A UNION RAILROAD STATION FOR AUSTIN, TEXAS

Submitted in partial fulfillment of the requirements for the degree of MASTER IN ARCHITECTURE at the Massachusetts Institute of Technology, 1949

by Robert Bradford Newman

B.A., University of Texas, 1938
M.A., University of Texas, 1939

2 September 1949

William Wilson Wurster, Dean
School of Architecture and Planning
Massachusetts Institute of Technology
Cambridge, Massachusetts

Dear Sir:

In partial fulfillment of the requirements for the degree of Master in Architecture, I respectfully submit this report entitled, "A UNION RAILROAD STATION FOR AUSTIN, TEXAS".

Yours very truly,

Robert B. Newman

Cambridge, Massachusetts
2 September 1949

TABLE OF CONTENTS

ACKNOWLEDGMENTS

I am indebted to the members of the staff of the School of Architecture and Planning of the Massachusetts Institute of Technology for their encouragement and helpful criticism in the completion of this study.

Information regarding the present operations of the Missouri Pacific, Missouri Kansas and Texas, and Southern Pacific Railroads was furnished by officials of these lines.

The City Plan Commission of Austin through its former Planning Supervisor, Mr. Glenn M. Dunkle, and through Mr. Charles Granger, Consultant to the Plan Commission gave encouragement to the pursuit of the present study and provided many of the street and topographic maps, aerial photographs and other information on existing and proposed railroad facilities. Without their help and consultation this study would have been most difficult.

Mr. David R. Williams kindly gave permission for the use of material from his paper, The Influence of Railroads on the Central Business District of Austin, Texas, prepared while he was a student at the University of Texas.

Finally, I am indebted to my father for gathering and expediting the transmittal of much of the needed material from Austin.

AUSTIN - THE CITY

In 1839 a commission of five men from the Congress of the Republic of Texas set out on horseback to select a site suitable for the capital city of the Republic. After considering several possibilities, they chose the site of Austin (then a settlement known as Waterloo) because of its central location on the Colorado River with potential water power, the fertile land of the river valley, the beauty of the hills to the westward, and the abundance of limestone in these hills for building purposes.

The city was laid out in a rigid gridiron pattern one mile square with the central street, Congress Avenue, 120 feet wide, leading from the river to the location selected for the Capitol. Congress Avenue occupies a former creek bed, and the land rises sharply on each side north of Sixth Street. Lots were laid out and sold in August of 1839 and in October the Congress of the Republic first assembled in Austin.

Austin is not only the capital of Texas, but also the seat of the University of Texas (20,000 students) and most of the state eleemosynary institutions. It is situated near the center of the state and the triangle formed by Dallas-Ft. Worth 200 miles to the north, Houston 160 miles southeast and San Antonio 90 miles south.

Austin is situated at 30 degrees north latitude, and has a very mild climate in which the sun shines 300 days in the year and the annual average temperature is 68 degrees Fahrenheit. During the winter freezing weather occurs only rarely and a light snowfall can be expected about once in five years. The "northers" bringing cold weather in the winter blow in from the north-west. The summers are warm, although temperatures above 100 degrees are exceptional. The prevailing summer breeze is from the south-east. The average annual rainfall is 34 inches, much of which comes in mid-winter.

Austin is surrounded by farms and ranches and serves as the distributing center for a trade territory comprising twenty-two counties. There is little industry in the city, although attempts to attract it are made from time to time. It is a rapidly growing city in which the population has increased from 53,000 in 1930 to over 120,000 in 1949. Predictions have been made that by 1960, the population will exceed 200,000.

PRESENT M K T - SO PAC STATION ON THIRD STREET

PRESENT MO PAC STATION ACROSS CONGRESS AVENUE

RAILROADS IN AUSTIN, 1871 TO PRESENT

The first railroad bringing service to Austin was the Houston and Texas Central Railroad (now part of the Southern Pacific Lines) in 1871. A passenger station was built on Congress Avenue at Third Street, three blocks south of the center of the business district. Since no provision for railroads had been forseen in the original gridiron plan, the HTC was granted a right-of-way along the center of East Third Street from the east to its Congress Avenue station (Figures 1 and 2).

In 1876 the International and Great Northern Railroad (now part of the Missouri Pacific Lines) brought its lines in from the north through the western part of the city and was given a right-of-way along West Third Street to its new passenger station diagonally across Congress Avenue from the HTC station (Figure 1). This railroad crossed the river on its way to San Antonio, over a bridge built to the west of the city. There was, at this time, much opposition to allowing any tracks to cross Congress Avenue. Later the Missouri Kansas and Texas (MKT) Railroad brought its main line tracks from St. Louis to San Antonio through Austin. The MKT joined the HTC (So. Pac.) right-of-way east of the city and shared the use of the existing HTC passenger station at Third and Congress Avenue. From the station, the tracks cross Congress Avenue and parallel the MoPac

FIGURE 1

PRESENT PLAN

tracks, joining them to cross the river on the MoPac bridge. The MKT uses the MoPac tracks from the bridge to San Marcos, 30 miles to the south.

