

ORIGINAL

BEFORE THE WASHINGTON STATE
UTILITIES AND TRANSPORTATION COMMISSION

CITY OF FIFE,

Petitioner,

v.

UNION PACIFIC RAILROAD,

Respondent.

DOCKET TR-100098

PREPARED TESTIMONY OF CHARLES
BURNHAM, P.E.

Summary of Testimony: I, Charles E. Burnham will testify regarding the design, location and cost of the proposed pedestrian at-grade crossing as well as the alternatives considered by the City.

Testimony:

1. Please State your name, job title, and place of business.

Charles E. Burnham, PE

Vice President/Senior Project Manager

David Evans and Associates, Inc.

3700 Pacific Highway East, Suite 311

Fife, WA 98424

1 **2. *Briefly describe your education and professional background.***

2 I have a BS in Civil Engineering from the University of Washington. I am a Registered
3 Professional Engineer in the State of Washington. I have over 35 years of experience as an engineer
4 all in the rail industry.

5 **3. *What is your involvement with the City's proposed at grade pedestrian crossing?***

6 David Evans and Associates, Inc. ("DEA") was hired by City to do engineering and
7 consulting for the proposed pedestrian at-grade crossing. I am the project manager for the project.

8 **4. *Please describe the pedestrian crossing that the City is proposing.***

9 The pedestrian crossing at 54th Avenue will be located immediately east of and parallel with
10 the existing 54th Avenue grade crossing. The crossing of the track is a precast concrete crossing. The
11 approaches are asphalt concrete. The 12-foot pathway will be separated from the roadway by a chain
12 link fence. The plans for the proposed pedestrian crossing are attached hereto as Exhibit No. ____
13 (CEB – 2).

14 **5. *Please describe the safety features that will be utilized.***

15 Both crossing approaches will be fenced to keep pedestrians on the pathway and direct them
16 to crossing. The approaches to the crossing will both have Z-gates in the pathway. Z-gates force
17 pedestrians to move through a chicane to slow them down and face them in both directions parallel to
18 the UPRR track before crossing the track. The crossing will also be protected by automatic flashing
19 railroad crossing lights and gates. There will be a concrete tactile warning strip on each approach.
20 Appropriate signing and pavement striping will also be utilized.

21 **7. *Please describe the grade and alignment of the proposed crossing.***

22 The alignment of the pathway approximately parallels the easterly edge of 54th Avenue. It
23 connects on the south to an existing sidewalk on the east side of the street. On the north, it connects
24

1 to an existing pathway on the eastside of the street approximately 135 feet north of the crossing.
2 Approach grades are 2.49% from the south and 6.25% from the north. The grade is level for 25 feet
3 each way from the centerline of the track along the pathway. The grade north of the crossing slightly
4 exceeds the recommended approach grade of 5.00%. This is necessary to meet the grade of the
5 existing pathway north of the crossing.

6 **8. *Are the sight distances adequate?***

7 Sight distances at the crossing are adequate for a passively protected crossing. Sight distance
8 is not a consideration at an actively protected crossing with automatic signals and gates. Refer to
9 Section 7b of the petition and the Pedestrian Sight Distance diagram attached hereto as Exhibit No.
10 ____ (CEB-3) for additional information.

11 **9. *Did DEA prepare a cost estimate for the proposed at-grade pedestrian crossing?***

12 DEA did not prepare a formal cost estimate. UPRR will design the modifications to the
13 existing grade crossing signals and gates and prepare a cost estimate for that work. The other
14 pedestrian crossing improvements include fencing, gates, culverts, concrete tactile warning pads,
15 asphalt paving, signage and pavement striping. The estimated costs for the general pathway
16 improvements are expected to be in the range of \$50,000 to \$75,000. Based on my professional
17 experience a rough estimate of total costs for the at-grade pedestrian crossing is \$155,000 to
18 \$250,000.

19 **10. *Did DEA analyze grade separation alternatives?***

20 Yes, our firm prepared a pedestrian grade separation study in September 2007, analyzing
21 three alternative locations for a pedestrian over/under pass in three different locations in the area
22 between 54th Avenue East and 70th Avenue East. A copy of the study and vicinity map are attached
23 hereto as Exhibit No. ____ (CEB-4). Estimated low cost estimates for the alternatives ranged from
24

1 \$2.6 million to \$7.4 million.

