

Steve Martchenke 817-878-4596 Union Pacific R.R. G. Manager, Public 1015. Watson Rd Projects Arlington, TX 76010 1-817-878-4596 (817-640-8710 Fax)



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Prestor Sargent Dir & Ergr. Omaha

402-271-3433

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from Dennis Schultz, HDR

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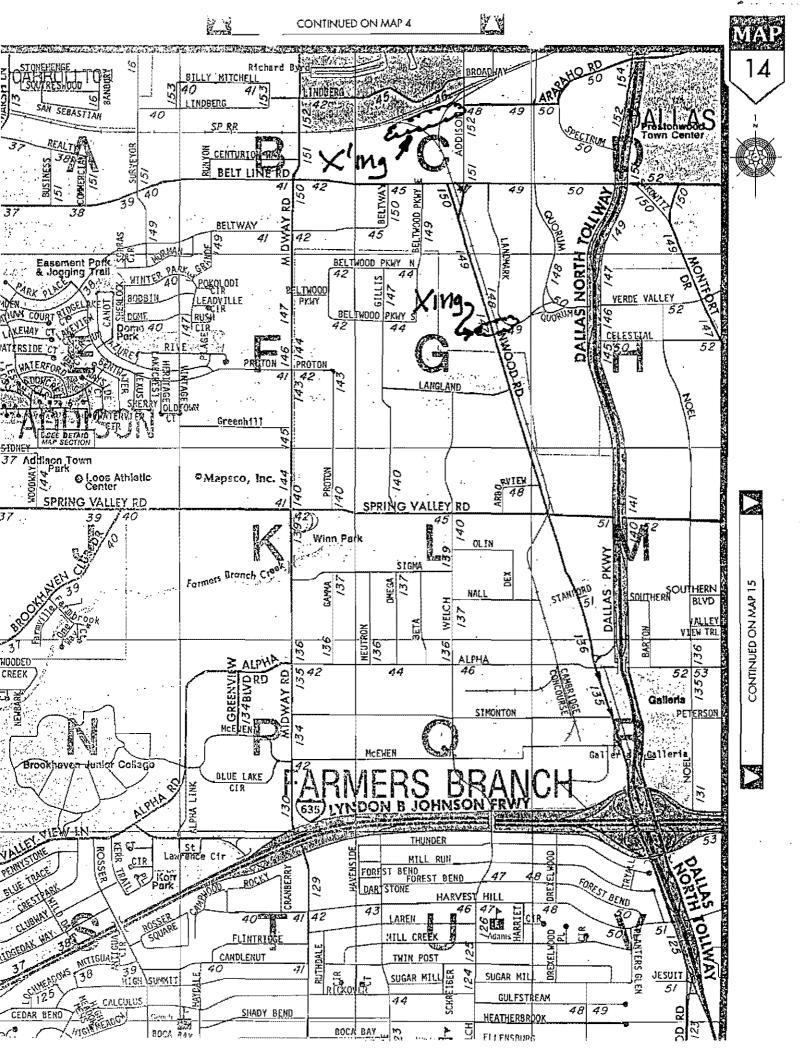
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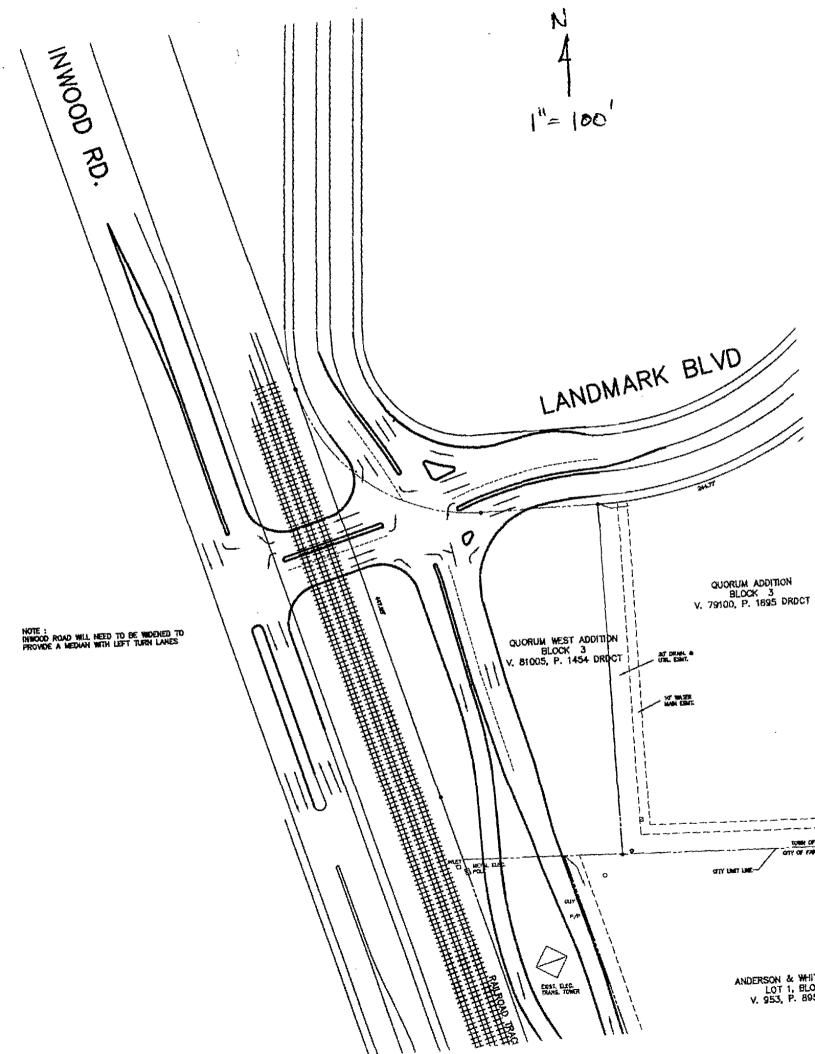
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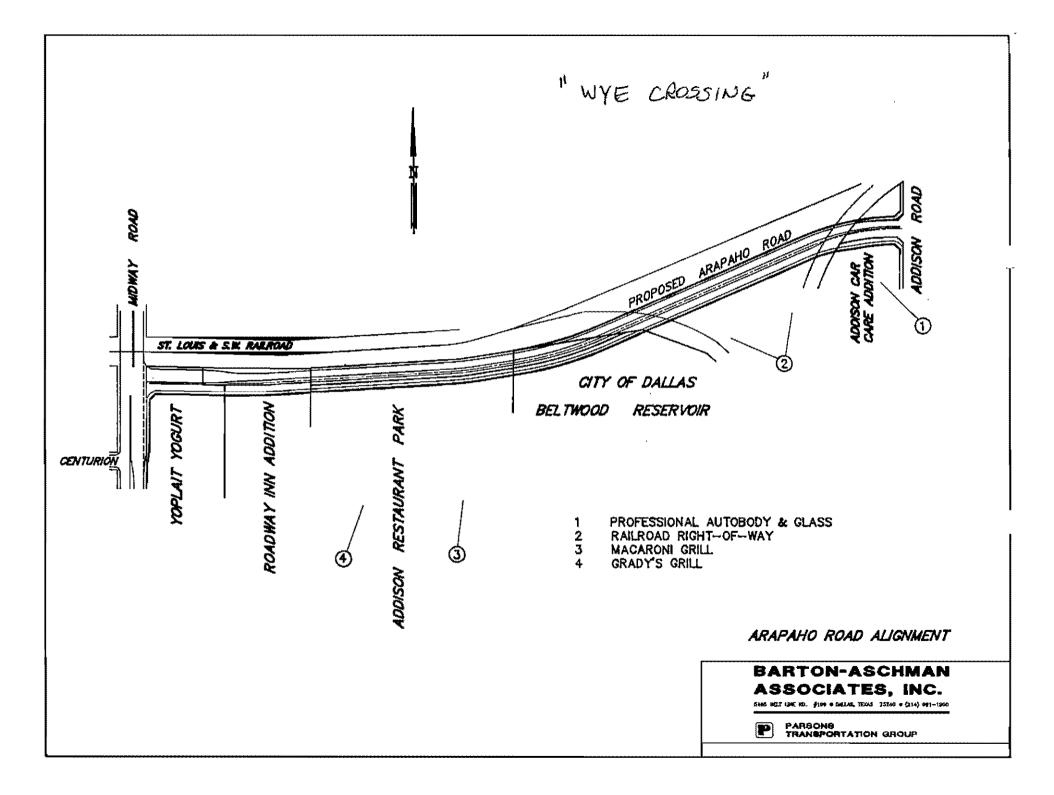
Ŋ TOWN OF **PUBLIC WORKS ADDISON** Chris Ter To: From: James C. Pierce, Jr., P.E., DEE **Assistant City Engineer** ll Company:_ Phone: 972/450-2879 FAX: 972/450-2837 FAX #:___ Date: 10-15-97 16801 Westgrove Re: Union Pacific RR P.O. Box 144 # of pages (including cover):____ Addison, TX 75001 DFYI Call me Original in mail Per your request Comments: had originally sent nary w - Look ? give it a Tout tNN

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TOWN OF PUBLIC WORKS ADDISON To: Steve Martchenke From: James C. Pierce, Jr., P.E., DEE **Assistant City Engineer** Company: UP Railroad Co. Phone: 972/450-2879 FAX: 972/450-2837 FAX #: 817-640-8710 Date: 9-25-97 16801 Westgrove P.O. Box 144 Re: UP RR Crossings # of pages (including cover):_____ Addison, TX 75001 Per your request Original in mail **D**FYI Call me **Comments:** Attached is Mapsco Sheet Showing 2 railroad crossings needed. also attached are larger scale drawings of each. These would be no (ects ease advise as to how been to proceed hank im



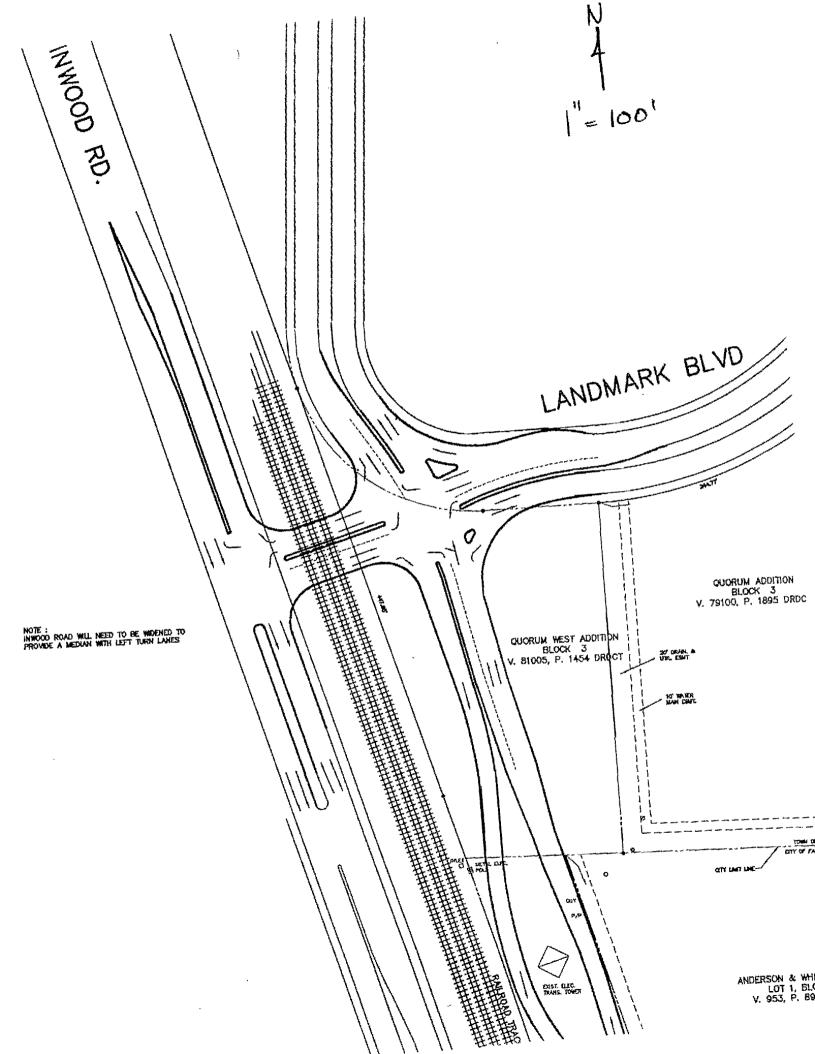




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R. D. Uhrich Assistant Vice President J. A. Anthony Director-Contracts

- D. D. Brown Director-Real Estate
- M. W. Catey General Director - Special Properties

CONTRACTS & REAL ESTATE DEPARTMENT

UNION PACIFIC RAILROAD COM



1416 Dodge Street WP001 Omaha, Nebraska 65179 (402) 997-3600 Fax (402) 997-3601 P.01/03

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- Director-Operations Support M. E. Heenan
- Director-Administration & Budgets D. H. Lightwine

