

STEEL FRAME DASHER BOARD SYSTEM SPECIFICATIONS

1.0 GENERAL

1.01 SCOPE

1.01.01 Manufacturer shall furnish and install one complete set of steel framed dasher boards for a ____' x ____' x ____' radius rink as manufactured by **Roustan United Arena Solutions d/b/a Dasher Systems, Johnstown, PA**

1.02 MATERIALS

1.02.01 All materials will be per plans and specifications and constructed, manufactured and installed per plans and specifications. All equipment and materials supplied under these specifications shall be new and of the best grade material and construction.

1.03 SUBMITTALS

1.03.01 The manufacturer shall upon receipt of contract from owner or its representative, prepare shop drawings, which will itemize sizes and materials as well as construction details for installation. The manufacturer will submit shop drawings to the owner and/or its representative for approval before fabrication of materials.

1.04 DELIVERY

1.04.01 To be arranged with owner and/or its representative to coincide with completion date of the project.

1.05 WARRANTY

1.05.01 Manufacturer shall warrant all equipment from all defects in materials and/or workmanship, for a period of one year from completion of installation. Any misuse or abuse and/or accident not caused by normal conditions is the responsibility of the owner.

2.0 SPECIAL PROVISIONS

2.01 PROJECT DESCRIPTION

2.01.01 The project outlined with these specifications consists of the manufacture and installation of a complete steel frame dasher board system as manufactured by **Roustan United Arena Solutions d/b/a Dasher Systems, Johnstown, PA** or approved equal.

2.01.02 The contractor shall be responsible for all necessary and related appurtenances to complete the project as described in these specifications. These specifications have been written with quality in mind. Any deviations from the following specifications found after installation will be back charged to the dasher contractor at owner's discretion of value.

2.02 SAMPLES

2.02.01 All contractors bidding this project shall supply a sample panel of proposed dasher system being bid showing exactly how the system will be manufactured. Samples will show how shield-mounting hardware will be attached to system, as well as samples of gate latches and related hardware.

2.02.02 Polyethylene samples shall be submitted for owner approval of color and quality prior to the start of fabrication.

2.03 MATERIAL SUBSTITUTION

2.03.01 In the specifications certain items are named by manufacturer, this is done for quality control. Other manufacturers of equal quality will be approved if submitted to the owner for review. Such requests must be submitted to the owner, in writing, seven (7) days before bid opening. Any such approved substitutions must be shown or noted at the time of bid. Any deviations from the specifications must be clearly indicated by the bidder. Bids offering lesser sizing or quality will not be considered. Bidders shall supply manufacturer's literature, specifications and fact sheets.

2.04 PROJECT COMPLETION

2.04.01 The contractor shall commence work immediately upon receipt of a signed contract. Completion of the project shall be not later than _____.

3.0 PRODUCTS

Acceptable system design shall be identical in design to:

Roustan United Arena Solutions d/b/a Dasher Systems, 195 Jari Drive, Johnstown, PA15904

3.01 DASHER PANEL FRAMEWORK

3.01.01 The dasher panels shall be fabricated in demountable sections of nominal 8' lengths. The design of all panels, whether a straight section, a curved section, or a section in which a gate is located shall be fundamentally similar. Each section shall be made of two horizontal 2" x 2" x 3/16" steel angles used at the top and intermediate locations and one horizontal 2" x 2" x 1/4" steel angle used at the base location.

3.01.02 An additional 2" x 1-1/2" x 1/4" steel angle shall be welded to the back and bottom of each panel to form a continuous slot for anchoring panel to the floor.

3.01.03 An additional 1" x 1" x .083 square steel tube shall be welded to the top and back of each panel to aid in the fastening of the top cap rail to the panel.

3.01.04 All angles will be welded to a specially designed 12 gauge x 6" deep steel end plates on each end of the panel. All vertical formed channels must have a minimum of 3/4" return edges.

3.01.05 The end plate will have three matching holes to accommodate 1/2" through bolts.

3.1.06 Panels that are over 5' in length will require an additional 2" x 3" x .120 steel tube, welded at the center point of the panel (vertically) to add rigidity.

3.01.07 (Optional - used when permanent backer panels are specified) An additional 1" x 2" x .083 steel tube shall be welded horizontally to the back of each panel to aid in fastening and supporting of the backer sheets. The location of this steel tube varies with location and sizing of backer panels.