2 **11. Did DEA estimate the cost of a pedestrian overpass at the proposed at-grade crossing?**

3 Not specifically. However the costs of a pedestrian over-pass at this location would be very
4 similar to the costs analyzed in Option B of the 2007 study, and the costs of a pedestrian under-pass
5 at this location would be very similar to the costs analyzed in Option C of the 2007 study.

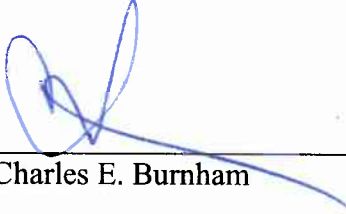
6 **12. Are the price estimates in the 2007 study still reasonably accurate?**

7 Yes.

8
9 **Declaration**

10 I, Charles Burnham, declare under penalty of perjury under the laws of the State of
11 Washington that the foregoing Testimony of Charles E. Burnham, P.E. is true and correct to the best
12 of my knowledge and belief.

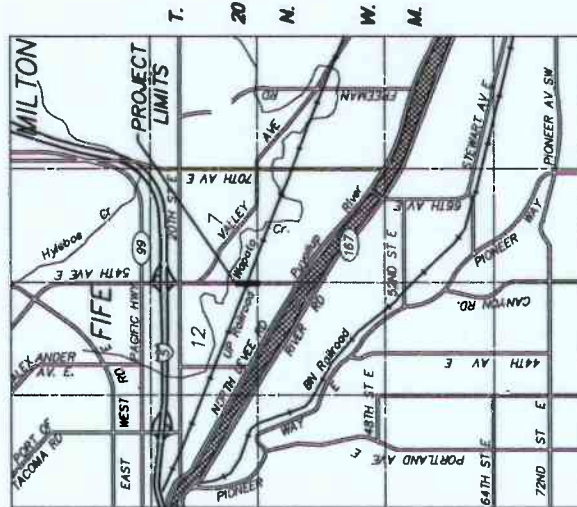
13 Dated this 13TH day of August, 2010

14
15 
16 _____
17 Charles E. Burnham
18
19
20
21
22
23
24

CITY OF FIFE

54TH AVENUE / UPRR PEDESTRIAN GRADE CROSSING

PORTIONS OF SEC. 7 and 12, T.20N., R.3E., AND R.4E., W. M.,
CITY OF FIFE, PIERCE COUNTY, WASHINGTON



VICINITY MAP
NOT TO SCALE

CITY OF FIFE
CITY COUNCIL:

- Barry Johnson, Mayor
- Richard Godwin
- Cedric Brooks
- Glenn Hill
- Rob Carqui
- Nancy de Booy
- Kim Renaceo

CITY MANAGER:
CITY ENGINEER:




- Steve Worthington
- Rues Blount, P.E.

