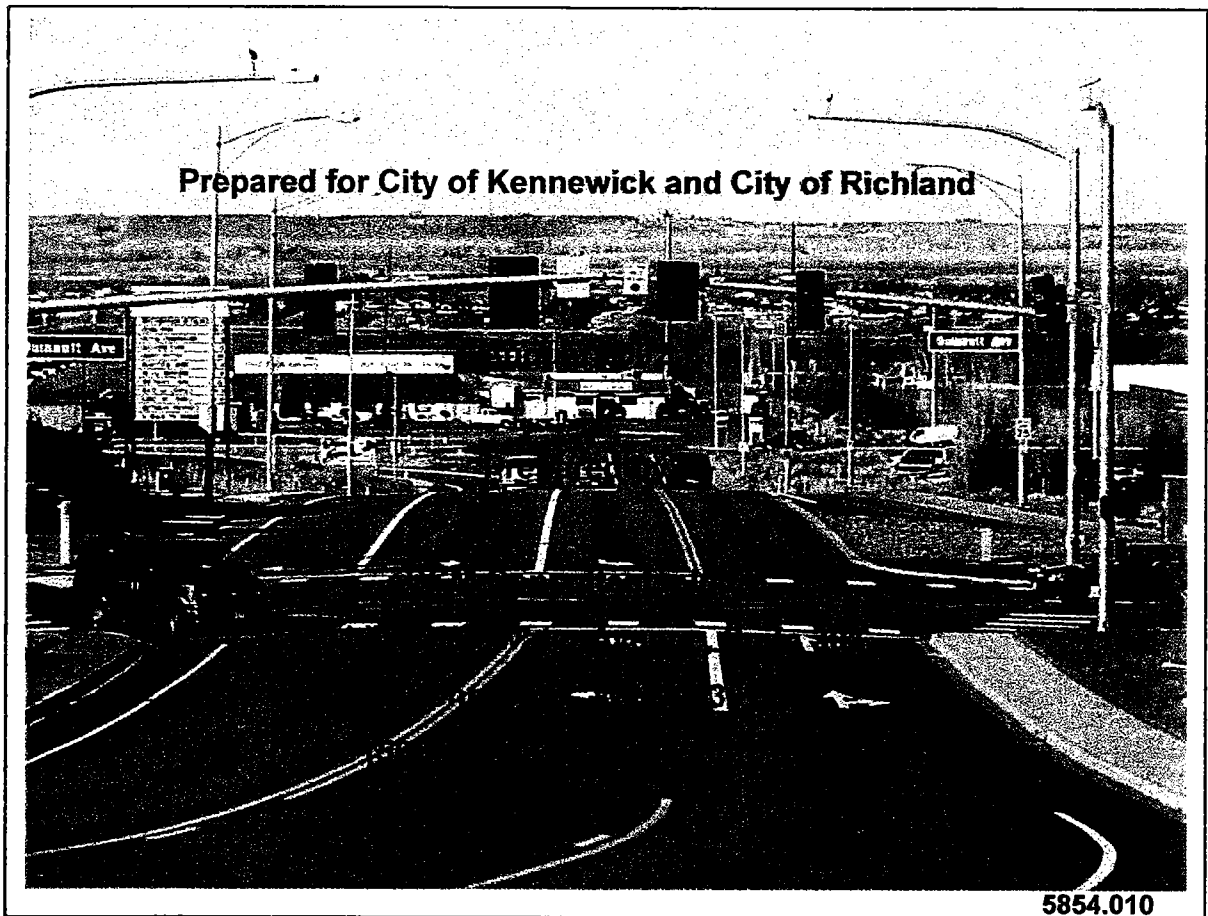


N. CENTER PARKWAY EXTENSION GAGE BOULEVARD TO TAPTEAL DRIVE DESIGN REPORT



SOM
SOM Consultants, Inc.
Architects & Engineers
A Terra Tech Company

EXECUTIVE SUMMARY

In August 2001, the City of Kennewick retained SCM Consultants, Inc. of Kennewick, WA, to complete a design study for a proposed extension of N. Center Parkway from Gage Boulevard to Tapteal Drive. This is a joint project between the Cities of Kennewick and Richland. The project includes a crossing of the Port of Benton and Union Pacific Railroad tracks. The project is within the city limits of both the City of Kennewick and the City of Richland.

The purpose of the design study is to identify a recommended alignment for the proposed extension of N. Center Parkway between Gage Boulevard and Tapteal Drive. Factors used in determining the recommended corridor include horizontal and vertical alignment, compatibility with the existing railroad tracks, impact to property and business owners, cost of right of way and construction, safety, and accessibility to adjacent properties and businesses.

N. Center Parkway currently extends from Deschutes Avenue to Gage Boulevard, approximately 1 mile, and includes a signalized intersection at Quinault Avenue and a four-way stop at Gage Boulevard. The roadway serves as major arterial for the Columbia Center Mall and the commercial and professional businesses in this area. The proposed extension of N. Center Parkway is necessary to accommodate the growing traffic demand and future development of this area.

The study evaluated three alignments for extending N. Center Parkway approximately 1,700 feet. The proposed cross-section is a 46-foot roadway with curb, gutter, sidewalks, storm drainage and streetlights.

The proposed roadway will intersect the Union Pacific and Port of Benton Railroad tracks. Negotiations with the railroad are ongoing, however, for

purposes of this report we have assumed that N. Center Parkway will only be required to cross a single railroad track and that the other three tracks will be relocated or abandoned.

Project information was presented to the nearby businesses and residents on several occasions. Additionally, discussions were held with the property owners directly impacted by the roadway. An open house was held where the alignments were discussed with homeowners and business owners. Verbal and written comments received from the business owners were incorporated in the analysis of the alignment alternatives and are also included in detail in the study.

Construction costs were estimated based on a 46-foot wide standard arterial roadway and included estimates of the right-of-way, design engineering, construction, construction engineering, and railroad modification costs.

Alignment 2 (see Figure 6) was found to be the recommended option because it has the optimum horizontal alignment, best meets driver expectation, and is at or near the least total project cost. Alignment 3 was found to be unsatisfactory because of its poor horizontal alignment, cost, the close proximity to the 30-foot high wall adjacent to the Home Depot, and because it leaves a remnant parcel adjacent to The Home Depot undevelopable.

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INTRODUCTION

In August 2001, the City of Kennewick retained SCM Consultants, Inc. of Kennewick, WA, to complete a design study for a proposed extension of N. Center Parkway (Center Parkway) from Gage Boulevard to Tapteal Drive. The project includes construction of a 46-foot wide roadway with curb/gutter, sidewalks, storm drainage, streetlights, and a traffic signal at the intersection of Center Parkway and Gage Boulevard and a crossing of the Port of Benton and Union Pacific railroad tracks. This is a joint project between the Cities of Kennewick and Richland as the project lies within the corporate limits of both Cities. See Figure 1.

The purpose of the design study is to identify a recommended alignment for the proposed extension of Center Parkway between Gage Boulevard and Tapteal Drive. The study includes identifying potential alignment alternatives, preparation of right-of-way and construction cost estimates for the roadway extension, and a report of the criteria used to determine the best location for the roadway. Factors used in determining the recommended corridor include horizontal and vertical alignment, driver expectation, compatibility with the existing railroad tracks, impact to property and business owners, cost of right of way and construction, safety, and accessibility to adjacent properties and businesses. The study also includes providing preliminary plan and profile design drawings.

N. Center Parkway Extension Vicinity Map

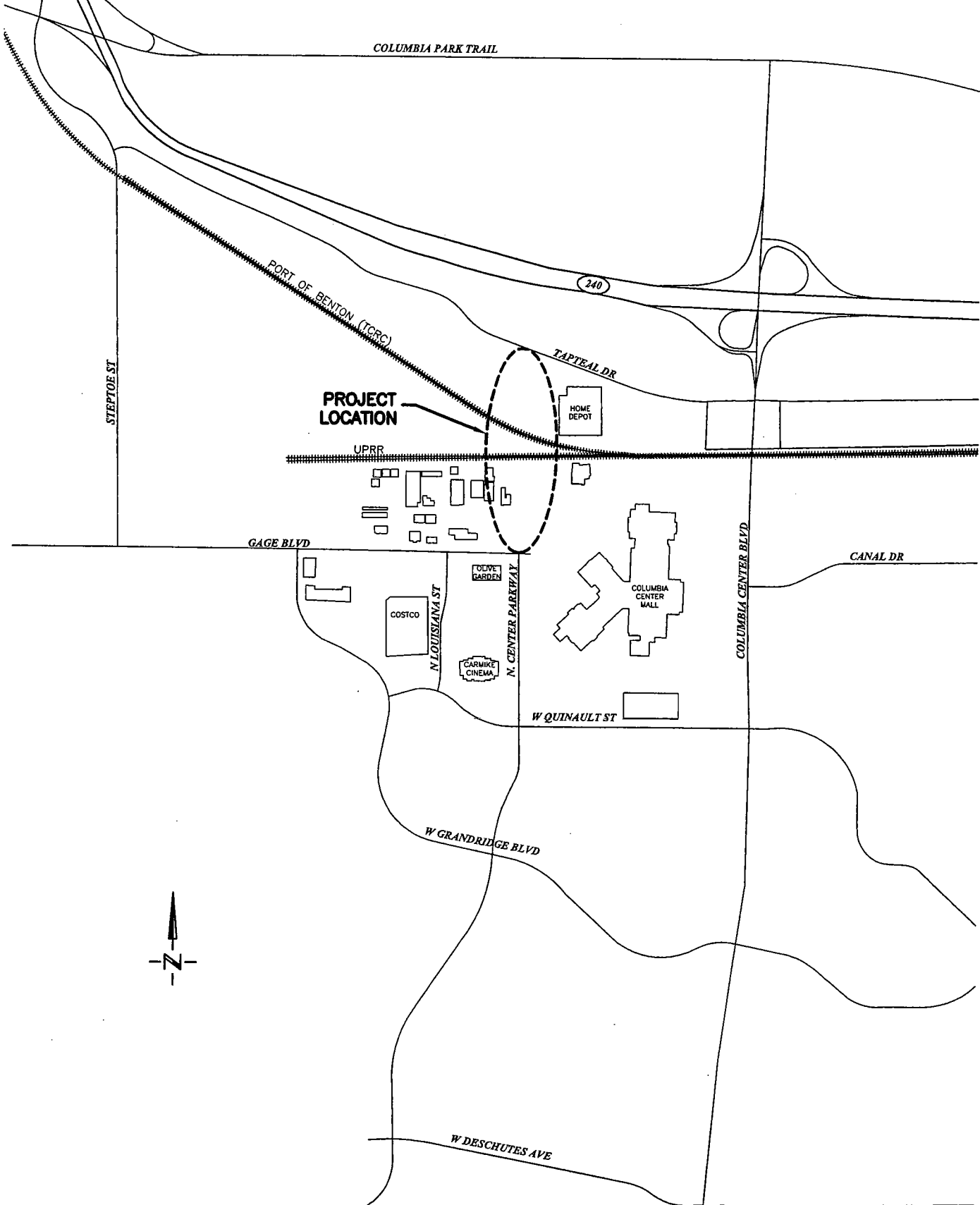


FIGURE 1

BACKGROUND

Cities within the State of Washington are required to participate in the State Transportation Improvement Program (STIP) transportation planning process that identifies projects to be completed within a six-year period. The City of Kennewick and City of Richland annually prepare a specific Six-Year Transportation Improvement Plan (6-Year TIP) to use as a planning tool for the preparation of their transportation budgets.

The proposed extension of Center Parkway and widening improvements on Gage Boulevard have been identified in their 6-Year TIP's for several years. Construction of Tapteal Loop over Columbia Center Boulevard was an initial phase of the development of the transportation system within this area.

The Columbia Center Mall and the surrounding commercial and professional businesses provide essential products and services for the entire Tri-City region. The entire Columbia Center commercial/retail area is a major economic base for Kennewick and Richland. Growth in the Columbia Center area is continuing and the traffic demands are increasing proportionately. The existing traffic flow around and through the area is hampered by the indirect route to return to Columbia Center Boulevard from Gage Boulevard, the lack of a convenient route to access Tapteal Drive to the north, and a direct route to access State Route 240. The proposed extension of Center Parkway will significantly improve the flow of traffic from Gage Boulevard to Tapteal Drive and Columbia Center Boulevard, and improve access for the consumer to the highway system.

Grant funding for the project is from two sources; the Rural Economic Vitality (REV) program of the Community Economic Revitalization Board (CERB), and the Surface Transportation Program (STP) through the Intemodal Surface

Transportation Efficiency Act (ISTEA). Local agency funding for the project includes a donation of right-of-way from a private developer for the portion of the project within the City of Richland corporate limits.

EXISTING CONDITIONS

Center Parkway currently extends from Deschutes Avenue to Gage Boulevard, approximately 1 mile. From Quinault Avenue to Gage Boulevard the roadway is a five-lane road, with center turn lane, and with curb, gutter and sidewalks on both sides. At the intersections with Quinault Avenue and Gage Boulevard there are separated right-turn lanes that leave four lanes at the intersections. The existing Center Parkway intersection at Quinault Avenue is signalized and the existing intersection at Gage Boulevard is a four-way stop with post-mounted stop signs. See Figure 2. As stated above, the existing traffic flow around and through the area is hampered by the indirect route to return to Tapteal Drive and Columbia Center Boulevard from Gage Boulevard, and the lack of a convenient route to access State Route 240.

The Port of Benton (POB) and the Union Pacific Railroad (UP) each own right of way with two sets of tracks each, that divide the project. The UP has a rail line extending from downtown Kennewick, across the bridge over Columbia Center Boulevard, to nearby Steptoe Street where it has been terminated. Starting from the Richland Junction to the west end of their main line the UP also has a siding track used to facilitate railcar storage and switching. The UP has abandoned their right-of-way west of Steptoe Street.

