

TURNER  
GROUP

THE H.L. TURNER GROUP Inc.

27 LOCKE ROAD, CONCORD, NH 03301-5417 TELEPHONE: 603-228-1122 FAX: 603-228-1126

March 27, 2012

Mr. Harry G. Dangora, Jr.  
Public Properties Superintendent  
City of Concord  
125 Hall Street  
Concord, NH 03301

SUBJECT: Doane Diamond Building and Main Field Bleacher Assessment  
Memorial Field  
South Fruit Street  
Concord, New Hampshire

Dear Mr. Dangora:

As requested, The H.L. Turner Group Inc. (TTG) has completed a facility assessment at Memorial Field complex on South Fruit Street. The assessment included the following items:

- I. The physical condition of the press box/concession building at Doane Diamond.
- II. The site and drainage issues at the press box/concession building at Doane Diamond.
- III. The physical condition of the main bleachers at the football field and track.

In this report we have included an overview of each of the components listed above, observations that were made during visits to the site, and recommendations for repair and/or upgrades that are required. We have also included an engineer's opinion-of-cost for any repairs and/or upgrades that are recommended.

Please do not hesitate to contact our office should you have any comments or questions as you review the information in this report at (603) 228-1122, ext. 133 or Paul Becht at ext. 125.

Sincerely,

THE H.L. TURNER GROUP INC.



William D. Hickey ~ Principal  
Vice President of A&E Services



Paul M. Becht, P.E. ~ Associate  
Lead Structural Engineer

WDH/sai

---

ARCHITECTS • ENGINEERS • BUILDING SCIENTISTS

## **I. Press Box/Concession Building - Warren H. Doane Diamond**

### Introduction

On February 10, 2012, William D. Hickey and Paul M. Becht, both structural engineers with The H.L. Turner Group Inc., visited Memorial Field and met with Mr. Harry Dangora, Public Properties Superintendent for the City of Concord. The purpose of this site visit was to evaluate the Press Box/Concession Building located adjacent to Doane Diamond.

### Overview

The building was constructed around 1999. It is a wood framed structure situated on a concrete frost wall. The building measures approximately 87' long by 13'-6" wide. It is a two-story structure that houses a concession area along with storage for maintenance, sports equipment on the lower level, and a press box on the upper level. For reference, the front of the building faces south towards the baseball field.

The exterior of the building is covered with vertically oriented T-111 plywood backed by oriented strand board (OSB) sheathing. For the most part the T-111 is in poor condition. It has absorbed moisture over the years and has started to warp and delaminate in numerous places. In some instances the T-111 has pulled away from the building such that it allows moisture to penetrate into the wall. The fascia boards and trim boards that cover the soffit are made of plywood. Many are twisted and warped allowing moisture and insects to enter the building. The roof, which overhangs the front and rear of the building approximately 12-inches, is covered with rolled roofing. It appears to have been recently replaced and is in fairly good condition.

### Observations

The first level is at grade and is comprised of three separate sections. The 20-foot long end sections are used for the storage of sports equipment and field maintenance equipment. Access to these end sections is through large sliding wooden doors at the ends of the building. The central section serves as a concession area during games and events and it is accessed through a pass door along the rear of the building. There is a large window at the rear wall with a flip-up, plywood-paneled window for the concession counter. The main electrical service panels for the building and for field lighting are located on the front wall within the concession area.

There are two 4'-9" wide walkway tunnels that literally pass through the building; one at each end. The tunnels provide a direct line path for spectators walking from the parking area to the field seating. The pass tunnels are located approximately 21-feet in from each end of the building.

The ceilings and walls within the lower level are covered with gypsum wallboard or OSB. We observed signs of water damage in the lower level as evidenced by a waterline around the perimeter of the wall approximately 6-inches above floor level. This has severely damaged the wallboard and the moisture intrusion has caused numerous wallboard surfaces throughout the space to become covered with mold.

Grading around the building is an issue. It appears that the ground along the rear and front of the building has settled, creating a depressed area all around the structure. In fact, we noted the concrete support piers for the exterior stairs have dropped away from the bottom of the wood support posts. Along the back, the natural grade slopes toward the building.

There is a small swale designed to intercept water as it approaches the building, but the swale is ineffective in preventing water from reaching the building. The water tends to pond along the back of the building and eventually the standing water will work its way under the doorway flowing into the concession space.

The second level is about 15'-6" above the first level. The entire second level is used as a press box. The main portion of the press box is 47-feet long and it is centrally located within the building. An interior wood stairway along the rear wall provides access from the ground level to the second level. There is an exterior metal clad door along the rear wall of the central press box area. The door opens to a wood platform where a set of exterior wood stairs descends to ground level. Partition walls separate smaller 20-foot long press box sections at each end of the building.

There are a series of openings along the 87' long side facing the baseball field and there is a window at each end of the building. The openings facing the field are fitted with plywood veneer panels hinged at the top and made to swing out toward the field. The end openings have similar wood closure panels split at the center and hinged on each side. All openings are loose fitting with large gaps and there are numerous opportunities for water to penetrate the building. Some of the wood framing around the windows has rotted due to moisture intrusion.

The roof is a low-sloped shed roof framed with 2x10 framing lumber spaced at 16-inches on center. It sheds water towards the rear of the building. The roof sheathing is OSB as are the partition walls. The roof sheathing was improperly installed as evidenced by the joints between sheathing panels that occur 2 to 3 inches away from the edge of the roof joist. Typically the panel joints should fall directly over the centerline of a roof joist. Furthermore, we noted at least eight locations where the OSB roof sheathing had deteriorated and/or there was a hole through the sheathing where water had penetrated. At the time of this inspection, the areas appeared dry which probably occurred after the rolled roofing was replaced.

The remaining walls in the press box areas are covered with gypsum and wood paneling and the floor is plywood. There are numerous cracks and gaps around the openings and at both soffit and eaves that allow water to infiltrate the structure. This has resulted in mold forming on the gypsum behind some of the wooden paneling, as well as other areas throughout the press box.

### Recommendations and Conclusions

The building has suffered over the years due to moisture intrusion. Mold is prevalent throughout the entire structure and some of the OSB sheathing and wood trim has rotted due to the presence of moisture and past roof leaks. The exterior sheathing is breaking down allowing for more gaps and entry points for water, especially a driving rain. The grading around the building, which currently allows water to pond at the building perimeter and eventually flow into the building, further exacerbates moisture intrusion.

The building is in need of serious renovation work. All the interior spaces should be stripped down to the stud walls by removing all the gypsum wallboard, oriented strand board (OSB) and paneling. We do not recommend that gypsum wallboard be re-installed in the building. If an interior finish is desired to cover the studs, exterior grade plywood or OSB would be recommended.

The roofing appeared to be in good condition, but the roof sheathing has areas of rot. Also, when the sheathing was installed the joints in the sheathing fall between the roof rafters and not over a rafter, which is the proper installation.

The T-111 sheathing on the exterior of the building should be removed and replaced. In lieu of using T-111 we recommend a low maintenance cement board siding or wood siding. The soffits and eaves should be stripped and redone, as should the wood trim around the windows. Cement board trim makes an excellent replacement for the existing wood and plywood. It is very durable and can be painted before installation.

It is recommended that the openings be replaced with better fitting, weather-tight panels that actually seal against the trim and prevent rainwater from penetrating the building. The window panels themselves should be constructed from a weather resistant material. The exterior stairs need to be properly supported and the handrail reconstructed.

We recommend adding 7" of concrete on top of the existing slab-on-grade. The building itself does not appear to be settling, but the areas around the building (sidewalks, etc.) seem to be settling and moving with each freeze/thaw cycle. The new slab will require some minor reframing of interior walls, but two courses of concrete masonry units (CMU) were added under the exterior walls due to moisture.

The opinion of cost to undertake the recommended repairs and/or upgrades is included in the back of this report.

## **II. Site/Drainage at the Press Box/Concession Building - Warren H. Doane Diamond**

Based on our on-site observations on Tuesday, March 20, 2012, The H.L. Turner Group Inc. is providing the following recommendations to address the existing drainage issues at the press box adjacent to Doane Diamond.

### Observations

The site now slopes toward the building causing ponding in and around the building. The walkways are all damaged and should be replaced. The fencing under the bleachers needs to be reworked. The soils around the building hold moisture and therefore are susceptible to heaving/settlement from the freeze/thaw cycles.

The grading around the building needs to be reworked and an extensive underdrain system should be installed around the perimeter of the building to capture water and direct it away from the structure. In addition, some proper drainage swales should be constructed on the uphill side of the building to intercept surface runoff.

### Recommendations and Conclusions

Install a footing drain around the entire perimeter of the building. The drain should be a perforated PVC pipe surrounded in a bed of stone that is wrapped in drainage fabric. The trench backfill material should be a coarse, free-draining, granular material, such as crushed stone, and the vertical trench wall should have drainage fabric placed along its face. The footing drain should slope to a new concrete pump chamber at the southeast corner of the building. The pump can discharge into the existing catch basin at the northeast corner of the building, which drains via gravity to the City of Concord stormwater system. If the depth of the invert at the existing drainage manhole allows, it may be possible to allow the footing drains to slope by gravity to the manhole, thereby eliminating the need for a pump station.

Replace the perforated underdrain running parallel to the building on its north side and reconstruct the stone swale to establish a well-defined trench between the field and the building. Install a catch basin at the western end of the trench to address the ponding issue in the area south of the maintenance building. Extend the trench southeasterly behind the third base line bleachers. The trench drain should be plumbed into the same catch basin it currently discharges into.

Remove the slab-on-grade concrete walkways on either side of the press box and replace them with perforated concrete pavers.

Repair the damaged section of asphalt sidewalk on the north side of the press box where it has become displaced over the electrical conduit.

Reset chain link fence posts so their bearing point is below the frost line.

If the base of the building is indeed elevated, regrade at the perimeter of the building to provide a positive slope away from the structure.

