

ORIGINALDecision No. 75740

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Investigation on the Commission's
own motion into the status, safety,
maintenance, use and protection or
closing of grade crossings over the
railroad tracks of The Atchison,
Topeka and Santa Fe Railway Company
and the Southern Pacific Company in
the City and County of San Francisco.

Case No. 8786
(Filed April 16, 1968)

Harold S. Lentz and K. E. Johnson, for Southern Pacific Company; Robert B. Curtiss, for The Atchison, Topeka and Santa Fe Railway Company; Richard W. Bridges, for The Western Pacific Railroad Company; Thomas M. O'Connor, William C. Taylor and Robert R. Laughead, for City and County of San Francisco; Joseph C. Easley, for State of California, Department of Public Works; respondents.
Elmer Sjostrom and William J. McNertney, counsel, for the Commission's staff.

O P I N I O N

This proceeding is an investigation by the Commission on its own motion into the status, safety, maintenance, use and protection or closing of two grade crossings in the City and County of San Francisco (City). Crossing No. 2SG-1.12 is located on The Atchison, Topeka and Santa Fe Railway Company (Santa Fe) in the intersection of Mariposa and Pennsylvania Streets. Crossing No. E-0.47 is located on Southern Pacific Company tracks across Sixth Street between Townsend Street and Berry Street.

The purposes of the investigation, as set forth in the Order Instituting Investigation are to determine:

1. Whether the public health, safety and welfare require relocation, widening, closing or other alteration of said crossings or require installation and maintenance of additional, different or improved protective devices at said crossings;

2. If any of the above is required, upon what terms it shall be accomplished, and to make such apportionment of costs among the affected parties as may appear just and reasonable;

3. Whether protection of said crossings could have been ordered in Application No. 49626;

4. Whether apportionment of costs of such protection would have been governed by Section 1202 or by Section 1202.5 of the Public Utilities Code in said application;

5. Whether any other order or orders that may be appropriate in the lawful exercise of the Commission's jurisdiction should be issued.

By said order, Santa Fe, Southern Pacific, The Western Pacific Railroad Company (Western Pacific)^{1/}, City, and the State of California Department of Public Works (Department) were made respondents in the proceeding.

Public hearings were held before Examiner Bishop at San Francisco on May 7 and 8, and October 1 and 3, 1968. Evidence was presented by the Commission's staff and by all respondents except Western Pacific.

This proceeding grew out of Application No. 49626. By Decision No. 74000, dated April 16, 1968, in that proceeding, Department was authorized to construct crossings at separated grades of State Route 87 (Southern Freeway - Interstate 280) over tracks of Santa Fe and Southern Pacific in the City and County of San Francisco, referred to as the "China Basin Overpass". That authorization was necessary for the proposed extension of State Route 87 generally

^{1/} Western Pacific trains operate over that portion of the Santa Fe track on which Crossing No. 2SG-1.12 is located.

northerly from a location just south of Mariposa Street to the vicinity of Sixth and Brannan Streets. The State Route 87 freeway will be elevated, passing over Mariposa Street and descending to street level at its northern terminus. At the termination of hearings in Case No. 8786 construction of that segment of State Route 87 had not yet begun.

At its southern terminus the above described segment of State Route 87 will connect with the segment of that same freeway described in Application No. 48000. The latter segment extends northerly from the vicinity of Evans Avenue to, but not over Mariposa Street, between Indiana and Pennsylvania Streets. On and off ramps have been constructed connecting the freeway with Mariposa Street. On or about May 16, 1968, these ramps were opened to traffic.

Santa Fe Crossing No. 2SG-1.12

The Santa Fe crossing of the intersection of Mariposa and Pennsylvania Streets is a branch line track serving the Indiana Street and Jackson Square industrial areas. The track extends northerly along Indiana Street, thence westerly just outside the southerly limit of Mariposa Street to Pennsylvania Street, thence diagonally through the intersection from its southeast corner to its northwest corner. From the latter point the track enters a private right of way between two buildings located at said northwest corner of the intersection, extending thence to its terminus at Rhode Island and Alameda Streets.