Both the MoPac and the MKT provide service from St. Louis to San Antonio. They serve different areas en route, however, and not until they arrive at Round Rock, 20 miles north of Austin, do their tracks cross. They then separate and enter the city from north-west and east respectively. The MoPac pulls its trains out onto the river bridge and then backs them up to its Congress Avenue station. Many north-south streets are blocked to traffic while the train stands in Third Street to load and unload passengers and baggage. In order to avoid this time consuming back-in operation, the MoPac had just completed a small passenger station to the west of the bridge at Lamar Boulevard. The advisability of this move has been the subject of much debate, especially since this is not in accord with the Master Plan for Austin, to be discussed below.

The MKT and SoPac head into their station from the east on Third Street and also block traffic for several blocks while the trains stand in the station, as shown in accompanying photographs. The MKT then crosses Congress Avenue and as noted above, crosses the river on the MoPac bridge. The SoPac trains are terminal in Austin and are backed out to the yards in East Austin after unloading.

Of no direct concern to passenger service is the Llano Branch of the SoPac, a freight line running through the east-central part of the city toward Llano, 70 miles to the north-west. There are 27 grade crossings on this line within the city limits. The areas adjacent to these tracks are almost entirely residential.

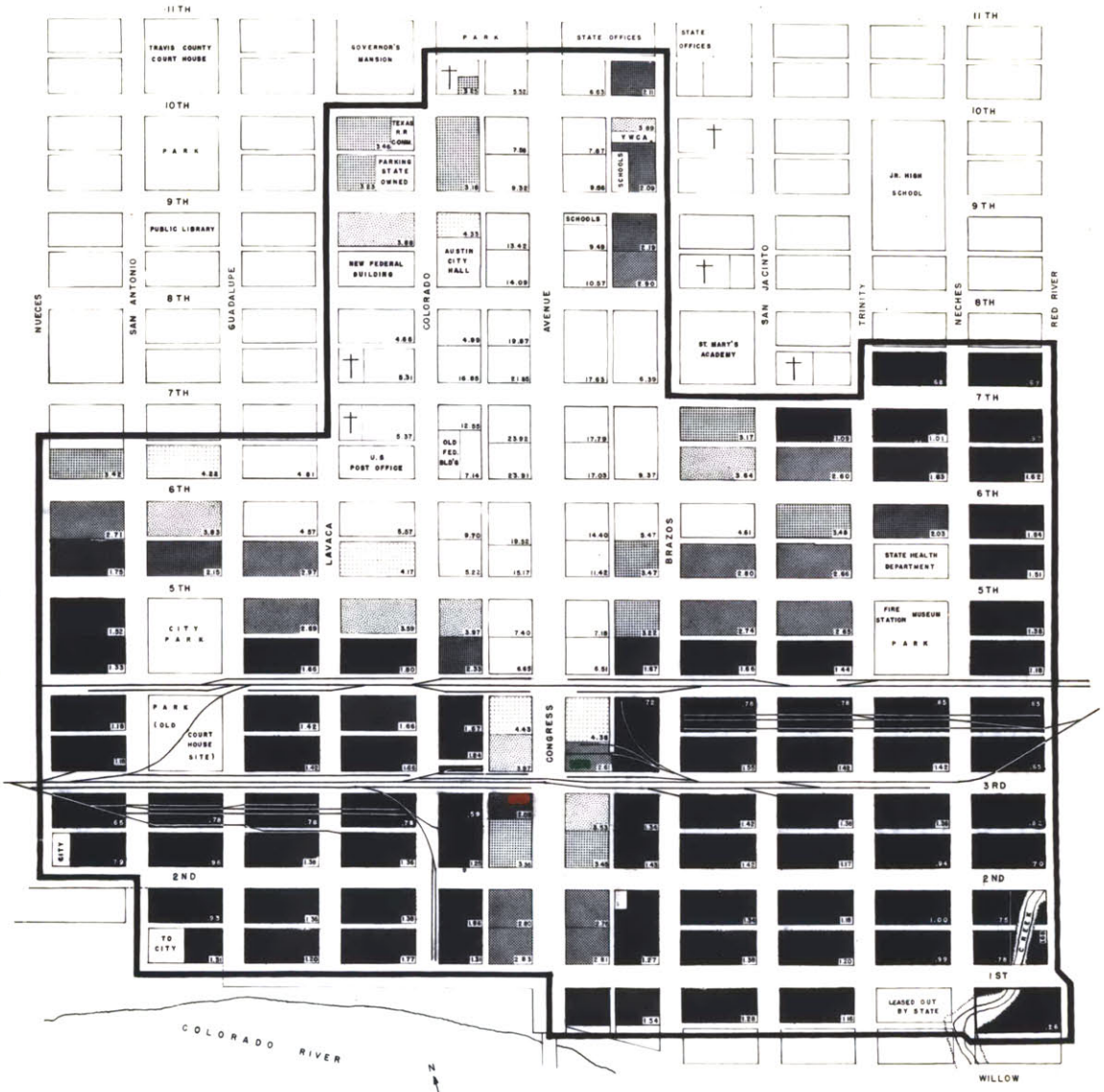
The location of railroad easements along Third Street, and later Fourth Street, across most of downtown Austin gave rise, of course, to the development of a wholesale district from Fourth Street to the river at First. The retail shops and hotels have located further up Congress Avenue from Sixth to Eleventh Streets (the Capitol grounds limit further northward expansion).