The POB acquired the former United States Department of Energy (USDOE) railroad tracks in 1998. The POB short line extends from the UP tracks at Richland Junction northwest to the USDOE Hanford Site. The POB also has a siding track that starts at the Richland Junction and extends several hundred feet

to the west paralleling the short line main track. Currently the Tri-City Railroad Company (TCRC) operates the POB short line. The TCRC performs switching for the railroad clients located on the POB short line and interchanges with the UP and BNSF at the Richland Junction, located at the intersection of the POB and UP tracks. This location is used by the railroad companies to facilitate interchanging of railcars. Storage of refrigeration cars with continuous running generators has become a problem in this area due to the close proximity of the residential area.

The roadway and interchange activities will conflict with extension of Center Parkway across the railroad tracks. Increased use of the Richland Junction is causing complaints of noise and unsightliness by the adjacent Columbia Center Estates. It is anticipated that the growing economy of the Tri-City area will continue to increase the need for TCRC to interchange with the UP and BNSF.

The proposed roadway will extend through a commercial/retail area. The portion of the project within the City of Kennewick is adjacent to the northwest corner of the Columbia Center Mall property. It also includes a bank, several businesses, and a Benton PUD substation. The portion of the project within the City of Richland is currently vacant. However, the proposed alignments are adjacent to the existing Home Depot site as well as a proposed Holiday Inn Express.

N. CENTER PARKWAY EXTENSION EXISTING STRIPING

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567

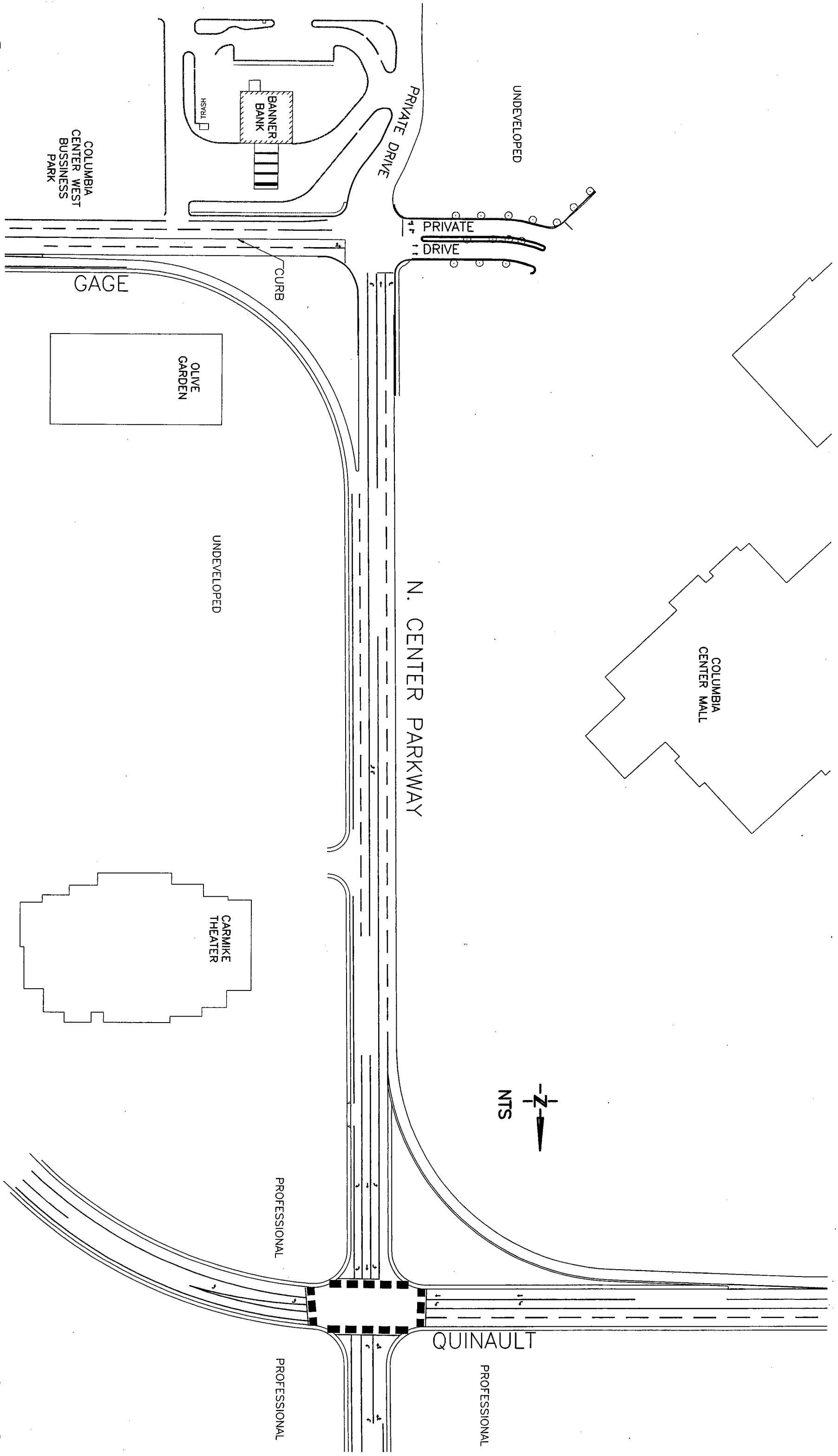


FIGURE 2

TRAFFIC VOLUMES AND PROJECTIONS

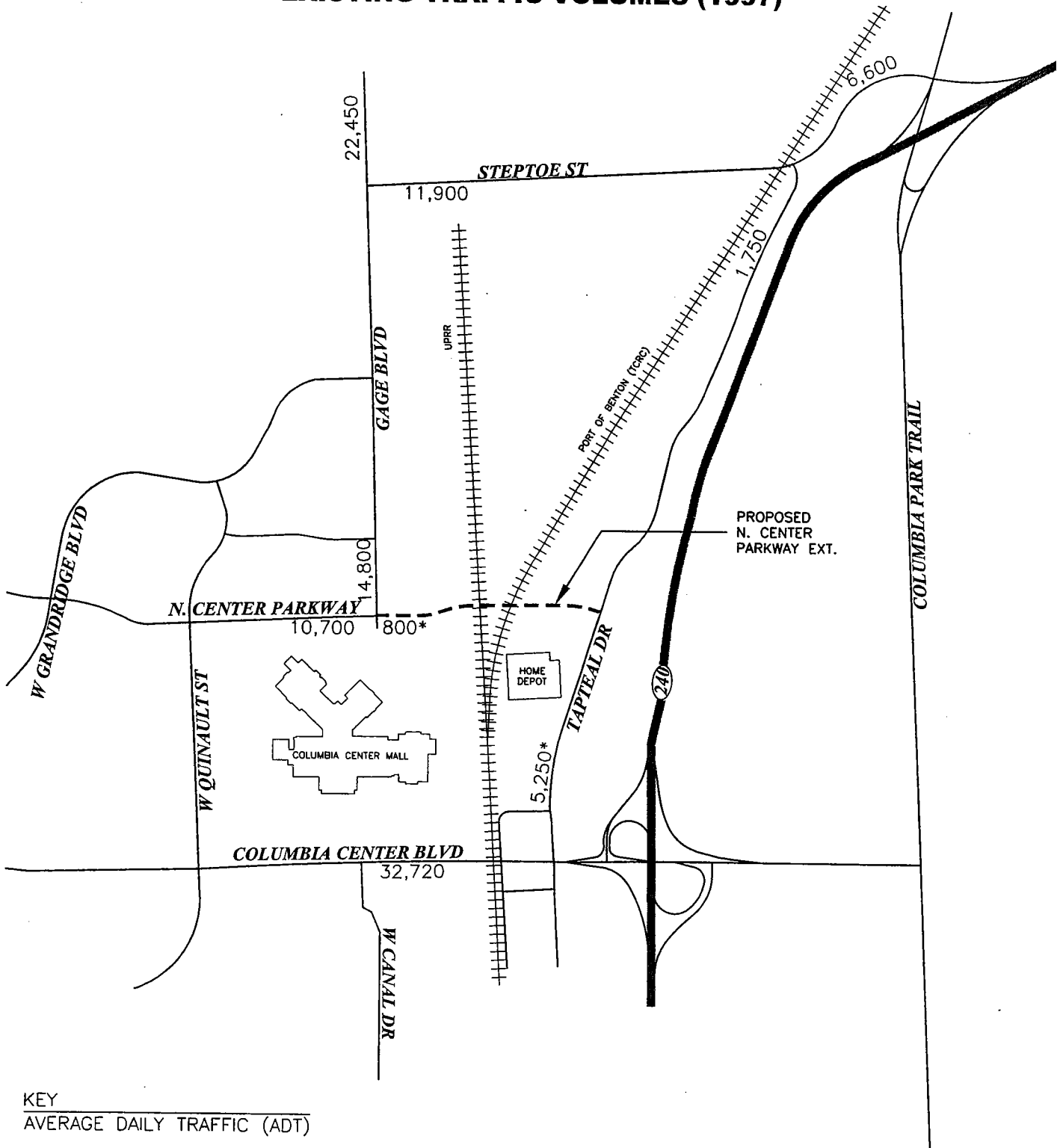
In July 1997 The Transpo Group completed a traffic forecast study in the vicinity of the proposed Center Parkway extension. When fully built out is the Transpo study estimated that 15,955 Average Daily Trips (ADT) would be generated by the commercial development between Columbia Center Boulevard on the east, Steptoe Street of the west, SR-240 on the north, and the railroad tracks on the south. The Transpo Group estimated that 60 percent of the trips would use Columbia Center Boulevard and 40 percent would use Steptoe for ingress/egress to the area. See Figures 3a, 3b and 3c for the traffic volumes and projections.

The Transpo study concluded that the Center Parkway Extension would save over 610,000 travel miles, over 30,500 gallons of fuel, and correspondingly significant reductions in travel time, air, noise and other pollutants associated with motor vehicles. The project would also reduce traffic volumes on adjacent streets, particularly Columbia Center Boulevard, which would be operating at a Level-of-Service LOS of between E and F by 2023 without the project.

N. CENTER PARKWAY EXTENSION

TRAFFIC FORECAST STUDY

EXISTING TRAFFIC VOLUMES (1997)



KEY
 AVERAGE DAILY TRAFFIC (ADT)
 10,700 = ADT
 800* = ESTIMATED ADT

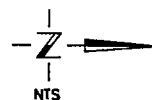
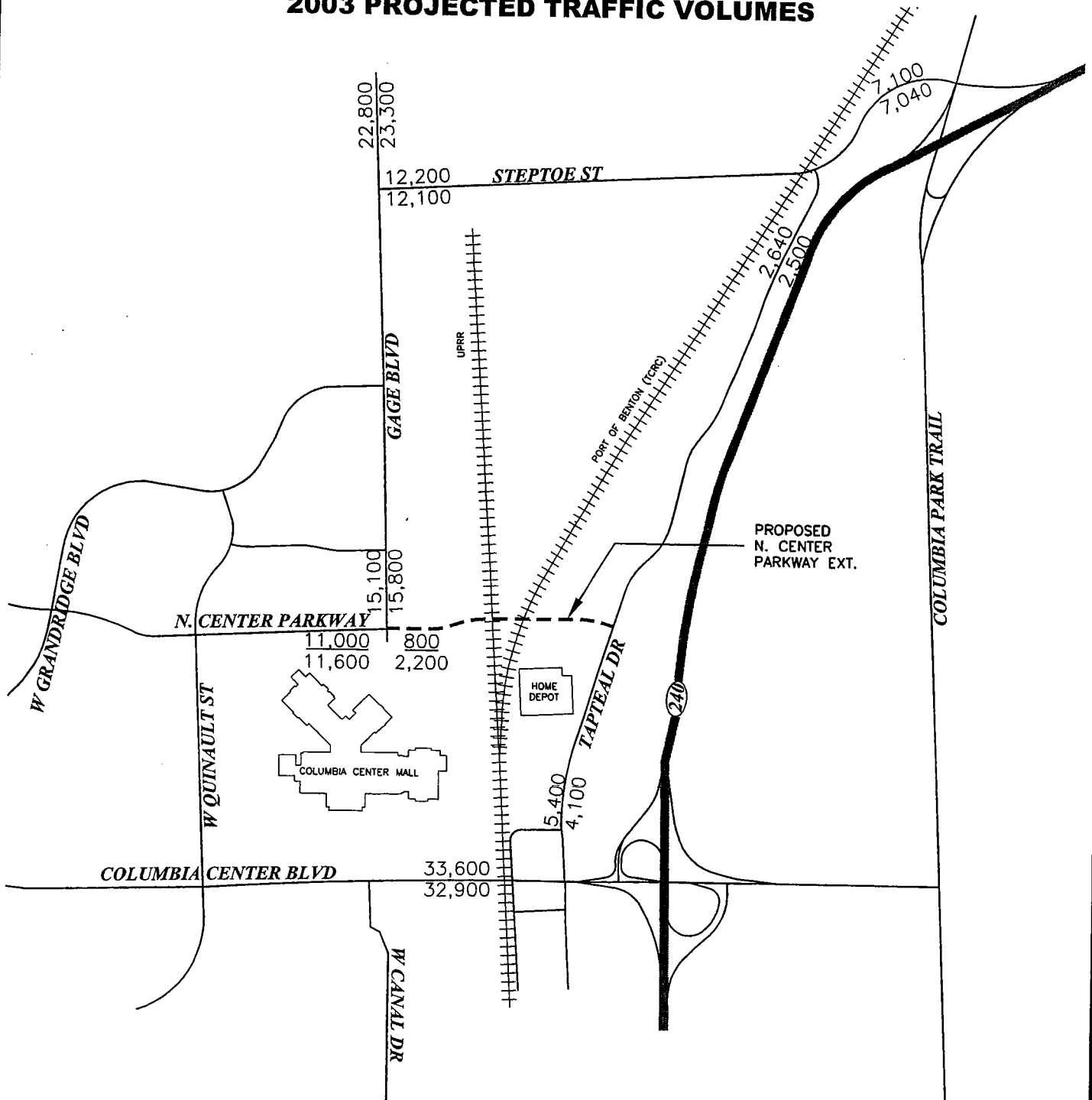


