

MISSOURI, KANSAS & TEXAS RAILWAY,
BELLMEAD YARD, BELLMEAD POWER HOUSE
Union Pacific Milepost 842.40
Bellmead
McLennan County
Texas

HAER No. TX-74-B

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

FIELD RECORDS

HISTORIC AMERICAN ENGINEERING RECORD
Southwest System Support Office
National Park Service
P.O. Box 728
Santa Fe, New Mexico 87504

HISTORIC AMERICAN ENGINEERING RECORD

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BELLMEAD POWER HOUSE

HAER TX-74-B

Location: Union Pacific Milepost 842.40
Bellmead, McLennan County, Texas

USGS Bellmead, Texas Quadrangle,
Universal Transverse Mercator Coordinates
14.68063.349576

Date of Construction: 1923

Present Owner: Union Pacific Railroad

Present Use: Abandoned

Statement of
Significance: The Power House was designed to provide electricity, steam, and compressed air via a bank of transformers to the new Bellmead Locomotive Shops, the old Roundhouse Machine Shops, and the Roundhouse. The building housed a Boiler Room and Compressor/Generator Room, as well as a subterranean switchboard room and pipe tunnels.

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A. General Statement:

1. History: The Bellmead Power House (HAER No. TX-74-B) was erected in 1923 and remained in continuous service until the 1950s. The building was altered in 1968 when the Warden Shops were converted to a bomb-casing plant. Equipment was removed and sold as scrap from that year onward at indeterminate times. A masonry wall, concrete sill, and steel window sash in one bay on the east facade has been removed to provide a vehicular entry to the building. The building was vacant in 1997 and subject to periodic vandalism.
2. Architectural Character The building is two-and-one-half and three stories in height. (See photographic documentation HAER No. TX-74-B-01-06 and digitally scanned and printed copies of original architectural and mechanical drawings from microfilm in aperture cards).

B. Description of the Exterior:

1. Overall Dimensions: The building measures 60'-0" in width and is 83'43" in length.
2. Foundations: The foundation walls are board-formed concrete and typically measure 2'-2" in thickness at the base to a height of 2'-0" and 1'-11" to a height of 3'-0". There is a Switchboard Room that was excavated 9'-1" below the Compressor/Generator Room for "disconnect switches, oil switches, and bus bars" as well as concrete pipe tunnels for steam, (compressed) air, exhaust, and fire pump suction lines as well as electrical conduit. Accessed through a metal hatch and steel stair, its walls are 2'-2" in thickness [1].
3. Wall Construction: The wall construction is fireproof throughout and consists of masonry load-bearing walls which are 1'-9" in thickness and 13" brick, laid in running bond. Corner piers at the east facade are 8'-8" in width and 43'-6" in height. They have chamfered concrete bases, recessed and flush decorative masonry panels in a herringbone pattern, rowlock bands, and are trimmed with 1'-3" precast concrete coping. Intermediate piers on the east, north, and south facades are 3'-10" in width and 28'-9" in height. They have concrete bases, are 13" brick, laid in running bond, and are simply trimmed with precast concrete caps of indeterminate dimension. Pilasters on the north, south, and west facades are 3'-2" in width, 21'-4 1/4" in height, and include concrete bases and precast concrete caps.

The north, south, and east facades also feature rowlock lintels and decorative rowlock bands in 13" brick. The north and south facades also feature a 1'-0" precast concrete Band that is aligned with the west concrete coping of a parapet that is located on the west facade [2]. There was firebrick lining the side walls and ceiling of a battery enclosure

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that encased the boilers. Drawing No. 14 of 24 carried the note stating that there was to be: "Fire brick lining side walls, 12'-6" from floor, 9" thick. Specification 'A.' Lining above that level, 4-1/2" thick [firebrick]. Specification 'B.' Arche[d ceiling of battery enclosure]. Specification 'C.' Box tiles on lower tubes and baffles, mounted on tubes furnished by the John O'Brien Boiler Works Company" [3].

