Bureau of Mines Boulder City Experimental Station, Titanium Research Building
(Building No. 400)
Date Street North of U.S. Highway 93
Boulder City
Clark County
Nevada

HABS No. NV-35-D

HABS
NEV
2-BOUC,
1D-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Buildings Survey
National Park Service
Western Region
Department of the Interior
San Francisco, California 94107

HABS
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HISTORIC AMERICAN BUILDINGS SURVEY

BUREAU OF MINES BOULDER CITY EXPERIMENTAL STATION (Date Street Complex) TITANIUM RESEARCH BUILDING (Building No. 400)

HABS No. NV-35-D

Location: Date Street Complex, bordered by U.S. Highway 93 Truck Route, and Elm and Date streets
Boulder City, Clark County, Nevada

Building 400 is located in the east central portion of the complex. Building 300 is directly south, and Building 500 is to the northeast.

Boulder City, Nev., 7.5' Topographic Quadrangle, U.S.G.S., 1958, Photorevised 1983, Universal Transverse Mercator Coordinates: 11.694560.3983380 (approximate center of building)

Present Owner: U.S. Department of the Interior, Bureau of Reclamation

Present Use: Abandoned

Significance: Building 400, as part of the Date Street Complex, was a component of the Bureau of Mines Electrometallurgical Research Facility located in Boulder City. As such, it is within the designated Boulder City Historic District. One of five buildings eligible that is to be demolished, this building is considered to be one of the dominant structures in the complex, and it retains much of its integrity, despite door replacements, removal of exterior equipment, a metal stack, and roof vents. The basic form of the structure remains unchanged with many of the original windows, although some have been bricked-in. In a report of a survey of the Date Street Complex, Christine Pfaff (1992:3-4) of the Bureau of Reclamation determined Building 400 to be a contributing element to the district because this building was constructed during the period of significance (1931-1945) for the District, contributed to the functioning of the Research Facility, and was significant as a part of the complex under National Register Criterion a.

The significance of the Boulder City Historic District is tied to the Boulder Canyon Project (Hoover Dam) and to the history of American City Planning. This was the first community constructed following the federal New Towns model, as well as the "first fully-developed experience in new town planning as promoted by the Community Planning Movement, a movement which is recognized as the force which most influenced contemporary community planning practices" (Woodward et al. 1983:8.1).

HISTORICAL INFORMATION

A. Physical History

Date of erection: Building 400 was built in four phases based upon the use of the building. The center "two-story" portion of the building, made of brick, was constructed in 1942 as a sponge iron pilot plant (Metallurgical Division 1952:8; NV-35-10). In late 1942, a tower was built at the end of a ditch leading from the building on the west elevation (NV-35-9). By late 1944, a one-story brick addition covered the ditch. It was a cover for the Titanium Building Pit (Titanium Unit, General Arrangement of Conc. Cover to be Constr. over Titanium Bldg. Pit 1944:X-300-1295). Although an alumina pilot plant had been in operation as early as 1942, it was in 1945-1946 that the north addition was built specifically for this research. In 1944, a portion of the building was set aside for a small scale titanium pilot plant, which was expanded with the construction of the south varied-story (one- and 1½-stories) addition. Both additions were constructed of concrete block, and the southernmost one-story section was built over the winter of 1944-1945 after a hydraulic press was placed on its concrete pad (Alumina Unit, New bldg., floor and column found. 1945:X-300-1381; Alumina Unit, Found. plans for ext. to N. end of A.U. Bldg. 1945:X-300-1382; NV-35-D-11; NV-35-2). Construction costs for the building were $104,350 for the work between 1942 and 1945, and $125,000 for the Titanium Research addition built from 1944 to 1946.

Discussion of building use: Initially, this building was used for sponge iron testing. Using a two-foot diameter kiln, the Boulder City station conducted tests on the use of solid carbon for reducing continuously produced metal. The process differed from other methods of manufacturing steel because it did not use scrap metal (*Las Vegas R-J and BJ* 14 October 1942:2; Metallurgical Division c. 1952:19-20). Fostered by Senator James G. Scrugham, the testing resulted in processing 12 tons of ore per day with a 93 percent conversion into 7.2 tons of sponge metallic iron per day. The steel industry was very interested in the project, especially Henry J. Kaiser, who apparently delivered 100 tons of ore from his company to Boulder City for testing (*Las Vegas R-J and BJ* 28 October 1942:1). Although this particular work was stopped in 1943 with the construction of a similar pilot plant in Wyoming, a short-term project in 1944 used producer gas in reducing fine iron ores in a 10-hearth Skinner furnace ([Stephens] c. 1983:7). The next project, conducted between 1942 and 1946, was producing alumina from alunite on a pilot plant scale. This entailed "roasting and leaching of about 1 ton of Marysvale, Utah alunite per day," then crystallizing pure potash alum. After additional dehydration, decomposing, and leaching, a nearly pure alumina was achieved ([Stephens] c. 1983:7). No explicit mention of the building is made with regards to the magnesium research, the presence of the *Magnesium Pickling Shed* suggests that a portion of the research was conducted in Building 400.

The major project undertaken in this building was the metallic titanium research, begun in the mid 1940s. With the additional space, the building contained a complete Kroll process pilot plant. Supervised by Frank S. Wartman, the work entailed feasibility testing of the Kroll process for commercial production. Initiated in Salt Lake City in 1942, the work was transferred to Boulder City in 1944 because larger batches (100 pounds) could be produced. By 1952, these had increased to 200 pound batches (Baroch and Kaczmarek 1956:1).

This research was noted as the most outstanding metallurgical development of the Bureau of Mines. Because of military interest in the lighter and stronger titanium metal, the Boulder City station served as a training and production plant until the Timet plant was completed, in c. 1951, producing 108,000 pounds of titanium that sold at $5 per pound. The pilot plant design used at the Boulder City station was incorporated into the construction of the Timet plant in Henderson, Nevada (Metallurgical Division 1952:15-16).

The construction of a large-scale titanium pilot plant (Building 300) in 1952 provided the opportunity to continue testing the Kroll process and other methods as a commercial plant would with continuous production. Other projects centered on titanium were conducted, as well in both buildings. These included smelting ilmenite to manufacture a "titanium-rich slag and marketable pig iron" in cooperation with the National Lead Co., purifying titanium tetrachloride, and beneficiating titanium chlorination residues ([Stephens] c. 1983:5-6).

Building 400 also was used for sulphur research in the 1970s and 1980s. Various projects examined the use of sulphur and sulphur bearing waste in construction materials such as asphalt, concrete, and a bonding spray. This spray was used on a concrete block structure, called a test house, located west of Building 500. The building was constructed without the use of mortar to demonstrate the bonding strength of the sulphur spray, which also is more waterproof than mortar ([Stephens] c. 1983:12-13; Peterson 1979:6J, 27J).

B. Description of Building 400:

Although this building is oriented on a northwest/southeast axis, the description of the elevations will be addressed as north, south, east, and west.

Condition of fabric: Essentially abandoned since 1984, the building remains in good condition with only minimal exposure to the pigeon population that moved onto the property prior to the closing of the facility under the Bureau of Mining (Carl Dewy, personal communication 2 December 2000).

Description of exterior: This multi-level, masonry building has a front-facing T-plan measuring 190 (north/south) by 40 (east/west) feet on the main north/south mass and 12 (north/south) by 35 (east/west) feet on the east/west leg with an additional 12 (north/south) by 11 (east/west) foot sump at the west end of the leg. The original structure is now the center of the primary north/south mass. It is a rectangular, 1½- and two-story mass constructed of brick (Flemish bond) with a partial basement. The one-story leg also is constructed of brick (American bond). There is a two-story addition at the north end of the primary mass. There are two additions at the south, one is a one-story and the other is a 1½-story (begins where the one-story leg joins the primary mass). These additions all are made of concrete block (12x8-inch and 12x12-inch sized). Brick and concrete block were used because steel was being conserved during the war (Metallurgical Division 1952:8). The 1½- and two-story masses, and the leg have low pitch (main mass - 23°, two-story addition - 24°, 1½-story addition - about 24°, leg addition - 12°) end-gabled roofs covered with corrugated metal. A dropped shed roof covers the east half of the one-story segment of the south addition, and

the west half has an end-gabled roof, both of corrugated sheet metal. Eaves are open with exposed metal rafters, and there is a shorter overhang on the west and east elevations of the primary mass, and north and south elevations on the leg. Only the gable on the leg addition has wood fill to the apex; the other gables all have bricks and concrete blocks to the roof apex. Exposed beam rafters are present on both east and west elevations of the primary mass. Wall vent pipes are located on the east (two) and west (one) elevations, with one vent on the original mass roof on the west slope, and one on the 1½-story addition on the roofline.