FIGURE 3a

N. CENTER PARKWAY EXTENSION

TRAFFIC FORECAST STUDY 2003 PROJECTED TRAFFIC VOLUMES



KEY

_____ AVERAGE DAILY TRAFFIC (ADT)

11,000 = 2003 ADT WITHOUT IMPROVEMENTS
11,600 = 2003 ADT WITH IMPROVEMENTS

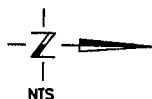
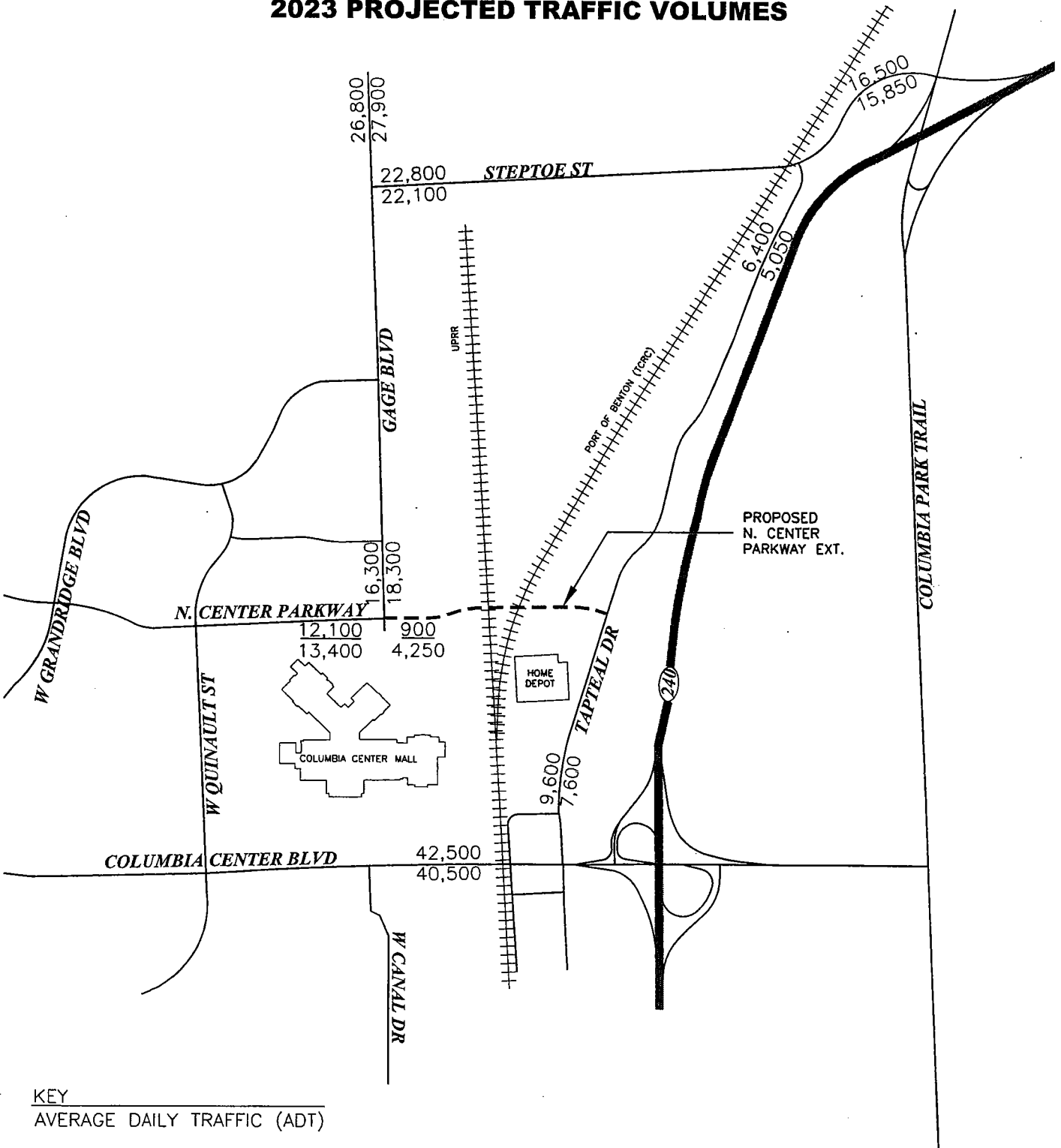


FIGURE 3b

N. CENTER PARKWAY EXTENSION

TRAFFIC FORECAST STUDY 2023 PROJECTED TRAFFIC VOLUMES



KEY

AVERAGE DAILY TRAFFIC (ADT)

12,100 = 2023 ADT WITHOUT IMPROVEMENTS

13,400 = 2023 ADT WITH IMPROVEMENTS

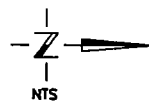


FIGURE 3c

ALIGNMENTS

The study evaluated three alignments for extending Center Parkway from Gage Boulevard to Tapteal Drive, an approximate distance of 1700 feet. This study also considered the No Build option. The project considered a 46-foot roadway, with a 40 mile-per-hour design speed, along with curbs, gutters, sidewalks, storm drainage and streetlights. A 60-foot right-of-way will be needed within the City of Kennewick to accommodate the planned improvements including 5-foot sidewalks. Within the City of Richland a 70-foot right-of-way is required to accommodate the roadway with 8-foot sidewalks. The City of Richland municipal code requires 8 foot sidewalks within C-2 and C-3 zones. See Figure 4.

The No Build option has no impacts to properties but does not provide any benefits to the developing area. There would be no relief to the traffic volumes on Columbia Center Boulevard and Tapteal Drive and increasing congestion may cause Level of Service failures at some locations. Accessibility to SR 240 would continue to be difficult and negative impacts to the community due to increased congestion would go unchecked. Not improving the transportation system to improve accessibility and address the growing traffic demand will hamper economic development of the area and would be imprudent considering the continuing development of the area.

The optimal route, from purely a transportation perspective, would be a straight line extending from the north end of the existing Center Parkway, crossing the railroad tracks, and curving at the largest practical radius to connect to Tapteal Drive at a 90 degree angle. However, this alignment significantly impacts existing infrastructure and would require the relocation of the existing Benton PUD power sub-station. This alignment was not evaluated beyond identifying that relocating the sub-station would cost between \$2.8 to \$3.2 million, and take nearly 18 months to accomplish once the necessary agreements were finalized.

Each of the proposed alignments attempted to maintain a reasonable vertical profile with a maximum 6% grade. Secondly, the alignments utilized corridors that minimized the impact to existing businesses and infrastructure. Finally, the alignments attempted to provide a safe and efficient horizontal alignment, meet driver expectation, and provide a safe and efficient roadway meeting current engineering design standards in accordance with the American Association of State Highway and Transportation Officials (AASHTO).

All three alignments require a solution to eliminate the conflict with the railcar switching that occurs at the Richland Railroad Junction. This will require elimination of at least two, and preferably three, of the existing tracks since switching activities cannot occur within a roadway crossing. At this time there is not an agreement between the railroads and the Cities. Continued negotiations are expected to yield a solution that will relocate the switching outside the road crossing. Each of the alignments have been evaluated on the basis that a solution can be found at the existing junction by reconstructing the rails or by relocating the interchange between the railroads will occur at another location. Each of the alignments have been developed assuming that the switching of the railcars cannot move closer to the residential area.

The three alignments that were reviewed are described as follows:

Alignment 1

Alignment 1 begins at the intersection of Center Parkway and Gage Boulevard and extends nearly directly north. The alignment begins by curving to the east to avoid the existing bank facility drive through exit and intersects with the east-west roadway through Columbia Center West at nearly 90 degrees. The alignment continues by curving to the west directly through Mail By The Mall and

avoids the main portion of the Benton PUD substation. After passing the substation the roadway returns to a line parallel to the Home Depot property line and along a line coincident with the centerline of the existing portion of Center Parkway. Alignment 1 is shown in Figure 5.

Alignment 2

Alignment 2 varies only slightly from Alignment 1. The first difference is that Alignment 2 realigns approximately 300-feet of the east curb line of the existing Center Parkway, south of Gage Boulevard, allowing a taper through the intersection and avoids the curve immediately north of the intersection with Gage Boulevard. This creates a straight alignment from Gage Blvd through the Mail By The Mall property all the way to the UP railroad tracks. In addition the alignment has been straightened between the power substation and Tapteal Drive eliminating an additional horizontal curve. This alignment passes directly through Mail By The Mall. Alignment 1 and Alignment 2 show only minor differences in vertical alignment. The Tapteal Properties binding site plan adjacent to Tapteal Drive is consistent with this alignment. Alignment 2 is shown in Figure 6.

Alignment 3

Alignment 3 varies significantly from Alignment 1 and 2. This alignment begins at the intersection of Center Parkway and Gage Boulevard and curves sharply to the east extending around the east side of the Benton PUD substation. Following crossing of the railroad tracks the alignment moves west to a minimum of 30 feet from the Home Depot's west property line and existing retaining wall. This alignment cuts through the Columbia Center Mall's storm drainage pond requiring relocation of this retention pond. This alignment requires crossing the Port of Benton railroad tracks at an angle. This alignment also requires

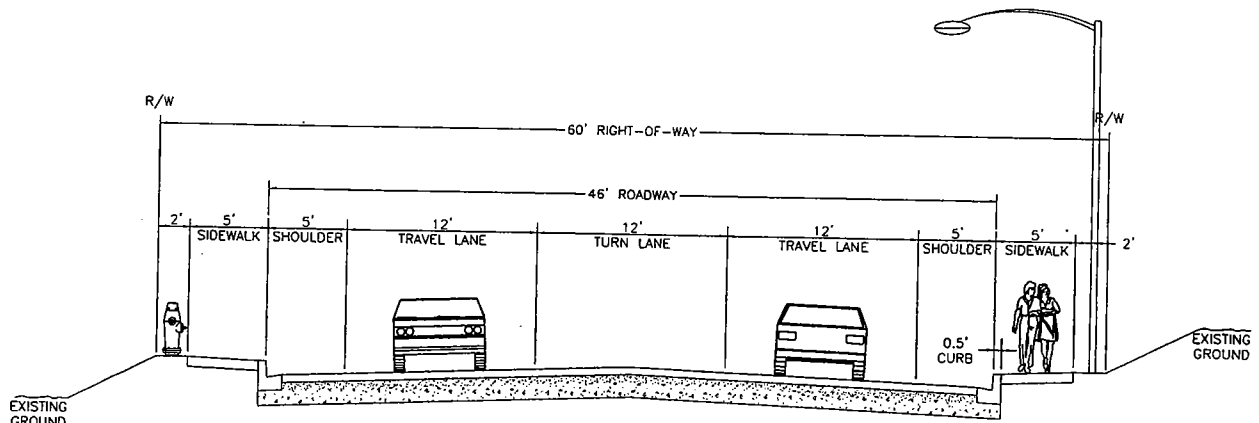
extending the east-west roadway through Columbia Center West. This alignment is not consistent with the Tapteal Properties binding site plan. This alignment may require the Richland Junction railroad modifications to move railcar switching and storage closer to the adjacent neighborhood worsening the noise and aesthetics problems if the interchange activities cannot be moved elsewhere. Alignment 3 is shown in Figure 7.

N. CENTER PARKWAY EXTENSION

Design Standards & Roadway Cross Sections

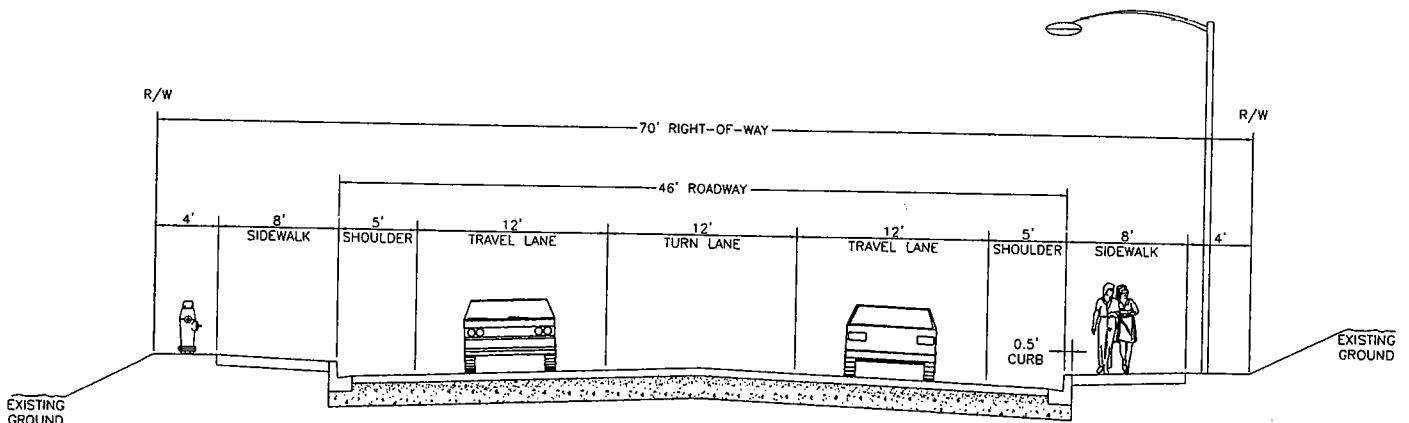
DESIGN SPEED:
MINIMUM WIDTH:

40MPH
46' PAVEMENT WIDTH



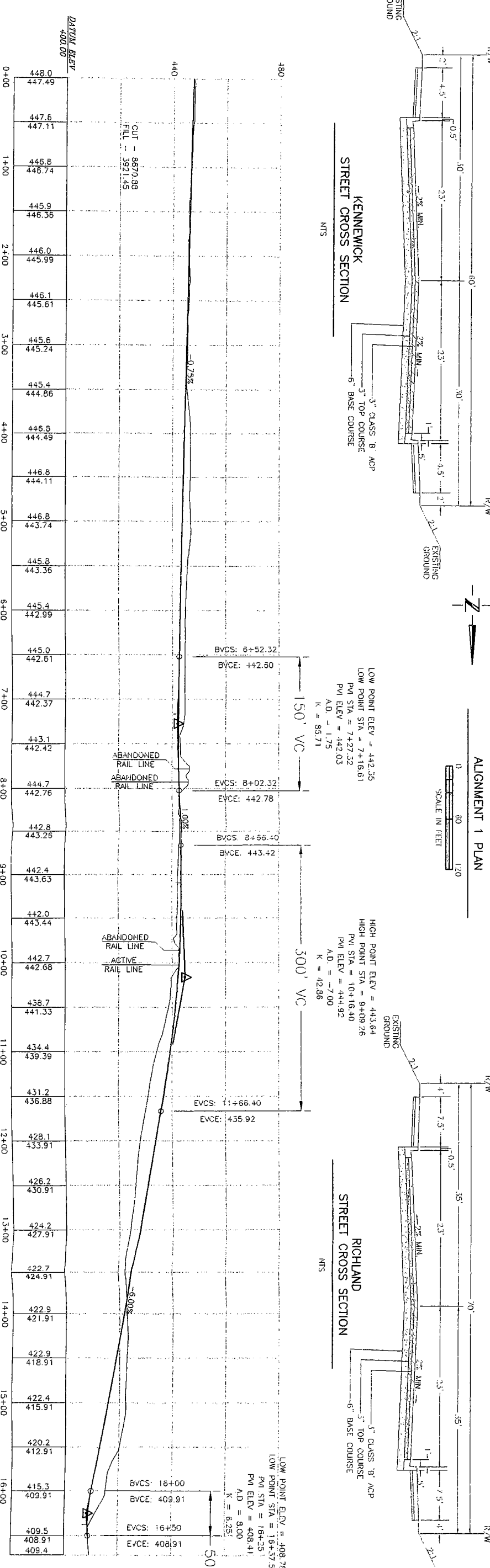
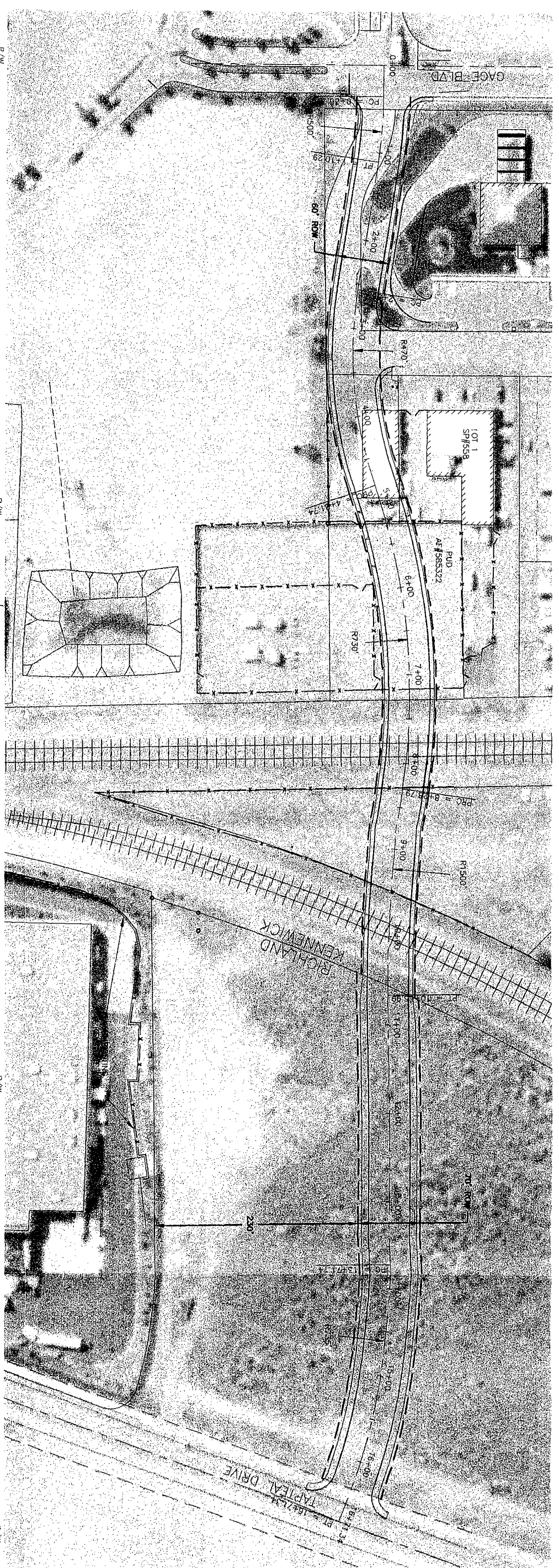
CITY OF KENNEWICK
CROSS SECTION

NTS



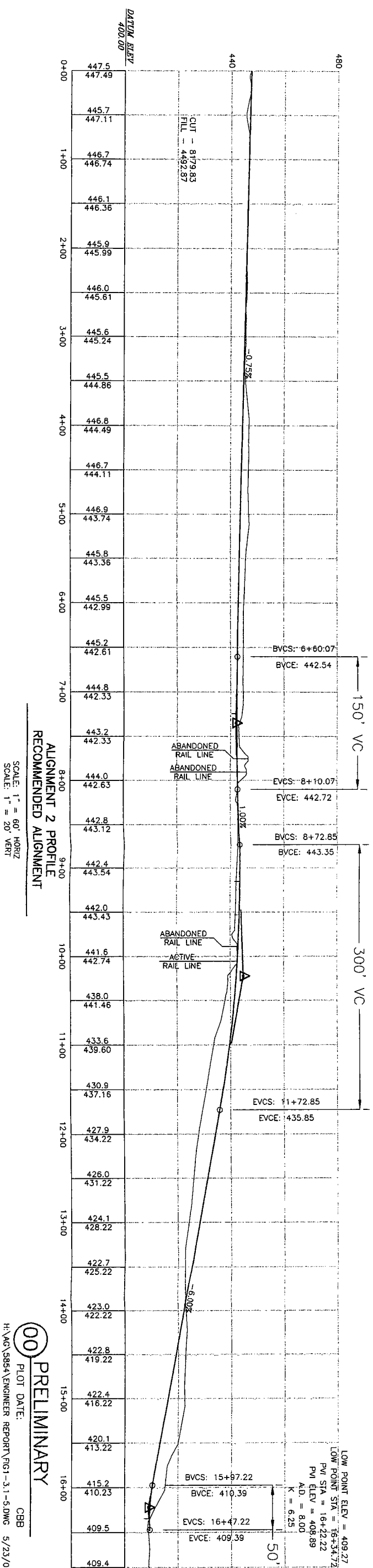
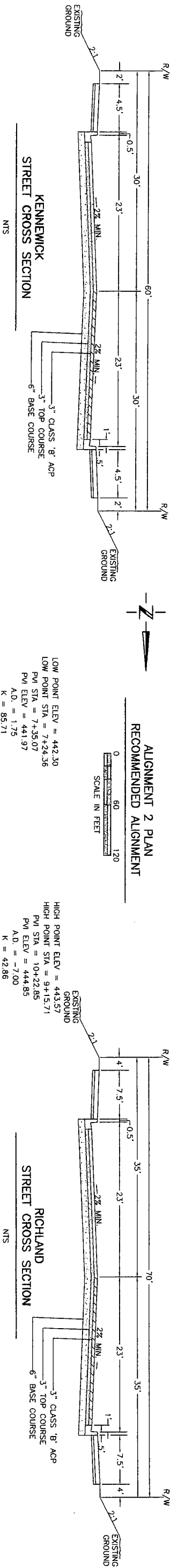
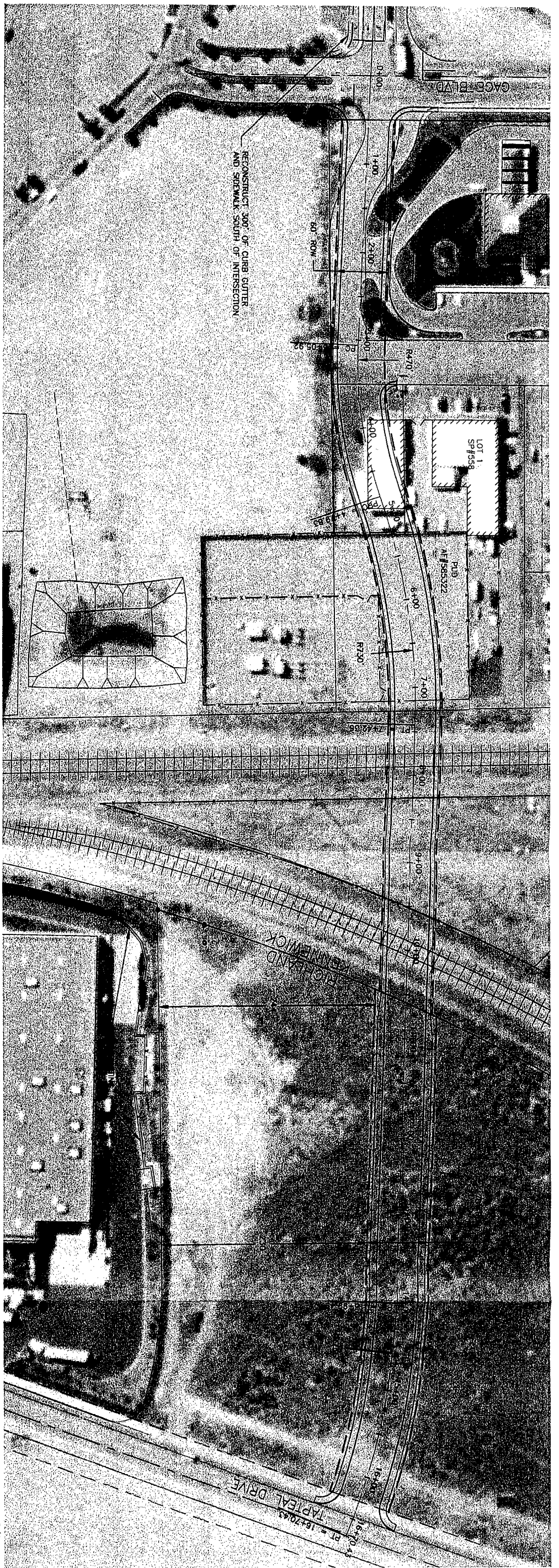
CITY OF RICHLAND
CROSS SECTION

NTS



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CITY OF KENNEWICK CENTER PARKWAY EXTENSION Architects & Engineers Kennewick, WA 99338	ALIGNMENT 1 PLAN AND PROFILE PROJECT NUMBER: 5854.010 CAD FILE: FIG1-3.1-5.dwg	© 2002 SCM Consultants, Inc. DRAWN BY: CBB CHECKED BY: DESIGN A/E: DESIGN CV SCM APPROVAL:	08:42 15.066 (LMS Tech) 05/23/02 DATE OF ISSUE <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>REV.</th> <th>DATE</th> <th>BY</th> <th>DESCRIPTION</th> <th>APPROVED</th> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>	REV.	DATE	BY	DESCRIPTION	APPROVED					
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ALIGNMENT 2 PROFILE
RECOMMENDED ALIGNMENT

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5/23/02 DATE OF ISSUE

CITY OF KENNEWICK
CENTER PARKWAY EXTENSION

Architects & Engineers
SCM Consultants, Inc. Kennewick, WA 99336

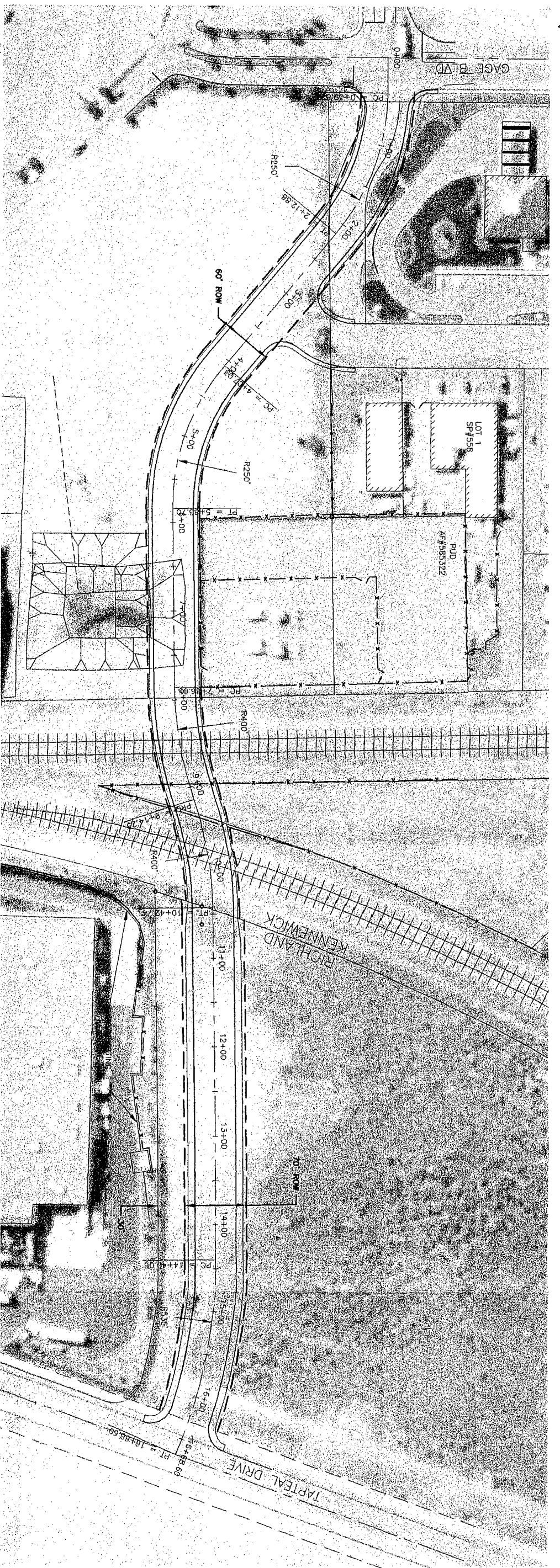
**ALIGNMENT 2
PLAN AND PROFILE
RECOMMENDED**