### **III. Main Bleachers at the Football Field and Track**

#### Overview

The main bleachers at the football field are a steel frame structure with wooden seat and foot boards. There is a press box at the upper section of the bleachers. The bleachers were likely constructed in the late 1960's or early 1970's. Attached is a plan entitled "Main Bleacher Plan and Sections" which shows the configuration of the bleachers. Using an 18" wide seat, the overall capacity of the bleachers is approximately 1,700 people.

Our review is based on the International Code Council (ICC) publication ICC 300-2012, "Standards for Bleachers, Folding and Telescoping, Chapter 5 - Existing Bleachers, Folding and Telescoping Seating and Grandstands".

#### Observations

The majority of the wooden seat and foot boards are significantly weathered, have twisted, and are warped. Both the seat and foot boards are supported at 6'-0" ± on center. The vertical distance between foot boards is 7-½" ± and is open to below.

There is chainlink fencing that has been installed along the sides and back of the bleachers. The fencing along the sides of the bleachers is 33" above the foot board and 24" above the seat board. Per section 503 of the code, the guard requirements are not less than 36" above the center of the adjacent bench seat. The fencing is 38" above the seat board along the back of the bleachers.

The steel frame is rusting and needs to be painted. A number of the braced frames are loose and need to be tightened.

It was noted that there is only one bolt in the majority of the connection points for the accessible ramp.

## Recommendations and Conclusion

The city should undertake a program to replace the existing foot and seat boards. There are three options for the material for this replacement: wood, steel and aluminum. Each of the materials has pros and cons, which are outlined below.

Structurally, the wooden boards spanning six feet are marginal to support the code required loading. The wood should be a pressure treated southern pine No. 1. The wood has the lowest initial cost for replacement, but also has the shortest life. The ultraviolet light and exposure to moisture will cause the wood to deteriorate. An option to reduce the exposure would be to cap the wood with Perma-Cap by Hussey Seating Company of North Berwick, Maine. Information on the Perma-Cap product is included with this report. These vinyl caps come with a five-year warranty and the City may want to purchase and install these caps on a section of the bleachers to determine if the life expectancy of the wood is increased.

There are two other options for replacement of the foot and seat boards. One is galvanized steel such as Perma-Plank by Hussey Seating Company of North Berwick, Maine. The galvanized steel also comes with a five-year warranty, but should last much longer. The Perma-Plank must be covered with the Perma-Cap. The cost of the galvanized steel is higher than the wood, but lower than the aluminum.

Aluminum would be the highest cost option for the replacement of the foot and seat boards. The aluminum has the longest life expectancy.

There are a few safety issues that must be addressed with the bleachers. First the space between the foot board and seat board must be minimized. There is a code requirement (section 504) for a space no larger than 4". Adding a solid steel rod or bar (1" diameter or 1" square) would be a good low cost solution and would reduce the space to meet the code requirement.

The height of the fencing along the sides of the bleachers must be extended so the top of the guard is a minimum 36" above the adjacent seat.

The steel frame should be cleaned and painted. The rust will continue to deteriorate the steel frame the longer it is not addressed. The paint that is on the structure now should be tested to determine if the paint contains lead.

The rod-braced frames that are damaged and/or are no longer able to be tightened should be replaced. The turnbuckles that are operable should be tightened.

The roofing and siding on the press box is similar to the material at Doane Diamond. We would recommend that the roofing and siding on the press box at the main bleachers be replaced at the same time as the work is undertaken on the building at Doane Diamond.

Add a minimum of one more bolt per connection point on the accessible ramp so there is a minimum of two bolts per connection point.

**ENGINEER'S OPINION OF CONSTRUCTION COSTS**

**I. Press Box/Concession Building - Warren H. Doane Diamond**

1. Remove all interior finishes, siding, and roofing .....	\$ 2,800
2. New roofing and roof sheathing .....	\$ 6,000
3. New wall sheathing .....	\$ 8,200
4. New siding:	
a. Wood (rough sawn cedar) .....	\$28,700
b. LP Smartside .....	\$16,400
c. Cement board .....	\$16,400
5. New fascia and soffit trim .....	\$ 6,800
6. 7" concrete slab .....	\$15,000
7. Minor framing to allow for new slab .....	\$ 1,500
8. Replacement/upgrade of openings .....	\$ 2,700
TOTAL.....	\$59,400 - \$ 71,700

**(The range of total cost is based upon which siding option (4a, b, or c) is chosen.)**

**II. Site/Drainage at the Press Box/Concession Building - Warren H. Doane Diamond**

1. Excavate around perimeter of structure, install stone-embedded perforated pipe and drainage fabric at the footing and along the face of the trench, backfill with free-draining material.....	\$ 3,500
2. Stormwater pump station .....	\$ 7,500
3. New drain line from footing drains to existing manhole .....	\$ 2,500
4. Remove concrete walkways and install concrete pavers .....	\$ 6,000
5. Repair asphalt sidewalk .....	\$ 1,250
6. Reset displaced fence posts .....	\$ 2,500
7. Regrade and reseed around perimeter of building .....	\$ 1,500
8. Reconstruct trench drain and replace drainage pipe.....	\$ 4,500
TOTAL.....	\$29,250

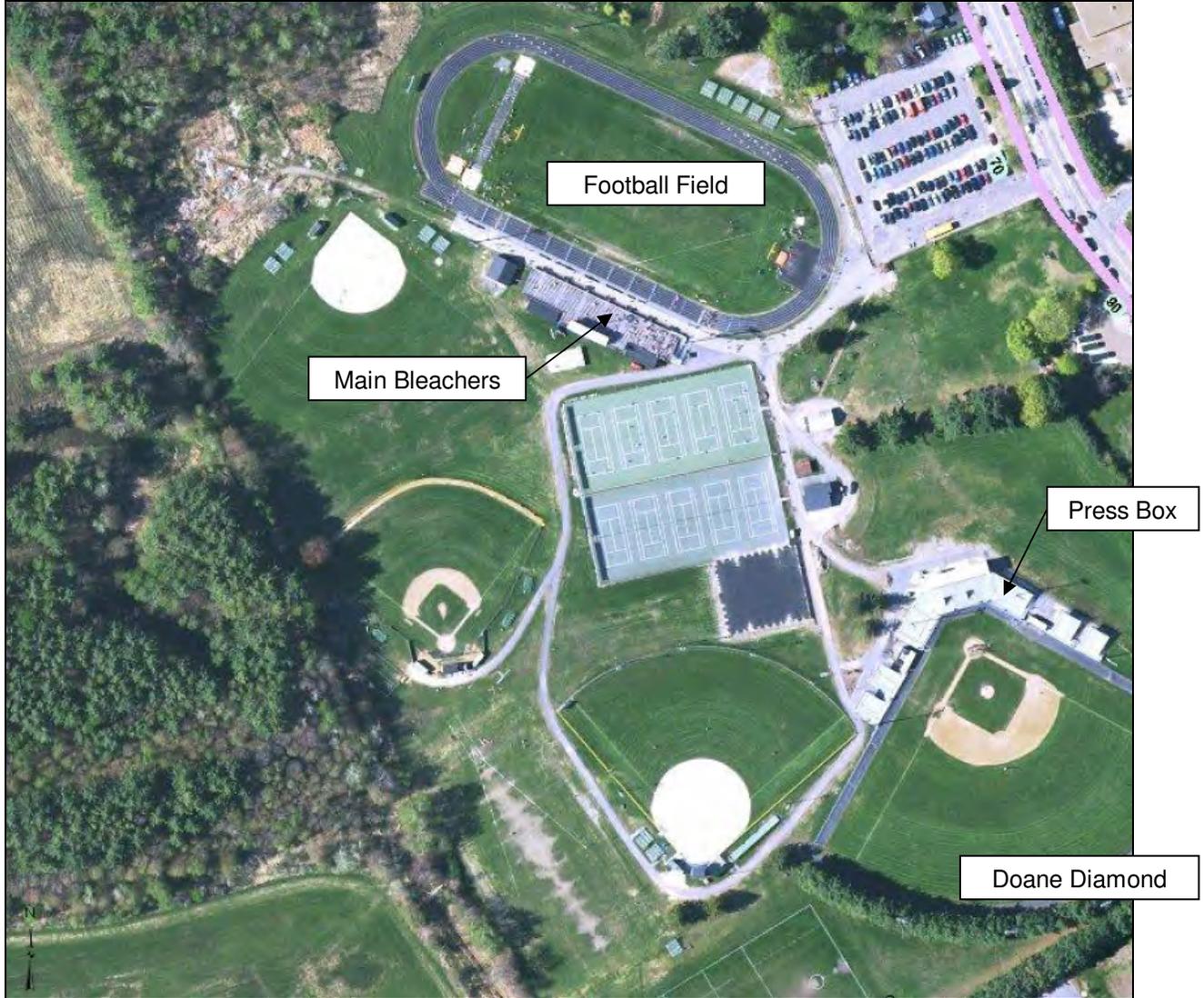
**III. Main Bleachers at the Football Field and Track**

1. New foot and seat boards: *	
a. Wood foot and seat boards .....	\$ 1.50 per foot
b. Perma-Cap Vinyl Covers .....	\$ 4.50 per foot
c. Perma-Plank & Perma-Cap Vinyl .....	\$ 6.00 per foot
d. Aluminum foot and seat boards.....	\$ 7.00 per foot

\* Costs are for materials only. It is estimated there are 3,400 linear feet of seat boards and 10,200 linear feet of foot boards.