The c. 1949 aerial photograph (NV-35-2) shows that there were approximately eleven cylindrical ventilators on the ridge and an attached exhaust stack located on the east elevation. By 1953 (NV-35-3), all but three (on the one-story south addition) of the ventilators and the stack were gone. The last ventilators were removed by 1965 (NV-35-4). A 1945 photograph (NV-35-D-7) of the construction of the south additions shows that there once was a raised gablet on the roof of the 1½-story portion of the original mass. It was for ventilating that section of the building. This, too, was removed prior to 1953.

The primary elevation (front) faces west into the yard area. Several of the original openings have been bricked over, boarded up, or altered. All of the doors are metal replacement with wire meshed multiple lights (double doors are 6-light [2/2/2] each; single doors are either divided-light [1/1] or 4-light [2/2]). The original openings include sliding doors at the north end (addition), and possibly one set in the original building. Four of the entrances, all located in the south addition, have lintels of either metal (two double doors), or straight vertical concrete block (two single doors). Windows are of varied size. Some are boarded up (one has two vent pipes), or have evaporative cooling units in them. Others are bricked-in, but a few retain single-light awning type windows. All are recessed, wood-framed, with brick (vertical) or concrete (solid) sills, depending upon which section of the building they are in. The windows in both additions have straight vertical concrete block lintels. There is one bricked-in area on the second level of the original building. The length suggests that it was a door, but there are no indications of an exterior platform or other edifice requiring an upper level entry.

A c. 1946 photograph (Pfaff 1992:43) shows equipment attached to the original mass and a tower-like piece of equipment at the end of the leg on the west elevation. A second, close-up photograph taken in 1946 and labeled as "Alumina" shows this equipment, which was associated with the processing of alunite. By 1965 (NV-35-4), all of the exterior equipment had been removed from the building. The wall patch on the original mass appears to be located where one of the pieces of equipment was attached to the building. One second level window on the 1½-story south addition is present in the c. 1946 photograph, and now appears to be bricked-in. The opening with the evaporative cooling unit was not added until later. The double door below these windows appears to be the same as today, although indications of a larger door opening are present in the photograph.

On the north elevation of Building 400 are two windows that are symmetrically placed on the second level. One is bricked-in, the other is closed off with a possible evaporative cooling unit. A single metal door with a single-light is in the center of the first level. On the east elevation are

open, boarded, and bricked-in windows similar to those on the west elevation (with evaporative cooling units, vent pipes, single pane present), including the wood frame, sills, and lintels. The north addition has a bricked-in opening with metal frame, probably from a sliding type door. Near the south end of the original brick building is a bricked-in door. The single story addition at the south end of the building has a small recessed entry with three doors facing north, east, and south, and a concrete ramp (downslope to the north) connecting the north and south facing doors. The north facing door is wood with a boarded and broken single-light window over a boarded possible louvered wood vent. It is in a metal frame. The east facing door is metal in a metal frame with a divided-light (1/1) window over a louvered vent panel. It is approximately 8 inches above the ramp. The south facing door is the same as the east door, but there are indications that a larger door was originally placed there. It has a metal lintel. The roof overhang for this cut-in is approximately 2 feet.

The south elevation shows the varied roof line of the south addition. Below the south gable of the one-story roof is sheet metal. A boarded divided-light horizontal slider window is in the center of the gable. Below the shed roof is a bricked-in opening with a metal lintel. In the center of the 1½-story section gable is a boarded divided-light horizontal slide window. The south elevation of the leg has a two-paneled metal door in a metal frame at the west end. There are patches in the brick suggesting the presence of three asymmetrically placed windows to the east. The c. 1946 photograph shows a door (appears to be paneled wood) on the west end, as well as a possible second door near the east end. There are two windows in-between and one near where the leg joins the original mass.

Surrounding the building is concrete. On the east side near the center is a transformer and on the north are kiln piers (three). A concrete retaining wall, added in the 1950s or later, is located around the concrete pads on the north and east sides. There are two approximately 8-foot square pads with approximately 5-foot diameter concrete framing for tanks. Each has two concrete-filled metal posts and access cut-outs. These are located on the west side of the building at the south end.

Description of interior: The earliest plan drawings available for this structure date from 1944 and 1945 covering the alumina addition and the titanium unit. The alumina addition, on the north end of the building, had a poured concrete floor, block tiles on the east and west walls, and a sump at the southeast corner. The floor slopes down into the original building to the south. On the east and west walls are large openings into the Alumina unit (Alumina Unit, New Bldg. Floor and Column Found. 1944:X-300-1381; Alumina Unit, Found. plans for ext. to N. end of Alumina Unit Bldg. 1945:X-300-1382).

The first plan drawing associated with the titanium research was for the brick addition, or "leg." It was built to cover the titanium pit and included a metal spiral stairway near the southwest corner of the building. The shell of the "leg" was probably built earlier, but these plans are for the lower level of the addition. The scale pit to be covered was in the center of the basement area. The plans show details regarding beams, a metal spiral stairway, a "dust tight" wood partition, and a second set of steps from the main building interior (Titanium Unit, Gen. Arrangement of Conc. Cover to be Constr. over Titanium Bldg. Pit 1944:X-300-1295).

In the second drawing for the titanium unit is the plan for the foundation of the 1½- and one-story additions, including the pit for the hydroelectric press. Again, the floor is poured concrete, but unlike the Alumina addition, this one had four rooms clearly delineated on the plan. The smallest room, on the east side center, had a stack base noted, probably for a machine tied in with the Titanium Pilot Plant work. A sump at the end of a gutter between the 1½- and one-story sections was located in the largest room (north end of the addition) in the southwest corner. Measurements for the "moulding press pit" are noted: 13 feet 6 inches by 12 feet (Titanium Unit, Found. Plans for Bldg. Ext. to Titanium P.P., 1945:X-300-1301).

The next set of floor plans date from c. 1953 (NV-35-D-12) and include the entire building, although specific information of room use is limited to the first level. Noted are the floor areas for the basement (650 square feet), first floor (7,900 square feet), and mezzanine (2,950 square feet). Individual room measurements are provided, as well. One room no longer present is called the furnace room, which was located along the northwest corner of the building, with the entrance through the double doors into the Alumina Unit. It appears that there may have been a modification of the entry opening between construction in 1945 and the remodeling prior to 1953. The furnace room was present in the 1953 aerial photograph (NV-35-3), but was removed between 1957 and 1965, when the remodeling, removing, and upgrading program began ([Blue] 1966:28-31). Another visible change is at the west end of the leg addition. At the southwest corner of the addition is an exterior entry with immediate access to a circular stairway to the basement similar to the one accessed in the former *Sintering & Melting Room*. The entry remains, but the stairway is gone. A third circular stair, no longer in the building, was in the *Shop & Electrolytic Room* in the 1½-story addition. This stair led to the upper level entry (still present) into the hydroelectric press room. The stairs that are currently in the *Press Room* are not noted in this plan. The last change from this plan is to the *Dry Room* in the north addition in the northeast corner. A small storage area was built at the south end of this room.

Renovations made to the building during the major period of remodeling and removal (1957-1965), include the installation of metal doors and remodeling the transformer yard (on the east side) in 1958, remodeling sections of the first floor into new laboratories in 1960, remodeling two research areas in 1961, installing new electric circuits in 1962, and the removal of the acid leaching shed and completion of two new laboratories in 1965. The acid leaching shed was located in the concrete pad area on the northwest side. It was called the *Magnesium Pickling Shed* in c. 1953. The shed just to the east of it probably was removed during this period, as well. A 1960 plan shows what remodeling work was done in the *Still Room*, including pouring a concrete floor, raising exterior doors on the west elevation, trimming interior doors to match the floor level, and placement of a floor drain. Near the ramp entry on the south end it was noted that a small area (6 square feet) of metal mesh be placed in the concrete (Building 400, Room 2, 1st Floor, Floor Plan & Details, Lab.-Remodeling 1960:X-300-1311).

Based upon remnant "furniture" and room location, function can be determined for some of the rooms as they appear today. The basement area has a wood door with "Dark Room" stenciled on it. Just within the entry, on the north wall, is a plywood cabinet with various sized wrench outlines painted in red on the interior built into an alcove. There are no indications of this area being used

as a dark room. The next level down, at the west end, appears to be a storage area, based on the presence of metal shelving. Nothing remains to suggest the circular stairway, but there is an opening to where the tower apparently was located for the sponge iron work conducted in the 1940s. The ground level of this addition (the leg) retains laboratory apparatus, work space with drawers and cabinets on the north and south walls, and a fume hood area on the south wall. It has painted wallboard walls and ceiling.

In a c. 1953 plan drawing, the room with the shed roof on the east half of the south one-story addition was used for storage. There are no indications that it had any other purpose, unless it was used as an office. The cut-in between this room and the *Shop and Electrolytic Room* was walled-in at a later date, creating a small room. It may have been an office or small storage room. Both rooms have concrete floors and painted wallboard walls and ceilings.