PROJECT NUMBER: 5854.010
CADD FILE: FIG1-3.1-5.DWG

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CHECKED BY:
DESIGN A/E: DESIGN G/A
SCM APPROVAL:

REV. NO.	DATE	BY	DESCRIPTION	APPROVED

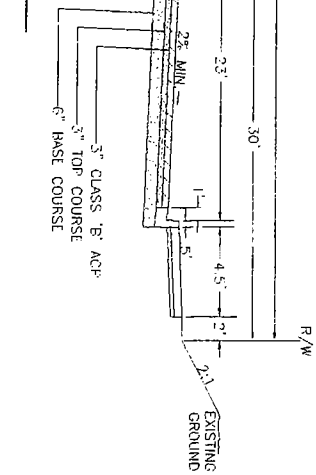
FIGURE 6
REV. 0



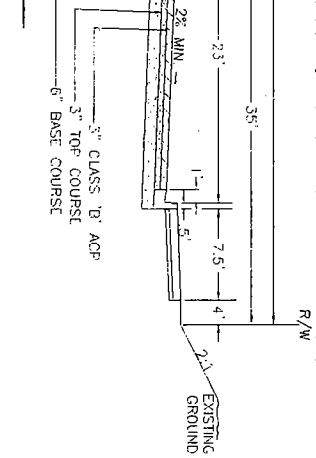
ALIGNMENT 3 PLAN
SCALE IN FEET



KENNEWICK
STREET CROSS SECTION
MFS



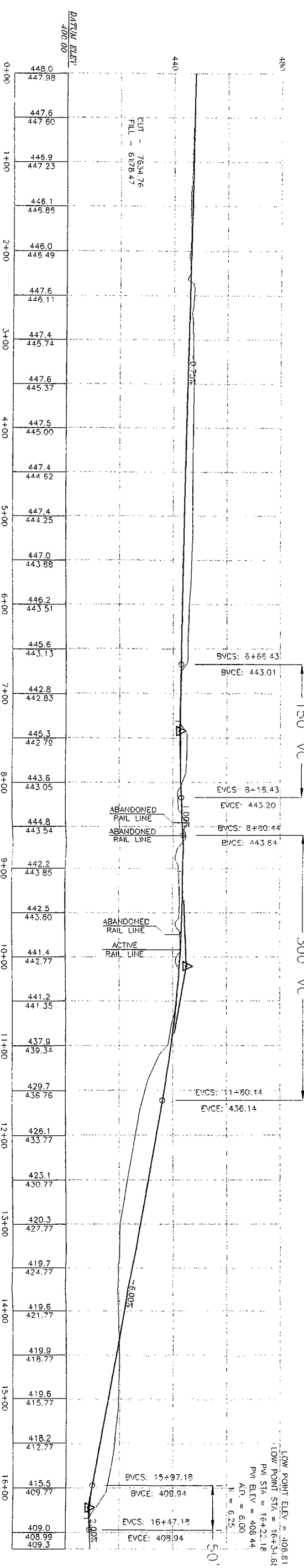
RICHLAND
STREET CROSS SECTION
MFS



LOW POINT ELEV = 442.77
 LOW POINT STA = 7+30.48
 PVI STA = 7+41.43
 PVI ELEV = 442.45
 A.D. = 1.75
 K = 85.95

HIGH POINT ELEV = 443.86
 HIGH POINT STA = 9+03.30
 PVI STA = 10+10.44
 PVI ELEV = 445.14
 A.D. = -7.00
 K = 42.86

LOW POINT ELEV = 408.81
 LOW POINT STA = 16+34.81
 PVI STA = 16+22.18
 PVI ELEV = 408.44
 A.D. = 8.00
 K = 6.25



ALIGNMENT 3 PROFILE
SCALE: 1" = 60' HORIZ
SCALE: 1" = 20' VERT

00 PRELIMINARY
 PLOT DATE: CBB
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CITY OF KENNEWICK
 CENTER PARKWAY EXTENSION

ALIGNMENT 3
 PLAN AND PROFILE

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5/23/02 DATE OF ISSUE

SCM Architects & Engineers
 Kennewick, WA 99338

PROJECT NUMBER: 5854.010
 CAD FILE: FIG1-3.1-5.DWG

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 DESIGN A/E: DESIGN G/P
 SCM APPROVAL

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FIGURE 7
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Railroad Crossing

All three alignments require crossing both sets of existing railroad tracks. This section of the tracks are currently used for switching of railcars and short term storage of railcars. Switching activities in the vicinity of a road crossing is not desirable due to lengthy closures of the roadway, potential conflicts between vehicles and railcars, and the requirement for railroad flaggers to assist with the switching activities. In addition, the switching and storage of the railcars occurs directly adjacent to a residential area (Columbia Center Estates) whose residents regularly complain about the noise from the refrigeration units and the railcars blocking their views. The study attempted to identify alternatives to reduce the track crossings to just one crossing of the POB short line allowing access to the north Richland and Hanford Areas. In addition, the railroad options were limited to alternatives that would not move the stored railcars any closer to the existing residents.

The options being discussed with the railroads include relocation of the switching and interchange activities to another area or making modifications to the passing tracks to allow the switching activity to occur without requiring crossing the proposed roadway. Modifying the tracks to allow switching to occur adjacent to the proposed Center Parkway includes constructing several hundred feet of new track parallel to the UP line, east of the proposed roadway, and moving the POB passing track further to the west. See Appendix C.

The project team has met several times with the UP, BNSF, and TCRC railroads to discuss the alternatives. While cooperative, the railroads have several operational issues to resolve. It may be possible to move the switching activities to the Kennewick railyard, which would allow the removal of the UP tracks requiring only one track crossing for the roadway.

Another solution to the railcar switching and storage conflict with the roadway is to construct a grade separated crossing. A grade separated crossing taking the roadway over the tracks would require 23-foot clearance plus the height of the structure, approximately 5-feet. This would require roadway slopes in excess of the maximum allowed by design standards for the two cities and is therefore not considered. A grade separated crossing putting the roadway under the tracks could be buildable but would require constantly changing slopes creating a roller coaster roadway and would require extensive retaining walls. It is estimated that the cost for a grade separated crossing would exceed \$10 million. This option was considered but is not viable or feasible for the reasons explained above.

For purposes of evaluating the roadway alignments it is assumed that the railroad issues will be resolved and will eliminate all but one rail crossing which would be an at grade crossing of the POB short line.

COMMUNITY INVOLVEMENT

It is the desire of the City of Kennewick and the City of Richland to have the support of the community on all public transportation projects. It is the goal of the community involvement process to inform the citizens of the benefits of the project and to obtain input regarding impacts to the citizens. Through this process, impacts that City staff and consultants are not aware of can be identified and evaluated, and the community becomes aware of the efforts and plans the City has to meet the growing transportation needs.

To initiate this process, an informational letter was hand delivered to homeowners and businesses in the area of the proposed project during the first week of October 2001. The letter outlined the project scope, funding and schedule. It also informed the public that land surveying would be occurring and

provided notice of an upcoming informational meeting. The letter is attached in Appendix B.

Only one response was received as a result of the initial notification. A member of the Columbia Center West Business Park Property Owners Association, contacted SCM requesting information concerning the project and the impacts to the Association's roadways. Information concerning the project was provided to the Property Owners Association as well as they were provided a contact with the City of Kennewick to discuss the future of the Association's roadways.

On February 13, 2002, a Community Open House was held at the nearby Kennewick Silver Cloud Inn conference room to discuss the proposed alignments. Invitations were hand-delivered to the neighboring homes in Columbia Center Estates and to the businesses adjacent to the project. Notices were also provided to the businesses within the Tapteal Center Business Park. Utility companies that provide services in the area were also invited.

Prior to the open house the City of Kennewick and SCM offered to meet with the businesses that would be directly impacted by the project. Key businesses that will be impacted are Banner Bank, Mail By The Mall, McCoy Distributing, McCoy Recording, the Columbia Center West Property Owners Association and Columbia Center Mall. These businesses were contacted prior to the open house and offered specific information concerning the alignments, how the roadway may affect their business, and a description of the recommended alignment. Only two property owners accepted the invitation to meet prior to the meeting. Mail By The Mall and McCoy Distributing, both located in the same building, met with the project team.

The meeting was held to explain that the recommended alternative would require that their property be purchased to accommodate the construction of the

roadway. The basic points of the acquisition/relocation process and the anticipated project schedule were discussed and a Washington State Department of Transportation right-of-way acquisition booklet was given to the business owners. Their first preference was that the proposed roadway not impact their building or property. If this is not possible, their second concern was that Mail By The Mall not have to change its name and lose the association with the Mall, and lastly that the acquisition, subsequent relocation, and construction not impact them during their peak business months preceding Christmas. These matters should be addressed during the right-of-way acquisition process.

Thirteen people and seven representatives from local utilities attended the open house. See the invitation in Appendix B. The scope and extent of the project was presented as well as the potential and evaluated alignments. General comments at the meeting were that while the project appeared to be needed, it should minimize the impact to existing businesses and not move the storage of railcars any closer to the residential area.

The President of the Columbia Center Estates Homeowners Association commented in writing on the homeowner's frustration with the railcar switching and storage in the area and asked if the project could eliminate the situation. It was discussed with him at the open house that it is not within the scope of the project to address the issue beyond reaching an agreement with the railroads as to how to accomplish an at-grade crossing with the roadway.

Banner Bank requested in writing that the City consider taking over ownership of some of the private drives within the business park in addition to what was needed for the new roadway. The process for having private roads accepted by the City was discussed as was the Federal Highway's acquisition process and its regulations that will have to be followed. It was noted that at the time the right-of-way process starts that the matter would be evaluated.

The owner of Mail By the Mall, attended the project open house but did not provide any written comments. She verbally reiterated her concerns from the previous meeting, which are stated above.

COST ESTIMATES

Construction costs were estimated based on a 46-foot wide standard arterial roadway with curb and gutter, sidewalks, storm drainage, and street lights as shown in Figure 4. Included in the estimate are right-of-way, design engineering, construction, construction engineering, and estimated railroad modification costs.

Right-of-way costs were based on comparable land sales for commercial property in the same vicinity. Sales of commercial zoned property in the vicinity were found to be in the \$6.00 to 10.00 per square foot range.

For purposes of the study we projected that the railroad solution would provide additional track between the Columbia Center Boulevard bridge and Center Parkway to allow switching to occur in this area. The same solution was estimated for all three alignments. The railroad cost estimate is based on modifying the existing tracks to eliminate all but the single POB short line track. Additional track would need to be constructed to provide storage for switching rail cars between the Tri-City Railroad, Union Pacific Railroad and Burlington Northern Santa Fe Railway. This track is planned to be constructed between the existing UP and the north boundary of the Columbia Center Mall property, east of the proposed Center Parkway alignment.

Construction cost estimates for the three roadway alignments are provided. Quantities of materials were calculated based on plan and profile plans prepared as part of the study. Unit prices were developed from recent and past project bid

tabulations for similar projects in the area. See Table 1 for a summary and Appendix A for the cost estimate details.

Table 1 – Summary of Construction Cost Estimates

Item	Alternate 1	Alternate 2	Alternate 3
Construction	\$ 682,000	\$ 713,000	\$ 703,000
Design Engineering	\$ 52,000	\$ 54,000	\$ 53,000
Construction Engineering	\$ 52,000	\$ 54,000	\$ 53,000
Right-of-Way	\$ 964,000	\$ 950,000	\$ 1,041,000
Total Cost	\$ 1,750,000	\$ 1,771,000	\$ 1,850,000

Railroad (Includes cost of constructing additional passing tracks between Columbia Center Boulevard and the proposed Center Parkway extension. May not be required if switching operations are relocated to another location. These amounts reflect adjustments to the Railroad Alternate 1 cost estimate in Appendix A to correspond to each Roadway Alternate.)	\$ 1,128,000	\$ 1,110,000	\$ 1,250,000
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Actual cost for road construction is highly dependent upon the demand for this type of work at the time of bid. Advertising the construction bid request for road construction projects early in the construction season generally results in the lowest available bids.

RECOMMENDED ALIGNMENT

Alignments 1 and 2 are very similar with respect to horizontal alignment, compatibility with the existing transportation system, impact to properties, and cost of right-of-way and construction. Both alternatives have good vertical alignment and appear to function well with the existing transportation system. Each alignment has very similar impacts to the existing businesses. Alignment 2 is the least impact to the bank facility at the intersection. Both alignments avoid major impacts to the Benton PUD substation, however, they do require relocation of Mail By The Mall. Alignment 2 provides a much better horizontal alignment avoiding curves at both the Gage Boulevard intersection and Port of Benton tracks. The final vertical alignment will be determined once the railroad issues are resolved.

Alignment 3 provides the least impact to existing businesses and infrastructure. This option does not require relocating any existing businesses and avoids any impact to the Benton PUD substation. This alignment does require reconfiguring or relocating the Columbia Center Mall storm drainage pond. However, Alignment 3 has a very poor horizontal alignment requiring significant curves at the intersection of Gage Boulevard as well as in the vicinity of the Benton PUD substation. Additionally, this alignment places the roadway adjacent to the high retaining wall surrounding The Home Depot store. Holding the roadway back a safe distance from the wall requires at least 30 feet of additional right-of-way.

