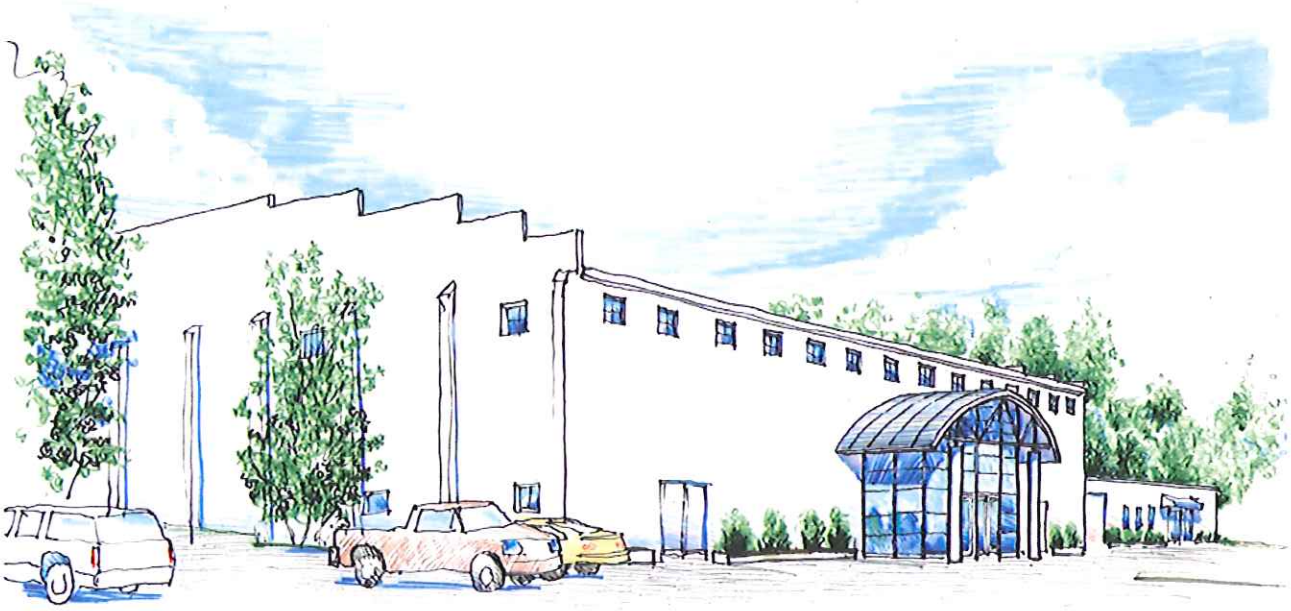
Bluefield Municipal Auditorium

Preliminary Architectural Report

Bluefield, West Virginia



ARCHITECTURE, HISTORIC PRESERVATION,
COMMUNITY PLANNING, LANDSCAPE ARCHITECTURE

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HILL
STUDIO

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Introduction

This Preliminary Architectural Report (PAR.) has been developed to address the need for refurbishing the Bluefield Municipal Auditorium in Bluefield West Virginia. The activities occurring in the Auditorium are an integral part of the community. Hill Studio's (HSPC) suggestions in this report are made to celebrate the Auditorium's place in the community by refurbishing and creating the building into a structure that reflects its importance to the community. The combination of the building analysis and the concept plan will be used to develop a cost estimate to determine the magnitude of the renovations.

The Specific Areas we are to review are:

- The 2 story portion at the front of the building.
- Parking and image at front of building.
- Interior spaces; Restrooms, Kitchen, Gym Floor, the Mechanical Electrical and Plumbing systems
- Water infiltration at the rear of the building.

Executive Summary

The Conceptual Programming and Design that follows the Existing Building Analysis recommends focusing the renovation work on 7 different areas.

The Stadium Avenue elevation is the public 'face' of the building for people using the facility or just driving by. We recommend removing the current two story addition and providing a new dramatic, covered, enclosed entrance. The design makes the entrance easily identifiable, unlike the current one, and accentuates the grand scale of the existing auditorium while reflecting some of its existing details such as the curved roof.

The interior spaces are to be partially renovated. The Locker Rooms of the Auditorium are to be upgraded with a slightly different layout. Women's toilets are to be added in the Community Room Building and one ADA compliant Men's toilet is added in the Auditorium. The existing corridor is reopened so that visitors don't have to walk on the gym floor to get to the bleachers and to make an easier flow of people. A design for improving the entrance from the Auditorium into the Community Room is provided that includes an ADA compliant ramp.

HSPC suggests replacing the Gym Floor. The replacement flooring is to be either a solid maple or synthetic flooring system.

The water intrusion at the back of the building can be greatly decreased by; 1) cleaning out and resetting the existing culverts, 2) regrading the access road so that water drains away from the building and back to the culverts, 3) provide a retaining wall between the hill and one of the culverts and 4) repairing the damaged CMU wall.

A revised parking plan is provided for the Stadium Ave side of the building. The parking plan has clearly defined entrances and parking spaces. Access into, around and out of the parking spaces is safer and presents a more attractive front to the facility.

Upgrades to the mechanical, electrical and plumbing systems are recommended for the specific areas being altered.

HSPC has reviewed the viability of the building qualifying as a Historic Structure in order to determine if Historic Tax Credits can be obtained for the cost of renovating the structure. The preliminary result of these findings is; if the Bluefield Municipal Auditorium is determined eligible for listing on the National Register, and subsequently listed, the rehabilitation of the property will be eligible for the 10% state tax credit program. To be eligible the two story addition in the front may have to be retained and renovated to near its original condition. Please see the analysis in the Appendix for a detailed explanation.

Existing Building Analysis

The following are items HSPC observed when analyzing the building.

ARCHITECTURAL

Auditorium Building

1) The roof has recently been replaced over the Auditorium and no reasons have been reported to us to recommend requiring work be done to it.

2) The exterior paint is peeling and faded at the full extent of the exterior.

A view of the Auditorium Building from the southwest.

3) The Stadium Avenue elevation is a grouping of pieces making a two story structure in front of the Auditorium. The two story structure has no clear entrance through it into the Auditorium and the spaces are underutilized. The structure is not welcoming nor does it add a strong presence to the

public as viewed when approaching the facility. It has also fallen into a state of disrepair.

4) The exterior of the wall at the Access Road has deteriorated from the collection of runoff water at its base. Runoff water from the hill behind the structure is collecting at and seeping into the building. The water has heavily deteriorated the CMU at many locations up to a height of about 4 feet. The whole area is neither graded properly away from the building nor is the runoff directed to the existing culverts.

The rear wall of the Auditorium Building is on the left, the hill is on the right and the Access Road is in the middle..

5) Both Locker Rooms are not inviting and the showers and toilet facilities are in disrepair.

6) Four spaces are designated as public toilets. The toilet fixtures are in disrepair and the layout is neither ADA compliant nor easy to maneuver due to elevated platforms for the toilets.

7) The original corridor that circles the gym floor has been blocked up with later additions. This creates a requirement for spectators to walk through the gym floor to get to their seats, to the Concession area and to use the toilets. One of the stairs up to the seats is blocked off because of this configuration

A detailed view of the damage to the rear wall of the Auditorium Building.

8) The enclosed spaces under the seats appear to be under utilized.

9) The Gym floor is in disrepair and was finished improperly causing bubbles on the surface. It is original to the building, has been refinished many times and has numerous 'dead' spots.

10) The railing of the Walkway in front of the seats is lower than recommended and has only two bars to keep people from falling through it.

An interior view of the Auditorium from the viewing stands towards the Stage.

An interior view of the Auditorium from the Gym Floor towards the Stage.

Community Room Building

1) The roof is part of the metal building system and there have been no reasons to have any repair work done to it.

2) The entrance from the Auditorium is by a plywood ramp through an underutilized area having access to the exterior by what appears to have been a loading/service area. This area is currently used only for passage from the Auditorium to the Community Room.

3) The kitchen is not quite sufficient for use as a holding kitchen for serving people at large dinners.

A view of the brick faced Community Room Building on the right with the Auditorium Building behind it from the southeast.

An interior view of the Community Room Building toward the Recreation Department's office.

HISTORIC TAX CREDITS

Please see the Preservation Assessment and backup information in the Appendix.

MECHANICAL SYSTEMS

Auditorium

1) Heating and Ventilation systems are observed as follows.
The Auditorium is not air-conditioned. The original heating system consists of a gas fired steam boiler with radiation and unit heaters, all of which have been abandoned. Heating for the auditorium is provided by four (4) ceiling mounted gas fired infra-red heating units. Two (2) sidewall exhaust fans, manually controlled, serve the Auditorium area for ventilation. There is no provision for intake air for the exhaust fans, except to open the exterior doors. The remaining areas under the auditorium bleachers are served by four (4) gas fired furnaces with supply air ductwork distributed to the corridors, locker rooms, toilets and other rooms. The attached addition on the street side of the building does appear not to be heated, except for portable heaters. There is also a window air conditioning unit serving one area in this addition. The abandoned steam boiler appears to be in reasonably good condition and not too old. The steam piping system, unit heaters, and peripheral radiant heating appears to be original and is estimated to be 60 plus years old. Exhaust fans are provided for the toilet and locker areas and are manually operated. The Concession area does not appear to have heating or air conditioning. There is an exhaust hood with fire suppression. All appliances are electric.

Community Room Building

1) The Community Room Building is air conditioned. The assembly area is served by three (3) split system heat pump units located in the space with supply ductwork routed exposed in the room. Return air is located at each unit. There are 3 ceiling paddle fans, manually controlled. Primary heating is provided by five (5) gas fired ceiling suspended unit heaters. There are two (2) sidewall exhaust fans, manually controlled, that serve to ventilate the assembly area. The Kitchen does not appear to have heating or air conditioning. There is an exhaust hood without fire suppression. All appliances are electric. The office area is served by a split system gas furnace with a cooling coil and an outdoor condensing unit.

Auditorium and Community Room Building

1) Outdoor Ventilating Air: All heating and air conditioning systems observed do not have any provision for providing outdoor ventilation air thru these systems. The use of the exhaust systems appears to be the primary source of outdoor ventilation air for the majority of the building.

2) Exhaust Systems: Some small toilets are not exhausted. The main toilets and locker areas are exhausted to the outside of the building. Some of these toilets appear to be lacking for proper air flow and some fans do not appear to be operating at full capacity.

PLUMBING SYSTEMS

Auditorium and Community Room Building

1) Domestic Hot Water: There are electric water heaters located throughout; all appear to be 50 gal. residential type. One water heater was observed to be leaking. There are a number of toilets that were reported to not have a hot water supply to the sinks.

2) Natural Gas Service: There are two (2) gas meters, one for the Municipal Building and one for the Community Room Building.

3) Water Service: There is a 1½" domestic water service with backflow preventer in the existing boiler room. This service serves both the Auditorium and the Community Room Building. No problems were observed, except for some maintenance items; misc. leaks, etc.

4) Sanitary Sewer Service: There were some reported issues of reoccurring blockage.

5) Toilets: The toilets are generally in service, but are not in compliance with ADA.

ELECTRICAL SYSTEMS

Auditorium

1) Service Entrance: The electrical service appears to be 600 amps, 3 phase, 208/120. The main electrical gear is housed in an electric room that does not meet current code requirements. Electrical changes, upgrades, etc. have occurred over the years, some of which appear suspect. There is a panel cover that needs to be replaced for safety purposes.

Community Room Building

1) Service Entrance: The electrical service appears to be 600 amps, 3 phase, 208/120. All of the electric gear appears to be in good condition and no code deficiencies were observed.

Auditorium and Community Room Building

1) Lighting: Fluorescent fixtures are used throughout the buildings and appear to be in good condition. It was noted that some incandescent fixtures have been abandoned in place and fluorescent fixtures have been installed.

2) Emergency Lighting: Emergency lighting was not observed and is assumed to not exist.

3) Exit Signs: Exit signs are installed and appear to be satisfactory.

4) Fire Alarm System: A fire alarm system was not observed and is assumed to not exist.

Conceptual Programming and Design

SUMMARY

The main space of the Auditorium is a very distinctive design. HSPC doesn't recommend major alterations to this area that would change its character. The spaces under the seating are underutilized and we recommend changes to some of those areas. The public toilets and the locker room facilities need to be upgraded. The two story addition on the Stadium Avenue side is under utilized and does not work as a main entrance to the building. We recommend removing the two story addition, creating a new entrance and repositioning the parking to minimize confusion and make the parking safer.

The Community Room building has only a few deficiencies and appears to function well as a large assembly area. The exterior of the building isn't aesthetically outstanding but it is in good shape. The exterior design is very different from the Auditorium. We recommend leaving the exterior as is to clearly delineate this newer structure from the historic Auditorium and add landscaping at the front of the building.

SCOPE OF WORK

The following Scope of work is a verbal description of the changes HSPC recommends. This Scope of Work can be used in combination with the Conceptual Design Drawings to determine an estimation of the costs for completing the work.

ARCHITECTURAL

Auditorium

1) Stadium Avenue side of the building

- Remove the two story structure at the Stadium Drive side and construct a dramatic entrance that includes removable ticketing stations and a welcoming covered entrance that clearly identifies the building.

- Refurbish the existing sign.

- Provide a retaining wall at the Stadium Drive side of the Parking lot in front to make the parking more level and provide a safe separation from the road. Regrade part of the parking area, pave and re-line the parking spaces, provide curbs and planting areas to provide safer and more easily identified parking spaces.

2) Main floor spaces.

- Keep the locker rooms in the same location and renovate them with new fixtures and a more functional layout.