The hydroelectric press room is identified by the Watson Stillman Press, which has metal plates in the concrete floor surrounding it. The window in the gable does not appear to be boarded but covered or painted; diffuse light is present. A crane is on the south wall. As noted above, there are metal stairs along the east wall leading to a metal deck. A barred entry is at the north end overlooking the old *Shop and Electrolytic Room*. Behind the press is a work area with benches. In the floor is a grate for drainage. The next room to the north is the *Office*, which retains a bulletin board and coat pegs on the wood east wall. The *Rest Rm.* contains a toilet, urinal, sink, and mirror, and has plastered walls. The walls and ceiling of these rooms are painted. Unless otherwise noted, the extant doors on the interior of the building are wood in wood frames.

A hallway leads into the old *Shop and Electrolytic Room*, which is in the original brick building. Along the south wall is a gutter cut into the concrete floor, probably for drainage. A set of double doors leads into the next room in the north wall. Wooden stairs on the north wall lead to the wood-floored mezzanine above. There is an open area at the top of the stairs, but two rooms are located on the west wall. The first room is an office with an entry on the north wall into a laboratory. Both rooms have painted wallboard walls and ceilings, although the office's east wall is wood clapboard, and the laboratory's north wall is brick. The floors in both rooms are linoleum covered plywood/wood plank. The office has interior and exterior windows. The interior, on the east wall, are two 4-light awning windows. One of the exterior windows (north) was filled-in. Flooring in the mezzanine area is plywood.

The next area was the *Sintering and Melting Room* with the floor about 8 inches below the ground surface. This room was part of the original building. The circular stairs to the basement are in this room, as is the entry into the leg mass (west wall). Although there is no entrance noted on the c. 1953 floor plan, examination of the concrete flooring does not indicated any post construction alterations. In the southwest corner are two metal posts on metal and concrete pads, probably for equipment. Above this area is a plywood floor with no access from the first level or the second. It may be unused from one of the periods of remodeling. On the north wall is a small fume work area with plastic "walls" and a braced metal lid and hood with a vent extending to the east wall. At the northwest corner is one set of double wood doors with fixed 4-light (2/2) windows. The windows are boarded except for a small, approximately 6 by 10 inch area centering at about 5 feet

5 inches from the floor. A concrete ramp leads into the next work area to the north, also part of the original building.

This room, called the *Still Room*, has a ramp from the single door on the west elevation. A set of double doors are on the north wall. There are three 10x10 inch steel columns in-filled with concrete down the center of the space with metal I-beams as floor supports for the mezzanine above. A grill in the floor is located just to the east of one of the posts. Along the north and part of the east walls are electrical boards. A set of metal stairs on the east wall lead to the mezzanine. Although not shown as open to this room in the c. 1953 building plan, the former *Generator Room* can be entered from the *Still Room* through an 8½-foot wide opening in the north wall. All that remains are electrical outlet strips on the wall. The floor is tiled with a linoleum type covering. The ceiling is painted concrete. There are two rooms identified as *Laboratory* along the east third of this area; a smaller one to the north and a larger one to the south. The entry into the south *Laboratory* on the east wall has been enlarged to include most of the former wall. Cement fill is present in the floor to indicate the change. This *Laboratory* also has an entry (west wall) into the *Still Room*, as well one (north wall) into the north *Laboratory*. The south *Laboratory* has the same floor covering as the *Generator Room*, and retains most of the laboratory furniture along the east wall.

The door opening to the north *Laboratory* is deeper than any of the others, measuring approximately 14 inches. The door has glass in a wood panel at eye level. The floor is about 3 inches lower than that in the other laboratory. Laboratory equipment is present in the room, including a fume vent on the east wall. Although the exterior wall does not indicate this, next to the fume hood, following the height of the wall, is an approximate 18-inch wide brick structural pier. There are two drains in the floor, and the ceiling is concrete with metal support beams. An opening present on the c. 1953 plan in the west wall was closed off and is now behind the electrical panel on the east wall of the *Still Room*. A door in the north wall opens into the north addition.

The main room in the north addition was called the *Vacuum Purification Room*. From the north *Laboratory*, the floor is first 6 inches above with an immediate 3-inch lowering. Grates are in the floor in the southeast area of the room. A tool bench and board are on the south wall. An electrical conduit is about 7 feet above the floor on the west, north, and east walls. An entry at the northeast corner goes into the old *Dry Room*. This room is about 4 inches lower and has a concrete ceiling. Evident on the east wall is a bricked-in opening, which is present on the original 1944 plan drawing. Remodeling prior to 1953 resulted in closing off the entry, and the creation of the *Dry Room*. At some point after 1953, the south end of the room was walled off for storage. The entry has a wood door with a fixed single-light and a wire mesh panel. The north wall is wood and has shelving. The ceiling is concrete with a steel beam.

The mezzanine above the *Vacuum Purification Room* has six steel post supports and is approached by a metal stairway near the center of the room. The floor is plywood. In the northeast corner, the *Dry Room* and *Storage* roof rises above the mezzanine floor 2½ feet and is accessible from stairs on the south end. The southeast corner is open to the floor below. Along the rest of the south wall are two rooms of the same size, with painted wallboard walls and ceilings (about 8 feet above the floor), linoleum covered floors, and a fixed single-light window (the pane is missing from the

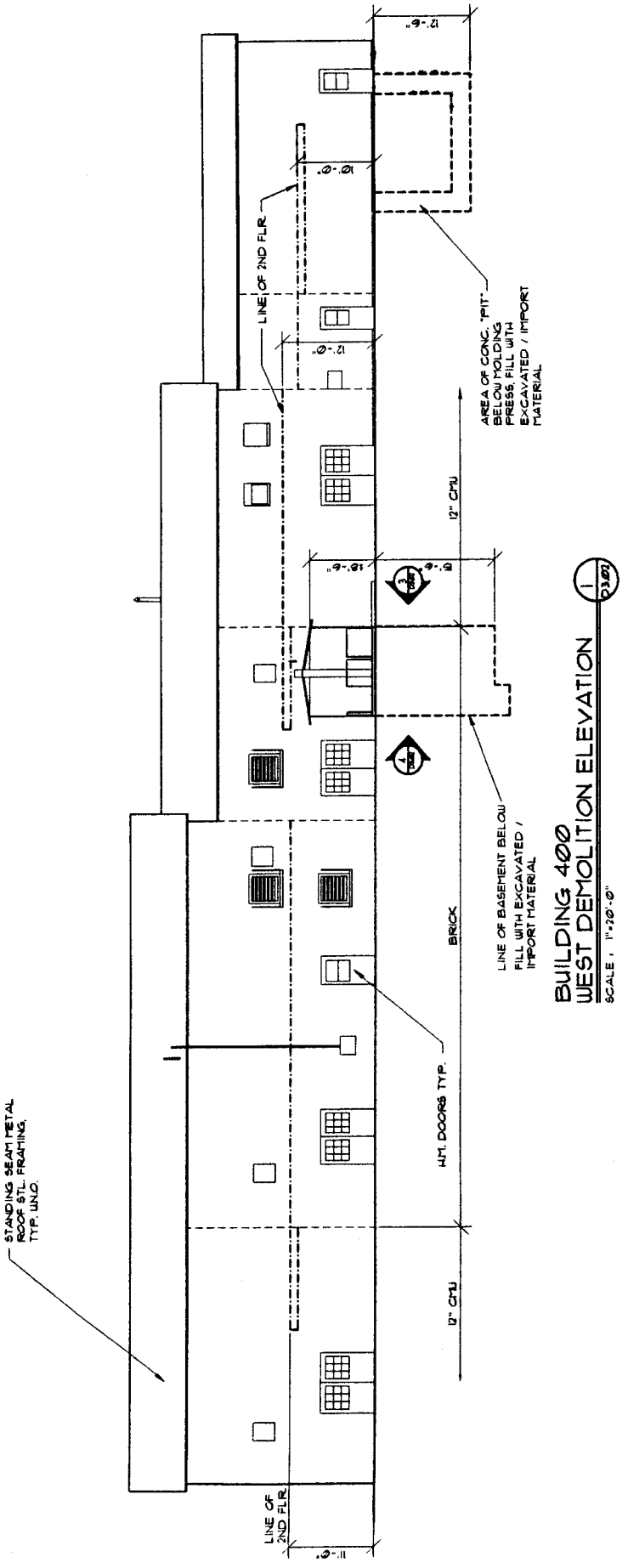
second room window), and a hollow-core wood door on the north wall. They appear to have been offices. A third room is on the west wall. It, too, has linoleum covered flooring and painted wallboard walls and ceiling. On the east wall are two fixed single-light windows similar to those on the other offices. A window on the north wall is a smaller single-light casement hinged on the west end. It has a more pronounced wood frame than the other windows. A doorway in the southwest corner leads to a possible storage area behind the third office room. Next to this, on the south wall, is a doorway into the mezzanine area above the *Still Room*.