4. Structural System, Framing: The exterior walls are load bearing. The interior structure of the Boiler Room consists of two steel columns spaced at 13'-2" centers. They are connected below the roof with steel cross-bracing of indeterminate dimension. The columns supported two steel trusses and two girders, a steel platform for feed water, piping risers, Collins burners, and a masonry structure which enclosed a battery of (328-horsepower) O'Brien Boilers on three sides and on top [4].
5. Chimneys and Vents: An arched breeching opening, 5'-6" in width and 9'-0" in height, is located in the north wall of the Boiler Room. It was connected with inclined steel breeching to another breeching opening of similar dimension in a concrete smokestack [5]. The smokestack has an interior diameter of 8'-0" at its base, is lined with 8" fire brick, has a 12" air space, and an exterior shaft of 12" thick board-formed concrete. The smokestack's foundation is octagonal in shape [6]. The radius at the cap is of indeterminate dimension; however, the smokestack is in excess of 100 feet in height. There is a vent opening, which was located in the roof of the Boiler Room for a 12" exhaust pipe and a 2-1/2" drain pipe. Another 4" vent stack was located in the roof of the Compressor/Generator Room, as well as a 2" steam whistle pipe [7]. All exhaust pipes and vent stacks have been removed.
6. Openings
 - a. Doorways and Doors: Original doors are of "tubular" steel construction and are glazed. The main entry doors are located in the west exterior wall. They are a pair of 3'-0" doors that are 7'-0" in height and surmounted by steel casements. The north and south doors are both 6'-0" in width and 7'-0" in height and suspended from overhead steel tracks. They provide egress to the outside of the building and are glazed with ten lights each [8].
 - b. Windows: Original windows are 14" x 20" steel casements, assembled in the following configurations: 3'-2" x 6'-0", 3'-3-5/8" x 9'-10-3/4", 9'-10-3/4" x 10'-3-1/2", 16'-11" x 12'-4", 16'-11" x 10'-4", and 10'-3-1/2" x 7'-6". The steel sash have steel lintels that are visible from the interior of the building and are trimmed with rowlock bands on the exterior walls [9].
7. Roof
 - a. Shape, Covering: The roof is constructed of cement tile and is canted. It is supported by a steel structure which consists of a pair of 6" "I" beam girders oriented east-west,

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and six 6" "I" beam purlins spaced at 3'-0" centers and oriented north-south, at the Generator Compressor Room. In the Boiler Room the cement roof tiles are supported by a combination of a pair of "I" beam girders and two steel trusses which are oriented east-west. The trusses are 5'-3-3/4" at the ridge and 4'-7-1/4" at the ends. The trusses bear on a pair of 1" "I" beam columns which in turn support two "I" beam girders. Ten 12" "I" purlins, oriented north-south and spaced at 3'-0" centers, support the cement tiles Of the roof of the Boiler Room. The tiles are reinforced with 1/8" diameter steel rods [10].

b. Cornice: The cornice consists of 12" precast concrete coping, emphasized on the north, south, east, and west elevations by a rowlock course which has been set into an 8" parapet [11].

C. Description of Interior:

1. Floor Plans:

a. First Floor Entry into the former Generator/Compressor Room is through a pair of entry doors in the west facade. An access hatch and steel stair to the Switchboard Room are located at the southwest corner of this room. A doorway has been enlarged at the northwest corner in the wall separating this room from the former Boiler Room. A metal door provides an original means of egress between these two rooms at the southeast corner. A vehicular entry has been made into the former Boiler Room through the third bay of the east facade, with the removal of steel casement sash and a low masonry wall. Two other doorways in the north and south walls retain their original "tubular" steel rolling doors and provide access from those respective sides of the building [12].

2. Flooring: The floor finish is 4" thick concrete except for an area that was located directly beneath the boiler platform. It was originally constructed of firebrick over a cinder fill but has been covered with concrete [13].

4. Wall Finish: The wall finish is brick and masonry tile and has been painted.

5. Doorways and Doors: Two "tubular" steel rolling doors were located in the west wall of the Boiler Room. The one that remains is located at the southwest corner and measures 3'-0" in width and 7'-0" in height. Both doors provided access to the Generator/Compressor Room and were unglazed. A steel hatch of 1/4" thick checkered plate is located in the southwest corner of the Generator/Compressor Room. Lifted by means of a chain and counterbalance, the hatch provides access to the Switchboard Room by means of a single steel stair [14].