Director Real Estata

T. K. Love

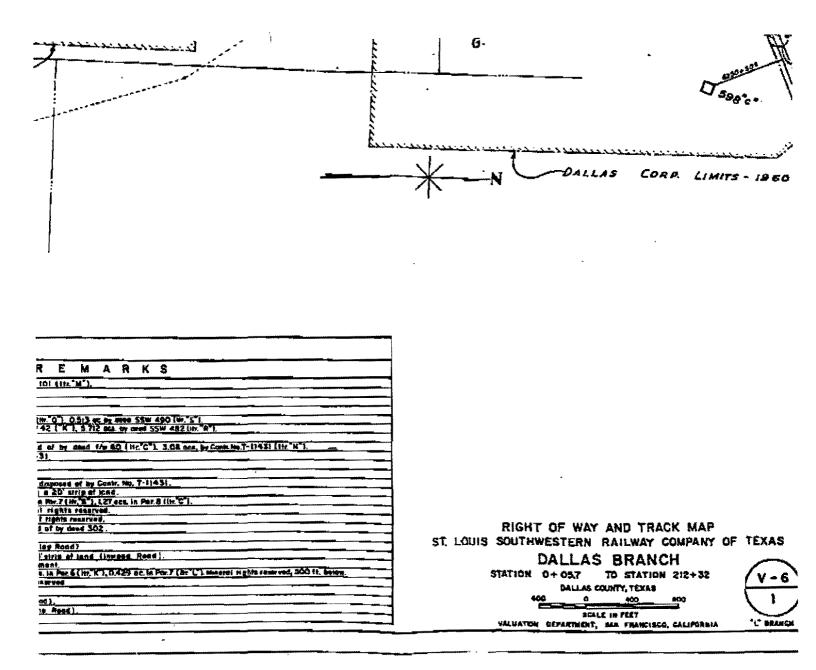
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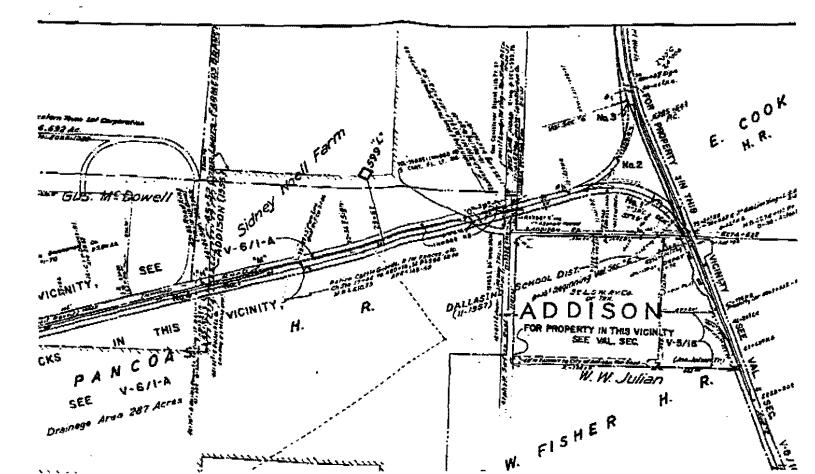
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Avapato South Quorum - 1416 Dodge St. WP OU Cheryl Kin Kel -Omaha Net 68179 402-997-3620 Omaha Net Fax > 402-997-3601 Union Pacific Some time crossing report arupa 5. Quorun File Not a Min live Gallen Spur -Curs in the Y 402-997-3552 Dennis Miller Field Manager Pealestal Fax 1800Farnam St. D. Net 68/02 #2997-3601 Permission to do the crossing what do we need to do on that Capy Haston report around Somewhen UP/Omaha -> 402-271=5000 main #

9-22-97 Cheryl-/up/omaha Mys of Andustry & fublic Projects --> my Drefts the agreements ~ Call: Steve Marchenke 817-878-4596 My lublic Projecto - City & UP will make an agreement -(Operating Dypartment Hundling Crossings) J.B. Cline 912-239-3771

GUIDELINES FOR ASSURING SMOOTH RELATIONSHIPS BETWEEN LOCAL GOVERNMENTS AND UPRR

Start Early Coordination – Set up a meeting with Steve Marchenke to share project selection lists, to ascertain projects with UPRR impacts. Then on impacted projects, share <u>preliminary</u> designs, invite UPRR to early meetings, such as stakeholder predesign charrettes, public workshops, etc.

8-23-02

Work out precisely the location of railroad project impacts, before contacting UPRR. This speeds the coordination process greatly. Use MAPSCO location, subdivision, and <u>RR Mile Post</u> where ever possible

Use the UPRR.com website for a wealth of information, maps, etc. This can save time in answering questions and can provide much information about UPRR, including points of contact, e-mail and telephone information, instructions, applications, specifications, DOT crossing information, permit requirements, ROW agreements, etc. Very, very valuable. Our in-house or consultant designers need to explore this web-site before launching road design whenever there is going to be a RR crossing. Procedures and responsibilities are clearly laid out, as are design guidelines and specifications. Avoid nasty surprises that can impact project costs if not budgeted.

Expect the UPRR owned ROW to contain many other utilities (telecommunications, power, pipelines, etc), that you will have to pay to relocate. These are private easements the utilities have paid for and the project will have to bear the costs of relocation. UPRR is a good source of information on the potential conflicts that you will encounter. Budgeting accurately for these costs will avoid nasty surprises later.

Do not even think about changing Exhibit B of the standard agreement. UPRR has agreements to work out in 23 states, and their lawyers are very vigilant to watch for precedents that might bind UP elsewhere. Work on win-wins in the body of the agreement.

Avoid adversarial actions and relationships, instead try the partnering approach. UPRR will respond in-kind. They desire to maintain integrity in relations with all their communities. Do not presume upon them (e.g., impossible responses on coordination that you failed to start timely, making demands they cannot meet, presuming the worst).

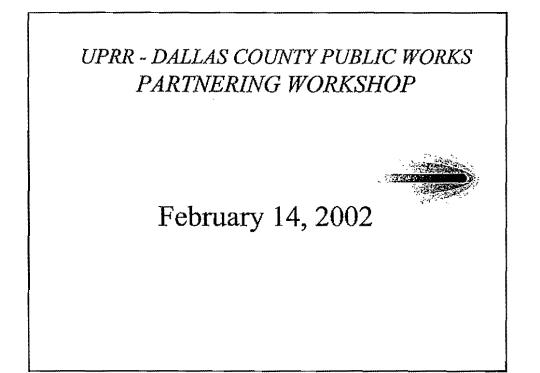
Look for ways to forge win-wins, for UPRR and the local community. Understand that USDOT has a policy since 1992 to reduce at-grade RR crossings by 25%. This puts tremendous pressure on RR's to accomplish this goal. Does your community have a number of little-used crossings? Explore ways to eliminate them and UPRR can do much to meet the needs of your current project.

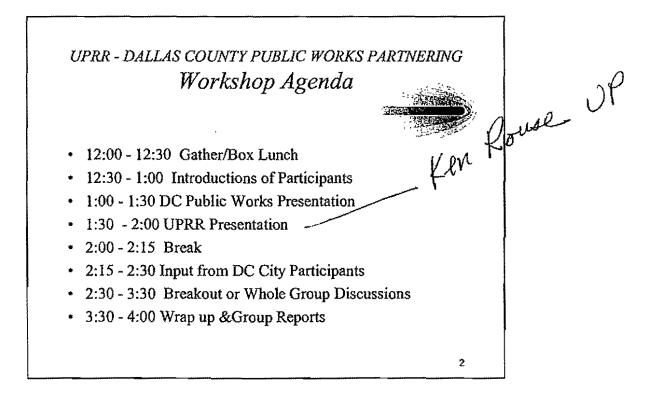
When appropriate, have our attorneys communicate directly with UPRR attorneys. The key is to have worked out all the coordination we can before that, using the information, contacts and principles described in these guidelines. Then, the Project Manager should stay involved to assure that going down "legal rabbit trails" is avoided whenever possible. If we follow the spirit of win-win, then both sides will have better results, even if our attorneys are involved, as they have to be.

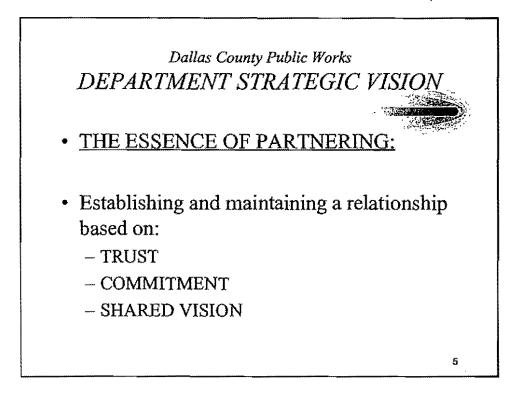
When you're in doubt and have searched all the readily available information, call Steve Martchenke, Ken Rouse, or Doug Feagan. Even though they have large territories to cover, they are never too busy to help you proactively solve a problem and forge a win-win. If you have a "folder number," this will save them much time in looking up the project file information.

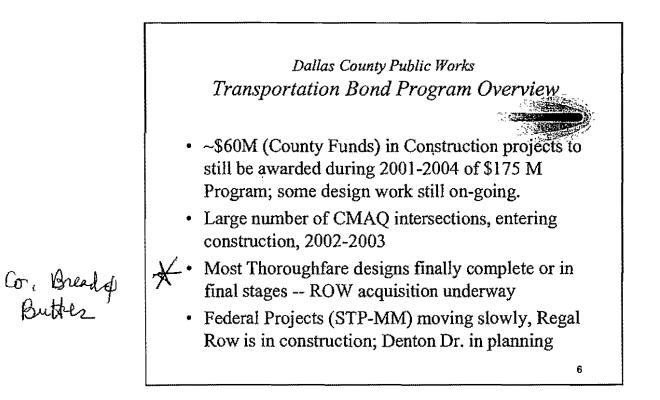
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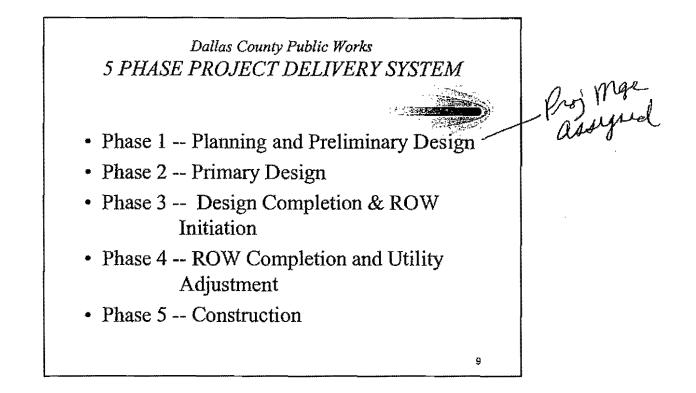
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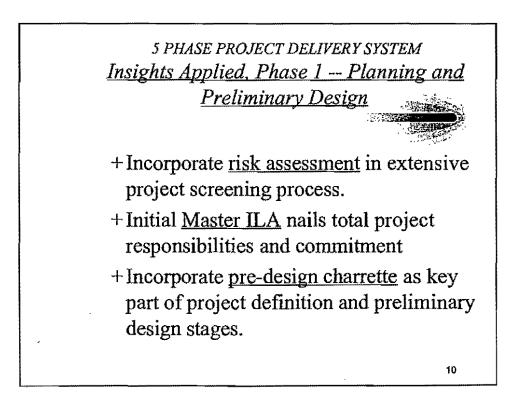


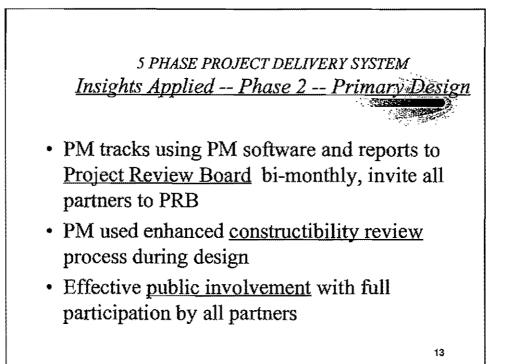


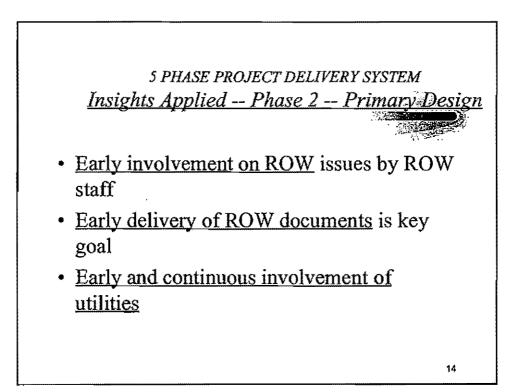












Dallas County Public Works MCIP Thoroughfare Program Project List

- Total of 60 New Projects submitted
 - District 1 16 Projects
 - District 2 10 Projects
 - District 3 12 Projects
 - District 4 22 Projects
- Total of up to ~\$90 M (~\$180M+ project totals) will be selected by Commissioners for PY 2005thru 2008