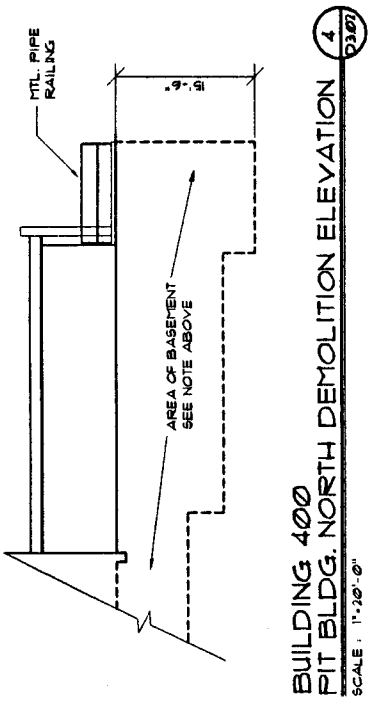
Most of the central mezzanine area above the *Still Room* is open with five wood-framed rooms along the east wall. Most of the rooms no longer have walls, but the floors are covered with a linoleum tile, and have low ceilings of painted wallboard. The first room, on the north wall, retains both doors (on the west and south walls with a fixed single-light). Some of the laboratory furniture remains. The second room has a door similar to those in in the laboratory. It contains a probable water heater. A wooden ladder to the top of the ceiling area is on the south wall. A second laboratory is south of the heater room. Entered through the second laboratory is an office, with the same type door as the others. This room retains the painted plastered walls and ceiling, and has a slightly different floor covering (possibly a different type of linoleum or other, unidentified material) than the laboratories. An exterior window is on the east wall, and a divided-light horizontal slider (1/1) with double panes is on the south wall. The room next to this, on the south wall, has double metal doors on the north wall and a single metal door on the west wall. The floor is concrete with no covering. The equipment in the room appears to be electrical. The last room of this mezzanine area is identified as a *Women's Restroom*. The access door is in the northwest corner, and there is an exterior window on the west wall. Furnishings consist of a toilet, mirror, and sink. There are two windows on the east wall providing light for the mezzanine and first level.

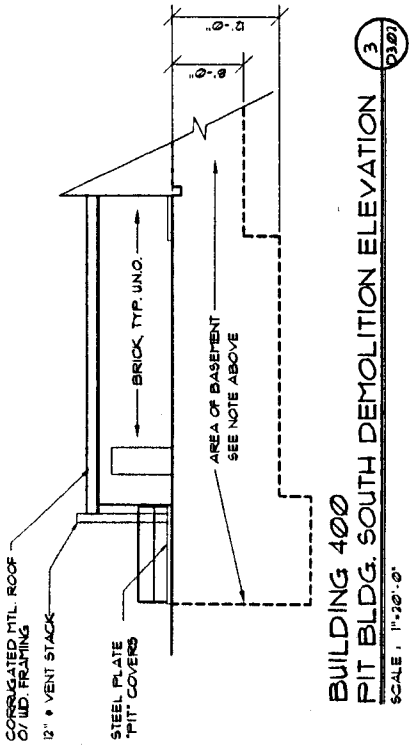
Where linoleum was used as a floor covering, the colors are a light and dark brown design (tiles) or a dark brown. In the rooms that were probably offices, the walls and ceilings are painted a light color, probably a shade of white or cream. Doors without windows are paneled (three or five), those with a window have two panels below the window. Interior lighting, when present, is comprised of hanging fluorescent lights (laboratories and offices), and incandescent ceiling lights (other rooms).

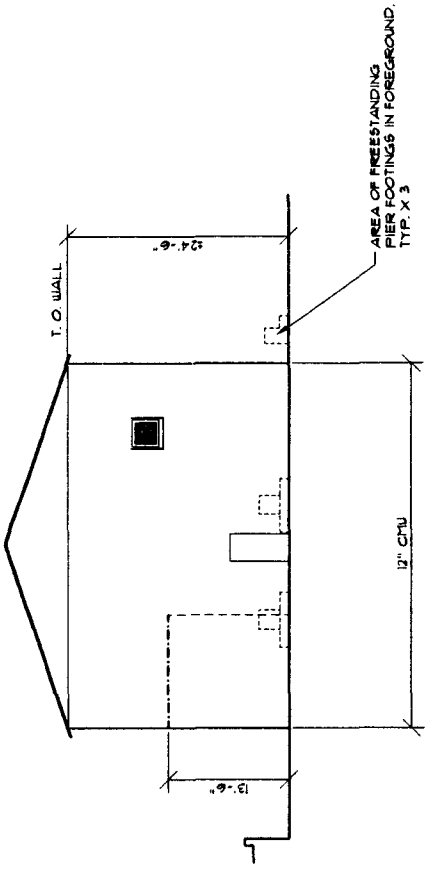
Additional Documentation:

Building Elevations and Floor Plans (Attachment 1: 7 pages)

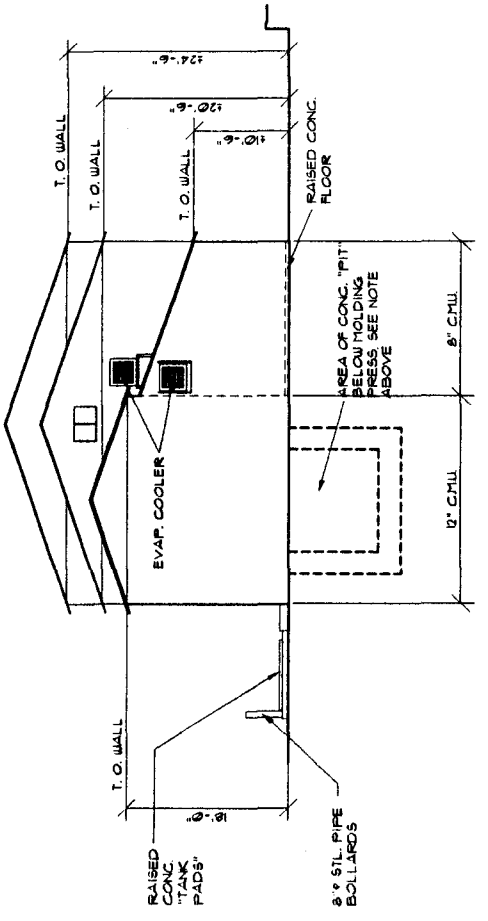

STANDING SEAM METAL ROOF STL. FRAMING, TYP. U.N.O.
LINE OF 2ND FLR.
LINE OF 2ND FLR.
AREA OF CONC. "PIT" BELOW MOLDING PRESS. FILL WITH EXCAVATED / IMPORT MATERIAL
12" CMU
LINE OF BASEMENT BELOW
FILL WITH EXCAVATED / IMPORT MATERIAL
BRICK
HVY. DOORS TYP.
12" CMU
BUILDING 400
WEST DEMOLITION ELEVATION
SCALE : 1"=20'-0"


MTL. PIPE RAILING
AREA OF BASEMENT SEE NOTE ABOVE
BUILDING 400
PIT BLDG. NORTH DEMOLITION ELEVATION
SCALE : 1"=20'-0"

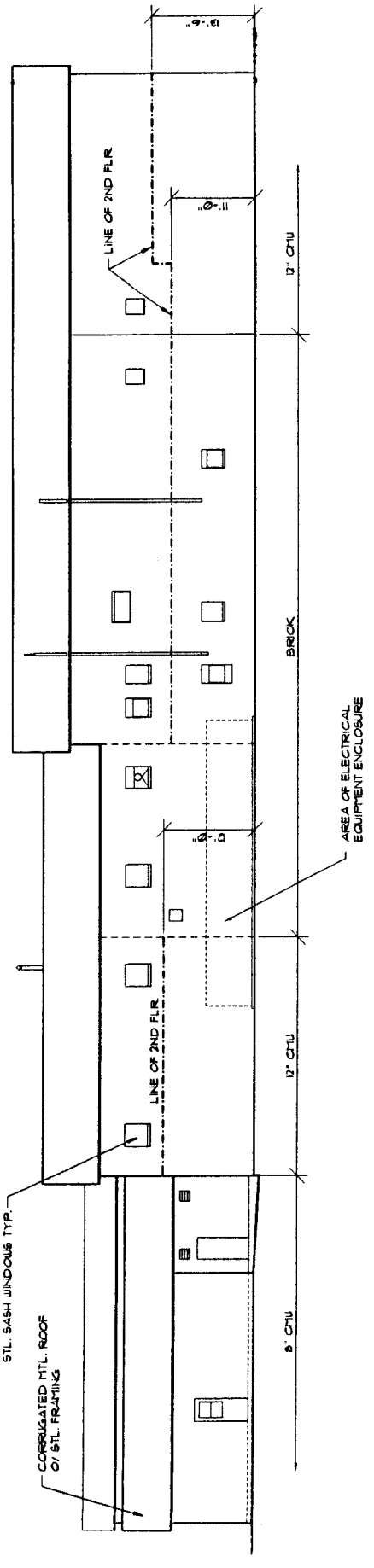

CORRUGATED MTL. ROOF O/ WD. FRAMING
12" ø VENT STACK
STEEL PLATE "PIT" COVERS
BRICK, TYP. U.N.O.
AREA OF BASEMENT SEE NOTE ABOVE
BUILDING 400
PIT BLDG. SOUTH DEMOLITION ELEVATION
SCALE : 1"=20'-0"