3.01.08 All steel angles and formed channels used to make up dasher panels and gates will be pre-punched with 3/4" long slotted holes to allow expansion and contraction in the polyethylene dasher facing due to changes in temperature. Round holes and self-tapping screws are not acceptable.

3.01.09 The panels are to be a completely welded construction. After the construction of the framing each panel is to be hot dip galvanized. Zinc or nickel plating is not acceptable.

3.01.10 The use of steel tubing for horizontal framing members or end vertical framing members is not acceptable.

3.01.11 Systems that require separate support posts to support the dasher system are not acceptable.

3.01.12 The standard sizes of the dasher panels are to be 96" long by 42" high.

3.02 GATES

3.02.01 The access gates (4'-0" or 3'-0" wide standard) and player gates (2'-6" wide) shall be built into 8' panels and shall be left or right-hand swing. The gate panel framing shall be of the same construction as standard panels. Gate insert shall be made of pre-punched 3/4" long slotted-formed channels both vertically and horizontally.

3.02.02 The gate latches shall be equipped with an adjustable spring loaded bolt mechanism so that the gate may be closed and latched in a single movement. The latch shall have a machined 5/8" solid steel rod extender attached between spring mechanism and a vertical handle made of 1/2" round steel. The handle is to be made so that a player wearing hockey gloves can easily open the gate. The use of chains or cables for operating the spring mechanism is not acceptable. The latches must be a solid welded construction designed for their intended use. Latches made of cast materials are not acceptable. The use of gravity style lift bar latches is not acceptable. The catches for the spring latch shall have a stainless steel strike plate welded on the outer surface to prevent wear.

All gates with shielding must be equipped with a spring latch and push button release mechanism located in the cap rail, on the ice side of shielding, so that the gate can be opened from the ice side. The use of cables, chains or other similar devices to open these gates is not acceptable.

Gate Schedule:

Four 2'-6" player gates with standard spring latches
Two 2'-6" penalty gates with standard push button spring latches
____ 3'-0" Access gate(s) with standard push button spring latches

3.02.03 The hinges for all gates shall be two, lift off type, welded to the frame. All hinge assemblies shall have grease fittings for easy lubrication. Hinges that are bolted to gate framework is not acceptable.

3.02.04 All single swing access and player gates shall have one 3/8" thick x 3-1/2" wide x 4-1/2" long door stop welded to the gate frame.

3.02.05 The thresholds for all player and penalty box gates shall be 9" above the finished floor level. The top of the steel frame is to be 8" above the finished floor with a 1" thick polyethylene cover. Threshold of access gates shall be 3" above the finished floor level. The top of the steel frame is to be 2" above the finished floor with 1" thick polyethylene cover.

3.02.06 The equipment gates shall be a double leaf gates with 10'-0" opening. Size of gate leaves to be determined by the owner. The gate panel framing shall be made of pre-punched slotted channels vertically and horizontally.

3.02.07 The equipment gate latch is to be the sliding bar type 2-1/4" x 2-1/4" x 12 gauge steel tubing with a large grasp handle. Each equipment gate shall lock into the steel threshold by means of 3/4" x 12" long cane bolts. Each equipment gate leaf over 36" in length shall be equipped with adjustable casters.

3.02.08 The equipment gates will be furnished with a steel threshold 1-1/4" high with a 1/2" white high-density polyethylene cover.

Equipment Gate Schedule:

____ Unit(s) required 10'-0" standard straight/radius equipment gate

3.03 HARDWARE

3.03.01 The steel hardware shall be galvanized or zinc plated for rust resistance after welding. The hardware shall include hinges, latches, nuts, bolts, washers and miscellaneous fastening devices necessary for complete installation.

3.04 ANCHORS

3.04.01 The dasher board contractor shall install all new **3/4"** anchors required for the installation of the dasher boards. (Reusing existing anchors optional if applicable) The dasher contractor shall furnish 1/2" x 4" x 5" steel hold down plates. The anchor plates will have a 7/8" hole to accept a 3/4" bolt and flat washer for securing of dasher panel to the anchors.

3.05 STEEL ICE RETAINER

3.05.01 A continuous steel ice retainer shall be installed around the perimeter of the ice surface. The ice retainer will be furnished in radius and straight sections and will match the length of the dasher board panel they support. The ice retainer will consist of a C6 x 8.2 structural "C" channel having 1/2" x 4" x 5-1/4" anchor plates welded at the interior to the vertical legs. The anchor plates will have 7/8" diameter holes used to receive anchor bolts. The anchor plates will be welded in the channel to match the location of the concrete anchors. The "C" channel will have 2" square holes cut into the back wall for access to the anchor bolts.

