Factory-Fabricated Liner for MLB-Standard Field Reconstruction

Sutter Health Park Field Reconstruction | Sacramento, California

130,000 sq ft | 30 mil LLDPE | 3 panels | 91% fewer field seams | 3-day install

PROJECT OVERVIEW

Sutter Health Park, home of the Sacramento River Cats in West Sacramento, California, was selected as the temporary home of the Athletics for the 2025 through 2027 MLB seasons. To qualify as an MLB-standard facility, the ballpark required a comprehensive renovation, including complete reconstruction of the playing field.

The original plan called for synthetic turf, but that changed after player concerns about heat and surface conditions. A natural grass surface was selected instead. Unlike synthetic turf, which sits on compacted aggregate, natural grass required a fully engineered subsurface drainage and aeration system, with a sealed liner serving as the pressure boundary beneath the entire field profile.

The schedule left a minimal recovery window. Between the River Cats and the Athletics, the stadium was committed to 163 games in 162 days. The field had to be ready for Opening Day on March 31, 2025, against the Chicago Cubs.

TECHNICAL INSIGHT

"Drainage trenches, swales, and pipe penetrations each require careful planning before a liner reaches the site. Addressing those features in fabrication, rather than in the field, is what gives the installed system its integrity."

Ron MacKenzie, CTO, Inland Tarp & Liner

THE CHALLENGE

Athletic field liner work carries a different kind of risk than many industrial or civil liner projects. The liner is not the only construction activity on the site. It is one layer in a larger field system, and once drainage aggregate, rootzone sand, and growing media are placed above it, correcting liner problems means removing the field profile above it.

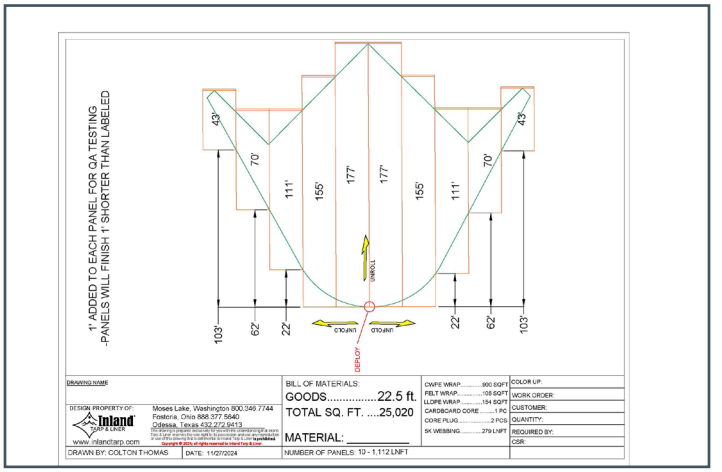
This project had multiple requirements:

- The field required a complete tear-out and rebuild from the subgrade up.
- The subsurface aeration and drainage system required a sealed liner to maintain the pressure boundary for both vacuum drainage and forced-air injection into the rootzone.
- The field geometry included drainage trenches, swales, and multiple pipe penetrations, all of which had to be addressed in fabrication before the liner reached the site.
- The construction window ran through Sacramento's rainy season.
- Sacramento summer temperatures regularly exceed 100°F. The Sub Air system would need to operate continuously through the season, placing sustained demand on liner integrity from opening day forward.

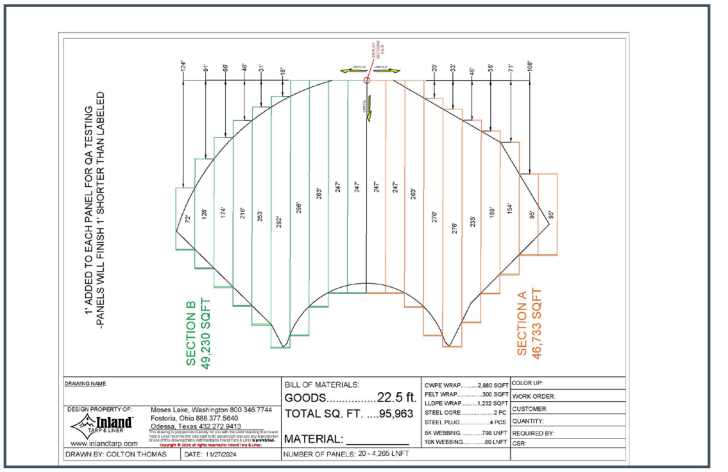
THE ITL APPROACH

ITL fabricated the 130,000-square-foot field liner as three large panels of 30 mil LLDPE. The panel layout was produced from the field geometry specifications, allowing the liner system to be planned around the infield crown geometry, outfield drainage slopes, subsurface drainage profiles, and pipe penetration locations before installation began.