With the continued growth of the city, the existing retail area has proven inadequate to expanding business needs. The rising land to each side of Congress Avenue discourages east-west expansion and the wholesale district with railroad tracks in the middle of Third and Fourth Streets has made southward expansion very undesirable. The influence of the presence of the railroad tracks on property values in downtown Austin can be seen in Figure 2.

For many years the City Plan Commission and others have hoped that means might be found to eliminate the railroad tracks from central downtown. The retail section could then expand southward on fairly level land and the beautification

FIGURE 2

LAND VALUES



NET FULL VALUE OF LAND PER SQ. FOOT
COMPUTED FROM EQUALIZED 1947 ASSESSMENTS
FOR

DOWNTOWN AUSTIN

of the river front could go ahead under the impetus of these improvements.

The above discussion has not attempted to give a complete survey of the many aspects of the present railroad situation in the city. This subject has been rather thoroughly covered in two published reports[1,2]. It has attempted, however, to point out the many disadvantages attendant to the present scheme of railroad operation in Austin.

At present, between 150 and 400 passengers per day board or leave trains in Austin. For a city of 120,000 people, this seems to be a rather small patronage of the railroads. Were it not a way station on the main line of the MoPac and MKT, it is unlikely that this operation could be considered economic.

This small patronage may be explained partly by the prevalent use of the automobile for trips up to 300 or 400 miles. People in Austin think nothing of driving 200 miles to Dallas for a day's shopping. There is, of course, competition from airlines and busses. To meet the latter, the

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1 Moore, G.S., A Brief Outline of Transportation in Austin (mimeographed), The City Plan Commission, Austin, 1944.

2 Williams, D.R., The Influence of Railroads on the Central Business District of Austin, Texas (typewritten report), The University of Texas, Austin, 1948.

railroads have reduced fares on short trips to those charged by the bus lines. The airport is only three miles from the center of the city and frequent flights to other cities in Texas make this service popular.

The overnight Pullman trains to Dallas-Ft. Worth and to Houston are well patronized, however, and it is anticipated by many, that with the advent of better equipment and faster schedules, the other trains serving Austin will receive heavier patronage. The continued growth of the city will, of course, increase the use of railroad facilities.

The opening and closing of the University of Texas, school holidays, football games, etc. are occasions for much heavier use of the trains than is indicated in the 400 person average daily maximum. The handling not only of large numbers of passengers, but of quantities of baggage, is required at these exceptional periods.

SOME PROPOSED SOLUTIONS TO THE RAILROAD PROBLEM

In 1928 the planning firm of Koch and Fowler of Dallas was retained to prepare a Master Plan for Austin. They made many recommendations on streets and sewers, zoning, and the railroad problem. Recognizing the existing location of railroad facilities as a blight on downtown Austin and an impediment to further expansion of the retail district and to the long talked of river front beautification program, they recommended strongly the removal of railroad activity from the center of the city.

They pointed out the importance of the removal of the MoPac trackage through the western residential area and the SoPac Llano Branch trackage in the east-central residential area. This would obviate the pressing need for about a dozen grade separations along these tracks. The cost of these viaducts and underpasses would average around $100,000 each.

It has been proposed that at Round Rock, 20 miles north of Austin, the MoPac join with the MKT and use the latter's track into Austin from the east. At first, there need be no new station facilities or elimination of the downtown trackage. The MoPac tracks through the residential sections in the west of the city would be

removed, the right of way possibly being used for a by-pass highway. It would be necessary to leave MoPac tracks from Round Rock to north of the city to serve Camp Mabry, a military establishment, and some other existing users.

The SoPac Llano Branch tracks would be removed from the almost wholly residential east-central part of Austin. At a point several miles north of Austin, about 5 miles of east-west track would be laid to join the existing SoPac Llano Branch with the existing MKT main line.

In time a new railroad bridge crossing the river east of the city would be constructed and a union passenger station would be provided, possibly on East Avenue. Tentative layouts and profiles have been made for the proposed tracks joining the SoPac Llano Branch with the MKT main line and for tracks leading around south Austin from the new bridge to the existing MoPac tracks going to San Antonio.

Accurate estimates as to the total cost of the entire program of railroad relocation have not been made, but it has been placed at between 6 and 8 million dollars.


AUSTIN TEXAS
STREET GUIDE
BY
Miller Blue Print Co.
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Scale
FIGURE 3
PROPOSED PLAN
Colorado River

SPECIFIC PROPOSALS OF THE PRESENT STUDY

As a result of the present studies a number of specific proposals may be made for the location of the new union railroad passenger station.