The horizontal alignment for option 3, while technically meeting design standards, is not desirable for an arterial roadway. This alignment does not meet driver expectation and has been found by the study to be unacceptable.

The horizontal alignment could be improved at the intersection of Gage Boulevard, but would require significantly modifying the existing Center Parkway as well as the entrance to the Columbia Center Mall. These modifications would also require additional right-of-way from the Mall.

Alignment 2 (Figure 6) was found to be the recommended route based on the following conclusions:

Alignment 2 provides –

- the least cost for the total project.
- a horizontal alignment with very nearly a straight connection from Gage Boulevard to Tapteal Drive.
- least amount of right-of-way acquisition.
- avoids construction activities and an arterial roadway adjacent to a high retaining wall.
- better options for solving the Railroad geometry & operations problems by leaving more room for re-construction of rail for railcar switching and storage should it be required.
- best Railroad crossing angle.
- Least impact to the existing roadway system including the internal Columbia Center West roads.

The total cost for Alignment 2 is estimated to be \$ 1,771,000. This does not include the costs to modify the railroad tracks east of the proposed Center Parkway. The railroad costs were not included since they would be approximately the same for each alignment and may not be required if an alternative location can be found.

Table 2 is a matrix summary of the impacts and benefits of each alignment.

Alignment Evaluation

N. Center Parkway Extension
Design Report

Item	No build	Alignment 1	Alignment 2	Alignment 3
Length	N/A	Alignment 1 requires 1671 feet of new roadway construction.	Alignment 2 requires 1670 feet of new roadway and re-construction of 300 feet of Center Parkway south of Gage. Total length of improvements are 1,970 feet.	Alignment 3 requires 1669 feet of new roadway.
Horizontal Alignment	N/A	Alignment 1 horizontal alignment has five minor curves with a satisfactory alignment meeting design standards. However, these curves are nearly back to back and do not meet driver expectation for an arterial roadway.	Alignment 2 horizontal alignment has three minor curves and provides the best horizontal alignment particularly by eliminating a curve at the intersection. This alternative best meets driver expectations.	Alignment 3 has five horizontal curves, two of which are 250-foot radius curves which are not desirable for an arterial roadway. AASHTO recommends a minimum of a 420-foot centerline radius. This alignment does not meet driver expectation especially through the intersection and provides the least desirable horizontal alignment.
Vertical Alignment	N/A	Alignment 1 has a maximum vertical slope of 6.00% which meets design standards	Alignment 2 has a maximum vertical slope of 6.00% which meets design standards.	Alignment 3 has a maximum vertical slope of 6.00% which meets design standards.
Impact to existing property	No impacts to properties, however, increased congestion in the surrounding area may cause Level of Service failures at some locations.	Alignment 1 requires slightly more of Banner Bank's property than Alignment 2. It requires the full acquisition of Mail By The Mall. It leaves small remnant parcels between Gage Boulevard and the UP railroad tracks. This alignment divides the Columbia Center Estates Tract. This alignment is consistent with the Tapteal Properties binding.	Alignment 2 is similar to Alignment 1 with the exception that it requires slightly less property from Banner Bank.	Alignment 3 still impacts Banner Bank but completely avoids Mail By The Mall. However, it significantly impacts the Columbia Center Mall property and leaves a large remnant parcel. It leaves a very large undevelopable parcel adjacent to the Home Depot property. It requires the extension of the Columbia Center West's common driveway and reconstruction of the Columbia Center East's storm detention pond. It is not consistent with Tapteal Properties binding site plan.

Table 2

**Alignment Evaluation
Continued**

**N. Center Parkway Extension
Design Report**

Item	No build	Alignment 1	Alignment 2	Alignment 3
<p>Railroad Requirements/Impacts</p>	<p>None. Continued noise associated with refrigerated railcar switching and storage activities.</p>	<p>Alignment 1 will require removal of all but the single POB through line. It provides adequate space to modify the tracks to provide railcar switching and storage activities east of the project. However, the Railroads have not yet agreed to the track modifications.</p>	<p>Alignment 2 will require removal of all but the single POB through line. It provides adequate space to modify the tracks to provide railcar switching and storage activities east of the project. However, the Railroads have not yet agreed to the track modifications.</p>	<p>Alignment 3 will also require removal of all but the single POB through line; however, unlike Alignments 1 and 2 it does not leave enough room to re-construct the rail lines to provide railcar switching and storage as required by the railroads, without moving the switching activities closer to the residential area. This alignment cannot be constructed until another option for the rail operations can be found.</p>
<p>Impacts to the Residential Areas</p>	<p>None. Continued noise complaints associated with refrigerated railcar switching and storage activities.</p>	<p>Alignment 1 will allow re-construction of the rail lines east of the new roadway moving the switching and storage of the refrigerated railcars farther from the neighborhood.</p>	<p>Alignment 2 will allow re-construction of the rail lines east of the new roadway moving the switching and storage of the refrigerated railcars farther from the neighborhood.</p>	<p>Alignment 3 precludes re-construction the rail lines to allow the removal of three of the rails and prevent the construction of the project until another option for the rail operations can be found.</p>
<p>Right of Way</p>	<p>No impact</p>	<p>Alignment 1 requires approximately 137,923 sf of right-of-way and leaves 28,017 sf of remnant property.</p>	<p>Alignment 2 requires approximately 133,080 sf of right-of-way and leaves 26,306 sf of remnant property.</p>	<p>Alignment 3 requires approximately 109,261 sf of right-of-way and leaves 21,165 sf of remnant property of which 18,583 is undevelopable.</p>
<p>Maintenance</p>	<p>No impact</p>	<p>Normal roadway maintenance.</p>	<p>Normal roadway maintenance.</p>	<p>Alignment 3 is very close to the 30-foot high Home Depot wall. Proximity to this wall may restrict future widening. Additionally, the 30-ft wide remnant parcel will be required to be maintained by the City.</p>

Alignment Evaluation
Continued

N. Center Parkway Extension
Design Report

Item	No build	Alignment 1	Alignment 2	Alignment 3
Traffic Flow	This option provides for no relief from the increasing traffic demands in the area. Neither does it improve access to SR 240.	Alignment 1 would provide improved traffic capacity for the area.	Alignment 1 would provide improved traffic capacity for the area.	Alignment 3 provides the least lane capacity due to drivers reducing speeds due to the substandard horizontal curves and the unusual alignment.
Costs	No impact from construction costs. There is an economic impact to community due to increased congestion.	Total roadway cost is \$1,750,000.	Total roadway cost is \$1,771,000.	Total roadway cost is \$1,850,000.
Conclusion			Alignment 2 is the recommended alignment.	

RECOMMENDATIONS

Alignment 2 best meets the goals of extending Center Parkway from Gage Boulevard to Tapteal Drive at or near the lowest estimated cost. Alignment 2 provides the best horizontal alignment, best meets driver expectations, and provides a safe and efficient route to connect these two arterial roadways and will provide a safe and convenient connection between this commercial area and Columbia Center Boulevard and State Route 240.

Based on this study it is recommended that the cities pursue the following:

- Center Parkway be extended from Gage Boulevard to Tapteal Drive following the recommended Alignment 2.
- Authorize acquisition of the required right of way and initiate final design of the roadway.
- Continue coordination between the cities and the railroads to resolve the conflict between the roadway extension and the railcar switching and storage activities to allow the removal of three of the existing railroad tracks at the proposed roadway.

Appendices

- A. Cost Estimates
- B. Community Support
- C. Railroad Alternatives

Appendix A -- Cost Estimates

**CENTER PARKWAY
CONSTRUCTION COST ESTIMATE**

5854.010

ITEM NO.	ITEM DESCRIPTION	Alternate 1				Alternate 2 (Preferred)				Alternate 3				
		UNITS	QTY	UNIT PRICE	TOTAL	QTY	UNIT PRICE	TOTAL	QTY	UNIT PRICE	TOTAL			
	GENERAL													
1	MOBILIZATION	LS	1	\$15,000.00	\$15,000.00	1	\$15,000.00	\$15,000.00	1	\$15,000.00	\$15,000.00	1	\$15,000.00	\$15,000.00
2	CLEAR AND GRUB	AC	1.37	\$3,000.00	\$4,110.00	1.37	\$3,000.00	\$4,110.00	2.20	\$3,000.00	\$6,600.00			
3	ACP REMOVAL	LS	1	\$2,500.00	\$2,500.00	1	\$2,500.00	\$2,500.00	1	\$1,250.00	\$1,250.00			
4	EXCAVATION, GRADING & FINE GRADING	CY	12,592	\$4.00	\$50,368.00	12,673	\$4.00	\$50,692.00	13,813	\$4.00	\$55,252.00			
5	3" TOP & 6" BASE COURSE	TON	3,629	\$9.00	\$32,661.00	3,624	\$9.00	\$32,616.00	3,622	\$9.00	\$32,598.00			
6	ACP CLASS 3"-8"	TON	1,344	\$37.00	\$49,728.00	1,342	\$37.00	\$49,654.00	1,341	\$37.00	\$49,617.00			
7	STD CURB AND GUTTER	LF	3,299	\$7.50	\$24,742.50	3,294	\$7.50	\$24,705.00	3,293	\$7.50	\$24,697.50			
8	CURB & GUTTER REMOVAL	LF	706	\$10.00	\$7,060.00	694	\$10.00	\$6,940.00	329	\$10.00	\$3,290.00			
9	4.5' CONCRETE SIDEWALK, 4" THICK	SYD	1,050	\$22.00	\$23,100.00	1,050	\$22.00	\$23,100.00	1,050	\$22.00	\$23,100.00			
10	7.5' CONCRETE SIDEWALK, 4" THICK	SYD	999	\$21.978.00	\$21,978.00	995	\$22.00	\$21,890.00	994	\$22.00	\$21,868.00			
11	TRAFFIC CONTROL	LS	1	\$2,500.00	\$2,500.00	1	\$2,500.00	\$2,500.00	1	\$2,500.00	\$2,500.00			
12	DUST CONTROL	LS	1	\$15,000.00	\$15,000.00	1	\$15,000.00	\$15,000.00	1	\$15,000.00	\$15,000.00			
	300' CURB AND SIDEWALK MODS S. OF GAGE AND INTERSECTION MODIFICATIONS AND STRIPING.	LS				1	\$25,000.00	\$25,000.00						
13														
14	CATCH BASIN, TYPE 1	EA	10	\$550.00	\$5,500.00	10	\$550.00	\$5,500.00	10	\$550.00	\$5,500.00			
15	DRYWELL	EA	4	\$4,500.00	\$18,000.00	4	\$4,500.00	\$18,000.00	4	\$4,500.00	\$18,000.00			
16	OIL / WATER SEPARATOR	EA	4	\$1,500.00	\$6,000.00	4	\$1,500.00	\$6,000.00	4	\$1,500.00	\$6,000.00			
17	12" DIA. STORM DRAIN PIPE AND EX/BACKFILL	LF	283	\$11.50	\$3,254.50	283	\$11.50	\$3,254.50	289	\$11.50	\$3,323.50			
18	TRENCH SAFETY	LF	0	\$0.50	\$0.00	0	\$0.50	\$0.00	0	\$0.50	\$0.00			
19	STORMDRAIN POND MODIFICATIONS	LS							1	\$15,000.00	\$15,000.00			
	TOTAL GENERAL:				\$281,502.00			\$306,461.50			\$298,596.00			
	STREET LIGHTS													
20	STREET LIGHTS, CONDUIT, CONDUCTORS	EA	11	\$4,000.00	\$44,000.00	11	\$4,000.00	\$44,000.00	11.00	\$4,000.00	\$44,000.00			
	RAILROAD SIGNAL AT POB TRACKS													
21	RAILROAD CROSSING WITH ARMS	EA	1	\$220,000.00	\$220,000.00	1	\$220,000.00	\$220,000.00	1.00	\$220,000.00	\$220,000.00			
	WATER -- NOT INCLUDED													
	SANITARY SEWER -- NOT INCLUDED													
	SUBTOTAL:				\$545,502.00			\$570,461.50			\$562,596.00			
	SURVEYING, STAKING AND MATERIALS TESTING:				\$27,275.10			\$28,523.08			\$28,129.80			
	20% CONTINGENCY:				\$109,100.40			\$114,092.30			\$112,519.20			
	TOTAL (rounded to thousands):				\$682,000.00			\$713,000.00			\$703,000.00			

**CENTER PARKWAY
RIGHT-OF-WAY COST ESTIMATE**

5854.010

ITEM NO.	ITEM DESCRIPTION	UNITS	Alternate 1			Alternate 2 (Preferred)			Alternate 3			
			QTY	UNIT PRICE	TOTAL	QTY	UNIT PRICE	TOTAL	QTY	UNIT PRICE	TOTAL	
	PROPERTY ACQUISITION											
1	COLUMBIA CENTER EAST (MALL)	SF	18,000	\$10	\$180,000	18,000	\$10	\$180,000	34,436	\$10	\$344,360	
2	COLUMBIA CENTER WEST	SF	15,670	\$10	\$156,700	12,583	\$10	\$125,830	9,855	\$10	\$98,550	
3	BANNER BANK	SF	7,278	\$10	\$72,780	4,504	\$10	\$45,040	3,135	\$10	\$31,350	
4	MAIL BY THE MALL	SF	13,698	\$10	\$136,980	13,698	\$10	\$136,980		\$10		
5	BENTON PUD	SF	19,653	\$10	\$196,530	19,653	\$10	\$196,530		\$10		
6	LOT 1	SF	486	\$10	\$4,860	486	\$10	\$4,860		\$10		
7	HOME OWNERS ASSOC	SF	22,870	\$10	\$228,700	24,304	\$10	\$243,040	2,984	\$10	\$29,840	
8	Taptal Properties LLC	SF	40,268	\$10	\$402,680	39,852	\$10	\$398,520	58,851	\$10	\$588,510	
	PROPERTY ACQUISITION TOTAL:		137,923		\$1,379,230	133,080		\$1,330,800	109,261		\$1,092,610	
	BUILDING AND RELOCATION COSTS											
9	MAIL BY THE MALL	LS	1	\$145,000	\$145,000	1	\$145,000	\$145,000	0			
	RE-SALE-ABLE PROPERTY											
	PUD REMAINDER	SF	7,542	-\$10	-\$75,420	7,542	-\$10	-\$75,420	0	-\$10	\$0	
	CC WEST REMAINDER	SF	4,820	-\$10	-\$48,200	2,004	-\$10	-\$20,040	2,582	-\$10	-\$25,820	
	HOME OWNER REMAINDER	SF	15,655	-\$10	-\$156,550	16,760	-\$10	-\$167,600	0	-\$10	\$0	
	RE-SALE-ABLE PROPERTY TOTAL		-28,017		-\$280,170	-26,306		-\$263,060	-2,582		-\$25,820	
	SQUARE FOOTAGE SUMMARY:											
		SF	109,906			106,774			106,679			
	GRAND TOTAL (ROUNDED TO THOUSANDS):				\$964,000			\$950,000			\$1,041,000	