3.05.02 Approximately 2'-6" in from each end of the "C" channel (5'-0" on center) a 1-5/16" diameter hole will be placed in the "C" channel so that a 1-1/4" OD type 304 stainless steel insert can be welded in place. The insert will have a 3/4"-10 continuous internal threads. The insert will be held at its base with a 1/2" x 4" x 5-1/4" plate having a 1-5/16" diameter hole. The plate will be welded to the vertical legs of the "C" channel and the stainless steel sleeve insert.

3.05.03 The steel ice retainer channel will be furnished with a hot dip galvanized finish after fabrication.

3.05.04 After the ice retainer has been hot dip galvanized, all excess galvanizing will be removed from the threads of the stainless steel inserts.

3.05.05 The ice side of the ice retainer channel will be furnished complete with one thickness of 1/2" white polyethylene and one thickness of 1/2" polyethylene matching the color of the kick plate. The screws used to fasten the polyethylene in place shall be 1/4"-20 x 1-3/4" Phillips flat head Type "F" self tapping screws. The screw spacing will not exceed 4" on center. Welded angles used to form a channel section are not acceptable.

3.06 POLYETHYLENE ICE RETAINER

3.06.01 A 1" x ____" natural white high density polyethylene ice retainer shall be installed under the entire dasher board system.

3.06.02 The ice retainer shall be installed using same anchors used to hold the dasher board system in place (2 per 8 foot section). The ice retainer shall be countersunk so it can be fastened to the floor using 3/4" x 1-1/2" flat head socket cap screws when the dasher board system is removed.

3.07 DASHER FACING

3.07.01 The dasher board facing will be 1/2" (nominal) thick high-density virgin polyethylene. The polyethylene is to be furnished in a bright white color. Natural white is not acceptable. Whites must match within the manufacturers tolerances.

3.07.02 On panels that require red and blue lines, the facing will be routed 1/4" deep by the width necessary so that a 1/4" thick red or blue panel of high-density polyethylene can be inserted into this area. Fastening the polyethylene red or blue line to the front of the white dasher panel or cutting the panels to insert a 1/2" thick line with a secondary backer is not acceptable.

3.07.03 The 1/2" polyethylene will be attached to the horizontal angles with 1/4"-20 x 1-1/4" Phillips flat head machine screws, flat washers and 1/4" nylon insert lock nuts. The heads of the screws are to be painted to color match the dasher facing. The spacing of the 1/4" screws will not exceed 1'-0" on center. The use of self-tapping or sheet metal screws to attach dasher facing is not acceptable.

3.08 CAP RAIL

3.08.01 The cap rail shall be constructed of 1" thick (1/2" and 3/4" thick optional) high density polyethylene shall be fastened to the top horizontal framing members. The cap rail shall be furnished with a textured finish. The standard colors are red and dark blue. Other colors are available upon request. The front edge of the cap rail shall be attached to the top angle using 1/4"-20 x 1-3/4" Phillips flat head machine screws, flat washers and 1/4" nylon insert lock nuts. The back edge of cap rail will be attached to the 1" x 1" steel tube using 1/4"-20 x 1-1/2" type "F" self tapping screws. The heads of the screws are to be painted to color match the cap rail. The spacing of the 1/4" screws (two rows) will not exceed 24" on center. The use of nylon rivets or sheet metal screws is unacceptable. The front and back edges of the cap rail shall have smooth and radiused edges.

3.08.02 Cap rail is to overhang backside of steel frame by a minimum of 3/8" to allow for backer sheet to be installed after the erection of the dasher system.

3.09 KICK PLATE

3.09.01 The kick plate shall be constructed of 1/2" thick (1/4" optional) high-density polyethylene 8" high. The top edge of the kick plate shall have a 1/4" radius. The standard colors are yellow, light blue, and gold. Other colors are available upon request. The kick plate shall be fastened to the bottom of the dasher panel and the dasher facing using 1/4"-20 Phillips flat head machine screws, flat washers and nylon insert locking nuts. The heads of the screws are to be painted to color match the kick plate. The use of nylon rivets or sheet metal screws is not acceptable.