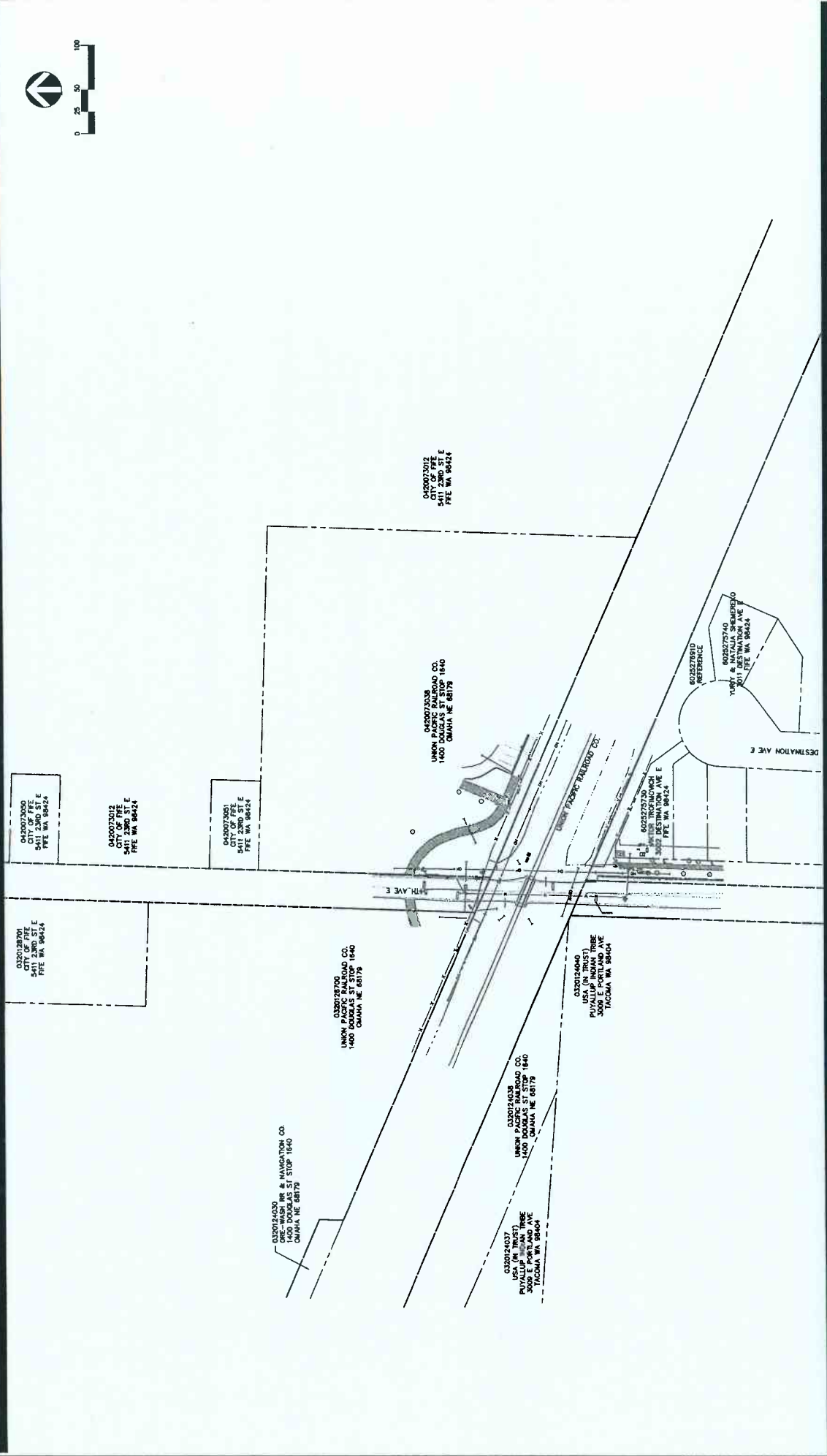
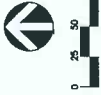
PROJECT OWNER:
CITY OF FIFE



DESCRIPTION	SHEET NO.
COVER SHEET	1
SITE PLAN	2
SITE PREPARATION PLAN	3
GRADING AND DRAINAGE PLAN	4
DRAINAGE SECTIONS	5
DRAINAGE SECTIONS	6
TRACK PLAN AND PROFILE	7
PEDESTRIAN GRADE CROSSING	8
PAVING SECTIONS AND DETAILS	9
FENCE DETAILS	10

Exhibit No. _____ (CEB-2)