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UNION PACIFIC RAILROAD COMPANY

Real Estate Department



UNION PACIFIC

1800 Farnam Street Omaha, Nebraska 68102 Fax (402) 997-3601

05/31/00

Folder: 1819-92

J. L. Hawkins Director-Operations Support M. E. Heenan Director-Administration & Budgets D. H. Ligbtwine Director-Reat Estate T. K. Love Director-Reat Estate

Mr. James C. Pierce, Jr., Asst. City Manager City of Addison 16801 Westgrove Drive P. O. Box 9010 Addison, TX 75001-9010

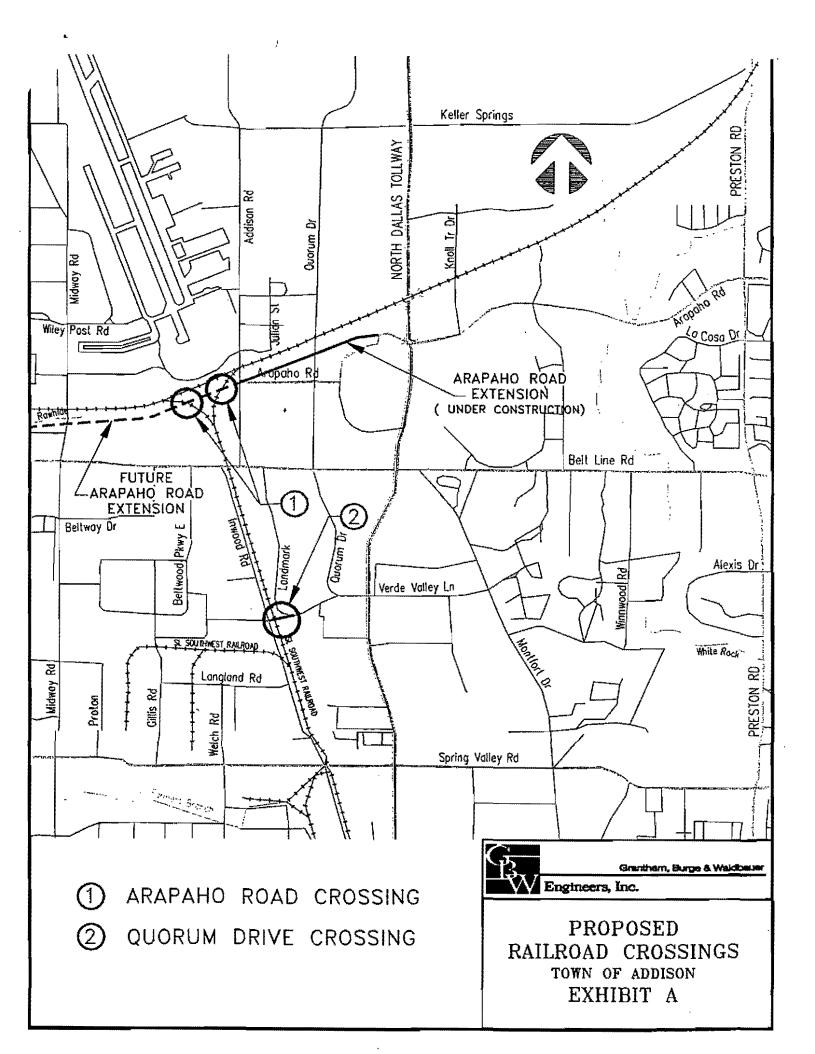
Dear Mr. Pierce:

Pursuant to your request at our meeting on May 18, 2000, attached is a print of the Railroad's line map displaying certain right of way and wye track property in Addison, TX This right of way is known as the Addison Branch. I'm sorry, but there are no available profiles for this segment of the line. All the right of way shown crosshatched on the print has already been sold.

If you have any questions, please contact me at (402) 997-3552.

Sincerely yours,

J. D. (Dennis) Miller Manager - Real Estate



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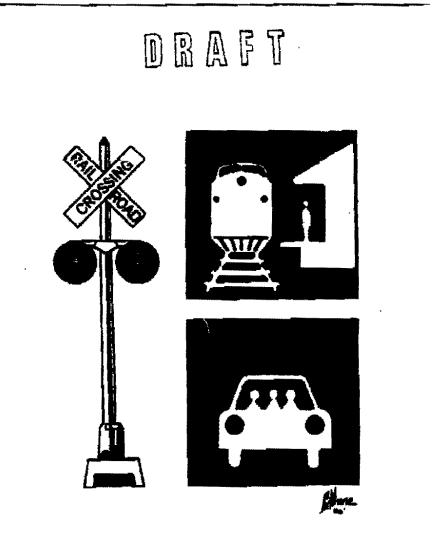
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| 140) Pacific Avenue Suite 300 Dailas, Teore 75202 (214) 749-2776 |
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| DATE: December 21, 1994 |
| PROJECT NAME: DART Starter System Job # 900245 |
| PLEASE DELIVER THE FOLLOWING PAGES TO: |
| John Baumgartner |
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| TRANSMITTED BY: JON' Leamon (149-2838) |
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Railroad Maintenance and Operations Handbook

For Local Governments and Rail Carriers



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North Central Texas Council of Governments

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Mr. Larry Cervenka (O) (formerly Traffic Engineer) City of Fammers Branch P.O. Box 819010 Farmers Branch, TX, 75381-9010 214/247-3131)

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Nr. Ken Daft Cotton Belt Reilroed P.O. Box 121 Campiton, TX 75006 214/434-7999

Mr. Jim Dickson (O) Director of Government Atfairs Burlington Northern Railroad '373 Inverness Drive South Englawood, CO 60112 303/220-3472

(M) Maintenance Work Group (O) Operations Work Group

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Nr. Don Millender Consultant Union Pacific Ratiroad 505 N. Industrial Bivd. Dallas, TX. 75207 214/760-2020

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Mr. Jim Renshew (O) Senior Traffic Engineer City of Arlington P.O. Box 231 Arlington, TX 75010 817/459-6371

Mr. Ron Royse (Ö) Transportation Manager Anttrak 1501 Jones Fort Worth, TX 75102 817/332-2931

Mr. Michael Schneider General Solicitor Union Pacific Raikroad 801 Travis, #1600 Houston, TX 77002 713/220-3202 T_WQ = crossing rate times the ADT/Truck Quotient The crossing rate example would result in 38 X .93 = 35.3

The crossing rate is then compared with the grade chart shown in Figure II-7. The example crossing, which ranks well below the failure rating, would warrant total replacement. Depending on available funding, the responsible railroad maintenance engineer along with the TxDOT railroad coordinator must decide whether to repair or replace. Figure II-8 is an adapted version of the surface ranking form used by FDOT. It should be noted that category points, assigned weights and ADT/Truck Quotients are arbitrary, but they can be used to establish a prioritized list of crossings which need repair or replacement.

Jurisdictions of Responsible Agencies

Track Maintenance

Within the State of Texas, cities, counties, TxDOT, and railroad operators assume both separate and joint maintenance responsibilities. Items such as the track and signals are always maintained by the rail operator. However, state civil statutes, site characteristics, and potential FHWA funding for crossing upgrades are further considerations in determining jointly funded improvements.

In Texas, the concept of railroad crossing maintenance occurs as one of the "enumerated powers" of home rule cities, according to <u>Vernon's Annotated Texas Civil Statutes</u>, Article 1175, Section 16. It requires that railroads be responsible for street improvements "between the rails and tracks of any such railway companies and for two feet on each side thereof." if the definition of "track," according to the FHWA publication entitled <u>Railroad-Highway</u>. <u>Grade Crossing</u> <u>Handbook</u>, includes: "an assembly of rails, ties, and fastenings over which cars, locomotives, and trains are moved," then the railroad company's maintenance responsibility extends two feet

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beyond the ends of ties as shown in Figures II-9 and II-10. However, for practical purposes, the Railroad Maintenance Task Group concurs with the FHWA suggestion in the <u>Railroad-Highway</u> <u>Grade_Crossing_Handbook</u>, "the public agency having responsibility for the maintenance of roadway approaches generally terminates its maintenance responsibility for the roadway at the crossing surface." The Work Group makes the recommendation that local governments maintain pavement up to the crossing material located at the end of the ties. However, according to FHWA, the railroad operator shall maintain any vehicular, pedestrian, or bicycle crossings between the ends of the ties. All of these crossings should be physically separated for optimal traffic safety reasons.

Therefore, the railroad is responsible for the maintenance of the rails, ties, fastenings, ballast, initial upper ballast drainage pipe installation, crossbuck sign assembly, railroad signals, control boxes, and grade crossing surface materials which extend to the ends of the ties. Any surface besides timbers will need the cost differential reimbursed to the railroads.

Railroad Signal Maintenance and Traffic Signal Preemption

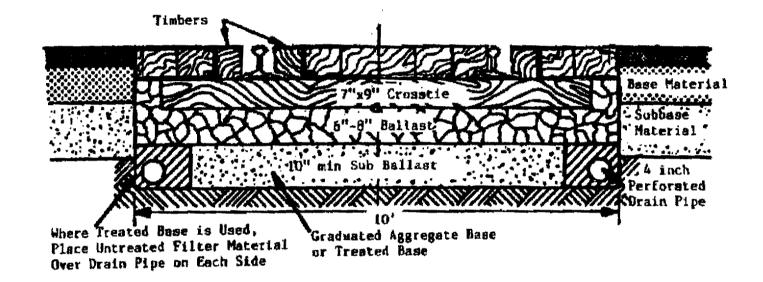
Signal maintenance at the crossing is the responsibility of the railroad carrier. However, TxDOT reimburses the railroad a unit price for signal maintenance by the type of signal on state and federal highway systems, but not on city streets, county roads, or private crossings.

If a state or local public agency anticipates future signal preemption of traffic signals to clear the intersection at a grade crossing before a train approaches, the Railroad Maintenance Work Group recommends that the city should notify the railroad of the intent to use a circuit in the railroad signal control box. Automatic time crossing devices should be calibrated to the fastest train using

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FIGURE II-9



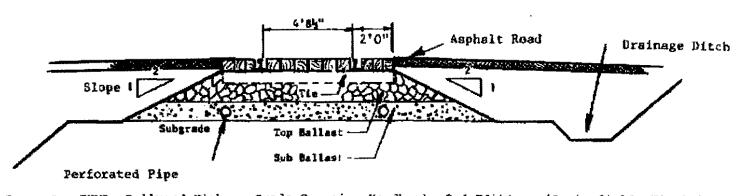


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FIGURE II-10

ELEMENTS OF RAILROAD TRACK CROSS SECTION

FBWA, Railroad-Highway Grade Crossing Handbook, 2nd Edition, (Springfield, Virginia, Sources: September 1986). Vernon's Annotated Texas Civil Statutes, Article 1175, Section 16.

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the track. When train speed increases are planned, timing devices should be recalibrated to allow motorists adequate time to clear the crossing prior to the implementation of the new speeds.

At the time of installation, the critical cycle time to clear the intersection of vehicles should be supplied. However, if the critical cycle time exceeds 30 seconds, then a constant warning time device in the railroad control box is necessary and would be eligible for Section 130 funding. As an example of cost, an upgrade to a control box in 1988 cost TxDOT \$2,000, but the conversion of older signal controls on a direct current system could cost well over \$100,000, especially in rural areas.

Pavement Alignment

Large grade changes in rail elevations would be a situation where the city may not be totally responsible for street approach grade changes. A schedule of cost sharing between the rail carrier and the local government or state agency responsible for the roadway is recommended by the Work Group.

The vertical slope of pavement approaching the crossing is recommended at a range of between 1 and 2 percent for 30 feet beyond the ends of ties, according to the American Railroad Engineering Association (AREA). Pavement sloping away from the track will also deter the necessity for installation of french drains by the local or state agency to deflect storm water away from the ballast to a storm water system or railroad ditch. Access to the railroad ditch would be through previous agreement with the railroad. The low vertical pavement slope would also assist faster acceleration of vehicles from a stop position across the tracks. It would prevent trucks or trailers with low undercarriages from becoming trapped on a severely humped pavement.

Horizontal alignment of the approach lanes is recommended to be as direct to the tracks as possible to assist motorists in viewing any approaching trains without contending with a potential "blind spot" situation. The width of the crossing surface should be sufficient to include all highway travel lanes and adjacent shoulders plus two feet, with the continuation of all traffic lanes across the tracks. Crossings that are inadequate in width should be called to the attention of the railroad company.