3.10 THRESHOLDS

3.10.01 The access and player gates shall have 1" thick high-density polyethylene thresholds that can be removed and replaced when wearing occurs. Polyethylene thresholds less than 1" thick are not

acceptable. The thresholds are to be fastened using 1/4"-20 x 1" Phillips flat head type "F" self tapping screws countersunk 1/2" deep to avoid contact with skate blades.

3.11 BACKER PANELS

3.11.01 3/8" high-density polyethylene panels will be attached to the backside of the dasher board framework, including all personnel gates and equipment gates.

3.11.02 The polyethylene will be attached to the framework with 1/4"-20 x 1" Phillips flat head type "F" self tapping screws.

3.11.03 A 3/8" plastic "H" channel shall be installed at every vertical seam of the backer panels.

3.11.04 The standard color of the backer sheets is white. Other colors are available upon request.

3.12 POLYETHYLENE DEMOUNTABLE QUICK RELEASE BACKER PANELS

3.12.01 3/8" high-density polyethylene panels shall be attached to a TS 1" x 2" x 1/8" steel framework and shall fit flush into the back of the dasher panels. All panels of 8' or less shall have a minimum of four magnetic assemblies to secure the top of panel to the dasher framework. All of the steel framework and magnetic assemblies shall be concealed within the framework of the dasher panel so that there are no protrusions on the backside of dasher system. There shall be no holes, slots or protrusions on the back outside surface of backer panels or the cap rail. All backer panels shall be readily demountable. The bottom of the backer panel shall drop over bottom angle of dasher framing and lock securely and hold panel flush.

3.12.02 Standard color of backer sheets is white. Additional colors are available.

3.13 PLAYER, PENALTY & SCORER'S BOX BACKER PANELS

3.13.01 3/8" high-density polyethylene panels will be attached to the backside of the dasher board framework in the player, penalty and scorer's boxes, including all personnel gates and equipment gates.

3.13.02 The polyethylene will be attached to the framework with 1/4"-20 x 1" Phillips flat head type "F" self tapping screws.

3.13.03 3/8" plastic "H" channel shall be installed at every vertical seam of the backer panels.

3.13.04 Standard color of backer sheets is white. Additional colors are available.

3.14 PLAYER BOX STORAGE SHELVING

3.14.01 Incorporated into the front of the player box area shall be a shelf for the storage of player's water bottles, etc. This shelf shall be completely lined with 3/8" polyethylene identical in color to the 3/8" dasher backer panel material. All exposed steel framing excluding the vertical support post which is recessed into the panel shall be covered.

3.15 CUSTOM COLOR POLYETHYLENE

3.15.01 Custom color dasher facing, cap rail, kick plate and backer panels are available.

3.16 SCORER'S TABLE

3.16.01 One 1" x 18" x ___' solid polyethylene scorer's table shall be installed in the scorer's box. The table shall be mounted to the back of the dasher board system with brackets bolted to vertical strut channels welded into the dasher panel, allowing the table to be adjusted to the preferred height.

3.17 SPECTATOR SHIELD MOUNTING HARDWARE

3.17.01 The spectator shield mounting supports shall be round in design of two piece construction made of solid architectural grade extruded aluminum (alloy #6005-T6) with 202R1 clear anodized finish. The back of the support shall be installed through a snug fitting contoured opening in the cap rail and secured at the bottom with a support-mounting bracket to the center stringer of the dasher panel. The face plate of the support is to be attached to the back using 1/4" x 1-1/4" self-tapping screws. The installation of glass panels shall be from the ice side of the rink side, with the vertical support post within the dimensions of the boards, there shall be no protruding anchors or support posts behind the dasher board system. The supports are to be furnished complete with shield gaskets integrally attached to both the support post and the face plate. Shield gaskets furnished, as a separate entity to the support post is not acceptable. Total width of supports shall not be less than 2-1/8" in diameter nor shall exceed 2-1/2".

3.17.02 The mounting hardware is to be removable so that the spectator shielding can be removed without demounting the dasher system. The round shield supports shall be attached at the center angle using a "J" fitting that extends a minimum of 1-1/4" below the center angle. Round support posts that stop short of center angle or fittings that attach above the center angle are not acceptable.

3.17.03 The gate shield mounting hardware shall be made of solid architectural grade extruded aluminum (alloy #6005-T6) with 202R1 clear anodized finish, it shall be of one piece design to allow the operation of gate sections. The supports to be furnished complete with integrally attached shield gaskets.