- The International Building Code recommends for an A-4 Arena Use Group with 2,000 maximum occupants that the minimum number of toilet fixtures per gender be; 14 water closets and 5 lavatories for Men and 25 water closets and 7 lavatories for Women. This count can be met by providing additional Women's public toilets in the Community Room Building with 2 ADA stalls and one additional ADA Men's toilet in the same area as one of the current Auditorium toilets.

- Remove the walls blocking the area where the existing corridor provides access to all of the second level seating. Spectators will be able to move throughout the building without having to walk across the gym floor. Open the currently blocked stair to the seating at the southwest side.

- Reconfigure the Concession Area and remove part of the Storage area walls to create a Lobby at the Entrance.

- Designate remaining spaces for Storage and Recreation Department personnel as needed.

3) New Gym Floor.

- Remove the existing gym floor and level the concrete subfloor as needed. The removed floor can be auctioned off as a fundraiser and/or used as paneling in the new addition.

- Provide either a solid wood floor or polypropylene floor system. See Appendix for an example of each.

4) Exterior wall at the Access Road.

- Lower and clean out existing culverts

- Provide positive drainage away from the building toward the culverts.

- Provide a retaining wall at one culvert to keep the eroding hill from clogging up the culvert behind the Auditorium.

- If the existing culverts cannot be adapted to the new grading, then provide a new culvert at the back of the building that is connected to the storm water system.

- Repair/replace the existing damaged CMU wall and finish with a water impervious finish to a height of two feet.

5) Seating Level

- Provide a railing at the bottom of the bleachers that meets current building codes. See Appendix for an example.

6) Painting

- The exterior should be scraped primed and painted.

- The interior sould be prepped, primed as needed and painted in order to have an equivalent 'new' finish like the exterior of the building.

Community Room Building

1) Upgrade Kitchen to function more like a holding kitchen. Provide additional equipment such as a refrigerator, warming ovens and increased dishwashing facilities.

2) Provide an ADA compliant ramp and steps at the connection between the Auditorium and the Community Room.

HISTORIC TAX CREDITS

The Owner will need to decide if the 10% state historic tax credits are worth pursuing. The current Conceptual Design recommends removing the two story addition at the front of the building. If future research is found that the two story addition must be retained to be eligible for the tax credits and the Owner wants to pursue retaining the Tax Credits, then the design will be revised.

MECHANICAL SYSTEMS

Auditorium

1) New Auditorium Entrance: This area will be provided with new heating and air conditioning systems as required for the space needs.

2) Auditorium Toilets and Locker Rooms: Replace heating units and exhaust systems.

3) Concession Area Revisions: Provide adequate ventilation and exhaust hood systems.

4) Upgrade Lobby at Entrance: Provide heating and ventilating systems. Additional personnel spaces will be provided with heating and air conditioning systems.

Community Room Building

1) Community Room Kitchen Upgrade: Modify or replace ventilating and exhaust systems. Consider an air conditioning system for the kitchen.

PLUMBING SYSTEMS

Auditorium

1) Auditorium Toilet and Locker Rooms: Replace plumbing fixtures and trim and connect with new cold water piping. Provide new hot water to all lavatories.

2) Concession Area Revisions: Provide hot and cold water to new and relocated fixtures

Community Room Building

1) Community Room Kitchen Upgrade: Provide hot and cold water to new and relocated fixtures.

2) New Toilets: Provide plumbing fixtures and trim and connect with new cold water piping. Provide new hot water to all lavatories.

ELECTRICAL SYSTEMS

Auditorium

1) New Auditorium Entrance: This area will be provided with new lighting and receptacles as required for the space needs. Provide power for new mechanical systems.

2) Auditorium Toilet and Locker Rooms: Replace lighting fixtures with new fixtures suitable for damp locations. Provide receptacle upgrades as required for code compliance.

3) Concession Area Revisions: Replace lighting fixtures with new fixtures and add new as required. Add new receptacles, and power for mechanical systems as needed.

4) Upgrade Lobby at Entrance and Additional personnel spaces: These areas will be provided with new lighting and receptacles as required for the space needs. Provide power for new mechanical systems.

Community Room Building

1) Community Room Kitchen Upgrade: Modify or replace lighting and power requirements to meet new upgrade requirements.

2) New Toilets: Provide lighting fixtures suitable for damp locations. Provide receptacle upgrades as required for code compliance.

PHASING OF CONSTRUCTION

The Construction work may need to be phased to accommodate funding sources and to coordinate with the daily operations of the facility. Phase One below is considered critical to remediating ongoing damage to the building. The additional Phases are recommended in the following order to; minimize the disruptions to the operations of the building and then have the biggest impact on a 'grand opening' when all of the work is complete.

Phase One

Repair the drainage pattern and the damaged wall at the north side of the building on the Access Road.

Phase Two

Renovate the Main Floor spaces of the Auditorium. This includes the Locker Rooms, Men's ADA toilet, removing the walls of the blocked corridor and reconfiguring the Concession Area.

Phase Three

Remove the old Gym Floor and install one of the two options recommended. Also remove the railing at the seating level and install a railing similar to the recommended version. Paint the interior.

Phase Four

Remove the two story addition at the Stadium Drive elevation and install the new entrance area. Paint the Exterior.

Phase Five

Redevelop the parking as shown.

CONCEPTUAL DESIGN DRAWINGS

The attached drawings illustrate the proposed improvements described in the above Scope of Work.

Appendix

Gym Floor Examples

Maple Wood Flooring
Polypropylene Flooring

Railings

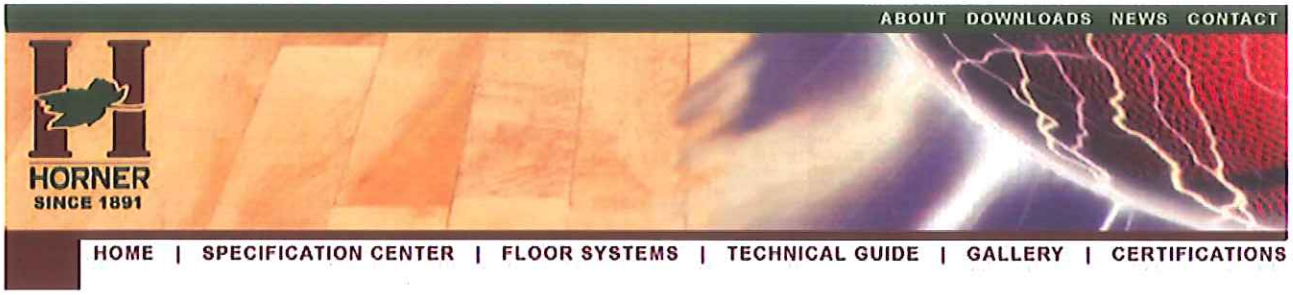
Historic Tax Credit Background Information

Gym Floor Example

Maple Wood Flooring

The following information is from a manufacturer that sells and installs a traditional maple wood flooring system. This document specifies a wood strip gymnasium floor system consisting, in general, of maple flooring, wood subflooring, vapor retarder, sanding, sealers, finishes, game lines and wall base.

The information is from only one provider of this product, Horner Flooring Company, and is included here as an example. There are other providers for this product.



Horner Flooring and its respective employees can be contacted at the addresses, numbers, and e-mails listed below.

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Suppliers of the NCAA® Final Four® floor for twenty years 1986 - 2005

Games of the XXIIIrd Olympiad, Los Angeles, 1984.

FIXED SLEEPER SYSTEM

HORNER
SINCE 1891

Horner's Fixed Sleeper Floor System is the oldest proven maple athletic system available. This premium sports floor is designed for high performance, resiliency, and reliability.

The 2" x 4" (51mm x 102mm) (nominal) sleepers are anchored to a concrete slab, and a 1" x 6" (25mm x 152mm) (nominal) sub-floor is laid at an angle on top of the sleepers. This arrangement, combined with the 16" (406mm) o.c. spacing of the sleepers, allows for uniform air circulation, which reduces the possibility of buckling and cupping brought on by excessive moisture buildup. The all-wood Fixed Sleeper Floor System is shock absorbent and reduces leg fatigue.

PART 1-GENERAL

1.1 DESCRIPTION

A. This document specifies a wood strip gymnasium floor system consisting, in general, of wood sub-flooring, maple flooring, vapor retarder, sanding, sealers, finishes, game lines, and wall base.

B. The general contractor shall provide a concrete slab, smooth troweled and level to a tolerance of 1/8" (3mm) in 10'0" (3m) radius, subject to the approval of the wood flooring contractor. LABOR AND MATERIALS NECESSARY TO PUT THE CONCRETE SLAB IN ACCEPTABLE CONDITION (HIGH AREAS GROUND DOWN AND LOW AREAS FILLED WITH APPROVED LEVELING COMPOUNDS) SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
   1. Concrete slab depression shall be:
      a. 3 1/8" (79mm) for 25/32" (20mm) thick flooring.
      b. 3 3/8" (86mm) for 33/32" (26mm) thick flooring.
   2. Concrete subfloors shall have an adequate vapor retarder beneath and at the perimeter of the slab.

1.2 QUALITY ASSURANCE

A. Supplier Qualifications
   1. Supplier of wood flooring shall be Horner Flooring Company.

B. Installer Qualifications
   1. Flooring contractor shall be a firm experienced in installing maple flooring systems.

C. Flooring shall be stored on the premises a minimum of seven (7) days before installation commences, or as required for acclimation. Final determination as to acclimation will be made by the flooring contractor.

D. All flooring bundles should be broken and loosely piled to acclimate the flooring to moisture conditions in the building.

1.3 WORKING CONDITIONS

A. The flooring system shall not be delivered or installed until all masonry, plastering, tile work and all overhead mechanical trades are completed and building is enclosed and weathertight.

B. Permanent heat, light and ventilation shall be installed and operating during and after installation, maintaining a temperature range of 55°F (13° C) to 75°F (24° C) and a relative humidity range of 35% to 50%.

1.4 WARRANTY

A. Horner Flooring Company hereby warrants the FIXED SLEEPER SYSTEM flooring materials to be free from manufacturing defects for a period of one year from the date of substantial completion of the floor.

PART 2-PRODUCTS

2.1 MATERIALS

A. Flooring shall be Horner Maple, 33/32" (26mm) or 25/32" (20mm) thick x 2¼" (57mm) or 1½" (38mm) wide, First, Second and Better, Third and Better or Third Grade, continuous tongue and groove and end-matched MFMA Northern Hard Maple, grade marked and stamped as manufactured by Horner Flooring Company.
   OPTION: Horner Long Life™ flooring if so specified.

B. Vapor retarder shall be 6 mil polyethylene.

C. Sleepers shall be 2" x 4" (51mm x 102mm) (nominal), Fir, Spruce, or Hemlock, S4S.

D. Subfloor shall be 1" x 6" (25mm x 152mm) (nominal), No. 2, Fir, Spruce, or Hemlock, S2S to ¾" x 6" (19mm x 152mm).
   OPTION: 15/32" x 4' x 8' (12mm x 122cm x 244cm) rated sheathing, exposure 1, plywood.

E. Sleeper anchors shall be 2½" (64mm) or 3" (76mm) long, 3/8" (10mm) Rawl type expandable concrete fasteners with minimum pull-out strength of 900 pounds (409kg).

F. Fasteners
   1. Subfloor fasteners shall be 6d (51mm) nails or 1¾" (45mm) staples.
   2. Flooring fasteners shall be 2" (51mm) barbed cleats or 15 gauge (1.8mm) coated staples.
      OPTION: If Horner Long Life™ is specified, use 2" (51mm) 15 gauge (1.8mm) staples only.

G. Spacers (shims) shall be 3" x 1½" (76mm x 38mm), made from 1/8" (3mm) thick and ¼" (6mm) thick tempered masonite or equal material.
H. Primer shall be asphalt cut back applied at a coverage of 275 sq.ft./gallon (6.741 m^2/liter).
I. Mastic/grout shall be hot pour steep roofing asphalt.
J. Wall Base shall be 3" x 4" (76mm x 102mm) Vent Cove heavy duty molded, vented vinyl base with premolded outside corners and mitered inside corners as supplied by Horner Flooring Company.
K. Finish material shall be as specified by architect selected from the latest listing provided by the MFMA and shall be applied according to manufacturer's instructions.

PART 3-EXECUTION

3.1 INSPECTION

A. Inspect concrete slab for proper tolerance and dryness and report any discrepancies to the general contractor for correction.
B. The concrete slab shall be cleaned of all debris so flooring contractor will have adequate access to work surface.
C. All work required to put the concrete slab in an acceptable condition shall be the responsibility of the general contractor.

3.2 INSTALLATION

A. Cover concrete with 6 mil polyethylene, sealing and lapping joints a minimum of 4" (102mm).
B. Prime concrete at 275 sq.ft./gallon (6.741 m^2/liter).
C. Install sleepers across short dimension of the area (perpendicular to the finish floor), 12" (305mm) or 16" (406mm) o.c., with ends butted and joints staggered by 24" (610mm). Provide a 2" (51mm) expansion void at the perimeter and all vertical obstructions. Anchor sleepers with drivepins, shimming to level with 1/8" (3mm) or 1/4" (6mm) masonite shims.
D. Pour hot-pour asphalt mastic to a level 1/8" (3mm) above bottom of sleepers.
E. Subfloor
    1. Install 1" x 6" (25mm x 152mm) (nominal) subflooring diagonally to sleepers. Break all joints over sleepers with ends butted and sides spaced 1" (25mm). Securely nail or staple to the sleepers.
    OPTION: Install ¾" (19mm) plywood with 8' (244cm) edge at right angles to sleepers. Break 4' (122cm) edge of plywood over sleeper. Space all sides of plywood ¼" (6mm) and securely nail or staple to sleepers.
F. Install finish flooring parallel with main playing court by power nailing or stapling approximately 12" (305mm) o.c.
    1. Space Joints between flooring strips to allow for intermediate expansion, as designated by the installer and in accordance with humidity conditions in the region.
    2. Provide 2" (51mm) expansion voids at the perimeter and at all vertical obstructions.