- 2. Install rod or square at riser .....\$ 2,500
  - 3. Extend fencing at sides of bleachers .....\$ 5,500
  - 4. New roofing at the press box .....\$ 3,000
  - 5. New wall sheathing at the press box .....\$ 2,800
  - 6. New siding at the press box:
    - a. Wood (rough sawn cedar) .....\$14,300
    - b. LP Smartside .....\$ 9,200
    - c. Cement board .....\$ 9,200
  - 7. Clean and paint structural steel \*\* .....\$35,000
- \*\* assuming no lead paint





Aerial Photo - Memorial Field



Building at Doane Diamond (north elevation)



Building at Doane Diamond (north elevation)



Building at Doane Diamond (roofing)



Building at Doane Diamond (west elevation)



Building at Doane Diamond (east elevation)



Building at Doane Diamond (south elevation)



Building at Doane Diamond (south elevation)



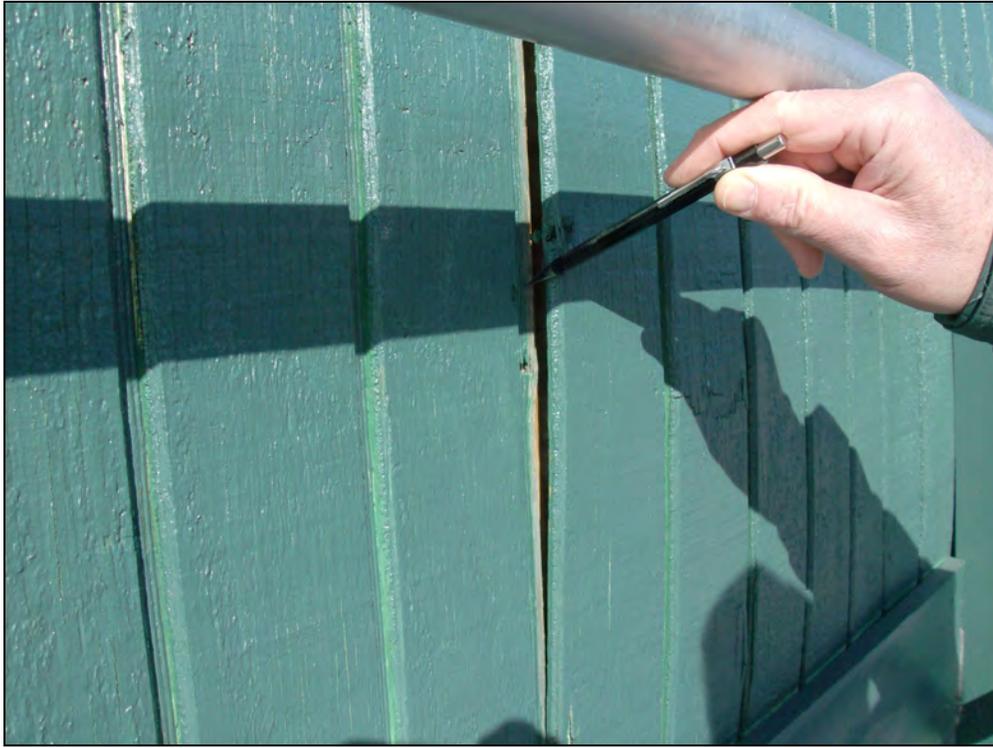
Facia and soffit at southwest corner of building.



North exterior stair “supported” on sonotubes.



Ice and water build-up on the north side of the building.



Gap in the vertical joints of the siding.



Upper level framing and finish at window head.



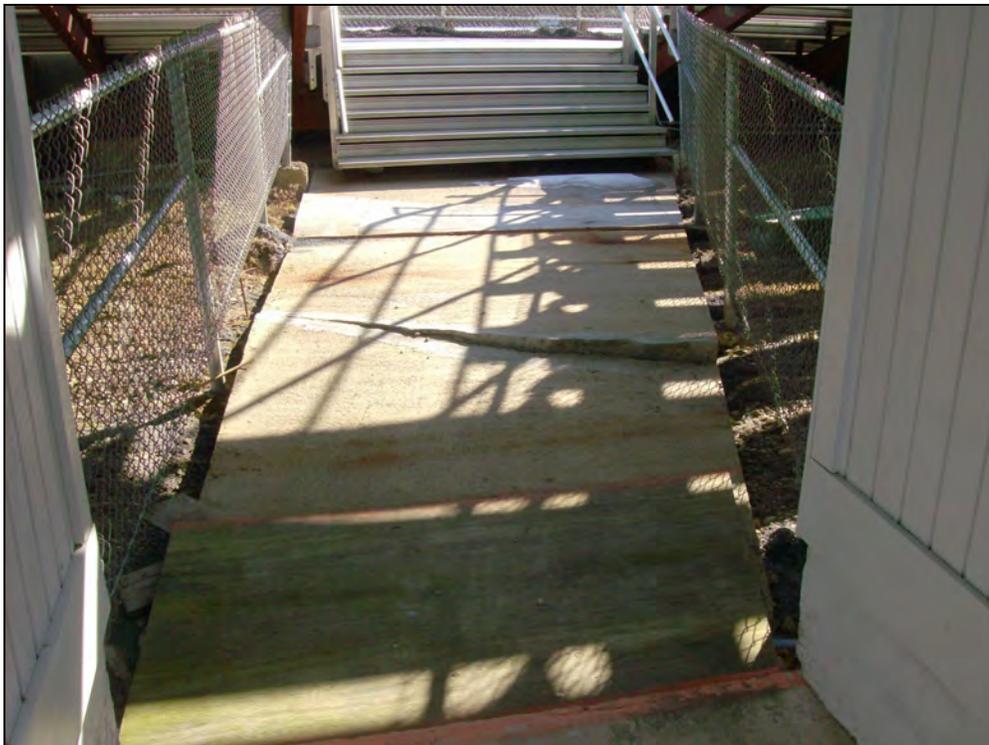
Upper level framing and finish at window side and sill.



Upper level framing and finish at window sill.



Upper level framing and finish at window sill.



Slab settlement at walkway slab to bleachers.



Second floor press box area.



High water mark on the OSB – 6-inches above the floor slab.



Mold covering the ceiling below the press box floor.



Water stained wallboard below the electrical panels.



Slab settlement at walkway slab to bleachers.



Leveling of walkway slab at sump pump.



Access stairs at front of main bleachers.



Steel frame of main bleachers.



Steel frame of main bleachers.



Steel angle frame at wood foot board.



Steel frame of main bleachers at the press box.



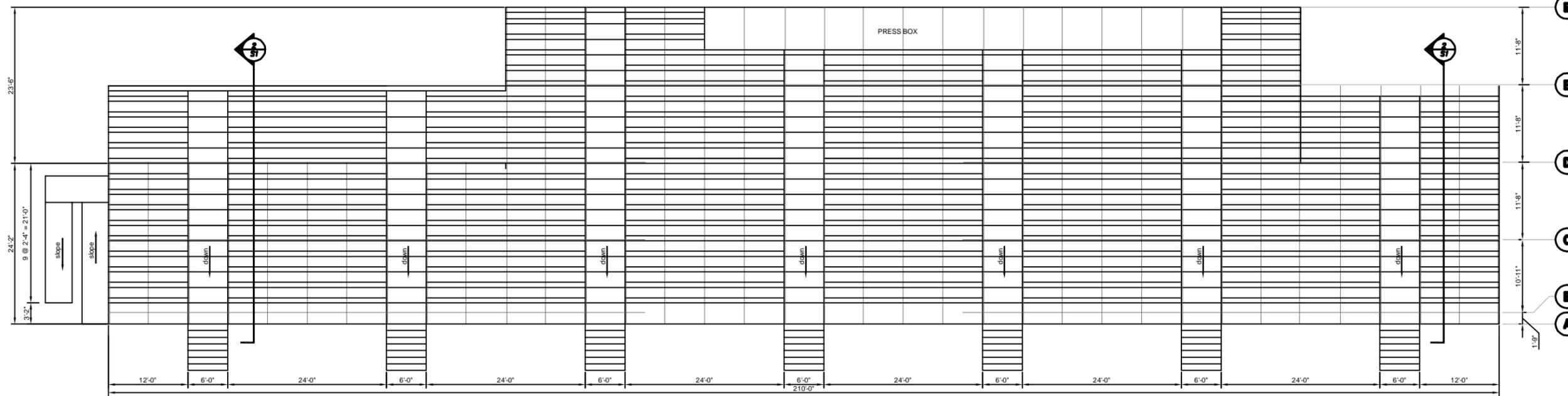
Wood foot and seat boards at the main bleachers.



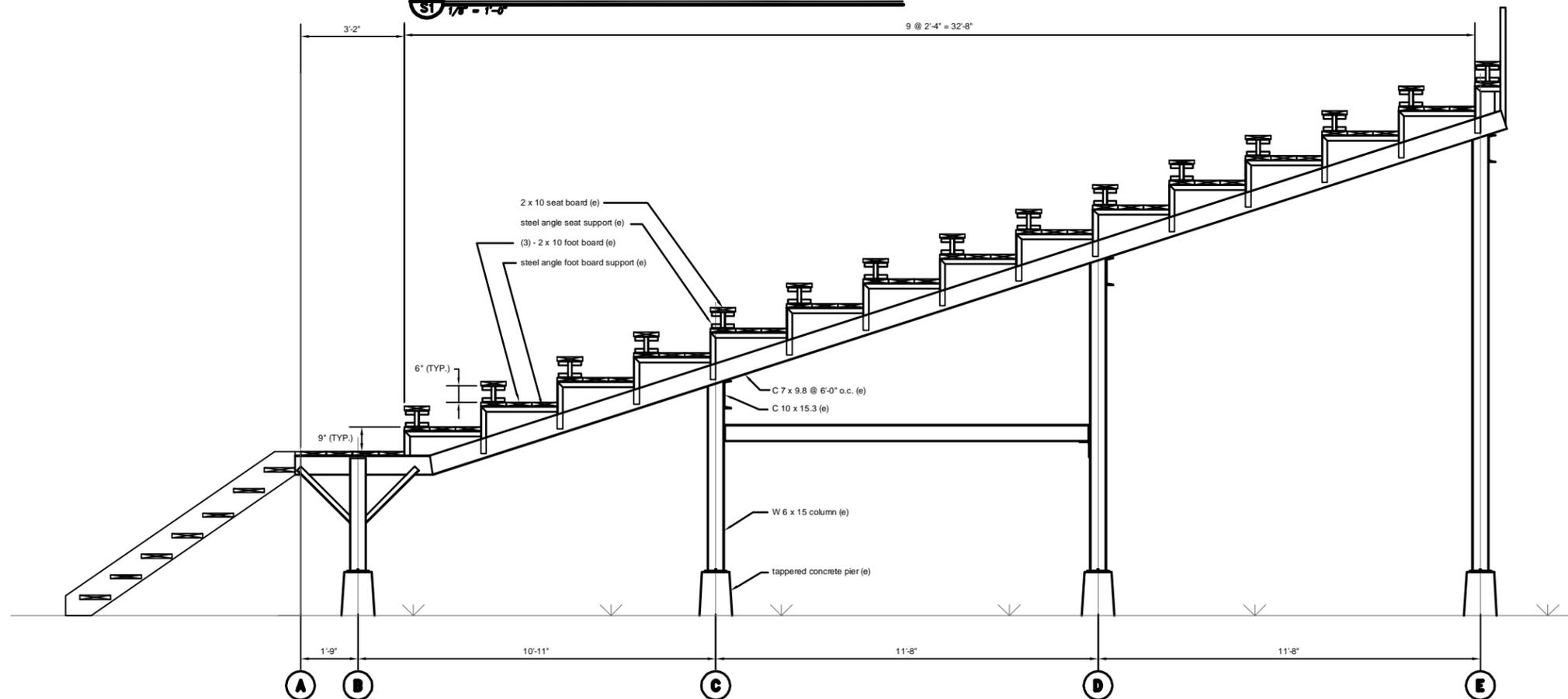
Wood foot and seat boards at the main bleachers.



