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*FINAL*

**Building 131  
Factory Building**

**Historic American Buildings Survey  
Level I**

**2701 North Harbor Drive,  
San Diego, California 92101**

Prepared for

**San Diego Unified Port District (SDUPD)  
San Diego County Regional Airport Authority**

April 2010

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**CH2MHILL**

HISTORIC AMERICAN BUILDINGS SURVEY  
RYAN AERONAUTICAL COMPANY HISTORIC DISTRICT  
BUILDING 131 - AIRCRAFT FACTORY BUILDING

Location:	2701 North Harbor Drive, San Diego, CA 92101, USA
Present Owner/Occupant:	San Diego County Regional Airport Authority
Present Use:	Vacant
Significance:	<p>Building 131 is located within the boundaries of the Ryan Aeronautical Company Historic District, a 46-acre complex containing 17 contributing resources and 30 non-contributing resources. The district is eligible on the local and national level for the National Register of Historic Places (NRHP) under Criteria A, B, and C and is eligible for the California Register of Historical Resources (CRHR) under Criteria 1, 2 and 3. The historic district is eligible under NRHP Criterion A (CRHR 1) for its association with the contribution of aircraft manufacturers at Lindbergh Field to World War II defense production. It is also eligible for its association with Cold War research, development projects, and defense manufacturing. Under Criterion NRHP B (CRHR 2) the district is eligible for its association with aviation pioneer T. Claude Ryan and his aircraft aerospace manufacturing businesses. Ryan Aeronautical Company, under Mr. Ryan’s leadership, made significant contributions to national defense production during World War II, as well as important developments in aerospace research and development in the 1950s and 1960s. The historic district is eligible under NRHP Criterion C (CRHR 3) for its representation of industrial architecture associated with the 1930s and World War II. The district embodies the distinctive architectural characteristics of aircraft manufacturing buildings of the period in Southern California. The building and structures in the district illustrate the design fabrication concepts common to aircraft manufacturing plants from the 1930s to the 1960s. During this period, the aerospace industry played a dominant role in the economy of the region (URS Corporation, 2008).</p> <p>Building 131, also called the Tooling Building, was built in the 1950s, and is a contributing resource to the Ryan Aeronautical Company Historic District due in part to its function as an aircraft factory. The building exhibits distinctive architectural characteristics of mid-century industrial architecture, particularly the aviation industry.</p>

Historian: Sara Orton

PART I. HISTORICAL INFORMATION

A. Physical History:

- 1. Date of erection: 1957
- 2. Architect/Builder: Freeland & Bird

- 3. Original and subsequent owners: Ryan Aeronautical Company signed a 50-year lease in 1939. Ryan Aeronautical Company sold to Teledyne Inc. in 1969, and the combined company became Teledyne-Ryan Aeronautical Company (TDY Industries). TDY Industries merged with Allegheny Ludlum Corporation in 1996, and Northrop Grumman Corporation acquired TDY Industries from Allegheny in 1999. Presently, the property is leased by the San Diego County Regional Airport and is under the Jurisdiction of the San Diego Unified Port District.
- 4. Original plans and construction: Building 131 is a, rectangular, open interior aircraft factory building, two stories in height and built on a concrete slab with a raised concrete perimeter foundation. It measures approximately 150 feet by 300 feet. The perimeter footing supports 2-inch-by-4-inch stud wood-framed walls sheathed in stucco on the exterior. Five-inch-by-8-inch wooden beam posts are placed approximately 12 feet apart along the interior of the wall to add reinforcement. The beams also support the arched steel roof trusses. Each truss is approximately 50 feet wide and placed in sets of three to span the 150-foot width of the building. The interior trusses are supported by two rows of 5-inch-square steel I-beam posts mounted directly onto the concrete slab floor. The steel trusses hold 4-inch-by-12-inch wooden roof joists covered with a plywood roof. The top of the roof is covered with rolled asphalt roofing material. There are large hanging doors on the east, west, and north elevations (URS Corporation, 2009).
- 5. Alterations and additions: There are no known alterations or additions. The majority of the windows have been removed and not replaced.

B. Historical Context:

1. San Diego’s Aviation History:

During the first three decades of the 20<sup>th</sup> century, the aviation industry was established in San Diego and it became a focal point of San Diego’s activities and reputation. In 1912, the Army founded an air base and the first year-round military aviation school at Rockwell Field on Naval Air Station North Island, San Diego (Macaulay, 1928; Moore, 1960). The creation of the military air bases helped establish aviation in the region during the industry’s pioneering years. In 1928, the Army and Navy had invested \$5,500,000 in the air bases at North Island (Macaulay, 1928). The high profile attained by aviation in the local community during these years resulted in an awareness of the potential future of the industry by the inhabitants of the region. San Diego became the first U.S. city to establish a Municipal Board of Air Control in 1926, and was also the first to issue a complete set of air ordinances (Macaulay, 1928).

In 1922, T. Claude Ryan, an aviation pioneer who began his career as an Army pilot, left the Army and moved to San Diego, where he began giving airplane rides and flying instructions. He soon established the Ryan Flying Company at the Dutch Flats Airfield in San Diego, which later became Ryan Airport. Dutch Flats Airfield was located at present-day Barnett Avenue and Midway Drive, off the current San Diego airport site and not within the current historic district boundaries. In the 1920s, Ryan Airport was the focal point for Ryan’s expanding aeronautical enterprises (flying school, flying service, and an airplane manufacturing company). In the late 1920s, the use of the airport expanded as civil aviation came of age with other companies using Ryan’s field to operate air services. With the help of T. Claude Ryan, civilian aviation flourished in San Diego County during these decades.

In the mid-1920s, the Chamber of Commerce promoted San Diego as the “Air Capital of the West.” The development of what is now Lindbergh Field would be the central effort in this

campaign. The committee realized that in order to maintain a leadership role in aviation, San Diego must have an adequate municipal airport. They wanted the location of the airport to be a place that would combine facilities for the operation of land and seaplanes, and be as near to the city of San Diego as possible. They selected an area at the north end of San Diego Bay on City-owned tideland; however, this area did not contain enough area to meet government requirements. Negotiations were made with the United States Navy to provide portions of the Marine Corps-owned tidelands for the airport expansion (URS Corporation, 2009).