The studies made by the City Plan Commission and reported by G. S. Moore in 1944[3] recommended that consideration be given to the location of a union station on East Avenue at Third Street (Figure 3). This station would be a "stub" station into which the trains would back from the new railroad bridge about 2 miles to the east. The freight yards and roundhouse facilities now located between Fourth and Fifth Streets between East Avenue and the new bridge would be retained. The trackage now serving the downtown areas west of East Avenue would be retained until the end of a period of proper amortization for the affected businesses.

While this scheme places the station on a principal north-south thoroughfare only .6 mile from the downtown hotels, it presents the major disadvantage of very undesirable operating conditions for the railroads.

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[3] Moore, G.S., op. cit.

Since Austin is only a way station for most of the trains serving it, the construction of a new "stub" station is most undesirable. As pointed out in the Manual of the American Railway Engineering Association[4], the "stub" station is the least convenient type of station for railroad operation. For large terminals the stub type is sometimes justified, but its use is very time consuming in a way station. Much to be preferred is the "through" station if it is at all possible to arrange. Trains waste no time in backing and retracing portions of the route in using the "through" station.

The MoPac proposes, by the construction of its new "through" station west of the existing railroad bridge in Austin, to cut 20 minutes from its present schedule, and it has to back only 3/4 of a mile to its present station. From every aspect of railroad operation, the East Avenue site, then, is unsuitable.

An examination of the possible locations for a new railroad bridge across the Colorado to the east of the city shows that, unless there is to be extensive displacement of existing residential development, the bridge will have to be located east of Pedernales Street. This is the region

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[4] American Railway Engineering Association Manual, Section 14, Chicago, 1948.

proposed in the City Plan Commission studies for the new bridge in connection with the East Avenue station site. It seems logical, therefore, that a "through" station can best be located east of Pedernales Street between the existing tracks and a new river bridge.

East First Street is a principal thoroughfare from Congress Avenue to the Montopolis Bridge which crosses the river 3-1/2 miles to the east leading to the Houston highway. East Seventh Street is the other and more important eastbound artery from the center of the city. Within the past few years it has been widened and, after crossing the MKT-SoPac tracks over a new viaduct, it connects with the Montopolis Bridge at East First Street and the Airport Boulevard. The other east-west streets between First and Seventh are minor streets of no consequence. Only Fifth Street runs through to the center of the city and, since it is principally a railroad right-of-way, it is not much travelled. Both Pedernales Street and Pleasant Valley Road join East Seventh with East First Street, and although they are at present unpaved and undeveloped, either of them could be made into excellent access streets for the Union Station.

A study of the relative merits of locations on Pedernales Street and Pleasant Valley Road shows that the location of a

new railroad bridge south of Pleasant Valley Road makes for an easier crossing of the river with access to the bridge over undeveloped land south of First Street. The land south of First at Pedernales is already developed as a residential section, and between First and Seventh, Pedernales is more built up than Pleasant Valley Road. Accompanying photographs show the character of the scattered development of land on Pleasant Valley Road between First and Fifth Streets.

In Figure 3 the proposed scheme for new track, bridge and station location is shown. After passing under the Seventh Street Viaduct, the new tracks turn off to the south to the new station site which occupies a 20 acre tract two blocks wide, between Fifth and First Streets. The City Abattoir, a modern concrete building, with its adjacent stock pens are immediately north of the station site. The new tracks would cut across the present stock pen location, but the pens can be rearranged and with an overpass or tunnel, there will be no interference with the Abattoir operations.

After passing through the 1300 foot station development, the tracks proceed under a new viaduct to be built at East First Street, to the new river bridge. In the event that station platforms longer than 1300 feet are needed, they can be extended under the East First Street viaduct

toward the river over level ground for another 500 feet. Right-of-way will be maintained for such expansion.

A viaduct is also proposed for Pleasant Valley Road between Seventh and Fifth Streets over the extension of the main line and the Y connecting it to the station site. Access to the Abattoir will be provided by an auxiliary drive. Since East Fifth Street is a little used street at present, no viaduct over the tracks is proposed at this time. A viaduct similar to the one at East First could be built at a later time if heavy use of this street should require it.

The east quarter of the site along Linden Street is possibly to be developed as a freight terminal at a later time. It might prove wiser to use it for wholesale or industrial purposes requiring railroad sidings. In any case, it is available for a railroad-oriented use.

TYPICAL DEVELOPMENT OF PROPOSED SITE

SOUTH TOWARD RIVER FROM FIRST STREET

PROGRAM FOR UNION RAILROAD STATION

Because the changes proposed by this and other studies for the solution of Austin's railroad problem involve the expenditure of large sums of money, the railroads are reluctant to discuss the matter. The City Plan Commission proposes, in its earlier studies, that the City of Austin bear a good fraction of the cost of these changes. A statement could not be obtained from officials of any of the three railroads concerning the feasibility of any of the proposed changes, nor did they indicate that a program for a new station had been given thought.