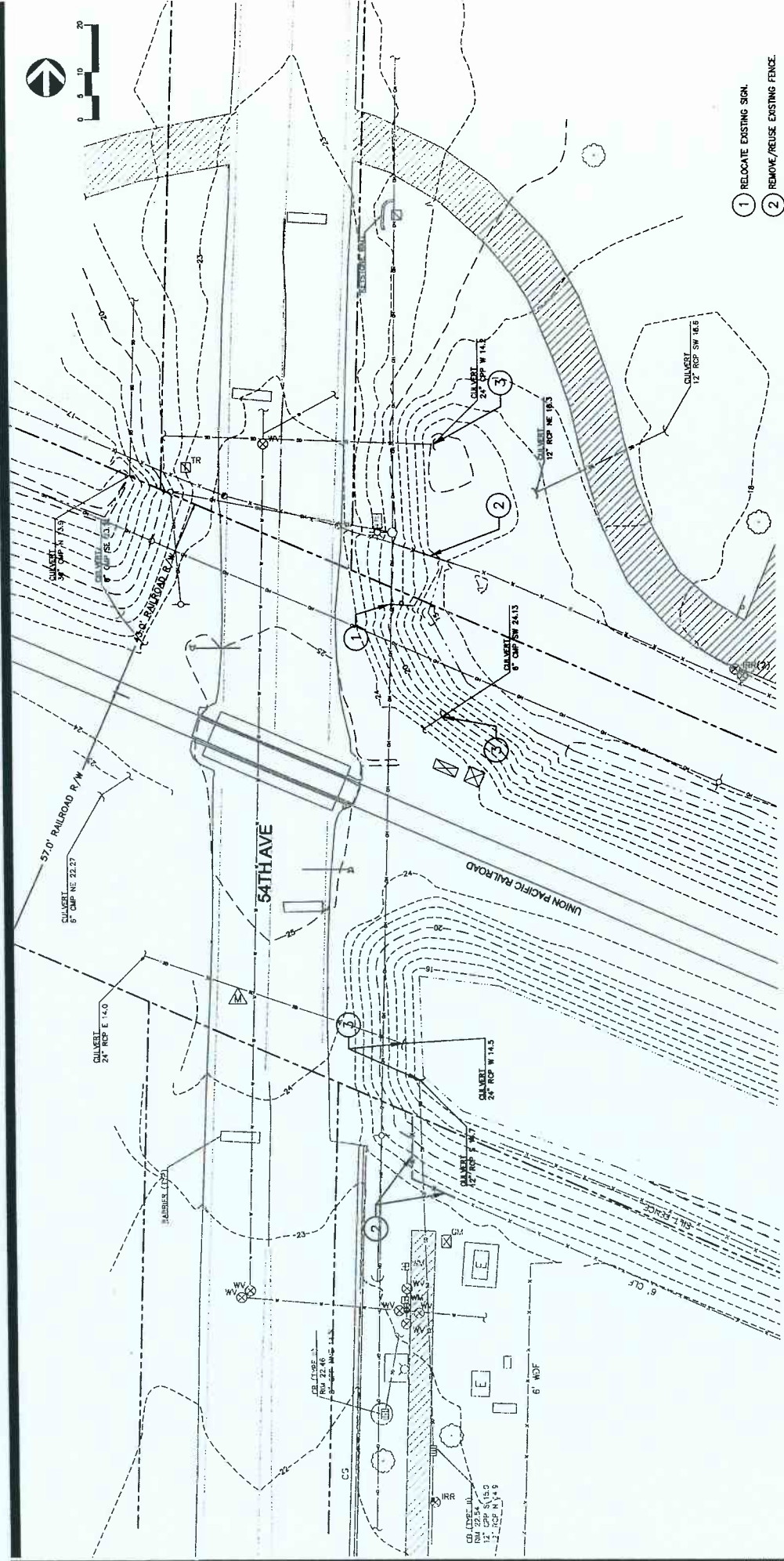
<p>PROJECT NUMBER: C. 1000000000</p> <p>ISSUED BY: C. 1000000000</p> <p>DATE: 10/10/10</p> <p>PROJECT TITLE: 54TH AVENUE / UPRR PEDESTRIAN GRADE CROSSING</p> <p>DATE PLOTTED: 10/10/10</p> <p>FILE: 1000000000.DWG</p>	 	<p>City of Fife Department of Public Works 540-23rd Street East Fife, Washington 98424</p>	<p>DAVID EVANS AND ASSOCIATES INC. 1000 Third Ave. Ste. 200 Tacoma, Washington 98401 Phone: 252-0000</p> 	<p>1 of 10</p> <p>COVER SHEET</p>
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PROJECT NUMBER: C. BIERKELM		SHEET: 2	
DESIGNED BY: C. BIERKELM		2 OF 10	
DRAWN BY: C. BIERKELM		SITE PLAN	
CHECKED BY: M. CLARK			
DATE PLOTTED: MARCH 2009			
FILE: 282P28776154.DWG			
DATE	BY	APPROV.	