Ryan was instrumental in the development of Lindbergh Field, San Diego’s nascent municipal airport, which was established in 1928. In 1929, 4,755 planes and over 20,000 passengers arrived or departed from the Dutch Flats Airfield (Leiser, 2000). Within a few years, the majority of these activities would move to Lindbergh Field. In 1939, Ryan established a manufacturing site on airport grounds, which is the location of the historic district.

2. Ryan Aeronautical Company:

T. Claude Ryan was born in Parsons, Kansas in 1898, but moved with his family to Orange, California in 1912. Ryan began a lifelong relationship with the aviation industry when, around the age of 19, he enrolled at the American School of Aviation in Los Angeles. In 1919, Ryan began studying mechanical engineering at Oregon State College. While in school, he applied to the Army for aviation cadet training and was accepted, but left the Army by January 1922 in hopes of flying as a civilian (National Aviation Hall of Fame, 2009). Ryan moved to San Diego to establish the Ryan Flying Company. The Ryan Flying Company changed its name to Ryan Airlines, Inc. when it was reorganized in 1924 to begin operating the first year-round, scheduled airline service in the United States from Dutch Flats (URS Corporation, 2009). Around the same time, in the mid-1920s, Ryan entered the aircraft manufacturing business with partner Frank Mahoney and created the Ryan M-1 Monoplane, which became one of the best-known air mail carriers in the country. A modified Ryan Monoplane became the *Spirit of St. Louis*, the plane Charles Lindbergh flew from New York to Paris in May 1927 on the first solo flight across the Atlantic Ocean. Ryan sold the company to Mahoney in 1926 and established the Ryan Aeronautical Corporation for the sale and manufacture of aircraft engines. The company changed its name to the Ryan Aeronautical Company in 1934.

Ryan Aeronautical Company signed a 50-year lease, starting in 1939, on land at the southeastern edge of Lindbergh Field along North Harbor Drive. Three buildings from the site of the previous company were relocated to this new location. The Ryan plant was one of several aircraft manufacturers located at Lindbergh Field that contributed to the nation’s war effort in the 1940s. At peak wartime production, the Ryan plant had 8,500 employees and annual production exceeded \$55 million. Following the war, workforce was reduced to 1,200 and annual production to \$8 million (URS Corporation, 2009).

The Korean conflict provided the Ryan Aeronautical Company the opportunity to work with electronics for aerospace applications. The role in aerospace electronics led to the development of a variety of aircraft navigation and positioning equipment, including helicopter hovering devices, altimeters, and remote sensors (URS Corporation, 2009).

In 1947, the United States Navy awarded Ryan a contract to research the feasibility of reaction controls for jet aircraft. With jet engines and reaction controls handled by remote control, a Ryan vertical test rig lifted itself off the ground for the first time in 1950. In 1953, the Air Force

awarded Ryan a contract to design and build two manned vertical takeoff jet research planes and 2 years later, the Ryan X-13 Vertijet was constructed. In the 1960s, Ryan continued target drone and electronic systems production and vertical takeoff and landing research (URS Corporation, 2009).

In 1969, the company was sold for \$128 million to Teledyne Inc. and became known as Teledyne-Ryan Aeronautical Company (TDY Industries). T. Claude Ryan remained with the company as chairman until his death in 1982. In 1996, TDY Industries merged with Allegheny Ludlum Corporation, and then later became a subsidiary of that company. In 1999, Northrop Grumman Corporation acquired TDY Industries from Allegheny and relocated the plant to a site in Ranch Bernardo, California, leaving the former plant site vacant. The site continues to be mostly vacant, with only a small portion of Building 100 used for administrative offices and several other buildings used for storage.

PART II. ARCHITECTURAL INFORMATION

A. General Statement:

1. Architectural Character: Building 131 is an industrial-style rectangular-shaped building measuring approximately 150 feet by 300 feet that was used as an aircraft factory. Few of the original or historic-period windows are extant from the period of significance. Removal of historic-period windows is a loss of distinctive materials and design that characterized the building. Building 131 has retained its hanging doors, barrel roof, and flat parapet wall above the west and east elevations (URS Corporation, 2009).
2. Condition of Building Material: Building 131 is in fair condition due to the loss of the windows and exposure to the elements.

B. Description of Exterior:

1. Overall Dimensions: Building 131 measures approximately 150 feet by 300 feet.
2. Foundations: Building 131 has a concrete slab with a raised concrete perimeter foundation.
3. Walls: Building 131 has wood-framed walls that are sheathed in stucco on the exterior. The building has parapet walls above the west and east elevations.
4. Structural System: Building 131 had a wood-frame construction covered with stucco on the exterior. Wooden beam posts add reinforcement and also support arched steel roof trusses, which span the 150 foot width of the building. The interior trusses are supported by two rows of 5-inch-square steel I-beam posts mounted directly onto the concrete slab floor (URS Corporation, 2009).
5. Openings:
  - a. Doorways: The east and west elevations each have a single 18-foot-tall sliding door and a smaller 11-foot-tall sliding door, as well as two personnel doors each. The north elevation has two 18-foot-tall sliding doors and three small personnel doors.
  - b. Windows: There are rows of large, steel-framed multi-panel rectangular windows around the perimeter of the building below the roofline. The majority of these



windows have been removed. The exceptions are four small, six-pane pivot windows on the north elevation which remain functional.

6. Roof: The barrel roof of Building 131 is covered with rolled asphalt roofing material.

C. Description of Interior:

Floor Plans: Building 131 is a two-story, industrial-style, rectangular-shaped building measuring approximately 150 feet by 300 feet. The building has an open plan interior. In the northeast corner of the interior of the building is a small, two-story area for restrooms and storage.

D. Site:

Historic Landscape Design: None

PART III. SOURCES OF INFORMATION

A. Early Views: N/A

B. Interviews: N/A

C. Bibliography

1. Primary and Unpublished Sources:

San Diego Unified Port District (SDUPD). 2009. 2701 North Harbor Drive Demolition Project Environmental Impact Report. April.