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5. Light Fixtures: Original 300-watt incandescent lights are suspended from steel girders by metal stanchions. Additional fixtures include wall-mounted incandescents in wattages varying from 100 to 200. Ceiling-mounted 30-watt incandescent fixtures originally illuminated the Switchboard Room [15].
6. Heating/Mechanical: Original mechanical equipment was removed for scrap at indeterminate times after 1968. The primary equipment in the Generator/Compressor Room included: one 2000 cubic foot Air Compressor, space for a future 2000 cubic foot Air Compressor, a recycled "old motor driven" 600 cubic foot Air Compressor, one Motor Generator and space allotted for another, two Steam Turbines, two Fire Pumps, an electrical Switchboard and their respective feeds, risers, conduits, and vent stacks. The primary equipment in the Boiler Room included two Feed Heater Pumps, two Feed Heaters, a battery of two 328-horsepower O'Brien Boilers with space for an additional 300-horsepower unit, Ceiling Oil Burners, six 3-head Collins Oil Burners, and their respective feeds, risers, conduits, and vent stacks [16].
7. Hardware: Original hardware such as hinges, rollers, and track for "tubular" steel doors as well as window operators for steel casements remain intact.

D. Site:

1. General Setting: The site is relatively flat and slightly overgrown with vegetation from a lack of general maintenance. A gravel road is located on the north, south, and east sides of the building and provides vehicular access through an opening in the third bay of the east facade.
2. Landscaping, Enclosures: There is a transformer pad on the west side of the Bellmead Power House that is enclosed by a chain link fence. The site has not been landscaped.

E. Endnotes

1. Drawing No. 4 of 24, "Bellmead Power House, Elevations, Detail[s] of Corner Piers [and] Pilaster Caps & Coping." Office of the Chief Engineer, MK&T Railway of Texas. St. Louis, Missouri. Drawn 1922, revised 1923.
2. Ibid.
3. Ibid.
4. Ibid.

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5. Ibid.
6. Drawing No. 12 of 24, "Bellmead Power House, [Mechanical] Plan." Office of the Chief Engineer, MK&T Railway of Texas. St. Louis, Missouri. Drawn 1923, revised 1924.
7. Drawing No. 9 of 24, "Bellmead Power House, Roof & Roof Framing Plan." Office of the Chief Engineer, MK&T Railway of Texas. St. Louis, Missouri. Drawn 1923, revised 1924.
8. Drawing Nos. 4 & 5 of 24, "Bellmead Power House, Elevations, Detail of Corner Pier [&] Detail of Pilaster Caps and Coping; First Floor Plan." Office of the Chief Engineer, MK&T Railway of Texas. St. Louis, Missouri. Drawn 1923, revised 1924.
9. Drawing Nos. 3, 4 & 5 of 24, "Bellmead Power House, [Longitudinal] Section on Line A-A; Elevations, Detail of Corner Pier [&] Detail of Pilaster Caps and Coping; First Floor Plan." Office of the Chief Engineer, MK&T Railway of Texas. St. Louis, Missouri. Drawn 1923, revised 1924.
10. Drawing Nos. 3 & 9 of 24, "Bellmead Power House, [Longitudinal] Section on Line A-A; Roof & Roof Framing Plan." Office of the Chief Engineer, MK&T Railway of Texas. St. Louis, Missouri. Drawn 1923, revised 1924.
11. Drawing Nos. 4 & 5 of 24, "Bellmead Power House, Elevations, Detail of Corner Pier [&] Detail of Pilaster Caps and Coping; First Floor Plan." Office of the Chief Engineer, MK&T Railway of Texas. St. Louis, Missouri. Drawn 1923, revised 1924.
12. Drawing No. 5 of 24, "Bellmead Power House, First Floor Plan." Office of the Chief Engineer, MK&T Railway of Texas. St. Louis, Missouri. Drawn 1922, revised 1923.
13. Drawing No. 14 of 24, "Bellmead Power House, Cross Section Showing Boiler, Air Compressor, Piping & Switchboard; Front Elevation of Battery of Boilers, Showing Steam & Oil Connections to Collins Burners." Office of the Chief Engineer, MK&T Railway of Texas. St. Louis, Missouri. Drawn 1922, revised 1923.
14. Drawing No. 5 of 24, "Bellmead Power House, First Floor Plan." Office of the Chief Engineer, MK&T Railway of Texas. St. Louis, Missouri. Drawn 1923, revised 1924.
15. Drawing No. 3 of 24, "Bellmead Power House, [Longitudinal] Section on Line A-A." Office of the Chief Engineer, MK&T Railway of Texas. St. Louis, Missouri. Drawn 1923, revised 1924.

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16. Drawing No. 12 & 14 of 24, "Bellmead Power House, [Mechanical] Plan; Cross Section Showing Boiler, Air Compressor, Piping and Switch Board." Office of the Chief Engineer, MK&T Railway of Texas. St. Louis, Missouri. Drawn 1923, revised 1924.