Drainage

Proper preparation of the track structure and good drainage of the subgrade are essential to good performance from any type of crossing surface. Excessive moisture in the soil can cause track eettlement, accompanied by penetration of mud into the ballast section. Surface and subsurface drainage should be intercepted and discharged away from the crossing. Ideally, the roadway-railroad crossing should occur at a rise in topography to ensure drainage away from the ballast to prevent fouling of the ballast with "fines" from the subgrade. Accumulated "fines" would cause the ballast and track to "pump" from railroad loads, cause track instability, and increase the likelihood of a train derailment. However, if the pavement slopes toward the crossing the railroad will install a french drain, and the drain will remain its responsibility as being within the confines of the track.

Drainage is a maintenance consideration involving varying jurisdictions. Drainage structures and ballast are initially installed by railroads on their right-of-way. Bar ditches (or drainage ditches and culverts) are a joint responsibility which should have negotiated maintenance and improvements shared by parties benefiting from the infrastructure or whoever modifies the runoff pattern necessitating improvements. Approach pavement costs can be reduced within the local

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government right-of-way if the local government completes the subgrade preparation with four-inch perforated pipe and filter cloth, according to TxDOT. Use of a suitable filter fabric over the entire subgrade area under the crossing and for a sufficient distance beyond can be a significant aid in separation, filtration, water transport, and tensile reinforcement. It is recommended by the Work Group that any future drainage problems be the continued legal responsibility of the rail carrier for repairs.

Advance Signs and Pavement Markings

Standards for advance signs and pavement markings are found in the <u>Texas Manual on Uniform</u> <u>Traffic Control Devices</u> (MUTCD). The local agency, as previously recommended by the Work Group, should be the agency responsible for pavement extending to the crossing material at the edge of the ties, traffic controls on the approach, pavement markings, and all signs except the crossbuck and/or signal assembly. Figure II-11 depicts the typical railroad advance warning signs as specified by the Texas MUTCD. Figure II-12 shows the railroad crossing (crossbuck) sign, flashing light signal, and automatic gate typically used at grade crossings.

The crossbuck assembly consists of the crossbuck, a multitrack sign if appropriate, and the "exempt" sign if required. The exempt sign informs drivers of vehicles for hire, school buses carrying children, or vehicles carrying hazardous materials that a stop is not required except when railroad equipment is approaching or occupying the crossing.

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) legislation has added revisions to the MUTCD to allow the use of Stop and Yield signs at railroad crossings. When adequate sight distance cannot be maintained at a passive grade crossing, stop signs are an







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EH&A Project No. 15764

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RAILROAD CROSSING STUDY

FOR

THREE PROPOSED RAILROAD CROSSINGS

FOR THE

.

TOWN OF ADDISON

Prepared by:

Espey, Huston & Associates, Inc. 13800 Montfort Drive Suite 230 Dallas, Texas 75240

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Espey, Huston & Associates, Inc. (EH&A) was initially retained by the Town of Addison to study the need for three proposed railroad crossings in the Town of Addison. These three crossings, which are identified in Exhibit A, have been previously submitted for your consideration by Addison. The correspondence which contained your response to this initial submittal was dated January 6, 1994. (File No. 948 215/323.2).

Following the previous submittal to Southern Pacific, the Town of Addison decided to pursue only two of the three crossings. One of the two crossings has two alternative locations, as shown on Exhibit B. This report focuses on these two crossings.

Phase 1 - Traffic Conditions

The first phase of EH&A's study involved an evaluation of traffic conditions in the general area of the proposed railroad crossings. This phase included the following steps:

• Examine land use in the general area.

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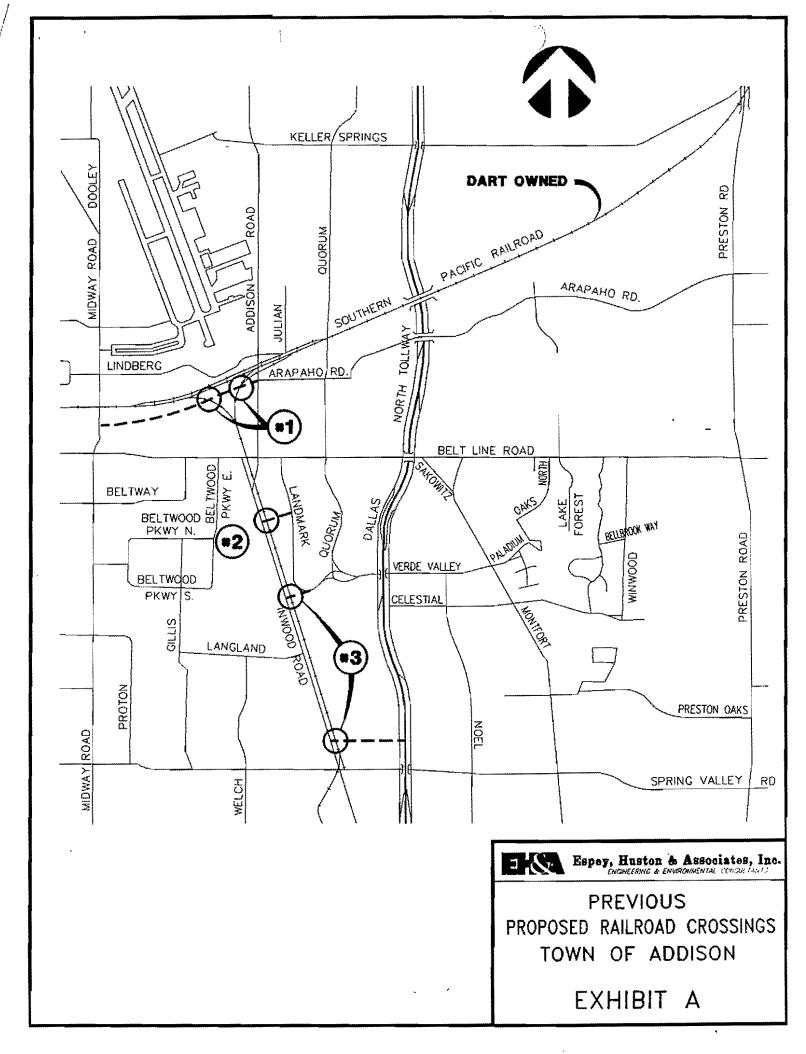
- Review existing historical and projected traffic volumes within the transportation network.
- Evaluate whether the proposed railroad crossings would help to alleviate traffic congestion.
- Determine if viable alternatives exist to the proposed crossings.
- 1. General Description of the Area.

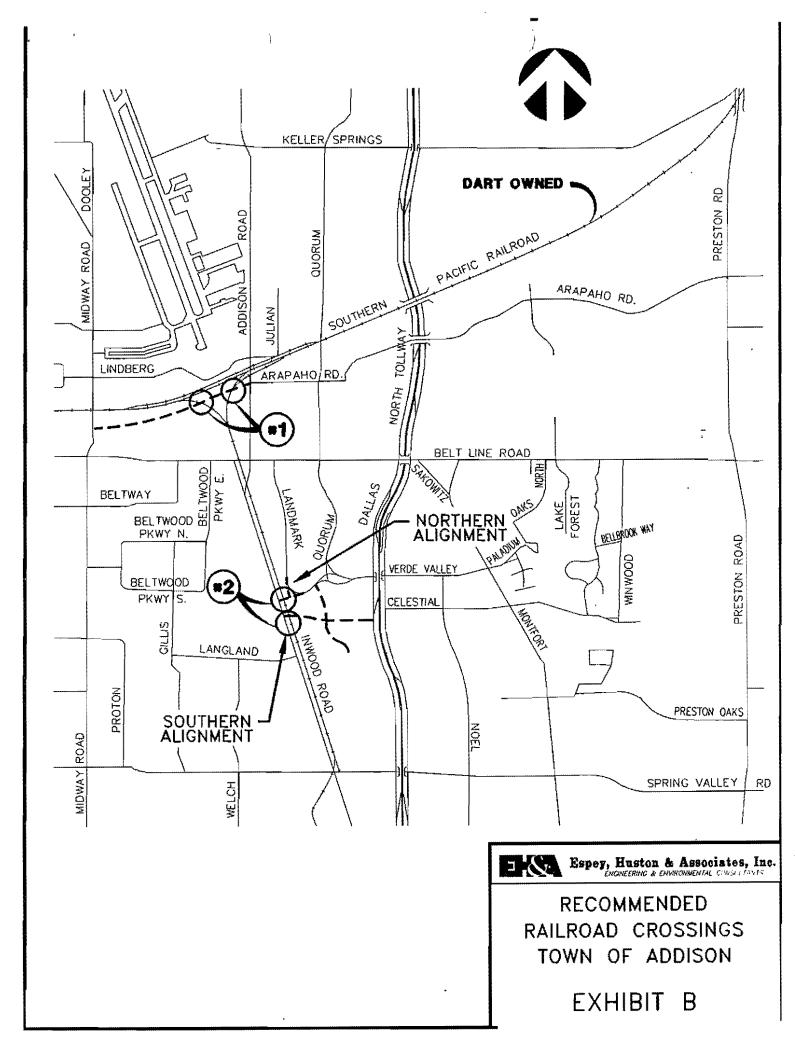
The Town of Addison is a north Dallas community that if four and a half square miles in size. The Town has a residential population of 9400. The Town's population swells during the daytime hours to 100,000 people who travel to the town to work or eat at one of the 126 restaurants. There are approximately 1000 single-family homes, 19 apartment complexes and 9 hotels.

Numerous retail areas are located in and adjacent to Addison. The are approximately 1.6 million square feet of retail space. Major retail centers, including the Galleria, Valley View and Prestonwood Malls, lie adjacent to Addison's city limits in Dallas, Texas.

The Addison Airport is the third busiest general aviation airport in the nation. It is home to approximately 750 aircraft.

One of the commercial areas that will benefit by the railroad crossings is the South Quorum area, bounded by Belt Line Road, the North Dallas Tollway, and the Southern Pacific Railroad Spur. This area contains 1.8 million square feet of office space. One-third of this land is vacant and open to future development.





2. <u>Description of the Transportation Network</u>.

The Dallas North Tollway is a major north-south highway that passes through Addison. It serves as a link between the north Dallas urban and suburban communities and downtown Dallas. Interstate Highway 635 (I.H. 635) is an east-west highway that is located just south of Addison.

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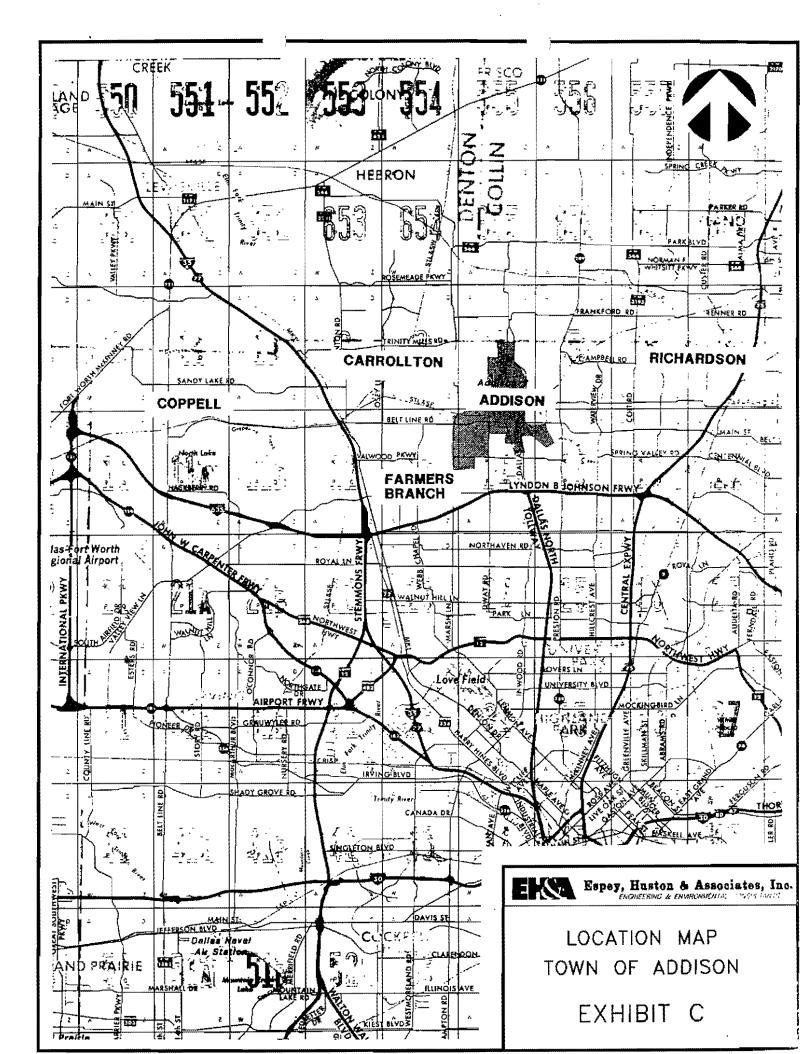
Preston Road (U.S. 289) is a six-lane divided urban thoroughfare that runs north and south on the east side of Addison. Midway Road and Marsh Lane are north-south urban thoroughfares that pass through Addison on the west side of town. Inwood Road/Addison Road is a four-lane undivided north-south thoroughfare that passes through the center of Addison.