URS Corporation. 2008. Department of Parks and Recreation Primary Record form for the Ryan Aeronautical Company Historic District (P-37-028619, CA-SDI-18401H). January.

URS Corporation. 2009. *Appendix B. Cultural Resources Assessment Report. 2701 North Harbor Drive Demolition Project Draft EIR (UPD #83356-EIR-713)*. April.

Van Wormer, Stephen. 2005. Department of Parks and Recreation Primary Record form for the Ryan Aeronautical Company Historic District (P-37-028619, CA-SDI-18401H). Prepared by Walter Enterprises. December.

Van Wormer, Stephen, Mary Robbins-Wade. 2006. *Historic Architectural Survey Report: San Diego International Airport Master Plan*. Prepared for San Diego County Regional Airport Authority. May.

2. Secondary and Published Sources:

Leiser, Edward. 2000. "San Diego Flying Days." Copies of manuscripts on file at the San Diego Historical Society and San Diego Aerospace Museum, San Diego, CA.

Macaulay, Major T. 1928. *"The Story of Lindbergh Field, San Diego's 'Triple A' Municipal Airport Lindbergh Field."* Dedication brochure, Lindbergh Field Vertical Files, San Diego Aerospace Museum Library, San Diego, CA.

Moomjian, Scott A. and Wendy L. Tinsley. 2001. *Historic Survey Report of the Former Teledyne-Ryan Aeronautical Complex, 2701 North Harbor Drive, San Diego, California, 92101*. Prepared by Office of Maria Burke Lia, Attorney at Law, 427 C Street, Suite 416, San Diego, CA 92101.

Prepared for Jones Lang La Salle, 2701 North Harbor Drive, Building 100, San Diego, California 92101. Copy on file with the San Diego Regional Airport Authority.

Moore, Floyd Roscoe. 1960. San Diego Airport Development. Thesis, Political Science, San Diego State College, San Diego, CA.

National Aviation Hall of Fame. T. Claude Ryan- Biography.  
[http://nationalaviation.blade6.donet.com/components/content\\_manager\\_v02/view\\_nahf/htdocs/menu\\_ps.asp?NodeID=-2144693577&group\\_ID=1134656385&Parent\\_ID=-1](http://nationalaviation.blade6.donet.com/components/content_manager_v02/view_nahf/htdocs/menu_ps.asp?NodeID=-2144693577&group_ID=1134656385&Parent_ID=-1) (accessed November 5, 2009)

San Diego Unified Port District. 1966. *San Diego Unified District Annual Report: 1965-66*. Carl Reupsch Collection, San Diego Historical Society, San Diego, CA.

San Diego Union. Various Dates. Issues cited in text from Lindbergh Field Vertical Files, San Diego Historical Society, San Diego, CA.

San Diego Unified Port District. 1968. *San Diego Unified District Annual Report: 1967-68*. Carl Reupsch Collection, San Diego Historical Society, San Diego, CA.

San Diego Unified Port District. 1971. *San Diego Unified District Annual Report: 1970-71*. Carl Reupsch Collection, San Diego Historical Society, San Diego, CA.

San Diego Unified Port District. 1977. *San Diego Unified District Annual Report: 1976-77*. Carl Reupsch Collection, San Diego Historical Society, San Diego, CA.



Building 131 - Factory Building, San Diego, California, Date unknown. Teledyne-Ryan Archives.



Building 131 - Factory Building, East Elevation, San Diego, California, October 2009.



Building 131 - Factory Building, San Diego, California, Date unknown. Teledyne-Ryan Archives.



Building 131 - Factory Building, Southeast Oblique, San Diego, California, October 2009.





Building 131 - Factory Building, Northeast Oblique, San Diego, California, October 2009.



Building 131 - Factory Building, Northwest Elevation, San Diego, California, October 2009.



Building 131 - Factory Building, Northwest Elevation, San Diego, California, October 2009.

