.

Duplex Outlet:

The duplex outlet shall be part of a modular system snapping and locking into place in available ports within the J-channels. Each outlet shall have two 15 amp NEMA 5-15R receptacles and shall be rated as 15 amp at the receptacle with 20 amp through-power and shall be UL Listed under Office Furnishings Standard (QAWZ).

Surge Suppression Duplex Outlet:

The duplex outlet shall be part of a modular system snapping and locking into place in available ports with the J-channels. Each outlet shall have two 15 amp NEMA 5-15R surge suppression receptacles having diagnostic indicator lights and an audible failure alarm with concealed silencing switch. The unit must be capable of being repaired with a UL Listed open market retail component without having to send unit back to factory. The assembly shall be 15 amp rated at the receptacle with 20 amp thru-power and shall be UL Listed under Office Furnishings Standard (QAWZ).

Power Entries - Cord Connected:

The power entries shall consist of a metal chase with blank data cover and a power raceway. The chase shall be a rectangular unit 2-1/2" deep x 4-3/4" wide, constructed of 14-gauge steel with cutouts for the power raceway and data faceplates and shall include brackets allowing the chase to be mounted on left or right hand sides of Pavilion work stations. The assembly must have provisions for mounting without the use of screws or other defacement of wood panels. The power raceway shall be interchangeable with the data faceplate allowing placement above or below the data faceplate. The raceway shall terminate at one end with a faceplate and a 2'-0" long "S" series black cord with a NEMA 5-20P configured 20 amp straight molded plug and terminate at the opposite end with flexible conduit with a quick connect connector. The conduit shall be of sufficient length and the connector of proper polarity and gender to permit interconnection with adjacent power assemblies. The assembly shall be 20 amp rated and UL Listed under Office Furnishings Standard (QAWZ)

Power Entries - Hardwired:

The power entries shall consist of a metal chase with blank data cover and a power raceway. The chase shall be a rectangular unit 2-1/2" deep x 4-3/4" wide, constructed of 14-gauge steel with cutouts for the power raceway and data faceplates and shall include brackets allowing the chase to be mounted on left or right hand sides of Pavilion work stations. The assembly must have provisions for mounting without the use of screws or other defacement of wood panels. The power raceway shall be interchangeable with the data faceplate allowing placement above or below the data faceplate. The raceway shall terminate at one end with a faceplate and a 3'-0" long black metallic liquid tight conduit with fittings at both ends and terminate at the opposite end with flexible conduit with a quick connect connector. The conduit shall be of sufficient length and the connector of proper polarity and gender to permit interconnection with adjacent power assemblies. The assembly shall be 20 amp rated and UL Listed under Office Furnishings Standard (QAWZ)

Wall Entries - Cord Connected:

The power entry assembly shall consist of a power raceway and a mounting plate. The assembly shall have provisions for mounting into any of the panel grommet locations without having to deface any of the panels. The raceway shall consist of a 2'-0" long "S" series black cord with a NEMA 5-20P configured 20 amp right angled molded plug and terminate at the opposite end with

flexible conduit with a quick connect connector. The conduit shall be of sufficient length and the connector of proper polarity and gender to permit interconnection with adjacent power assemblies. The assembly shall be of space saving design requiring no more than 1-1/2" clearance for connection to power supply outlet. The assembly shall be 20 amp rated and UL Listed under Office Furnishings Standard (QAWZ).

Wall Entries - Hardwired:

The power entry assembly shall consist of a power raceway and a mounting plate. The assembly shall have provisions for mounting into any of the panel grommet locations without having to deface any of the panels. The raceway shall consist of a 5'-0" long black metallic liquid tight conduit with right angle fittings at both ends and terminate at the opposite end with flexible conduit with a quick connect connector. The conduit shall be of sufficient length and the connector of proper polarity and gender to permit interconnection with adjacent power assemblies. The assembly shall be of space saving design requiring no more than 1-1/2" clearance for connection to power supply outlet. The assembly shall be 20 amp rated and UL Listed under Office Furnishings Standard (QAWZ).

Attachment "B"
Diametron Modular Workstations
(to match and intermember w/existing)

End Panels:

End panels are 1-3/16" thick, 3-ply particleboard panel with select grade "A" oak veneer face and back. The top and bottom edges shall be banded with 5/16" thick solid oak external bands radiused 1/16". The vertical edges of all end panels shall be banded with 5/16" thick solid oak edge band, coped and chamfered to receive a 1-1/2" diameter steel leg. Top of leg shall have a dome-shaped alloy cap, matching the finish of the leg. Leg finish to be Arctic Silver Powder Diakote enamel. The bottom of the leg shall have a 1-3/16" black plastic adjustable glide. End panels shall be fitted on one side with threaded metal inserts for screws for front panel attachments and Z-bar attachment.

Intermediate Panel:

Intermediate panels shall be same construction as end panels, except shall be fitted on both sides for have a 3" PVC-lined grommet for cable passage.

Top:

The work surface is 1-1/4" thick, 3-ply particleboard construction with .050" high pressure plastic laminate face and .028" backer on the underside. The working side edge is banded with 5/8" thick x 1-5/8" wide solid oak applied after the top is laminated. The edge is square with a 1/8" radius top and bottom. Tops shall be pre-drilled for attachment to the end and front panels, as well as the attachment of J-Channels and Duplex Modules. All tops 60" Wide and wider shall include oak support gusset. All tops shall be pre-machined to accept, and shall include Black oxidized metal "Z-bar" brackets.

Front Panel:

The front panel is 1-3/16" thick, 3-ply particleboard construction with vertical grain select grade "A" oak veneer on both faces. The top and bottom of the panel are banded with 1/8" solid oak. The band is square with a 1/8" radius along front and back edge. The edge of panel is exposed and flush at the top and extends to 1/8" above the bottom of the panel end or intermediate panel. Front panels to be pre-drilled for accepting all necessary attachments, and to include mod-eez clips on both vertical edges for attachment to end/intermediate panels.

Raised Front Panel:

The raised front panel is the same construction as the front panel except the raised front panel extends 10" above the work surface.

Glides:

Each end and intermediate panel is equipped with a pair of 1-3/16" diameter rubber cushioned leveling glides with a 15/16" stem.

UL-LISTED ELECTRICAL/DATA MANAGERS FOR MODULAR WORK STATIONS:

General:

Electrical components and data managers for computer stations and circulation desks. All components listed in this specification must be capable of mounting to the underside of the work surfaces of the computer stations and circulation desks. The work surfaces must be predrilled with hole patterns to match that of electrical system. Due to the construction of the carrels, data managers that mount to the front panel are not acceptable. All pricing must include prepaid delivery and installation charges.

J-Channels with Duplex Openings:

The "J" channel is two-piece construction, 4" deep x 5-1/4" high with a 1-1/2" lip at the back of the upper channel. The lower channel pivots on a hinge that is molded into the upper channel. The lower channel pivots down to access data cords and is secured by the catch at the front of the upper channel. The "J" channel is mounted on brackets suspended from the top, or "J" channel shelf, and secured in place with retention pins. The "J" channel assembly includes a raceway with an opening for duplex outlet(s), rated as 15 amp at the receptacle with 20 amp through-power. The raceway shall include necessary 9/16" oval BX jumpers with quick connects at both ends to allow for interconnection to adjacent units.

Power Entry:

The power entry device must be compatible with floor, wall or column outlets or liquid-tight hardwire connections, as specified. The power/data entry devices shall be designed to provide maximum protection of both the power wiring and data cabling entering the furniture. All wiring flex conduit must be contained in a physical enclosure. Any conduit exposed outside of the enclosure shall be metallic liquid tight. All hard-wired devices shall include fittings to connect to the building. Hard-wired entry devices shall be of sufficient length to reach floor, wall or column box and shall not exceed 6'-0". Whenever possible the device shall be in-line with straight fittings. When the device must extend to wall or column location, all fittings shall be right angle. All leads shall be a minimum of 8". All cord connected devices shall have a 2'-0" long 12-3 S Series cord with a NEMA 5-20P 20-amp plug.

Duplex Outlets:

15-amp duplex outlets must be interchangeable and keyed for proper circuit. When installed in J-Channel, openings must align with duplex outlets to allow safe access to outlet.

Mid-Range Adaptor:

The bidder shall provide provisions for the electrical power entry to enter mid-range and have the powered J-channels split off in both directions by use of mid-range adaptor.

Attachment “C” Teraine Benching System

TERAINE TABLE

General:

The TMC Furniture’s Teraine Table benching system offers a light and flexible work space for collaborative or independent work. Tops are available in a wide range of sizes and shapes, including round, square, rectangular, trapezoid, triangle, half- and three-quarter-round, crescent, racetrack, oval, and boat. Several Standard edge treatments are available. Standard table heights have been developed to match to our seating system.

Benching Chassis System:

Design with an uninterrupted work surface (up to 96” span without requiring intermediate base). Chassis beam is constructed of 1-1/2” x 1-1/2” T- slotted aluminum frame. Bridge is constructed of 1-1/2” x 4.5” T- slotted aluminum frame using metal-to-metal connections. Anchor fasteners, joining plates, 90 degree connectors are part of the table’s easy assembly.

Work surface – The work surface is a nominal 3/4” thick with a 3-ply construction of: 1) 3/4”, 45 lb. premium particleboard. 2) Surface material using a .05” horizontal grade high-pressure laminates from Formica, Nevamar, Pionite or Wilsonart. Other face material such as maple, oak, & cherry wood veneer or linoleum are also available. 3) A .02” "Polybak" backer on the underside. Standard screws are added to the underside of the table to allow the understructure to be attached.

Edge Treatment:

- Vinyl T-Mold edge is 3/4” wide x 1/8” thick and provides a soft, slightly rounded edge;
- Plywood Edge banding is 3/4” wide x 1/8” thick and mimics the look of premium die-board plywood composed of 1/16” thick plys.
- Maple Edge banding is 3/4” wide x 1/8” thick and gives the appearance of a solid maple edge; but is constructed of five .025” thick plys bonded with adhesive – banding made without these micro-ply layers is unacceptable since it will not have the same strength and durability.
- Solid Wood Knife Edge is composed of 2-1/4” wide x 3/4” thick solid maple with a reverse bevel cut on bottom edge, all edges are eased.

- Solid Wood Edge is composed of 1-1/4" wide x 3/4" thick solid maple with a profile edge, all edges are eased.

Teraine Lunar Leg:

The leg is constructed of 1-1/2" diameter steel leg, with an adjustable 3" level feature on legs. The legs are constructed of 16 gauge CRS. A 1/4" steel top plate is welded to the leg; the top plate is drilled for fasteners and the holes are counter-sunk for flush mounting. 3" Lunar glide has a 26-degree swivel and 5/16-18 threaded stem and is 1-1/4" in length. Parts are then electrostatically coated with an epoxy powder to a thickness of 3 to 5 mil dry paint film; Silver is offered as a standard color. The understructure is attached to the work surface by means of 3/4" screws. Standard table heights are: 29"TH for 18"SH adult chairs. Legs are adjustable to assist in leveling of long work surfaces.

Divider Panels:

Privacy is flexible and adaptable, available in 12" or 19" high with several width options. Available in many surface materials including wood, acrylic, anodized metal or laminate. Acrylic panel - 3/8" thick 3-form or other acrylic products such as Lumicor or Veritas. Attached using metal fastener tabs.

Wire Management:

Optional under mount steel basket for wire concealment and collection. Grommets may be specified or open channel slot in double-faced work surfaces for cord drop. Flip up electrical units with power or data also available.

**Attachment “D”
Folio Genealogy Workstations
(to match and intermember w/existing)**

Carrel Table Tops:

Tops shall be a 3-ply construction consisting of 0.050” high pressure laminate face, medium density particleboard core, and 0.028” balancing backer, for a nominal total thickness of 1-1/4”. The edges of all carrel table tops shall be externally banded on the end edges with a 1/4” wide by 1-9/16” high, flat solid oak band; and on the user edges with a 1-1/4” wide by 1-9/16” high, profiled solid oak band. The 1-1/4” wide bands shall extend over the 1/4” wide bands to form a butt joint at the corners. Tops which are 60” long and longer and less than 48” wide shall be fitted with one V-shaped, 14-gauge steel keel securely fastened to the underside of the top running parallel with its length. Tops which are 48” wide by 60” long and longer shall receive two of the aforementioned keels running parallel with the length of the top. Tops which are 60” wide by 60” long and longer shall receive four keels. When an electrical device is installed on the centerline of the work surface, two V-keels will be installed on tops which are less than 48” wide and 60” long or longer.

TABLE LEGS:

3-bar Study/Carrel Table Legs:

Legs shall be 2-1/4” square, solid hardwood. The bottom of each leg shall be fitted with an aluminum accent foot with a powder coat finish, and a 1-1/4” diameter, chrome glide with a 1” stem. Legs shall be attached to the underside of rectangular and square table tops by means of a 5” square by 5/16” thick steel plate. The plate is secured to the leg with a dowel nut and two flat head machine bolts. The leg assembly is then attached to the table top with five machine cap screws and threaded inserts.

TABLE END OPTIONS:

3-Bar End Frames:

End frames shall be fabricated from various sizes of roll formed square steel tubing with a powder coat finish. Frames shall be assembled by means of internally integrated nuts and external decorative head bolts. Frames are mounted between the leg assemblies by means of decorative head bolts. The bottom stretcher in the end frame assemblies shall include a hole for fastening an optional trestle assembly. The hole shall be fitted with a decorative head bolt when no trestle is present.

CARREL RACKS/DIVIDERS:

42” High Carrel Rack:

Racks shall consist of end panels, back panels, and intermediate panels when required. The back panel shall be fabricated from 1” thick veneered medium density particleboard core and shall be surrounded on three edges by a fabricated steel frame with a powder coat finish. The frame shall attach to the work surface at each end by means of decorative feet which shall be bolted to the table through the work surface. End and intermediate panels shall be fabricated from 1” thick veneered medium density particleboard core with 1/8” thick solid hardwood edge bands. The top edge of the end and intermediate panels shall have an arc with the narrowest portion of the panel at the front edge. End and intermediate panels shall be attached to, and elevated from the work surface at the front end of the panel by means of steel standoffs with a powder coat finish. The end and intermediate panels shall be attached to the back panel by means of concealed fasteners.

Dividers:

Dividers shall be fabricated from 1” thick veneered medium density particleboard core with 1/8” thick solid hardwood edge bands. The top edge of the panel shall have an arc with the narrowest portion of the panel at each end. The ends of the panel are to receive a steel post with a powder coat finish which shall be attached by means of concealed fasteners. The posts shall attach to the work surface by means of decorative feet which shall be bolted to the table through the work surface.

ELECTRICAL/DATA OPTIONS:

Wire Management Leg Chase:

When specified, a black extruded PVC chase shall be fitted into one side of a table leg which provides a means for concealment of wires or cables that run from work surface mounted electrical devices down to the floor.

Top Mount Grommet Assembly:

The top mount grommet assembly shall be fabricated from formed 14 gauge steel with a powder coat finish. The grommet is recessed into the table top and rests on a formed steel flange. A fabricated steel lid is fitted into the grommet housing and is held in place by means of wing nuts and washers accessible only from the underside to prevent tampering. The lid also features black filament brushes at each end. The entire grommet assembly shall be fastened to the work surface by means of a wood screw into the edge of the work surface cutout.

Adjustable CPU Holders:

Steel CPU Holder with adjustable width and height. Finish is smooth Black.

	Standard CPU Holder	Slim CPU Holder
Width	5.25" - 9.25"	3" - 5.5"
Height	15" - 21"	15" - 21"

Attachment "E"
Children's Desk add-on
(to match and intermember w/existing)

The circulation desks shall be of modular design, sized per stock number, made up of continuous sections. The patron side of all units shall be fitted with a perforated steel detail, 11" High x length of desk Chemetal #102 MICRO-STEEL.025"T overlaid on ¼" T clear acrylic (per drawing 1) formed to fit the shape of the desk. This perforated steel detail shall be attached to the front of the desks with 5/8" Diameter Aluminum standoffs. The components are configured as a fully constructed cabinet.

Top:

All assemblies have continuous tops composed of longest sections possible. Joints are secured with splines and mechanical joint fasteners. Desk top is 1-1/4" thick, 3-ply particleboard construction with High Pressure Laminate face and .028" backer on the underside. The front and back edges of top are externally banded with 5/8" thick x 1-5/8" wide solid oak and bullnose shaped. Top to extend 2" beyond the front panels of the desk.

Cabinet Construction:

All desk modules are flush front design of 3" thick curved finished oak ply construction, steam bent forming straight or curved units, per equipment schedule. The modules consist of two side panels each, front, toe base, top and accessories per schedule of equipment.

- The front panels will be 3/4" thick, 3-ply construction with premium grade "A" oak veneer. Exterior face is matched for color and grain, and sequence matched across the complete assembly. Bottom edge of panel at toespace is banded with 1/8" thick solid oak.
- The 6" high recessed toespace is painted black.
- The side panels will be 3/4" thick, 3-ply particleboard construction with select grade "A" oak veneer on interior face. All exposed edges at working side are banded with solid oak.

J-Channels:

The "J" channel is constructed of ¾" Thick MDF, painted black, 6" Deep x 5" Tall, overall, mounted to the desk with metal brackets. The "J" channel assembly includes a raceway with an opening for duplex outlet(s), rated as 15 amp at the receptacle with 20 amp through-power. The raceway shall include necessary 9/16" oval BX jumpers with quick connects at both ends to allow for interconnection to adjacent units.

Power Entry:

The power entry device must be compatible with floor, wall or column outlets or liquid-tight hardwire connections, as specified. The power/data entry devices shall be designed to provide maximum protection of both the power wiring and data cabling entering the furniture. All wiring

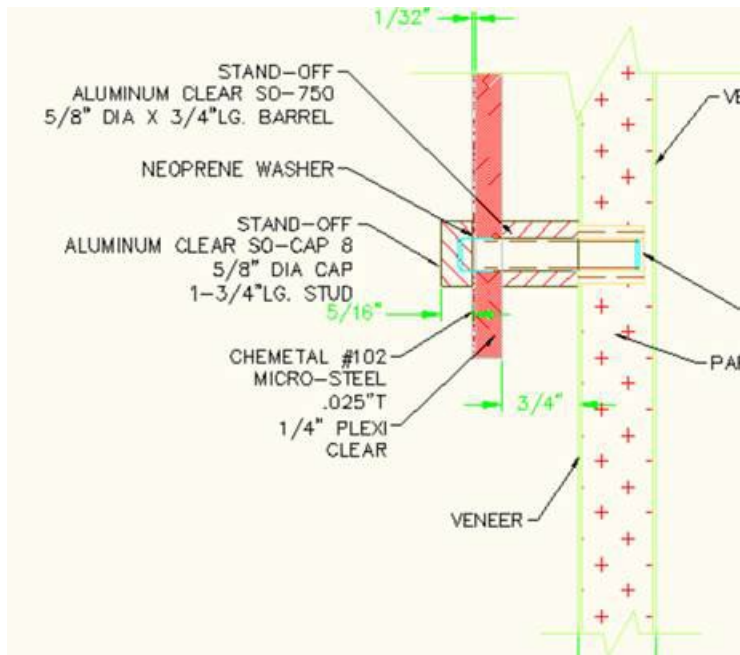
flex conduit must be contained in a physical enclosure. Any conduit exposed outside of the enclosure shall be metallic liquid tight. All hard-wired devices shall include fittings to connect to the building. Hard-wired entry devices shall be of sufficient length to reach floor, wall or column box and shall not exceed 6'-0". Whenever possible the device shall be in-line with straight fittings. When the device must extend to wall or column location, all fittings shall be right angle. All leads shall be a minimum of 8". All cord connected devices shall have a 2'-0" long 12-3 S Series cord with a NEMA 5-20P 20-amp plug.

Duplex Outlets:

15-amp Duplex outlets must be interchangeable and keyed for proper circuit. When installed in J-Channel, openings must align with duplex outlets to allow safe access to outlet.

Mid-Range Adaptor:

The bidder shall provide provisions for the electrical power entry to enter mid-range and have the powered J-channels split off in both directions by use of mid-range adaptor.



Drawing 1: Perforated front panel

Attachment "F"
Multimedia Display System
(to match and intermember with existing)

GENERAL:

It is the intent of the Jefferson Parish Library to use components of the existing Jefferson Parish Library shelving in this reconfiguration. The parts listed in the schedule of equipment are necessary for this reconfiguration. It is the bidder's responsibility to ensure compatibility of items bid with the existing shelving. This information must be included with bid. Failure to do so is cause for rejection of bid.