3.3 FLOOR SANDING

A. Machine sand with coarse, medium and fine paper to a smooth, even and uniform surface.
B. Remove sanding dust from entire surface by tack or vacuum.
C. Refer to MFMA sanding and finishing guide for procedures.

3.4 FINISHING

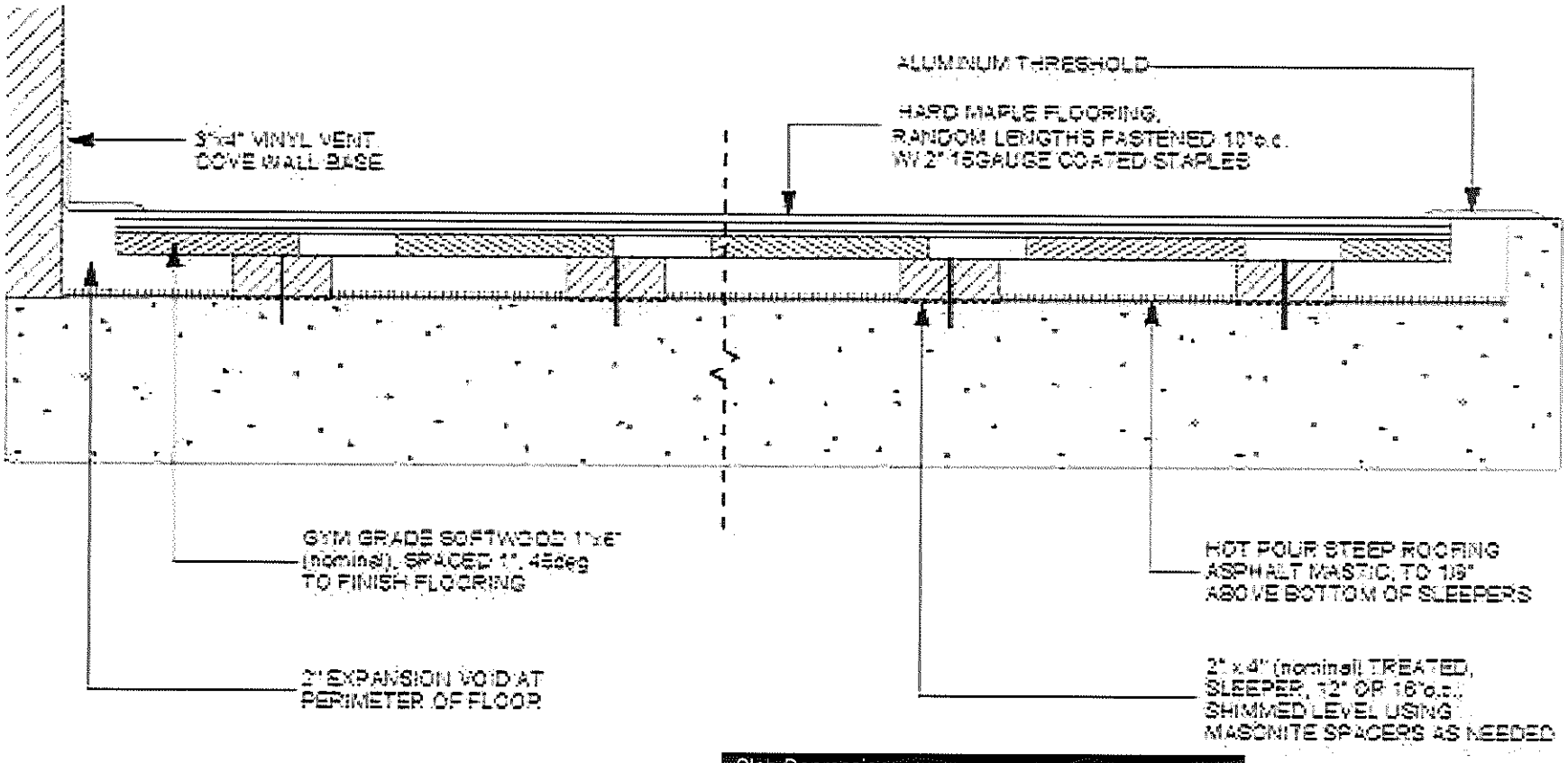
A. Inspect entire area of floor to insure that surface is acceptable for finishing, completely free from sanding dust and perfectly clean.
B. Apply seal and finish per manufacturer's instructions.
    1. Apply two (2) coats of seal and two (2) coats of finish.
C. Buff and clean floor between each coat.
D. Paint game lines as shown on drawings, between seal and first coat of finish.
E. Game line paint shall be compatible with finish.

3.5 BASE INSTALLATION

A. Install maple or vinyl Vent Cove base along the perimeter walls. Mitre all inside corners and maple outside corners; use premolded outside corners with vinyl base. Attach vinyl cove base to walls.

3.6 MAINTENANCE

A. Upon completion of floor, the owner, attendants or individuals in charge and responsible for the upkeep of the building are to see that the care and maintenance instructions of the Horner or MFMA Care Card are followed.

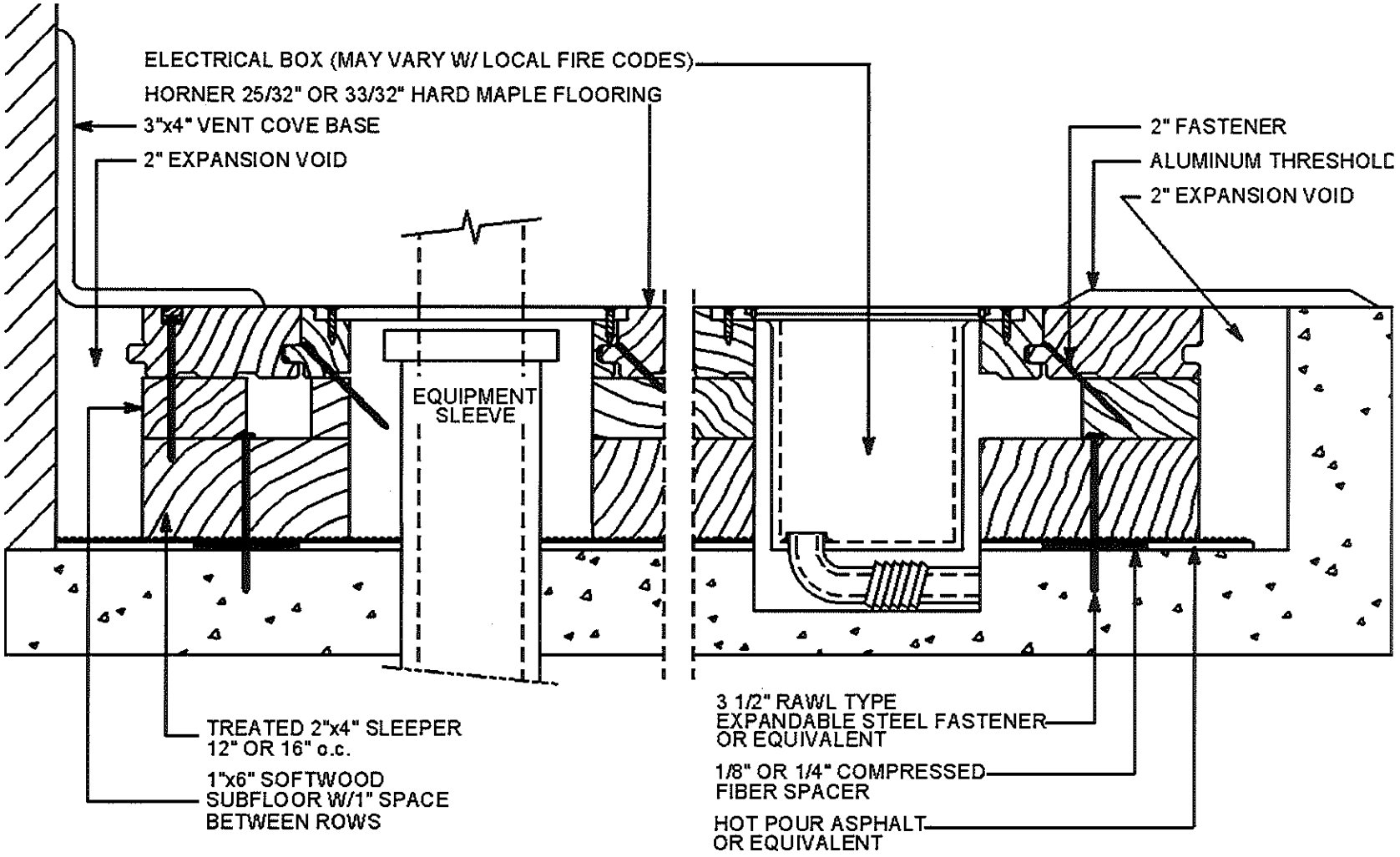


Slab Depression		
Flooring	25/32" (20mm)	33/32" (26mm)
	3 -1/8" (79mm)	3 -3/8" (86mm)

FIXED SLEEPER SYSTEM

Horner Flooring

Drawing Rev. 08-06



FIXED SLEEPER SYSTEM

Gym Floor Example

Polypropylene Flooring

The following information is from a manufacturer that sells and installs one of the newer synthetic floor systems. This document specifies the complete installation of sports surfacing including the interlocking high-impact polypropylene tile, supportive rubber underlayment and striping.

The information is from only one provider of this product, Sport Court International, and is included here as an example. There are other providers for this product.

SPORT COURT

Residential

BACKYARD GAME COURTS | IN-HOME FLOORING | PUTTING GREENS

CHECK OUT OUR SPECIAL OFFERS

Commercial

ATHLETIC SURFACES | PORTAFLOOR

CONTACT US

Contact Sport Court

Your Sport, Our Court.
Since 1974.

General Information

Post:
Sport Court International
939 South 700 West
Salt Lake City, UT 84104

Phone:
800.421.8112
Email:
info@sportcourt.com

Search for a Local Dealer

COMPANY INFO | CONTACT SPORT COURT | PRIVACY / LEGAL | FAQS | DEALER LOGIN | CONNOR HARDWOOD COURTS | INTERNATIONAL

ResponseMaple™

A high performing floor for middle and secondary school gyms, this surface has a hardwood look without the hardwood cost. ResponseMaple™ can be retrofitted over most existing surfaces, including VCT/VAT and concrete, and requires no adhesive or anchors.

SPORT COURT®

THE UNDISPUTED CHAMP FOR GYM FLOORING

Since 1974 Sport Court has developed more than 50,000 projects worldwide with our network of over 220 independent dealers. We continually surpass the expectations of even the most demanding coaches, players, architects and builders. ResponseMaple™ is versatile enough to switch from volleyball to basketball to choir practice and is the perfect choice whether you're retrofitting an existing gym or building a new one.

SPECS

SYSTEM TYPE	Modular– Polypropylene
BALL BOUNCE	Excellent
LOAD CAPACITY	200 psi
COEFFICIENT OF FRICTION	Pass
SHOCK ABSORPTION	ASTM F 1292* 11" pass
ABRASION RESISTANCE	Excellent
SANITARY	Resistance to Fungi, bacteria and other organisms
LATERAL FORGIVENESS™	Excellent
TILE DIMENSIONS	9.842" x 9.842" x 1/2" (25cm x 25cm x 12.7mm)
COLOR AVAILABILITY	Maple
SOLID COLOR OPTIONS	Pearl Royal Blue, Pearl Burgundy, Pearl Steel, Pearl Evergreen, Pearl Navy Blue, Pearl Beige, Pearl Graphite, Pearl Silver Blue, Pearl Gold, Ultra Red, Shamrock, Pearl Orange, Pearl Purple, Stone, Pearl Shamrock, Black, ICE Blue Special orders available

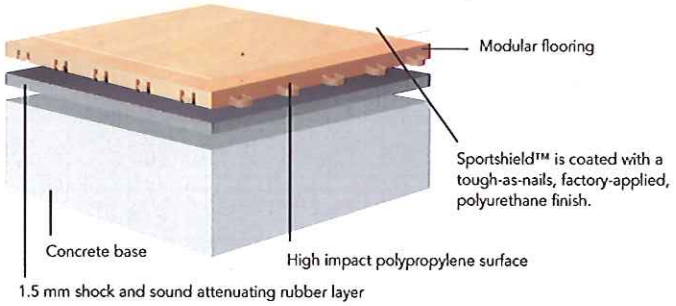
*Based on ASTM F 1292 test

SPORT COURT®

YOUR SPORT, OUR COURT

SINCE 1974

ResponseMaple™ Sports Surface



BENEFITS

- Lowest life cycle costs
- Installs in less than 5 days
- Retrofits over existing floors
- No environmental condition restrictions
- Low maintenance costs
- Lateral Forgiveness™ - Helps reduce joint stress and fatigue

RESPONSE IS ALSO AVAILABLE IN THESE SOLID COLOR OPTIONS

NOTE: Color samples are reproduced as closely as possible. They may not represent an exact color match to the modular court surface.

800.653.6527 **sportcourt.com/flooring**

The following organizations have approved and use SPORT COURT® flooring:

Volleyball Badminton Volleyball Basketball Futsal Tennis

©2006 Sport Court® is a registered trademark of Connor Sport Court International, Inc.

SECTION 09624 – MODULAR ATHLETIC FLOORING

PART 1 - GENERAL

1.1 DESCRIPTION

A. Scope
   1. The complete installation of sports surfacing including the interlocking high-impact polypropylene tile, supportive acoustical underlayment and striping.