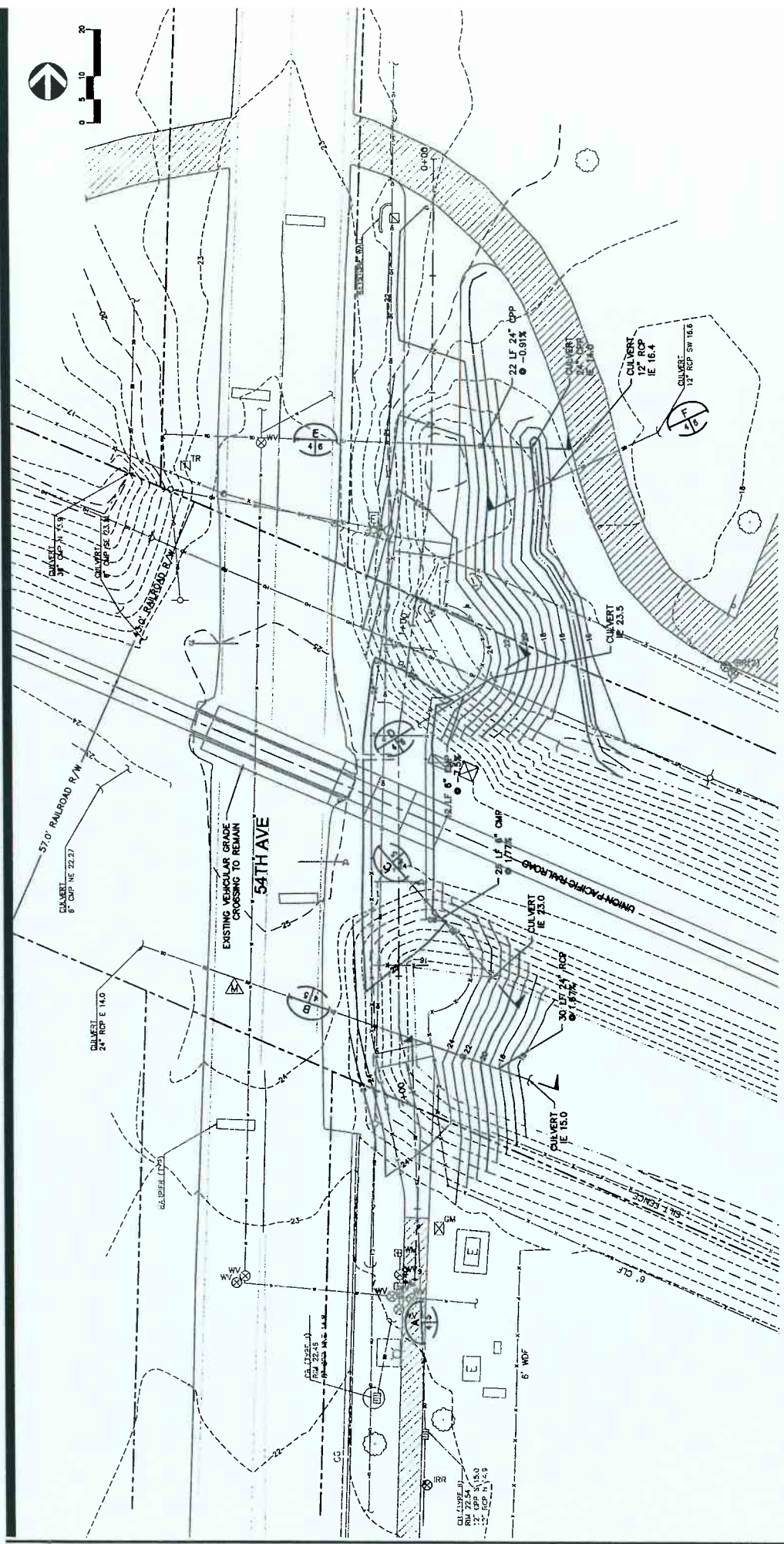
PLANNED BY: DAVID EVANS AND ASSOCIATES INC.
2700 Public Hwy, East, Suite 101
Tacoma, Washington 98404
Phone: 252.622.9790

City of Fife
Department of Public Works
5411-23rd Street East
Fife, Washington 98424



- ① RELOCATE EXISTING SIGN.
- ② REMOVE/REUSE EXISTING FENCE.
- ③ EXTEND EXISTING CONDUIT. SEE GRADING AND DRAINAGE PLAN.