The major thoroughfares that pass through Addison from east to west are Belt Line Road and Spring Valley Road, although only the portion of Spring Valley Road between Midway Road and Marsh Lane is located within Addison's city limits. In addition, Arapaho Road is a major thoroughfare that enters Addison from the east and currently ends just west of the Dallas North Tollway.

All the aforementioned east-west thoroughfares are six-lane divided arterials. Belt Line Road is a continuous loop around Dallas County. These major highways and thoroughfares are shown on Exhibit D.

3. Capacity of the Transportation Network.

Traffic congestion on Belt Line Road within the city limits prompted the Town of Addison to commission a traffic study. This study included a tabulation of the recorded traffic volumes for different segments of Belt Line Road from 1982 to 1993. This tabulation, which is provided in Table 1, indicates the steady increase in traffic volumes during this period.



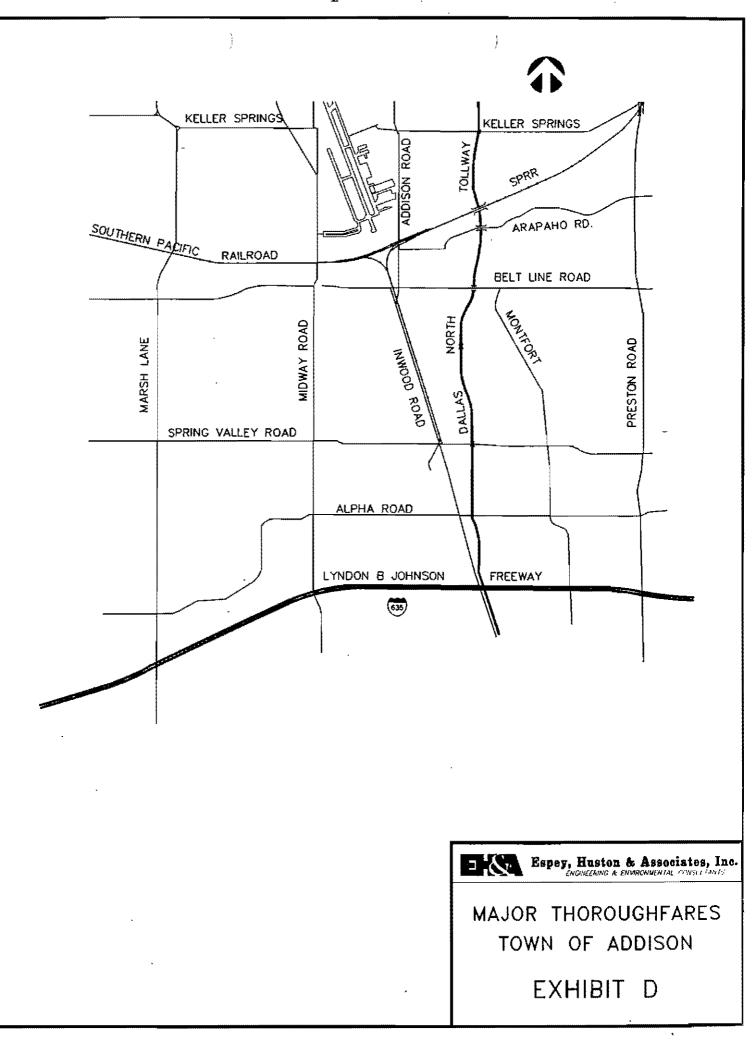


TABLE 1

| Street | Location | EB | WB | Total VPD | 1982 | 1986 | 1989 | 1993 | Difference 1993-1989 | % Increase From 1989 |
|----------------|------------------------------|-------|-------|--------------|-------|-------|-------|-------|-------------------------|-------------------------|
| ARAPAHO ROAD | Addison Rd. to Spectrum | 9120 | 8977 | 16097 | 7000 | 10115 | 6205 | 16097 | 9892 | 159% |
| | Spectrum to Dallas Pkwy. | 5484 | 8247 | 11731 | 8300 | 11640 | 10379 | 11731 | 1352 | 13 % |
| | | | | | | | | | | |
| BELT LINE ROAD | West of Marsh Ln. | 21370 | 21477 | 42847 | 23000 | 41115 | 39539 | 42847 | 3308 | 8% |
| | Marsh Ln. to Surveyor | 20650 | 20404 | 41854 | 29600 | 41411 | 36171 | 41054 | 4883 | 13% |
| | Surveyor to Midway Rd. | 20444 | 19568 | 40030 | 25200 | 38435 | 36395 | 40010 | 3614 | 10%5 |
| | Midway Rd. to Beltway | 24795 | 29404 | 54199 | 33300 | 48249 | 41928 | 54199 | 12271 | 29% |
| | Beltway to Addison Rd. | 26202 | 26041 | 52243 | 38200 | 54442 | 44772 | 52243 | 7471 | 17% |
| | Addison Rd. to Quorum Rd. | 24908 | 24118 | 49028 | NA | 42387 | 42340 | 49028 | 6688 | 16% |
| | Quorum Rd. to Dallas Pkwy. | 22788 | 22161 | 44949 | NA | 38084 | 40788 | 44949 | 4161 | 10%5 |
| | Dallas Pkwy. to Montfort | 20643 | 21403 | 42046 | 36000 | 34882 | 37332 | 42046 | 4714 | 13% |
| | Montfort to White Rock Creek | 21728 | 20466 | 42192 | 37500 | 32612 | 43037 | 42192 | -845 | -2% |

TRAFFIC STUDY TABULATION

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In addition, the study included a comparison of traffic volumes and Level of Service (LOS) under different scenarios. This analysis is summarized in Table 2.

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TABLE 2

| Scenario | Daily Volume just West of Addison Road | e Link <u>Volume</u> | | Daily Volume just East of Marsh Lane | Link LOS | Volume Capacity |
|---------------------------------|--|----------------------|------|--|-------------|--------------------|
| Existing Count | 54,199 | F | 1.25 | 41,054 | Е | .95 |
| Yr 2010 No-Build | 61,000 | F | 1.40 | 41,000 | Е | .94 |
| Yr 2010 w/Arapaho to Midway Rd. | 50,000 | F | 1.15 | 41,000 | F | .94 |
| Yr 2010 w/Arapaho to Marsh Ln. | 49,000 | F | 1.13 | 33,000 | D | .76_ |

COMPARISON OF TRAFFIC VOLUMES AND LEVEL OF SERVICE

The capacity of Belt Line Road was established using data obtained from the North Central Texas Council of Governments (NCTCOG), which is a regional planning agency. A daily capacity of 43,500 vehicles per day was used for the Volume/Capacity calculations. The No-Build Scenario assumes Arapaho Road is not extended across the railroad. Year 2010 scenarios are provided assuming Arapaho Road is extended to Midway Road and Marsh Lane, respectively.

LOS is a quantitative measure of identifying how effectively traffic is managed along a roadway link and is defined by categories A through F. The Highway Capacity Manual (Special Report 209) provides the following general statements regarding arterial LOS:

"<u>Level-of-service</u> <u>A</u> describes primarily free flowoperations at average travel speeds usually about 90 percent of the free flow speed for the arterial class. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Stopped delay at signalized intersections is minimal.

<u>Level-of-service</u> B represents reasonably unimpeded operations at average travel speeds usually about 70 percent of the free flow speed for the arterial class. The ability to maneuver within the traffic stream is only slightly restricted and stopped delays are not bothersome. Drivers are not generally subjected to appreciable tension. <u>Level-of-service C</u> represents stable operation. However, ability to maneuver and change lanes in mid-block locations may be more restricted than in LOS B, and longer queues and/or adverse signal coordination may contribute to lower average travel speeds of about 50 percent of the average free flow speed for the arterial class. Motorists will experience an appreciable tension while driving.

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<u>Level-of-service D</u> borders on a range on which small increases in flow may cause substantial increases in approach delay and, hence, decreases in arterial speed. This may be due to adverse signal progression, inappropriate signal timing, high volumes, or some combination of these. Average travel speeds are about 40 percent of free flow speed.

<u>Level-of-service</u> E is characterized by significant approach delays and average travel speeds of one-third the free flow speed or lower. Such operations are caused by some combination or adverse progression, high signal density, extensive queuing at critical intersections, and inappropriate signal timing.

<u>Level-of-service</u> F characterizes arterial flow at extremely low speeds below one-third to one-quarter of the free flow speed. Intersection congestion is likely at critical signalized locations, with high approach delays resulting. Adverse progression is frequently a contributor to this condition."

Table 1 confirms that the extension of Arapaho Road reduces the projected increase in traffic volumes on Belt Line Road through the year 2010. In the vicinity of Addison Road, the Arapaho project will divert 11,000 to 12,000 vehicles per day from Belt Line Road resulting in a net improvement in LOS from the existing condition. Near Marsh Lane, the impact of the Arapaho Road extension depends on whether the extension is completed to Marsh Lane. With a Marsh Lane connection, the model predicts a 20% net diversion of traffic from Belt Line Road of about 8,000 vehicles per day with a resulting improvement in the LOS. Consequently, the Arapaho Road extension, with the associated railroad crossings, is considered vital to the improvement of Addison's transportation network.

In addition to the Arapaho Road railroad crossings at Location 1, two additional crossings were considered between Belt Line Road and Spring Valley Road. Addison had previously identified two possible locations for the third crossing. (See Exhibit A.) Two primary factors provide the impetus for these additional railroad crossings:

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- i) Westbound traffic crossing under the Dallas North Tollway on Valley Verde cannot connect with a north-south arterial south of Belt Line Road.
- ii) The Quorum Drive/Landmark Boulevard business park contains high-rise commercial and hotel development. The remaining undeveloped land in this business park is slated for similar high-density development. Traffic from these developments cannot connect with a north-south arterial south of Belt Line Road.

In order to access the Inwood Road/Addison Road arterial at the nearest point, traffic from Verde Valley and the Quorum Drive/Landmark Boulevard business park must first travel west on Belt Line Road. A railroad crossing between Belt Line Road and Spring Valley Road will provide additional relief to the congested Belt Line Road Corridor. -

4. <u>Alternatives to the Railroad Crossings</u>.

Belt Line Road, from the Dallas North Tollway to Marsh Lane, has been largely developed on both sides up to a 100-foot wide road right-of-way (R.O.W.). Nine-foot-wide parkways are typical behind the curb on both sides of the roadway. The existing commercial, retail and restaurant developments that abut most of this portion of Belt Line road make a roadway widening project impractical. Consequently, upgrading the existing railroad crossing at Belt Line Road is not feasible.

A similar condition exists with the existing developments along Spring Valley Road between the Dallas North Tollway and Marsh Lane. In addition, the railroad crossing at Spring Valley Road is located within the city limits of Farmers Branch. As a result, the Town of Addison does not have the jurisdiction required to upgrade this crossing. Given the degree of traffic congestion in the general area, an additional railroad crossing between Belt Line Road and Spring Valley Road would appear to be highly desirable.

Grade-separated crossings at Arapaho Road and the Quorum Road extension were also considered. At Quorum Road, there is not sufficient room to construct the ramps required for a grade-separated crossing. At Arapaho Road, a grade-separated crossing would have to span the wye portion of an industrial lead and Addison Road. The resultant bridge would be prohibitively expensive. In addition, it is unlikely that neighboring businesses would favor such a major grade-separated structure. Therefore, grade-separated crossings do not appear to be viable alternatives to the proposed at-grade crossings.