DESIGN:

Shelving is cantilever design with a 7 degree sloping panel. Book stacks are to be of a starter and adder unit to constitute a given Book stacks range. Starter units shall consist of a complete modular unit with two tubular uprights; each additional adder unit shall consist of the same except, reduce the quantity of tubular uprights and display channels by half that is required for a starter unit and changing the display cover from a starter to an adder.

MATERIAL AND DESIGN:

The shelving is made from only the finest materials and workmanship. All sheet metal and tubular steel is commercial quality furniture-stock steel; hot and cold rolled, reannealed, fully pickled or equivalent. All gauge thickness conforms to U.S. Standards.

CAPACITY REQUIREMENTS:

Each shelf has a minimum clearance between the end brackets of 35 3/8". Unit widths are 36" nominal, 37 1/32 actual overall for a starter, adders are 35 17/32". When properly installed, units are capable of supporting 50 lbs. evenly distributed weight per linear foot of shelving, multiplied by the number of shelves per unit, without deflection (considered excessive by industry standards).

COLOR:

Shelving color must match existing Pearl Gray finish. Sample must be provided with bid.

FINISHES:

Shelving colors are described above, with an epoxy powder applied electrostatic method. The finish yields a minimum average thickness of 1.0 to 1.8 mils and has a medium gloss. Abrasion resistance requires a minimum of 60 liters of sand to remove finish to bare metal.

NOTE:

The following are the Estey standard manufacturing specifications for the Estey A-frame Display Shelving. For special application requirements not listed below please contact the factory.

- 1) **UPRIGHT COLUMNS** are formed from no less than #14 gauge tubular steel. Overall dimensions are 2 1/2" in the web and 1 1/2" across the front and rear area surfaces. Uprights are perforated the full height with a series of 5/16" x 5/8" slots spaced on 1" vertical centers and located within 3/4" of the outer web surface to the center of the slot. All slots are rectangular in shape to allow ease of installation and resting of shelves. Every fifth and sixth slot has a rounded top for visual alignment of shelves. Side slots are located at the top, bottom and middle of the upright with a special design allowing the strut to lock into place. Base supports are welded into place creating a single upright and base supports assembly, with leveling bolts at each end of the base support.
- 2) **TOP AND BOTTOM SPREADERS** are formed of not less than #16 gauge steel in a channel shape, measuring 1 1/32" x 4" in cross-section and attached to the uprights by means of a friction fit.
- 3) **KICK PLATES** are formed of no less than # 20 gauge steel, measuring 1/2" x 2 9/16" x 8 1/16" x 1/2" in cross-section and attached to the base support with pins through predrilled holes.
- 4) **DISPLAY CHANNELS** are formed of no less than # 16 gauge steel, measuring 1 1/2" x 1 5/8" x 1 1/2" in cross-section and attached to the horizontal base support with Tek Screws. Channels are perforated the full height with a series of 1/4" x 5/8" rectangular slots spaced 1" on vertical centers and located 13/16" from the outer flange surface to the center of the slot. Every fifth and sixth slot has a rounded top for visual alignment of shelves.
- 5) **FRONT PANELS** are formed of no less than # 19 gauge steel with a series of slots cut into the panel's side flanges for attachment to the Display Channels. The Front Panel hooks into place over the provided screws on the Display Channel and is designed to conceal all hardware.

SHELVING:

1) **NO. OF SHELVES** per unit are as listed below, unless otherwise specified.

HEIGHT	NO. OF ADJUSTABLE SHELVES
66"	5
54"	4
42"	3

- 1) **ADJUSTABLE SHELVES** are formed of no less than #18 gauge steel with the front and rear edges having a box formed profile, 1" high capable of receiving wire book supports and snap-on label holders. The nominal depth is 1" greater than the actual dimension. The sides of the shelf are flanged for locking into the end bracket.
- 2) **END BRACKETS** are formed of no less than #16 gauge steel. The bracket incorporates a "J" flange at the bottom of the bracket for securing the shelf to the bracket. The "J" flange is

formed to allow for automatic seating of shelf to bracket. The bracket design allows for greater shelf adjustment upward and downward (i.e. "walking-the-shelf") without disturbing any of the other shelves. Brackets fit flush to one another to prevent overlapping or miss-alignment of adjoining brackets. Brackets are available in 3", 6" and 8" heights. They are also available as double sided, for use at the base location.

3) **BROWSER SHELVES** Each welded assembly contains a box made from 18 gauge steel and 16 gauge side brackets with hooks that allow the unit to be installed on a Weld Frame and or Designer Series Upright Unit. Each assembly contains a rubber pad to prevent items from sliding around and five dividers to keep items from falling over

4) **MAGAZINE SHELVES** Each welded assembly contains a flat shelf base made from 16 gauge steel, 16 gauge side brackets with hooks for attachment purposes, and a divider assembly that contains eight divided sections that allows the overlapping of periodicals during showcasing.

5) **MEDIA SHELVES** Each welded assembly contains a 16 gauge steel body with integrated side brackets. Each body has hooks cut into each side for attachment purposes. Each assembly contains a Zig Zag insert formed from 19 gauge steel and is welded into place providing five divided sections for showcasing.

ACCESSORIES:

1) **SWIVEL CASTER W/BRAKE** is 3" in diameter and screws into the bottom of the upright foot. Casters allow the units to roll freely and or to be locked into place.

2) **SHELF LABEL HOLDERS** are made of plastic to tightly grip the edges of book or divider type shelves for card size of 5/8" x 5".

3) **CARDHOLDERS** are made with # 20 gauge steel standard black powder coated finish, and are sized to accommodate 3" x 5" cards. Cardholders are provided with double-sided tape to ensure positive adhesion to end panel surface.

4) **STEEL END PANELS** cover the entire height and depth of the unit. Panels are cut from no less than #14 gauge steel in a one piece construction to create a flush profile. Panels attach to uprights by hooking a series of end panel clips into the outer slots provided on the upright and by pins through predrilled holes in the base support of the upright.

5) **CASTER OFFSET BRACKET** allows the casters to recess, therefore reducing overall height and giving more of a fixed appearance while allowing the units to be mobile.

Attachment "G"
Curved Multimedia Display System

DESIGN:

Shelving is cantilever design. Book stacks are to be of a starter and adder unit to constitute a given Book stacks range. Starter units shall consist of a complete modular unit with two tubular uprights for each additional adder unit.

MATERIAL AND DESIGN:

The shelving is made from only the finest materials and workmanship. All sheet metal and tubular steel is commercial quality furniture-stock steel; hot and cold rolled, reannealed, fully pickled or equivalent. All gauge thickness conforms to U.S. Standards.

CAPACITY REQUIREMENTS:

Unit widths are 36" nominal, 37 1/2" actual overall for a starter, adders are 36 1/32". When properly installed, units are capable of supporting 50 lbs. evenly distributed weight per linear foot of shelving, multiplied by the number of shelves per unit, without deflection (considered excessive by industry standards).

COLOR:

Shelving color must match existing Pearl Gray finish. Sample must be provided with bid.

FINISHES:

Shelving colors are described above, with an epoxy powder applied electrostatic method. The finish yields a minimum average thickness of 1.0 to 1.8 mils and has a medium gloss. Abrasion resistance requires a minimum of 60 liters of sand to remove finish to bare metal.

1) UPRIGHT COLUMNS are formed from no less than #14-gauge tubular steel. Overall dimensions are 2 1/2" in the web and 1 1/2" across the front and rear area surfaces. The uprights are perforated the full height with a series of 5/16" x 5/8" slots spaced on 1" vertical centers and located within 3/4" of the outer web surface to the center of the slot. All slots are rectangular in shape to allow ease of installation and resting of shelves. Every fifth and sixth slot has a rounded top for visual alignment of shelves. Side holes are located at the top and bottom of the upright with a special design allowing the strut to bolt into place. Base supports are welded into place creating a single upright and base supports assembly, with leveling bolts at each end of the base support.

2) TOP AND BOTTOM SPREADERS are formed of not less than #16-gauge seam welded steel tube with end plates of 7-gauge steel. The top and bottom and bottom spreaders bolt onto the upright. The top and bottom spreader profile is designed to be curved at a 20-degree radius in 36" (nominal) arc lengths.

3) ADJUSTABLE SHELVES are formed of no less than #18-gauge steel with the front and rear edges being welded to the shelf. The shelf front profile is 1" high, rear shelf profile is a 2" integral back capable of receiving a sliding wire divider. The nominal depth is 1" greater than the actual dimension. The sides of the shelf are flanged for locking into the end bracket. The adjustable shelves designed to be curved at a 20-degree radius.

4) END BRACKETS are formed of no less than #16-gauge steel. The bracket incorporates a "J" flange at the bottom of the bracket for securing the shelf to the bracket. The "J" flange is formed to allow for automatic seating of shelf to bracket. The bracket design allows for greater shelf adjustment upward and downward (i.e. "walking-the-shelf") without disturbing any of the other shelves. Brackets fit flush to one another to prevent overlapping or miss-alignment of adjoining brackets. Brackets are available in 3", 6" and 8" heights.

5) CANOPY TOP BRACKETS are formed of #14-gauge engaged in the upright slots.

Attachment “H” Children’s Tables/Chairs

LORCA CHAIR

Chair Shell

Shells are constructed of molded plywood to form a seat and back. The shell’s veneer faces must be northern hardwood maple which has been rotary cut (peeled from the log in one continuous movement); shells are .41” thick and composed of 8 layers of ply. Wood has controlled sterilization for 48 hours. The veneer is dried between 6% to 9% relative humidity. The shell is pressed by a High Frequency process using state-of-art generators with automatic control for power level, analysis of reversals (to avoid over-heating) and total electronic control for RF / Stabilization cycles. The temperature is controlled to ensure that even curing of the plywood occurs while the high-pressure presses force the adhesive deep into the cellular structure of the wood, improving the bond and increasing the strength between the layers. After leaving our presses, the shells are left to rest on specially adapted frames in order to avoid any warping of the wood and to ensure an optimal stability concerning shape and dimension. The shell is then cut on a CNC 6-axis machine. The shell veneer and edges are sanded and smoothed to final grain of 180 grit. Before leaving the factory, every shell undergoes a resistance test to make sure we catch any hidden, structural defects; a force is applied perpendicularly to the back of the shell 13-3/4” above the seat for 4 seconds. Quality control makes a final visual inspection to catch any last veneer or manufacturing defects. The face veneer color must be unspliced, light and uniform. Plywood shells cannot have any: knots, splice lines, splits, cracks, flaws caused by parasites, unwanted discoloring (red coloring, mold, heat marks, blue marking), open joints, blistering, hollows, bumps or marks, breaks (a break in the first layer of wood lets the second layer show through), traces of glue, foreign bodies, filling or patching on outer surfaces, raw edges.

Cut-Outs

Plywood chair shells can be laser cut with a variety of decorative patterns and perimeters. Chair back cut-outs must be formed with a computer numeric controlled laser beam running at a minimum of 400 watts and set to a beam diameter of .007 of an inch – this narrow beam dimension allows for a very detailed shaping of the wood, while ensuring a cleanly cut product. Any cut-out formed with a cutting tool having a diameter larger than .007 of an inch is unacceptable. Cut-outs must be blackened where the wood has been cut through; this is required in order to highlight the design’s shape and set it in contrast to the rest of the chair. Blackening by the use of paint is not acceptable since its edges cannot appear as even as the laser CNC controlled process; additionally, the density of the black cannot be properly controlled when paint is used. Cut-outs formed with a router are unacceptable – routers are unable to cut .007 of an inch in diameter and router cuts do not blacken the cut-through plywood.

Finishing

All shells go through at least a four-step sanding process. The veneer is pre-sanded to 100 grit prior to lay-up. After the molded shells are perimeter cut, they are bag-sanded to remove any burrs

or sharp edges. The perimeter is sanded with bag sander at 80 grit and then the surface and edges all get a final orbital sand with 180 grit. TMC Furniture finishes chairs with a variety of transparent stains, opaque paints and toners (a mixture of stain and opaque). A seal coat of pre-catalyzed lacquer is applied and, after drying, is hand-sanded with 220 grit sand paper. A final coat of pre-catalyzed lacquer is then applied to a 10 sheen.

Fasteners

Each chair shell is prepared for the fasteners with four spot faces on the seat bottom. Four 1.8" diameter hard Maple disks with internally mounted nut fasteners are attached to the chair bottom with thermoset urethane adhesive. The spot faces disks must be cross-grain cut from a solid dowel and positioned on the shell so that the end grain of the disk rests against the plywood face of the shell – disks made from plywood are unacceptable and non-cross-grain cut disks or solid maple disks mounted with the grain running parallel to the plywood face are unacceptable (both are liable to separate or tear-out more easily). Each of these four fasteners must be able to withstand a direct pull test of 500 lbs. The chair is attached to the shell with ¼" 20 screw.

Metal Base

The metal base is constructed of 7/8" diameter, 16 gauge cold-rolled, commercial quality tubing. Tubes are bent and a center ¼" bead weld is applied that is 1-1/2" long. Each rectangular mounting tabs is welded with 2" long, ¼" bead weld – non-rectangular or triangular mounting tabs are unacceptable. The bases are thoroughly cleaned with an acid wash. Parts are then electrostatically coated with an epoxy powder to a thickness of 3 to 5 mil dry paint film.

Task Base

The task base is constructed of 25" diameter, 5 legged composite in the color black.. It has a hub of 50 mm and the radius from the center of the hub to the outside of the legs is 13.97". The caster barrel diameter is 1.77" and has standard caster sockets of .43" x .98", with a base height of 2.55". Height adjustments are made via hand lever. There is a 50mm gas cylinder with 5.5" of travel and the top taper is 17-4. The base exceeds all applicable ANSI/BIFMA Standards.

Glides

Super-tough nylon glides cap the tube ends and form the feet of the chair. The glides are available in black, red, blue, yellow and gray. Glides must be at least 1.3" in diameter to allow for easy movement over carpeting and solid surface floors; small glides are unacceptable since they will make it difficult for a child to slide the chair. Additionally, the glide must be a minimum of .75" in height on the exterior in order to properly secure the glide to the leg, to make sure it will not catch on carpeted surfaces as well as to maximize the design impact.

Dimensions

The child's chair is built with a wide and deep stance to make it stable. The chair is available in four seat heights – 12", 14", 16" and 18"

LORCA STOOL

Stool Seat

Wooden stool seats are 14” in diameter and are constructed of premium 1” thick hardwood die board plywood and are surfaced on both sides with a select white, rotary-cut northern hardwood maple veneer. Plys are all .05” thick and are of high grade and free of voids and other defects – both at the edge and internally. The plywood seat is notable for its strength and ability to hold fastener systems; seats made of particleboard, MDF or other materials are unacceptable. The veneer is dried between 6% to 9% relative humidity. The veneer is then selected and quality control once again inspects the sheets for relative humidity, thickness, quality, etc. before transferring the veneer to the press. The temperature is controlled to ensure that even curing of the plywood occurs while the high-pressure presses force the adhesive deep into the cellular structure of the wood, improving the bond and increasing the strength between the layers. The seats are cut and bored on a CNC 5-axis machine to ensure exact placements of holes in relation to legs and understructure. The seat veneer and edges are sanded and smoothed to final grain of 180 grit. Before leaving the factory, every seat undergoes a resistance test to make sure we catch any hidden, structural defects. Quality control makes a final visual inspection to catch any last veneer or manufacturing defects. Plywood veneer cannot have any: knots, splits, cracks, flaws caused by parasites, unwanted discoloring (red coloring, mold, heat marks, blue marking), open joints, blistering, hollows, bumps or marks, breaks (a break in the first layer of wood lets the second layer show through), traces of glue, foreign bodies, filling or patching on outer surfaces, raw edges.

Finishing

All seats go through at least a four-step sanding process. The veneer is pre-sanded to 100 grit prior to lay-up. After the seats are cut, they are bag-sanded to remove any burrs or sharp edges with 80 grit paper and then the surface and edges all get a final orbital sand with 180 grit. TMC Furniture finishes wood stools with a variety of transparent stains, opaque paints and toners (a mixture of stain and opaque). A seal coat of pre-catalyzed lacquer is applied and, after drying, is hand-sanded with 220 grit sand paper. A final coat of pre-catalyzed lacquer is then applied to a 10 sheen.

Metal Base

The metal base is constructed of 7/8” diameter, 16 gauge cold-rolled, commercial quality tubing. Tubes are bent and a center ¼” bead weld is applied that is 1-1/2” long. Each rectangular mounting tabs is welded with 2” long, ¼” bead weld – non-rectangular or triangular mounting tabs are unacceptable. The bases are thoroughly cleaned with an acid wash. Parts are then electrostatically coated with an epoxy powder to a thickness of 3 to 5 mil dry paint film.

Dimensions

The child’s stool is built with a 14” wide and 14” deep stance (for the 16” SH stool), which makes it much more stable and safe than children’s stools with narrower stance. The stool is available in three seat heights for kids – 12”, 14” and 16” – to more closely tailor it to a growing child’s

ergonomic needs; stools that are available only in 13" and 15" seat heights are not acceptable substitutes. The adult seat heights are 18", 24", or 30".

**Attachment “I”
Teen’s Tables/Chairs
Couture Collection**

GENERAL

The Couture chair is available in various models: Adelle, Alphonso Mona, Sasha, and Napoleon. Bar and counter heights are available as well as a seat pad option for these chairs.

Chair Shell

Shells are constructed of molded plywood to form a seat and back. The shell’s veneer faces must be northern hardwood maple, which has been rotary cut (peeled from the log in one continuous movement); shells are .45” thick and composed of 9 layers of ply. This shell thickness and the number of plies are consistently stronger than shells using less than 9 plies – chair shells manufactured with 8 or few plies are not acceptable substitutes. Wood has controlled sterilization for 48 hours. The veneer is dried between 6% to 9% relative humidity. The shell is pressed using a unique thermal heat process with state-of-art generators with automatic control for power level, analysis of reversals (to avoid over-heating) and total electronic control of stabilization cycles. The temperature is controlled to ensure that even curing of the plywood occurs while the high-pressure presses force the adhesive deep into the cellular structure of the wood, improving the bond and increasing the strength between the layers. After leaving the press, the shells are left to rest on specially adapted frames in order to avoid any warping of the wood and to ensure an optimal stability concerning shape and dimension. The shell is then cut on a CNC 6-axis machine. The shell veneer and edges are sanded and smoothed to final grain of 180 grit. Before leaving the factory, every shell undergoes a resistance test to make sure we catch any hidden, structural defects; a force is applied perpendicularly to the back of the shell 13-3/4” above the seat for 4 seconds. Quality control makes a final visual inspection to catch any last veneer or manufacturing defects. The face veneer color must be un-spliced, light and uniform. Plywood shells cannot have any: knots, splice lines, splits, cracks, flaws caused by parasites, unwanted discoloring (red coloring, mold, heat marks, blue marking), open joints, blistering, hollows, bumps or marks, breaks (a break in the first layer of wood lets the second layer show through), traces of glue, foreign bodies, filling or patching on outer surfaces, raw edges.

Perimeter Cut-out/Etching

Uses the same shells and processes as cutouts, but is cut on the perimeter of the shell as well as the interior surfaces. Perimeter cutting also uses a process called etching to add defining black lines to characterize certain cutout patterns. These etchings are cut on both sides of the shell requiring two totally different machine set-ups to acquire the intended effect. Perimeter cutouts and etching give the appearance that the cutout is a part of the chair itself.

Finishing

All legs and shells go through at least a four-step sanding process. The veneer is pre-sanded to 100 grit prior to lay-up. After the molded shell and legs are perimeter cut, they are bag-sanded to

remove any burrs or sharp edges with 80 grit paper and then the surface and edges all get a final orbital sand with 180 grit. TMC Furniture finishes chairs with a variety of transparent stains, opaque paints and toners (a mixture of stain and opaque). A seal coat of pre-catalyzed lacquer is applied and, after drying, is hand-sanded with 220 grit sand paper. A final coat of pre-catalyzed lacquer is then applied to a 10 sheen.