The track is on a grade in excess of 3 percent on each side of the crossing, the summit of the vertical curve being located on the Santa Fe bridge over the main line tracks of the Southern Pacific Company approximately 200 feet east of the crossing. Traffic on

Pennsylvania Street, going south from Mariposa Street, experiences an ascending grade of 10 percent; going north from Mariposa Street a descending grade of 6 percent is encountered. Mariposa Street is generally level west of Pennsylvania Street with a 3 percent rising grade eastward from the intersection to the aforesaid bridge over the Southern Pacific tracks. The intersection is illuminated by four mercury arc vapor street lights.

In a report presented by an assistant transportation engineer from the Commission's staff, it is stated that the view conditions at the crossing are very restricted in all four quadrants, due to buildings which are located at the northwest, southwest and southeast corners and to the presence of a fence, six feet high, on the east side of Pennsylvania Street north of the crossing.

There is no automatic protection at this crossing. Stop signs are located at the intersection on Pennsylvania for both northbound and southbound traffic. There are also two crossbuck (Standard No. 1) signs, one facing Mariposa for eastbound traffic and one on Pennsylvania for northbound traffic.

Western Pacific trains operate over the track involved herein in movements between that carrier's barge dock and its freight terminal. According to the staff report, there are approximately 12 rail movements daily over this crossing, the Santa Fe averaging four through trips and two switching moves, and Western Pacific averaging six through trips per day. However, Santa Fe's regional engineer testified that there are regularly two Santa Fe movements (one round trip) over the crossing and sometimes two additional movements, reflecting an average of less than four through movements per day.

Additionally, there are occasionally two switching moves to serve one of the adjacent industries. The daily train, he said, goes out toward Jackson Square after midnight; the return movement is made prior to 8:00 a.m. The other through train, when it operates, goes out in the afternoon and returns later in the day.

In exhibits introduced through the regional engineer the trains which passed over the Mariposa crossing were tabulated for two 24-hour periods on which traffic counts were also taken. On May 14-15, 1968 six Western Pacific and two Santa Fe movements over the crossing were made. On May 23-24 there were five Western Pacific and two Santa Fe movements. The times of day were not recorded. The regional engineer testified that the frequency of Santa Fe trains moving over the crossing has declined in recent years.

Traffic counts at the Mariposa crossing were taken by the staff, by Santa Fe and by the City both before and after the Evans Avenue-Mariposa Street segment of State Route 87, including the on and off ramps at Mariposa, was opened to traffic. After the ramps were opened to traffic on and off counts at the ramps were taken by Santa Fe and by the Department.^{2/}

In Table I below, the various car counts taken at the Mariposa-Pennsylvania crossing are chronologically set forth.

^{2/} It appears that on or about May 16, 1968, the highway segment in question and the Mariposa on and off ramps were opened to traffic. A few days later the 18th and 20th Street overpasses were opened. At the conclusion of the hearing session of May 8, 1968, it was decided that an adjourned hearing should be scheduled for a date several months after the opening of the freeway to Mariposa Street, so that its effect on the traffic at the crossing intersection might be observed after a stable pattern of on and off traffic had developed.

TABLE I
TRAFFIC COUNTS
MARIPOSA AND PENNSYLVANIA STREETS
(24-hours periods)

<u>Date</u> (1968)	<u>Day</u>	<u>No. of</u> <u>Vehicles</u>	<u>Count</u> <u>Made By:</u>
Feb. 8-9	Thurs.-Fri.	(2) 10,310	Staff
Feb. 27	Tues.	(1) 8,434	City
May 14-15	Tues.-Wed.	(4) 9,606	Santa Fe
May 16	(Date of opening of freeway section)	(4)	
May 23-24	Thurs.-Fri.	(3) 10,243	Santa Fe
Aug. 6	Tues.	(4) 10,325	City
Aug. 13-14	Tues.-Wed.	(2) 9,746	Santa Fe
Aug. 22-23	Thurs.-Fri.	(2) 11,361	Staff
Sept. 26-27	Thurs.-Fri.	(2) 12,026	Staff

(1) No adjustment for 3-axle, or more, vehicles.

(2) Adjusted figure (count reduced by 5 percent to eliminate effect of 3 or more axles).

(3) Adjusted figure (count reduced by 9 percent to eliminate effect of 3 or more axles).

(4) Visual count.