The three railroad companies provided the information that on a typical day about 350 passengers board or leave trains in Austin. Following is the current schedule of the sixteen passenger trains serving Austin:

TRAINS ARRIVING IN AND LEAVING AUSTIN DAILY

MKT 1:20AM from San Antonio for St. Louis (parked Pullman for Dallas)

MKT 4:55AM from St. Louis-Dallas for San Antonio (leaves parked Pullman)

SoPac 5:30AM from Houston (leaves parked Pullmans)(Terminal)

MoPac 10:10AM from St. Louis for San Antonio

MoPac 10:10AM from San Antonio-Mexico City for St. Louis

MKT 11:35AM from Dallas-St. Louis for San Antonio

SoPac 12:30PM from Houston (Terminal)

MoPac 2:00PM from St. Louis for San Antonio-Mexico City

MKT 2:19PM from Dallas-Kansas City for San Antonio

SoPac 2:20PM for Houston (Terminal)

MKT 2:59PM from San Antonio for Dallas-St. Louis

MoPac 3:40PM from San Antonio for St. Louis

MoPac 4:35PM from St. Louis for San Antonio-Laredo

MKT 5:20PM from San Antonio for Dallas-St. Louis

MoPac 10:50PM from San Antonio-Laredo

SoPac 11:30PM for Houston (parked Pullmans)(Terminal)

Recommendations have been made by the American Railway Engineering Association[5] for the areas required of various railroad station facilities. From these standards for a station with a passenger load like Austin's, together with an inspection of existing facilities in the railroad stations in Austin, and other considerations of problems peculiar to this situation, the following program of approximate space requirements has been evolved:

Waiting Rooms (white and colored)	3000 square feet
Concourse	2000
Lunch Counters (white and colored)	800
Newsstand, Public telephones, toilets, etc.	1000
Ticket and Baggage Counters	
Baggage Room	1500
Office Space totalling	2500
for:	
Station Master (view of tracks) MoPac City Passenger Agent MKT City Passenger Agent SoPac City Passenger Agent General Business Office for Union Station Management Telegraph and Telephone	
On Site Parking for approximately 100 automobiles	
Railway Express (separate building)	3600

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[5] American Railway Engineering Association, Proceedings of the 28th Annual Convention, 28, 573, Chicago, 1927.

As one can see from the accompanying photographs, meeting the train in Austin is a rather informal procedure. The train stops in the middle of Third Street and cars may be parked near the train along most of its length. People getting off with baggage frequently go directly from their railroad car to private car or taxi parked in the street near that part of the train. In many ways the system is a very convenient one--certainly, one which does not involve the station building greatly as far as the passengers are concerned. Many people who board or leave trains in Austin have never been inside either of the station buildings. The parked automobile is the waiting room. This may partly be occasioned by the fact that the waiting rooms in the stations are neither pleasant nor inviting places to await trains.

In the proposed Union Station plan, the parking of automobiles beside the main platform in reminiscent of the present scheme of things. Many passengers will go directly from train to automobile, but it is probable that many more will use the station building itself than now do.

The two platforms will be 1300 feet long, each 20 feet wide. The American Railway Engineering Association[6]

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6 American Railway Engineering Association, Proceedings of the 25th Annual Convention, 25, 488ff, Chicago (1924).

M K T TRAIN AT PRESENT STATION

recommends a 20 foot platform as desirable where there is to be combined passenger use and baggage handling on the same platform. Separate baggage and passenger platforms are warranted only in stations handling large numbers of passengers.

Although a high platform at car floor level is more convenient for passengers, it has several operational disadvantages which make it inappropriate for use except in large terminals with nearby coach yards. If the train is to be serviced while standing in the station, low platforms are mandatory. Many of the older cars on these trains are air conditioned with ice which must be loaded into bins under the floor of the cars. Many other service operations require the low platform. Baggage handling is equally convenient from low or high platforms.

Three tracks adjacent to the two platforms are provided. It is proposed that most of the trains, both north and south bound, would use the principal platform adjacent to the station and that the second platform would be used only for simultaneous arrivals, parked Pullman cars, etc.

Passengers will walk from the outer platform across the paved areas between the tracks to the main platform when trains on Track 1 do not interfere. In such cases as it may be necessary, a subway pedestrian tunnel is provided from the outer to the main platform.

A "Y" is provided to handle the turning around of the Houston trains which are terminal here. It is proposed that the existing freight and servicing yards be maintained, although in time it may be desirable to remove these to the industrial zone to the east near the railroad right-of-way.

Since color separation is observed in Austin in the use of most public facilities, provision has been made for separate waiting areas, lunch counters, and toilets for white and colored people. The attempt has been made to mitigate this separation and to make its removal relatively simple if custom changes in this matter.

The building is to be built of reinforced concrete frame with native rough coursed limestone facing on the lower portions. The upper portions of the building are faced with anodized aluminum sheet. The platform canopy is of reinforced concrete. Floors throughout the building are of terrazzo, walls of plaster or limestone, and ceilings of perforated asbestos cement board with sound absorptive backing. There is no basement; all heating, ventilating, and air cooling equipment is on the second floor.

BIBLIOGRAPHY

American Association of Railroad Engineers, Manual, Chicago (1948).

American Association of Railroad Engineers, Proceedings of the 25th Annual Convention, 25, Chicago (1924).