Fasteners

Each chair shell is prepared for the fasteners with four spot faces on the seat bottom. Four 1.8” diameter hard Maple disks with internally mounted nut fasteners are attached to the chair bottom with thermo set urethane adhesive. The spot faces disks must be cut so that the end grain of the disk rests against the plywood face of the shell – disks made from plywood are unacceptable and solid maple disks mounted with the grain running parallel to the plywood face are unacceptable (both are liable to separate or tear-out more easily). Similarly, fasteners that merely screw into the chair shell – commonly referred to as “bayonet” fasteners – do not offer enough contact area and are liable (even when adhesive is used) to pull off; these small metal bayonet fasteners are not acceptable substitutes. Each of these four fasteners must be able to withstand a direct pull test of 500 lbs. The chair is attached to the shell with ¼” 20 screw.

Metal Understructure

A metal understructure joins the four solid maple legs and then allows the legs to be fastened to the shell; this creates a very strong and stable chair by reinforcing all the key leg components as well as lowering the center of gravity of the chair, making it more stable and less liable to tipping. The understructure is constructed of 7/8” diameter, 12 gauge cold-rolled, commercial quality tubing. Tubes are bent and a center ¼” bead weld is applied that is 1-1/2” long; this metal understructure has four angle-iron corners that allow the base to securely fasten to the four Maple legs. Four rectangular mounting tabs are welded with 2” long, ¼” bead welds. The bases are thoroughly cleaned with an acid wash. Parts are then electro statically coated with an epoxy powder to a thickness of 3 to 5 mil dry paint film. The legs are specifically cut to fit snugly against the chair’s bottom surface. Leg parts are sanded to 150 legs are attached to the metal understructure with wood screws and thermo set urethane adhesive.

Solid Maple Legs

Four molded solid maple legs form the base of the chair. The leg consists of a squared and tapered 2-1/8” x 2-1/8” at top and 1-1/8” x 1-1/8” at bottom, a concealed metal understructure (described above) joins the legs. The legs are constructed of premium northern hard maple with one seam along the centerline of each leg. Each leg is bored at least 4” deep to accommodate the hidden metal understructure stem – this hidden steel tube stem adds greatly to the strength of each leg. Legs are fastened to the understructure with thermo set urethane adhesive. The wood leg goes through a three-step sanding process, which ends with a final orbital sand at 180 grit. A variety of transparent stains, opaque paints and toners (a mixture of stain and opaque) can be applied. A seal coat of pre-catalyzed lacquer is applied and, after drying, is hand-sanded with 220 grit sand paper. A final coat of pre-catalyzed lacquer is then applied to a 10 sheen. Quality control makes a final visual inspection to catch any last veneer or manufacturing defects. Concealed nylon

glides are attached to the bottom of each chair leg. Glides must be at least .6" in diameter to allow for easy movement over carpeted or solid surface floors.

Dimensions

The Chair is built 18" wide and 20.5" deep with an 18" seat height and a 34" overall height. The Counter Chair is 18" wide and 20.5" deep with a 24" seat height and a 39.5" overall height. The Bar Chair is 18" wide and 20.5" deep with a 30" seat height and a 45.5" overall height.

KESTREL TASK CHAIR

Chair Shell

Shells are constructed of molded plywood to form a seat and back. The shell's veneer faces must be northern hardwood maple, which has been rotary cut (peeled from the log in one continuous movement); shells are .41" thick and composed of 8 layers of ply. Wood has controlled sterilization for 48 hours. The veneer is dried between 6% to 9% relative humidity. The shell is pressed by a High Frequency process using state-of-art generators with automatic control for power level, analysis of reversals (to avoid over-heating) and total electronic control for RF / Stabilization cycles. The temperature is controlled to ensure that even curing of the plywood occurs while the high-pressure presses force the adhesive deep into the cellular structure of the wood, improving the bond and increasing the strength between the layers. After leaving our presses, the shells are left to rest on specially adapted frames in order to avoid any warping of the wood and to ensure an optimal stability concerning shape and dimension. The shell is then cut on a CNC 6-axis machine. The shell veneer and edges are sanded and smoothed to final grain of 180 grit. Before leaving the factory, every shell undergoes a resistance test to make sure we catch any hidden, structural defects; a force is applied perpendicularly to the back of the shell 13-3/4" above the seat for 4 seconds. Quality control makes a final visual inspection to catch any last veneer or manufacturing defects. The face veneer color must be un-spliced, light and uniform. Plywood shells cannot have any: knots, splice lines, splits, cracks, flaws caused by parasites, unwanted discoloring (red coloring, mold, heat marks, blue marking), open joints, blistering, hollows, bumps or marks, breaks (a break in the first layer of wood lets the second layer show through), traces of glue, foreign bodies, filling or patching on outer surfaces, raw edges.

Cutouts

Plywood chair shells can be laser cut with a variety of decorative patterns and perimeters. Chair back cut-outs must be formed with a computer numeric controlled laser beam running at a minimum of 400 watts and set to a beam diameter of .007 of an inch – this narrow beam dimension allows for a very detailed shaping of the wood, while ensuring a cleanly cut product. Any cutout formed with a cutting tool having a diameter larger than .007 of an inch is unacceptable. Cutouts must be blackened where the wood has been cut through; this is required in order to highlight the design's shape and set it in contrast to the rest of the chair. Blackening by the use of paint is not acceptable since its edges cannot appear as even as the laser CNC controlled process; additionally, the density of the black cannot be properly controlled when paint is used. Cutouts formed with a

router are unacceptable – routers are unable to cut .007 of an inch in diameter and router cuts do not blacken the cut-through plywood.

Finishing

All shells go through at least a four-step sanding process. The veneer is pre-sanded to 100 grit prior to lay-up. After the molded shells are perimeter cut, they are bag-sanded to remove any burrs or sharp edges. The perimeter is sanded with bag sander at 80 grit and then the surface and edges all get a final orbital sand with 180 grit. TMC Furniture finishes chairs with a variety of transparent stains, opaque paints and toners (a mixture of stain and opaque). A seal coat of pre-catalyzed lacquer is applied and, after drying, is hand-sanded with 220 grit sand paper. A final coat of pre-catalyzed lacquer is then applied to a 10 sheen.

Fasteners

Each chair shell is prepared for the fasteners with four spot faces on the seat bottom. Four 1.8” diameter hard Maple disks with internally mounted nut fasteners are attached to the chair bottom with thermo-set urethane adhesive. The spot faces disks must be cross-grain cut from a solid dowel and positioned on the shell so that the end grain of the disk rests against the plywood face of the shell – disks made from plywood are unacceptable and non-cross-grain cut disks or solid maple disks mounted with the grain running parallel to the plywood face are unacceptable (both are liable to separate or tear-out more easily). Each of these four fasteners must be able to withstand a direct pull test of 500 lbs. The chair is attached to the shell with ¼” 20 screw.

Task Base

The task base is constructed of 25” diameter, 5-legged composite in the color black. It has a hub of 50 mm and the radius from the center of the hub to the outside of the legs is 13.97”. The caster barrel diameter is 1.77” and has standard caster sockets of .43” x .98”, with a base height of 2.55”. Height adjustments are made via hand lever. There is a 50mm gas cylinder with 5.5” of travel and the top taper is 17-4. The base exceeds all applicable ANSI/BIFMA Standards.

Dimensions

The task chair is 23” wide and 23” deep and has a seat height between 15” and 18” with an overall height between 31” and 34”.

KESTREL STOOL

Stool Seat

Wooden stool seats are 14” in diameter and are constructed of premium 1” thick hardwood dieboard plywood and are surfaced on both sides with a select white, rotary-cut northern hardwood maple veneer. Plys are all .05” thick and are of high grade and free of voids and other defects – both at the edge and internally. The plywood seat is notable for its strength and ability to hold fastener systems; seats made of particle board, MDF or other materials are unacceptable. The

veneer is dried between 6% to 9% relative humidity. The veneer is then selected and quality control once again inspects the sheets for relative humidity, thickness, quality, etc. before transferring the veneer to the press. The temperature is controlled to ensure that even curing of the plywood occurs while the high pressure presses force the adhesive deep into the cellular structure of the wood, improving the bond and increasing the strength between the layers. The seats are cut and bored on a CNC 5-axis machine to ensure exact placements of holes in relation to legs and understructure. The seat veneer and edges are sanded and smoothed to final grain of 180 grit. Before leaving the factory, every seat undergoes a resistance test to make sure we catch any hidden, structural defects. Quality control makes a final visual inspection to catch any last veneer or manufacturing defects. Plywood veneer cannot have any: knots, splits, cracks, flaws caused by parasites, unwanted discoloring (red coloring, mold, heat marks, blue marking), open joints, blistering, hollows, bumps or marks, breaks (a break in the first layer of wood lets the second layer show through), traces of glue, foreign bodies, filling or patching on outer surfaces, raw edges.

Finishing

All legs and seats go through at least a four-step sanding process. The veneer is pre-sanded to 100 grit prior to lay-up. After the seat and legs are cut, they are bag-sanded to remove any burrs or sharp edges with 80 grit paper and then the surface and edges all get a final orbital sand with 180 grit. TMC Furniture finishes wood stools with a variety of transparent stains, opaque paints and toners (a mixture of stain and opaque). A seal coat of pre-catalyzed lacquer is applied and, after drying, is hand-sanded with 220 grit sand paper. A final coat of pre-catalyzed lacquer is then applied to a 10 sheen.

Metal Understructure

A metal understructure joins the four solid maple legs and then allows the legs to be fastened to the seat; this creates a very strong and stable chair by reinforcing all the key leg components as well as lowering the center of gravity of the stool, making it more stable and less liable to tipping. The understructure is constructed of 7/8" diameter, 12 gauge cold-rolled, commercial quality tubing. Tubes are bent and a center 1/4" bead weld is applied that is 1-1/2" long; this metal understructure has four angle-iron corners that allow the base to securely fasten to the four Maple legs. The bases are thoroughly cleaned with an acid wash. Parts are then electrostatically coated with an epoxy powder to a thickness of 3 to 5 mil dry paint film. The legs are specifically cut to fit snugly against the stool's bottom surface. Leg parts are sanded to 150 grit. Legs are attached to the metal understructure with wood screws and thermoset urethane adhesive.

Solid Maple Legs

Four molded solid maple legs form the base of the stool. The leg consists of a squared and tapered 1-7/8" x 1-7/8" at top and 1-1/8" x 1-1/8" at bottom, a concealed metal understructure (described above) joins the legs. The legs are constructed of premium northern hard maple. Each leg is bored 4" deep to accommodate the hidden metal understructure stem – this hidden steel tube stem adds greatly to the strength of each leg. Legs are fastened to the understructure with thermoset urethane adhesive. The wood leg goes through a three-step sanding process which ends with a final orbital sand at 180 grit. A variety of transparent stains, opaque paints and toners (a mixture of stain and

opaque) can be applied. A seal coat of pre-catalyzed lacquer is applied and, after drying, is hand-sanded with 220 grit sand paper. A final coat of pre-catalyzed lacquer is then applied to a 10 sheen. Quality control makes a final visual inspection to catch any last veneer or manufacturing defects. Concealed nylon glides are attached to the bottom of each stool leg. Glides must be at least .6" in diameter to allow for easy movement over carpeted or solid surface floors.

Dimensions

The child's stool is built with an 14" wide and 14" deep stance (for the 16" SH stool) which makes it much more stable and safe than children's stools with narrower stance. The stool is available in three seat heights for kids – 12", 14" and 16" – to more closely tailor it to a growing child's ergonomic needs; stools that are available only in 13" and 15" seat heights are not acceptable substitutes.

TABLES

General

TMC Furniture' tables are designed to give the customer a wide variety of options to construct a semi-custom look which can link with other TMC products. Tops are available in a wide range of sizes and shapes, including round, square, rectangular, trapezoid, triangle, half- and three-quarter-round, crescent, racetrack, oval, and boat. Many different edge treatments are available; the most commonly selected options are vinyl t-mold, 1/8" edge band and 1-1/4 solid wood edge. Standard table heights have been developed to match to our seating system.

Work Surface

The work surface is roughly 1-1/4" thick with a 3-ply construction of: 1) 1-1/8", 45 lb. premium particleboard, 2) surface material using a .05" horizontal grade high-pressure laminate from Formica, Nevamar, Pionite or Wilsonart (other face material such as maple, oak or cherry wood veneer, linoleum or Corian are also available), and 3) a full .05" phenolic backer on the underside. Nut inserts are added to the underside of the table to allow the legs to be attached using metal-to-metal connections; nut inserts must be for 1/4" 20 standard screws.

Edge Treatment

Solid Wood Edge is composed of 1-1/4" wide x 1-1/4" thick solid Maple with a 1/2" radius on the top and an eased bottom edge (other edge profiles are also available); the Wood Edge is applied after the laminate work surface creating a "frame" effect; bands are set flush to the table surface and corner edges can be mitered.

Table Legs

Standard table heights are: 29"TH for 18"SH adult chairs, 26"TH for 16"SH chairs, 24"TH for 14"SH chairs, and 20"TH for 12"SH chairs. Table legs are designed to link to the various chair lines that TMC Furniture offers. The table legs lines include:

- **Kestrel (Wood) Leg** – The leg assembly consists of a squared and tapered 2-7/8” x 2-7/8” at top and 1-7/8” x 1-7/8” at bottom, a 5” x 5” square top plate, and a concealed adjustable level feature. The legs are constructed of premium northern hard maple. A 3/16” thick top plate is fastened to the wood leg using a unique UHMW rod inserted 1-1/2” from the top of the leg; four screws extend through the top plate and leg into the rod to capture the leg securely. The top plate is drilled for fasteners and the holes are counter-sunk for flush mounting with metal insert. A hidden, adjustable glide is inserted into the leg bottom with a glide screw which has .25” stem and is 1.25” in length. The wood leg goes through a three-step sanding process which ends with a final orbital sand at 180 grit. A variety of transparent stains, opaque paints and toners (a mixture of stain and opaque) can be applied. A seal coat of pre-catalyzed lacquer is applied and, after drying, is hand-sanded with 220 grit sand paper. A final coat of pre-catalyzed lacquer is then applied to a 10 sheen. The steel plate is attached to the work surface by means of 5/16” screws which fasten to threaded metal inserts embedded in the work surface. The legs are set back 2” to 2-1/2” from the edge of the work surface.

Attachment "J"
Computer Lab Stations
(to match and intermember w/existing)

Work Surface

The work surface shall be 1-1/4" thick, 3-ply particleboard construction with .050" high-pressure laminate face and .020" phenolic backer on the underside. The front edge shall be Post Form Laminate. The remaining edges shall be square and banded with thin PVC. The work surface shall have one grommet for work surfaces up to 48" long and two grommets for work surfaces greater than 48". On single face units, the work surface shall be mounted flush with the leg assembly at the back and sides and flush with the ends on double face units. The work surface shall be secured by means of 12-gauge clips and 1/4-20 bolts screwed into threaded inserts embedded in the work surface.

End Leg Assemblies

The end leg assembly shall be a double "C" shape, constructed of 11-gauge tubular steel and powder coated. The top and bottom rails shall be 2" x 3" and the vertical leg rail shall be 2" x 4" with an additional 2" x 2" square leg rail forming the open trestle. The rails shall be mitered at the joint and welded at the corners and seams on single faced assemblies and butt joined and welded flush at joints on double-faced assemblies. The welds shall be full fillets with all outside welds ground flush. The vertical rails shall have 2" x 3" pass-through holes and tapped holes for attachment of raceway on the inside surfaces. The top and bottom rails shall have tapped holes for work surface and accessory attachment and shall be fitted with end caps. The inside rails of the trestle shall be tapped for optional Privacy Panel. Top Rail shall be tapped for Optional Data/Power End Caps which can be secured with setscrews. The bottom rail shall be fitted with adjustable glides.

Intermediate Leg Assemblies

The leg assembly shall be a "C" shape, constructed of 11-gauge tubular steel and powder coated. The top and bottom rails shall be 2" x 3" and the vertical leg rail shall be 2" x 4". The rails shall be mitered at the joint and welded at the corners and seams on single faced assemblies and butt joined and welded flush at joints on double-faced assemblies. The welds shall be full fillets with all outside welds ground flush. The leg rail shall have 2" x 3" pass-through holes and tapped holes for attachment of raceway on both surfaces. The top and bottom rails shall have tapped holes for work surface and accessory attachment and shall be fitted with end caps. Top Rail shall be tapped for Optional Data/Power End Caps which can be secured with setscrews. The bottom rail shall be fitted with adjustable glides.

Power/Data Raceway

The power/data raceway shall be 4" deep x 12" high constructed of 18-gauge steel and powder coated. The raceway shall have a drop-down and removable access door secured by a thumb latch. The raceway shall be capable of being positioned to permit field placement of the access

door toward the front or back. The raceway shall be attached to the leg assemblies with 1/4-20 bolts.

Single Power Entry

This End Power Feed comes with a plug in style 20 amp wall plug on one end and a Male Connector on the other which plugs into a Junction Block. Comes with 24" of Flex Cord. Available in Right-Angle or Straight plug. Available in 3 or 4 circuit system. Requires 20-amp receptacle.

Hard Wire Feed

This End Power Feed comes with bare wires on one end and a Male Connector on the other which plugs into a Junction Block. Comes with 24" of Flex Cord. Available in Angle or Straight fitting. Available in 3 or 4 circuit system.

Attachment "K" **Adult Tables**

TABLE TOPS

Tops shall be a 3-ply construction consisting of 0.050" high pressure laminate face, medium density particleboard core, and 0.028" balancing backer, for a nominal total thickness of 1-3/16".

Wood Edge band

The edges of tops shall be externally banded with a 7/16" wide by 1-3/16" high, profiled solid hardwood band. The long edge bands shall extend over the short edge bands to form a butt joint at the corners

The bottom side of the table tops are fitted with a formed metal anti-sag device(s).

TABLE LEGS

Leg weldments shall be constructed of 14 gauge, 1.75" Diameter Bent Steel Tubing with a 7 gauge, 6" square mounting plate and have a powder coat finish. The leg weldment is attached to the table top with seven truss head sheet metal screws. The bottom of each leg shall be fitted with one of the following foot options. The feet are attached to the legs using a headless hanger bolt and tube connector.

Tall Wood Foot

Tall wood feet shall be turned from solid hardwood. The bottom of each foot shall be fitted with a 1-1/16" diameter plastic, adjustable glide with a 1-1/2" stem.

CENTER DIVIDER RACKS

Center Divider Frame

The frame weldment shall be constructed of 14 gauge, 32mm diameter steel tube and a 14-gauge steel c-channel. The top of the panel shall be secured by 16-gauge steel u-clips and fastened with screws. The ends of the frame rest on 16-gauge steel plate that are recessed into the work surface and shall be bolted to the table through the work surface. The frame weldment and plates are powder coated to match the leg weldments

Center Divider Panels

Panels shall be a 3-ply construction, consisting of MDF core faced with material as specified, such as veneer or laminate, to achieve a nominal overall thickness of 3/8".

Attachment "L"
End Panels and Counter Tops
(to match and intermember w/existing)

END PANEL CONSTRUCTION

The end panels are 1-3/16" thick, 3-ply particleboard panel with select grade "A" oak veneer face and select grade "B" oak veneer on the back. All four edges are banded with 5/8" solid oak. All exposed corners of panel profile are shaped to a 5/8" radius and continuous bullnose shaped. End panels include pan-head wood screws for attachment to steel shelving.

COUNTER TOP CONSTRUCTION

The work surface shall be 1-1/4" thick, 3-ply particleboard construction with hpl face and a .028" thick backer on the underside. The long edges shall be externally banded with 1/4" thick x 1-1/4" wide solid oak edge band applied to the core after the face veneer. The edge bands shall be set flush to the veneer without the use of reveals or vein lines. The bands shall be shaped to a 1-3/8" radiused bullnose. Counter tops include pan-head wood screws for attachment to steel shelving.

SELF-EDGED END PANELS

End Panel Construction

Panels shall be 3-ply particleboard construction with .050" thick decorative laminate applied to both faces and all exposed edges. The bands are applied prior to face lamination. End panels include pan-head wood screws for attachment to steel shelving.

Attachment "M"
End Panels
(to match and intermember w/existing)

END PANEL CONSTRUCTION

The end panels are 1-3/16" thick, 3-ply particleboard panel with select grade "A" oak veneer face and select grade "B" oak veneer on the back. All four exterior edges on double faced end panels and three exterior edges on single face end panels receive an exterior frame 1-3/16" thick x 3" wide solid oak shaped to create a raised panel effect. End panels include pan-head wood screws for attachment to steel shelving.