Wood foot and seat boards at the main bleachers.



**1 MAIN BLEACHERS - PLAN VIEW**  
 SCALE: 1/8" = 1'-0"



**2 MAIN BLEACHERS - SECTION**  
 SCALE: 1/2" = 1'-0"

**TURNER  
GROUP**

**THE H.L. TURNER GROUP Inc.**  
 ARCHITECTS • ENGINEERS • BUILDING SCIENTISTS  
 27 LOCKE ROAD  
 CONCORD, NEW HAMPSHIRE 03301  
 T: 603.224.1822 • F: 603.228.1126  
 W:  
 CONCORD NH • HARRISON ME • LYNDONVILLE VT  
 LITTLETON MA • NEW HAVEN CT



COPYRIGHT: THE H.L. TURNER GROUP INC. 2012  
 Electronic images of these documents may be used for the  
 purpose of reporting shop drawings and construction drawings for  
 this project only. The Architect's or Engineer's seal shall not appear on  
 any documents that are modified by others. The Architect shall  
 bear no responsibility for any modifications to the original  
 documents by others.

ISSUED FOR	
<input type="checkbox"/>	PROGRESS
<input type="checkbox"/>	SCHEMATIC DESIGN
<input type="checkbox"/>	DESIGN DEVELOPMENT
<input type="checkbox"/>	BID
<input type="checkbox"/>	CONSTRUCTION
<input checked="" type="checkbox"/>	NOT FOR CONSTRUCTION

KEY PLAN

PROJECT TITLE / ADDRESS  
**CITY OF CONCORD, NH  
 MEMORIAL FIELD  
 MAIN BLEACHER EVALUATION**  
 SOUTH FRUIT STREET  
 CONCORD, NEW HAMPSHIRE

PROJ. NO.: 3702	ISSUED FOR:
SCALE: 1/8" = 1'-0"	
DATE: -	
DESIGNED BY: -	
CHECKED BY: -	
ISSUED DATE: -	

**MAIN BLEACHERS  
AND SECTION**

**S1**

## CHAPTER 5

# EXISTING BLEACHERS, FOLDING AND TELESCOPIC SEATING, AND GRANDSTANDS

### SECTION 501

#### APPLICATION AND ADMINISTRATION

**501.1 General.** Existing bleachers, folding and telescopic seating, and grandstands that exist prior to the adoption of this standard shall comply with this chapter and the applicable provisions of Chapter 1.

**Exception:** Tiered seating where the top of footboards, seatboards, aisles and cross aisles are not more than 30 inches (762 mm) above the floor or grade below, unless judged by the code official to represent a distinct hazard.

**501.2 Inspection.** All existing tiered seating shall be inspected and evaluated at least once a year by a qualified person for compliance with the provisions of this chapter. All folding and telescopic seating shall be inspected to evaluate compliance with the manufacturer's installation and operational instructions, including an inspection during the opening and closing of such seating.

**501.3 Violations.** Where deficiencies are identified, the owner shall have until [DATE TO BE INSERTED BY JURISDICTION] to abate the unsafe condition as deemed necessary by the code official.

**501.4 Alterations.** Alterations to any tiered seating shall conform with the requirements of this standard for new construction. Portions of the structure not altered and not affected by the alteration are not required to comply with the requirements in this standard for a new structure.

### SECTION 502 MAINTENANCE AND REPAIRS

**502.1 Structural.** Existing tiered seating shall be maintained structurally sound as follows.

1. Components or fasteners shall not be broken, damaged, badly deteriorated or missing.
2. Adequate bearing shall be provided. The structure shall bear uniformly on the floor or ground in a manner so as to safely support the structure.
3. All components and systems shall be in proper working condition.

**502.2 Durability.** Materials used in the construction of outdoor installations shall be weather resistant. Where wood is used, it shall be naturally durable or preservative-treated wood as defined in the building code or other approved material. Where ferrous metal is used, it shall be protected from corrosion. Fasteners shall consist of aluminum or other approved corrosion-resistant materials or shall be provided with approved corrosion-resistant coatings such as copper or zinc.

**502.2.1 Application.** Bleachers, folding and telescopic seating and grandstand systems included in this standard

must be maintained in good repair and structurally sound so not to pose a threat to the public health, safety or welfare.

**502.2.2 Unsafe conditions.** Seating shall comply with Chapter 5 and the applicable sections of the *International Property Maintenance Code*, Sections 304 and 305. In seating areas affected by damage, unsafe operation or defects that interfere with safe use shall not be used or operated until satisfactory repairs restoring safe use is completed.

**502.2.3 Notification.** Written or oral notice shall be provided to the owner or owner's representative of the unsafe condition upon discovering the defective conditions.

**502.3 Interior corrosive environment.** Installations located in interior corrosive environments, such as those located in conjunction with indoor pools, shall be corrosion resistant.

**502.4 Spaces beneath seats.** Spaces beneath or adjacent to seating structures shall comply with the building code and fire code.

### SECTION 503 GUARDS

**503.1 Required guards.** Guards shall be provided in the following areas.

1. Along open-sided walking surfaces, cross aisles, stepped aisles, ramps and landings of tiered seating areas which are located more than 30 inches (762 mm) above the floor or grade below. Such guards shall be not less than 36 inches (1067 mm) high, measured vertically above the leading edge of the tread, adjacent walking surface or center of adjacent bench seat.

#### Exceptions:

1. Where the uppermost seat is located less than or equal to 55 inches (1397 mm) above the floor or ground below.
2. Where located adjacent to a wall and the space between the wall and the tiered seating is less than 4 inches (102 mm).
2. Unless subject to the requirements of Item 3, a guard with a minimum height of 26 inches (660 mm) shall be provided where the floor or footboard elevation is more than 30 inches (762 mm) above the floor or grade below and the guard would otherwise interfere with the sightlines of immediately adjacent seating.
3. A guard shall be provided for the full width of the aisle where the foot of the aisle is more than 30 inches (762 mm) above the floor or ground below. The guard shall be a minimum of 36 inches (914 mm) high.

## EXISTING BLEACHERS, FOLDING AND TELESCOPIC SEATING, AND GRANDSTANDS

**503.2 Opening limitations.** Open guards shall be constructed of materials such that a 4-inch-diameter (102 mm) sphere cannot pass through any opening.

**Exception:** The triangular opening formed by the riser, tread and bottom rail at the open side of an aisle stair or tiered seating shall be of a maximum size such that a sphere of 6 inches (152 mm) in diameter cannot pass through the opening.

**503.3 Guard design.** Guards and their attachment shall be designed to resist the loads indicated in Section 303.

### SECTION 504 OPEN SPACES AT FOOTBOARDS AND SEATBOARDS

**504.1 Open spaces at footboards and seatboards.** Where an opening between the seatboard and footboard is located more than 30 inches (762 mm) above the floor or ground below, the opening shall be closed with construction such that a 4-inch-diameter (102 mm) sphere cannot pass through.

**Exception:** Where the uppermost seat is located less than or equal to 55 inches (1397 mm) above the floor or ground below.

### SECTION 505 SEATING RELOCATION

**505.1 Relocating existing bleachers.** Relocating existing bleachers to a new location shall be permitted provided the existing bleacher complies with Sections 303.7, 304, 306, 307, 308 and 310 and Chapter 5.

**Exception:** Where full compliance with Sections 310.1 and 501.4 is technically infeasible, the relocated existing bleachers shall provide access in compliance with the building code to the maximum extent technically feasible.



# SMARTSIDE®

TRIM & SIDING

*The Beauty Of Wood.*

*Made Better.*



**Product Portfolio**

It's more than a job.

More than a structure.

It's a home.



That's why America's leading builders rely on engineered building materials from LP Building Products. Our materials offer exceptional strength, durability and consistency. And their cost efficiencies and environmental benefits make them all the more impressive. Generations of families will count on your homes to stand up to Mother Nature's worst. Build them with the very best: engineered building materials from LP Building Products.



LP Building Products.  
The First Choice  
For Homes That Last.