American Association of Railroad Engineers, Proceedings of the 28th Annual Convention, 28, Chicago (1927).

Haines, Francis S., A Transportation Center for Stamford, Connecticut, Thesis, M. Arch., M.I.T., Cambridge, (1948).

Haskell, Douglas, "Railroad Stations, A Neglected Opportunity," Architectural Record, December 1943.

Moore, G. S., A Brief Outline of Transportation in Austin, (mimeographed), The City Plan Commission, Austin, (1944).

Williams, D. R., The Influence of Railroads on the Central Business District of Austin, Texas, (typewritten report), The University of Texas, Austin, (1948).

PUBLISHED DESIGNS

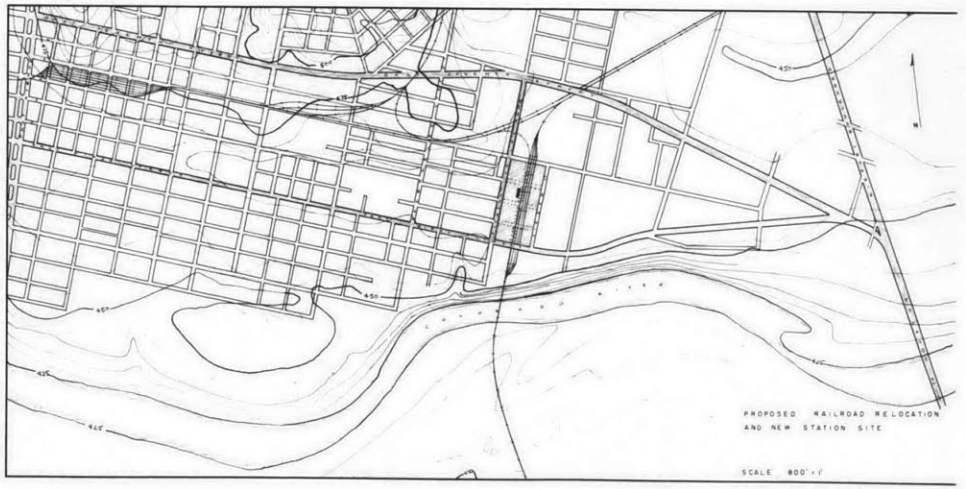
"Railway Station; LaCrosse, Wisconsin, Holabird and Root, Architects," Architectural Forum, May 1940.

"Railroad Station--Postwar Pioneer; CB and Q Station; Burlington, Iowa; Holabird and Root, Architects," Architectural Forum, October 1944.

"Two Stations for the Pennsylvania Railroad; Raymond Loewy, designer; Lester C. Tichy, Architect," Architectural Forum, March 1943.

A UNION RAILROAD STATION

FOR AUSTIN, TEXAS



M. ARCH. THESIS - SEPT. 1949
ROBERT BRADFORD NEWMAN

A UNION RAILROAD STATION

FOR AUSTIN, TEXAS

M. ARCH. THESIS - SEPT. 1949

ROBERT BRA[illegible]D NEWMAN

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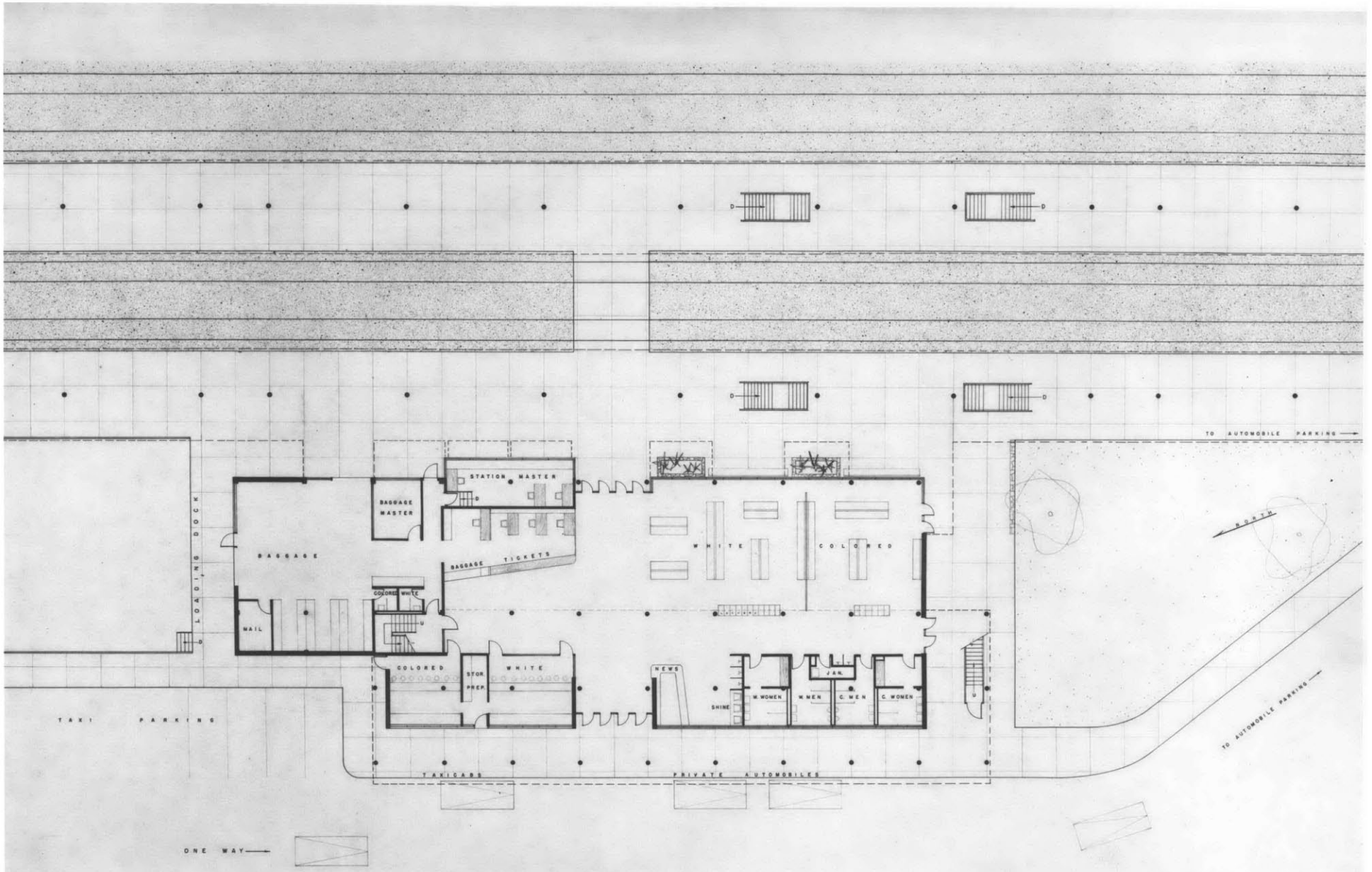