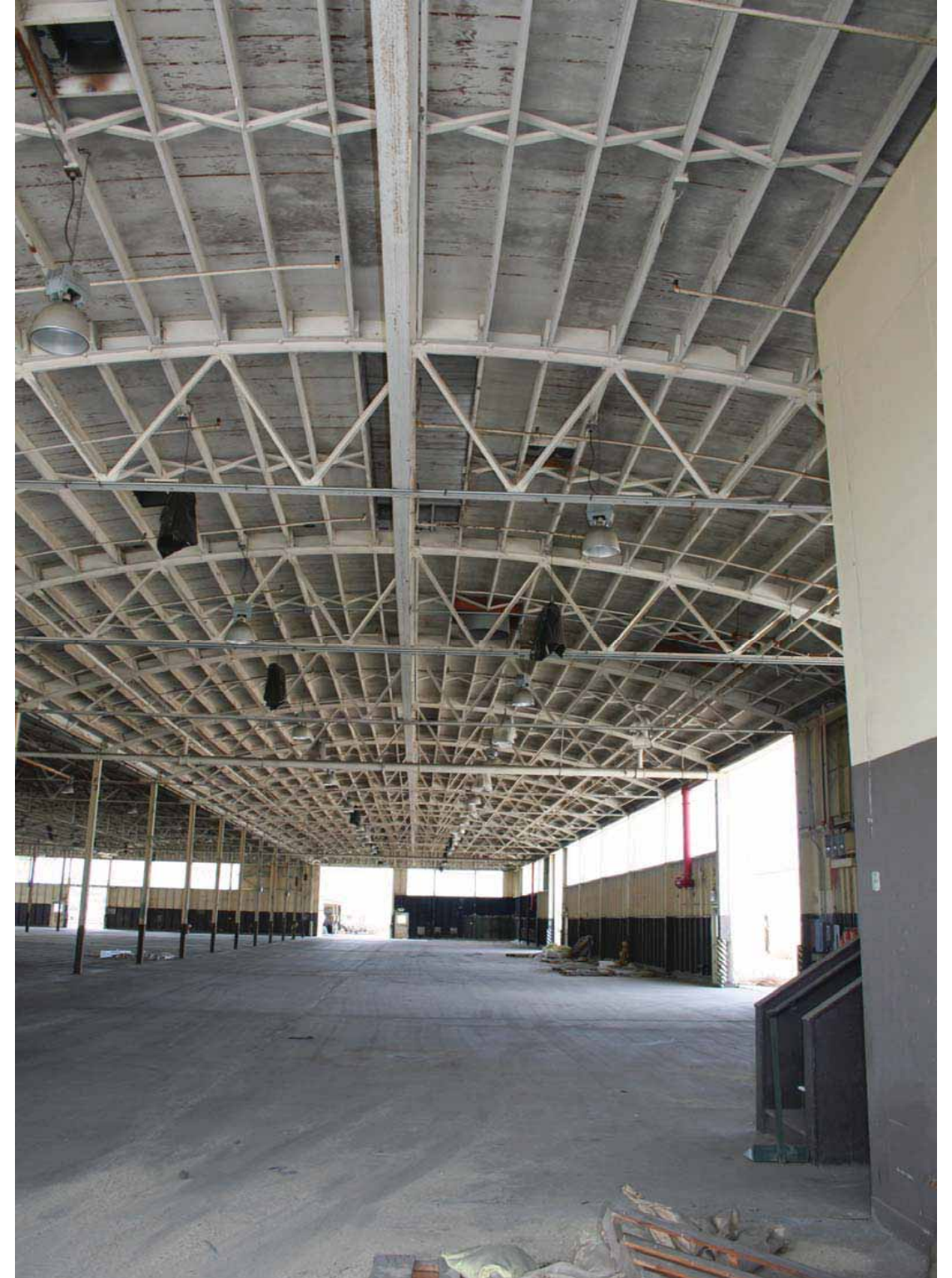


Building 131 - Factory Building, West Elevation, San Diego, California, October 2009.



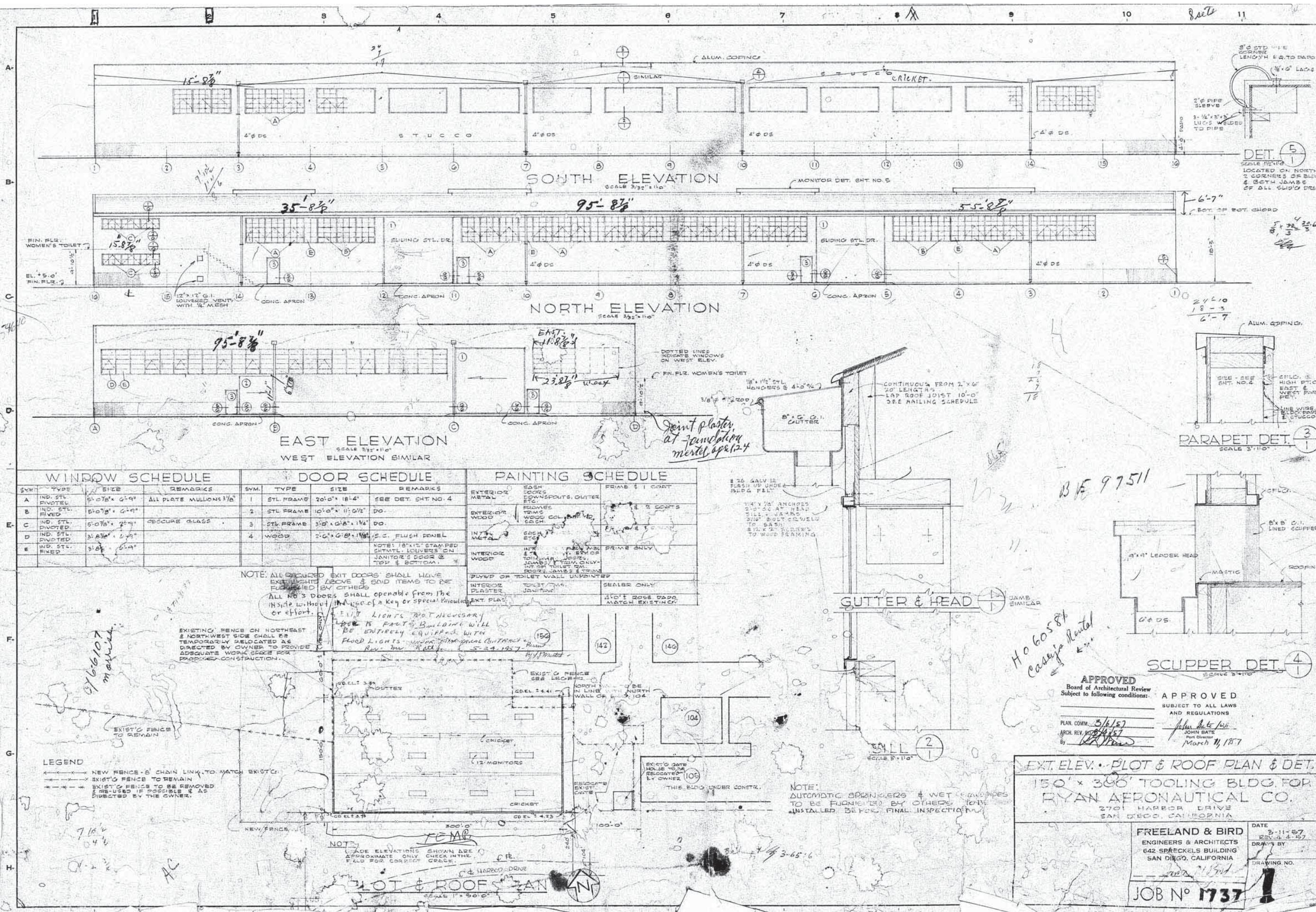


Building 131 - Factory Building Interior, north and west walls, San Diego, California, October 2009.



Building 131 - Factory Building Interior, ceiling detail, facing West, San Diego, California, October 2009.