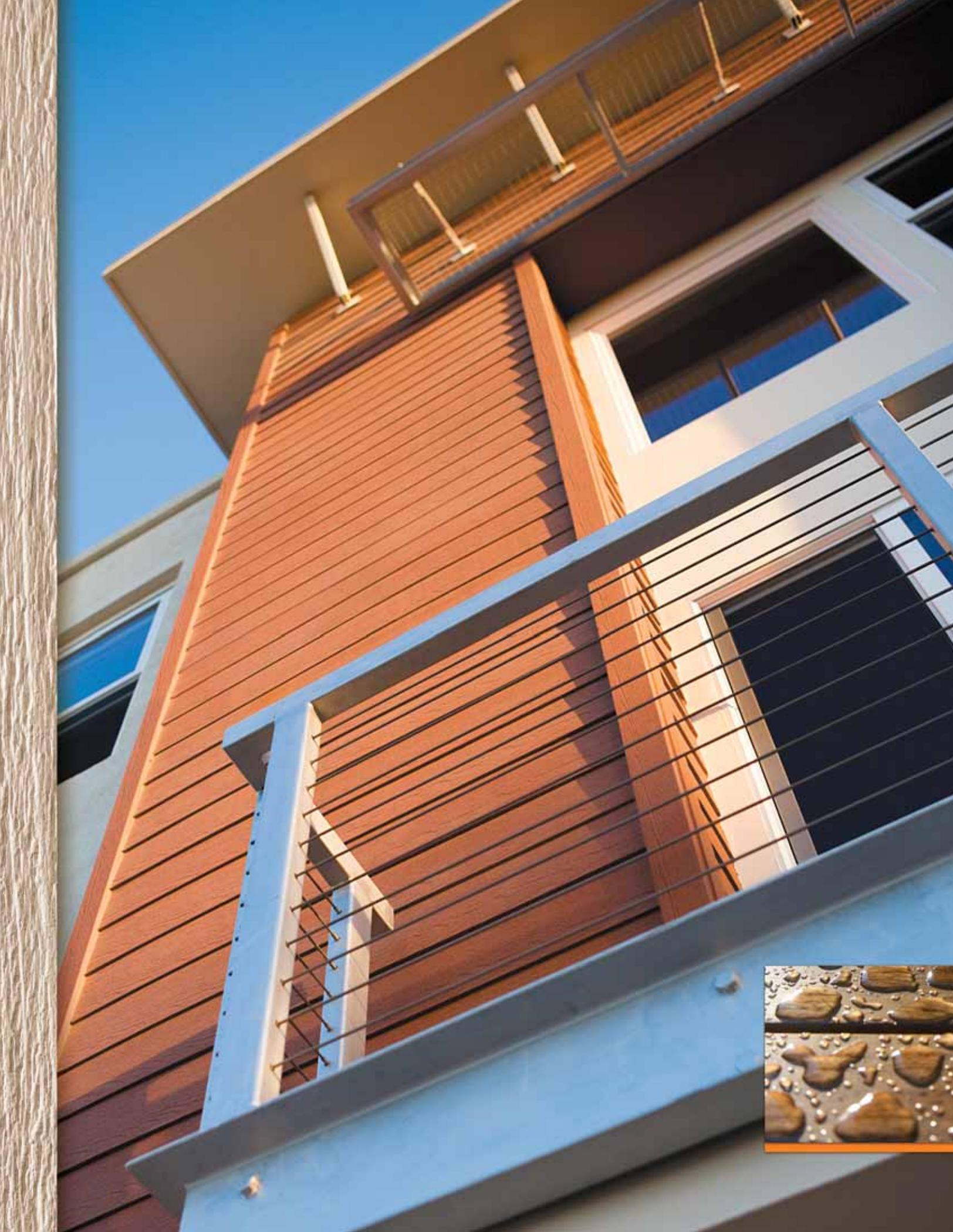
**Introduction**  
pg. 2

**Trim**  
LP® SmartSide®  
Trim  
pg. 8

**Siding**  
Architectural  
Collection  
pg. 12  
Precision Series  
pg. 20  
Foundations  
pg. 24

**Why Choose  
LP Building  
Products**  
Business  
Practices &  
Sustainability  
pg. 28

**Materials  
From  
LP Building  
Products**  
Additional  
Products  
pg. 29



# INTRODUCTION

LP® SmartSide® Trim & Siding.  
Beautiful. Durable. Workable.

LP® SmartSide® Trim & Siding products offer all the warmth and beauty of traditional wood, along with all the advantages of LP engineered wood. Our advanced technology actually improves upon nature, creating products that are far more durable and consistent than traditional wood materials. Free of knots and common defects, LP SmartSide products resist twisting, warping, cupping and shrinking. They work and cut just like traditional wood, taking nails and screws with ease—with no special tools or protective gear required. And they're backed by an industry-leading 5/50-Year Limited Warranty.



## Extra Protection, Through And Through

In addition to their impressive consistency and outstanding workability, LP® SmartSide®



Trim & Siding products offer the remarkable protection of our proprietary SmartGuard® manufacturing process.

Every step of the SmartGuard process is designed to create the most durable product possible. That includes the application of zinc borate throughout the substrate to create materials that resist both fungal decay and termite damage. LP SmartSide products are also pre-primed at the factory. This adds another layer

of moisture protection while ensuring that on-site paint application is fast and easy.

## Tested Tough

We do more than just use the SmartGuard® manufacturing process, we put it to the test. Since 1996, select LP® SmartSide® Trim & Siding products have undergone brutal testing in the relentless tropical environment of Hilo, Hawaii. Hilo is the perfect place to see how well LP SmartSide products stand up to moisture, fungal decay, and hungry termites. All these years later, the LP SmartSide products continue to suffer no structural damage, while other wood siding products were totally destroyed by moisture and termite damage within three years.

## Good For Business

LP® SmartSide® products are silica-free. Unlike fiber cement products, they require no special tools or protective gear during installation. LP SmartSide products also weigh less than fiber cement trim and siding, so breakage, installation costs and installation time are all significantly reduced. In fact, a Total Installed Cost Study found that crews installed LP SmartSide Siding 12% faster than fiber cement siding (Source: NAHB Research Center, October 2003).

Meanwhile, consistency and lack of knots and common defects mean LP SmartSide Trim & Siding products create far less waste than using traditional lumber on a home's exterior. And traditional lumber can't match the proven durability of LP SmartSide Trim & Siding.





## Good For The Planet

The entire LP® SmartSide® Trim & Siding manufacturing process is exceptionally efficient. Our wood is obtained under strict Sustainable Forestry Initiative® standards. Our process uses the entire log, either in the product or for fuel. We add no urea-formaldehyde and use low-emitting, safe resins as our binding agents. Finally, our SmartGuard® process protects with natural materials. We know of no other family of siding products that offers our level of sustainability. So it should come as no surprise that using LP products like LP SmartSide Trim & Siding can help you qualify for green building programs. Check local codes and review the green building programs in your area for details.



## More Products, Better Choices

LP® SmartSide® Trim & Siding features beautiful wood grain patterns in authentic natural textures.

Our product line is so extensive that you can count on LP SmartSide products for all of your lap, trim, panel, fascia and soffit needs. Our incredible array of finishes and dimensions meets the widest possible variety of design requirements, ensuring that there are LP SmartSide products for every home you build.

## Great Product, Great Warranty



We back LP® SmartSide® products with one of the absolute best

warranties in the market: A 5/50-Year Limited Warranty that provides a 5-year, 100% labor and replacement feature and a 50-Year Prorated Limited Warranty on the product. That's peace-of-mind protection for you and your customers for decades to come. And it applies to every LP SmartSide Trim & Siding product we make! Visit us online at [LPCorp.com/SmartSide](http://LPCorp.com/SmartSide) for complete warranty details.

# A Comprehensive Approach, A Complete Family Of Products

LP® SmartSide® products are available in four lines that offer unparalleled beauty, performance and variety.

LP® SmartSide® Trim products are suitable for use with almost any substrate and are available in a cedar texture and a smooth or cedar reversible design. With a wide variety of widths and lengths, LP SmartSide Trim products let you finish any home in style.

The Architectural Collection is our most distinctive line. It brings unique siding solutions in a variety of styles and profiles. All offer beautiful natural looks and unbeatable durability. The many offerings in the Architectural Collection include cedar shakes, colonial beaded lap, reverse board & batten panel, and cut-to-width vented soffit.

Our Precision Series offers the most durable engineered wood siding on the market today. The Precision Series delivers a number of installation advantages, including structural panels that may be applied direct-to-stud, allowing you to save time and money on sheathing.

Clean looks and lasting performance come together in Foundations, a line that delivers outstanding value. The Foundations product line is designed to have the natural warmth and beauty of traditional wood without the hassles.









# LP® SmartSide® Trim. The Beauty Of The Best.

Whether you finish a home in wood, vinyl, brick, stone or stucco, LP® SmartSide® Trim is the smart choice for that finishing touch that says so much. Beautiful, durable LP SmartSide Trim offers a full range of strand and fiber substrate options. Choose from cedar and smooth texture designs, including narrow widths and lengths up to 20 feet.

Imagine giving your homes the beauty of wood trim without the hassles and limited durability of “white wood” trim (also known as SPF or spruce-pine-fir). No knots or common defects. No culling on the job site. Resistance to cupping, twisting, splitting and shrinking, as well as



termites and fungal rot. All in a product that combines superior workability with unmatched durability, backed by a 5/50-Year Limited Warranty.