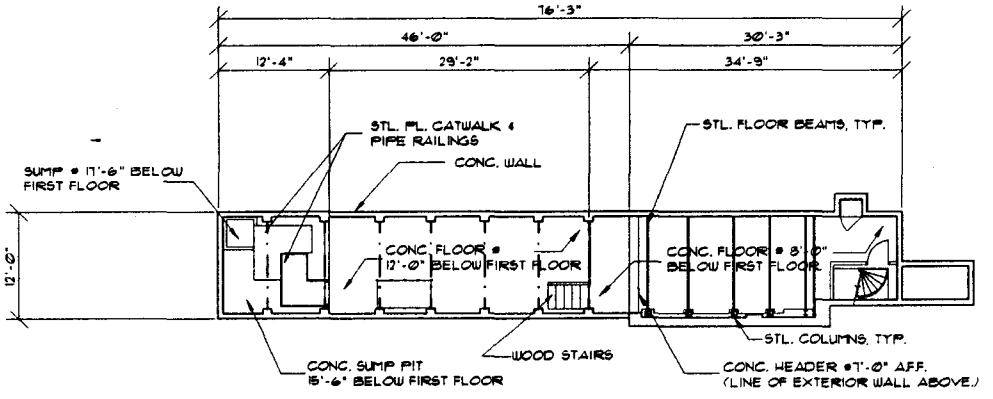
BUILDING 400
NORTH DEMOLITION ELEVATION (5 / 23.07)
SCALE: 1"=20'-0"



BUILDING 400
SOUTH DEMOLITION ELEVATION (2 / 23.07)
SCALE: 1"=20'-0"

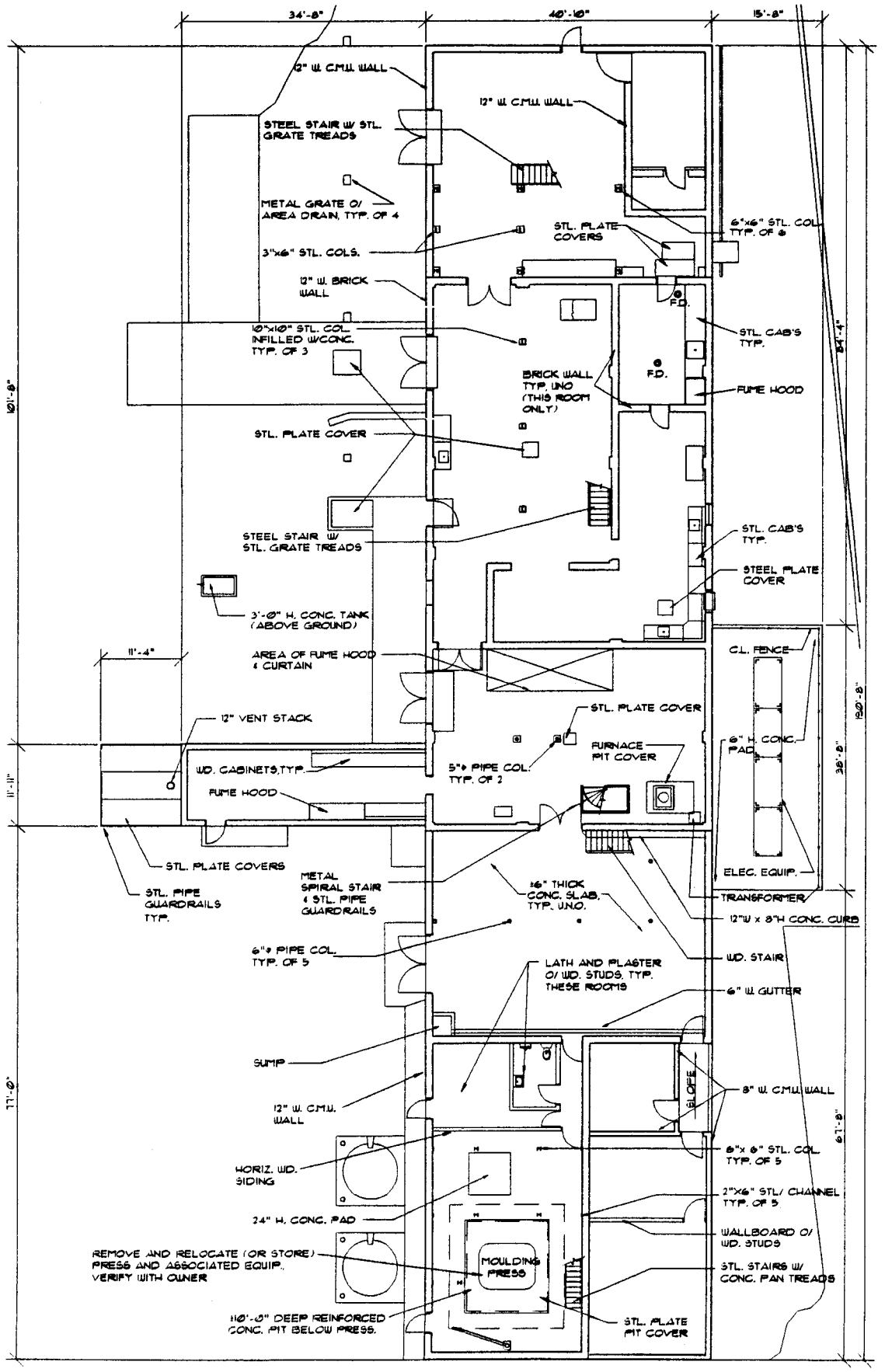


BUILDING 400
EAST DEMOLITION ELEVATION
SCALE: 1"=10'-0"
6
D3-80



BUILDING 400, BASEMENT DEMOLITION PLAN

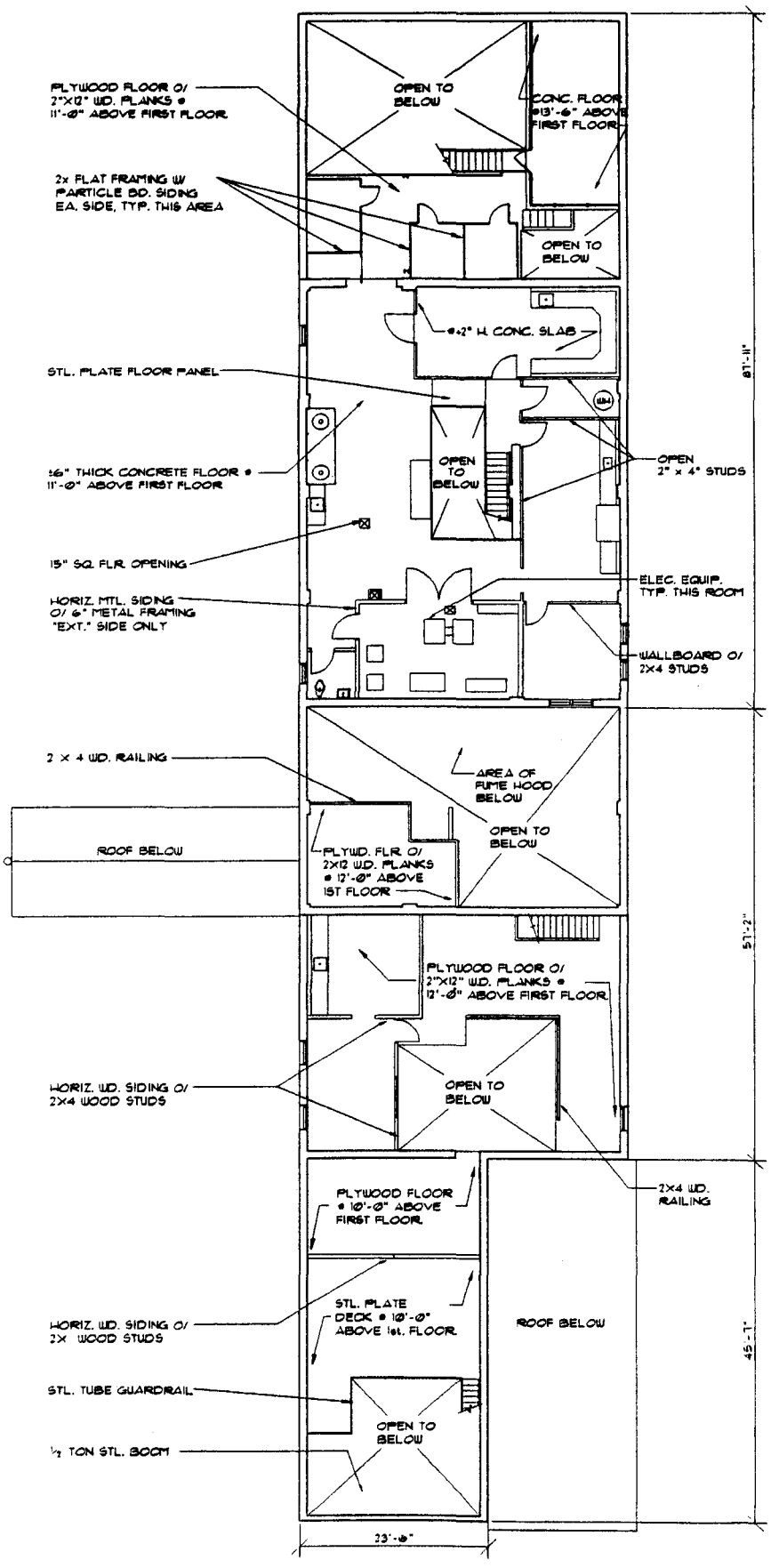
SCALE : 1" = 20'-0"