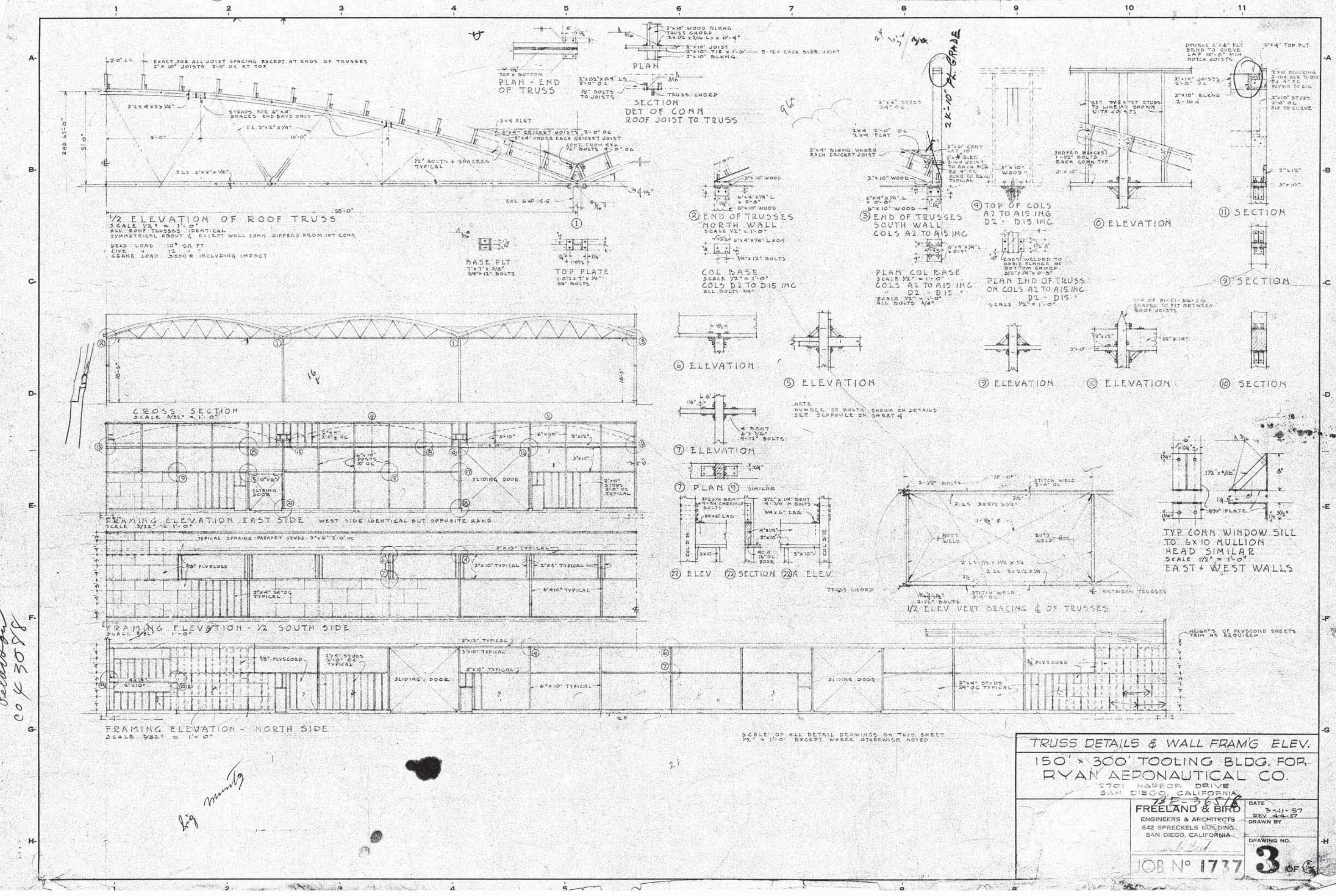




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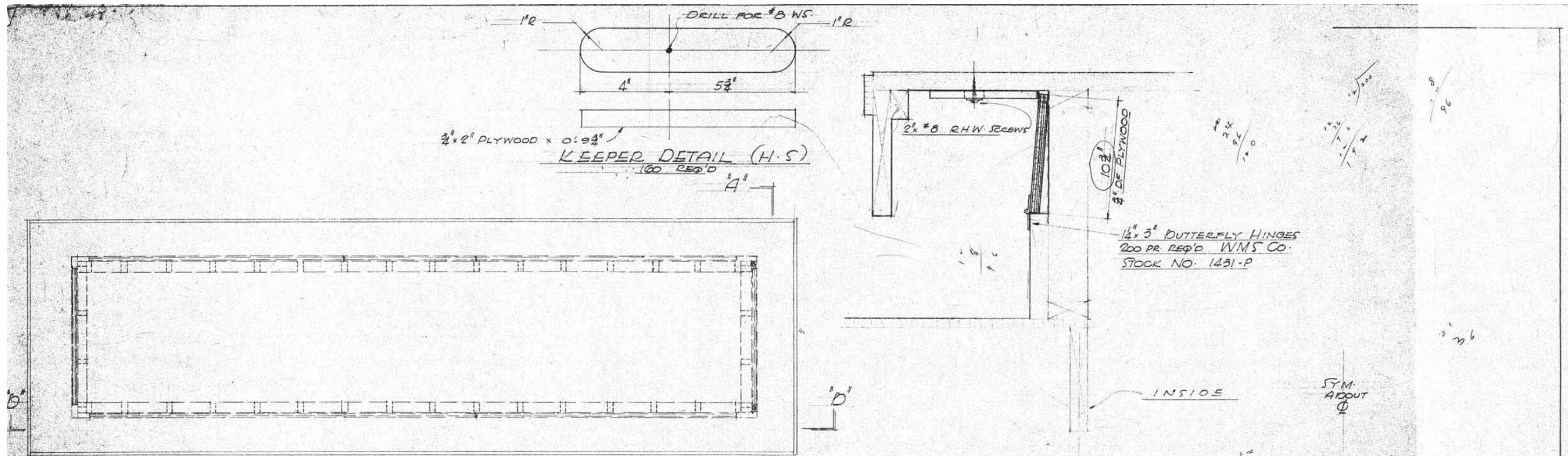
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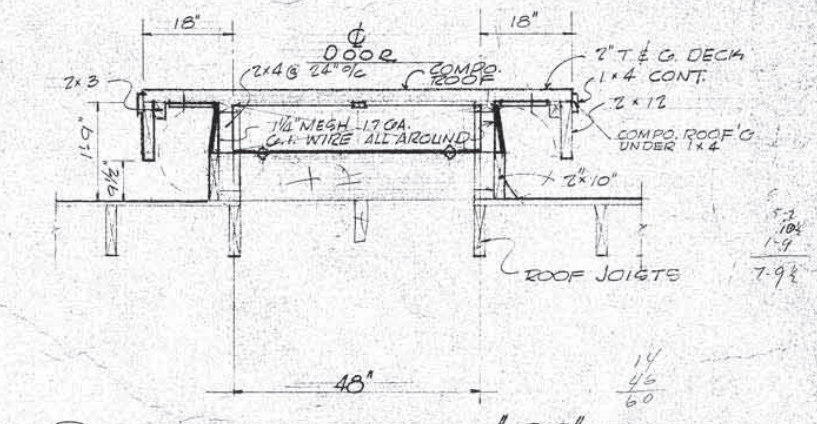