## Reversible

### Great Looks, Maximum Versatility

- The natural look of cedar on one side, smooth on the other
- Doubles your options while reducing inventory requirements
- Suitable for interior or exterior use, including corner boards, windows and doors
- Available in 540 Series and 440 Series thicknesses that can replace 5/4 and 4/4 solid wood trim
- Free of knots and common defects, for less waste and no culling
- Pre-primed for exceptional paint adhesion
- 16' length for faster installation and fewer seams
- Engineered with our proprietary SmartGuard<sup>®</sup> process to help prevent fungal decay and termite damage
- Silica-free fiber substrate works and cuts like traditional wood, no special tools or protective gear required

## Cedar

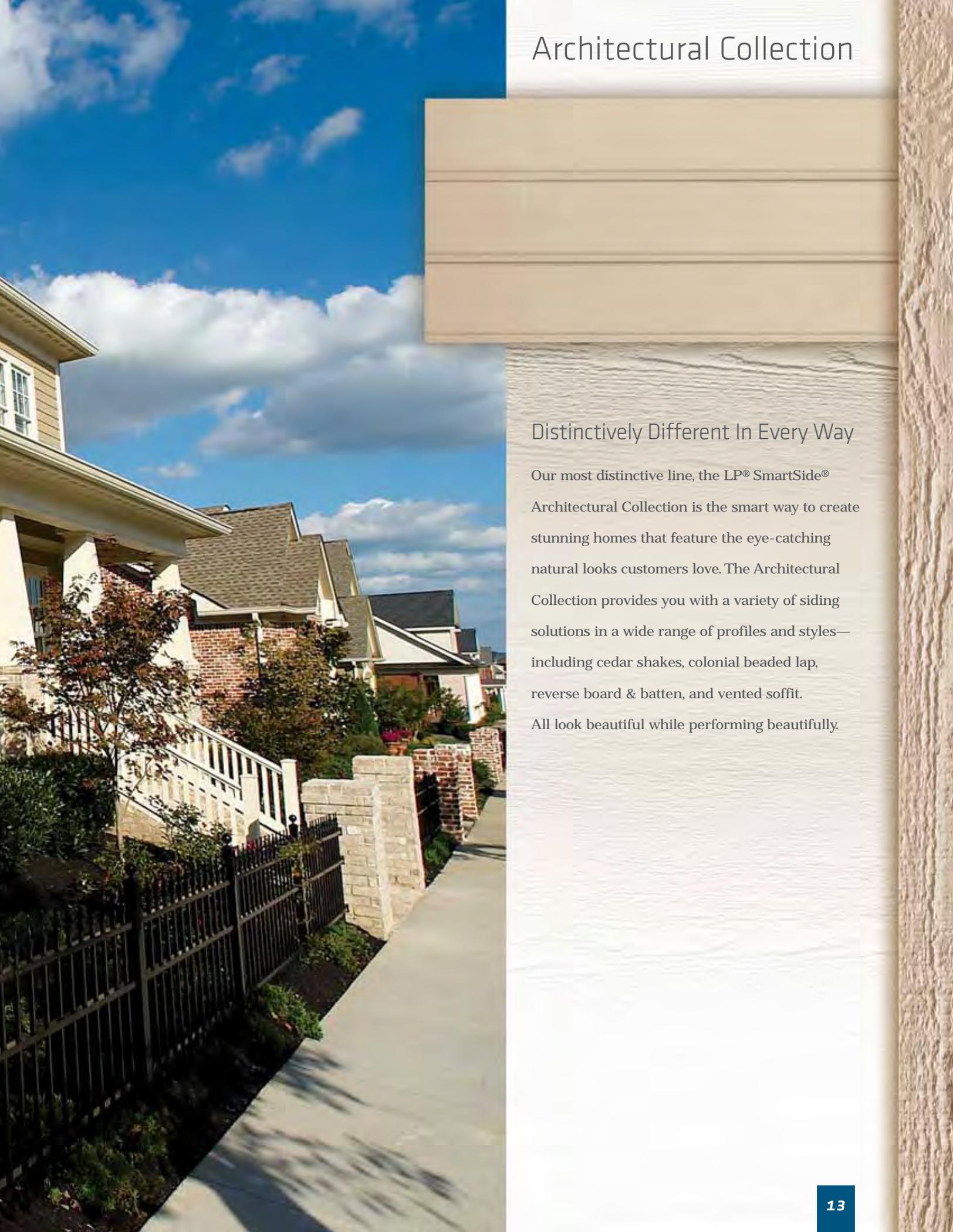
### Trim It Out In Style

- Cedar finish
- Interior or exterior use, including corner boards, windows and doors
- Narrow widths available; save cutting time with no ripped edges to seal
- Available in 2000 Series, 540 Series, 440 Series and 190 Series thicknesses that can replace 8/4, 5/4, 4/4 and 19/32 surfaced solid wood trim
- Free of knots and common defects means less waste and no time spent sifting through flawed pieces
- Pre-primed for exceptional paint adhesion
- 16' & 20' lengths for faster installation and fewer seams
- Treated with our proprietary SmartGuard<sup>®</sup> process to help prevent fungal decay and termite damage
- Silica-free strand substrate works and cuts just like real wood, no special tooling required



LP® SmartSide® Siding





# Architectural Collection

## Distinctively Different In Every Way

Our most distinctive line, the LP® SmartSide® Architectural Collection is the smart way to create stunning homes that feature the eye-catching natural looks customers love. The Architectural Collection provides you with a variety of siding solutions in a wide range of profiles and styles—including cedar shakes, colonial beaded lap, reverse board & batten, and vented soffit. All look beautiful while performing beautifully.



## Cedar Shakes

### The Luxurious Look Of Real Cedar Shakes

- The affordable way to deliver the look of real cedar
- Easy installation of lap siding
- Staggered or straight edge options in one versatile piece
- Staggered edges create a lively, textured effect
- An eye-catching alternative to the linear uniformity of conventional siding
- Suitable for an entire house or as a decorative accent with any siding
- Pre-primed for exceptional paint adhesion
- Treated with our proprietary SmartGuard® process to help prevent fungal decay and termite damage
- Silica-free fiber substrate works and cuts just like real wood, no special tooling required
- Reduced maintenance over time versus actual cedar

## Colonial Beaded

### Classic American Style Meets Modern American Ingenuity

- Classic American style in smooth or cedar finishes
- Drip lines cast crisp shadows for maximum curb appeal
- Pre-primed for exceptional paint adhesion
- 16' length for faster installation and fewer seams
- Treated with our proprietary SmartGuard® process to help prevent fungal decay and termite damage
- Silica-free fiber substrate works and cuts just like real wood, no special tooling required



## 12" Bold Profiles

### Striking Profiles, Remarkable Detail

- Distinctive double 5" and triple 4" profiles
- Shiplap edges make product easier to level and apply
- Pre-primed for exceptional paint adhesion
- Resistant to twisting, splitting, cracking and delaminating
- 16' length for faster installation and fewer seams
- Manufactured with our proprietary SmartGuard® process to help prevent fungal decay and termite damage
- Silica-free fiber substrate works and cuts like traditional wood, no special tools or protective gear required

## 16" Bold Profiles

### Distinctive Width, Rich Textures

- Distinctive extra-wide siding in quad 4", triple 5" and double 8" profiles
- Shiplap edges make product easier to level and apply
- Pre-primed for exceptional paint adhesion
- Resistant to twisting, splitting, cracking and delaminating
- 16' length for faster installation and fewer seams
- Manufactured with our proprietary SmartGuard® process to help prevent fungal decay and termite damage
- Silica-free fiber substrate works and cuts like traditional wood, no special tools or protective gear required

# Architectural Collection



## Self-Aligning

### Our Level Best

- Self-aligning lap that's ultra-easy to level
- Apply course after course with ease
- The natural look of cedar
- Saves installation and labor time
- Pre-primed for exceptional paint adhesion
- 16' length for faster installation and fewer seams
- Manufactured with our proprietary SmartGuard® process to help prevent fungal decay and termite damage
- Silica-free strand substrate works and cuts like traditional wood, no special tools or protective gear required



## Stucco

### The Hand-Troweled Look Without The Hassles

- Detailed hand-troweled effect gives the appearance of genuine stucco
- Deeply textured with variations from board to board
- Easy-to-install shiplap edge panels
- Pre-primed or pre-finished in white
- Manufactured with our proprietary SmartGuard® process to help prevent fungal decay and termite damage
- Silica-free fiber substrate works and cuts like traditional wood, no special tools or protective gear required
- Not rated for structural use



## Reverse Board & Batten Rustic Charm Made Easy

- The weathered grain appearance of cedar
- Cross-sawn to enhance authentic rustic look
- Available in 8' and 9' lengths
- Shiplap edges make product easier to level and apply
- Pre-primed for exceptional paint adhesion
- Manufactured with our proprietary SmartGuard® process to help prevent fungal decay and termite damage
- Silica-free fiber substrate works and cuts like traditional wood, no special tools or protective gear required
- Not rated for structural use





## LP® SmartSide® Cut-To-Width Vented Soffit

### Promote Ventilation, Not Infestation

- The ideal alternative to MDO, plywood, vinyl or hand-installed metal vents
- The natural look of cedar
- Precisely cut vents offer 10 square inches of ventilation per linear foot
- Exceeds ventilation requirements of most building codes
- Designed to minimize paint build-up and promote continuous airflow
- Vents as small as International Building Codes allow (1/8") keep insect pests out
- Available in three standard widths to fit in 12", 16" and 24" soffits
- Eliminates time spent ripping full sheets
- 16' length for faster installation and fewer seams
- Manufactured with our proprietary SmartGuard® process to help prevent fungal decay and termite damage
- Silica-free strand substrate works and cuts like traditional wood, no special tools or protective gear required



Each piece of LP SmartSide vented soffit comes with precisely cut vents offering 10 square inches of ventilation per linear foot.



## Homeowners Love It, Insects Don't

While some soffit manufacturers allow their vents to have openings as large as 1/4", LP® SmartSide® vented soffit vents are as small as 1/8". These smaller openings help keep insects like hornets and honeybees from infesting a home's attic. In addition, the 10 square inches of ventilation per linear foot of LP SmartSide soffit maximizes airflow to the part of a home that needs it the most. While some soffit designs can lead to paint build-up that can restrict airflow, LP SmartSide soffit is designed to minimize paint build-up and promote continuous airflow. Which makes LP SmartSide soffit a very cool product, indeed.

1/8"	
LP SmartSide Soffit Vent Size	
	4/5"
	1"
	1/3"



## Precision Series



### Unmatched Beauty And Durability

Our Precision Series offers the most durable engineered wood siding on the market today, with structurally rated panels that can typically be applied direct to stud. But we didn't sacrifice aesthetic beauty to achieve outstanding durability. Which is precisely why the Precision Series is a hit with builders and homeowners alike.