B. Related work specified under other sections.
   1. CONCRETE SUBFLOORS - SECTION 03_ _ _
      a. The General Contractor shall furnish and install the concrete subfloors.
      b. The slab shall be steel troweled to a medium-dense finish to a tolerance of 1/8" in any 10' radius.
   2. GAME STANDARD INSERTS - SECTION 11_ _ _

1.2 REFERENCES

A. ASTM (American Society for Testing & Materials)
   1. ASTM C1028
   2. ASTM D 256
   3. ASTM D 638
   4. ASTM D 648
   5. ASTM D 696
   6. ASTM D 785
   7. ASTM E 1745
   8. ASTM D 1929
   9. ASTM G-21

1.3 SUBMITTALS

A. Sport Court® ResponseMaple™ specifications.
B. One sample of specified system and color choices, if requested by Architect.
C. Sport Court® Modular Flooring Care & Maintenance Guide.

1.4 QUALITY ASSURANCE

A. MATERIAL SUPPLIER: Shall be Sport Court® Inc.
B. INSTALLER:
   The complete installation of the flooring system, as described in these specifications, shall be carried out by a certified, authorized, factory trained dealer or representative as per current installation guidelines.

1.5 DELIVERY, STORAGE AND HANDLING

A. Materials must be delivered in manufacturer's original, unopened and undamaged packaging with identification labels intact.
B. Store material protected from exposure to harmful weather conditions, on a clean, dry, flat surface protected from possible damage.

1.6 SITE CONDITIONS

A. Installation of modular flooring materials shall not commence until all other finishes and overhead mechanical trades have completed their work in the modular floor areas.
B. Subfloors shall be clean, dry and free from dirt, dust, oil, grease, paint, old adhesive residue or other foreign materials.
C. The facility must be completed to the extent that temperature conditions that will normally be present during the life of the floor shall be maintained for 72 hours prior to, during and after installation.
D. Flooring installation shall not begin until the levelness of concrete subfloors has been met and the sub floor is properly prepared by the General Contractor, as set forth in section 1.1B and 1.6B of this specification.
E. Environmental Limitations

1. Comply with Sport Court's requirements.
2. Adhere to all MSDS requirements for materials employed in the work. Protect all persons from exposure to hazardous materials at all times.

F. After modular floors are installed and the game lines painted, the area is to be closed for 72 hours to allow curing time for the painted lines. No other trades or personnel are allowed on the floor until it has been accepted by the owner.

1.7 WARRANTY

A. Sport Court® provides a limited warranty of ten (10) years on the materials it has supplied. (A copy of the full warranty, with its Terms and Exclusions, is available from the authorized Sport Court Dealer.) This warranty is expressly limited to the flooring materials (goods) supplied by Sport Court®. This warranty does not cover floor damage caused (wholly or in part) by fire, winds, floods, moisture, other unfavorable atmospheric conditions or chemical action, nor does it apply to damage caused by ordinary wear, misuse, abuse, negligent or intentional misconduct, aging, faulty building construction, concrete slab separation, faulty or unsuitable subsurface or site preparation, settlement of the building walls or faulty or unprofessional installation of Sport Court® flooring systems.

B. Sport Court® shall not be liable for incidental or consequential losses, damages or expenses directly or indirectly arising from the sale, handling or use of the materials (goods) or from any other cause relating thereto, and their liability hereunder in any case is expressly limited to the replacement of materials (goods) not complying with this agreement or, at their election, to the repayment of, or crediting buyer with, an amount equal to the purchase price of such materials (goods), whether such claims are for breach of warranty or negligence. Any claim shall be deemed waived by buyer unless submitted to Sport Court® in writing within 30 days from the date buyer discovered, or should have discovered, any claimed breach.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Sport Court® ResponseMaple™ Patented Suspending Flooring - Metric, solid-top design shall be, high-impact polypropylene, copolymer suspended modules with a patented hexagonal cell support structure as supplied by Sport Court®. Proprietary Maple Graphic design with a factory applied, wear resistant, polyurethane clear coat. The tile shall have a Lateral Forgiveness™ positive locking system.

B. Size – 9.842" x 9.842" x ½" (25cm x 25cm x 12.7mm)

C. Weight - 0.62 lbs. (280g).

D. Material Test Results
   1. Rockwell hardness (ASTM D 785): 61 R
   2. Heat deflection @ 66 psi (ASTM D 648): 77°C
   3. Auto-ignition temperature (ASTM D 1929): 570°C
   4. CLTE: (ASTM D 696): 14.4 mm/mm°C x 10-5
   5. Tensile Yield Strength (ASTM D 638) 2800 psi
   6. Elongation at Yield (ASTM D 638) 5%
   7. Notched Izod (ASTM D 256) 11 (FT-LBS / IN) at 23°C

E. Product Test Results
   1. Friction Test (ASTM C1028) Dry /Wet: 0.60 / 0.67
   2. Flatness: 0.0mm ±0.5mm
   3. Lateral Forgiveness™: +0.045 / -0

F. Load Bearing Capacity: 210 psi

G. Underlayment – Multi-purpose recycled rubber underlayment supplied by Sport Court, Inc.

H. Sanitary Information
   1. Resistance to fungi (when tested in compliance with ASTM G-21 and MIL standard 810-D procedure 508.3). All basic organisms tested (ATCC #6205-11797) and were found to have zero growth.
   2. Resistance to the following:
      a. Bacteria and mildew resistance
      b. Gram-positive bacterial Staphylococcus Aureus
      c. Gram-negative Klebsiella Pneumoniae
      d. Pink-staining organism
      e. STV Reticulum
      f. Surface fungi growth prior to and following leaching
I. Game Line Paint
   1. Primer – proprietary tile primer as supplied by Sport Court®.
   2. Paint - aliphatic polyurethane as supplied by Sport Court®. Select from standard colors.

PART 3 - EXECUTION

3.1 INSPECTION

A. Inspect concrete slab for contamination, and levelness. Report any discrepancies to the General Contractor.
B. Concrete slab shall be broom cleaned, and wet mopped (for dust removal) by the General Contractor.
C. Installer (Flooring Contractor) shall document all working conditions as specified in PART 1 – GENERAL prior to starting installation. Report any discrepancies to General Contractor.

3.2 INSTALLATION

A. Underlayment - Rubber underlayment will be unrolled and allowed to relax. All butt joints shall be properly trimmed, fitted, and seamed together with an approved all-purpose tape.
B. Floor will be installed to pre-approved layout.
C. Minimum clearance at all vertical obstructions of 3/4 inch is required.
D. Floor surface shall be clean and free of debris.
E. Game Lines
   1. Use only high quality masking tape approved by Sport Court®.
   2. Lines shall be primed and painted using proprietary Sport Court® primer and recommended aliphatic polyurethane paint.
   3. Provide game lines as indicated on drawings.
F. Optional: Wall Base - Install approved base and anchor to walls with base cement.
G. Remove all excess and waste materials from the area of work. Dispose of empty containers in accordance with federal and local statutes.

END OF SECTION 09624

Railing Example

Glass Railing

The following information is from a manufacturer that sells a typical glass railing system. The glass railing system will be installed at the correct height for the safety of the spectators and will also allow for easy viewing of the action on the Gym Floor.

The information is from only one provider of this product, The Wagner Companies, and is included here as an example. There are other providers for this product.

The Wagner Companies
R & B Wagner • J.G. Braun • Wagner Industrial

Live Support OFFLINE

How to Contact The Wagner Companies

R & B Wagner, Inc. • J.G. Braun Company

Mailing Address:
P.O. Box 423
Butler, WI 53007-0423

Office Address :
10600 West Brown Deer Rd.
Milwaukee, WI 53224

Warehouse Pick-Up and Polishing Drop-Off:
Use 107th Street Entrance Just North of Brown Deer Rd.
Milwaukee, WI 53224

Toll Free Phone: 1-888-243-6914
Local:1-414-214-0444
Fax: 1-414-214-0450
General Email: info@mailwagner.com

Other Important Numbers

Department	*Phone*	*Email*	*Contact*
Human Resources	414-214-8388	kkirst@mailwagner.com	Kathy Kirst
Accounts Payable	414-214-8351	eoduro@mailwagner.com	Esther Oduro
Accounts Receivable	414-214-8330	dbraga@mailwagner.com	Diane Braga
Sales	888-243-6914 Option 1 - Catalog sales Fax: 414-214-0449	info@mailwagner.com	
Estimating	888-243-6914 Option 2 - Special Services Fax: 414-355-3576	info@mailwagner.com	
Polishing	414-214-8365	polishing@mailwagner.com	Nou Vang

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RAILING CAPS

Aluminum
Extruded, 6063-T52, Mill Finish. Suitable for Anodizing.

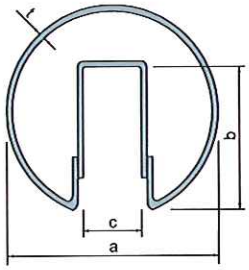
Brass
C27000, Yellow Brass, Satin or Polished Finish.

Stainless Steel
Type 304, Satin or Polished Finish.

Contact **Wagner** regarding other finishes.

Gail 1/1

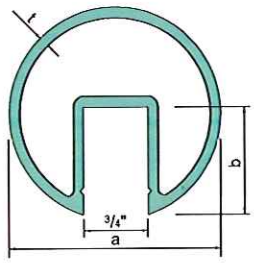
ROLL FORMED CAP RAIL 10' Length, except as noted



Two roll formed sections are welded together to provide this configuration. For ½" or ¾" glass, as noted. ***-14*** after the number indicates 14' lengths.

a	b	c	glass	t	Brass Satin Finish	Brass Polished	Stainless Satin Finish	Stainless Polished
1½"	1"	⅝"	½"	.050"	GR415L.4	GR415L.7	GR315L.4	GR315L.7
2"	1½"	¾"	½"	.050"	GR420L.4	GR420L.7	GR320L.4	GR320L.7
2"	1½"	⅞"	¾"	.050"			GR3207.4	GR3207.7
2"	1½"	⅞"	¾"	.050"			GR3207.4-14	GR3207.7-14
2½"	1½"	¾"	½"	.065"	GR425L.4	GR425L.7	GR325L.4	GR325L.7
2½"	1½"	⅞"	¾"	.062"			GR3257.4	GR3257.7
2½"	1½"	⅞"	¾"	.062"			GR3257.4-14	GR3257.7-14
3"	1½"	¾"	½"	.065"	GR430L.4	GR430L.7	GR330L.4	GR330L.7
3½"	1½"	¾"	½"	.065"	GR435L.4	GR435L.7	GR335L.4	GR335L.7
4"	1½"	¾"	½"	.065"	GR440L.4	GR440L.7	GR340L.4	GR340L.7

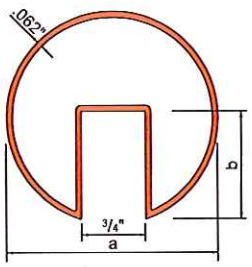
EXTRUDED CAP RAIL 20' Lengths, Mill Finish



a	b	t	Aluminum	Satin Anodized Aluminum
1.66"	1"	.109"	GR2166	GR2166.4AN
1.90"	1¼"	.109"	GR2190	GR2190.4AN
2"	1¼"	.125"	GR2200	GR2200.4AN
2½"	1¼"	.125"	GR2250	GR2250.4AN

Suitable For Bending

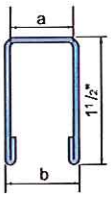
DRAWN CAP RAIL 16' Lengths



a	Brass Satin Finish	Brass Polished
2"	GR420V.4	GR420V.7
2½"	GR425V.4	GR425V.7

Suitable For Bending

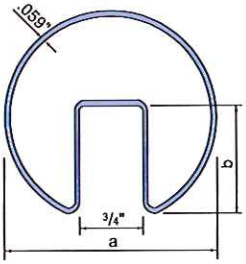
U-CHANNEL CAP RAIL .062" Thick, 10' Lengths



a	b	glass	Stainless Satin Finish	Stainless Polished
¾"	⅞"	½"	GR30915.4	GR30915.7
1"	1⅛"	¾"	GR31115.4	GR31115.7

The U-Channel Cap protects the glass edge and secures glass panels together. Use with PVC inserts **GR9394** or **GR9395** with silicone **GR95CBL** to secure glass. Many local codes require that the glass cap railing meet a specific load requirement. Confirm with your local authorities prior to specifying the use of this glass cap style.

ROLL FORMED CAP RAIL 18' Lengths



These stainless steel sections have *no visible seam*. For use with ½" glass or Wagnerail panels. See page 27 to 33. Type 316 alloy available on special order.

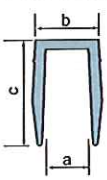
Suitable For Bending

a	Stainless Satin Finish	Stainless Polished
1¼"	GR3166.4	GR3166.7
1½"	GR3190.4	GR3190.7
2"	GR3200.4L	GR3200.7
2½"	GR3250.4L	GR3250.7

.4 indicates a circumferential satin finish; .4L indicates a longitudinal satin finish.

Code Note: *Many building codes require that glass railings have a minimum of 3 lites of glass with a guard rail cap in place that meets the structural load requirement for the guard. In the event of a panel failure, this will allow the guard rail to remain supported by at least two panels of glass.* ***In an end condition, if the cap rail is not affixed to the structure, this code may limit the width of the end panel since the cantilever stress on the cap rail needs to be taken into account.***

PROTECTIVE INSERT

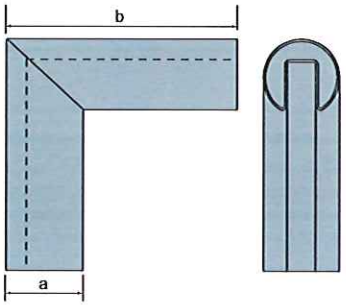


a	b	c	length	PVC
⅜"	¾"	1"	10'	GR9396
½"	¾"	1"	10'	GR9397
½"	¾"	1¼"	10'	GR9394
¾"	⅞"	1¼"	10'	GR9395

These inserts protect the top edge of the glass from making contact with the metal rail cap. Secure with **GR95CBL** Silicone. Choose based on depth of Cap Rail and thickness of panel.