Phase 2 - Construction Impacts

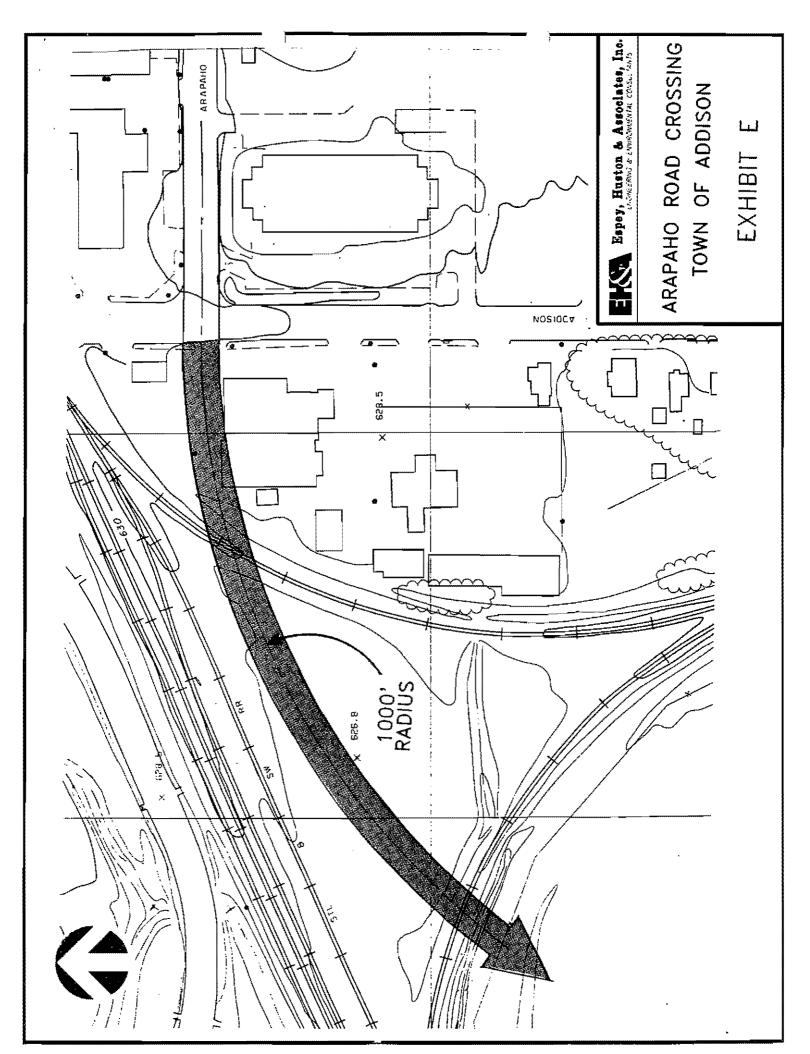
The second phase of EH&A's study involved a review of the construction impacts associated with the proposed railroad crossings. This phrase included the following considerations:

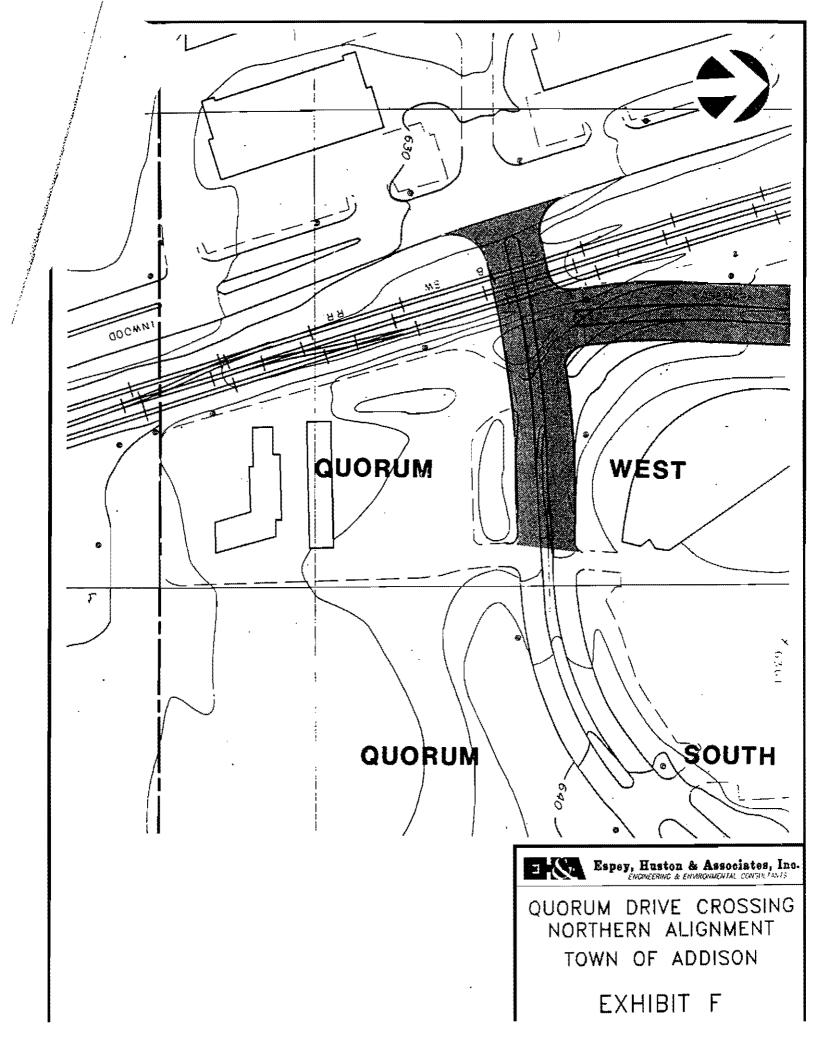
- Geometric considerations of the railroad crossings.
- Impact of the crossings on Railroad operations.
- 1. Geometric Considerations

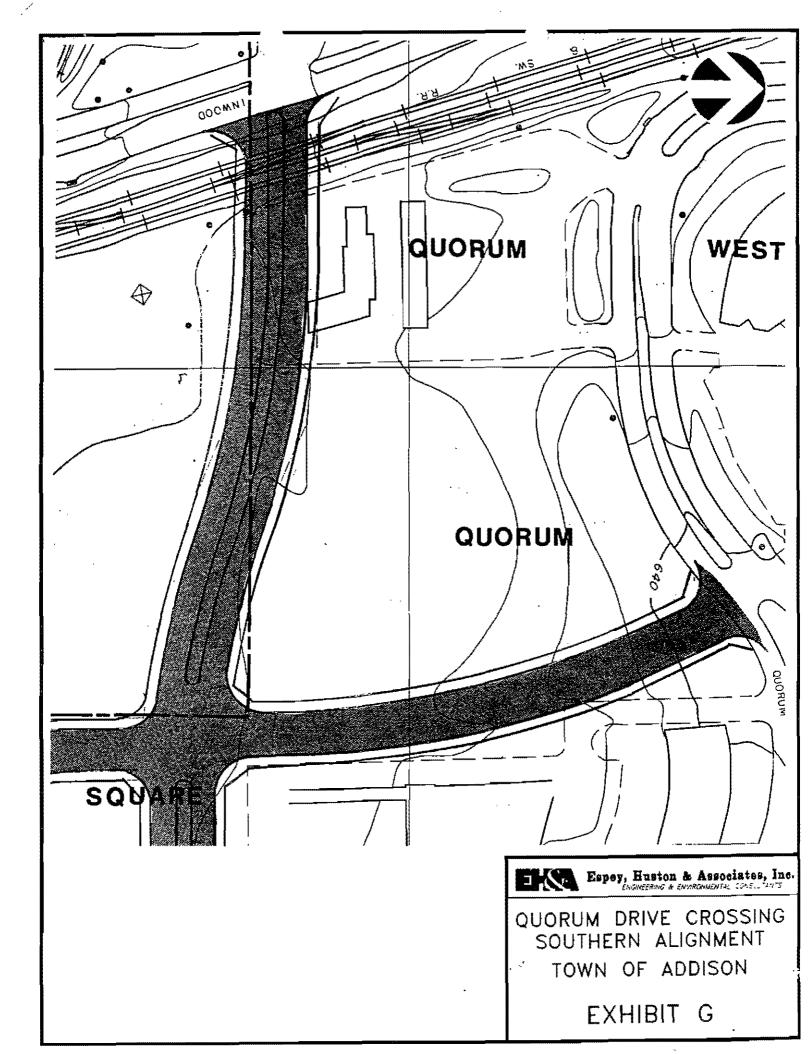
The extension of Arapaho Road (see Location 1 - Exhibit B) across the wye portion of an industrial lead track will require two at-grade railroad crossings. The two at-grade crossings would occur at approximate elevations of 628 and 630 mean sea level (msl). The intersection of Addison Road and Arapaho Road is at an approximate elevation of 630 msl. Consequently, the road extension across the wye would be relatively flat. Furthermore, if Arapaho Road were extended at a 1000-foot radius west from the Addison Road intersection, the northern curb line would maintain an approximate minimum horizontal clearance of 50 feet from the southern most railroad track (see Exhibit E).

An extension of Quorum Drive/Landmark Boulevard across the railroad has two alternative alignments, (see Location 2 - Exhibit B). The southernmost alignment appears to be the more favorable as it does not involve reconstruction of a portion of Quorum Drive/Landmark Boulevard. In addition, the southern alignment provides an additional connection to the Dallas North Tollway service road. The northern railroad crossing would occur at an approximate elevation of 633. The Inwood Road intersection would occur at an approximate elevation of 630. A straight grade of $5.5\% \pm$ would result between the track and Inwood Road (see Exhibit F). The southern alignment railroad crossing would occur at an approximate elevation of 632. The Inwood Road intersection would occur at an approximate elevation of 632. The Inwood Road intersection would occur at an approximate elevation of 632. The Inwood Road intersection would occur at an approximate elevation of 632. The Inwood Road intersection would occur at an approximate elevation of 632. The Southern alignment railroad crossing would occur at an approximate elevation of 632. The Inwood Road intersection would occur at an approximate elevation of 632. The Inwood Road intersection would occur at an approximate elevation of 632. The Inwood Road intersection would occur at an approximate elevation of 632. The Inwood Road intersection would occur at an approximate elevation of 632.

Although the horizontal and vertical geometrics would need to be evaluated in more detail during the design phase, there appears to be no geometric constraints which would prohibit the aforementioned railroad crossings.







2. Railroad Impacts

The following are three impacts we have identified on the railroad which would result from the proposed crossings.

- One of the two tracks at the Arapaho Road crossing would not be crossed at right angles, resulting in a less than ideal line of sight condition. A fully signalized crossing would be proposed to mitigate this condition.
- The impact on switching movements at the wye would need to be considered. Addison recently completed an upgrade of the Addison Road railroad crossing which relocated a switch out of the road crossing and realigned one of the wye tracks.
- Three tracks would be crossed at the Quorum Drive/Landmark Boulevard location. Coordination with railroad operations would be required to determine the impact of this multiple tracks crossing.

Summary

We recognize that the proposed railroad crossings are not beneficial to the railroad; however, the Town of Addison has a pressing need to upgrade its road network in this area. Addison has expressed its strong desire to work with Southern Pacific to mitigate any concerns regarding the impact of the proposed crossings on the railroad. EH&A would be pleased to assist in this process.



Post Office Box 144, Addison, Texas 75001

16801 Westgrove

MEMORANDUM

To: John Baumgartner

From: Robin Jones

Date: March 2, 1994

Subject: Railroad Crossing Repairs

John, as you know I've been trying for some time to have the Railroad or DART repair the crossings at Marsh Lane and Surveyor Blvd. Both of these are timber crossings with timbers in various degrees of decay. This decay has the same effect on motor vehicles crossing the tracks that pot holes on regular streets have. Additionally, on Marsh Lane one of the tracks has broken and the rail actually bounces up and down as cars cross the track. To the best of my knowledge this hasn't damaged any cars, but it contributes to the continuing deterioration of this crossing.

I first spoke to a Railroad representative about these crossings and was told that DART owns these tracks and it was therefore DART's problem. The Railroad representative said that they don't have the funds to make anything but minor repairs. Apparently, that amounts to scattering a little asphalt over the crossing from time to time. DART tells me they're willing to do minor maintenance (using Railroad employees) but that the crossings are ours to repair when repairs become extensive (beyond scattering a little asphalt).

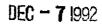
My discussions with DART have been with Jan Seidner who is their Right of Way Management Representative. I first wrote her back in December of 1992 about this problem. I have spoken to her several times over the past year and found her courteous, but not very helpful in getting these crossings repaired. I get the impression they're trying to wait me out, or possibly out live me.

In the past, the Railroads position regarding all crossings has been that they are the Railroads crossings to maintain or rebuild as necessary. If the Town desired an upgraded crossing (rubber, concrete mats, or anything better than a standard timber crossing) the Town was responsible for purchasing the mats and delivering them to the Railroad for installation. Additionally, the Town would assist the Railroad with traffic control during installation. We can hire a contractor to rebuild both of these crossings at a cost of \$50,000 to \$60,000 for Marsh and \$15,000 to \$20,000 for Surveyor. This would include a rubber or concrete mat and is probably twice the cost of any repair the Railroad would make. The only problem with this approach is that we might be accepting responsibility for all future railroad maintenance and reconstruction not to mention possible liability at each crossing if the crossings become the responsibility of the Town by our actions.

Therefore, why don't we have our attorney look into this and see what our responsibilities are regarding all railroad crossings in Addison.

That is my recommendation, I await your direction.

Thank you.





STREET DEPARTMENT

Post Office Box 144, Addison, Texas 75001

16801 Westgrove

December 4, 1992

Ms. Jan Seidner R/W Management Representative Dallas Area Rapid Transit P.O. Box 660163 Dallas, Texas 75266-0163

Re: Marsh Lane and Surveyor Boulevard Railroad Crossings

Dear Ms. Seidner:

I had spoken with Mr. Charles DeWeese back in January regarding the condition of the Railroad crossings on both Marsh Lane and Surveyor Boulevard. Mr. DeWeese sent a letter to Mr. A. M. Henson (copy enclosed) with the Southern Pacific Transportation Company requesting that my concerns and others be addressed.

Please chre

I had been told that Mr. DeWeese is no longer with DART, and that you would be able to help me with repairs to these crossings.