The Santa Fe traffic counts were broken down by direction of approach to the intersection and indicated whether vehicles continued straight ahead or made a right or left turn. While the Santa Fe's total for August 13-14 was only slightly higher than that for May 14-15, there were substantial changes in the traffic pattern during the intervening period. Thus, in the May check 2,228 cars entered the intersection northbound from Pennsylvania, about half turning to the right on Mariposa, toward Third Street, and half to the left. By the

August date the total had dwindled to 542, again about half turning to the right and half to the left. In both checks the volume of traffic into the intersection from Pennsylvania southbound was very small.

In May the vehicles moving into the intersection from Mariposa totaled 3,488 vehicles eastbound and 3,803 westbound. By August these figures had increased to 4,538 and 4,555 vehicles, respectively. In both checks it was found that the preponderance of traffic in both directions moved straight through the intersection; however, the May check, made before the freeway on and off ramps were opened to traffic, showed that 602 eastbound vehicles made a right turn onto Pennsylvania and that 802 westbound vehicles made a left hand turn at the intersection. By the time of the August check, these counts had dwindled to 142 and 153 vehicles, respectively.

The traffic counts made at the freeway on and off ramps on May 23-24 (Santa Fe), August 6-7 (Department) and August 13-14 (Santa Fe) totaled 9,412, 12,400 and 11,448 vehicles, respectively. The split between on and off traffic was roughly half in each instance. The Santa Fe count of August 13-14 showed 48.4 percent of the on and off ramp traffic moving to and from points easterly of the ramps, that is, in the direction of Third Street, and 52.6 percent moving from and to points westerly of the ramps, and necessarily through the Mariposa-Pennsylvania intersection.^{3/}

In the last ten years, the record shows, there have been two train-vehicle accidents at Mariposa-Pennsylvania crossing; one of these, in 1967 involved a trolley coach and a train. In neither accident were there injuries.

^{3/} At the May hearings the staff witness presented estimates of traffic volumes which he anticipated would pass through the Mariposa-Pennsylvania intersection after the freeway ramps should be opened. Since actual traffic counts were taken after the opening, the staff estimates will not be further considered.

Recommendations

The staff's recommendation, presented at the May hearings, was that the Mariposa-Pennsylvania crossing be protected with four Standard No. 8 flashing light signals on cantilevers. This recommendation was predicated on the physical situation at the crossing and the staff witness' expectation that traffic over the crossing would increase by 50 percent as a result of the opening of the Army Street-Mariposa section of the freeway. Moreover, the witness believed that such improved protection was warranted even by the volume of traffic then prevailing, prior to said opening.

The recommendation of the City and County of San Francisco, as expressed by a traffic engineer, was that (1) Santa Fe reflectorize the crossbuck signs at the crossing; (2) the City install standard W-47R advance warning grade crossing signs, reflectorized; (3) "RXR's" be painted in the pavement in standard-size letters, in thermo-plastic material and (4) the track area be outlined in thermo-plastic material.

The Santa Fe regional engineer concurred in the City's recommendation, suggesting further the installation of an arterial stop sign for eastbound traffic on Mariposa just west of the Pennsylvania Street intersection. Another Santa Fe witness, assistant to the signal engineer, expressed the view that no automatic signal protection is needed at the crossing in question. He testified further that if the Commission should order such installation, Standard No. 8 flashing light signals would be adequate for the north-south traffic on Pennsylvania but that for the east-west traffic on Mariposa 12-foot type cantilever signals should be installed.

Witnesses for Santa Fe and the City were of the opinion that the volume of traffic over the Mariposa crossing would not materially increase beyond the levels disclosed by the August and September counts.^{4/} These witnesses believed that the existing advance warning, boulevard stop, and crossbuck signs, with the additional changes set forth in their respective recommendations, above, would furnish adequate protection at the crossing in question.

The staff, Santa Fe and City recommendations were all made at the initial hearings, before the on and off ramps were opened to traffic. At the October hearings each of the witnesses reaffirmed his original recommendation.

Southern Pacific Crossing No. E-0.47

A total of 29 tracks cross Sixth Street between Berry and Townsend Streets, viz.: 8 tracks between Berry and King Streets, 2 tracks on King Street, 16 tracks between King and Townsend Streets and 3 tracks on Townsend Street. The 16 tracks between King and Townsend Streets are protected by four sets of crossing gates operated by a man in a tower located among said tracks westerly of Sixth Street. There is presently no automatic protection for any of the 13 other tracks.