BUILDING 400, FIRST FLOOR DEMOLITION PLAN

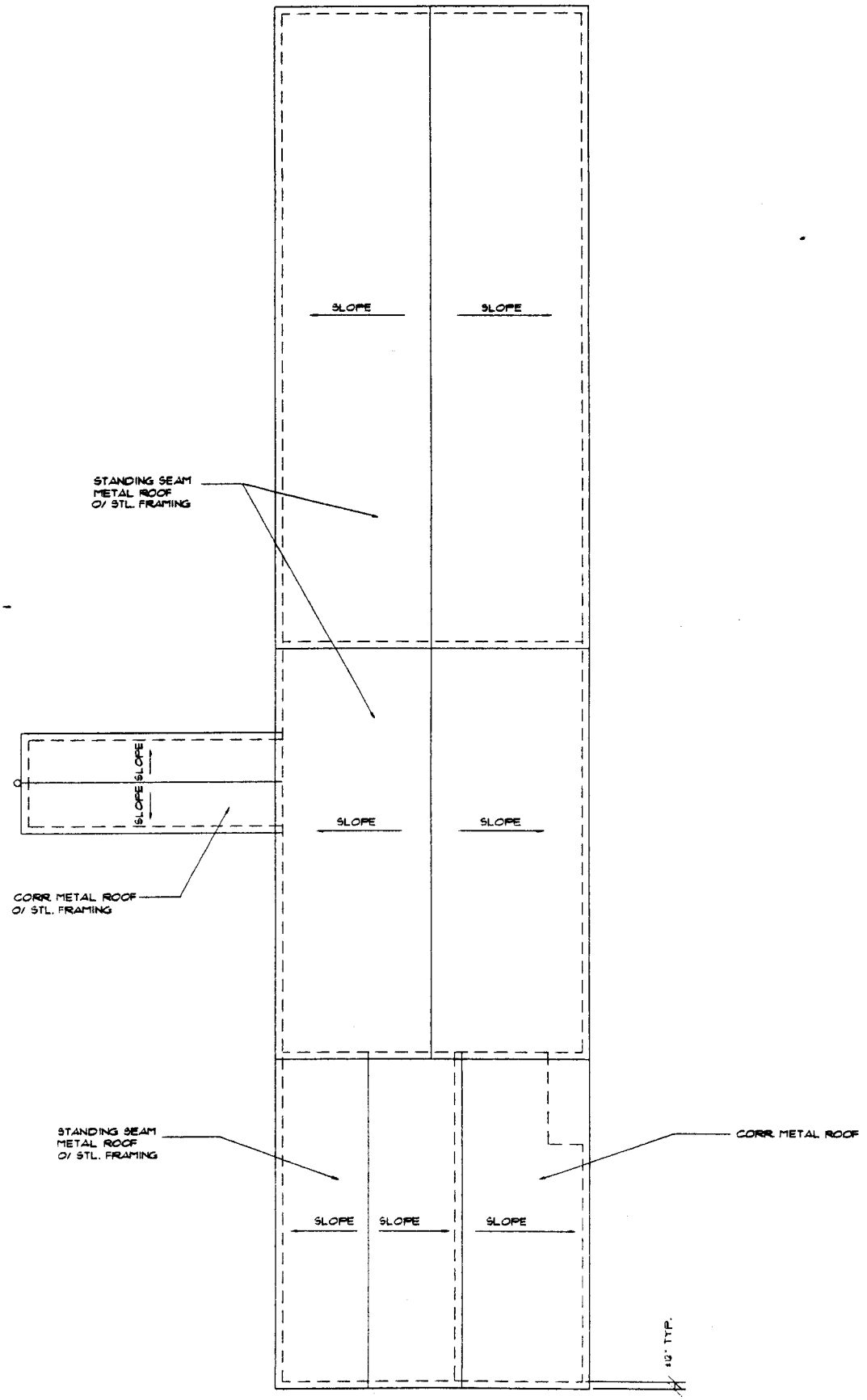
SCALE : 1" = 10'-0"

NORTH



BUILDING 400, SECOND FLOOR DEMOLITION PLAN

SCALE : 1" = 10'-0"



BUILDING 400, ROOF DEMOLITION PLAN

SCALE : 1" = 30'-0"

ATTACHMENT
PHOTOCOPIES OF HISTORIC PHOTOGRAPHS

The following attachments are photocopies of historic photographs from original prints in the U.S. Bureau of Mines Photograph Collection, Boulder City Museum and Historical Association, Boulder City, Nevada. Photographers unknown.

Photograph No. 1: File 0022, No. 0025, 1945, entitled "Service." VIEW OF SOUTH ADDITION CONSTRUCTION, LOOKING EAST

Photograph No. 2: File 0022, No. 0028, 1942, entitled "Chromium." VIEW OF BUILDING CONSTRUCTION, LOOKING SOUTHEAST, COMPLEX SWITCHYARD AND BUILDING IN BACKGROUND

Photograph No. 3: File 0022, No. 0030, 1942, entitled "Chromium." VIEW OF BUILDING CONSTRUCTION, LOOKING SOUTHEAST, COMPLEX SWITCHYARD AND BUILDING IN BACKGROUND

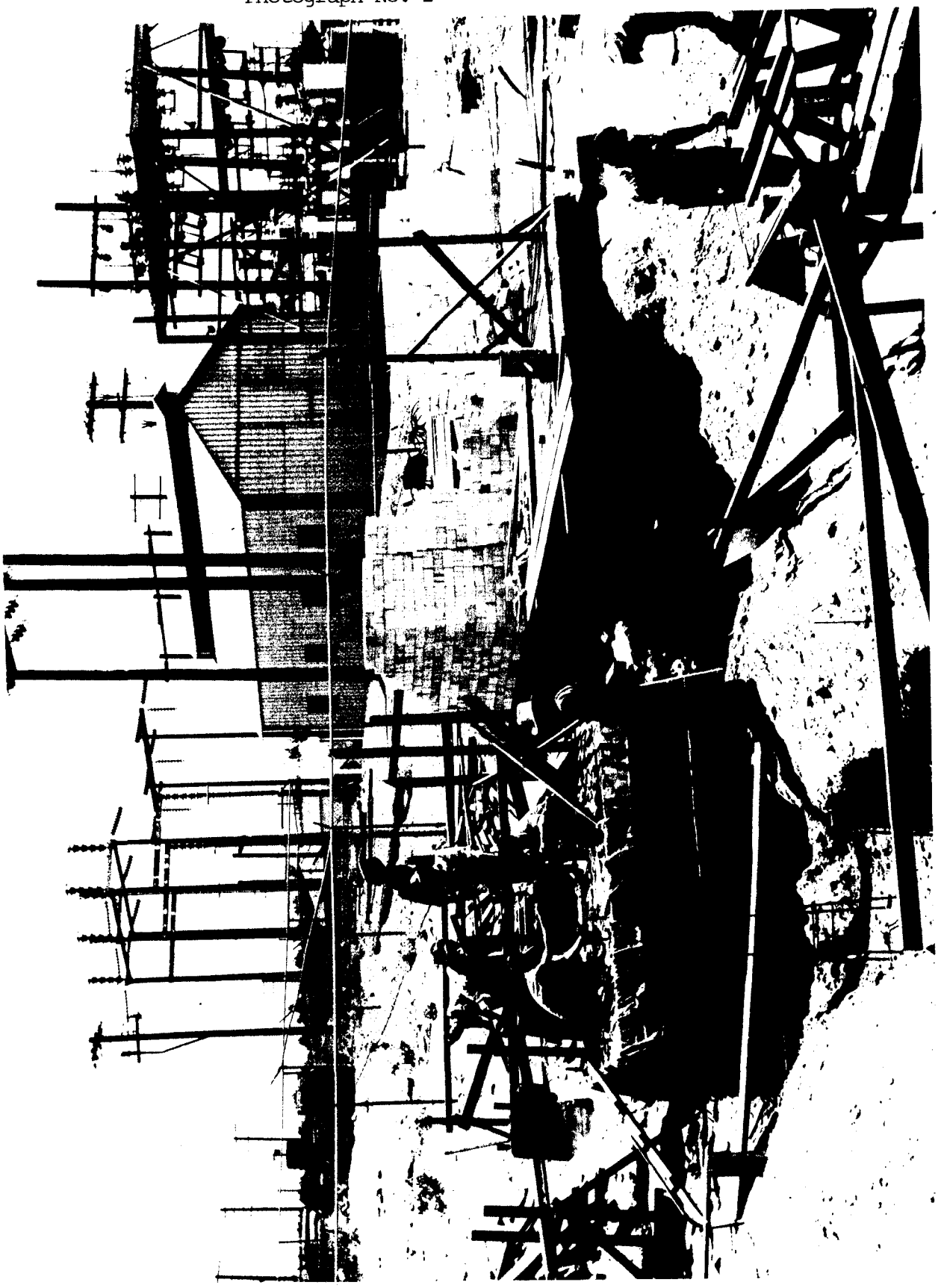
Photograph No. 4: File 0022, No. 0033, 1942, entitled "Chromium." VIEW OF BUILDING CONSTRUCTION, LOOKING NORTH, COMPLEX SWITCHYARD TO NORTHEAST