			3 SHEET
City of Pile Department of Public Works		DAVID EVANS AND ASSOCIATES INC. 3000 1st Avenue, Suite 1000 Seattle, WA 98101 Phone: 206.252.7070	
54th-23rd Street East File, Washington 98424		54TH AVENUE/UPRR PEDESTRIAN GRADE CROSSING	
		SITING PREPARATION PLAN	
PROJECT NUMBER: C. BIRDALE	DESIGNED BY: C. BIRDALE	DATE: MARCH 2009	DRAWN BY: M. CLARK
PROJECT TITLE: 54TH AVENUE PEDESTRIAN GRADE CROSSING	DATE: MARCH 2009	DATE: MARCH 2009	DATE: MARCH 2009
PROJECT LOCATION: 54TH AVENUE AND 23RD STREET EAST	DATE: MARCH 2009	DATE: MARCH 2009	DATE: MARCH 2009
PROJECT NUMBER: C. BIRDALE	DESIGNED BY: C. BIRDALE	DATE: MARCH 2009	DRAWN BY: M. CLARK
PROJECT TITLE: 54TH AVENUE PEDESTRIAN GRADE CROSSING	DATE: MARCH 2009	DATE: MARCH 2009	DATE: MARCH 2009
PROJECT LOCATION: 54TH AVENUE AND 23RD STREET EAST	DATE: MARCH 2009	DATE: MARCH 2009	DATE: MARCH 2009



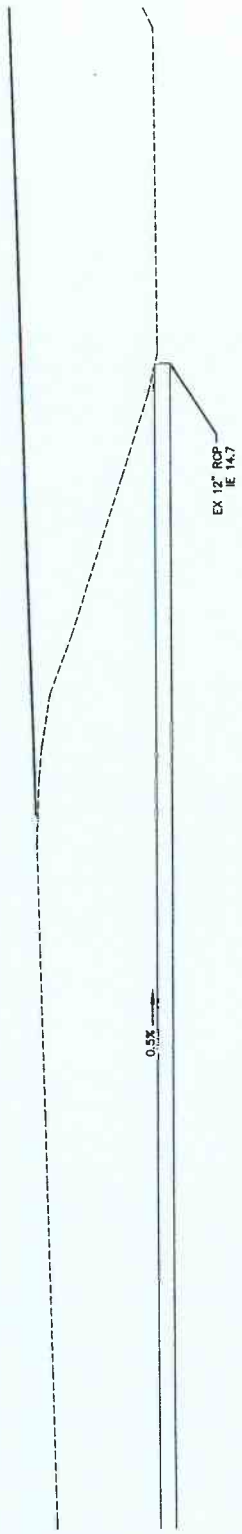
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DESIGNED BY:	C. BURNHAM	DATE:	07/14/10
DRAWN BY:	C. BURNHAM	DATE:	07/14/10
CHECKED BY:	M. CLARK	DATE:	07/14/10
DATE PLOTTED:	MARKE 2009	DATE:	07/14/10
FILE:	BR001070514.DWG	DATE:	07/14/10
APPROVED:		DATE:	

DAVID EVANS AND ASSOCIATES INC.
 2700 Pacific Hwy, Ste. 200
 Tacoma, Washington 98404
 Phone: 253.833.8770

City of Pile
Department of Public Works
 5411-23rd Street East
 Pile, Washington 98424