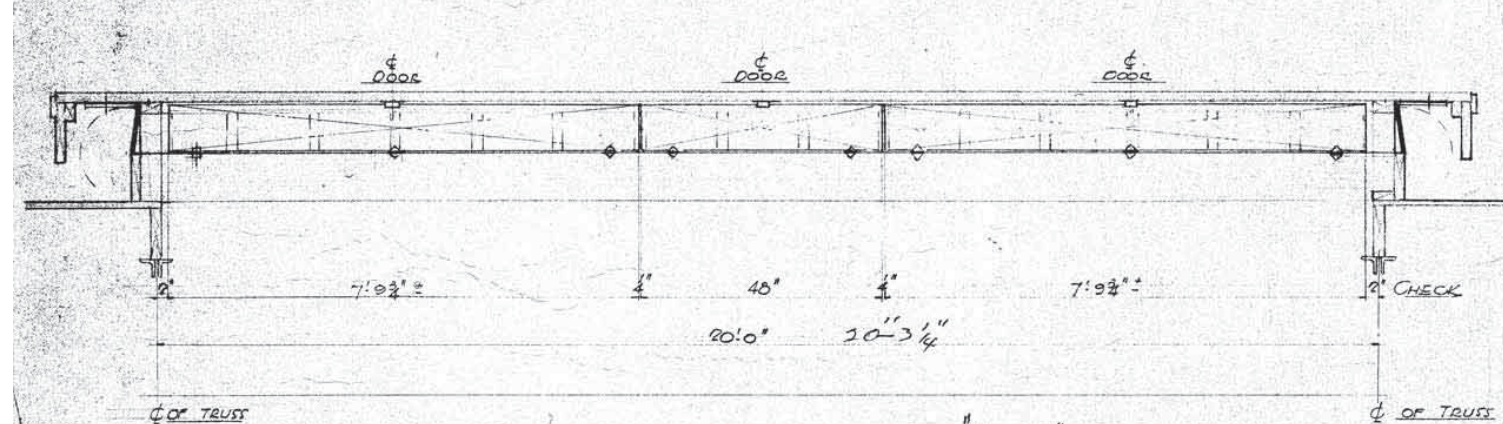








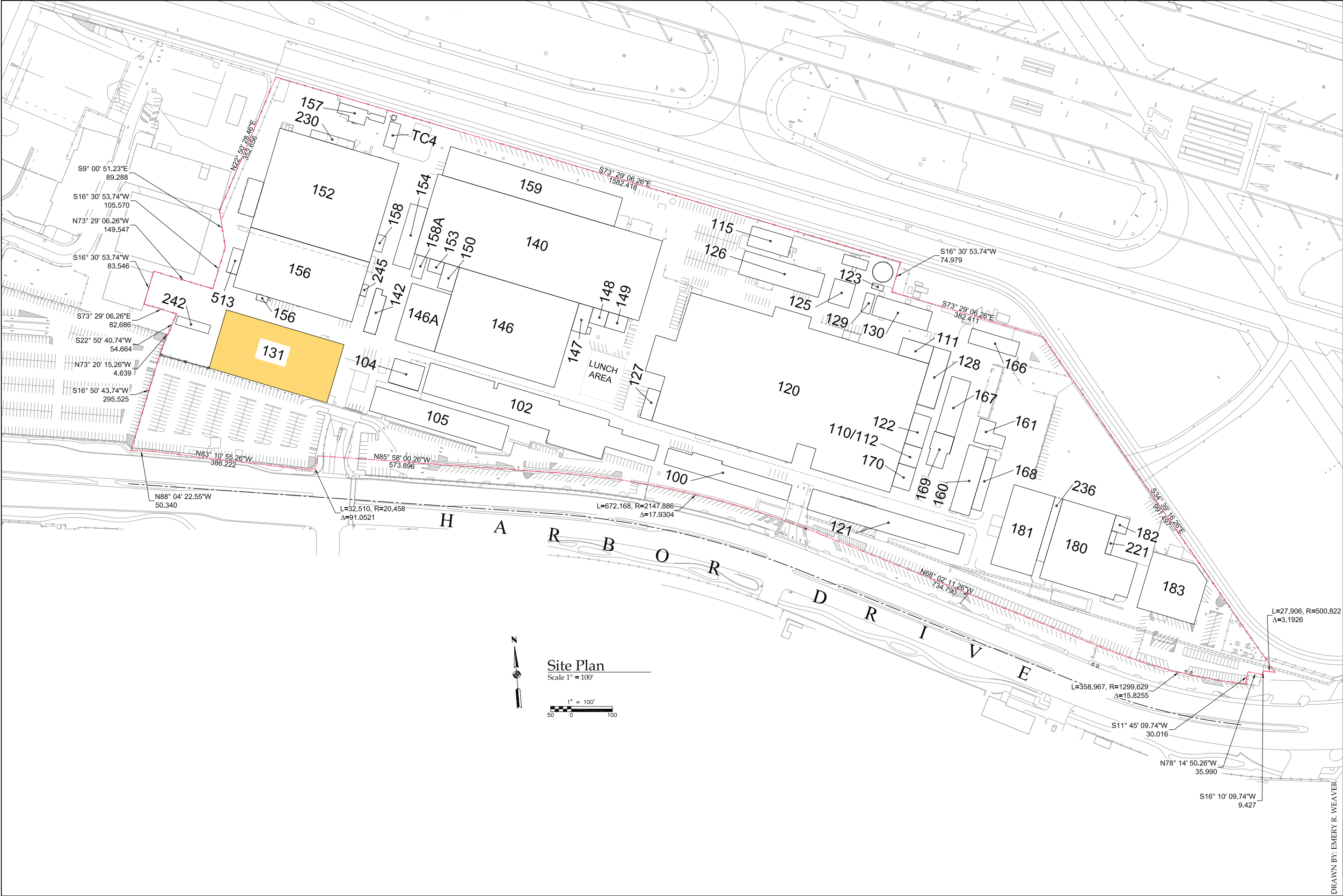
TYPICAL PLAN (MONITOR) THRU TRANSOM DOORS  
SCALE 3" = 1'-0"



PAINT DOORS - WHITE?