Photograph No. 5: File 0022, No. 0101, c. 1945, entitled "Titanium Research." VIEW OF WATSON STILLMAN HYDRAULIC PRESS AND CONSTRUCTION OF BUILDING AROUND IT

Photograph No. 1

File copy

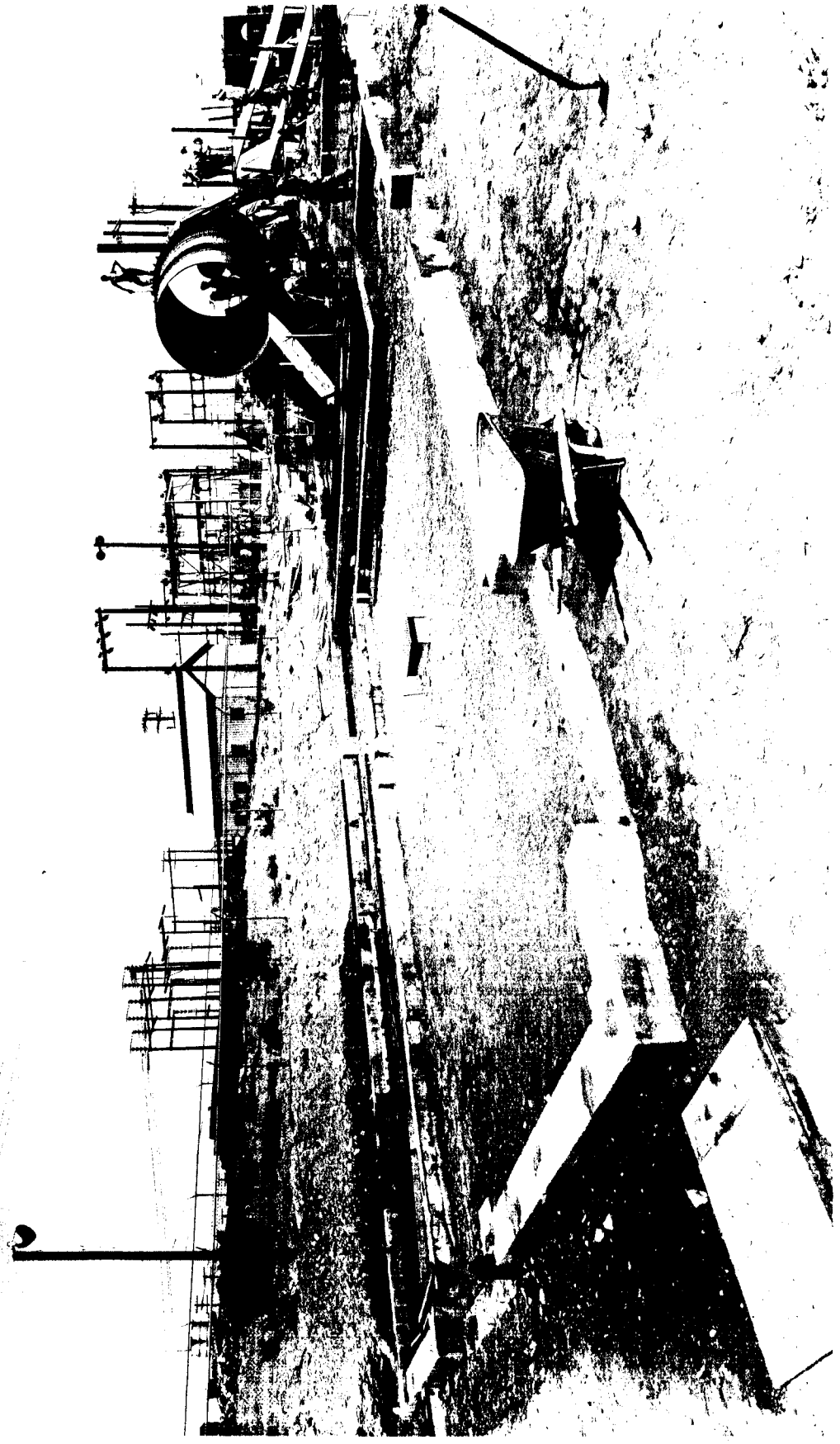
Photograph No. 2



File Copy

CHROMIUM

Photograph No. 3

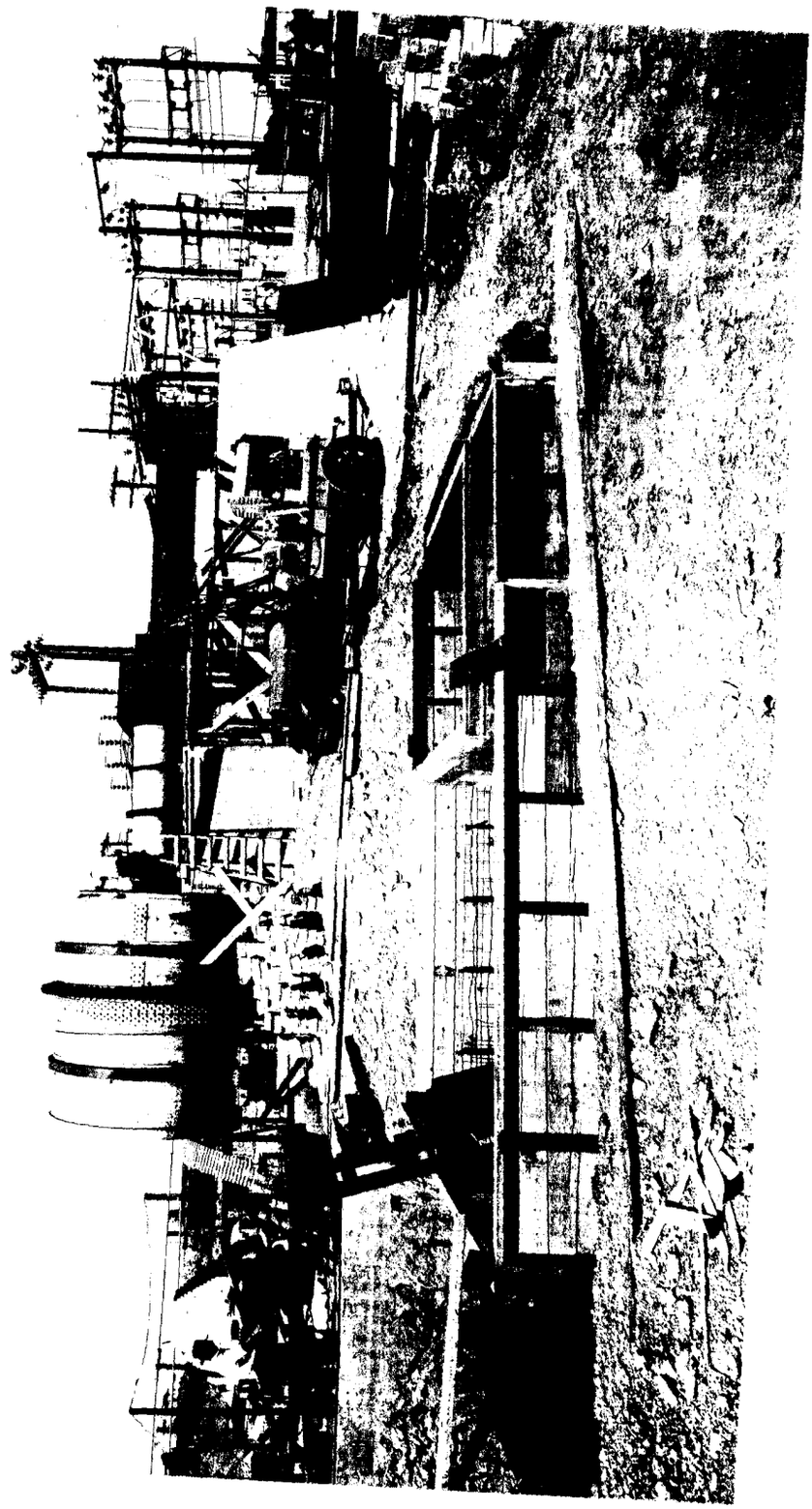


File copy

CHROMIUM

8/1/92

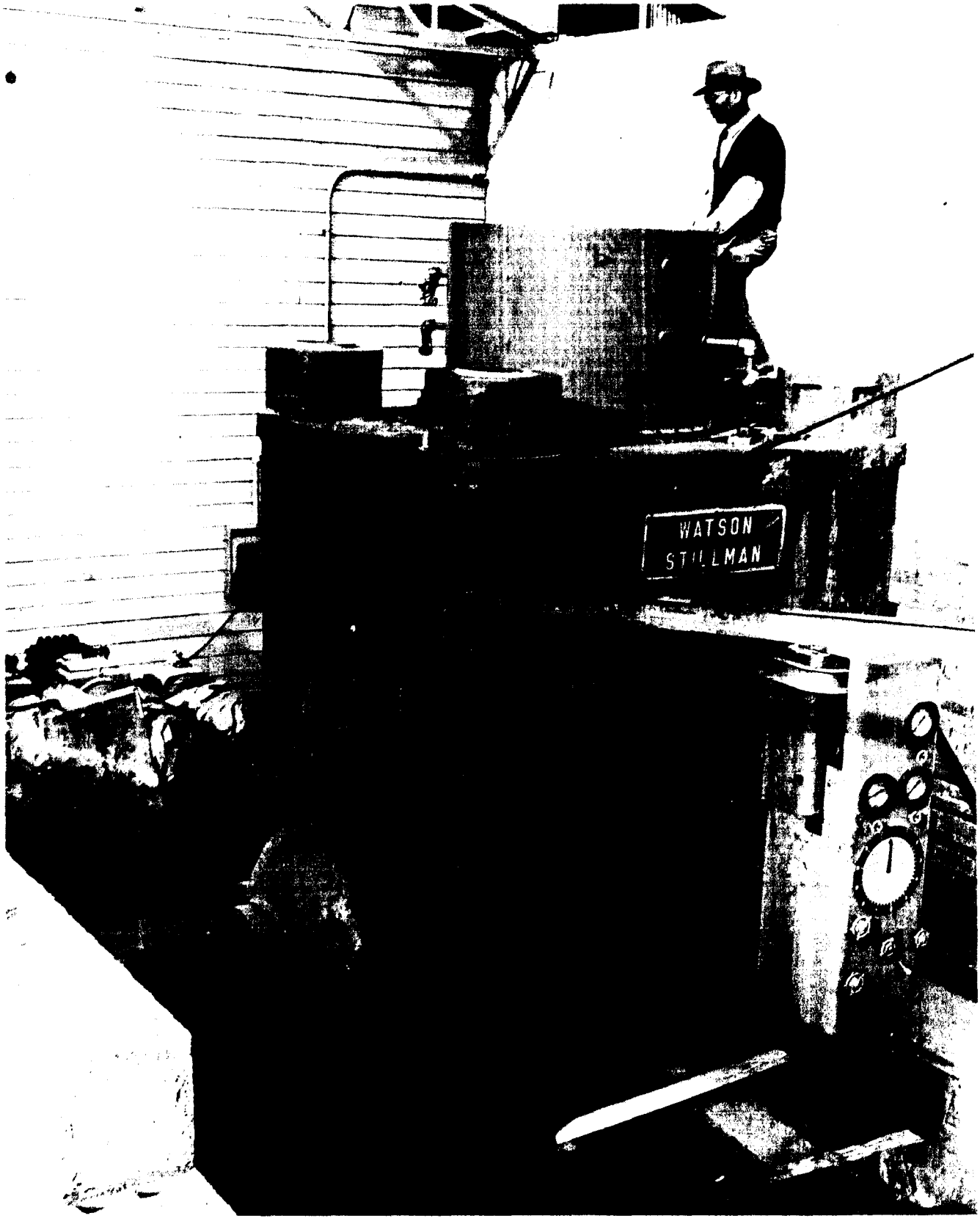
Photograph No. 4



File copy