**Attachment “N”
Meeting Room Stack Chairs**

STANDARD FEATURES

- Innovative flex-back disc system
- Stacks 8-12 on cart, 5 on floor
- Three Tablet Options: right and left, and oversized right
- Upholstered or 17 plastic colors
- Available with Casters and Task Base Options
- Lifetime Warranty up to 300 lbs.

DOLLY

Dolly to be welded steel, shaped to support stack chairs up to 12 high, with four rubberized casters.

Attachment "O" **Meeting Room Mobile Chairs**

Seat and Back Frame

The frame shall be constructed of 1-inch-thick suitable hardwood. All joints are to be double doweled and glued as required. The seat deck shall be sprung with five 9 gage sinuous springs and shall be covered with burlap and 2-inch-thick, fire retardant polyurethane foam of 2.8 lb. density and 45 lb. IFD. The inside of the back shall be webbed with Propex and covered with 2-1/4-inch-thick, fire retardant polyurethane foam of 2.8 lb. density and 30 lb. IFD at 25% deflection. The outside of the back shall be webbed with burlap and covered with ¼ inch thick Dacron. The underside of the seat frame will be covered with black Accord fabric.

Arm Frameset

The arm framework shall be constructed of 3/4-inch-thick, formaldehyde free, veneer core, hardwood plywood. The framework consists of three sandwiched panels that are joined together using dowels and glue. The top and sides of the arm frames are covered with ¾ inch thick, fire retardant polyurethane foam of 2.8 lb. density and 45 lb. IFD. The arm frames are attached to the seat and lower back frame using bolts.

Legs

The two legs shall be constructed of maple solids. Each leg has a large tenon protruding from the top that fits into a mortise in the lower rear corner of the arm. The joint is secured with screws and glue.

Casters

The two casters shall be 3" nominal diameter, full swivel, non-locking with a mounting height of 4". The main body of the caster shall be black ABS plastic, both tires shall be dark grey nylon. Mounting flanges and stems shall be zinc plated steel. Each caster shall have a load rating of 150 lbs. Each caster shall feature face turned, premium grade, hardwood hub caps, held in place with epoxy resin. The casters shall be fastened to caster mounting blocks with screws. The mounting blocks shall be constructed of select hardwood. Each block has a large tenon protruding from the top that fits into a mortise in the lower front corner of arm. The joint is secured with screws and glue.

Tablet Arm

The tablet arm shall be positioned on the left or right arm frame of the lounge chair and shall consist of a platform and a swivel mechanism. The platform shall be 7/8-inch-thick x 18 inches' deep x 8 inches wide, with 4 inch (full round) radiuses in all four corners, and shall be constructed of maple solids. The swivel mechanism attaches to a ¼ inch thick steel plate that is mounted to the underside of the platform with screws. The lower portion of the mechanism is press fit and glued into the tablet mounting block. The tablet mounting block shall be constructed of maple solids and

has a large tenon protruding from the bottom that fits into a mortise in the upper front corner of arm. The joint is secured with screws and glue. The motion of the assembly shall allow rotation that places the platform in a position that will not interfere with getting in or out of the chair while providing a cantilever that maximizes the overhang while seated. The tablet arm shall be secured to prevent removal.

Handle

The handle is constructed of maple solids. It is attached to the back frame of the chair with mechanical fasteners.

Upholstery

All upholstery shall be a tight, welt less design.

**Attachment “P”
Mesh Back Task Chairs and Stools**

Back Mesh

- 70% Elastomeric, 30% Polyester
- 100,000+ Double Rubs, Wyzenbeek Method
- Meet or exceed Cal 117 Fire Retardency
- Meet or exceed AATCC 8-1974 Dry Cracking, Class 4 minimum, Wet Cracking Class 3 minimum
- Meet or exceed AATCC 16A-1974, Class 4 minimum at 40 hours
- Meet or exceed Brush Pill ASTM D3511, 3-4 minimum, Breaking Strength ASTM D3597-D1682-64 (1975) 50 lbs. minimum in warp & weft. Seam Slippage ASTM D3597-D434-75 25 lbs. minimum in warp & weft

	WORK MIDBACK	TASK STOOL MIDBACK
MODEL NUMBER	5622	5622
Overall Width Armless	20	20.5
Overall Width with Arms	27.3	27.3
Overall Depth	25	25
Overall Height	35 (B3/B8) 0.5	(S1) 41.6 (S2) 46
Seat Width	19	19
Seat Depth	18.5	18.5
Seat Height	(T) 17.5-21.5 (K) 17.5-20 (Y) 16.75-20.75 (B3/B8) 0.5	(S2) 24-34
Back Width	18.25	18.25
Back Height	20	20
Weight Armless	35.5 lbs.	(S1) 39.5 lbs. (S2) 40.5 lbs.
Weight with Arms	41.5 lbs.	(S1) 45.5 lbs. (S2) 46.5 lbs.
Weight Capacity	300 lbs. (Y) 350 lbs.	300 lbs.

Attachment "Q"
Children's Furniture and Interactives

Solit Chairs:

Chairs are designed to promote good posture due to a flexible, plastic shell and high-back seating. The fiberglass reinforced core creates extreme durability and the surface of the plastic is scratch-resistant, easy to clean, and textured to prevent slipping. The rounded back construction creates an ideal place to hang backpacks and bags. This height-adjustable swivel chair includes a release lever and an aluminum star base. Ten year warranty.

solit:sit Height-Adjustable Plastic Swivel Chairs:

178072 - Seat: 13 $\frac{3}{4}$ "-18 $\frac{1}{4}$ "H x 13 $\frac{3}{4}$ "W x 19 $\frac{1}{2}$ "Base Diameter

178074 - Seat: 16 $\frac{1}{2}$ "-21"H x 17"W x 24 $\frac{3}{4}$ "Base Diameter



Rainmaker:

This wall panel when turning the blue disk, a rustling and trickling sound can be heard. Watch the clouds roll by! The Sensory Wall has a variety of elements that provide many different sensory experiences. Base panel made of birch veneer with child-safe stain.



Where is my Home:

Move the animals to their homes with this imaginative wall activity!
With four movable creatures, children can learn what belongs where.

Find My Home Wall Activity, 20-SPD-100. Made in USA.
22"H x 22"W x 1¾"D. 5yr warranty. Hardware included.



Mirror:

These bright and colorful mirrors reflect all things good. Hang them at little ones level so they can discover a concept of themselves & others.

HABA Pro Porthole Safety Mirrors. Ten year warranty. 1"Thick.
Available in 3 Diameters: 10¼", 15" or 19¾" & 3 Frame Colors.
Shatterproof mirrors. Hardware included.



Attachment "R"

Personal Computer Seating and Tables

CHAIRS:

Single Seat Chair:

Overall dimensions: 36" W x 29" D x 36-1/2"H

Seat dimensions: 24" W x 19-1/4" D x 18-1/2"H

Chairs shall consist of four wood legs, two end panel assemblies, a back panel assembly, two wood arm caps, a bottom panel, a seat support beam, a back cushion assembly, a seat cushion, and optional rotating tablet assemblies. Each part shall be fastened to adjacent parts by means of rigid mechanical fasteners.

Wood Legs

Legs shall be 2-1/4" square, solid maple hardwood. The bottom of each leg shall be fitted with an aluminum accent foot with a powder coat finish, and a 1-1/4" diameter chrome glide with a 1" stem. The two back legs shall join the back and side assemblies, and shall also attach directly to the wood arm caps. The two front legs shall join the side assemblies and the seat support beam. The front legs shall stop short of the arm caps leaving a space in which a 1-1/4" diameter metal standoff with a powder coat finish shall be placed. As an option, in lieu of the standoff, a rotating tablet assembly shall be placed to fill the space between the leg and the arm cap.

End Panel Assembly

End panel assemblies shall consist of an inner layer, and two outer layers. The inner layer shall be 3/4" raw particle board with veneer tape on the top edge, and shall attach to the wood legs by means of mechanical fasteners. The two outer layers shall be 7/16" MDF wrapped with fabric. The outer layer panels shall be attached to the inner layer panel by means of mechanical fasteners.

Back Panel Assembly

The back panel assembly shall consist of an inner layer, and one outer layer. The inner layer shall be 3/4" raw particle board, and shall attach to the wood legs by means of mechanical fasteners. The outer layer shall be either 7/16" MDF wrapped with fabric. The outer layer panel shall be attached to the inner layer panel by means of mechanical fasteners.

Wood Arm Caps

Wood arm caps shall be 1-1/8" thick by 6" wide solid maple hardwood, and shall be attached to the legs either directly, or by way of the standoff or tablet assembly, by means of 1/4" thick by 4"

square steel plates. The plate is secured to the leg with a dowel nut and one flat head machine bolt. The plate is fastened to the underside of the arm with wood screws.

Bottom Panel

The bottom panel shall be a resilient panel material such as veneer core plywood, and shall support the seat cushion. The panel shall attach to the seat support beam at the front, and to the back panel assembly at the back.

Seat Support Beam

The seat support beam shall be fabricated from 1-1/2" by 2" structural steel tubing, and shall have a powder coat finish. At each end, the beam shall attach to the front legs by means of mechanical fasteners.

Back Cushion Assembly

The back cushion assembly shall consist of a particle board stiffener, and a ReSKU™ cushion, both of which are covered with fabric and attached to the back panel assembly.

Seat Cushion

The seat cushion shall consist of a ReSKU™ cushion, which is covered with fabric and secured to the bottom panel.

Tablet Assembly

The tablet assembly shall consist of a rotating mechanism, a tablet base, and a flipper tray. The tablet base and flipper tray shall be fabricated from 3/4" thick, MDF with black powder coat finish. When the hinged flipper tray is in the open position, a flush surface of 11-3/4" deep by 15" wide is available to the user. The rotating mechanism allows the tablet to rotate 360°, and allows for storage under the wood arm cap when not in use.

DOUBLE SEAT STATION:

Overall dimensions: 75-1/4" W x 28-1/2" D x 39-1/8"H or 48-1/8"H

Seat dimensions: 24" W x 19-1/4" D x 18-1/2"H

The double seat station shall consist of two wood legs, two end panel assemblies, a back panel assembly, two wood arm caps, a center table, two bottom panels, a seat support beam, two back cushions, two seat cushions, and optional rotating tablet assemblies. Each part shall be fastened to adjacent parts by means of rigid mechanical fasteners.

Wood Legs

Legs shall be 2-1/4" square, solid maple hardwood. The bottom of each leg shall be fitted with an aluminum accent foot with a powder coat finish, and a 1-1/4" diameter chrome glide with a 1" stem. The front legs shall stop short of the arm caps leaving a space in which a 1-1/4" diameter metal standoff with a powder coat finish shall be placed. As an option, in lieu of the standoff, a rotating tablet assembly shall be placed to fill the space between the leg and the arm cap.

End Panel Assemblies

End panel assemblies shall consist of an inner layer, and two outer layers. The inner layer shall be 3/4" raw particle board with veneer tape on the top edge, and shall attach to the wood legs and back panel frame by means of mechanical fasteners. The two outer layers shall be 7/16" MDF wrapped with fabric. The outer layer panels shall be attached to the inner layer panel by means of mechanical fasteners.

Back Panel Assembly

The back panel assembly shall consist of an inner layer, and two outer layers. The inner layer shall be 3/4" raw particle board with 2-1/4" square, solid hardwood bands on the top and sides. The bands on the sides shall extend beyond the bottom edge of the inner panel to mimic the front legs. The bottom of each side band shall be fitted with an aluminum accent foot with a powder coat finish, and a 1-1/4" diameter chrome glide with a 1" stem. The back panel shall attach to the end panel assemblies by means of mechanical fasteners. The outer layer shall be 7/16" MDF wrapped with fabric. The outer layer panels shall be attached to the inner layer panel by means of mechanical fasteners.

Wood Arm Caps

Wood arm caps shall be 1-1/8" thick by 6" wide solid maple hardwood, and shall be attached to the legs, by way of the standoff or tablet assembly, by means of 1/4" thick by 4" square steel plates. The plate is secured to the leg with a dowel nut and one flat head machine bolt. The plate is fastened to the underside of the arm with wood screws. The wood arm caps shall attach to the back panel assembly by means of mechanical fasteners.

Center Table

The center table shall be a 3-ply construction consisting of 0.050" high pressure laminate face, medium density particle board core, and 0.028" balancing backer, for a nominal total thickness of 1-1/4". The edges shall be internally banded on three edges with a 1/4" wide, flat, solid maple hardwood band. The center table shall attach to the back panel and seat support beam by means of mechanical fasteners. The dual level center table shall also include a tablet assembly, consisting of a rotating mechanism and a tablet base. The tablet base shall be fabricated from 3/4" thick, MDF with black powder coat finish. The rotating mechanism allows the tablet to rotate 360°, and allows for storage under the wood arm cap when not in use.

Bottom Panels

The bottom panels shall be a resilient panel material such as veneer core plywood, and shall support the seat cushions. The panels shall attach to the seat support beam at the front, and to the back panel assembly at the back.

Seat Support Beam

The seat support beam shall be fabricated from 1-1/2" by 2" structural steel tubing, and shall have a powder coat finish. At each end, the beam shall attach to the front legs by means of mechanical fasteners.

Back Cushions

The back cushions shall consist of a ReSKU™ cushion, which is covered with fabric and shall be secured to the back panel assembly.

Seat Cushions

The seat cushions shall consist of a ReSKU™ cushion, which is covered with fabric and secured to the bottom panel.

Tablet Assembly

The tablet assembly shall consist of a rotating mechanism, a tablet base, and a flipper tray. The tablet base and flipper tray shall be fabricated from 3/4" thick, MDF with black powder coat finish. When the hinged flipper tray is in the open position, a flush surface of 11-3/4" deep by 15" wide is available to the user. The rotating mechanism allows the tablet to rotate 360°, and allows for storage under the wood arm cap when not in use.

4 SEAT BACK TO BACK STATION

Overall dimensions: 75-1/4" W x 53-3/4" D x 39-1/8"H or 48-1/8"H

Seat dimensions: 24" W x 19-1/4" D x 18-1/2"H

The back to back double seat station shall consist of four wood legs, four end panel assemblies, a back panel assembly, two wood arm caps, two center tables, four bottom panels, two seat support beams, four back cushions, four seat cushions, and rotating tablet assemblies. Each part shall be fastened to adjacent parts by means of rigid mechanical fasteners.

Wood Legs

Legs shall be 2-1/4" square, solid hardwood. The bottom of each leg shall be fitted with an aluminum accent foot with a powder coat finish, and a 1-1/4" diameter chrome glide with a 1" stem. The front legs shall stop short of the arm caps leaving a space in which a 1-1/4" diameter

metal standoff with a powder coat finish shall be placed. As an option, in lieu of the standoff, a rotating tablet assembly shall be placed to fill the space between the leg and the arm cap.

End Panel Assemblies

End panel assemblies shall consist of an inner layer, and two outer layers. The inner layer shall be 3/4" raw particle board with veneer tape on the top edge, and shall attach to the wood legs and back panel frame by means of mechanical fasteners. The two outer layers shall be 7/16" MDF wrapped with fabric. The outer layer panels shall be attached to the inner layer panel by means of mechanical fasteners.

Back Panel Assembly

The back panel assembly shall consist of an inner layer, and two outer layers. The inner layer shall be 3/4" raw particle board with 2-1/4" square, solid hardwood bands on the top and sides. The bands on the sides shall extend beyond the bottom edge of the inner panel to mimic the front legs. The bottom of each side band shall be fitted with an aluminum accent foot with a powder coat finish, and a 1-1/4" diameter chrome glide with a 1" stem. The back panel shall attach to the end panel assemblies by means of mechanical fasteners. The outer layer shall be 7/16" MDF wrapped with fabric. The outer layer panels shall be attached to the inner layer panel by means of mechanical fasteners.

Wood Arm Caps

Wood arm caps shall be 1-1/8" thick by 6" wide solid hardwood, and shall be attached to the legs, by way of the standoff or tablet assembly, by means of 1/4" thick by 4" square steel plates. The plate is secured to the leg with a dowel nut and one flat head machine bolt. The plate is fastened to the underside of the arm with wood screws. The wood arm caps shall attach to the back panel assembly by means of mechanical fasteners.

Center Table

The center tables shall be a 3-ply construction consisting of 0.050" high pressure laminate face, medium density particle board core, and 0.028" balancing backer, for a nominal total thickness of 1-1/4". The edges shall be internally banded on three edges with a 1/4" wide, flat, solid hardwood band. The center tables shall attach to the back panel and seat support beam by means of mechanical fasteners.

Bottom Panels

The bottom panels shall be a resilient panel material such as veneer core plywood, and shall support the seat cushions. The panels shall attach to the seat support beam at the front, and to the back panel assembly at the back.

Seat Support Beams

The seat support beams shall be fabricated from 1-1/2" by 2" structural steel tubing, and shall have a powder coat finish. At each end, the beam shall attach to the front legs by means of mechanical fasteners.

Loose Back Cushion

The loose back cushion shall consist of a high density, fire retardant foam cushion with a sewn, removable fabric cover. The component is tethered to the chair with elastic strapping, D-clips and hooks.

Loose Seat Cushion

The loose seat cushion shall consist of a high density, fire retardant foam cushion with a sewn removable fabric cover. The component is tethered to the chair with elastic strapping, D-clips and hooks.

Tablet Assembly

The tablet assembly shall consist of a rotating mechanism, a tablet base, and a flipper tray. The tablet base and flipper tray shall be fabricated from 3/4" thick, solid black powder coat finish. When the hinged flipper tray is in the open position, a flush surface of 11-3/4" deep by 15" wide is available to the user. The rotating mechanism allows the tablet to rotate 360°, and allows for storage under the wood arm cap when not in use.

4 SPOT PINWHEEL STATION

Overall dimensions: 68-7/8" W x 68-7/8" D x 60-1/8"H or 48-1/8"H

Seat dimensions: 24" W x 19-1/4" D x 18-1/2"H

The four seat quad station shall consist of four wood legs, four end panel assemblies, four back panel assemblies, a center post, four wood arm caps, four bottom panels, four seat support beams, four back cushions, four seat cushions, and rotating tablet assemblies. Each part shall be fastened to adjacent parts by means of rigid mechanical fasteners.

Wood Legs

Legs shall be 2-1/4" square, solid hardwood. The bottom of each leg shall be fitted with an aluminum accent foot with a powder coat finish, and a 1-1/4" diameter chrome glide with a 1" stem. The legs shall stop short of the arm caps leaving a space in which a 1-1/4" diameter metal standoff with a powder coat finish shall be placed. As an option, in lieu of the standoff, a rotating tablet assembly shall be placed to fill the space between the leg and the arm cap.

End Panel Assemblies

End panel assemblies shall consist of an inner layer, and two outer layers. The inner layer shall be 3/4" raw particle board with veneer tape on the top edge, and shall attach to the wood legs and back panel frame by means of mechanical fasteners. The two outer layers shall be 7/16" MDF

wrapped with fabric. The outer layer panels shall be attached to the inner layer panel by means of mechanical fasteners.

Back Panel Assembly

The back panel assembly shall consist of an inner layer, and two outer layers. The inner layer shall be 3/4" raw particle board with 2-1/4" square, solid hardwood bands on the top and one side. The band on the side shall extend beyond the bottom edge of the inner panel to mimic the leg. The bottom of the side band shall be fitted with an aluminum accent foot with a powder coat finish, and a 1-1/4" diameter chrome glide with a 1" stem. The back panel shall attach to the end panel assembly by means of mechanical fasteners. The outer layer shall be 7/16" MDF wrapped with fabric. The outer layer panels shall be attached to the inner layer panel by means of mechanical fasteners.

Center Post

The center post shall be 2-1/4" square solid hardwood. The bottom of the post shall be fitted with a 1-1/4" diameter chrome glide with a 1" stem. The center post shall attach to the four back panel assemblies by means of mechanical fasteners.

Wood Arm Caps

Wood arm caps shall be 1-1/8" thick by 6" wide solid hardwood, and shall be attached to the legs, by way of the standoff or tablet assembly, by means of 1/4" thick by 4" square steel plates. The plate is secured to the leg with a dowel nut and one flat head machine bolt. The plate is fastened to the underside of the arm with wood screws. The wood arm caps shall attach to the back panel assemblies by means of mechanical fasteners.

Bottom Panels

The bottom panels shall be a resilient panel material such as veneer core plywood, and shall support the seat cushions. The panels shall attach to the seat support beam at the front, and to the back panel assembly at the back.