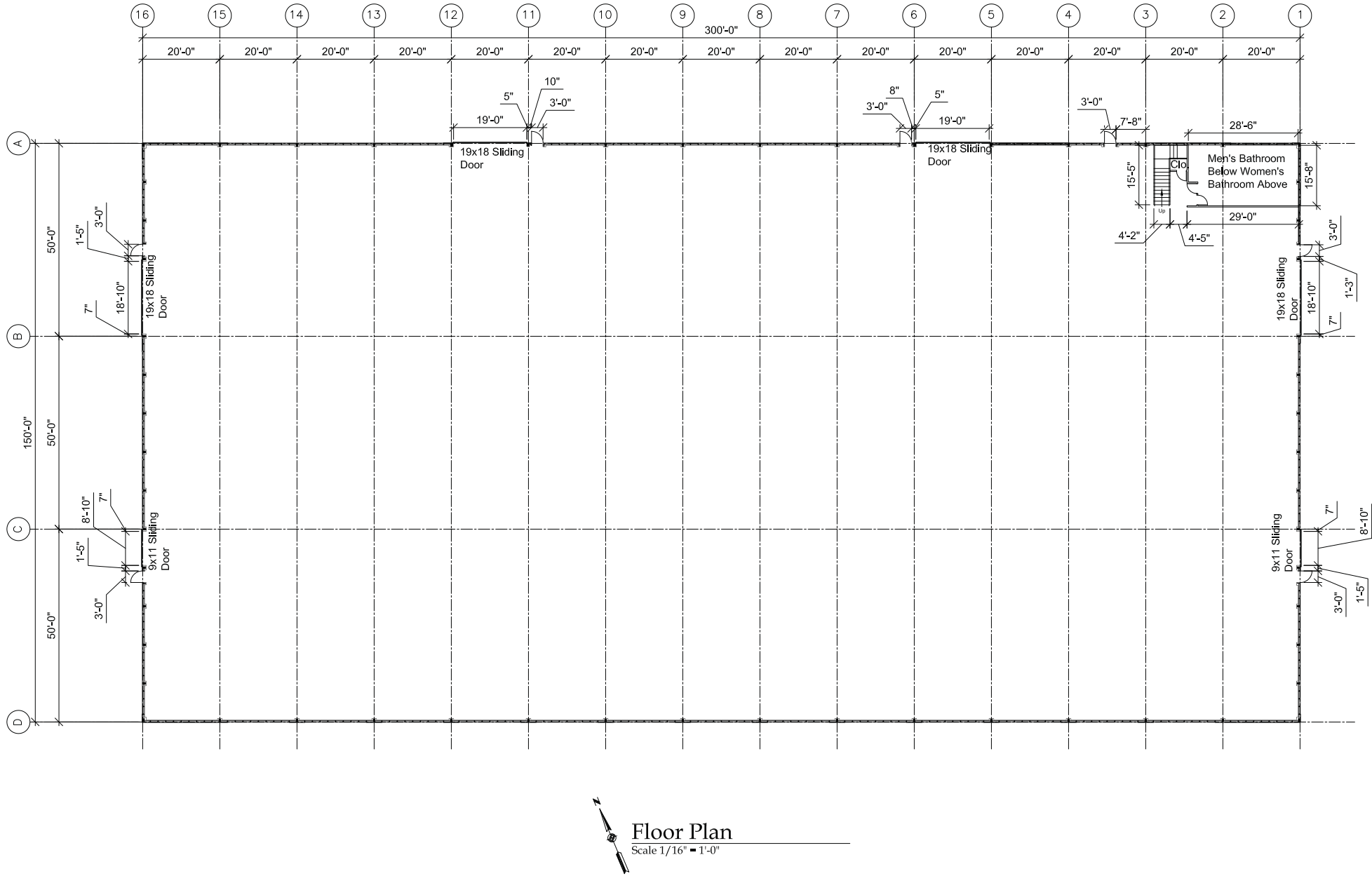
MONITOR DETAILS		
150' x 300' TOOLING BLDG. FOR RYAN AERONAUTICAL CO. 2701 HARBOR DRIVE SAN DIEGO, CALIFORNIA		
FREELAND & BIRD ENGINEERS & ARCHITECTS 642 SPRUCE BUILDING SAN DIEGO, CALIFORNIA <i>James L. Bird</i>	DATE	3-11-57
	REV	4-4-57
JOB N° 1737	DRAWN BY	
	DRAWING NO.	5 OF 6





RYAN AERONAUTICAL COMPANY HISTORIC DISTRICT JANUARY 2010	NAME AND LOCATION OF STRUCTURE		Library of Congress Index Number
	BUILDING 131 - FACTORY BUILDING		
	2701 N. HARBOR DRIVE	SAN DIEGO, CALIFORNIA	
		SURVEY NO.	HISTORIC AMERICAN BUILDINGS SURVEY
		SHEET 1 OF 4 SHEETS	
		SAN DIEGO COUNTY	