As many as 300 rail movements per day are made across Sixth Street on the 16 tracks protected by gates. On the other tracks the staff study disclosed that there is an average of 20 to 26 crossing movements per day.

^{4/} It is difficult to compare the vehicle counts taken by one party with those taken by another; for example, the methods of adjusting the data from automatic counters for vehicles of 3 or more axles were not uniform.

A 24-hour traffic count taken by the staff on January 10-11, 1968, showed that a total of 870 vehicles traversed the crossing between Berry and King Streets during that period. The staff engineer estimated that about 40 percent of the cars were operated by employees of Southern Pacific or of its highway subsidiary company. In the staff report it is stated that Southern Pacific is the owner of all property bounded by Seventh Street on the west, Townsend Street on the north, Third Street on the east and Berry Street on the south, and that nearly all traffic using Sixth Street between Townsend and Berry Streets is comprised of vehicles operated by Southern Pacific employees or by customers using that carrier's freight facilities. No other counts of traffic moving over the Sixth Street crossing were introduced.

The record shows that the construction of the Mariposa-Brannan section of the freeway will result in permanent closure of Sixth Street to traffic between Townsend and Brannan, where the on and off ramps will be constructed. This will necessitate traffic moving from Sixth Street north of Brannan to Sixth Street south of Townsend, and vice versa, to detour via Fifth or Seventh Street between Brannan and Townsend. Additionally, Sixth Street terminates, on the south, at Berry Street.^{5/} The record further shows that when the aforesaid section of the freeway is completed and open to traffic there will be no increase of vehicular traffic over the Sixth Street crossing by reason of the freeway's presence in the vicinity.

In view of the circumstances set forth in the preceding paragraph, the record indicates, it is anticipated that the volume of

^{5/} Berry Street is parallel to, and approximately 300 feet north of the China Basin Channel. At one time there was a bridge over the Channel, by means of which Sixth Street extended continuously to Sixteenth Street. The bridge was for many years closed to traffic and was recently removed.

traffic over the crossing will not increase and that when freeway construction blocks off Sixth Street between Brannan and Townsend said traffic will diminish from its current level.

Between King and Berry Streets, and extending easterly from Sixth Street the full length of the block to Fifth Street are two parallel buildings, with industry and drill tracks between them. The testimony of the witnesses discloses that for vehicles approaching that portion of Sixth Street close to which the buildings are located the view of the tracks is obscured to the right, for northbound cars, and to the left, for southbound cars.

To the west of Sixth Street the visibility for drivers on that street approaching the tracks between Berry and King appears to be generally good, with some obstructions. The view conditions for drivers approaching the tracks between King and Townsend are not a problem, since, as hereinbefore mentioned, these tracks are protected by two sets of manually operated crossing gates.

The staff witness testified that the view conditions of the tracks crossing Sixth Street will be seriously restricted by the freeway structure, which will cross the Southern Pacific yards just westerly of and adjacent to Sixth Street between Berry and King Streets. His report states that the bents required to support the overhead ramps will be spaced approximately 125 feet apart, that the bents will present to drivers a very restricted view of trains approaching from a westerly direction, and that the operator of the aforesaid crossing gates will have a very reduced view of operations in the passenger yard.

An assistant bridge engineer of the Department's Division of Highways testified regarding the proposed placement of the bents of the freeway structure between Berry and King Streets. He indicated that

the actual locations of certain of the bents will be different from those designated in the original plans. He testified that the bents would not obscure the view of approaching locomotives or trains as to create a hazard for vehicular traffic moving over the Sixth Street crossings in question.

A witness for City testified that, in his opinion, when the freeway bents have been erected they will not obscure the view of approaching engines or trains more than would a parked truck.

Recommendations

The staff engineer recommended that Sixth Street be closed to vehicular traffic between Townsend and Berry Streets, and that this action be taken immediately, without waiting for the freeway construction, hereinabove described. This recommendation was predicated on the small volume of traffic over the crossing, the existing hazards, as well as those anticipated for the future, and the accessibility to Berry Street and its vicinity via Third, Fourth and Seventh Streets. In the event the Commission should not order the closing of Sixth Street this witness recommended that automatic gates and Standard No. 8 flashing light signals be installed protecting the yard tracks between King and Berry Streets, and that the existing gates and light signals protecting the tracks between King and Townsend Streets also be automated.