Seat Support Beams

The seat support beams shall be fabricated from 1-1/2" by 2" structural steel tubing, and shall have a powder coat finish. At the ends, the beam shall attach to the leg and the adjacent back panel assembly by means of mechanical fasteners.

Loose Back Cushion

The loose back cushion shall consist of a high density, fire retardant foam cushion with a sewn, removable fabric cover. The component is tethered to the chair with elastic strapping, D-clips and hooks.

Loose Seat Cushion

The loose seat cushion shall consist of a high density, fire retardant foam cushion with a sewn removable fabric cover. The component is tethered to the chair with elastic strapping, D-clips and hooks.

Tablet Assembly

The tablet assembly shall consist of a rotating mechanism, a tablet base, and a flipper tray. The tablet base and flipper tray shall be fabricated from 3/4" thick, solid black powder coat finish. When the hinged flipper tray is in the open position, a flush surface of 11-3/4" deep by 15" wide is available to the user. The rotating mechanism allows the tablet to rotate 360°, and allows for storage under the wood arm cap when not in use.

TABLES

General

The tables shall be available in side tables and in occasional tables. The side tables shall be available with optional task light, and power/data outlets.

Side Tables

The side tables shall be 18" or 24" wide x 24" deep x 23-1/2" high consisting of a top, a recessed fascia, an open book compartment and a recessed base. The top shall be 1-3/16" thick x the dimensions listed above. The fascia shall be maple recessed 1-1/2" on four sides and sized to accommodate power and data options listed below. The book compartment shall be the dimensions listed above consisting of a 1-3/16" thick top and bottom, and 3/4" thick sides, back and sub-back cable chase. The sides and back shall be recessed 1-1/2" on all four sides. All components shall be 3-ply particleboard construction with premium grade "A" maple veneer face and exposed back with exposed edges externally banded with 1/8" solid maple. Non-exposed faces may have any sound veneer. The recessed base shall be 3" high solid maple recessed 1-1/2" on four sides. The back side of the base shall be open for cord egress. All parts shall be secured with concealed fasteners.

American Classics Occasional Tables

The occasional tables shall be 30" or 36" square x 15" high, or 24" x 42" x 15" high consisting of a top, a bottom, four book compartments and a recessed base. The top and bottom shall be 1-3/16" thick x the dimensions listed above. The book compartment shall consist of 1-3/16" thick dividers, and 3/4" thick backs. The dividers shall extend from the back to the perimeter of the top and bottom. The back shall have four sides recessed to form storage space and a cable chase. All components shall be 3-ply particleboard construction with premium grade "A" maple veneer face and exposed back with exposed edges externally banded with 1/8" solid maple. Non-exposed faces may have any sound veneer. The recessed base shall be 3" high solid maple recessed 4" on four sides and mitered at the corners. All parts shall be secured with concealed fasteners.

Attachment "S" **Workroom Furniture**

WORKSURFACES

- 45 lb. 1 1/2" thick industrial grade particle board substrate.
 - Bottoms are finished with a full thickness balancing backer sheet.
 - Tops are finished with GP50 (.050mm) high pressure laminate.
 - Edges are covered with a solid, 2mm thick, high impact, purified, color through, and resilient, polyvinyl chloride (PVC), machine applied with hot-melt adhesives and automatically trimmed, buffed, and corner radiused for uniform appearance.
- or
- Edges are covered with a solid, 2mm thick, (wood edge), machine applied with hot-melt adhesives and automatically trimmed, buffed, and corner radiused for uniform appearance.
 - All work surfaces to be machined with metal inserts for attachment of all connecting hardware (support elements, flat brackets, screen hardware).
 - Work surfaces may be field cut to fit in tight spaces such as columns and/or window sills.
 - Work surfaces are finished on all edges and are non-handed.

LOWER STORAGE

Top and side panels are 18-21 gauge cold rolled steel. Outer panels and drawer bin are 22-gauge steel; drawer fronts are 20-gauge steel. Free Standing and Mobile Pedestals include either four leveling glides with 1-5/8" adjustment ensure proper drawer alignment and operation or swivel casters. All drawers include full-extension, steel ball bearing slides and rubber bumpers. Slides include "anti-rebound" and "quick disconnect" features. File dividers allow for side-to-side filing, sold separately. Freestanding and mobile pedestals include lock and counterweight, factory-installed.

MODESTY PANELS

Single piece, 22-gauge metal pre-drilled to fit any size panel leg or comer leg. Full height panels are 27-5/8" high and partial height are 12" high. Legs are 1-1/2" thick. Plan for 1/2" overhang on all sides of legs, modesty panels and case goods.

PANEL LEGS (NON-HANDED)

Each 12" panel leg includes (1) 18" plastic wire management channel, (1) metal wire management cover and a single centered grommet at the top of the leg. Each 23" and 29" panel leg includes (1) 18" plastic wire management channel. Metal wire management covers available.

HUTCHES

36" and 42" wide hutches include one door, all others include two doors. Inside depth is 12-1/2" and inside height is 12-1/4". Includes tack board and rubber wire management strip. Bottom shelf accommodates task lights (sold separately) with wire management in side panel. Actual width is 1" shorter than listed. Ships assembled. Please specify tack board fabric. Doors flip up to stow over the top, hutch compartment includes a vertical center divider.

LATERAL FILES

5-high and 6-high units feature a top flipper door that stows over-the-top, revealing a roll-out shelf. Inside height of flipper compartment is 13-1/2".

LATERAL FILE / STORAGE CABINET

Full width drawer fronts and doors. Includes two LL Series locks, keyed alike. Units with 2 high cupboard allows binder storage on one shelf. Units with 3 high cupboard allows binder storage on two shelves.

BOOKCASES

Welded steel frame construction. Double wall construction on side panels. Four leveling glides. Top is mechanically fastened, can be replaced with laminate top. Shelves adjustable in 1/2" increments. Adjustable shelf is 1" high. Inside depth is 13". Binder height available on all but one shelf.

DOUBLE DOOR STORAGE CABINET

Top, side and back panels are 20-22 gauge cold rolled steel. Inner channels, shelves and top are 18 gauge. 110° concealed hinges. 3/4" shelves, adjustable in 1-1/2" increments. Inside depth is 17-1/4".

TOWERS

65-7/8" high tower features two adjustable shelves. 51-3/8" high tower features one adjustable shelf. Single lock captures cupboard and drawers. Wardrobe Storage Bookcase options available.

V-PED

Four of Five Drawers High. Safety interlock included. Wardrobe Storage Bookcase options available.

WARDROBE TOWERS

Tower includes two locks, keyed alike. Coat closet includes two-pronged coat hook. 51-3/8" high tower includes one adjustable shelf. 65-7/8" high tower includes two adjustable shelves.

**Attachment “T”
Librarian’s Office Furniture**

WORKSURFACES

- 45 lb. 1 1/2” thick industrial grade particle board substrate.
- Bottoms are finished with a full thickness balancing backer sheet.
- Tops are finished with GP50 (.050mm) high pressure laminate.
- Edges are covered with a solid, 2mm thick, high impact, purified, color through, and resilient, polyvinyl chloride (PVC), machine applied with hot-melt adhesives and automatically trimmed, buffed, and corner radiused for uniform appearance.

or

- Edges are covered with a solid, 2mm thick, (wood edge), machine applied with hot-melt adhesives and automatically trimmed, buffed, and corner radiused for uniform appearance.
- All work surfaces to be machined with metal inserts for attachment of all connecting hardware (support elements, flat brackets, screen hardware).
- Work surfaces may be field cut to fit in tight spaces such as columns and/or window sills.
- Work surfaces are finished on all edges and are non-handed.

LOWER STORAGE

- All lower storage cabinetry cases are constructed of 3/4” thick medium density industrial particle board with a laminate finish on both faces.
- All door and drawer faces are 3/4” thick 45 lb. industrial grade particle board, finished with either:
 1. VG32 high pressure laminate with 2mm PVC edge banding on all 4 sides.
 2. Veneer with 2mm wood edge banding on all 4 edges.
- A standard center mounted lock in the face rail is standard for all lower storage elements. Locks, Timberline cylinder type, die cast, with 5 pin tumblers. Each lock is furnished with two milled brass keys. All locks have field replaceable cores.
- All cabinetry is joined with dowel pin construction under controlled case clamp conditions, utilizing machined panels with matching pre-drilled holes.
- Drawers are constructed with 1/2” thick sides doweled and glued together, 1/4” bottom captured in groove on all four sides, full box with separate face.
- Pulls are accurately positioned on drawer and door fronts and securely mounted with two machine screws through panel. Crescent shape solid metal with black powder coating, 3/8” x 13” x 1 1/4” (10mm x 288mm x 32mm).
- Drawer slides are of the Accuride Company with rail disconnects and a lifetime guarantee. Steel rails with two dimensional independent adjustments. Permanently lubricated polymer or steel ball bearings.

Box drawer #2037 series with built-in stops.

Dynamic load capacity: 50 lbs.

Static load capacity: 75 lbs.

File drawer to 24” (610mm) wide: 4017 series with built-in stops and 1 1/2”
over travel.

Dynamic load capacity: 110 lbs.

Static load capacity: 135 lbs.

Lateral file drawer to 42" (1070mm) wide: 147 series with built-in stops and 1 1/2" over travel.

Dynamic load capacity: 130 lbs.

Static load capacity: 155 lbs.

- All lower storage cabinets are equipped with leveling glides.
- Tops to all lower storage elements are pre-drilled for attaching to work surfaces as well as reconfiguring.
- Reinforced drawers are produced by doweling a 3/4" thick drawer bottom in lieu of the 1/4" thick bottom.

LOWER SUPPORT

- Support legs are manufactured of 16-gauge tube steel welded to 1/8" steel plates finished in standard black powder coating.
- Casters of twin wheel, 2" (50mm), 100 lb. load rating per caster.
- All support legs are equipped with leveling glides.
- Support legs attach to the work surface with standard machine bolts into pre-drilled metal inserts.
- 26 styles both fixed and adjustable are standard in stock product.

UPPER STORAGE

- All upper storage cabinetry cases are constructed of 3/4" thick medium density industrial particle board with a laminate finish on both faces.
- All door faces are 3/4" thick 45lb. industrial particle board finished with either:
 1. VG32 high pressure laminate with 2mm PVC edge banding on all 4 edges.
 2. Veneer with 2mm wood edge banding on all 4 edges.
- All cabinetry is joined with dowel pin construction under controlled case clamp conditions utilizing machined panels with matching pre-drilled holes.
- All upper storage units come with two upper posts manufactured of 16" gauge tube steel welded to 1/8" steel plates finished in standard black powder coating.
- Support posts include two wire access holes at the top and bottom for managing data/com/electrical wires, that pass through the supports and exit below the work surface.
- Support posts are bolted through the work surface to a round plate that is routed into the work surface to assure stability. This allows full freedom of space underneath the work surface without posts to the fixed floor.
- Upper storage units with a width greater than 36" will require a vertical center divider. All adjustable shelves are 1 1/4" thick 45 lb. industrial grade particle board with high pressure laminate on both sides with 2mm PVC edge on front edge.
- Adjustable shelf support is 224mm x 12mm x 5mm steel wire to provide invisible mounting for pre-grooved shelf.

Attachment “U”
Printed Acrylic End Panels

Printed Acrylic End Panels

3/8” thick, sized for application on steel shelving. One face to receive a clear finish, opposite side to receive custom, full color printing. Prints shall utilize a UV-treated ink, with additional polycarbonate protective film applied to protect the print.

Panels shall be machined to size, with mounting hole locations to match steel shelving. Panels up to 42” High shall have four (4) holes, panels from 42” to 66” shall have five (5) holes, and taller panels shall have six (6) mounting holes. Mounting hardware shall consist of architectural hardware, including black or nickel plated steel Allen or Phillips head bolts, with ½” diameter nylon standoffs, with ½” projection from the panel.

All edges of the panels shall be polished and beveled, to provide a safe edge.

Attachment “V”
Animated Characters and End Panel Art

Custom characters and end panel art for thematic library areas. Bidders must submit illustrated catalogs, brochures, etc. depicting proposed items. All pricing shall include the following:

Design

Design process shall incorporate 3-dimensional scanning, casting, and molding, to make large-scale replicas of almost any object. Prior to manufacture, all items shall be fully dimensioned, and rendered in 3-Dimensional, color drawings.

Manufacture

Manufacture shall incorporate materials ranging from cold cast bronze, molded polyurethane resin, foam and fiberglass to produce realistic artwork.

Installation

All items are to be delivered and installed by factory personnel. Installation to include modification work necessary to accommodate for field conditions.



Item # StoryPanel_24_42_4 example:

Item # Character_24_18 example:



**Attachment “W”
Mobile Tables and Seating**

MYRIAD TABLES

BOOMERANG TABLE TOPS

HPL

The tops shall be a 3-ply construction consisting of 0.050” high pressure laminate face, medium density particleboard core, and 0.028” balancing backer, for a nominal total thickness of 1-3/16”. The edges of tops shall be internally banded with a 1” wide by 1-3/16” high, profiled reverse bevel edge solid hardwood band in maple sectored at the front curved edge. The reverse bevel edge shall taper to ½” at the leading edge. The edge band shall transition into a capital over each leg. Tops shall have threaded inserts for attachment of five (5) legs

ROUNDED BOOMERANG, QUARTER ROUND AND TRIANGULAR TABLE TOPS

HPL

The tops shall be a 3-ply construction consisting of 0.050” high pressure laminate face, medium density particleboard core, and 0.028” balancing backer, for a nominal total thickness of 1-3/16”. The edges of tops shall be internally banded with a 1” wide by 1-3/16” high, profiled reverse bevel edge solid hardwood band in maple sectored at the front curved edge. The reverse bevel edge shall taper to ½” at the leading edge. The edge band shall transition into a capital over each leg. Tops shall have threaded inserts for attachment of three (3) legs

QUARTER ROUND TABLE TOPS

HPL

The tops shall be a 3-ply construction consisting of 0.050” high pressure laminate face, medium density particleboard core, and 0.028” balancing backer, for a nominal total thickness of 1-3/16”. The edges of tops shall be internally banded with a 1” wide by 1-3/16” high, profiled reverse bevel edge solid hardwood band in maple sectored at the front curved edge. The reverse bevel edge shall taper to ½” at the leading edge. The edge band shall transition into a capital over each leg. Tops shall have threaded inserts for attachment of three (3) legs

QUARTER ROUND TABLE TOPS

Veneer

The tops shall be a 3-ply construction consisting of a minimum .025” thick Grade A veneer face of maple, medium density particleboard core, and a sound veneer balancing backer for a nominal thickness of 1-3/16”. The edges of tops shall be internally banded with a 1” wide by 1-3/16” high, profiled reverse bevel edge solid hardwood band in maple sectored at the front curved edge. The

reverse bevel edge shall taper to ½” at the leading edge. The edge band shall transition into a capital over each leg. Tops shall have threaded inserts for attachment of four (4) legs

The underside of the table top is fitted with formed metal anti-sag device(s) when required by the size of the table.

Table Legs

The legs shall be constructed of extruded aluminum designed with a 45-degree angle at the front face and recessed from the edge of the table by 1/8”. The angled leg shall be 2” by 2-7/16”. The leg shall attach to the 5” by 5” black powder coated metal leg plate by means of (1) 3/8” – 16 x 1” flat head bolt and (4) #10-24 x 1” flat head machine screws. The leg assembly shall be inset into and attached to the top by means of (5) 5/16” – 18 x 3/4” truss head metal screws engaging 5/16” metal inserts embedded in the top. A black powder coated 14 gauge, 2” by 2” steel gusset shall span between the leg and top.

The leg shall be fitted with a 1-3/8” diameter black nylon glide with a 1-1/2” stem.

Casters

The caster shall be a 1-1/2” diameter black twin wheel locking caster with a 5/16”-18 threaded stem.

Divider Panels

The divider panel shall be 3/8” thick opaque acrylic held to the top by 1-3/4” by 1-3/4” simulated brushed stainless clamps. The acrylic panel shall be 11” high by required length.

CHAIRS

Chairs shall feature fully welded, tubular steel frames with molded plywood seat, back and arm components. Chairs are available in three sizes; Adult, Juvenile and Youth. Adult chairs may be specified with or without arms. Adult and Juvenile chairs are available in upholstered and caster models. Adult and juvenile versions may be stacked up to five (5) high, the youth version up to three (3) high.

Seat and Back

The seat and back shall be 3/8” thick, molded, hardwood veneer core plywood. Exposed faces shall be premium rotary white maple or red oak. Each formed component shall include an odd number of alternating, void free, inner plies. Components shall feature multiple, complex, compound curves forming an integral and ergonomically correct unit. Edges shall be sanded smooth, eased for comfort and finished to match the face finishes.

The back shall be precision routed to interface with milled grooves at the inner quadrants of both rear leg/post components and shall lock securely and seamlessly to these components with

injection molded, ABS domed caps and tamper resistant, stainless steel fasteners. The tamper resistant fasteners shall pass through a hole located at the upper rear of the leg/post and shall engage the back and cap. Backs also feature a routed handle hold near the top and centered in the back. A number of laser images may be cut into backs; these images are treated as custom and are subject to pricing based on the complexity of design. The seat shall be fitted with matching specie hardwood cleats. Each cleat shall be milled to fit securely into slots cut along the bottom of the seat blank. Each cleat shall be fitted with two (2) #8-32 T-nuts, imbedded in the rear side of the cleat, offering the advantage and strength of pull-through construction. The cleats shall be assembled to the seat bottom with glue and shall be held under pressure until the glue has set. Each seat shall fasten to the tubular frame with four (4) #8-32 x 1-1/4" long machine screws.

The screws shall pass through the frame members and shall engage the inserts imbedded in the seat cleats. Upholstered Seats shall be the same as the wood seats above and shall include a fabric covered, foam lined, molded plywood appliqué. The molded plywood pan shall be formed to match the unique contour of the finished veneer seat. The core shall be 3/16" thick, multiple ply, hardwood, veneer core with alternating plies. The pan shall be perimeter cut to set back and follow the outer shape of the finished veneer seat, forming a finished perimeter reveal detail. Each pan shall be fitted with eight (8) #8-32 T-nuts, inserted into the top side and allowing eight (8) #8-32 machine screws to pass through the finished seat and seat pan and engaging the T-nuts on the opposite side. A layer of 1/2" thick, medium density foam shall be adhered to the face side of the plywood pan with the final upholstery being adhered over the foam and brought around the pan where it shall be securely fastened to the bottom side of the pan.

Arms

The arms shall be 1/2" thick, molded, hardwood veneer core plywood. Exposed faces shall be premium rotary white maple or red oak. Each formed component shall include an odd number of alternating, void free, inner plies. Arms shall be 2-1/4" wide and shall feature a radius on the front which shall follow the curve of the support frame. Arms shall attach to the support frame by passing four (4) 1/2" #8 truss head screws through a 12 gauge welded flange and into the back side of the arm.

Frames

Frames shall be fabricated from 14 gauge, hot rolled and pickled in oil steel tubing. Components are precision cut and formed on computer numerically controlled tube processing equipment. Assembly fixtures shall be used to produce frame of repeated accuracy. Frames are TIG welded at all joints. The front legs and rear leg/posts are 1" diameter 14-gauge stock. The seat support frames are 7/8" diameter 14-gauge stock. The arm supports are 1/2" diameter, 1018 solid bar stock with a 12-gauge arm flange welded along the outside, upper quadrant. Each rear leg/post is slotted to accept the formed back. The interior of the leg/post shall receive a socket, welded into the inner front face and used in conjunction with a tamper resistant screw; to secure the back into the frame. Where casters are to be used; frames are fitted with a 7-gauge weld nut; set into the bottom of the leg, allowing for the caster and a mating lock nut.

Domed Caps

Each rear leg/post of the chair shall be fitted with a domed closure cap. This cap shall be injection molded from recyclable, ABS material and shall be offered in black and arctic silver. The cap shall be designed to interface with the rear leg/post of the chair frame and molded plywood chair back. The cap shall feature an apron flange that drops into the rear leg/post, becoming trapped by the plywood back during assembly. The upper dome area of the cap shall be split to encompass the rear outer corners of the plywood back.

Upholstered Seat Bumper Tray

Upholstered seat versions of the chair are fitted with a bumper tray. The tray has a vacuum formed contour, matching the reverse contour of the fabric covered seat assembly. This allows for the chairs to be stacked without damaging the fabric or cushion or leaving impressions. The tray shall be fabricated from .125" gauge, black, haircell, textured, 100% regrind ABS. The forming of the tray shall allow assembly into the bottom side of the chair and shall wrap into the frame work, trapping the pan within the final assembly.