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RYAN AERONAUTICAL COMPANY  
HISTORIC DISTRICT  
JANUARY 2010

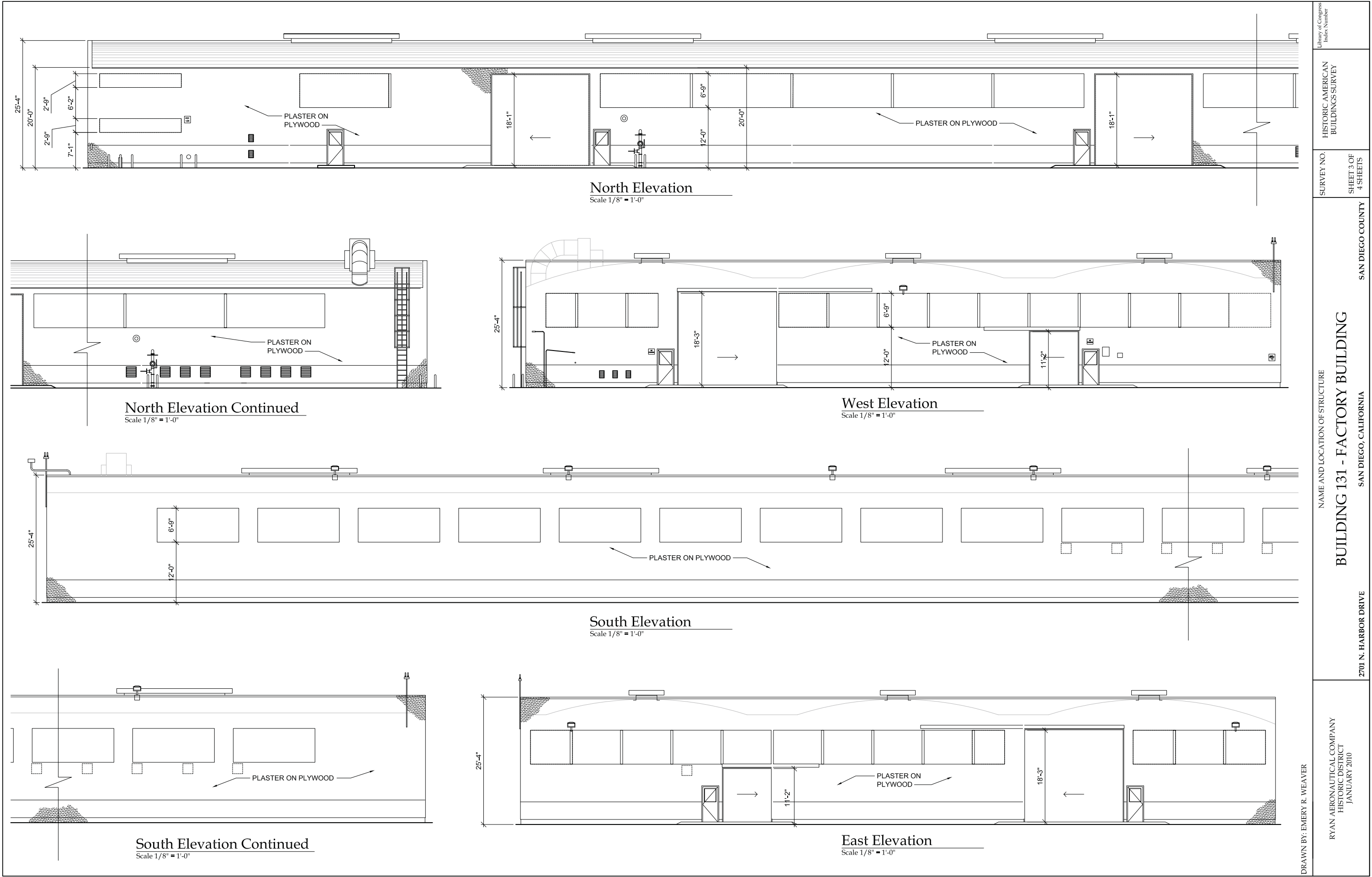
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**BUILDING 131 - FACTORY BUILDING**  
2701 N. HARBOR DRIVE  
SAN DIEGO, CALIFORNIA  
SAN DIEGO COUNTY

SURVEY NO.  
SHEET 2 OF 4 SHEETS

HISTORIC AMERICAN  
BUILDINGS SURVEY

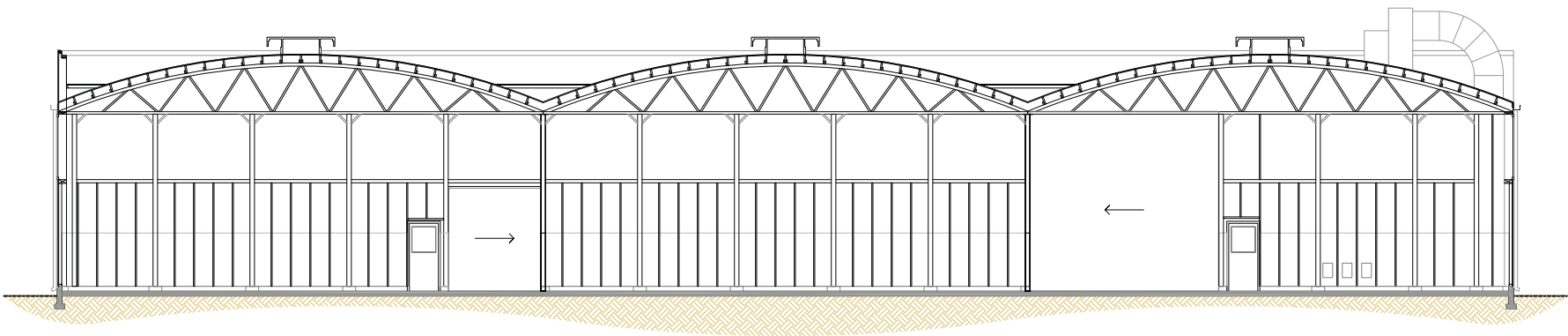
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RYAN AERONAUTICAL COMPANY HISTORIC DISTRICT JANUARY 2010			





Section  
Scale 1/8" = 1'-0"

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RYAN AERONAUTICAL COMPANY  
HISTORIC DISTRICT  
JANUARY 2010

NAME AND LOCATION OF STRUCTURE  
**BUILDING 131 - FACTORY BUILDING**  
2701 N. HARBOR DRIVE      SAN DIEGO, CALIFORNIA      SAN DIEGO COUNTY

SURVEY NO.  
SHEET 4 OF  
4 SHEETS

HISTORIC AMERICAN  
BUILDINGS SURVEY

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