## Lap

The Beauty Of Cedar  
Made Durable And Affordable

- One of the most durable lap siding options on the market today
- Available in three standard widths similar to traditional 6", 8" and 12" siding
- 16' length for faster installation and fewer seams
- Pre-primed for exceptional paint adhesion
- Free of knots and common defects, for less waste and culling
- Self-aligning SmartLock™ option installs straighter, faster and more efficiently
- Manufactured with our proprietary SmartGuard® process to help prevent fungal decay and termite damage
- Silica-free strand substrate works and cuts like traditional wood, no special tools or protective gear required



## Soffit

Top It Off Right

- The perfect alternative to MDO, vinyl and plywood soffits
- Available in cedar and smooth finish
- Engineered options for open or closed soffit applications
- Available in three pre-cut widths to fit 12", 16" and 24" soffits and in 16' lengths to eliminate time spent ripping full sheets
- Free of knots and common defects, for less waste and no culling
- Manufactured with our proprietary SmartGuard® process to help prevent fungal decay and termite damage
- Silica-free strand or fiber substrate works and cuts like traditional wood, no special tools or protective gear required
- Also available in standard 8' panels



## Panel

### Strong Enough To Be Rated By The APA® For Strength

- The natural look of cedar
- 4" or 8" On Center groove design flexibility for finishing contemporary homes
- Shiplap edge with advanced bead and notch system for easier alignment
- Pre-primed for exceptional paint adhesion
- Significantly lighter and stronger than comparable fiber cement panel
- Strong enough to be nailed direct to stud, making additional sheathing unnecessary in many applications
- Eliminates need for diagonal bracing on load-bearing walls
- Ideal exterior for homes in areas of high winds or seismic activity
- Free of knots and common defects, for less waste and no culling
- Manufactured with our proprietary SmartGuard® process to help prevent fungal decay and termite damage
- Silica-free strand substrate works and cuts like traditional wood, no special tools or protective gear required

# Foundations



## Strength And Style Start Here

Outstanding performance and clean, stylish looks come together beautifully in our Foundations line. One of the best values on the market today, it offers the natural beauty and welcoming warmth of real wood in lap, panel and soffit products. Because every home deserves the quality of LP Engineered Wood.



## Smooth Lap Simply Beautiful

- Traditional look that accentuates the architectural features of any home
- Smooth texture for a clean finish
- Pre-primed for exceptional paint adhesion
- Free of knots and common defects, for less waste and no culling
- 16' length for faster installation and fewer seams
- Manufactured with our proprietary SmartGuard® process to help prevent fungal decay and termite damage
- Silica-free fiber substrate works and cuts like traditional wood, no special tools or protective gear required



## Cedar Lap

### The Look That Lasts

- The natural look of cedar
- Pre-primed for exceptional paint adhesion
- Free of knots and common defects, for less waste and no culling
- 16' length for faster installation and fewer seams
- Manufactured with our proprietary SmartGuard® process to help prevent fungal decay and termite damage
- Silica-free fiber substrate works and cuts like traditional wood, no special tools or protective gear required

## Primed Panel

### Good Looks Made Easy

- Shiplap edge for easy installation
- Easy maintenance
- Available in cedar or smooth finish
- Pre-primed for exceptional paint adhesion
- Free of knots and common defects, for less waste and no culling
- Manufactured with our proprietary SmartGuard® process to help prevent fungal decay and termite damage
- Silica-free fiber substrate works and cuts like traditional wood, no special tools or protective gear required
- Not rated for structural use

# Foundations



## Prefinished Panel

### Beautifully Done

- The natural look of cedar
- Prefinished with multiple layers of paint along the edges and face surfaces
- Easy maintenance
- Free of knots and common defects, for less waste and no culling
- Manufactured with our proprietary SmartGuard® process to help prevent fungal decay and termite damage
- Silica-free fiber substrate works and cuts like traditional wood, no special tools or protective gear required
- Not rated for structural use
- Available colors: Ivory, Beige, White, Pearl

## Soffit

### Made To Match

- Installs quickly and easily
- Available in a variety of sizes for extraordinary versatility
- Pre-primed for exceptional paint adhesion
- Free of knots and common defects, for less waste and no culling
- Manufactured with our proprietary SmartGuard® process to help prevent fungal decay and termite damage
- Silica-free fiber substrate works and cuts like traditional wood, no special tools or protective gear required
- Not rated for structural use



# It's More Than Our Products. It's The Way We Do Business.

At LP Building Products, we're proud to offer integrated building solutions that work together to save you time and money. And proud that our products offer so many environmental benefits.

But something else sets us apart: the way we do business. We believe that "sustainability" means acting in a way that protects the environment, embraces social responsibilities, and builds economic prosperity today and for future generations.

We invite you to discover more about LP's comprehensive environmental programs, industry-leading employee safety accomplishments, community involvement and financial results by visiting our website at [LPCorp.com](http://LPCorp.com).

**BUILD WITH US.**

# Build It Better With LP Building Products



## LP® SolidStart® Laminated Strand Lumber (LSL)

Engineered to outperform traditional lumber, LP® SolidStart® LSL delivers superior strength for greater load-bearing capacity. Consistently straight and true, it eliminates the need to cull lumber and build up headers. And like all LP SolidStart Engineered Wood Products, it's backed by a Lifetime Limited Warranty.



## LP® TopNotch® Sub-Flooring

Providing protection from the costs and hassles of sanding, LP® TopNotch® Sub-Flooring is the only brand of sub-flooring with the patented RainChannel™ self-draining system. By removing standing water, it greatly reduces the risk of warping, swelling and other water damage. LP TopNotch products also feature edge sealing and advanced panel construction.



## LP® CanExel® Prefinished Siding

Available in 19 beautiful, nature-inspired colors, LP® CanExel® products combine all the advantages of engineered wood with all the advantages of prefinished materials. LP CanExel products are silica-free and require no special equipment for installation. Five layers of baked-on paint and sealer ensure years of enduring beauty.



## LP® TechShield® Radiant Barrier

The original radiant barrier sheathing, LP® TechShield® Radiant Barrier sheathing is the #1 brand. It's also the only brand with patented VaporVents™ technology for faster drying from construction moisture. By blocking up to 97% of the radiant heat in the panel from entering the attic, it lowers attic temperatures and helps reduce monthly air conditioning bills by up to 17%.



**LP** **SMARTSIDE**<sup>®</sup>  
BUILDING PRODUCTS TRIM & SIDING



For more information on LP<sup>®</sup> SmartSide<sup>®</sup> Trim & Siding, visit our website at [LPCorp.com/SmartSide](http://LPCorp.com/SmartSide)  
For information on other LP products, visit [LPCorp.com](http://LPCorp.com).

Phone: 888-820-0325  
Fax: 877-523-7192  
E-mail: [Customer.Support@LPCorp.com](mailto:Customer.Support@LPCorp.com)  
Web: [LPCorp.com](http://LPCorp.com)



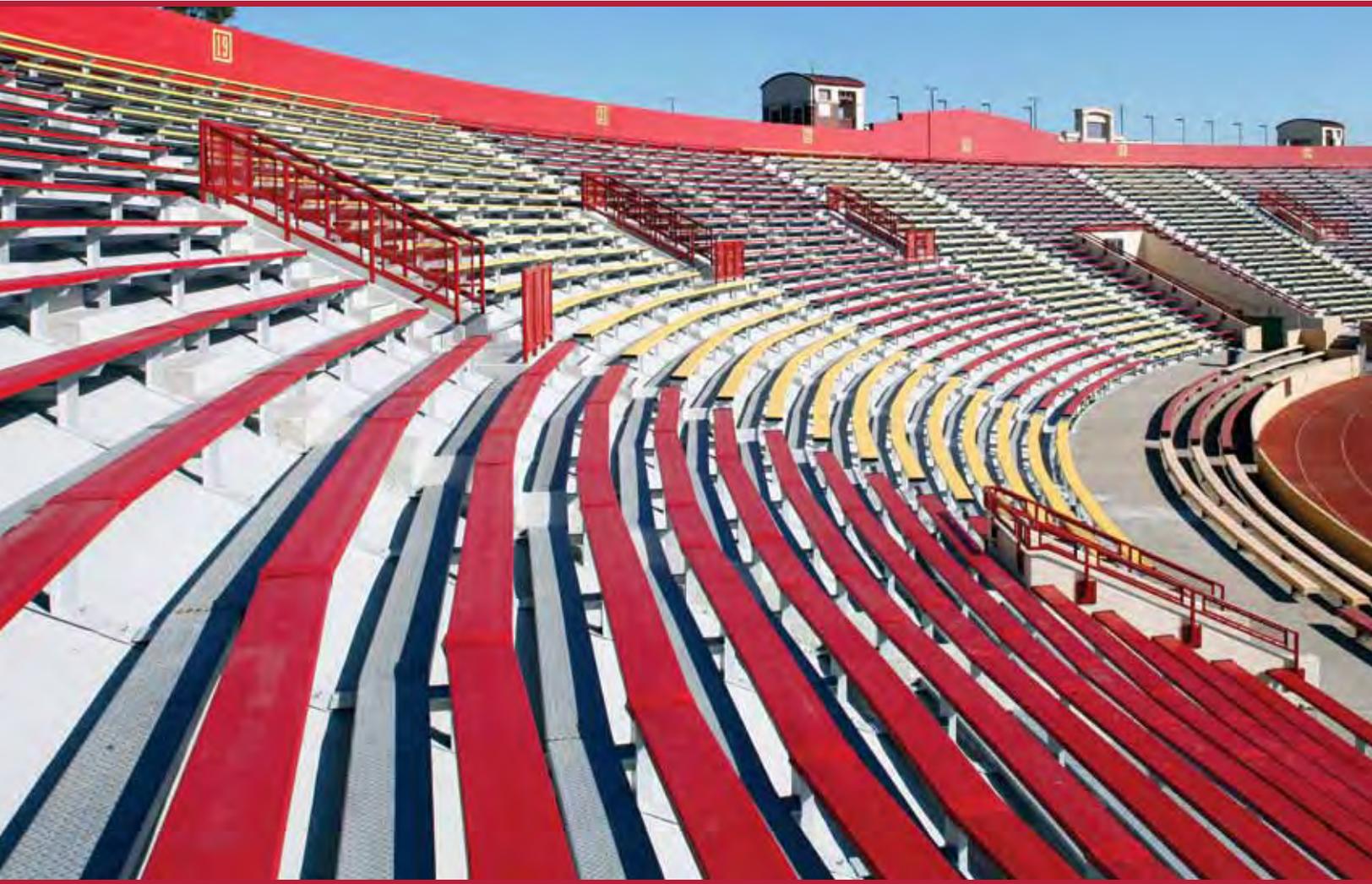
©2010 Louisiana-Pacific Corporation. All rights reserved. SFI is a registered trademark of Sustainable Forestry Initiative, Inc. SmartGuard is a registered trademark of Louisiana-Pacific Corporation and S-T-N Holdings, Inc., APA is a registered trademark of APA-Engineered Wood Association. All other trademarks are owned by Louisiana-Pacific Corporation. Specifications subject to change without notice.