Seat Bumper

Non-upholstered versions of the chair shall be fitted with four (4), 7/8" diameter, contoured, cushioning bumpers; coped to fit the corresponding frame. The bumpers shall be injection molded black polypropylene. Each bumper shall be located on and fastened to the 7/8" diameter frame tubing, facing down and preventing damage when chairs are stacked. Each bumper is held to the frame with one (1) 1/2" #8 pan head screw.

Caster

Each leg of a caster style chairs shall be fitted with one 1-3/8" diameter, dual wheel, full swivel, non-locking caster. The casters shall be fabricated from textured black nylon-6 and shall include a 5/16"-18 x 5/8" threaded mounting stem, along with a 1/2" hex nut drive and locking nut. The caster stem shall engage a weld nut located in the bottom of the chair leg. The overall width of the caster shall be 1-7/8", with a mounting height of 1-1/2". The tire surface area shall be 1-1/8" with a turning radius of 1-1/4". Each caster shall have a load rating of 90 lbs. and shall be tested to both DIN/EN 12529 and international ANSI/BIFMA 5.1 standards.

Glides

Each leg of a glide version chair shall be fitted with a domed, insert floor glide; allowing the chair to be moved about without damaging floor coverings. The glide shall be injection molded, black, low density polyethylene. The glides shall feature a pair of fins to center and hold the glide in the chair leg. The glide dome shall be 1" diameter and 1/2" H.

TJ ADULT ARM CHAIR



Standard



With casters

Height: 34-1/4"
Depth: 21-1/4"
Width: 24-1/4"
Seat Height: 18"
Seat Depth: 16-1/2"
Arm Height: 25-1/2"
COM yardage: 1/2 yard

TJ JUVENILE SIDE CHAIR



Height: 32-1/4"
Depth: 21-1/4"
Width: 19-7/8"
Seat Height: 16"
Seat Depth: 16-1/2"
COM yardage: 1/2 yard

TJ YOUTH SIDE CHAIR



Height: 25-3/4"
Depth: 16-1/4"
Width: 15-3/4"
Seat Height: 14"
Seat Depth: 12-1/4"

Attachment “X” Wireless Charging Tables and Seats

Power Hub

Dimensions: 28” W x 28” D x 15”H

Body

The bodies of the Floor and Wall Power Hubs shall be constructed using miter fold construction for the sides and base. The material shall be ¾” T balanced mdf panels. Veneered on the face with premium grade A veneer and a black backer. The tops of all Power Hubs shall be constructed from ¾” T mdf and be post veneered with premium A grade veneer.

KIFA Mounting Bracket

The KIFA mounting bracket assembly shall consist of the KIFA mounting bracket, one rectangular magnet, felt, 2 thru-bolts and nuts and anti-skid tape. The KIFA mounting bracket shall be constructed from 11-gauge steel and will be powder-coated. The magnet shall be 1 ¾” L x ¾”H x 1/8” T with 2 countersunk holes. Magnets shall be Max-Attach Polymagnets, nickel plated N42 material with approximately 50 lbs. of pull strength overall in each KIFA. The magnets shall be attached to the magnet holders using #8-32 x 1” stainless steel flat head phillips machine screws and #8-32 locknuts with nylon inserts. Screws shall be mounted sub-flush in magnets to allow a small amount of “travel” when the magnets mate to opposing KIFA brackets. 3M™ Anti-slip/Anti-stick tape shall be adhered to the face of the magnets to aid in the prevention of disengagement of the assemblies through shearing.

Conductive Power

Conductive power shall consist of 2 conductive power pucks that mount to the KIFA using four #4 x 3/8” pan head screws, one wiring harness that includes one T-Connector and one 25v to 5v converter box for powering the USB 2.1 charging unit. T-Connector and converter boxes shall be attached to the underside of the body using four #6 x ½” pan head screws each. USB charging unit will consist of two USB 2.1 charging ports and one blue LED light to be used as an indicator of power passing through the system. USB 2.1 charging unit mounts through the front face of the body and is screwed on from behind with an included screw mechanism that threads directly to the USB charging units’ body. The LED light shall be mounted in an LED/USB holder plate that nests behind the USB charging unit and is connected to the body using two #6 x ½” pan head screws. Byrne Ellora Plus shall be installed in the surface of the power hubs and be configured with conductive swimlanes on the top and 2 power/2 USB inside.

Power Supply

The power supply shall be a 200W unit with 1-4 outputs and meet these specifications:

- High performance PFC medical power supply
- Universal AC input: 85~264VAC
- Operating temperature range: -40~+70°C
- Medical safety approval: ANSI/AAMI ES60601-1, IEC60601-1 3rd edition
- 2xMOOP (means of operator protection)
- Protections: short circuit / overload / over voltage / over temperature
- Built-in constant current limiting circuit
- Withstand 300VAC surge for 5 seconds
- Low leakage current < 300μA
- Low no load power consumption < 0.5W

SINGLE LOUNGE CHAIR

Seat and Back Frame

All framework shall be constructed of 15/16" thick, 9 ply, fir plywood and shall be assembled using lap and half lap joints. All joints are to be glued and screwed as required. The underside of all seat frames will be painted black. The front, back and sides shall be covered with Propex as needed.

Arm Frame

There are two arm options: short and tall. The arm framework for both options shall be constructed of 15/16" thick, 9 ply, fir plywood and shall be assembled using lap and half lap joints. All joints are to be glued and screwed as required. The arm frames are webbed with Propex as needed and covered with ½ inch high density, fire retardant polyurethane foam on all sides. The arm frames are attached to the seat using bolts. Both arm frames are fully upholstered, single unit arms, and allow for concealed attachment of tablet tables.

Seat, Back, and Arm Cushions

The seat, back and arm cushions shall be glued to the seat, back and arm frames. Cushions are made of high density, fire retardant polyurethane foam. The seat cushion is 3 inches thick. The back cushion tapers from 9 inches thick at the bottom to 6 inches thick at the top. The arm cushion is ½" thick. The seat, back and arm assemblies shall be completely wrapped in non-removable fabric.

Upholstery

All upholstery shall be a tight, welt less design.

Legs

The legs shall be constructed of 2 ½” x 1” x 1/8” thick rectangular steel tubing. The tube is welded to a ¼ inch thick steel top mounting plate and is open at the bottom to accept a 1” x 2-1/2” O.D. Black LDPE Rectangular glide. Optional caster legs shall have a 3/8” hex nut assembly welded in to the bottom of the leg, inset ¼” from the bottom. The entire weldment is powder coated and attached to the underside of the seat frames using four #10 screws each.

Casters

The mobile lounge chair is available in two options. Option 1 includes two casters in place of the front two legs. Option 2 includes four locking casters. The casters shall be 75mm twin wheel caster with a 70-75A durometer tread constructed of high-tech thermoplastic elastomer. All casters will come with a 3/8” threaded stem for installation in to the available caster leg option.

KIFA Mounting Bracket

The KIFA mounting bracket shall consist of 3 main pieces: The main bracket, the mounting plate and the magnet holder. The main bracket and mounting plate shall be constructed from 11-gauge steel and will be powder coated. The magnet holder shall be constructed from 5/4 solid maple and will hold 3 nylon washers, 3 felt pads and 3 magnets. The magnets will be ¾” diameter rare earth poly magnets with a countersink in the center and 17lbs of pull strength, to create approximately 50 lbs. of pull strength overall in each KIFA. The magnets shall be attached to the magnet holders using #6 x ½ stainless steel flat head screws. Screws shall be mounted sub-flush in magnets to allow a small amount of “travel” when the magnets mate to opposing KIFA brackets.

Conductive Power

Conductive power shall consist of 2 conductive power pucks that mount to the mounting plate on the KIFA using four #4 x 3/8” pan head screws, one wiring harness that includes one T-Connector and one 25v to 5v converter box for powering a USB 2.1 charging unit. T-Connector and converter boxes shall be attached to the underside of the seat using four #6 x ½” pan head screws each. USB charging unit will consist of two USB 2.1 charging ports and one blue LED light to be used as an indicator of power passing through the system. USB 2.1 charging unit mounts through the front face of the seat base and is screwed on from behind with an included screw mechanism that threads directly to the USB charging units’ body. The LED light shall be mounted in an LED/USB holder plate that nests behind the USB charging unit and is connected to the base of the lounge using two #6 x ½” pan head screws.

TABLET TABLE

Work Surface

The work surface shall be made from 6/4 solid wood and be 10” Dia. x 1 5/16” T.

Frame

The frame shall make up of 4 components and be welded together at the seams. The tube shall be fabricated from 14-gauge steel tubing and have a 1" O.D. The mounting plate shall be fabricated from 13-gauge steel. The cleat shall be fabricated from 10-gauge steel. The finishing plug in the bottom of the tube shall be black polyethylene with a durometer of 41D-54D and fit tubes with an I.D. from .84" to .95". The Mounting Plate shall engage Arm Frames via concealed connections.

**Attachment “Y”
Modular Lounge
(to match and intermember w/existing)**

WHISTLER LOUNGE COLLECTION

General

TMC’s Whistler Lounge Collection is a modular seating system; the product line includes chair, settee, sofa, bench, and table modules in straight sections and inner and outer wedges that can be ganged to form numerous seating configurations. Side panels allow the seating to be customized with laser cut-out designs and laminate inserts or fabric-covered panels.

Back

The back is incorporated into a composite frame. A woven 3.5” polypropylene webbing with high-rating PSI is applied tautly to the back portion of the frame to support the back pad. The back cushion is made of high-density urethane foam with a minimum foam density of 1.8 pounds and an IFD of 20-40 pounds.

Seat

The Whistler seat is incorporated into a composite frame. A woven 3.5” polypropylene webbing is applied tautly over an opening in the deck to enhance seating comfort. The deck is topped with a cushion made of high density polymeric urethane foam with a minimum density of 1.8 pounds and an IFD of 20-40 pounds. The sides are wrapped in ½” thick Dacron Micro fill polyester.

Frame

The Whistler frame is divided into two sections, the deck and the back. This allows for two-tone upholstery applications. The frame is constructed of 1” hardwood plywood. The two sections of the frame are mechanically attached and can be separated for easy upholstery replacement. Legs are a 4” die-cast brushed aluminum with a 5/6” high-impact/wear WHMD plastic glide. Legs are mechanically attached to the underside of the deck.

Mechanical Attachments

The Whistler’s back/frame connection incorporates six ¼”-20 machine bolts with split lock washers into threaded t-nuts connect the back frame to the deck. Wood dowels, glue and wood screws secure both the deck and the back frames. When requested, a ganging device can be attached in the factory (for ease of installation). The ganging device consists of a 10-gauge, cold-rolled steel plate and is mechanically secured to the underside of the deck. The ganging device also allows chairs to be more securely attached in the field by using two ¼”-20 screws to mechanically fasten them together.

Cushion Attachments

As a key feature of the Whistler, back and seat cushions are permanently bonded to the frame. A single fabric cover envelops both cushions and the frame. Since the frame is constructed in two sections, it is possible to have a two-tone upholstery application. Chairs are constructed to have a gracefully hidden hem that does not require other devices for concealment.

Filling Materials

All TMC foams are flame-retardant to meet BIFMA and well-known state fire codes such as the California Fire Bulletin 117. TMC also offers special treatments, materials and fabrics, which allow our furniture to meet the Boston, New York Port Authority codes as well as California Technical Bulletin Number 133.

Fabric Attachments

TMC upholstered products have the option to be constructed with hook and loop removable coverings; this option is provided for installations that require convenience for frequent removal, cleaning and/or replacement of covers. Unless this option is requested, our standard upholstery systems attach with a fixed fastener system, which still provides for convenient removal and re-upholstery, but is more difficult to tamper with.

Channel Caps

TMC Whistler Lounge furniture does not require any channel caps; the Whistler does not have spaces where children might hide or become stuck.

Stitching

All seams are double-stitched and then topstitched for maximum strength.

Waterproofing

TMC polymeric urethane foam includes a layer of waterproof polyurethane membrane to protect against spills.

Assembly & Disassembly

Each Whistler unit is shipped fully assembled. If selected, a ganging device is added at the factory, and tools are not needed to gang units together. If a semi-permanent ganging configuration is desired, then (as described earlier) two additional screws are used to lock the ganged chairs together – a Philips-head screwdriver is the only tool required to do this.

Attachment "Z"
Steel Shelving
(to match and intermember w/existing)

GENERAL:

It is the intent of the Jefferson Parish Library to use components of the existing Jefferson Parish Library shelving in this reconfiguration. The parts listed in the schedule of equipment are necessary for this reconfiguration. It is the bidder's responsibility to ensure compatibility of items bid with the existing shelving. This information must be included with bid. Failure to do so is cause for rejection of bid.

DESIGN:

Shelving is a cantilever design. The book stack section may be removed as a modular unit from any range without disturbing adjacent units in any way. Relocation and reuse of removed section(s) can be accomplished without acquiring additional parts. The uprights and cross member supports make up the fully welded frame construction, and allow for adjustable base shelf with kickplate. Uprights are punched for bolting additional Weld Frame units into the book stack range. Shelving design allows for either static or mobile installation.

MATERIAL AND WORKMANSHIP:

The shelving is made from only the finest materials and workmanship. All sheet metal is commercial quality furniture stock steel, hot & cold rolled, reannealed, fully pickled or equivalent. All gauge thickness must conform to U.S. standards.

CAPACITY REQUIREMENTS:

Each shelf has a minimum clearance between end brackets of 35 13/32". Unit widths are 36" nominal overall. When properly installed, units are capable of supporting 50 lbs. evenly distributed weight per linear foot of shelving, multiplied times the number of shelves per unit, without deflection considered excessive by industry standards.

COLOR:

Shelving color must match existing Pearl Gray finish. Sample must be provided with bid.

FINISHES:

Shelving colors are as described above, with an epoxy powder applied electrostatically. The finish yields a minimum average thickness of 1.0 to 1.8 mils and has a medium gloss. Abrasion resistance requires a minimum of 60 liters of sand to remove finish to bare metal, as determined by **Library Technology** test guidelines.

SEISMIC REQUIREMENTS:

The Weld Frame system is to conform to the particular standards of all seismic codes through the use of seismic sway bracing, floor anchoring, trapezoidal gussets, or any combination thereof.

UPRIGHT COLUMNS

The Weld Frame are formed of not less than #16-gauge steel into a channel shape with a total of 3/4" of stiffening flanges on the inside of the upright. Overall dimensions are 2 1/2" in the web and 1 1/4" across the front and rear area surfaces. Uprights are perforated the full height with a series of 1/4" x 5/8" slots spaced 1" on vertical centers and located within 5/16" of the outer web surface. Every fifth and sixth slot has square corners as viewed against the remaining rounded corner slots to aid visual alignment of shelves. This pattern is repeated over the full height of the upright.

TOP SPREADERS

Are formed of not less than #16-gauge tubular steel measuring 1"x 3" in cross section. The spreader is electrically welded to the uprights.

BOTTOM SPREADER

The Weld Frame is a channel shape measuring 1" x 1 3/4" in cross-section, and consists of not less than #16-gauge steel. The outer ends of the channel are punched to receive leveling nuts and floor levelers. The bottom channel is electrically welded to the uprights with the open face of the channel positioned upward. Weld Frames heights are as specified; widths are 36" standard. Weld Frames are equipped with two (2) adjustable floor levelers. Levelers can be provided with an optional elastomeric plastic shoe to prevent "walking" of units. Levelers are inverted mushroom type, with 3/4" hex head, 5/16 – 18 x 1 1/2" long, with groove on threaded end to allow adjustment from the top or bottom of leveler.

CLOSED BASE BRACKETS

Are designed to fit snugly in and around the welded frame upright. Material is no less than #16-gauge steel. Brackets have a 90-degree flange at the bottom to rest on the floor covering. Single faced base brackets are to be furnished with one adjustable threaded leveler per bracket and double-faced base brackets furnished with two adjustable threaded levelers. Levelers are inverted mushroom type, with 3/4" hex head, 5/16 – 18 x 1 1/2" long, with groove on threaded end to allow adjustment from the top or bottom of leveler. Top and front edge of the base bracket are flanged outward approximately 1/4". The profile of the bracket matches that of the adjustable shelf end bracket. The embossed area incorporates a hole to allow attaching of adjoining base brackets with a fastener.

CLOSED BASE SHELVES

Are formed from not less than #18-gauge steel into two-piece construction with adjustable kickplate in black epoxy finish. Designed to fit snugly around base brackets with kickplate bolting to base brackets and adjustable to correct for floor irregularities. Front height is 3 5/16", and sides have stiffening flanges.

ADJUSTABLE SHELVES

Are formed of #18-gauge steel with the front and rear edges having a box-formed, 13/16" high profile capable of receiving wire book supports and snap-on label holders. The nominal depth of shelf is 1" greater than the actual dimension. The sides of the shelf are flanged for locking into end bracket lances. Shelves are capable of supporting 50 lbs. per linear foot without deflection in excess of 3/16".

SHELF END BRACKETS

Are formed of not less than #16-gauge steel, with all but the rear edge flared outward approximately 1/4". The rear edge has two crimped hooks at the top for engaging frame upright slots, and a positioning tab at the bottom to prevent accidental dislodgement. The bracket incorporates two lances with protruding dimples in the sides for securing shelf side flanges. Bracket design allows for shelf adjustment upward and downward (i.e. "walking-the-shelf") without disturbing any of the other shelves. Bracket emboss prevents overlapping of adjoining brackets. Brackets extend at least 6" above the shelf surface.

SLOPING PERIODICAL SHELVING

Equipped with adjustable alternating display and storage shelves as follows: Flat storage shelves, when ordered, may be any standard size and are mounted on inverted brackets. Sloped display shelves are at least 12" actual height with a 1 5/16" flange at the bottom and boxed flanged upwards with inside safety hem. Brackets allow for a slope of approximately 30 degrees from vertical. Display shelves are equipped with rubber bumpers on support brackets for sound deadening, and will remain positively located without holding them open.

PIVOTING PERIODICAL SHELVING

Consists of pivoting display shelves hinged to shelf brackets, which engage in slots in upright. Sloped display shelves are 14" actual height with a 1 5/16" flange at the bottom and boxed flanged upwards with inside safety hem. Included storage shelf is 12" deep nominal. Brackets allow for a slope of approximately 20 degrees from vertical.

ONE PIECE DIVIDER TYPE SHELF

Is formed of no less than #18-gauge steel and resembles a standard adjustable storage shelf except for slots on 1" centers to receive dividers. An integral 5" high back piece with matching slots serves as a back for the shelf. Standard quantity and size of divider is five (5) per shelf with an overall height of 7' 7/16".

STEEL CANOPY TOPS

Are formed of no less than #19-gauge steel. Tops have a 13/16" front edge and extend the full width and depth of the unit base. Tops are supported by #14 gauge brackets engaged in slots in the frame uprights.

RECESSED KICKPLATES

Are of one-piece construction and are formed of not less than #20-gauge steel. The kickplate is 36" wide and 3" in height. The kickplate shall be painted black powder epoxy.

BASE FILLER CLOSURE

Are of one-piece construction and are formed of not less than #20-gauge steel. The closure is 2 1/2" wide, and sized to fit the welded frame.

SLOPING SHELF END BRACKETS

Are formed of not less than #16-gauge steel, with all but the rear-edge flared outward approximately 1/4". The rear edge has two crimped hooks at the top for engaging the frame upright slots; and a positioning tab at the bottom to prevent accidental dislodgement. The bracket incorporates two lances with protruding dimples in the sides for securing the shelf side flanges. Bracket design allows for shelf adjustment upward and downward (i.e. "walking-the-shelf") without disturbing any of the other shelves. Bracket emboss prevents overlapment of adjoining brackets. Brackets extend at least 6" above the shelf surface and have a 7-degree slope. Flat shelf brackets with shims for sloping are unacceptable.

INTEGRAL BACK SHELVES

Are formed of #18-gauge steel with the front edge being box-formed, 13/16" high profile capable of receiving snap-on label holders. The rear edge of the shelf contains a built-in 2" high backstop. The nominal depth of the shelf is 1" greater than the actual dimension. The sides of the shelf are flanged for locking into the end bracket lances. Shelves are capable of supporting 50 lbs. per linear foot without deflection in excess of 3/16".

CORNER FILLERS

Are formed from #18-20-gauge steel to dimensions as required. Each filler includes a tightly fitting cap.