3.17.04 The minimum height of the supports shall be _____" above the caprail on the sides of the rink where the use of _____" high shielding is indicated and _____" above cap rail at the ends of the rink where the use of _____" high shielding is indicated.

3.17.05 The spectator shield supports are to be nominally 48" apart except at gates or similar openings in the dasher boards.

3.17.06 The contractor shall route a continuous channel in the top of the polyethylene cap rail to hold and support the shielding.

3.18 TEMPERED GLASS SPECTATOR SHIELDING

3.18.01 The spectator shielding shall be clear float safety tempered glass. The shields shall have the top two corners radiused and all edges ground to minimize breakage and for safety in handling. Seamed edges are not acceptable.

3.18.02 The shields shall be nominal 48" wide except those at gates, removable sections, or similar openings in the dasher boards.

3.18.03 The height of spectator shielding at the sides of the rink to be ____ above dasher panels. The tempered glass shields on the sides of the rink to be 1/2" thick.

3.18.04 The height of spectator shielding at the ends and radius corners to be ____ above dasher panels. The tempered glass shields on the ends and radius corners to be 5/8" thick.

3.18.05 The spectator shield supports and shields shall be installed across the front and sides of the scorer's box.

3.18.06 The spectator shield supports at both ends of the players boxes and the supports at the front corners of the scorer's box shall have a specially designed safety pad to provide safety from injury.

3.19 ACRYLIC SPECTATOR SHIELDING

3.18.01 The spectator shielding shall be cell cast acrylic sheeting manufactured in the United States and be identical to Polycast acrylic sheets. All acrylic sheets shall be no less than .470" in thickness, clear and colorless.

3.19.02 The acrylic shielding shall have the top two corners rounded to a 1" radius and the two sides and top shall have beveled edges.

3.19.03 The shields shall be 48" wide except those at gates, removable sections, or similar openings in the dasher boards.

3.19.04 The height of spectator shielding at the ends of the rink to be ____" above dasher panels.

3.19.05 The height of spectator shielding on the sides of the rink to be ____" above dasher panels.

3.19.06 The use of extruded acrylic material is not acceptable.

3.20 SUPPORTLESS SHIELDING SYSTEM

3.20.01 The panels shall have a specially designed track system installed to secure the bottom of each tempered glass shield. Track system shall be designed so that shield panel can be easily installed or removed. The specially designed track system shall be designed to secure and protect the glass panels without the use of separate cushions.

3.20.02 The gate shield mounting hardware shall be made of solid architectural grade extruded aluminum (alloy #6061-T6) with 202R1 clear anodized finish, it shall be of one piece design to allow the operation of gate sections. The supports to be furnished complete with integrally attached shield gaskets.

3.21 PLAYER, PENALTY, AND OFFICIAL'S BOXES

3.21.01 The player boxes shall consist of two ____' long team boxes, two ____' long penalty boxes and one ____' long officials box. All boxes to be ____' deep.

3.21.02 The spectator shielding shall be installed behind and along side of but not in front of team boxes. Spectator shielding shall be installed behind, along side of and in front of officials and penalty boxes.

3.22 ELEVATED FLOORING

3.22.01 The elevated flooring will be furnished for the players, official and penalty box areas. The flooring will be fabricated with TS 1" x 2" x 1/8" stringers and 1-1/2" x 1-1/2" x 3/16" steel angle cross members welded into frames 7" high by 4'-0" wide and 1" less than the depth of the areas they are used in. The flooring sections shall have adjustable bases welded to the bottom of the steel framework to allow the elevated floor sections to be leveled.

3.22.02 The steel framing shall be hot dip galvanized after fabrication.

3.22.03 The steel framework shall be covered with 3/4" wolmanized treated plywood, tek screwed in place and covered with 1/4" light or dark gray Protect-All flooring.

3.23 RAISED COACHES WALKWAY

3.23.01 In the players area an optional two-tier framework can be fabricated for a coach's walkway behind the benches. The coach's walkway will be elevated 7" above standard floor height and will be 18" deep. The walkway is to be of identical to the construction of the elevated flooring in the player boxes. The riser will have 1/2" white polyethylene covering.

3.24 BENCHES

3.24.01 The benches used in the players and penalty box areas will be made of 1" thick x 9-1/2" wide textured high-density polyethylene. A formed steel channel frame shall be used to support benches. Color must match the cap rail material. Player box benches to be ____' in length and penalty box benches to be ____' in length.