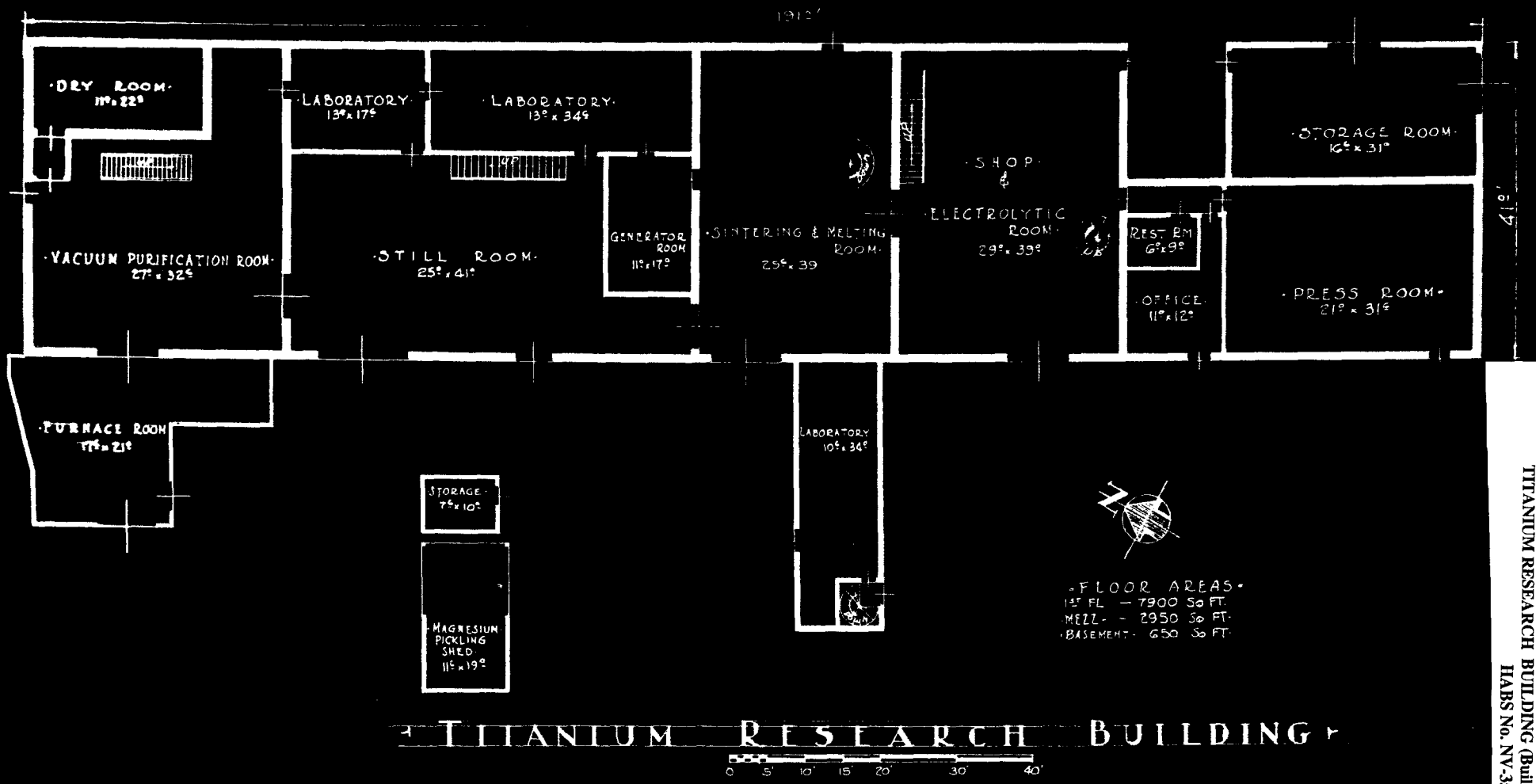
CHROMIUM

Photograph No. 5



File copy

Titanium Research



Photocopy of plan drawing (c. 1953, photocopy in U.S. Bureau of Mines Lab Collection, MS-18, Department of Special Collections, Leid Library, University of Nevada, Las Vegas). TITANIUM RESEARCH BUILDING

BUREAU OF MINES BOULDER CITY EXPERIMENTAL STATION
TITANIUM RESEARCH BUILDING (Building No. 400)
HABS No. NV-35-D (Page 23)

C-875-8C