FITTINGS

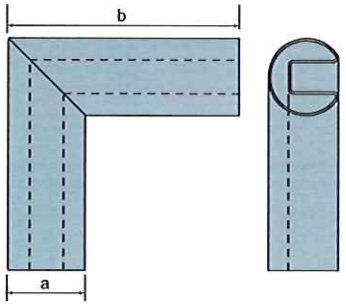
Available in satin and polished finishes. Contact **Wagner** regarding availability.

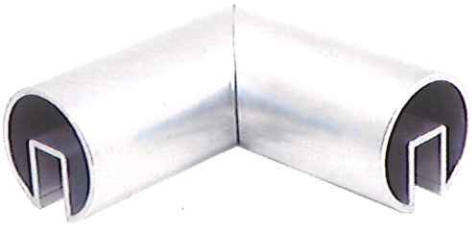


Miter Elbows require Internal Splice for attachment to Slotted Tubing.

Contact Wagner regarding custom angled elbows

VERTICAL MITER ELBOW





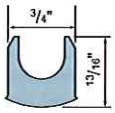
HORIZONTAL MITER ELBOW

MJ 1/1

END CAPS

Design varies by diameter. Confirm at time of order.

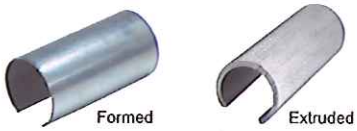
SLOTTED TUBE INSERT



Neoprene
LU001
Available in one foot increments.

This insert is useful in closing up gaps between Light Strips, brackets and mounting clips within the Cap Rail slot. Apply silicone sealant/adhesive to interior of channel on slotted Cap Rail and insert as required.

INTERNAL SPLICE



Sleeve style varies based on Cap Rail. Roll Formed Sleeves are set into place with Lido-Weld Adhesive. Extruded Aluminum Sleeves require 3M Scotch-Weld Epoxy. Confirm at the time of your order.

ADHESIVE

For connections of **all** metals – including aluminum – where air flow permits curing, use **3M Scotch-Weld Epoxy.**

For stainless steel and brass connections where metal-to-metal contact restricts air curing, use **Lido-Weld Adhesive.**

3M SCOTCH-WELD

SA533 Applicator Gun
SA531 Epoxy

LIDO-WELD

14664 1.10 oz.

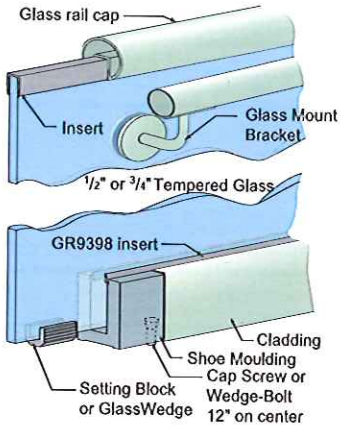
Add a suffix of **.4** for satin finish or **.7** for polished finish – i.e. **GR2166MK.4** is a *Horizontal Miter Elbow with a Satin Finish.*

a	b	Alloy	Cap Rail	Horizontal Miter Corner	Vertical Miter Corner	End Cap	Internal Splice
1.66"	6"	Aluminum	GR2166	GR2166MK	GR2166MKV	GR2166E	GR2166S
1.90"	6"	Aluminum	GR2190	GR2190MK	GR2190MKV	GR2190E	GR2190S
2.00"	6"	Aluminum	GR2200	GR2200MK	GR2200MKV	GR2200E	GR2200S
2.50"	6"	Aluminum	GR2250	GR2250MK	GR2250MKV	GR2250E	GR2250S
1.50"	6"	Stainless	GR315L	GR315LMK	GR315LMKV	GR315LE	GR315LS
1.66"	6"	Stainless	GR3166	GR3166MK	GR3166MKV	GR3166E	GR3166S
1.90"	6"	Stainless	GR3190	GR3190MK	GR3190MKV	GR3190E	GR3190S
2.00"	6"	Stainless	GR3200	GR3200MK	GR3200MKV	GR3200E	GR320LS
2.00"	6"	Stainless	GR320L	GR320LMK	GR320LMKV	GR320LE	GR320LS
2.50"	6"	Stainless	GR3250	GR3250MK	GR3250MKV	GR3250E	GR325CS
2.50"	6"	Stainless	GR325L	GR325LMK	GR325LMKV	GR325LE	GR325LS
3.00"	6"	Stainless	GR330L	GR330LMK	GR330LMKV	GR330LE	GR330LS
3.50"	6"	Stainless	GR335L	GR335LMK	GR335LMKV	GR335LE	GR335LS
4.00"	6"	Stainless	GR340L	GR340LMK	GR340LMKV	GR340LE	GR340LS
1.50"	6"	Brass	GR415L	GR415LMK	GR415LMKV	GR415LE	GR415LS
2.00"	6"	Brass	GR420L	GR420LMK	GR420LMKV	GR420LE	GR420LS
2.00"	6"	Brass	GR420V	GR420VMK	GR420VMKV	GR420VE	GR420VS
2.50"	6"	Brass	GR425L	GR425LMK	GR425LMKV	GR425LE	GR425LS
2.50"	6"	Brass	GR425V	GR425VMK	GR425VMKV	GR425VE	GR425VS
3.00"	6"	Brass	GR430L	GR430LMK	GR430LMKV	GR430LE	GR430LS
3.50"	6"	Brass	GR435L	GR435LMK	GR435LMKV	GR435LE	GR435LS
4.00"	6"	Brass	GR440L	GR440LMK	GR440LMKV	GR440LE	GR440LS

SHOE MOULDING

Now available in three styles and two hole configurations. Produced from extruded aluminum, they may be anodized, painted or clad to match the cap railing or area decor.

Shoe moulding may be surface mounted, fascia mounted or embedded in concrete. The shoe is the key to the structural integrity of any glass railing system. Proper attachment is extremely important – refer to page 42. Tempered glass is set in the shoe moulding using either a wet glaze – page 43 – or the new dry glaze, GlassWedge® System – page 44.



HOLE CONFIGURATIONS:

- 12" on center beginning 6" from the end:
  - **Countersunk Holes** are drilled for ½", flat head, socket head screws for attachment to tapped steel substrate.
  - **Counterbored Holes** are for ⅜" × 4" Wedge-Bolt anchors for attachment to concrete.

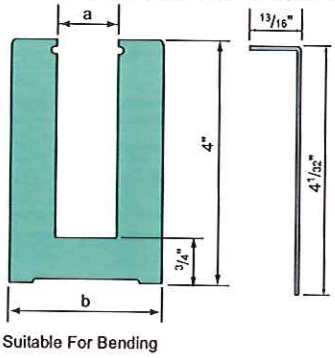
LENGTH TOLERANCES: +/- ¼"

Numbers in ***Italics*** denote items that may not be available for immediate shipment.

STANDARD SHOE MOULDING

Aluminum, 6063-T52 Alloy — 10' and 20' Lengths

For mounting Glass Railing Systems. May be used with GlassWedge® or standard wet glaze.



Suitable For Bending

a	b	glass	lb/ft	Length	Without Holes	Countersunk Holes	Counterbored Holes
1"	2½"	½"	7.98	20'	GR2850	GR2850H	GR2850HCB
1"	2½"	½"	7.98	10'	GR2850-10	GR2850H-10	GR2850HCB-10
1¼"	2¾"	¾"	8.12	20'	GR2875	GR2875H	GR2875HCB
1¼"	2¾"	¾"	8.12	10'	GR2875-10	GR2875H-10	GR2875HCB-10

CLADDING

10' Lengths

Aluminum Satin Anodized	Brass Polished	Stainless Satin Finish	Stainless Polished
GR2800.4AN	GR4800.7	GR3800.4	GR3800.7

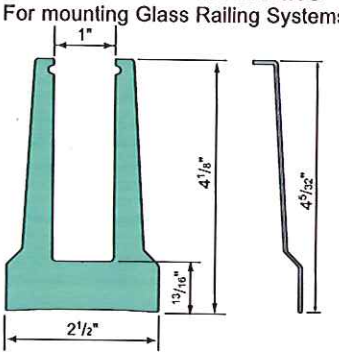
END CAPS

b	Aluminum Satin Finish	Brass Polished	Stainless Satin Finish	Stainless Polished
2½"	GR2850E.4	GR4850E.7	GR3850E.4	GR3850E.7
2¾"	GR2875E.4	GR4875E.7	GR3875E.4	GR3875E.7

TAPERED SHOE MOULDING

Aluminum, 6063-T52 Alloy — 10' and 20' Lengths

For mounting Glass Railing Systems. May be used with GlassWedge® or standard wet glaze.



a	b	glass	lb/ft	Length	Without Holes	Countersunk Holes	Counterbored Holes
1"	2½"	½"	6.10	20'	GR2650	GR2650H	GR2650HCB
1"	2½"	½"	6.10	10'	GR2650-10	GR2650H-10	GR2650HCB-10

CLADDING

10' Lengths

Aluminum Satin Anodized	Brass Polished	Stainless Satin Finish	Stainless Polished
GR2600.4AN	GR4600.7	GR3600.4	GR3600.7

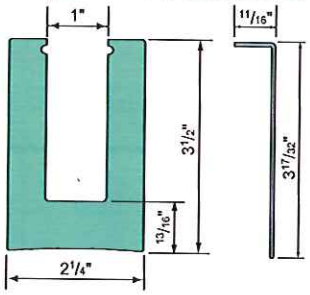
END CAPS

b	Aluminum Satin Anodized	Brass Polished	Stainless Satin Finish	Stainless Polished
2½"	GR2650E.4	GR4650E.7	GR3650E.4	GR3650E.7

LOW PROFILE SHOE MOULDING

Aluminum, 6063-T52 Alloy — 10' and 20' Lengths

Lower profile for use in residential or yacht applications. Standard wet glaze only.



a	b	glass	lb/ft	Length	Without Holes	Countersunk Holes	Counterbored Holes
1"	2¼"	½"	5.70	20'	GR2750	GR2750H	GR2750HCB
1"	2¼"	½"	5.70	10'	GR2750-10	GR2750H-10	GR2750HCB-10

CLADDING

10' Lengths

Aluminum Satin Anodized	Brass Polished	Stainless Satin Finish	Stainless Polished
GR2700.4AN	GR4700.7	GR3700.4	GR3700.7

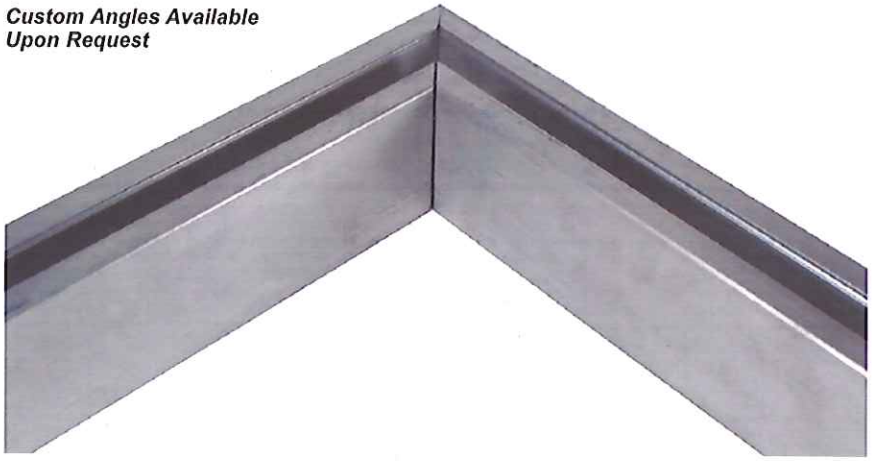
END CAPS

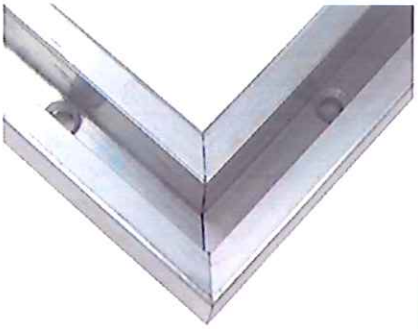
b	Aluminum Satin Anodized	Brass Polished	Stainless Satin Finish	Stainless Polished
2¼"	GR2750E.4	GR4750E.7	GR3750E.4	GR3750E.7

90° MITERED SHOE MOULDING Aluminum, 6063-T52 Alloy

3'-0" long. Pre-drilled shoe has holes drilled 6" from each end and 12" on center.
Sold as a pair.

Custom Angles Available Upon Request





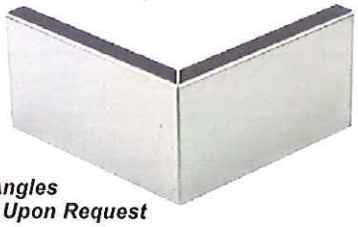
glass	Without Holes	Countersunk Holes	Counterbored Holes
1/2"	GR2850MK	GR2850HMK	GR2850HCBMK
3/4"	GR2875MK	GR2875HMK	GR2875HCBMK

90° CLADDING MITERS

Sold as a set to create both an Inside and Outside Corner. Attach with cladding tape. Inside Corner is provided in two pieces. Outside Corner is notched and formed from one piece.
8" overall length.