As of this date, no repairs have been made to either crossing except for repairs made by Addison Street Department employees. Specifically, as the crossing timbers have continued to rot away, Addison employees have attempted to fill the voids with asphalt. This being only a temporary solution I am requesting that you apply whatever pressure is necessary to the Railroad to have all the rotten timbers at both of these crossings replaced.

I appreciate your assistance in this matter. If you have any questions, I can be reached at 450-2849.

Sincerely,

Robin D. Jones Director, Street Department



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Dallas Area Rapid Transit 601 Pacific Avenue Dallas, Texas 75202 214/748-3278

February 11, 1992

Mr. A. M. Henson General Manager Southern Pacific Transportation Company 913 Franklin Street Houston, Texas 77002

Dear Art,

It appears that the maintenance responsibilities that SP took with the trackage rights agreements on the 1988 DART purchase of the SP line in the Dallas area and on the 1990 DART purchase of the Cotton Belt are not being met in several areas. Last summer, DART spent over \$12,000 on outside contractors for vegetation control of lines SP was operating to avoid citation by various cities. We also used over 200 hours of DART labor on rented tractors mowing from Plano south. A bill for the contracted work has been sent to Carl Bradley. We are preparing a bill for the work done with DART labor and rented equipment and will forward it to Carl soon.

I did not anticipate DART having to do this kind of work on lines you were maintaining, consequently our efforts were hampered by the time constraints associated with public procurement regulations. We are in the process of putting a large contract in place to maintain the lines where we are assuming exclusive occupancy. This contract will also allow us to maintain problem areas where your maintenance does not meet local standards. We will, of course, bill SP for all maintenance work done on property where SP has responsibility. Carl and Martin Swatek have indicated that they would pay these bills, and I assume that will continue.

Bigger problems are shown by

A City of Dallas Non-Traffic Citation recently issued for Cotton Belt right-of-way in the area shown on the enclosed map west of Dickerson Road;

Complaints from the City of Addison Director of Streets (Robin Jones at 214-450-2849) about lack of grade crossing maintenance at Marsh Lane and Surveyor Road, and blocking of the grade crossing at Addison Road during the rush hours in spite of your timetable Mr. A. M. Henson February 11, 1992 Page 2

curfew; and

Complaints from the City of Colleyville (Dave Draz at 817-498-7180) about grade crossing repairs promised but not completed on John McCain, Pleasant Run and Bransford roads.

I understand the priority that maintenance of these lines must have in the overall scheme of things for SP, but these issues are causing safety, health and image problems for DART and the cities along the lines (and SP) that I cannot allow to continue. We need to decide jointly how the SP obligations are going to be met, and then proceed on a sensible course. If you are going to be in the Dallas area soon, I'd welcome the opportunity to meet and resolve these (and related) issues. Let me know soon what your plans are.

Sincerely,

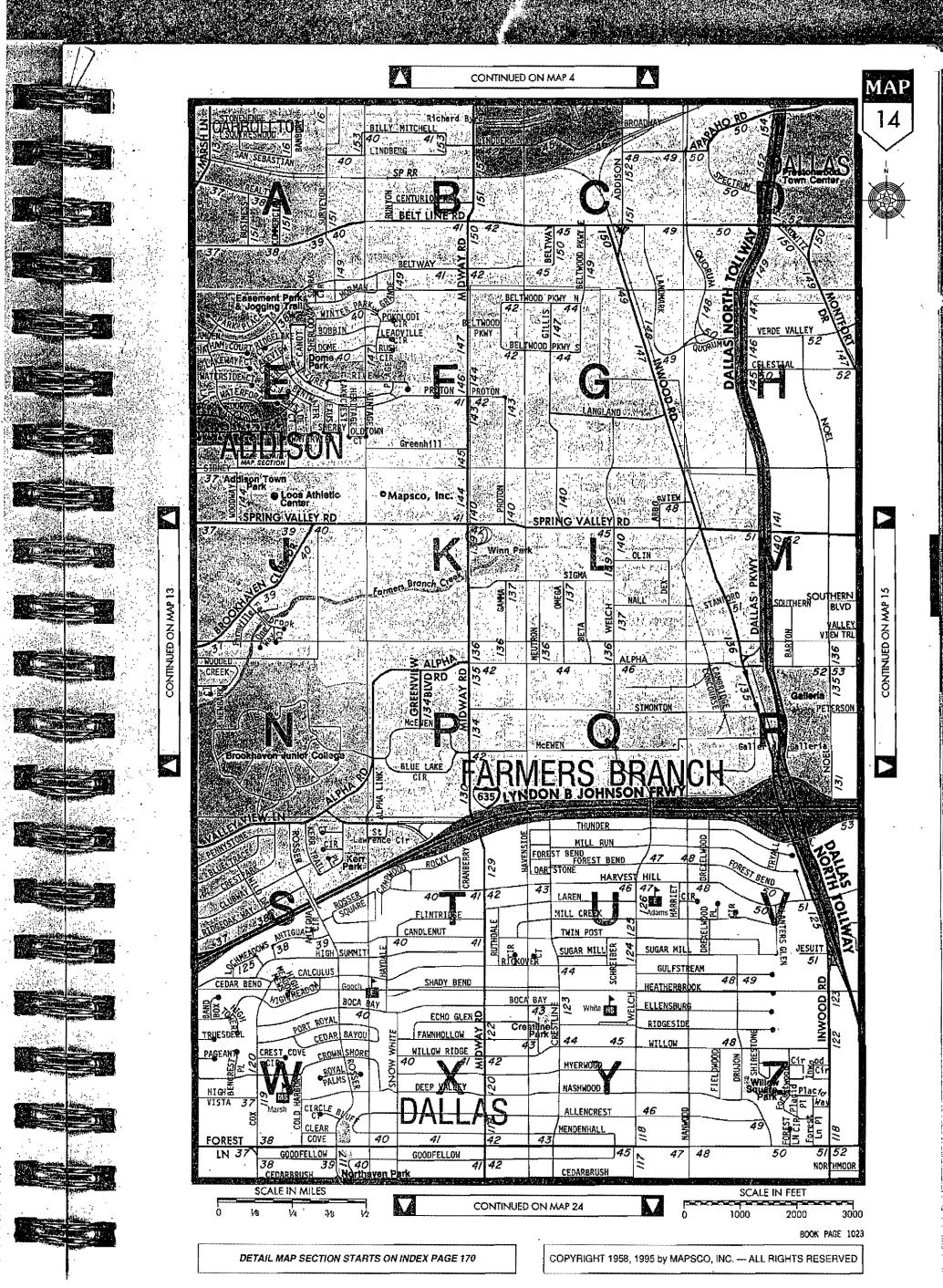
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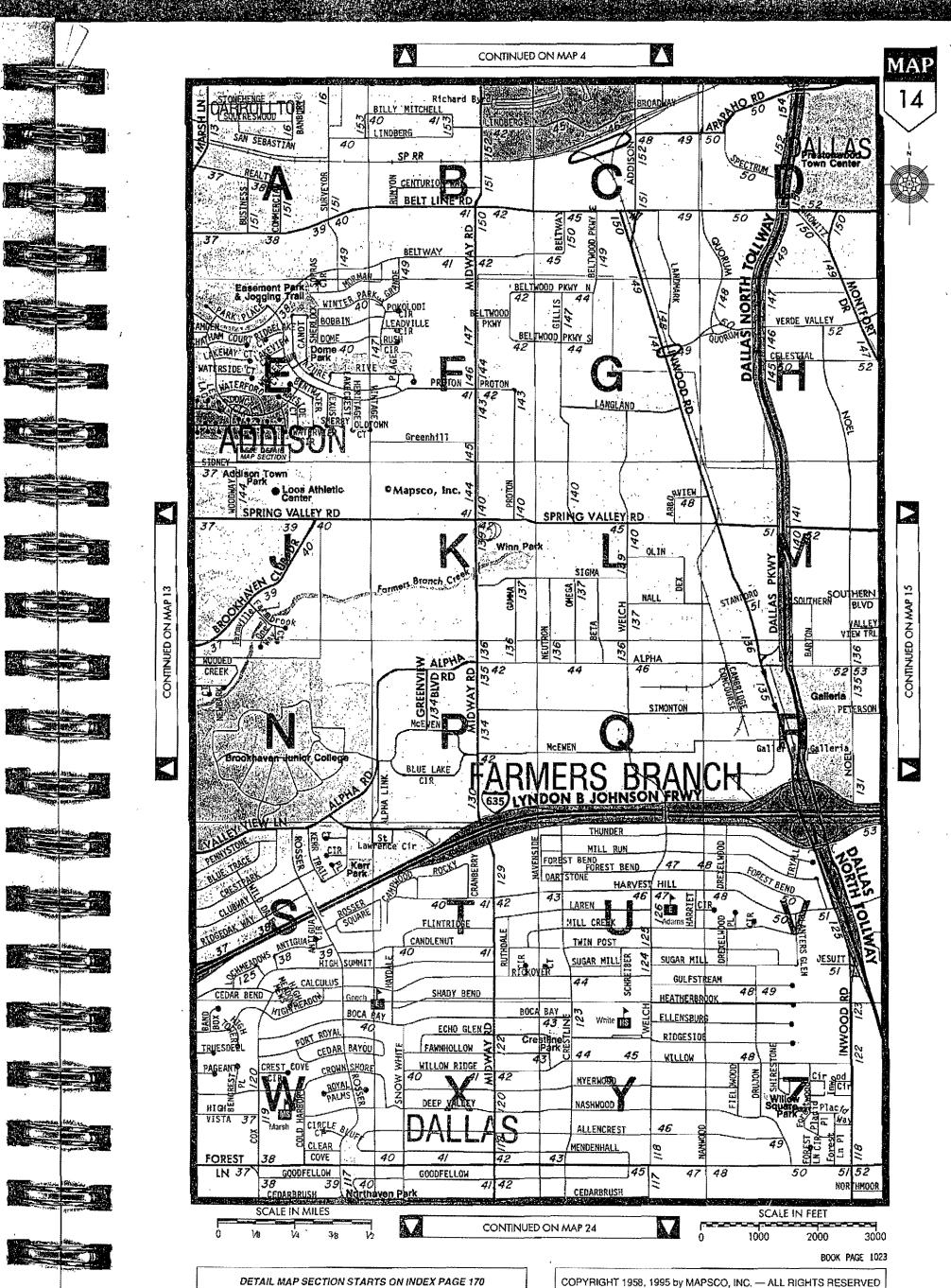
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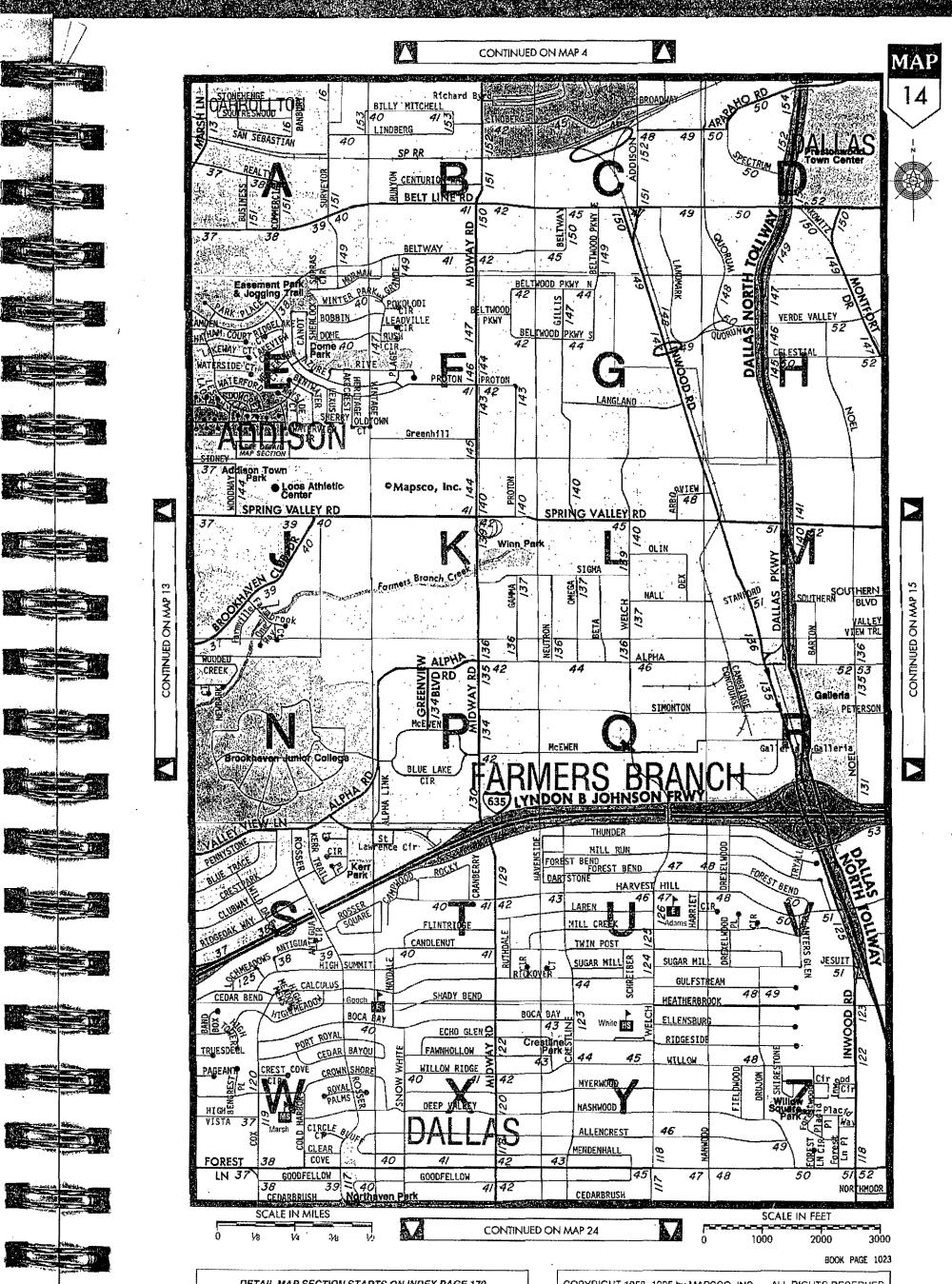
Charles C. DeWeese Director, Facility Maintenance