The witness for City recommended that no changes be made at Sixth Street at the present time, and that when the freeway bents are in place, or at least under construction, the situation can be further reviewed to determine whether their presence will then require some action to safeguard the users of the crossing. At the May hearings he pointed out that closure of Sixth Street would be of concern to City's fire and police departments, which should be consulted.

A Southern Pacific signal engineer testified that it would not be practicable to substitute automatic gates for the existing manual gates. He further testified to the effect that if the crossing remains open after the freeway is constructed over the tracks, the view of the operator in the tower from which the gates are controlled would be obstructed and it would be necessary to relocate the tower. He estimated that the cost of installing automatic gates and lights to protect the tracks between King and Berry Streets would be approximately \$16,400.

At the October hearings City introduced evidence through its assistant fire chief concerning the need for access over the Sixth Street crossing for fire-fighting equipment. He described the locations of fire hydrants in the area between Townsend Street and the Channel and between Third and Seventh Streets, and of the three firehouses which are closest to said area. He pointed out that two large lumber yards, located between Berry Street and the Channel and between Fifth and Seventh Streets, are considered very great fire hazards. Other hazards are the two long buildings, previously mentioned, extending easterly from Sixth Street between King and Berry Streets. In view of these circumstances, it was his opinion that the Sixth Street crossing should unquestionably remain open for Fire Department vehicles.

The witness pointed out that, while there is access to the lumber yards and other described facilities via Seventh Street, that street is congested with vehicular traffic at times, aggravated in part by Greyhound buses parked on the street and by the manner in which trucks are necessarily spotted for loading or unloading at commercial establishments located there. Also, the grade crossing on

Berry Street at Seventh Street is sometimes blocked by switching movements. Additionally, Fourth Street is blocked during certain portions of the day between Townsend and King Streets by Southern Pacific passenger trains or cars. New Fourth Street and Jordan Alley, which give alternate access from Townsend to King and Berry Streets, are not dedicated streets, are on Southern Pacific property, and can be closed to public use at any time.

A few minutes delay in getting to a fire can be very costly, the witness stated, and it is essential that the most direct practicable routes be kept open. Sixth Street is the direct route between the fire house on Bluxome Street and the above described fire hazard areas. He further testified that, in case of a fire at any of the lumber yards, it might be necessary to string hoses from a high pressure hydrant at Sixth and Townsend Streets over the tracks and along Sixth Street to Berry, to supplement the water from hydrants which are close to the yards.

Following receipt of the assistant fire chief's testimony, counsel for City, Southern Pacific and the staff entered into a stipulation,^{6/} as follows:

"It is stipulated that there is no necessity for continuation of the Sixth Street Crossing for use by the general public after commencement of construction of the freeway project in the vicinity of the crossing. However, if the Commission concludes and determines that a crossing at this location is necessary for emergency use after commencement of such construction, then it is further stipulated that any order by the Commission requiring continuance of an emergency grade crossing at the Sixth Street location shall be on the following terms:

"1. The crossing shall be provided with barriers in the form of locked gates or breakable barriers of only sufficient width to permit passage of single vehicles in connection with an actual emergency.

^{6/} Santa Fe is not involved and counsel for Department, not being directly concern in what is to be done with the Sixth Street crossing, took no position as to the stipulation.

"2. The crossing need be maintained only to such standard and single lane width necessary to permit use by emergency vehicles.

"3. The crossing will be permanently closed to all but emergency vehicles and crossing protection devices and signs shall be removed.

"4. The only restriction upon rail use will be that the crossing area will not be occupied by stored railway cars or equipment."

Statements of the parties made during the course of the hearings require that the foregoing stipulation be considered in the light of the following facts: Southern Pacific and the Commission's staff maintain the position that the Sixth Street crossing should be closed at once; City believes that the crossing should be left open to all traffic until the commencement of construction of the freeway project in the vicinity of the crossing.