FIRST FLOOR SCALE 1/8" = 1'-0"

A UNION RAILROAD STATION
FOR AUSTIN, TEXAS

M. ARCH. THESIS – [illegible] EPT. 1949

ROBERT BRADFORD NEWMAN

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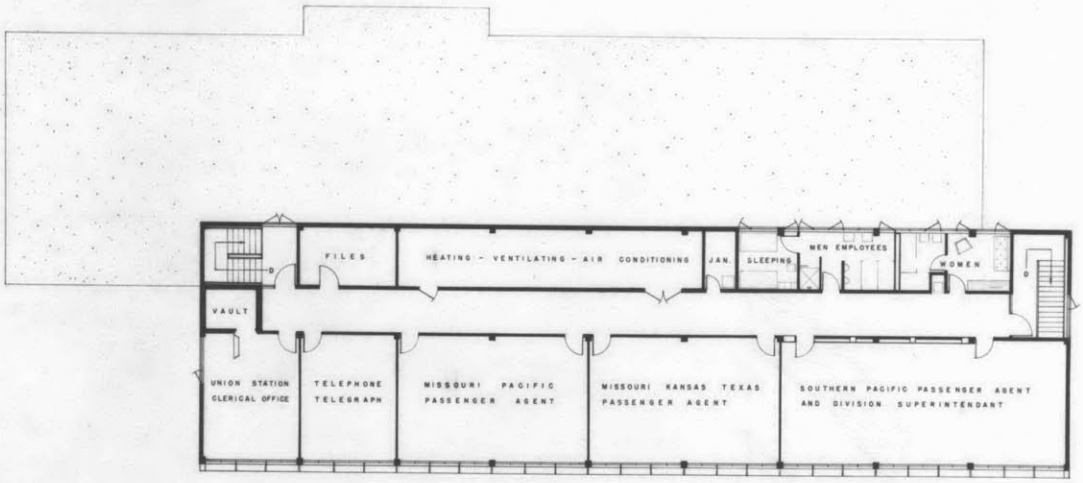


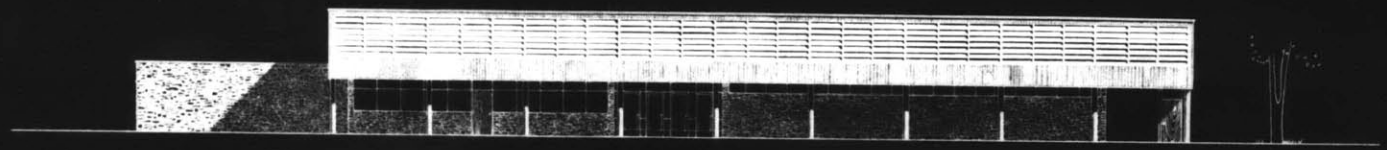
SECOND FLOOR SCALE 1/8" = 1'-0"