3.24.02 The top edges of the benches will have a 3/8" radius and a 1/4" radius on the bottom edges.

3.24.03 The polyethylene benches will be supported using a formed steel channel framework attached to bench supports constructed of 8" x 8" x 1/4" steel plates welded to 2-1/4" square, 12 gauge steel tube.

3.24.04 The tube supports will not exceed 6'-0" on center. The polyethylene benches will be attached to the formed channels using 1/4"-20 Phillips flat head self tapping Type "F" machine screws. The tube supports will be fabricated so that they rise vertically out of the steel sleeve welded in the elevated flooring framework and are mitered 15 degrees toward the front of the boxes so that players cannot hit the tubes with their skates. The benches will be mounted to the support tubes with 1/4"-20 Phillips flat head self tapping Type "F" machine screws.

3.25 LIFT OUT PANELS

3.25.01 The lift-out panels shall be installed in areas noted on drawing. These lift-out panels shall leave a 60" wide (48" optional) x 33"-1/4" high opening and shall have a replaceable 1" high-density polyethylene threshold. These lift-out panels will be similar in design to the standard gate panel construction.

3.26 PANEL STORAGE CARTS

3.26.01 The panel storage carts will be fabricated with structural framing members having 4 casters welded to them. Framing shall be hot dip galvanized after fabrication.

3.26.02 The carts will be 96" long by 48" wide. The carts will have removable side supports used to keep panels in line. Total weight capacity of each cart is 6000 pounds.

3.27 SPECTATOR SHIELD & SUPPORT STORAGE CARTS

3.27.01 The spectator shield & support storage carts will be fabricated with structural framing members having 4 casters welded to them. Framing shall have a painted finish in choice of color.

3.27.02 The carts will be of sufficient size and quantity to accommodate all spectator shields and shield supports. The carts base shall be covered with 1" high density polyethylene so that no sharp metal or metal surface comes in contact with the shields.

3.28 SHIELD REMOVAL CUPS

3.28.01 Provide one set of "glass handler" suction cups, to provide a firm grip to facilitate removal of shields, including storage cases.

3.29 GOAL JUDGES BOXES

3.29.01 The goal judge boxes will be fabricated from 1-3/4" x 1-3/4" square steel tubing. The steel tubing will be welded into a three-sided framework 3' square. Top section to be designed to accept the 1/2" acrylic shielding.

3.29.02 The base of the boxes, shall be 42" high and will be covered with 1/2" white high density polyethylene facing and 1" polyethylene caprail that match the dasher boards.

3.29.03 The remaining height of the boxes will have 1/2" x _____" high acrylic shields on three sides and top. Acrylic shields will be held in place by extruded aluminum retainers.

3.29.04 All steel framing to have a painted finish after welding.

3.29.05 The goal judges boxes will be equipped with four lockable 4" high casters attached to the bottom of the base section so that the goal judges boxes can be moved when not in use.

3.29.06 All electrical and lighting by others.

3.30 OTHER MATERIAL

3.30.01 Provide other materials, not specifically described but required for a complete and proper operational installation, as selected by the contractor subject to the approval of the owner.

3.31 INSTALLATION

3.31.01 Manufacturer will construct, fabricate and deliver all materials to job site per plans and specifications. All materials will be installed to result in a complete steel frame dasher system with all dashers and spectator shielding to be straight and true to line and properly braced. Installation shall be done under the direct supervision of a factory representative at all times. The use of subcontractors without factory supervision is not acceptable.

3.32 EXECUTION

3.32.01 Examine the areas and conditions under which work of this section will be performed. Correct conditions detrimental to timely and proper completion of the work. Do not proceed until unsatisfactory conditions are corrected.

3.32.02 Installation shall be in strict conformance with manufacturer requirements and instructions.

3.32.03 Erect units rigid, straight, level, plumb, and true with horizontal and vertical lines level.

3.32.04 No defective, scratched, marred or otherwise damaged equipment and materials shall be installed.

3.33 ADJUSTMENTS

3.33.01 Put all items of equipment and systems through at least five complete cycles of operation, verifying that each item is properly installed and operating properly.

3.34 PROJECT CLEAN UP & RESTORATION

3.34.01 The contractor shall be responsible for clean up all of construction debris (packing materials, scrap materials, etc.). The contractor is not responsible for the cleaning of the dasher board system prior to project completion.