Discussion, Findings and Conclusions

As hereinbefore stated, this investigation grew out of Application No. 49626, which relates to that segment of State Route 87 (Southern Freeway - Interstate 280) which is to be built from Mariposa Street northerly to Brannan Street. However, the traffic moving onto and off the freeway via the Mariposa ramps is traversing that portion of the freeway which lies southerly of Mariposa Street. Moreover, the record in Case No. 8786 shows that when the freeway segment northerly of Mariposa is completed and open to traffic no ramps will be provided to enable vehicles moving to or from points northerly of Mariposa to enter or leave the freeway at that street. In view of this, there will be no increase of traffic on Mariposa (and over Santa Fe Crossing No. 2SG-1.12) By reason of the construction of said freeway segment. It appears, rather, that there will, at that time, be a reduction in the volume of vehicular traffic on Mariposa, as northbound drivers

from points south of Mariposa bound for points northerly thereof will have a tendency to continue on the freeway as far as possible, rather than leave it at Mariposa, as they are now compelled to do.

Thus, it appears that the question as to whether protection of the Mariposa crossing could have been ordered in Application No. 49626 is irrelevant and need not be further considered. It follows that this is also the case with the question as to whether apportionment of costs would have been determined under Section 1202 or under Section 1202.5 of the Public Utilities Code.

With respect to the Sixth Street crossing, in view of the findings and conclusions hereinafter set forth, it appears also that a determination of the questions mentioned in the immediately preceding paragraph is, with respect to said crossing, also not necessary. It is to be here observed that, although the inclusion of these questions in the Order Instituting Investigation in this proceeding was the result of a stipulation entered into at the hearing in Application No. 49626, above, by the parties involved in this proceeding, Case No. 8786, no presentation, either by evidence or argument, was made by any party at the hearings in Case No. 8786, relative to said questions.

We find that:

1. In the last ten years only two train-vehicle accidents have occurred at the Mariposa-Pennsylvania crossing and that no injuries resulted therefrom.

2. The opening of the Army Street-Mariposa section of State Route 87 (Southern Freeway - Interstate 280), together with opening of the on and off ramps at Mariposa and the opening of the 18th Street and 20th Street overpasses, has changed the traffic patterns on Mariposa and Pennsylvania Streets.

3. During the period of construction of said section of State Route 87, and while the 18th Street and 20th Street overpasses were being reconstructed, some traffic was diverted temporarily to Mariposa Street from said streets. That traffic passed through the Pennsylvania intersection. Since the opening of said overpasses the bulk of the traffic in question has returned to 18th and 20th Streets and their freeway overpasses.

4. A connection of Pennsylvania Street with State Route 87 freeway in the vicinity of Army Street resulted in an increase of traffic via said street on Mariposa and over the subject grade crossing while the Army-Mariposa segment of the freeway was being built. With the opening of that segment the freeway movements via Pennsylvania declined, using instead the ramps at Mariposa. That portion of said traffic moving between the ramps and Third Street no longer traverses the grade crossing in issue.

5. Although the three Santa Fe traffic counts at the Mariposa-Pennsylvania intersection show a drop in volume, they do not reflect a distinct trend. Those of the City and the staff show substantial upward increases after the opening of the Army-Mariposa freeway segment, ending with the staff's adjusted count of 12,026 vehicles in a 24-hour period on September 26-27, 1968.

6. Whether the volume of traffic over the crossing will reflect a substantial increase above 12,026 vehicles during the period prior to the opening of the Mariposa-Sixth Street freeway segment (yet to be constructed) is conjectural.

7. When the Mariposa-Brannan Street segment is opened a decline of traffic volume on Mariposa via the freeway ramps, including that portion traversing the Santa Fe crossing, may be reasonably expected.

8. There are two to four Santa Fe train movements including switching movements, per day over the crossing. Half of these occur after midnight. There are five or six Western Pacific train movements per day over the crossing.

9. Due to grades and curves in the vicinity, train speeds over the crossing are necessarily very slow, 3 to 7 miles per hour.

10. Public health, safety and welfare do not require the installation of Standard No. 8 flashing light signals at Crossing No. 2SG-1.12.

11. Public health, safety and welfare require that the existing protection at said Crossing No. 2SG-1.12, as hereinbefore described, be improved as follows:

- (a) Santa Fe should reflectorize the existing crossbuck signs at the crossing, or replace the present signs with reflectorized (Standard No. 1-A) signs.
- (b) City should install Standard W-47R reflectorized grade crossing signs on the four approaches to the crossing.
- (c) City should paint RCR's in thermoplastic material in the standard dimensions, on all four approaches to the crossing.
- (d) City shall outline in the pavement, in thermoplastic material, the crossing area.