**CENTER PARKWAY
RAILROAD RECONSTRUCTION COST ESTIMATE
RECONSTRUCTION AT RICHLAND JUNCTION**

5854.010

COST ESTIMATE*

ITEM NO.	ITEM DESCRIPTION	UNITS	RR Alternate 1		RR Alternate 2	
			QTY	TOTAL	QTY	TOTAL
1	Reconstruction	LF	2,671	\$1,075,000.00	2,473	\$1,043,000.00
	TOTAL COST (rounded to thousands)			\$1,075,000.00		\$1,043,000.00

*Estimate from HDR Engineering

Appendix B -- Community Support

News Letter

Open House Invitation

Open House Sign Attendees and Comment Sheets



**NEWSLETTER
CENTER PARKWAY EXTENSION
Gage Boulevard to Tapteal Drive**

The Cities of Kennewick and Richland have jointly secured federal funding for the extension of Center Parkway from Gage Boulevard to Tapteal Drive. At this time, surveying to locate existing property boundaries, structures and utilities within the project limits is being scheduled. Project construction is tentatively scheduled to begin in September 2002.

1. What improvements are being considered?

The proposed extension of Center Parkway will include improvements to the Gage Boulevard intersection, including a traffic signal, and existing water and sewer utilities in the area. The project will require a crossing of the existing Port of Benton and Union Pacific railroad tracks. The exact location and alignment for extension of the roadway will be determined during preliminary engineering and design.

2. Who is involved?

The City of Kennewick is the lead agency in cooperation with the City of Richland through an inter-local agreement. SCM Consultants, Inc. has been retained to perform project engineering and design. Permit Surveying, Inc. will be performing the land and topographic surveying for the project. Informational meetings will be scheduled in the near future to help local property and business owners understand how the project may impact them.

3. Who is paying for it?

The project is being funded with Rural Economic Vitality (REV) funds, as well as Surface Transportation Program (STP) funds and local matching funds.

4. **What is the schedule?**

Topographic and property boundary surveying for the Center Parkway extension will be starting soon, in order to establish project design constraints. Preliminary engineering and design for the proposed roadway alignment will begin once the surveying is complete. Completion of detailed design is expected in September 2002 with construction scheduled to occur between September 2002 and June 2003.

5. **What input will I have?**

An initial meeting will be scheduled in the Fall of 2001 to acquaint property and business owners with the project and to receive their input. Additional meetings may be held as the design proceeds.

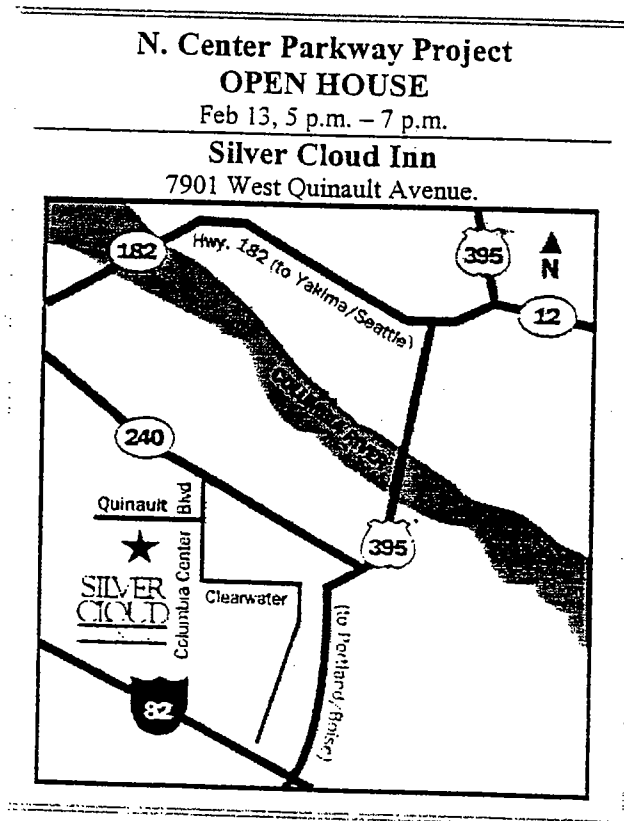
6. **Who can I call if I have any questions?**

Steve Plummer, Project Engineer
City of Kennewick

Phone: (509) 585-4287
Fax: (509) 585-4451
e-mail SteveP@ci.kennewick.wa.us

Richard Evans
SCM Consultants, Inc.
7601 Clearwater Avenue, #301
Kennewick, WA 99336

Resident



Hello,

The Cities of Kennewick and Richland are working on a project to extend Center Parkway from Gage Boulevard to Tapteal Drive. SCM Consultants, Inc. is the project consultant. This improvement is needed to handle the increasing transportation needs in this area. At this time the survey of the property and the conceptual design phase have been completed.

You are invited to an open house February 13, 2002 from 5:00 p.m. to 7:00 p.m. There will not be a formal presentation so you may arrive any time during the open house. We will have displays showing the alignment alternatives and be available to answer any questions you have about the project. The open house will be held in the conference room at the Silver Cloud Inn, 7901 W. Quinault Avenue. We hope you will attend.

If you have any questions about the open house please contact Richard Evans, SCM Consultants, at 783-1625.

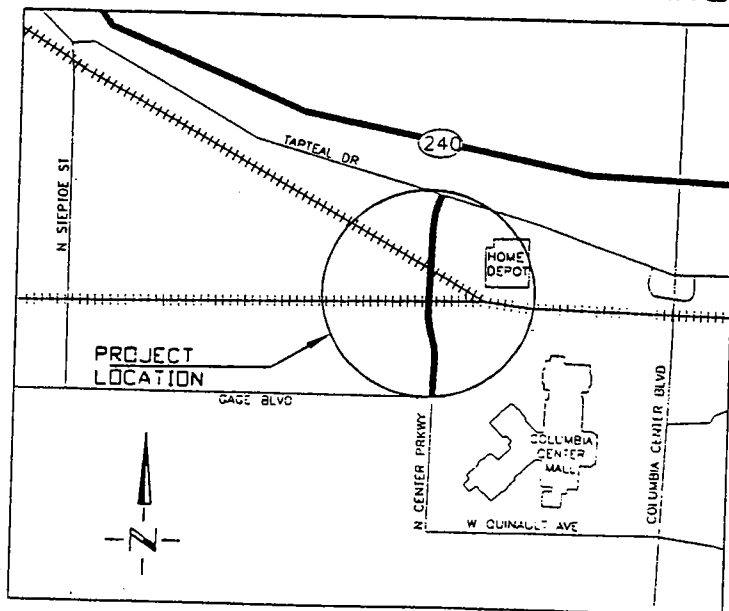
Sincerely,

The City of Kennewick

The City of Richland

VICINITY MAP

N CENTER PARKWAY EXTENSION GAGE BOULEVARD TO TAPTEAL DRIVE



NORTH CENTER PARKWAY OPEN HOUSE

February 13, 2002

	<u>Name</u>	<u>Address</u>	<u>Phone</u>
1.	Steve Hunter BPOD	P.O. Box 6270	582-1217
2.	DANNY HOLDEN Charter	639 N Kellogg	222-2665
3.	Dean Kelley	639 N Kellogg	222-2665
4.	BRAD LANGDELL BPOD	P.O. Box 6270 KENN	582-1231
5.	Richard G. Ciccone	Bent Franklin Transit	734-5132
6.	Floyd & Dixie Shuman	8306 W. Hawthorne	783-2833
7.	Barb Hill	1606 S Roosevelt PL	783-4206
8.	DAVID BIXBY	Banner Bank	946-9585
9.	John Crockett	8409 W Canyon AVE	735-9675
10.	Marie Crockett	ditto	ditto
11.	David & Lisa Jones	8519 W Arrowhead Ave	
12.	Gomez Victor	8236 GAGE BLVD	783-5022
13.	DANN FLESMER	8428 Gage Blvd	734-0630
14.	Chris Reich	8428 Gage	734-0630
15.	Santa Wingham	8318 W Gage Blvd	735 6450
16.	Laurie McCoy	8220 Gage Blvd	783-8269
17.	Ken Miller	1020 Center Parkway Suite B Kennewick, WA 99336	374 4200

NORTH CENTER PARKWAY OPEN HOUSE

February 13, 2002

	<u>Name</u>	<u>Address</u>	<u>Phone</u>
1.	Mark Montell	9451 W. STATE STREET RD KASCO	783-2141
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
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15.			
16.			
17.			

NORTH CENTER PARKWAY OPEN HOUSE

February 13, 2002

	<u>Name</u>	<u>Address</u>	<u>Phone</u>
1.	Nancy Christensen	USBR	
2.	Alan Scherzinger	USBR	
3.	DAN Kaufman	city	
4.			
5.			
6.			
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16.			
17.			

NORTH CENTER PARKWAY OPEN HOUSE

February 13, 2002

Name: DAVE BIXBY - Banner Bank

Comments: To the City?

We would like to have you
consider taking over the private
road (owned by the Property Owners
Assoc) between ~~the~~ Lot 1 and
Lot 2 of SP 558

NORTH CENTER PARKWAY OPEN HOUSE

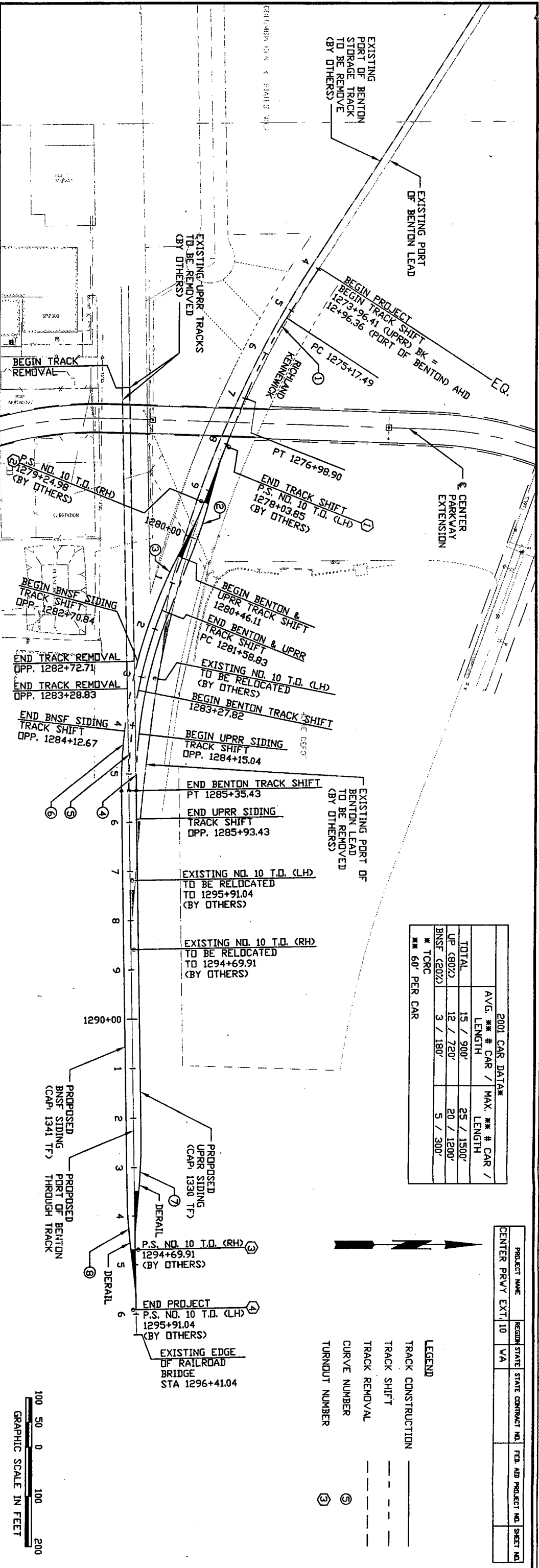
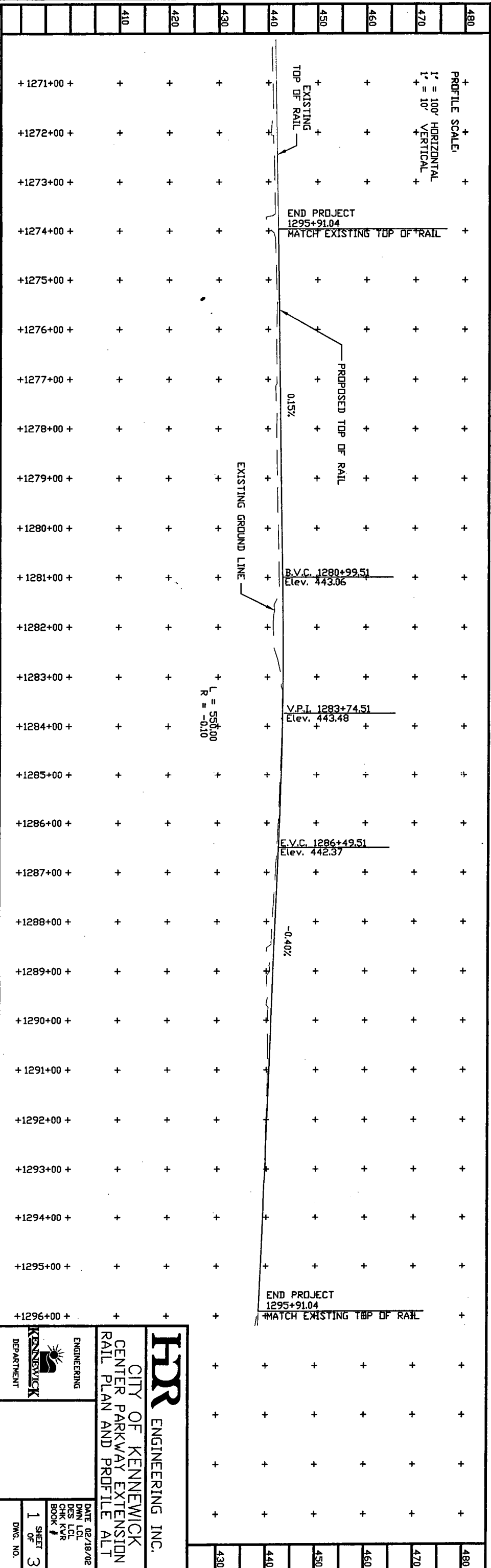
February 13, 2002