INSIDE CORNER

OUTSIDE CORNER



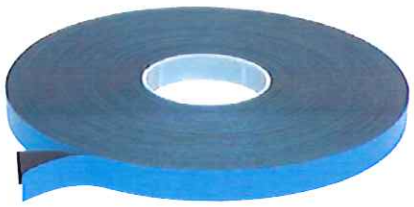
Custom Angles Available Upon Request

Aluminum Satin Anodized	Brass Polished	Stainless Satin Finish	Stainless Polished
GR2800MK.4AN	GR4800MK.7	GR3800MK.4	GR3800MK.7

Steve 31/31

CLADDING TAPE

3/4" × 108' Roll
Pressure sensitive, high strength adhesive used for adhering cladding and end caps to shoe.



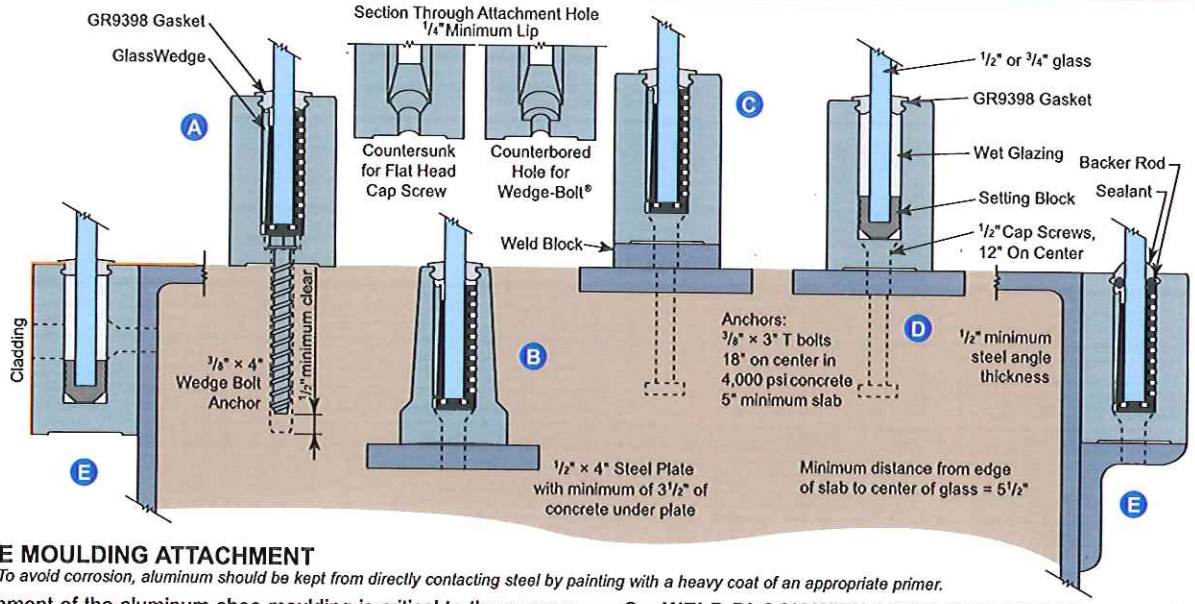
Cladding Tape **GR975**

Recommended Attachment Options

1. *Apply two rows of tape to the vertical face of the cladding and apply a silicone bead between the rows.*
2. *Apply three rows of tape to the vertical face of the cladding.*

3. *Apply silicone to the vertical face of the cladding. Use clamps to hold the cladding in place until the silicone cures.*

Take care to properly align cladding before pressing into place



SHOE MOULDING ATTACHMENT

Note: *To avoid corrosion, aluminum should be kept from directly contacting steel by painting with a heavy coat of an appropriate primer.*

Attachment of the aluminum shoe moulding is critical to the success of any glass railing installation. The details above depict five typical attachment methods. Other methods of attachment are possible but their integrity would need to be determined by the installer in cooperation with their own engineer.

A – ATTACHMENT TO CONCRETE

The shoe mouldings may be attached directly to concrete – 4000 psi minimum – using a ⅜" × 4" Wedge-Bolt®, *Orange Tip,* Anchor. Use the pre-drilled holes in the shoe moulding as a template to drill holes in the concrete. The Wedge-Bolt®, *Orange Tip,* Anchor allows the use of a standard ⅜" × 12" masonry bit. Holes must be drilled a minimum of ½" deeper than the required embedment. Vacuum all loose debris and thread in the Wedge-Bolt Anchor.

B – EMBEDDED IN CONCRETE

When design parameters require a hidden floor attachment, a poured in place shoe may be appropriate. With this attachment method, the glass will appear to rise directly out of the floor.

C – WELD BLOCK WITH STEEL SUBSTRATE

If a structurally sound steel substrate is present and you wish to avoid drilling and matching shoe holes with substrate holes, steel weld blocks may be used. These blocks are mechanically attached to the base of the shoe moulding. The assembly is then placed and aligned in the field and welded. Custom sized cladding is available to cover your weld block attachment.

D – ATTACHMENT TO EMBEDDED STEEL

A ½" × 4" steel strip is drilled and tapped for ½"-13, 12" on center; and ⅜" × 3" T bolt anchors are welded to the underside of the steel strip,18" on center. Prior to placing in wet concrete, insert nylon Allen screws to protect threaded holes and cover the cap screw socket heads with duct tape to keep out the concrete. When cured, remove the Allen screws and secure the shoe moulding with ½"-13 × 1¼" cap screws.

E – FASCIA MOUNT

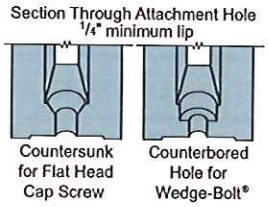
The shoe may be side mounted to a steel angle or substrate as shown. Wagner can pre-drill shoe for fascia mounting as required.

WEDGE-BOLT® – Orange Tip

Steel
Zinc Plated

⅜" × 4" **WB7216**

Insert the Wedge-Bolt® through the base shoe and into the drilled hole. Use downward pressure and begin to turn the Wedge-Bolt® clockwise thereby engaging the first few threads. Continue tightening until firmly seated against the shoe moulding. An impact wrench is recommended to facilitate tightening to a torque of 40 ft/lbs. Go to www.glassrailing.com for complete instructions on proper use of the Wedge-Bolt®.



FLATHEAD CAP SCREWS

Flat head, socket head for mounting to tapped steel substrates. 10 Screws per package.

Stainless

½"-13 × 1¼" **FHSH5013**

Recommended Tools:

Concrete Drilling:
- 15/16" Heavy-Duty Rotary Hammer
- ⅜" × 12" Masonry Bit

Setting Wedge-Bolt®:
- Impact Wrench or Ratchet
- ⅜" Drive, 9/16", Deep Socket, 6 pt Socket

Setting Cap Screw:
- ⅜" Drive, ⅜" Hex Bit

Locate attachments – Flat Head Cap Screws or Wedge-Bolts® – as follows:
- *Lengths less than 1'-6", two attachment minimum.*
- *Lengths between 1'-6" and 2'-6", three attachment minimum.*
- *Lengths over 2'-6", space attachments 12" on center.*
- *The first hole should be located 3" from the end of the shoe moulding on lengths less than 2'-6" and 6" from the end on lengths over 2'-6". Drill additional holes in shoe moulding as required.*

For exterior applications, the heads of the attachments should be covered with silicone.

IMPACT SOCKETS

⅜" Drive

For driving cap screws or Wedge-Bolts®

3" Drive Extension	**DX3830**
9/16" Deep Socket, 6 pt.	**DS3856**
⅜" Hex Bit	**HB3838**

WELD BLOCK

Supplied with centered ½"-13 tapped hole for **GR2850, GR2750** and **GR2650** base shoes. Contact **Wagner** for availability of blocks for use with **GR2875** shoe moulding.

Steel

2¼" × 2½" × ½" **GR150WB**

DRAIN BLOCK

These blocks are placed under exterior installed shoe mouldings to provide drainage. One drain block should be placed under each mounting hole. They may be rotated for use with any available shoe.

Aluminum

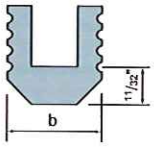
2¼" × 2½" × ⅜" **GR238DB**

PLACE SETTING BLOCKS AND SPACERS

Place *Setting Blocks* – 4" to 6" in length – onto the bottom and ¼ of the length in from the end of each panel. Place panel with *Setting Block* into shoe moulding. Use ¼" *Spacer Block/Sealing Pads* between glass panels to prevent glass-to-glass contact and control the pour.

SETTING BLOCKS

EPDM, 90 Durometer

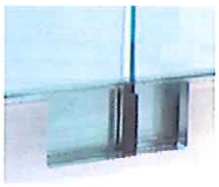


glass	b	length	unit	
½"	1"	25'	spool	**GR9392**
½"	1"	4"	10/package	**GR9392PK**
¾"	1¼"	25'	spool	**GR9393**
¾"	1¼"	4"	10/package	**GR9393PK**

SPACING AND SEALING PADS

¼" Thick, 3⁷⁄₁₆" High, High Density Foam

These die cut foam pads with adhesive on one side act as spacers between panels of glass as well as act as a dam for your desired pour area. Use with rigid spacer blocks – page 45 – for slant pours. Trim as required.



½" Glass	**GR5NSB**
¾" Glass	**GR7NSB**
Spacer Block Tool	**RSB1T**

SECURE AND ALIGN THE GLASS

Secure the glass panels with the Clamp and Alignment Fixture. Attach the *Laser with Bracket* – page 45 – to the glass panel and insert the *Plumb Indicator Bracket.* Turn adjustment knob on the *Clamp and Alignment Fixture* until the *Laser Beam* splits the *Plumb Indicator Line.*

Clamp/Alignment Fixture ***GRAT1***
Wet Glaze Kit with Laser ***ROBOVWK***

Includes: **GRAT1** Fixture, **ROBOV** Laser, Laser Bracket, and Plumb Indicator Bracket – refer to page 45. Note: These items not subject to return.

ROCKITE® CEMENT

With Wet Glaze Pump, mix cement in mixing bucket then insert the inlet hose into the mixture and depress the ON/OFF switch located in the delivery nozzle. Purge any excess water from the hose and release the ON/OFF switch. You are now ready to start pumping cement into the shoe moulding. For exterior applications use Kwikset – see page 196.

Refer to page 196 for more information on anchor cement.

Rockite Cement, 10 lb.	**RK10010**
Rockite Cement, 50 lb.	**RK10051**

NYLON ALLEN SCREWS

½"-13 × 1" **NSS051**

Used to protect the threaded holes in steel attachments from concrete contamination and provide a clearance area behind the attachment. Insert into the threaded steel substrate until top is flush. Cover with duct tape to protect the wrench opening. After the steel attachment is set in concrete, remove the tape and screws so the shoe moulding may be attached.

POUR AND SET THE GLASS

Pour in *Rockite® Cement* to ⅜" below the top. Allow 10 to 15 minutes to set. Finish with *Top Gasket* or *Backer Rod* with *Silicone* –shown below.

WET GLAZE PUMP

- Portable, light-weight, compact delivery system for Rockite® Cement.
- Will pump cement into the shoe at a rate of 11 feet per minute.
- Utilizes a pair of rollers fixed to a rotating disk that squeezes the cement through flexible tubing.

Wet Glaze Pump Kit ***GRP1***

Includes: One Pump with Hoses, One Nozzle, One Momentary ON/OFF Switch, Two 5 Gallon Buckets, Two Measuring Pitchers, One Plastic Scoop, One Mixing Spoon, One GFCI 15A Ground Fault Interrupt Device, and One **GRP2** Replacement Hose Kit. ***Clamp, Allignment Fixture and Laser are not included.***

Hose Replacement Kit ***GRP2***

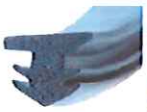
Includes: Hoses, One Nozzle and Clamps.

POURING RAMP

Neat and effective method to manually deliver Rockite® Cement into the shoe moulding. This Pouring Ramp provides a wide delivery area for mess-free pouring of cement into the shoe moulding. It shields the gasket retention groove area in the shoe eliminating further clean-up.

Pouring Ramp **GRP35**

TOP GASKET FOR SHOE



½" Wide × ⁷⁄₁₆" High, EPDM – 50-60 Durometer. Rubber gasket finishes off the top of the shoe moulding pocket after glass has been set. A Vinyl Roller Tool is available to simplify installation.

Gasket 25'	**GR9398-25**
Gasket 50'	**GR9398-50**
Gasket 100'	**GR9398-100**
Gasket 500'	**GR9398**
Vinyl Roller Tool	**VR04**

BACKER ROD

When a more positive seal is required for exterior applications, roll in a ⅜" *Foam Backer Rod* and run a cap bead of *Neutral Cure Silicone* over it.

Foam Backer Rod	**GR9B38**
⅜" Stepped Roller Tool	**GWFR38**

SILICONE 10.3 fl.oz.

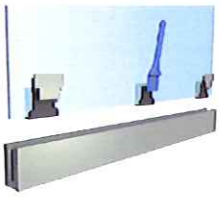
Neutral cure, waterproof formula. Used to adhere cladding to base shoe, cap rail to glass and seal over backer rod.