DISPLAY SHELF LOWER BRACKETS

Are formed of no less than #16 ga. steel. The rear edge has two hooks at the top for engaging the frame upright slots, and a 90 degree return tab for added stability. The bracket ends are designed with two adjacent 5/16" \varnothing bolt holes with an 8° slope for shelf attachment. Overall dimensions for the bracket are 4 9/16" h x 9 1/8" d.

SLOPING DISPLAY BACK BRACKETS

Are formed of no less than #16 ga. steel. The rear edge has two hooks at the top for engaging the frame upright slots, and a 90 degree return tab for added stability. The bracket ends are designed

with two adjacent 5/16" ø bolt holes with an 8° slope for upright shelf attachment. Overall dimensions for the bracket are 2 1/4" d x 5 3/8" h.

“Z” SIGNAGE BRACKETS

Are formed of no less than #12 ga. steel. Brackets are formed of one-piece steel, 1-3/16" Wide x 5" Long x 7" High, overall, with 5/16" slot to support acrylic sign, 2" above top of shelving

“Z” SIGNAGE ACRYLIC SIGNS

Are formed of 1/8" Thick clear acrylic, bent in a “U” shape to receive paper insert.

BOOK CART WELD FRAME

Is constructed in the same manner as our standard weld frame. In addition to this construction a #11-gauge channel that is 7" high and 1 1/8" deep is welded to the inside of the upright for attachment of the foot.

BOOK CART END FOOT

Is designed to bolt to the weld frame assembly. Material is to be no less than #11-gauge steel. Each foot is designed to have two casters attached one at each end. The side flanges of the foot are to be formed at 1 3/4" for extra strength.

BOOK CART INTERMEDIATE FOOT

Is constructed in the same manner as the Book Cart Foot, except to support two (2) adjacent Book Cart Weld Frames.

CART HANDLE

Is constructed of 1" x 1" #16-gauge tubing. The tube is bent into a “C” shape handle. There is a plate welded at each end for attaching to the weld frame. The plate is constructed of #14-gauge steel.

CASTERS

Are made from Polyolefin and are 5" in diameter and have 1 1/4" tread width. They are zinc plated with double ball races with hardened raceways. Wheel rotates around a bolt and nut axle. Casters are mounted to a pre-punched flat plate, which allow them to be attached to the book cart foot. Two are required per end or intermediate foot. The casters use a Vertilok Brake system that pivots an axle.

MOBILE CARRIAGE REINFORCING GUSSETS

Are no less than #16-gauge trapezoidal shape, 39-7/8" High, with depth to match shelving depth. Gussets are perforated to match weld frames, for attachment.

Attachment “AA”
Compact Shelving Components
(to intermember with existing cantilever shelving)

SECTION 1 - HIGH-DENSITY MOBILE STORAGE UNITS (MECHANICALLY ASSISTED MOVEMENT)

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawing and general provisions of the contract, including general and supplementary conditions and related specification sections, apply to this section.

1.2 SUMMARY

- A. This section includes the following:

Multi-spoke handle driven mechanical assist carriages and related equipment containing new or existing Cantilever Shelving elsewhere specified, or already in the Jefferson Parish Library facilities.

1.3 RELATED WORK FURNISHED BY OTHERS

- A. Base floor capable of withstanding line load weight distribution created by load transfers from weight of system, storage housings, media, and occupants.
- B. Finished floor material and installation within system footprint if optional prefinished floor is not specified elsewhere.

1.4 REFERENCES

- A. American National Standards Institute (ANSI) Standards
- B. American Society for Testing and Materials (ASTM) Standards

1.5 DESCRIPTION

- A. **General:** High-density mobile storage system consisting of storage housings mounted on wheeled carriage assemblies riding on multiple steel rails. Purpose is to allow multiple ranges of storage housings to be accessed by means of one moving aisle, thus greatly reducing floor space requirements from that of conventional rows of storage housings. For clarification, the term storage housing shall refer to the shelving, rack, or cabinets which are a component of the high-density mobile system herein specified.

- B. **Carriage:** The carriage shall be formed of a bolted structural steel frame with precision machined and balanced steel wheels aligning to corresponding steel rails. All bearings shall be permanently lubricated and shielded.
- C. **Drive Controls:** Triple arm operating control with ergonomic user-friendly knobs shall be provided on the drive ends. A minimum of one operation knob per carriage shall be within ADA reach guidelines at all times.
 - 1. Front drive control consisting of chain, sprocket, and upper drive bearing assembly shall be completely self-contained and provide for drive chain tension adjustment located conveniently below the drive handle without the need to remove the carriage end panel. Carriage drive assemblies which require end panel removal for drive chain tension adjustment shall be unacceptable.
 - 2. Carriage drive mechanism shall be a line shaft drive, or a synchro drive per manufacturer recommendations to best provide a smooth, non-binding, and non-racking movement. The drive to the wheels shall be a balanced design providing drive torque from the midpoint of the length of the carriage out the carriage ends. Drive system shall be designed to provide a movement of up to 4000 pounds (1814 Kg) of load with only 1 pound (0.4536 Kg) of user effort at the drive control handle.
 - 3. All bearings throughout the drive system shall be permanently lubricated and shielded.
- D. **Safety Items:**
 - 1. A user activated aisle safety locking mechanism shall be provided at every carriage control to prevent unintentional carriage movement. Aisle safety lock shall incorporate 2 points of contact to prevent unintentional movement of handle. Aisle safety lock knob mechanism shall contain a red indicator to alert user of lock status.
 - 2. Each movable carriage shall incorporate a fully self-contained safety sweep brake mechanism requiring no battery or external power source which activates a carriage brake by means of side sweep panels on both sides of the movable carriage. Mechanical safety sweep brake shall allow for a carriage that is in the locked safety activated state to be backed away from a person or obstruction. Systems that when engaged lock the carriage and prevent it from backing away from the safety activation point shall be unacceptable.
- E. **Finishes:**
 - 1. **Metal Components and Assemblies:**

- a. All components shall be finished with an electrostatically applied powder coat. Finish shall consist of a non-glare raised surface that provides scuff and scratch resistance. Finish shall be a non-VOC emitting hybrid powder coat which meets or exceeds ASTM test criteria for adhesion, flexibility, hardness, and humidity resistance. A minimum of 8 standard manufacturer's colors shall be offered at no additional charge and a minimum of 12 additional colors shall be available at an extended lead time. Any special color match shall be made available per the standard manufacturer's published policy.
 2. **Laminate Panels:** High Pressure Laminate Finish: Provide another laminate manufacturer's color and pattern selection as desired by owner or architect.
- F. **Sizes:** Per manufacturer's standard offering.

1.6 PERFORMANCE REQUIREMENTS

A. Design Requirements:

1. Consult drawing for plan view and elevation details.
2. For ceiling height or sprinkler code requirements, rail with required clearance for leveling, carriage structure height, and storage housing heights must be considered for an overall system height.
3. Carriages shall be designed to accommodate existing or new storage housings as may be specified elsewhere in accompanying documentation.

- B. **Seismic Performance:** Provide high-density mobile (compact) storage units capable of withstanding the effects of earthquake motion as required by applicable building codes. Site specific third party evaluation shall be provided by a licensed local structural engineer.

1.7 SUBMITTALS

- A. **Product Data:** Submit manufacturer's product literature and installation instructions.
- B. **Drawings:** Provide dimensional layout of complete system including elevations, adjacent room details including pertinent notations and descriptions. Provide dimensional drawings including elevations of all storage housings locating on or adjacent to the system specified.
- C. **Warranty:** Submit a copy of manufacturer's warranty.
- D. **Maintenance Data:** Provide manufacturer's operation manual, maintenance and care instructions, and instructions for care and cleaning of the finish.

- E. A list shall be submitted of all specification deviations with a complete description and validation.

1.8 QUALITY ASSURANCE

- A. **Manufacturer Qualifications:** Engage an experienced manufacturer who has been continuously manufacturing this type of product without interruption for a minimum of 20 years and can supply a list of references upon request.
- B. **Manufacturing Qualifications:** Engage an experienced manufacturer who is ISO 9001 certified. Additionally, manufacturer shall be MAS Certified Green and RoHS Compliant.
- C. **Installer Qualifications:** Engage an experienced installer who is authorized by the manufacturer to install a high-density mobile system of this magnitude and has a minimum of 3 years' experience with similar installations.

1.9 DELIVERY, STORAGE AND HANDLING

- A. Follow manufacturer's instructions and recommendations for delivery, storage and handling requirements.

1.10 PROJECT CONDITIONS

- A. **Field Measurements:** Verify all dimensions of perimeter area and proposed system prior to manufacture. Any variations shall be addressed by the general contractor or designated project representative prior to manufacture. Coordinate fabrication and delivery to ensure there is no delay in progress of the work.
- B. **Established Dimensions:** Where field measurements cannot be made without delaying the work, establish dimensions and proceed with fabricating high-density mobile storage units. At this point it is the sole responsibility of the general contractor or designated project representative to coordinate verified field dimensions with the manufacturer in a timely fashion.

1.11 SEQUENCING AND SCHEDULING

- A. Sequence high-density mobile storage system with adjoining work to minimize possibility of damage and soiling during entire construction period.
- B. Schedule installation of specified high-density mobile system after finishing operations; including ceiling tile, wall covering, and painting have been completed.

- C. Delivery, Storage, and Handling: Comply with all instructions and recommendations made by manufacturer or manufacturer's representative for delivery, storage, and handling requirements.
- D. Pre-installation Conference: Schedule and conduct conference on project site to review methods, procedures, and logistic details to coordinate installation of the high-density mobile system.

1.12 **WARRANTY**

- A. Manufacturer shall warrant the high-density mobile storage system against defects in material and workmanship for the life of the system from date of final acceptance by owner. Manufacturer shall provide labor for 2 years from date of final acceptance provided all terms of the most recent warranty statement release are met.

PART 2 – **PRODUCTS**

2.1 **BASIC MATERIALS**

- A. **General:** Provide materials and quality of workmanship, which meet or exceed established industry standards for products specified. Material selection and composition shall be manufacturer's option unless indicated otherwise. Fabricate units from ASTM Class 1, cold-rolled commercial grade sheet or coil steel with all bends and radiuses consistent and true.
- B. **Laminate Panels:**
 - 1. High Pressure Plastic Laminate: Shall conform to NEMA LD-3 .040 inch (1 mm) vertical grade.
- C. **Grout:** Shall be high strength; controlled expansive grout with superior dynamic load stability, which when mixed with water shall harden rapidly to produce a permanent foundation for the mobile storage system. Grout shall be non-corrosive, non-metallic and non-shrink. The grout after curing shall have a minimum strength of 8000 pounds (3629 kg) per square inch.

2.2 **MANUFACTURED COMPONENTS**

- A. **Rail:**
 - 1. Rail shall be ASTM/AISI Type 1018 steel of manufacturer's selection designed and manufactured to carry a load of 1000 pounds per lineal foot (1488 kg/m) of carriage length.
 - 2. Rail surfaces at all wheel contact points shall be unfinished. For long term durability and aesthetics, paint or powder coat finishes shall be unacceptable.

3. Rail shall be designed to be anchored to structurally sound base floor capable of supporting fully loaded system and exhibiting a maximum deflection not to exceed $L/700$.
4. Rail shall be positioned, leveled and secured in accordance with the manufacturer's instructions, providing a minimum of 1/4 inch (6 mm) of grout under the rail from the high spot on the floor. Void under leveled rail shall be completely filled with a non-shrink grout. Provide a minimum of 1/4 inch (6 mm) of grout under the rail from the high spot on the floor.
5. Rail shall be drilled and tapped to accommodate leveling screws adjacent to all anchor holes. All rails must extend completely under all stationary ranges. Rail leveling shall be a captive fastener type. Install stationary carriage (platform) adjacent to the decking.
6. Rail shall be level not to exceed 1/16 inch (1.6 mm) maximum variation from true level within module and 1/16 inch (1.6 mm) maximum variation between adjacent rails perpendicular to rail direction. Each section of rail shall be a minimum of 12 inches (305 mm) and a maximum of 72 inches (2134 mm) with shorter length used only to terminate each individual rail assembly.
7. Each end of the rail shall be connected by means of stainless steel dowels pinned between the rail splice. The splice shall be designed for the most severe operating conditions. Connection joints shall demonstrate vertical and horizontal continuity and provide a transfer of load to and from the adjoining rail sections. Butt splice joints and tongue and groove rail splice joints which only prevent movement in one direction are unacceptable.

B. Floor and Ramp:

1. Floor shall be constructed of a minimum of 3/4 inch (19 mm) underlayment grade exterior glue 5-ply plywood. There shall be no open gaps between the floor and the rail. Fire retardant rated plywood shall be available as an option where required by code.
2. Ramp shall be constructed of plywood, painted steel, stainless steel, or galvanized steel.
3. Ramp shall not extend beyond the end of the carriage if at all avoidable. It shall be understood that with certain ramp and carriage size combinations this may be unavoidable. The vertical transition from the ramp edge to the floor shall be a maximum of 1/8 inch (3 mm) with ramp having a maximum slope of nine degrees.
4. Ramp shall extend under all mobile and stationary carriages.

5. Ramp shall meet ADA minimum requirements.

C. Carriages:

1. Carriages are to be bolted or welded steel construction at the discretion of the manufacturer. Riveted carriages or components shall be unacceptable. Galvanized components are unacceptable. Components of unlike finish or material are unacceptable. Steel shall be ATSM-A1008 Commercial Type B or better.
2. Carriage side structural members shall be not less than 4.5 inches (114 mm) in height from bottom flange of carriage to storage housing base or foot.
3. Carriage shall be designed for a capacity of 1000 pounds per linear foot (1488 kg/m).
4. Carriage construction shall provide for shelving to be securely anchored with vibration-proof fasteners.
5. Carriages designed to recess the shelving or storage housing, thus creating a lip and causing the carriage to protrude beyond the plane of the face of the shelving or storage housing shall be unacceptable.
6. Carriages shall be powder coat finished inside and out. Galvanized components and unfinished structural steel components shall be unacceptable.
7. Fixed carriages (platforms) shall be of the same construction and height as the mobile carriages. Fixed carriages (platforms) shall be securely anchored.
8. Splices shall be designed to maintain proper unit alignment with no visible fasteners on the outside of the carriage. Fasteners connecting any carriage splice joint shall be vibration-proof in design.
9. Carriages shall be straight and square. There shall be no movement in any splice, bolted, or welded connection when loaded to recommendation and normal operation is performed.

D. Wheels:

1. All wheels whether load or driven shall be a minimum of 5 inches (127 mm) in diameter to outer guide flange and precision machined for smooth operation and to ensure compatibility to the corresponding rail.
2. Bearings shall be permanently lubricated and shielded.
3. Dynamic load rating on wheel bearings shall be a minimum of 3500 pounds (1588 kg) per wheel.

E. Guidance:

1. Guide Design:

- a. A minimum of 2 guide rails shall be required to ensure precise carriage tracking alignment.
- b. All guide rails shall have a flat top surface to provide friction-free alignment with the carriage guide wheel flanges.
- c. All carriage wheels shall have a precision milled load surface which when coupled with the rail surface will ensure precise carriage tracking.
- d. Roller guide and center flange methods of guidance shall be unacceptable.

2. Line Shaft Drive:

- a. Shaft shall be a minimum of 3/4 inch (19 mm) diameter solid steel.
- b. Drive shaft shall be a non-load bearing member of the drive mechanism for ease of movement.
- c. Couplers shall be securely keyed and locked into place to prevent looseness in the drive mechanisms.
- d. Drive mechanism must drive to midpoint of carriage length and transfer drive motion in a balanced manner to the carriage ends.

3. Synchro Drive:

- a. System shall consist of 3/4 inch (19 mm) diameter solid steel drive shafts and machined couplers.
- b. Wheels on both sides of the carriage shall be driven in a synchronous motion. Systems that do not drive both sides synchronously are unacceptable.
- c. Drive mechanism must drive to midpoint of carriage length and transfer drive motion in a balanced manner to the carriage ends and to both sides of the carriage.

F. Operation:

1. Gearing requirements unless specified will be at the discretion of the manufacturer based on anticipated weight load and carriage size. Reduction drive units must be available resulting in the noted carriage travel per revolution of the composite 3- spoke ergonomic operator control handle:

- a. Single Reduction (.250 gear ratio) @ 3.487 inches (89 mm) carriage travel per handle revolution.
 - b. Double Reduction (.166 gear ratio) @ 2.316 inches (59 mm) carriage travel per handle revolution.
 - c. Triple Reduction (.125 gear ratio) @ 1.744 inches (44 mm) carriage travel per handle revolution.
2. Operator handles shall be provided in an ergonomic three-spoke design with three rotating knobs.
 3. All operator handles shall be provided with a minimum 1.81" (46 mm) diameter ergonomic push-pull knob (Aisle Safety Lock) located at the center of the operator handle to secure adjacent carriages in place while an aisle is being occupied. Smaller knobs shall be unacceptable.
 4. A red indicator on the Aisle Safety Lock Knob shall exhibit a red indicator visible when the aisle lock is pushed in and activated.
 5. Operator handles and aisle access both into and around the system shall conform to all applicable codes including but not limited to the Americans with Disabilities Act.

G. End and/or Face Panels:

1. End panels or chain box covers shall be provided to cover the drive chain mechanism and enhance the aesthetics of the system.
2. End panels must extend the full width of the carriage and extend from the bottom edge of the carriage to the top of the storage housing on the carriage.
3. End panel selection shall be from the following options:
 - a. **Steel:** Panels shall be fabricated from no less than 20-gauge material, 48 inches (1219 mm) in width shall be fabricated from 16-gauge powder coated steel. Panels 48 inches (1219 mm) wide and greater may be fabricated from a lesser gauge sheet steel if additional reinforcing hat channel are provided. Finish and color shall be selected from manufacturer's full offering.
 - b. **High Pressure:** Shall consist of plastic laminate clad particle board with steel powder coated side channel which shall protect the panels from cart damage and provide a durable alternative to some other manufacturers plastic tubes or edging.

- c. **Thermal Fused Low Pressure:** Shall consist of plastic laminate clad particle board with black plastic integral side edge covers and spacer tubes.
- d. **Solid Wood:** Shall be design, wood species and finish as determined by architect. Finished product shall meet applicable AWI standards for appearance and craftsmanship. Products shall be sourced locally.

H. Accessories:

- 1. Provide manufacturer's standard. Location and quantity as indicated on the drawings.
 - a. Carriage mounted lock
 - b. Mechanical carriage safety sweep and brake
 - c. Chain box cover
- l. **Environmental Requirements:** All carriages, steel shelving, and steel end panels shall contain a minimum of 40% recycled steel content, comprised of a mixture of post and pre-consumer and industrial. Finishes on carriages, steel shelving, and steel end panels shall be a powder coat finish with low VOC (volatile organic compounds) and application must incorporate a powder recycle process.

2.3 FABRICATION

- A. **General:** Coordinate all parties to ensure timely execution of this project and to related work. Ensure that all necessary information relating to this portion of the project has been transmitted to the parties involved.

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Verify that building floor structure is adequate to support high-density mobile system within limits of established deflection criteria based on mobile system type and manufacturer's published criteria. Basis shall be L/700. Verification shall be provided by a locally licensed structural engineer.
- B. With installer present, examine floor area within area of mobile system to verify that it is within levelness tolerance per manufacturer's requirements for rail installation.
- C. With installer present and prior to installation, examine mobile carriages for proper sizing, proper placements of support members for the shelving, and to ensure that storage housing mounting surface is square and level.

- D. For all installations it shall be the installer's responsibility to know and to execute all phases of the installation in compliance with local building codes.

3.2 INSTALLATION

- A. **General:** Follow all manufacturer's documented instructions and procedures for installation of rail, floor and ramp if applicable, fixed and movable carriages, shelving, panels and related accessories.

3.3 FIELD QUALITY CONTROL

- A. Verify all fixed and movable carriages are installed and operating square and level. Correct if necessary.
- B. Verify all end or face panels, shelving components and accessories are aligned properly. Correct if necessary.
- C. Replace components that are scratched, dented, or damaged in any manner with new items from the manufacturer. Surface scratches may be touched up but repair must be complete and undistinguishable.

3.4 ADJUSTING

- A. Adjust all components and accessories to provide smooth operation and proper tracking alignment. Perform final visual check that all panels align when aisles are closed, and all gaps are consistent.