Enclosure



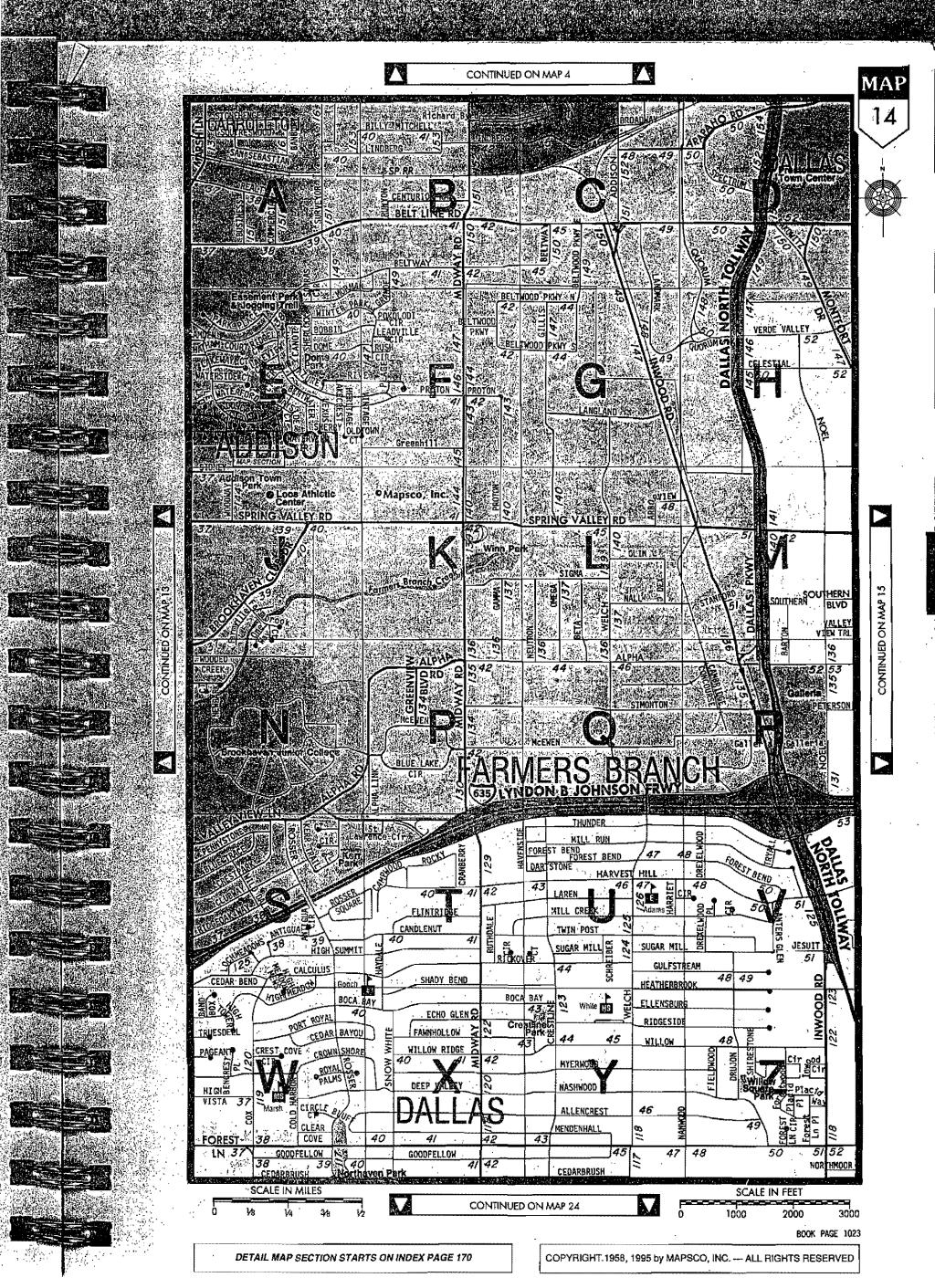
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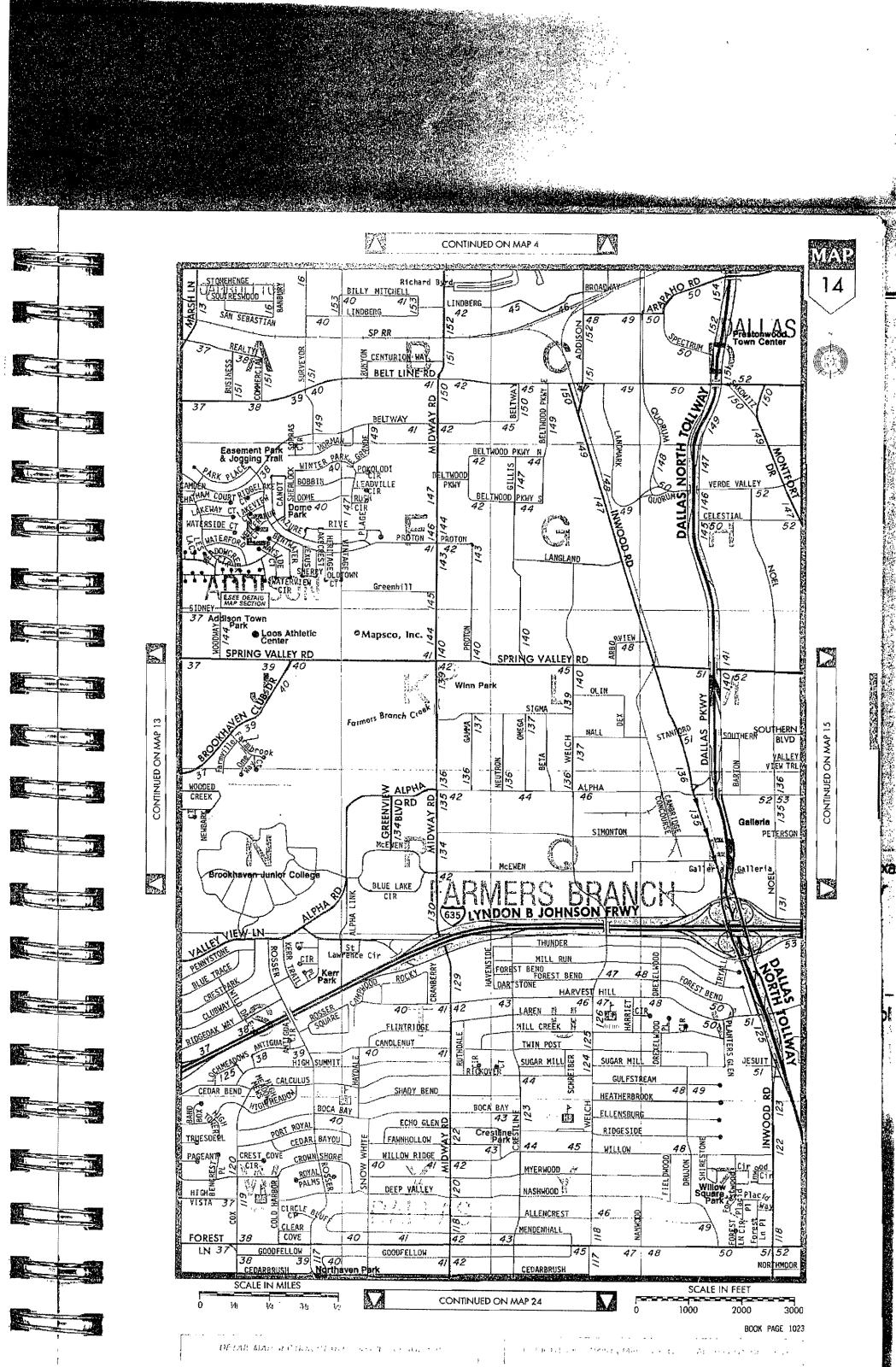


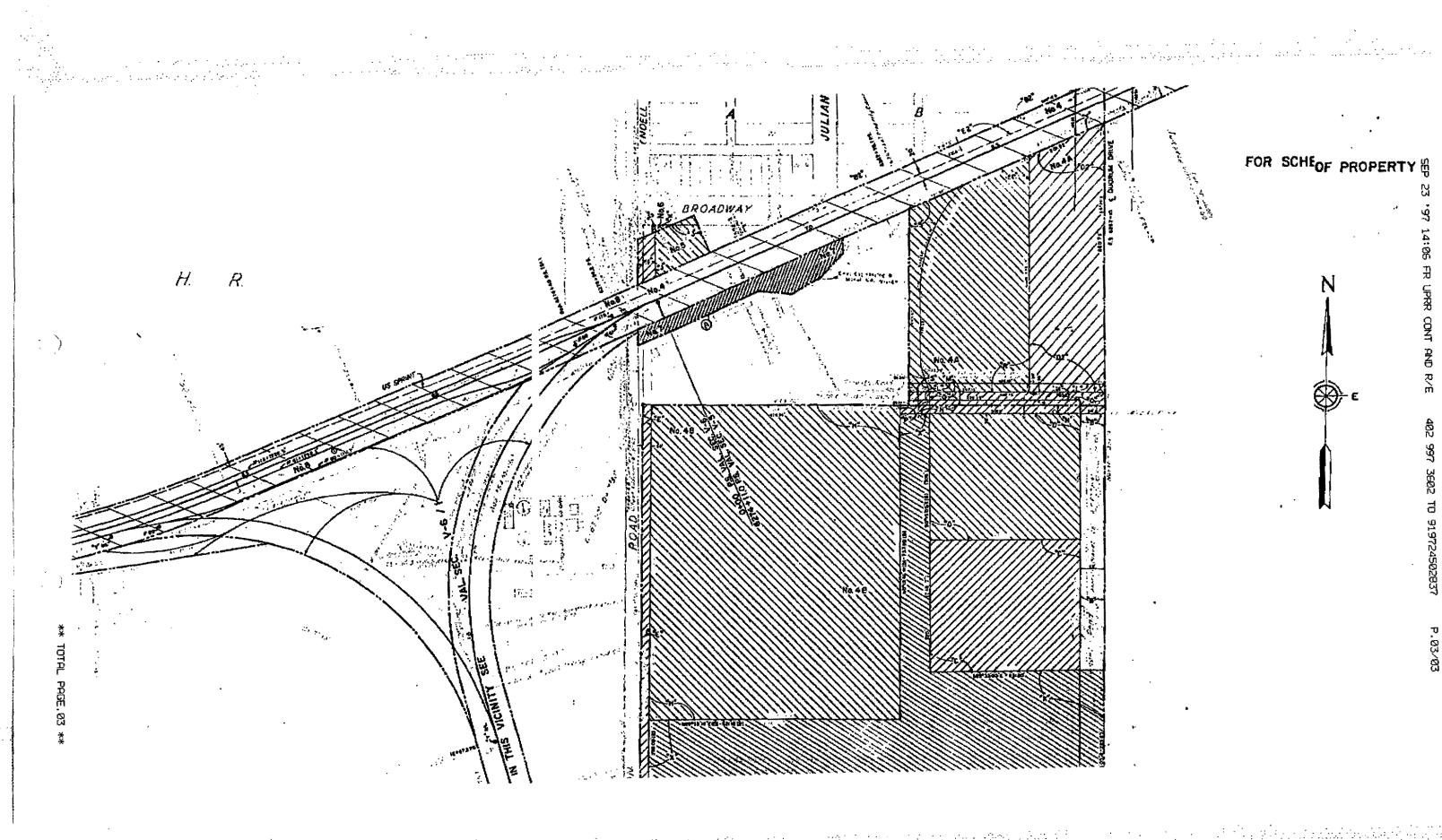


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DETAIL MAP SECTION STARTS ON INDEX PAGE 170







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