Black **GR95CBL**

GLASSWEDGE®

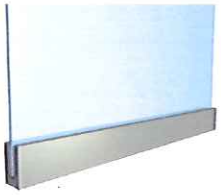
- **Labor time reduced by 50%.**
- **Adjusts for variations in glass thickness and base shoe pocket width.**
- **Grips glass for easy installation.**
- **No messy cement.**
- **Installs from the floor side.**

glass	Plastic Isolator w/Aluminum Wedge
½"	**GR9500**
¾"	**GR9700**



Ready. . .
Place isolators onto the bottom of the glass panel

Set. . .
Tap the aluminum wedge into place using the special chisel available from **Wagner.**



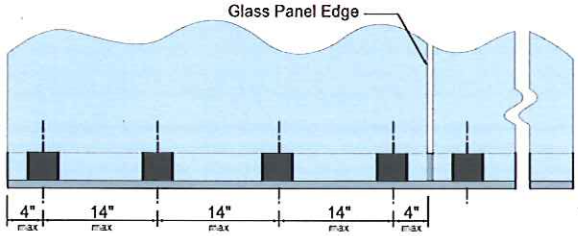
Done!
Check plumb then drive the aluminum wedge to locked position.

The patented GlassWedge® consists of a high impact Plastic Wedge *Isolator* and a high strength Aluminum Wedge. The GlassWedge® provides the installer with a simpler, cleaner method of setting tempered glass panels in **Wagner's** structural shoe moulding. Complete installation instructions and video may be viewed at www.glassrailing.com.

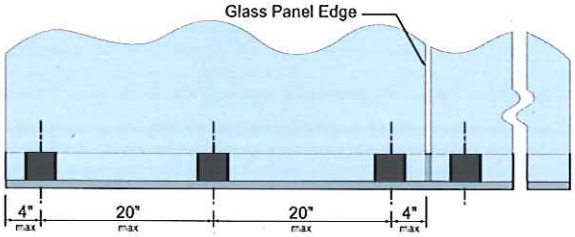
- GlassWedges are available for nominal 1/2" (12mm) and 3/4" (19mm) tempered glass. The system allows for the following variations in glass thickness:
  - For 1/2" (12mm) glass from .470" (11.938mm) to .490" (12.446mm)
  - For 3/4" (19mm) glass from .746" (18.948mm) to .766" (19.456mm)
- Due to tolerance variances in the production of GlassWedge™ components and tempered glass itself, the GlassWedge™ System may not be suitable for all applications.
- GlassWedge™ is not to be used with laminated glass.

*Note: By agreement with the patent holder, the GlassWedge® can only be sold as part of a system that includes the **GR2850H, GR2875H** or **GR2650H** series, pre-drilled Shoe Mouldings.*

GLASSWEDGE® SPACING GUIDELINES



System for 200 lb. point load with 4 × safety factor
14" center-to-center maximum with
4" maximum from center to glass edge.



System for 200 lb. point load with 2 × safety factor
20" center-to-center maximum with
4" maximum from center to glass edge.

GLASSWEDGE® DRY GLAZE SHOE ALIGNMENT SYSTEM

On all multi-panel railings, the mounted shoe should be adjusted, if required, to assure it is plumb to +/- ⅛" at an extended height of 42". Spend the time required to plumb the shoe to this tolerance since the glass will only be as plumb as the shoe.

Position *Plumbing Plate* with *Isolator* in shoe and secure using temporary *Isolator Setting Tool.*

Attach the *Laser with Bracket* to the *Plumbing Plate* and insert the *Plumb Indicator Bracket.*

Shim *Base Shoe* as needed until the *Laser* beam splits the plumb indicator line on the *Indicator Bracket* and secure to substrate. Remove *Plumbing Plate, Indicator* and *Laser.*

View the installation video at www.glassrailing.com

Slip *Isolators* on to bottom of glass panel and adjust to proper spacing shown above.

Insert glass panel into the *base shoe*, adjust panel spacing and insert *Isolator Setting Tool* between *Isolator* and *Shoe Moulding.*

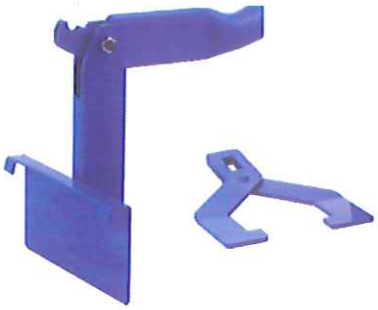
Insert *Aluminum Wedges* at each isolator. Use *Chisel* and *Hammer* to drive *wedges* into locked position. Glass is now secure and ready for *Cap Rail* installation.

HAMMER AND CHISEL

GlassWedge® Aluminum Wedge Setting Chisel **GWCH1**
3 Pound Hand Drilling Hammer **GWHM1**

GLASSWEDGE® REMOVAL TOOL

Wedge yoke, fulcrum tool and handle combine to remove the aluminum locking wedge and permit repositioning or replacement of glass panels.



GlassWedge® Removal Tool **GWRT1**
Includes Wedge Yoke, Fulcrum and 36" Handle.

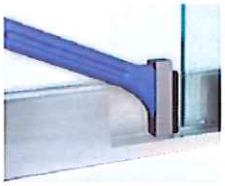
Removes GlassWedges used when shoe moulding is embedded in concrete.

Removal Tool Flush Mount Attachment **GWRT1F**

SPACER BLOCKS AND TOOL

1/4" × 3 5/16" rigid rubber spacing blocks with adhesive provide open spacing between glass panels. They are recommended in all applications but required on stair or ramp installations to prevent the glass from sliding down. Trim height as required.

1/2" Glass	**GR5ASB**
3/4" Glass	**GR7ASB**
Spacer Block Tool	**RSB1T**



ISOLATOR TOOL

Designed to allow aligning of the glass panel without the use of an aluminum wedge.

GlassWedge® Temporary Isolator Tool **GWST1**

TOP GASKET

Refer to page 43 for methods of sealing off the top of the shoe moulding after setting glass panels.

LASER ALIGNMENT TOOLS

Plumbs within 1/32".

Note: These items not subject to return.

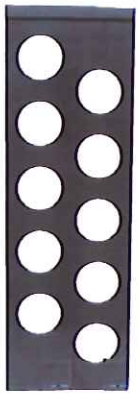
ROBOV Vector 5-Way Laser

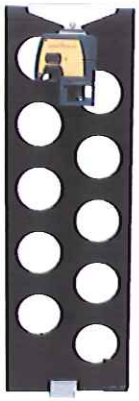
ROBOVP1B Plumb Indicator

ROBOVLB Laser Bracket

PLUMBING PLATE KITS

Note: These items not subject to return.



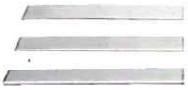


Plumbing Plate Kit ***GRPK1***
Includes: Plumbing Plate, Isolator and Temporary Isolator Setting Tool. Note: These items not subject to return.

Kit with Laser ***ROBOVDK***
Includes everything in the **GRPK1** Kit plus **ROBOV** Laser, Plumb Indicator, and Laser Bracket.
Note: These items not subject to return.

SHIM STRIPS

24" long × 3/4" wide. 10/package
Thicknesses as noted below. These strips are used under one side of the shoe moulding to adjust it plumb before securing with fasteners. Trim or stack as necessary.

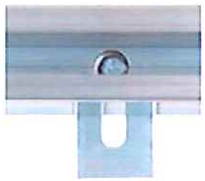


	Aluminum
1/64"	**GR2SS02**
1/32"	**GR2SS03**
1/16"	**GR2SS06**

HORSESHOE SHIMS

2" wide × 3" long. 10/package
Thicknesses as noted below. Will not compress or project beyond the shoe. May be stacked as necessary.

	Aluminum
1/16"	**GR2HS06**
1/8"	**GR2HS12**
1/4"	**GR2HS25**



PANEL CLIPS

This selection of clips is used in the installation of railing infill panels. Clips are available for use with ¼", ⅜" or ½" glass, mesh or solid panels. The brass clips at the bottom of the page are available with both left and right stops to simplify panel installation.

When used in a vertical mount, use the clips with bottom stops or provide holes to match up with the pins on the clips below to keep the glass or panel from sliding down over time.

Note: Mounting screws are not included with panel clips.

Note: *When using tempered glass, holes must be drilled prior to tempering. Minimum hole size is equal to your glass thickness.*

For ½" glass or panel. 2⅛" high

Use With:	Style	Stainless Satin Finish	Stainless Polished
2.00" Tube	Round	152813R-2	162813R-2
Flat	Round	152813R-F	162813R-F

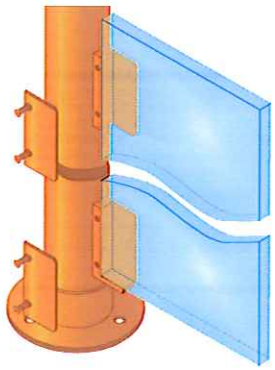
GLASS CLAMP

For ⅜" or ½" glass or panel. 2⅛" high

Use With:	Style	Stainless Satin Finish	Stainless Polished
2.00" Tube	Square	GR320R.4	GR320R.7
Flat	Square	GR320F.4	GR320F.7

For use with ⅜" or ½" glass. Insert the proper set of gaskets for your glass thickness. Use of Security Stud recommended. Mounting hardware included.

BRASS PANEL CLIPS



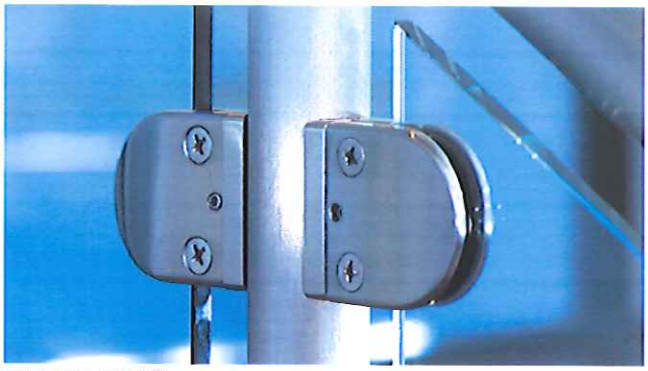
Use silicone to set glass into these brass panel clips.

For ¼" glass or panel, 2⅝" long

Use With:	Brass
1.50" Tube	142812-15
1.50" Tube	142812-15SL†
1.50" Tube	142812-15SR††
2.00" Tube	142812-2
2.00" Tube	142812-2SL†
2.00" Tube	142812-2SR††

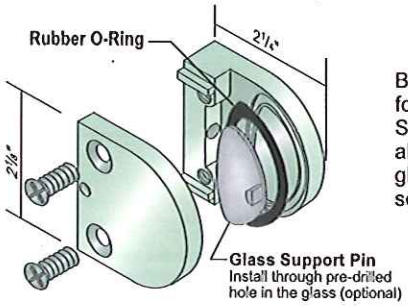
†left glass stop ††right glass stop

Use With:	Brass
Flat	142812-F



GLASSGRIP™

GlassGrip is perfect for all guardrail applications requiring a ¼" infill panel – stainless steel *GlassGrips* include a second set of screws for use with ⅜" glass. The *GlassGrip* tightening system utilizes solid rubber O-rings that hold the glass panels as they securely grip and prevent sliding. The optional pin fits through a pre-drilled hole in the glass for added support. Mounting screw is not included.



Brass ***GlassGrips*** are for ¼" glass. Stainless Steel ***GlassGrips*** may also be used with ⅜" glass by using longer screws, not included.

Use With:	Brass Polished	Stainless Satin Finish	Stainless Polished
2.00" Tube	142816-2	152816-2	162816-2
Flat	142816-F	152816-F	162816-F

For ½" glass or panel, 2⅝" long

Use With:	Brass
2.00" Tube	142813-2
2.00" Tube	142813-2SL†
2.00" Tube	142813-2SR††

†left glass stop ††right glass stop

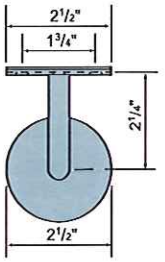
Use With:	Brass
Flat	142813-F

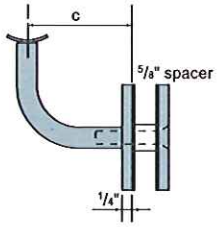
GLASS MOUNT BRACKETS

In a guardrail application – 42" high – codes will generally require that a handrail be provided at a height of between 34" and 38". **Wagner** glass rail mounting brackets permit attachment of brackets directly to the ½" glass structural balustrades. See pages 142 to 155 for other available brackets and components for custom assembly. Contact **Wagner** regarding availability for ¾" glass.

Note: These brackets require that a ¾" hole be drilled in the glass which must be done prior to tempering. **Attempts to drill holes or grind the glass after tempering will most likely cause breakage.**

BAR BRACKETS for use with ½" or ¾" glass.

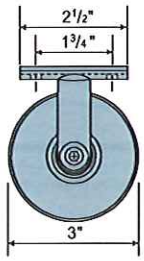


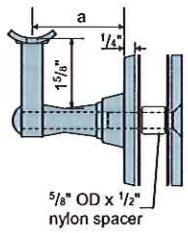


c	Tube OD	Stainless Polished	Brass Polished
2¾"	1.50"	993	793
2⅞"	2.00"	993-2	793-2

MACHINED BRACKETS

Also available in wall or post mount styles and as components for the assembly of custom brackets – see page 149.





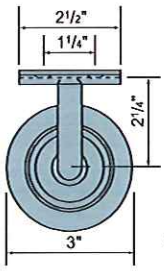
Longer screws are available to adapt these brackets for use with ¾" glass.

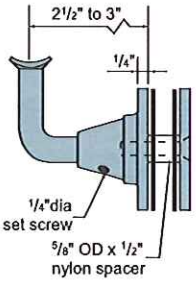
* A new stud welded backing disk is now used in these Stainless Steel brackets.

a	Satin Aluminum	Satin Stainless	Satin Brass
2⅛"	GB2251	GB3251*	GB4251
2⅝"	GB2301	GB3301*	GB4301

ADJUSTABLE

This bracket has a set screw which permits the projection to be adjusted as necessary. Also available in a wall mount style. Refer to page 149. A new option will be available in 2007 without the large flange and backing disk. New disk will be 2" in diameter.