3.5 CLEANING

- A. Upon completion of installation, clean all components and surfaces. Cover to protect from dust and environmental fallout as a result of other work continuing in the surrounding area. Remove all packaging material and debris that accumulated as a result of the installation immediately upon completion. Leave area of installation neat, in broom clean condition, and ready to present to appropriate persons.

3.6 DEMONSTRATION AND TRAINING

- A. Schedule and conduct demonstration of the high-density mobile system. Review all safety features and proper carriage operation with owner's personnel. Review any additional features or points of interest as appropriate.
- B. Schedule and conduct maintenance training with owner's maintenance personnel. Training session should include a full operation demonstration and all preventative maintenance and minor repair procedures for the high-density mobile system that they would normally be expected to perform.

3.7 PROTECTION

- A. Protect system against dirt and damage during remainder of construction period. Recommend to owner of any additional precautions needed to ensure that system will remain unharmed during balance of construction in surrounding area.

SECTION 2 - HIGH-DENSITY MOBILE STORAGE UNITS (ELECTRICALLY ASSISTED MOVEMENT)

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawing and general provisions of the contract, including general and supplementary conditions and related specification sections shall apply to this section.

1.2 SUMMARY

- A. **This section includes the following:**

Solid state electronic controlled motor driven carriages and related equipment containing new or existing Cantilever Shelving elsewhere specified, or already in the Jefferson Parish Library facilities.

1.3 RELATED WORK FURNISHED BY OTHERS

- A. Base floor capable of withstanding line load weight distribution created by load transfers from weight of system, storage housings, media, and occupants.
- B. Finished floor material and installation within system footprint if optional prefinished floor is not specified elsewhere.

1.4 REFERENCES

- A. American National Standards Institute (ANSI) Standards
- B. American Society for Testing and Materials (ASTM) Standards
- C. Underwriters Laboratories, Inc. (UL, C-UL)

1.5 DESCRIPTION

- A. **General:** High-density mobile storage system consisting of storage housings mounted on wheeled carriage assemblies riding on multiple steel rails.
 - 1. Purpose is to allow multiple ranges of storage housings to be accessed by means of one moving aisle, thus greatly reducing floor space requirements from that of conventional rows of storage housings.

2. For clarification, the term storage housing shall refer to the shelving, rack, or cabinets which are a component of the high-density mobile system herein specified.
- B. **Carriage:** The carriage shall be formed of a bolted structural steel frame with precision machined and balanced steel wheels aligning to corresponding steel rails. All carriage motor, drive axle, and wheel bearings shall be permanently lubricated and shielded.
- C. **Drive Controls:** Each movable carriage shall contain an aisle selection control mounted on each moveable end panel to facilitate carriage movement and create the aisle selection. Each controller shall be intuitive with minimal user training and shall contain “Open” and “Stop” buttons. Control shall be positioned a maximum of 36 inches (914 mm) up from the lower edge of the carriage end panel. All carriage/aisle movement controls shall be within ADA reach guidelines.
1. Each movable carriage shall be powered by a 40 watt minimum 24 VDC motor. Carriages with motors requiring greater voltage shall be unacceptable.
 2. Carriage drive mechanism shall be a direct drive, line shaft drive, or a synchro drive per manufacturer recommendations to best provide a smooth, non-binding, and non-slipping movement. Drive system shall be designed to provide a movement speed of 3 inches (76 mm) per second.
- D. **Safety Items:**
1. An infrared photoelectric safety sweep shall be provided at a minimum of one per aisle as a primary safety.
 - a. (optional) An infrared photoelectric safety sweep shall be provided on both sides of all movable carriages.
 2. All carriage motors shall contain a dynamic self-regulating motor monitoring current limiting sensor system which shall detect any increase in resistance at a closing aisle and will immediately stop further aisle closure and back the closing aisle open 6 inches (13 mm) from the stop point. The Dynamic Monitoring System shall automatically adjust for changing carriage weight load conditions. Carriage systems which require user input to make these load adjustments shall be unacceptable.
 3. (optional) An infrared photoelectric aisle entry sensor shall be provided at the entrance to each aisle to detect the presence of a person entering a closing aisle and shall prevent further closure of that aisle. Sensor shall be positioned 12 inches (25 mm) up from lower edge of carriage end panel to provide added protection for

small children, step stools, etc. Carriage systems with sensors mounted higher shall be unacceptable.

E. Finishes:

1. Metal Components and Assemblies:

- a. All components shall be finished with an electrostatically applied powder coat. Finish shall consist of a non-glare raised surface that provides scuff and scratch resistance. Finish shall be a non-VOC emitting hybrid powder coat which meets or exceeds ASTM test criteria for adhesion, flexibility, hardness, and humidity resistance. A minimum of 8 standard manufacturer's colors shall be offered at no additional charge and a minimum of 12 additional colors shall be available at an extended lead time. Any special color match shall be made available per the standard manufacturer's published policy.

2. **Laminate Panels: High Pressure Laminate Finish:** Provide another laminate manufacturer's color and pattern selection as desired by owner or architect.

- F. **Sizes:** Per manufacturer's standard offering.

1.6 PERFORMANCE REQUIREMENTS

A. Design Requirements:

1. Consult drawing for plan view and elevation details.
2. For ceiling height or sprinkler code requirements, rail with required clearance for leveling, carriage structure height, and storage housing heights must be considered for an overall system height.
3. Carriages shall be designed to accommodate existing or new storage housings as may be specified elsewhere in accompanying documentation.

- B. **Seismic Performance:** Provide high-density mobile (compact) storage units capable of withstanding the effects of earthquake motion as required by applicable building codes. Site specific third party evaluation shall be provided by a licensed local structural engineer.

1.7 SUBMITTALS

- A. **Product Data:** Submit manufacturer's product literature and installation instructions.

- B. **Drawings:** Provide dimensional layout of complete system including elevations, adjacent room details including pertinent notations and descriptions. Provide dimensional drawings including elevations of all storage housings locating on or adjacent to the system specified. Provide power supply location(s).
- C. **Warranty:** Submit a copy of manufacturer's warranty.
- D. **Maintenance Data:** Provide manufacturer's operation manual, maintenance and care instructions, and instructions for care and cleaning of the finish.
- E. A list shall be submitted of all specification deviations with a complete description and validation.

1.8 QUALITY ASSURANCE

- A. **Manufacturer Qualifications:** Engage an experienced manufacturer who has been continuously manufacturing this type of product without interruption for a minimum of 20 years and can supply a list of references upon request.
- B. **Manufacturing Qualifications:** Engage an experienced manufacturer who is ISO 9001 certified. Additionally, manufacturer shall be MAS Certified Green and RoHS Compliant.
- C. **Installer Qualifications:** Engage an experienced installer who is authorized by the manufacturer to install a high-density Powered (electrically controlled) mobile system of this magnitude and has a minimum of 3 years' experience with similar installations.

1.9 DELIVERY, STORAGE AND HANDLING

- A. Follow manufacturer's instructions and recommendations for delivery, storage and handling requirements.

1.10 PROJECT CONDITIONS

- A. **Field Measurements:** Verify all dimensions of perimeter area and proposed system prior to manufacture. Verify power supply location(s). Any variations shall be addressed by the general contractor or designated project representative prior to manufacture. Coordinate fabrication and delivery to ensure there is no delay in progress of the work.
- B. **Established Dimensions:** Where field measurements cannot be made without delaying the work, establish dimensions and proceed with fabricating high-density mobile storage units. At this point it is the sole responsibility of the general contractor

or designated project representative to coordinate verified field dimensions with the manufacturer in a timely fashion.

1.11 SEQUENCING AND SCHEDULING

- A. Sequence high-density mobile storage system with adjoining work to minimize possibility of damage and soiling during entire construction period.
- B. Schedule installation of specified high-density mobile system after finishing operations; including ceiling tile, wall covering, and painting have been completed.
- C. Delivery, Storage, and Handling: Comply with all instructions and recommendations made by manufacturer or manufacturer's representative for delivery, storage, and handling requirements.
- D. Pre-installation Conference: Schedule and conduct conference on project site to review methods, procedures, and logistic details to coordinate installation of the high-density mobile system.

1.12 WARRANTY

- A. Manufacturer shall warrant the high-density mobile storage system against defects in material and workmanship for the life of the system from date of final acceptance by owner. Lifetime warranty shall exclude electrical components which shall be warranted by the manufacturer by no less than 2 years. Manufacturer shall provide labor for 2 years from date of final acceptance provided all terms of the most recent warranty statement release are met.

PART 2 – PRODUCTS

2.1 BASIC MATERIALS

- A. **General:** Provide materials and quality of workmanship, which meet or exceed established industry standards for products specified. Material selection and composition shall be manufacturer's option unless indicated otherwise. Fabricate units from ASTM Class 1, cold-rolled commercial grade sheet or coil steel with all bends and radiuses consistent and true.
- B. **Laminate Panels:**
 - 1. **High Pressure Plastic Laminate:** Shall conform to NEMA LD-3 .040 inch (1 mm) vertical grade.
- C. **Grout:** Shall be high strength; controlled expansive grout with superior dynamic load stability, which when mixed with water shall harden rapidly to produce a permanent foundation for the mobile storage system. Grout shall be non-corrosive, non-metallic

and non-shrink. The grout after curing shall have a minimum strength of 8000 pounds (3629 kg) per square inch.

2.2 MANUFACTURED COMPONENTS

A. Rail:

1. Rail shall be ASTM/AISI Type 1045 steel of manufacturer's selection designed and manufactured to carry a load of 1000 pounds per lineal foot (1488 kg/m) of carriage length.
2. Rail surfaces at all wheel contact points shall be unfinished. For long term durability and aesthetics, paint or powder coat finishes shall be unacceptable.
3. Rail shall be designed to be anchored to structurally sound base floor capable of supporting fully loaded system and exhibiting a maximum deflection not to exceed $L/700$.
4. Rail shall be positioned, leveled and secured in accordance with the manufacturer's instructions, providing a minimum of 1/4 inch (6 mm) of grout under the rail from the high spot on the floor. (optional): Void under leveled rail shall be completely filled with a non-shrink grout. Provide a minimum of 1/4 inch (6 mm) of grout under the rail from the high spot on the floor.
5. Rail shall be drilled and tapped to accommodate leveling screws adjacent to all anchor holes. All rails must extend completely under all stationary ranges. Rail leveling shall be a captive fastener type. (optional): Install stationary carriage (platform) adjacent to the decking.
6. Rail shall be level not to exceed 1/16 inch (1.6 mm) maximum variation from true level within module and 1/16 inch (1.6 mm) maximum variation between adjacent rails perpendicular to rail direction. Each section of rail shall be a minimum of 12 inches (305 mm) and a maximum of 72 inches (2134 mm) with shorter length used only to terminate each individual rail assembly.
7. Each end of the rail shall be connected by means of stainless steel dowels pinned between the rail splice. The splice shall be designed for the most severe operating conditions. Connection joints shall demonstrate vertical and horizontal continuity and provide a transfer of load to and from the adjoining rail sections. Butt splice joints and tongue and groove rail splice joints which only prevent movement in one direction are unacceptable.

B. Floor and Ramp:

1. Floor shall be constructed of a minimum of 3/4 inch (19 mm) underlayment grade exterior glue 5-ply plywood. There shall be no open gaps between the floor and

the rail. Fire retardant rated plywood shall be available as an option where required by code. Substitute a polyvinyl clad board flooring (optional) which requires no additional floor covering tile or carpet and provides a slip resistant surface.

2. Ramp shall be constructed of plywood, painted steel, stainless steel, or galvanized steel.
3. Ramp shall not extend beyond the end of the carriage if at all avoidable. It shall be understood that with certain ramp and carriage size combinations this may be unavoidable. The vertical transition from the ramp edge to the floor shall be a maximum of 1/8 inch (3 mm) with ramp having a maximum slope of nine degrees.
4. Ramp shall extend under all mobile and stationary carriages.
5. Ramp shall meet ADA minimum requirements.

C. Carriages:

1. Carriages are to be bolted or welded steel construction at the discretion of the manufacturer. Riveted carriages or components shall be unacceptable. Galvanized components are unacceptable. Components of unlike finish or material are unacceptable. Steel shall be ATSM-A1008 Commercial Type B or better.
2. Carriage side structural members shall be not less than 4.5 inches (114 mm) in height from bottom flange of carriage to storage housing base or foot.
3. Carriage shall be designed for a capacity of 1000 pounds per linear foot (1488 kg/m).
4. Carriage construction shall provide for shelving to be securely anchored with vibration-proof fasteners.
5. Carriages designed to recess the shelving or storage housing, thus creating a lip and causing the carriage to protrude beyond the plane of the face of the shelving or storage housing shall be unacceptable.
6. Carriages shall be powder coat finished inside and out. Galvanized components and unfinished structural steel components shall be unacceptable.
7. Fixed carriages (platforms) shall be of the same construction and height as the mobile carriages. Fixed carriages (platforms) shall be securely anchored.

8. Splices shall be designed to maintain proper unit alignment with no visible fasteners on the outside of the carriage. Fasteners connecting any carriage splice joint shall be vibration-proof in design.
9. Carriages shall be straight and square. There shall be no movement in any splice, bolted, or welded connection when loaded to recommendation and normal operation is performed.

D. Wheels:

1. All wheels whether load or driven shall be a minimum of 5 inches (127 mm) minimum in diameter to rolling surface and precision machined for smooth operation and to ensure compatibility to the corresponding rail.
2. Bearings shall be permanently lubricated and shielded.
3. Dynamic load rating on wheel bearings shall be a minimum of 3500 pounds (1588 kg) per wheel.

E. Guidance:

1. Guide Design:

- a. A minimum of 2 guide rails and 4 guide wheels shall be required to ensure precise carriage tracking alignment.
- b. All guide rails shall have a flat top surface to provide friction-free alignment with the carriage guide wheel flanges.
- c. All carriage wheels shall have a precision milled load surface which when coupled with the rail surface will ensure precise carriage tracking.
- d. Roller guide and center flange methods of guidance shall be unacceptable.

2. Line Shaft Drive:

- a. Axle shafts shall be a minimum of 1.00 inch (25.4 mm) diameter solid steel.
- b. Drive shaft shall be a non-load bearing member of the drive mechanism for ease of movement.
- c. Couplers shall be securely keyed and locked into place to prevent looseness in the drive mechanisms.
- d. Drive motor must drive at midpoint of carriage length and transfer drive motion in a balanced manner to the carriage ends.

3. Synchro Drive:

- a. System shall consist of 1.00 inch (25.4 mm) diameter solid steel axle shafts and machined couplers.
- b. Wheels on both sides of the carriage shall be driven in a synchronous motion. Systems that do not drive both sides synchronously are unacceptable.
- c. Drive motor must drive at midpoint of carriage length and transfer drive motion in a balanced manner to the carriage ends and to both sides of the carriage.

F. Operation:

1. User interface control shall contain an electrostatic capacitive touchpad. The user interface control shall not incorporate any moving parts. Systems utilizing buttons, switches, or other mechanical devices shall be unacceptable.
2. User interface control shall be intuitive and provide clear and easy to understand indicators. Additionally, to minimize downtime in the unlikely event a problem might arise, the user control shall contain a diagnostic display to pinpoint the problem. Systems which provide only a problem indication with no diagnostic capability are unacceptable.
3. The carriage control system must provide for operation of the mobile system at the face panel mounted user interface/operator control head.
4. A mechanically adjustable distance sensor shall be provided at each aisle to provide carriage stopping distances as needed should oversize media be protruding over the shelf edge.
5. System shall provide soft carriage starting and stopping.
6. (optional) User interface controls shall be available at each end of each possible aisle.
7. User interface controls and user aisle access both into the aisles and around the system shall conform to all applicable codes including but not limited to the Americans with Disabilities Act.

G. End and/or Face Panels:

1. End panels shall be provided to mount the carriage movement/information readout control, aisle entry sensor (if equipped), and enhance the aesthetics of the system.
2. End panels must extend the full width of the carriage and extend from the bottom edge of the carriage to the top of the storage housing on the carriage.

3. End panel selection shall be from the following options:
 - a. **Steel:** Panels shall be fabricated from no less than 20-gauge material, 48 inches (1219 mm) in width shall be fabricated from 16-gauge powder coated steel. Panels 48 inches (1219 mm) wide and greater may be fabricated from a lesser gauge sheet steel if additional reinforcing hat channel are provided. Finish and color shall be selected from manufacturer's full offering.
 - b. **High Pressure:** Shall consist of plastic laminate clad particle board with steel powder coated side channel which shall protect the panels from cart damage and provide a durable alternative to some other manufacturers plastic tubes or edging.
 - c. **Thermal Fused Low Pressure:** Shall consist of plastic laminate clad particle board with black plastic integral side edge covers and spacer tubes.
 - d. **Solid Wood:** Shall be design, wood species and finish as determined by architect. Finished product shall meet applicable AWI standards for appearance and craftsmanship. Products shall be sourced locally.

H. Accessories:

1. Provide manufacturer's standard. Location and quantity as indicated on the drawings.
 - a. Aisle Presence Safety System (optional) which shall consist of an aisle entry sensor at every aisle opening. This system shall require a visual inspection of the open aisle prior to allowing an aisle closure and resultant new aisle selection.
 - b. All systems/aisles shall have the ability of incorporating a series of sensors which shall detect the presence of a person in an open aisle and which shall prevent that aisle from closing.
 - c. A manual override capability shall be provided on every carriage to provide manual movement in the event of a power outage. The manual override mechanism shall be readily accessible to the end user without the need to remove end panels, shelves, or gain access to the inside of the carriage.
 - d. Universal Power Source (UPS) (optional) shall be available to provide system power in the event of a power outage. All safety devices and system functionality shall remain operational when the UPS is activated. The UPS shall switch on and off automatically as needed and require no user input.

1. **Environmental Requirements:** All carriages, steel shelving, and steel end panels shall contain a minimum of 40% recycled steel content, comprised of a mixture of post and pre-consumer and industrial. Finishes on carriages, steel shelving, and steel end panels shall be a powder coat finish with low VOC (volatile organic compounds) and application must incorporate a powder recycle process.

2.3 FABRICATION

- A. **General:** Coordinate all parties to ensure timely execution of this project and to related work. Ensure that all necessary information relating to this portion of the project has been transmitted to the parties involved.

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Verify that building floor structure is adequate to support high-density mobile system within limits of established deflection criteria based on mobile system type and manufacturer's published criteria. Basis shall be L/450. Verification shall be provided by a locally licensed structural engineer.
- B. With installer present, examine floor area within area of mobile system to verify that it is within levelness tolerance per manufacturer's requirements for rail installation.
- C. With installer present and prior to installation, examine mobile carriages for proper sizing, proper placements of support members for the shelving, and to ensure that storage housing mounting surface is square and level.
- D. For all installations it shall be the installer's responsibility to know and to execute all phases of the installation in compliance with local building codes.

3.2 INSTALLATION

- A. **General:** Follow all manufacturer's documented instructions and procedures for installation of rail, floor and ramp if applicable, fixed and movable carriages, shelving, panels and related accessories.

3.3 FIELD QUALITY CONTROL

- A. Verify all fixed and movable carriages are installed and operating square and level. Correct if necessary.
- B. Verify all end or face panels, shelving components and accessories are aligned properly. Correct if necessary.

- C. Replace components that are scratched, dented, or damaged in any manner with new items from the manufacturer. Surface scratches may be touched up but repair must be complete and undistinguishable.

3.4 ADJUSTING

- A. Adjust all components and accessories to provide smooth operation and proper tracking alignment. Perform final visual check that all panels align when aisles are closed, and all gaps are consistent.

3.5 CLEANING

- A. Upon completion of installation, clean all components and surfaces. Cover to protect from dust and environmental fallout as a result of other work continuing in the surrounding area. Remove all packaging material and debris that accumulated as a result of the installation immediately upon completion. Leave area of installation neat, in broom clean condition, and ready to present to appropriate persons.

3.6 DEMONSTRATION AND TRAINING

- A. Schedule and conduct demonstration of the high-density mobile system. Review all safety features and proper carriage operation with owner's personnel. Review any additional features or points of interest as appropriate.
- B. Schedule and conduct maintenance training with owner's maintenance personnel. Training session should include a full operation demonstration and all preventative maintenance and minor repair procedures for the high-density mobile system that they would normally be expected to perform.

3.7 PROTECTION

- A. Protect system against dirt and damage during remainder of construction period. Recommend to owner of any additional precautions needed to ensure that system will remain unharmed during balance of construction in surrounding area.