Using factory fabrication moved the majority of seam welding into a controlled production environment. Seams were welded, pull-tested, and documented before the liner shipped to the site. The field seams remaining were limited to the three connections between the large fabricated panels.



Infield panel: 25,020 sq ft



Outfield panel: 95,963 sq ft.

WHY 30 MIL LLDPE FIT THE APPLICATION

The Sutter Health Park liner was specified as 30 mil linear low-density polyethylene, or LLDPE, conforming to GRI-GM17 standards. For this application, flexibility and conformability mattered. The liner had to conform to the field profile without creating unnecessary stress points.

Compared with HDPE (high density polyethylene), LLDPE offers greater flexibility and conforms better to irregular field profiles. HDPE can develop stress cracks when folded, which makes large-panel factory fabrication impractical and requires field welding of individual rolls instead. For a project constrained by field geometry and schedule, LLDPE was the appropriate material.

TECHNICAL INSIGHT

> "Many field applications in the past specify very lightweight liners such as 12 or 20 mil products. Extreme care is required during installation to avoid damage in an application where many layers of turf, soil, and equipment go on top. Designing heavier liners such as 30 mil LLDPE or reinforced WCPE products protects system integrity during installation and avoids costly issues down the line."

Ron MacKenzie, CTO, Inland Tarp & Liner

SEAM REDUCTION

Field seams are one of the most closely controlled risk points in liner installation. Each seam depends on material preparation, ambient conditions, equipment calibration, installer skill, and testing discipline. Reducing the number of field seams reduces the number of variables that have to be managed during installation.

ITL's factory-fabricated approach reduced field seaming to the minimum required by geometry:

- Factory-fabricated 30 mil LLDPE panels: approximately 550 LF of field seams
- Conventional field-welded build using the same width material: approximately 6,500 LF of field seams
- Field-welded thin-gauge material: more than 10,000 LF of field seams

That is roughly 91 percent fewer field seams than a conventional on-site build using the same material width. For a liner positioned beneath the field profile and tied to the Sub Air pressure system above it, every seam eliminated on site is a variable removed from the installation.

FIELD SEAM REDUCTION COMPARISON

~91%

Fewer field seams left to complete on site

compared with conventional field welding using the same material width.

Comparison based on conventional field welding using the same material width.

Liner deployment during rain window.

WEATHER AND SCHEDULE IMPACT

The construction window included nine days of rain. Field welding cannot proceed in rain, which would have stopped production on a conventional field-built liner installation.

With the liner already factory-fabricated, the large panels could be deployed during rain. Only the remaining field seams had to wait for workable welding conditions.

The liner installation was completed in three days. Compared with prior on-site liner deployments, factory fabrication saved nine days, and that figure does not include the production stops that nine days of rain would have forced on a field-welded installation.

QA/QC DOCUMENTATION

ITL provides a complete QA/QC package with fabricated liner orders for athletic field applications. That package includes material certifications covering thickness, tensile strength, and hydrostatic test results; weld test data including tensile testing, weld count, visual inspection records, and preweld certification testing; certified QA oversight on all production; and audit records available on request.

Having that package assembled before the liner ships means the acceptance process starts with complete records.

SPECIFICATION TAKEAWAYS

For natural grass athletic field liner systems, confirm these items before fabrication or installation begins:

- Factory-fabricated or field-welded?
- How many field seams remain?
- Are panel drawings based on field geometry, drainage profiles, and penetrations?
- Has installation been coordinated with the subsurface aeration and drainage system?
- Has liner thickness been evaluated against installation loads, including construction equipment, drainage aggregate, and rootzone media?
- What QA/QC documentation will be provided?

OUTCOME

The Sutter Health Park liner was fabricated, shipped, and installed on schedule. Seam count was reduced by 91 percent compared with a conventional field-welded build, and installation was completed in three days despite nine days of rain during the construction window.

The Athletics played their inaugural MLB game at Sutter Health Park on March 31, 2025. The field was ready.

PROJECT SUMMARY

Challenge: Complete playing field reconstruction to MLB standards with no meaningful schedule recovery window before the 2025 season.

Solution: 130,000 sq ft of 30 mil LLDPE factory-fabricated by ITL into three large panels using field geometry and CAD-based panel planning.

Result: Approximately 550 LF of field seams, roughly 91% fewer field seams than a conventional field-welded build using the same material width. Three-day installation. Nine days saved compared with prior on-site deployments.

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www.inlandtarp.com | 800-346-7744 | sales@inlandtarp.com

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