Name: Floyd + DIXIE Johnson 7830283

Comments: Please help stop Train
switching & whistles. We do
NO wish to have this situation
made worse.
Thank you

Appendix C -- Railroad Alternatives

Plan and Profile Sheets

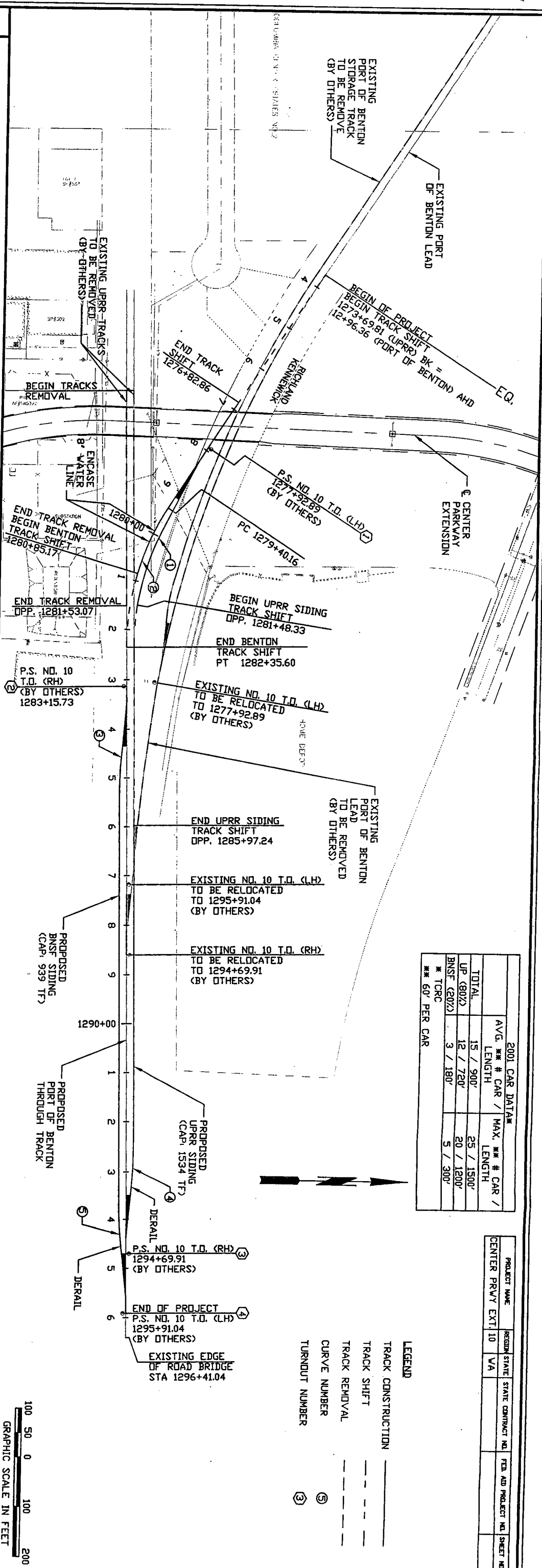
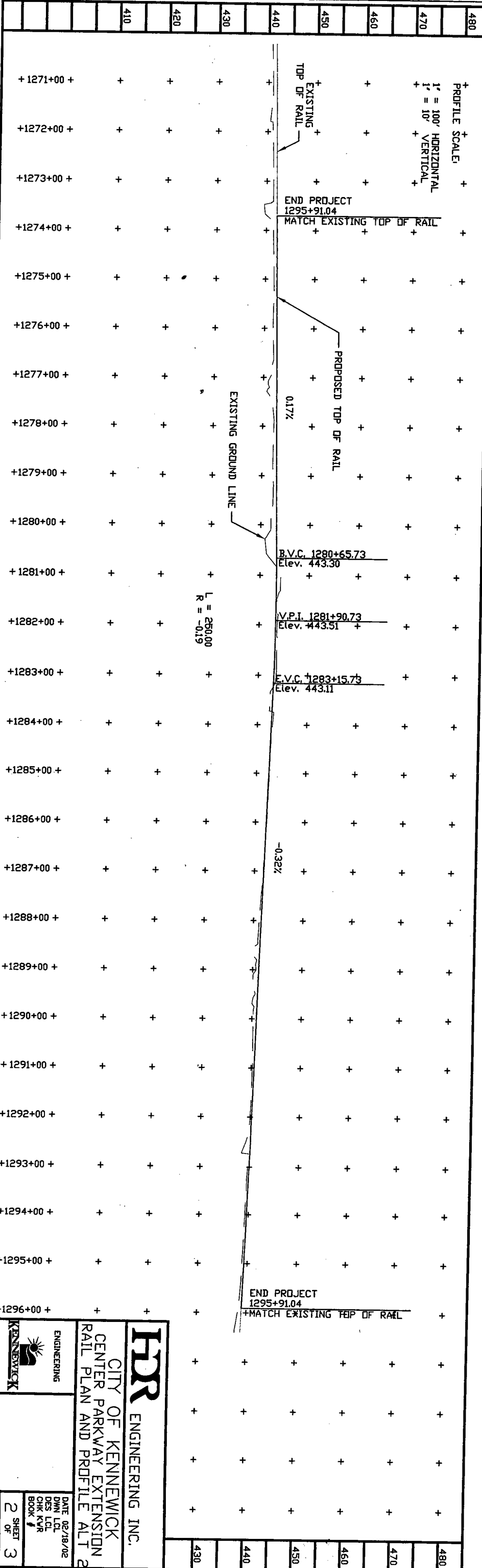


HDR ENGINEERING INC.
 CITY OF KENNEWICK
 CENTER PARKWAY EXTENSION
 RAIL PLAN AND PROFILE ALT 1

ENGINEERING DEPARTMENT

DATE: 02/18/02
 DWN LCL
 DES LCL
 CHK KVR
 BOOK 1

1 SHEET
 OF 3
 DWG. NO.:



2001 CAR DATA			
AVG. # CAR / LENGTH	# CAR / LENGTH	MAX. # CAR / LENGTH	# CAR / LENGTH
TOTAL	15 / 900'	25 / 1500'	
UP (80%)	12 / 720'	20 / 1200'	
BNSF (20%)	3 / 180'	5 / 300'	
* TCRC			
** 60' PER CAR			

PROJECT NAME	REGION STATE	STATE CONTRACT NO.	FED. AID PROJECT NO.	SHEET NO.
CENTER PRVY EXT. 10	VA			

LEGEND

TRACK CONSTRUCTION ———

TRACK SHIFT - - - - -

TRACK REMOVAL - - - - -

CURVE NUMBER (5)

TURNOUT NUMBER (3)



HRR ENGINEERING INC.

CITY OF KENNEWICK
 CENTER PARKWAY EXTENSION
 RAIL PLAN AND PROFILE ALT 2

ENGINEERING
 DEPARTMENT

DATE 02/18/02
 DNN LCL
 DES LCL
 CHK KVR
 BOOK #

2 SHEET OF 3
 DWG. NO.

CURVE DATA - CENTER PARKWAY EXTENSION ALTERNATIVE 1

NO.	STATIONING	POINT	TOTAL DELTA	DELTA	D	R	TOTAL T	T	L	DELTA SP.	L _s	NORTHING	EASTING
SHEET 1	1275+17.49	PC											
	1276+08.49	PI	11°19'57"	6°15'	917.19'		91.00'	181.14'				10328.49	8081.98
	1276+98.90	PT										10279.12	8158.42
	1280+46.56	PC										10245.72	8243.07
	1279+76.30	PI	6°07'51"	6°00'	955.37'		51.16'	102.23'				10171.46	8457.30
	1281+48.59	PT										10085.52	8506.63
	1280+97.44	PC										10066.74	8554.22
	1281+48.59	PI	6°07'51"	6°00'	955.37'		51.16'	102.23'				10080.99	8562.98
SHEET 2	1281+48.59	PT										10021.99	8608.30
	1281+58.83	PC										10025.45	8655.89
	1283+49.61	PI	22°35'07"	6°06'	940.37'		187.78'	370.86'				10076.94	8676.42
	1285+35.43	PT										10006.53	8851.10
	1281+58.83	PC										10010.45	9038.85
	1283+49.61	PI	22°35'07"	6°00'	955.37'		190.77'	376.59'				10062.99	8670.92
	1285+35.43	PT										9991.88	8848.38
	1281+58.83	PC										9995.45	9039.12
SHEET 3	1281+58.83	PT										10082.99	8665.41
	1283+49.61	PI	22°35'07"	5°54'	970.37'		193.77'	382.51'				9991.88	8845.86
	1285+35.43	PT										9995.45	9039.40
	1282+39.69	PC										10038.44	8742.98
	1292+87.46	PI	5°43'26"	6°00'	955.37'		47.76'	95.44'				10039.32	8790.75
	1293+34.98	PT										10035.43	8838.35
	1293+60.82	PC										10010.68	8864.66
	1294+08.59	PI	5°43'26"	6°15'	955.37'		47.76'	95.44'				10011.56	8912.41
1294+56.11	PT										10017.20	8959.84	

CURVE DATA - CENTER PARKWAY EXTENSION ALTERNATIVE 2

NO.	STATIONING	POINT	TOTAL DELTA	DELTA	D	R	TOTAL T	T	L	DELTA SP.	L _s	NORTHING	EASTING
SHEET 1	1279+87.92	PC											
	1281+10.56	PI	28°11'41"	11°51'	484.06'		121.56'	238.20'				10073.08	8507.03
	1282+33.21	PT										10017.63	8615.21
	1279+40.16	PC										10019.88	8736.76
	1280+92.35	PI	33°55'07"	11°30'	489.06'		152.19'	295.44'				10084.70	8459.35
SHEET 2	1282+35.60	PT										10002.12	8587.19
	1284+51.48	PC										10004.92	8739.35
	1284+98.18	PI	5°37'27"	6°00'	955.37'		46.93'	93.78'				9998.50	8955.39
	1285+45.11	PT										9994.77	9002.16
	1292+39.69	PC										9995.63	9049.08
SHEET 3	1292+87.46	PI	5°43'26"	6°00'	955.37'		47.76'	95.44'				10038.44	8742.98
	1293+34.97	PT										10039.32	8790.75
	1293+60.82	PC										10035.43	8838.35
	1294+08.58	PI	5°43'26"	6°00'	955.37'		47.76'	95.44'				10010.68	8864.66
	1294+56.10	PT										10011.56	8912.41

TURNOUT COORDINATE DATA - CENTER PARKWAY EXTENSION ALTERNATIVE 1

NO.	TURNOUT	STATIONING	POINT	NORTHING	EASTING
SHEET 1	NO. 10 (LH)	1278+03.85	P.S.	10207.21	8340.70
		1278+36.65	P.L.	10195.17	8371.22
	NO. 10 (RH)	1279+24.98	P.S.	10162.76	8453.38
		1279+57.78	P.L.	10150.72	8483.89
SHEET 2	NO. 10 (RH)	1294+37.10	P.L.	10027.08	9940.65
		1294+69.91	P.S.	10027.68	9973.44
	NO. 10 (LH)	1295+58.23	P.L.	10029.31	10061.76
		1295+91.04	P.S.	10029.92	10094.55

TURNOUT COORDINATE DATA - CENTER PARKWAY EXTENSION ALTERNATIVE 2

NO.	TURNOUT	STATIONING	POINT	NORTHING	EASTING
SHEET 1	NO. 10 (LH)	1277+92.89	P.S.	10164.61	8335.64
		1278+25.69	P.L.	10146.81	8365.20
	NO. 10 (RH)	1283+15.73	P.S.	10006.40	8819.47
		1283+48.56	P.L.	10006.94	8849.99
SHEET 2	NO. 10 (RH)	1294+37.10	P.L.	10027.08	9940.65
		1294+69.91	P.S.	10027.68	9973.44
	NO. 10 (LH)	1295+58.23	P.L.	10029.31	10061.76
		1295+91.04	P.S.	10029.92	10094.55

HDR ENGINEERING INC.
 CITY OF KENNEWICK
 CCB/BNSF GRADE SEPARATION
 CURVE AND TURNOUT DATA

ENGINEERING
 KENNEWICK
 DEPARTMENT

DATE 02/18/02
 DRN LCL
 DES LCL
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 BOOK 777

3 SHEET OF 3
 DWG. NO.