12. Cost of installation and of maintenance of improved crossing protection specified in Finding 11(a) should be borne by Santa Fe. Cost of installation and of maintenance of improved protection specified in Findings 11(b), (c) and (d) should be borne by City.

13. That segment of the State Route 87 freeway involved in Application No. 49626 will, when constructed, parallel Sixth Street a short distance southerly thereof between Berry and Townsend Streets.

14. Said freeway segment will terminate with on and off ramps in Sixth Street approximately between Bluxome and Brannan Streets and will result in the permanent blocking off of Sixth Street from vehicular traffic between Townsend and Brannan Streets.

15. Southerly of Townsend Street, Sixth Street extends two blocks across King Street to Berry Street and in that distance crosses 26 tracks of Southern Pacific, including its main tracks and those of its passenger yard.

16. The 16 tracks between King Street and Townsend Street are protected by four sets of crossing gates, operate manually from a tower located westerly of Sixth Street. The remaining tracks over the crossing are protected only by crossbuck signs.

17. A 24-hour traffic count taken early in 1968 showed a total of 870 vehicles traversing the crossing during that period.

18. There is an average of from 20 to 26 rail moves per day across Sixth Street on the tracks having protection only by crossbuck signs, and as many as 300 rail movements per day over the passenger yard tracks, which are protected by gate arms.

19. In the ten year period prior to the initial hearing session in this matter there were three train-vehicle accidents on the Sixth Street crossing between King and Berry Streets. In one of these slight injury resulted; there were no fatalities.

20. To the east of Sixth Street visibility is badly obscured by two long buildings, with tracks between them, located between King and Berry Streets.

21. To the west of Sixth Street visibility over the ungated portion of the crossing is partially obscured.

22. The locations of the freeway bents in some instances will be different from those indicated in the plans attached to Application No. 49626. The exact locations for said bents had not been determined at the times of hearing in the instant matter.

23. It appears that the freeway structure will, in some measure, obscure the view of approaching trains or engines for drivers at the Sixth Street crossing, but the degree to which such obscuration will obtain cannot be determined until construction of that portion to be built near the Sixth Street crossing has been at least commenced.

24. The aforesaid signal tower serves two other crossings westerly of it; if the Sixth Street crossing is closed to public use it will not be necessary to move the tower in order to continue serving said other crossings.

25. There will be no on and off ramps of the section of the freeway involved herein which will draw from, or feed into, that part of Sixth Street between Townsend and Berry Streets, hence the freeway will not have the effect of increasing the volume of traffic over the Sixth Street crossing.

26. Since the freeway will block off Sixth Street between Brannan and Townsend Streets, traffic moving between points north of Brannan on or via Sixth Street and points south of Townsend via the Sixth Street crossing will necessarily detour between Brannan and Townsend via Fourth or Seventh Street.

27. The structures heretofore mentioned, between King and Berry Streets, can be reached from points on Sixth Street north of Brannan via Fourth or Seventh, thence via King or Berry, which latter two streets connect with Fourth and Seventh Streets. The same is true of establishments located between Berry Street and the Channel.

28. The circuitry of movement described in Finding 26, and the availability of alternate routes to and from the area south of the crossing mentioned in Finding 27 will certainly cause a decline in the volume of traffic over the Sixth Street crossing when the freeway is constructed.

29. It appears that nearly all of the traffic which traverses the Sixth Street crossing consists of vehicles operated either by employees or customers of Southern Pacific or of its subsidiaries.

30. Two large lumber yards located between Berry Street and the Channel, and between Fifth Street, on the north, and Seventh Street, on the south, constitute a prime fire hazard for the general area.

31. The two long buildings between King and Berry Streets, being old and wooden, are also a notable fire hazard.

32. One of the three fire houses which are closest to the facilities mentioned in Findings 30 and 31 is located on Bluxome Street between Fourth and Fifth Streets.

33. Seventh Street between Townsend and Berry Streets is often congested with traffic. Fourth Street between Townsend and King is blocked off at certain times of day by Southern Pacific passenger cars or trains.

34. New Fourth Street and Jordan Alley, which also provide access from Townsend to King are not dedicated streets, being Southern Pacific property, and subject to closure by that company at any time.