Printed In U.S.A.  
LPZB0501 75M 05/10

# PERMA-CAP<sup>®</sup>

VINYL BLEACHER COVERS

## BLEACHER COVERS



husseyseating<sup>™</sup>

YOUR PARTNER FOR SEATING SOLUTIONS

# The Economical Bleacher Replacement

Perma-Cap® covers enhance and protect your bleacher investment, with installation and maintenance costs approximately half that of refinishing or replacing existing seating. In fact, Perma-Cap covers are a snap to install-by your maintenance crew or an athletic boosters club.

Made from durable, UV stabilized vinyl, Perma-Cap covers maintain color fastness and impact properties over years of outdoor exposure, so pre-season maintenance is a breeze. And since Perma-Cap acts as an insulator, it won't draw heat from your body like aluminum will, making it an ideal way to add color and comfort to your existing aluminum grandstand.

Perma-Cap will rejuvenate your indoor gym bleachers as well. Perma-Cap eliminates the costly replacement and maintenance associated with lumber, and the vibrant colors will add a splash of school spirit as well!

For a complete plank replacement use Perma-Plank®, a sturdy galvanized steel plank covered with a durable layer of vinyl. The result is extra stable seating that can stand up to the worst weather, or glaring sunlight, for years on end without cracking or fading.



## INDOOR



- Standard lengths up to 20' (6096 mm)
- Available in 3/4" (19 mm) & 5/4" (32 mm) thicknesses
- Covers fixed and telescoping bleachers
- 14 standard colors

## OUTDOOR



- Specially formulated acrylic polymers
- UV resistant/outdoor weatherable
- 2x8" (51 mm x 203 mm), 2x10" (51 mm x 254 mm) and 2x12" (51 mm x 305 mm) widths
- Standard lengths up to 18' (5486 mm)
- Environmentally friendly
- Non-reflective/splinter free
- 14 standard colors

## Sustainability

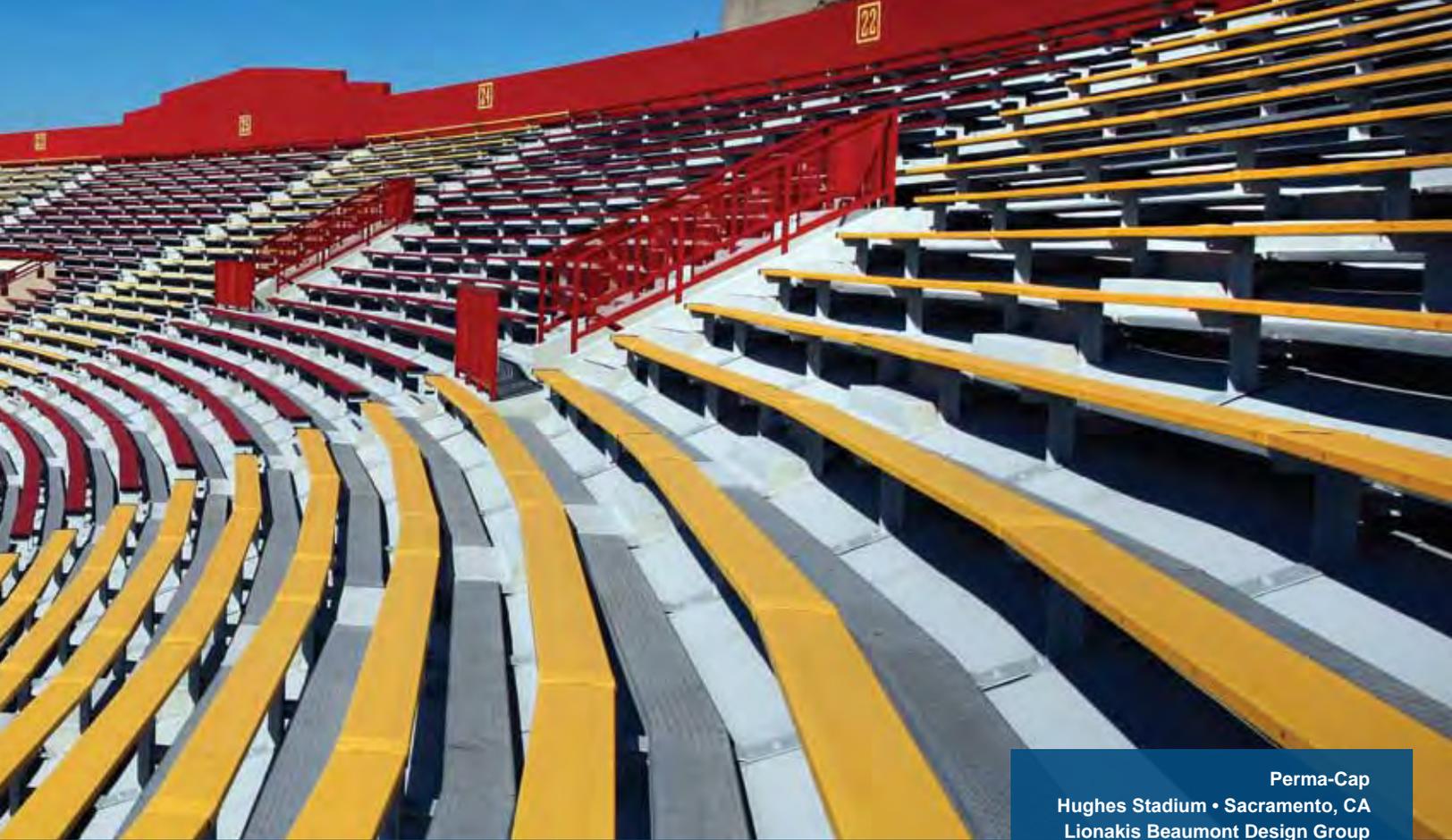
Hussey seating solutions come in a wide range of colors—but every day our seats get greener. If you'd like to learn more about our sustainability efforts, please visit our website at [www.HusseySeating.com/sustainability](http://www.HusseySeating.com/sustainability)

## Resources

For more information on PERMA-CAP, visit [www.HusseySeating.com](http://www.HusseySeating.com)

## Warranty

5 year factory-backed warranty - the best in the industry.



Perma-Cap  
Hughes Stadium • Sacramento, CA  
Lionakis Beaumont Design Group

## PERMA-PLANK



PERMA-CAP over PERMA-PLANK

### Galvanized Bleacher Planks

Galvanized steel is ideal for replacing old planks or for use in new construction.

- Roll formed galvanized steel
- Meets ASTM A-256
- 8" (203 mm), 10" (254 mm) & 12" (305 mm) widths
- Standard lengths up to 20' (6096 mm)

## PERMA-CAP



PERMA-CAP over wood



PERMA-CAP over aluminum

## End Caps



PERMA-CAP End Caps

- Available in black & grey

## Standard Colors



\*Actual colors and finishes may vary from printed color shown.



# PERMA-CAP®

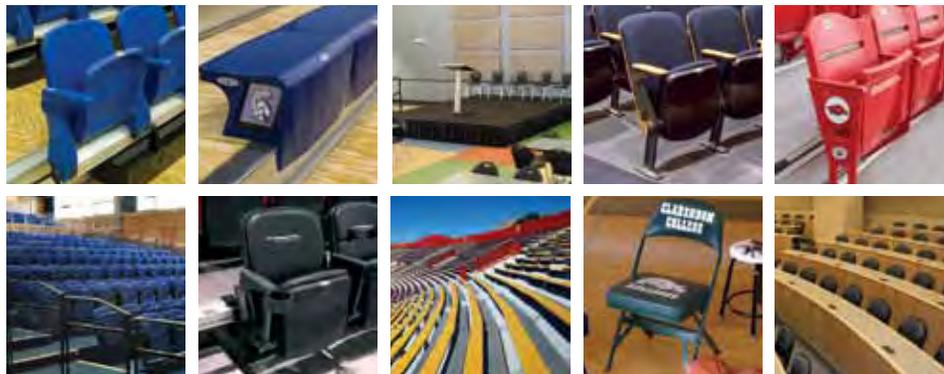
VINYL BLEACHER COVERS



## Hussey Seating Company™

The Hussey Seating Company story dates back to 1835 with William Hussey's tremendously successful plow design, and thus, the Hussey Plow Company was born. As times changed over the next sixty years, the family set about reinventing the business, evolving into the company that is now seating the world. Today, under the sixth generation of family leadership, Hussey Seating Company is proud to be known as the leading manufacturer of seating solutions throughout the world – in stadiums, arenas, schools, universities, colleges, places of worship and anywhere people gather.

**Hussey. Your partner for seating solutions.**



## husseyseating™

YOUR PARTNER FOR SEATING SOLUTIONS

38 Dyer Street Extension  
North Berwick, Maine 03906 USA  
Toll Free (USA) 1.800.726.SEAT  
Tel: +1.207.676.2271 • Fax: +1.207.676.2222  
info@husseyseating.com • www.husseyseating.com