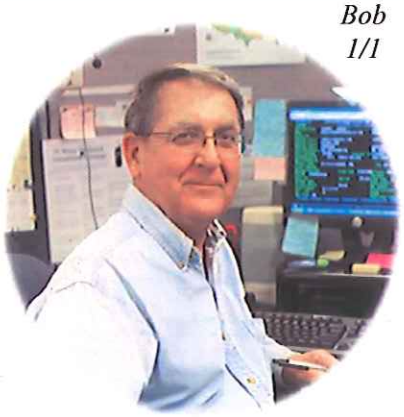


Longer screws are available to adapt these brackets for use with ¾" glass.

* A new stud welded backing disk is now used in these Stainless Steel brackets.

Satin Aluminum	Satin Stainless	Satin Bronze
GB4381	GB4383*	GB4385

Bob
1/1



STUD WELDED BACKING DISK

A new stud welded backing disk is now used in these Stainless Steel brackets. By March 2007, a smaller diameter version of these will be available for use with our new handrail brackets as shown below.

GB4383HS

NEW BRACKET DESIGNS

Available in 2007.

a	Satin Aluminum	Satin Stainless	Satin Brass
2⅛"	GB2252	GB3252*	GB4252
2⅝"	GB2302	GB3302*	GB4302

Machined Bracket with no visible bolt. Set screw below allows bracket to be adjusted to field angles.

Bracket without wall flange to be attached to glass with matching backing disk.

a	Satin Aluminum	Satin Stainless	Satin Brass
2⅛"	GB2253	GB3253*	GB4253
2⅝"	GB2303	GB3303*	GB4303

Historic Tax Credit Background Information

The following information is provided to give an understanding of the Historic Tax Credit Program in general and as it relates to the renovations of the Bluefield Municipal Auditorium. The information that follows has been and will continue to be used for your project should you decide to pursue the tax credits.

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Preservation Assessment

Historic Background:

The Bluefield Municipal Auditorium and Youth Center was built in 1956 to commemorate the World War II Veterans. Originally, the building was privately owned and independently operated. Due to financial debt, the city eventually purchased the property and has operated it as a municipal facility. The two story addition in the front of the building was added shortly after the construction of the facility to provide space for the local American Legion chapter. This facility has been the focal point of community activities over the years, hosting the annual Mountain Festival Concert series, WCW Wrestling events, both high school and college basketball, dances, banquets, religious events and private parties. It is estimated that 67,000 people frequent this facility on an annual basis. The Youth Center building addition was added in the early 1970's for the purpose of a banquet hall.

Adjacent to the Municipal Auditorium is Mitchell Stadium. The stadium and its two distinctive stone locker rooms were constructed in 1936 with the help of WPA grant funding. The interior of these facilities has been renovated a number of times with new carpet, heating, showers, etc... The exterior stone was sandblasted and cleaned along with new roofing that took place in the late 90's.

Historic Significance and Eligibility for National Register Listing:

The Bluefield Municipal Auditorium is significant on the local level as a recreational complex that developed as a municipal facility during the mid-20th century. The complex reflects the general growth and prosperity of Bluefield and the emphasis on community recreational facilities during this period. The Bluefield Municipal Auditorium, which has operated continuously as a municipal and regional recreational facility, is the only such complex in the area. The Bluefield Municipal Auditorium is potentially eligible for individual listing on the National Register of Historic Places under criterion A and C for its distinctive architecture and its role in the community as a focal point for activities during the period 1956 to the present. In addition, the Mitchell Stadium may be considered as part of a larger recreational complex potentially eligible for listing. The stone locker rooms, constructed in 1936 using WPA funds, are relatively unique structures. The condition of the interior and the integrity of its historic design

and materials should be investigated to determine if these buildings might be legible for listing on the state and national registers as well.

Preservation Options

If the Bluefield Municipal Auditorium is determined eligible for listing on the National Register, and subsequently listed, the property will be eligible for the state and federal historic rehabilitation tax credit programs. The state and federal tax credits, equaling 10% and 20% respectively of the qualified rehabilitation expenses, are available for income-producing properties. If a property is non-income producing (i.e. private residence) then it is only eligible for the 10% state tax credit program. Credits not used for the taxable year in which the building is placed in service may be carried back one year and carried forward for up to 20 years. In addition to the use requirement, the recipient of the tax credits must retain ownership for a minimum of five years after completion of the project or a portion of the credits will be recaptured. Properties that are developed and sold as condominiums are not eligible for the federal credit but may be eligible for the 10% state tax credit program. However, properties can be developed with a mixture of uses and ownership, with the federal tax credits pro-rated by square footage as to the area that qualifies. Both the state and federal programs require a minimum investment to qualify for the credits. This amount, referred to as "substantial rehabilitation" equals at least 100% of the adjusted gross basis in the building. Finally, all rehabilitation work must meet *The Secretary of the Interior's Standards for the Rehabilitation of Historic Buildings.* A copy of the *Standards for Rehabilitation* as well as an outline of the application process is attached as an appendix to this report.

The state and federal historic rehabilitation tax credits can be combined with other tax credit programs and preservation incentives, including preservation easements, Enterprise Zone, Workforce Housing Credits and New Market tax credits. Although the historic rehabilitation tax credits can not be sold outright, it is possible to syndicate these credits by creating a partnership that includes an equity investor that contributes capital to the project in exchange for the tax credits. The value of the tax credits in this case is often discounted, depending on the current market and the investor. It is important to obtain legal and accounting advice prior to beginning a project to insure its ability to be syndicated.

In the case of the Bluefield Municipal Auditorium, it may not be possible to syndicate the federal tax credits due to the ownership and use history. The Internal Revenue Service has a "prior use" clause in its regulations regarding the syndication of the tax credits that prohibit entities that have used the building prior to the rehabilitation and plan to use the building afterwards from being able to syndicate the federal tax credits. For this reason, I do not believe that the rehabilitation of the Bluefield Municipal Auditorium will be eligible for the federal tax credits. The rehabilitation would be eligible for the 10% state tax credit program.

Preservation Requirements

As mentioned above, all work associated with a certified rehabilitation project under the federal and/or the state historic tax credit programs must comply with *The Secretary of the Interior's Standards*. In order to achieve this, it is important to determine the significant and character-defining elements, features and materials of the resource. Once identified, these elements should be retained and repaired if necessary. It is recognized that older buildings may require some modifications to bring them into compliance with currently building code requirements. However, the uniform building code does allow for some flexibility when applied to the rehabilitation of historic buildings. Where code and preservation are in conflict, creative solutions should be explored that can accomplish the goals of both.

Based on a preliminary review of the Bluefield Municipal Auditorium, the following elements, features and materials should be retained and repaired appropriately where needed:

- building shell with original form (exterior walls, roof form);
- Two-story addition on front ONLY if built more than 50 years ago;
- Interior plan with major public spaces (lobby, gymnasium/auditorium and other specific spaces whose function is directly tied to the historic use of the building);
- Interior finishes (wood floors, painted cinder block walls, etc.)

This is a preliminary list based on a limited understanding of the building and may be expanded as the project progresses and a full assessment of the historic integrity of the building is conducted. It is understood that service areas, such as toilets, locker rooms, kitchens, etc. can be upgraded. Materials that may contain hazardous materials, such as asbestos tile flooring, can be removed and replaced with similar non-hazardous materials. The ultimate goal is to retain the historic character and physical integrity of the building so that people can understand the historic function and role this facility has had in the community.

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Historic Rehabilitation Tax Credits: A Summary-WV

Eligibility for the State and Federal Rehabilitation Tax Credits

- Individually listed on the National Register, or
- A contributing structure in a historic district listed on the National Register.
- Determined eligible and will be listed on National Register by project completion

State and Federal Historic Rehabilitation Tax Credits

State and Federal programs:

- All work must meet the *Secretary of Interior's Standards for Rehabilitation.*
- Substantial work (to meet material rehabilitation test) must be completed within a 24-month period or a 60-month period for phased projects.
- The tax credits are based on eligible expenses, which include any work that is properly chargeable to a building's capital account as well as some soft costs such as architecture and engineering fees, construction management, and reasonable developer fees. *Any work done outside the shell of the building as well as acquisition costs and site work .are typically not eligible expenses.*

***State Program*:**

- Available for both income-producing properties and private residences.
- Administered by West Virginia State Historic Preservation Office (WVSHPO).
- Equal to 10% of eligible costs.
- Can be carried backwards for one year and forward for 20 years.
- Substantial rehabilitation equal to 100% of adjusted gross basis in the building only.

***Federal Program*:**

- Available only for income-producing properties.
- Administered by WVSHPO, the National Park Service (NPS) and the Internal Revenue Service (IRS).
- Equal to 20% of eligible credits.
- Can be carried forward for 20 years and back for one year.
- Substantial rehabilitation equal to 100% of adjusted gross basis (building only).
- Ownership must be retained for the 5-year recapture period after completion of the project and the *Standards* must continue to be met during this period..

Syndication of Tax Credits:

- In the case of a not-for-profit or governmental owner, it is possible to use the tax credits by syndicating them through the creation of a limited partnership. Federal Credits cannot be used in syndicating the tax credits if there is any prior use of the property by the owner.
- In syndication, the tax credits are discounted to the owner, depending on the investor and the market. ***There are several important issues, such as prior use of the building, that must be considered in syndicating a rehabilitation project and it is critical that the project team consult with a professional experienced in the syndication of tax credits in the initial stages of project planning.***

For more information contact Alison Blanton at HSPC (540-342-5263

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Historic Rehabilitation Tax Credits Application Process

Step One: Determine if Property is Eligible

- Property is individually listed on the state and national registers
- Property has been determined eligible for individual listing on registers
- Property is listed as contributing building in historic district listed on the registers
- Submit Historic Preservation Certification Application (HPCA) Part 1: Evaluation of Significance

Step Two: Determine if Project is Eligible
Submit Historic Preservation Certification Application (HPCA) Part1

- Federal credits
  - Property must be income-producing
  - Eligible rehabilitation expenses must meet 100% of adjusted gross basis
- State credits
  - Property does not have to be income producing
  - Eligible rehabilitation expenses must meet 100% of adjusted gross basis

- For projects planning on syndicating the tax credits, it is critical to consult with a tax attorney experienced in historic tax credits at this point for advice in setting up the necessary partnership structure and other aspects of the project that may be impacted by the syndication.
  -

Step Three: Identify and Document Character-Defining Features of the Property

- Evaluate the building, its design, setting, materials, workmanship and condition to identify those elements that make it significant and therefore eligible for listing on the state and federal register.
- Document character-defining features and their condition
- Prepare list of character-defining elements and preservation issues submitted to project team prior to design development

Step Four: Evaluate the Rehabilitation Plan for Conformance with the Secretary of the Interior's Standards for Rehabilitation

- All work must comply with the Standards
- Review proposed plans for compliance at the schematic design level
- Request preliminary or informal review with West Virginia State Preservation Office (WVSHPO) regarding any potential issues identified.

Step Five: Submittal of Historic Preservation Certification Application (HPCA) Part 2 "Description of Rehabilitation"

- Submit HPCA Part 2 with description of existing elements and their condition, proposed work and its impact
- HPCA Part 2 submittal to include photographs of existing conditions, "as-is" drawings and proposed rehabilitation drawings on at least a schematic level
- Application fees for state and federal review required based on total estimated cost of project.
- HPCA Part 2 is submitted to WVSHPO for review. If a federal tax credit project as well, WVPO will forward the application with their comments to the National Park Service (NPS) for their review and comment.
- WVSHPO and NPS to review the HPCA Part 2 within 30-60 days of receipt.
- WVSHPO and NPS will issue either a letter of approval or a conditional letter of approval. Additional information may be requested and is to be submitted in the form of an amendment.

Step Six: Construction Administration

- It is important to monitor the project during the construction phase for any unanticipated discoveries that may affect the rehabilitation design or the treatment of materials.
- All discoveries must be documented
- Any changes to the rehabilitation plan should be submitted as an amendment to WVSHPO and NPS for review and approval

Step Seven: Completion of Project and Submittal of HPCA Part 3 "Request for Certification"

- Submit HPCA Part 3 of completed work with photographs taken from the same locations as the Part 2 photographs to document work as proposed and approved.
- Application fee for state and federal review is required based on the total cost of the project.
- For projects with tax credits equaling more than $100,000, a Cost Certification of Eligible and Non-eligible Rehabilitation Expenses by a CPA must be submitted.
- For projects that are syndicating the tax credits, the proper partnership structure and equity investors must be in place at this point. For details, consult a tax attorney with experience with historic tax credits.

- ***For additional information or assistance, contact Alison Blanton (540-342-5263)***

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SECRETARY OF THE INTERIOR'S STANDARDS FOR REHABILITATION

REHABILITATION IS DEFINED AS *the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values.*

1. A property will be used as it was historically or be given a new use that requires minimal change to its distinctive materials, features, spaces, and spatial relationships.
2. The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided.
3. Each property will be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historic properties, will not be undertaken.
4. Changes to a property that have acquired historic significance in their own right will be retained and preserved.
5. Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.
6. Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.
7. Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.
8. Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.
9. New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work will be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment.
10. New additions and adjacent or related new construction will be undertaken in a such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

REHABILITATION AS A TREATMENT. When repair and replacement of deteriorated features are necessary; when alterations or additions to the property are planned for a new or continued use; and when its depiction at a particular period of time is not appropriate, Rehabilitation may be considered as a treatment.

From the National Park Service website, http://www2.cr.nps.gov/tps/secstan1.htm.