35. Between the Bluxome Street fire house and the vicinity of Sixth and Berry Streets the route via the Sixth Street crossing is the most direct. If the crossing is closed to fire equipment precious time may be lost for fire trucks in answering an alarm, by the necessity of traversing indirect routes, and subject to the obstacles mentioned in Findings 33 and 34.

36. It may be necessary, in the event of a fire south of the crossing, for the water from nearby hydrants to be supplemented by water from a high pressure hydrant located at Sixth and Townsend Streets. This would involve running hose across the tracks on Sixth Street between Townsend and the fire. Such procedure will be impossible if the crossing is closed to fire equipment.

37. The Fourth Street bridge is to be refurbished. While this is being done the City's fireboat will not be able to go beyond Fourth Street to fight a fire at one of the lumber yards, for example.

38. The circumstances mentioned in Finding 37 point to the necessity for the fire trucks to reach such a fire in the shortest possible time.

39. The public health, safety and welfare do not require the continued maintenance of the Sixth Street crossing as a thoroughfare for the general public.

40. The public, health, safety and welfare require that the Sixth Street crossing be maintained for emergency use only, by emergency equipment, subject to conditions substantially the same as those set forth in numbered paragraphs 1 to 4, inclusive, in the stipulation hereinabove set forth.

41. The locked gates or breakable barriers should be installed by Southern Pacific and the cost of installation and maintenance borne by City.

42. Maintenance of the emergency roadway should be borne as follows: within two feet outside the rails of each track, by Southern Pacific; the remainder, by City.

We conclude that:

1. The protection at the Santa Fe crossing at the intersection of Mariposa and Pennsylvania Streets should be improved to the extent provided in the order which follows.

2. The Sixth Street crossing over Southern Pacific tracks should be closed to the general public but continue to be maintained for emergency use only as specified and subject to the conditions set forth in the order which follows.

O R D E R

IT IS ORDERED that:

1. Within ninety days after the effective date of this order the protection at the crossing of The Atchison, Topeka and Santa Fe Railway Company at Mariposa and Pennsylvania Streets in the City and County of San Francisco, Crossing No. 2SG-1.12, shall be improved as follows:

- (a) Santa Fe shall either reflectorize the present crossbuck signs or replace said signs with Standard No. 1-A (reflectorized) crossbuck signs.
- (b) City shall install Standard No. W-47R reflectorized grade crossing signs on the four approaches to said crossing.
- (c) City shall paint RXR's, in thermoplastic material in the standard dimensions, on the four approaches to said crossing, and outline in the pavement the crossing area, in thermoplastic material.

2. The cost of installation and maintenance of the improved protection specified in paragraph 1(a) shall be borne by Santa Fe, and that specified in paragraphs 1(b) and 1(c) shall be borne by City.

3. The grade crossing of Sixth Street over tracks of Southern Pacific Company between Townsend and Berry Streets, in the City and County of San Francisco, Crossing No. E-0.47, shall, within ninety days of the effective date of this order, be closed by Southern Pacific to all vehicular and pedestrian traffic, except as provided in ordering paragraph 4, below.

4. Said crossing specified in ordering paragraph 3, above, shall be continued as an emergency crossing only, as follows:

- (a) The crossing shall be provided with barriers in the form of locked gates or breakable barriers of only sufficient width to permit passage of single vehicles in connection with an actual emergency.

- (b) The crossing need be maintained only to such standard and single lane width necessary to permit use by emergency vehicles and equipment.
- (c) The crossing shall be permanently closed to all but emergency vehicles and equipment and crossing protection devices and signs shall be removed.
- (d) The only restriction upon rail use shall be that the crossing area shall not be occupied by stored railway cars or equipment.

4. The cost of installing and maintaining the locked gates or breakable barriers specified in ordering paragraph 4, above, shall be borne by City. The cost of maintaining the emergency crossing shall be borne as follows: within two feet outside the rails of each track, by Southern Pacific; the remainder, by City.

5. Within thirty days after the completion of the work which they shall have respectively performed pursuant to numbered paragraphs 1 and 3 of this order, Santa Fe, Southern Pacific and City shall so advise the Commission in writing.

The effective date of this order shall be twenty days after the date hereof.

Dated at San Francisco, California, this 3rd day of JUNE, 1969.

William J. ...
President
Angela ...
J. P. Monrosey
P. ...
Thomas ...
Commissioners