A UNION RAILROAD STATION

FOR AUSTIN, TEXAS

M. ARCH. THESIS - [illegible] SEPT. 1949

ROBERT BRADFORD NEWMAN



W E S T

S O U T H

A UNION RAILROAD STATION

FOR AUSTIN, TEXAS

M ARCH THESIS SEPT. 1949

ROBERT BRADFORD NEWMAN

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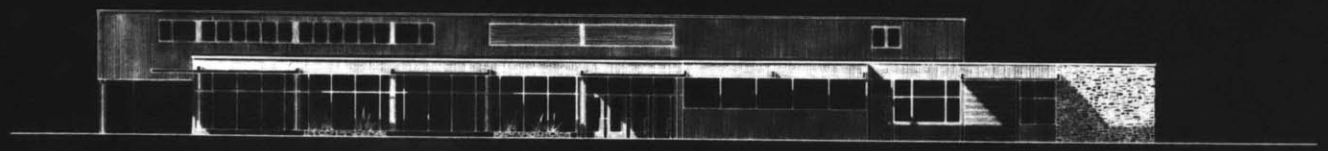

EAST

NORTH SCALE 1/8"-1'-0"

A UNION RAILROAD STATION

FOR AUSTIN, TEXAS

M. ARCH. THESIS - M.I.T. - 1949

ROBERT BRADFORD NEWMAN

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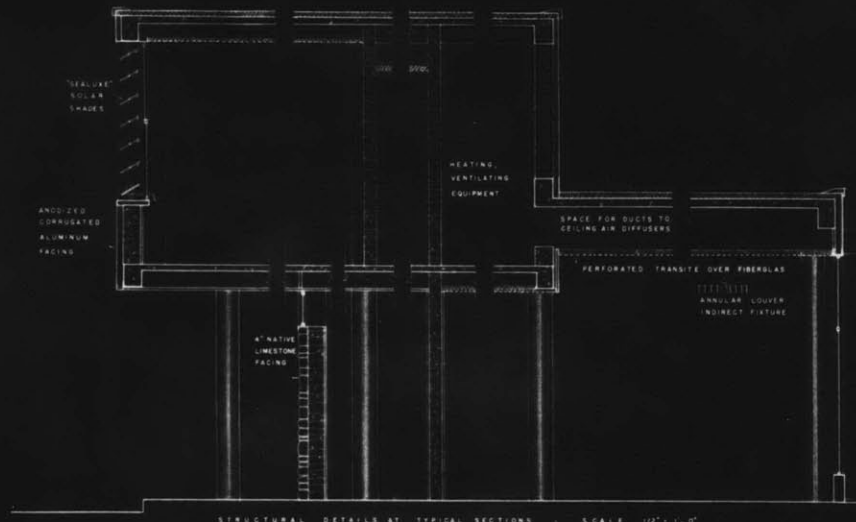
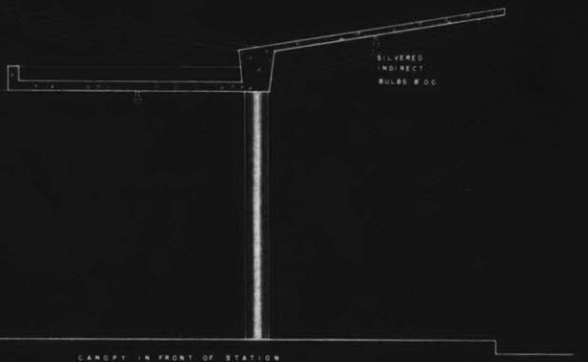
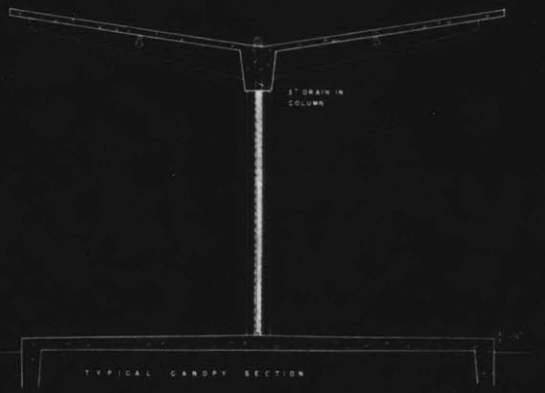


STRUCTURAL DETAILS AT TYPICAL SECTIONS - SCALE 1/2" = 1'-0"

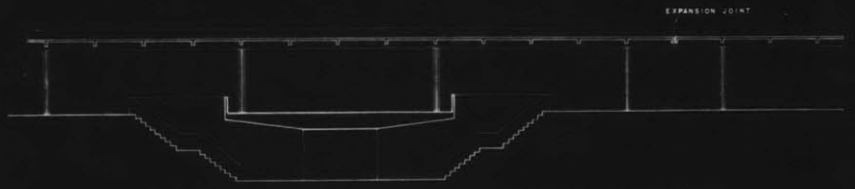


CANOPY IN FRONT OF STATION

TRANSVERSE SECTION - SCALE 1/8" = 1'-0"



TYPICAL CANOPY SECTION



SECTION THROUGH STAIRWAY TO PEDESTRIAN SUBWAY - SCALE 1/8" = 1'-0"

A UNION RAILROAD STATION

FOR AUSTIN, TEXAS

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