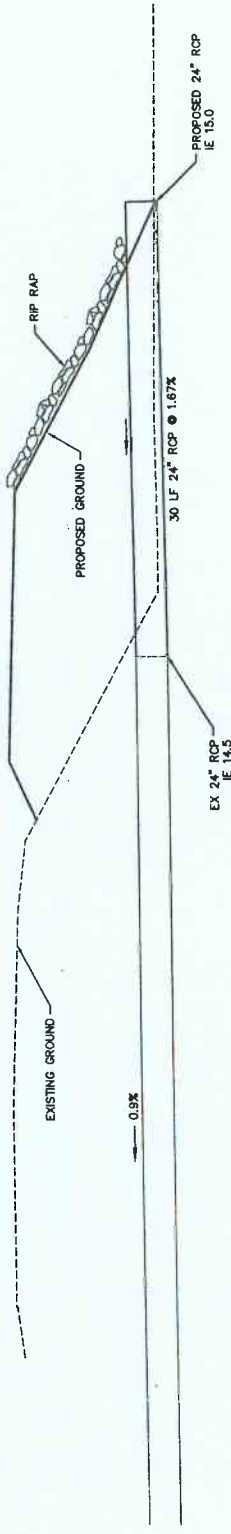


54TH AVENUE/UPRR PEDESTRIAN GRADE CROSSING
 SHEET 4 OF 10
 GRADING AND DRAINAGE PLAN



EX 12" RCP
IE 14.7

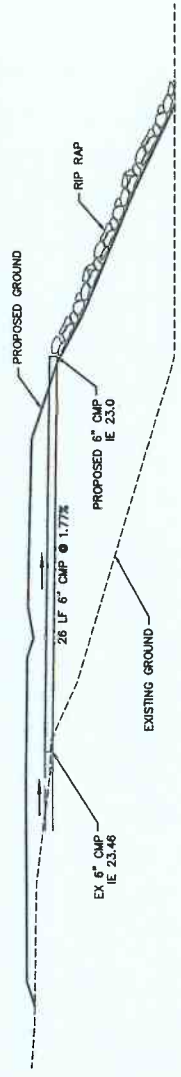
A CULVERT SECTION
4/5 NOT TO SCALE



EX 24" RCP
IE 14.5

PROPOSED 24" RCP
IE 15.0

B CULVERT SECTION
4/5 NOT TO SCALE



EX 6" CUP
IE 23.46

PROPOSED 6" CUP
IE 23.0

C CULVERT SECTION
4/5 NOT TO SCALE

PROJECT NUMBER: C. BIRNBAUM	DATE: []	REVISIONS: []	APPROVED: []
DRAWN BY: C. BIRNBAUM	DATE: []	REVISIONS: []	APPROVED: []
CHECKED BY: M. CLARK	DATE: []	REVISIONS: []	APPROVED: []
DATE PLOTTED: MARCH 2009	DATE: []	REVISIONS: []	APPROVED: []
FILE: BIRNBAUM14-LONG	DATE: []	REVISIONS: []	APPROVED: []

City of Fife
Department of Public Works
54th-23rd Street East
Fife, Washington 98424

DAVID EVANS
AND ASSOCIATES INC.
2002 Public Way, East Side Hill
Tacoma, Washington 98404
Phone: 253.825.7790

54TH AVENUE/UPRR PEDESTRIAN GRADE CROSSING

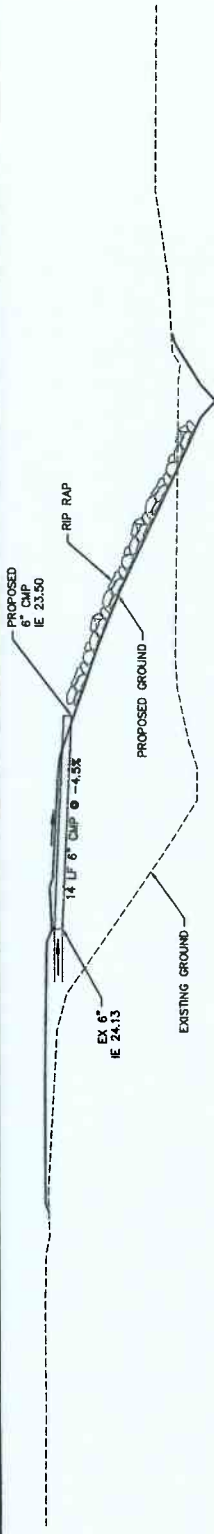
DRAINAGE SECTIONS

54TH AVENUE/UPRR PEDESTRIAN GRADE CROSSING

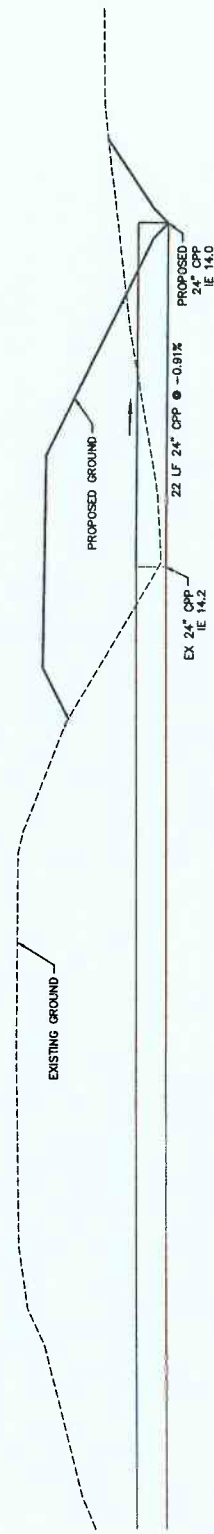
DRAINAGE SECTIONS

5 OF 10

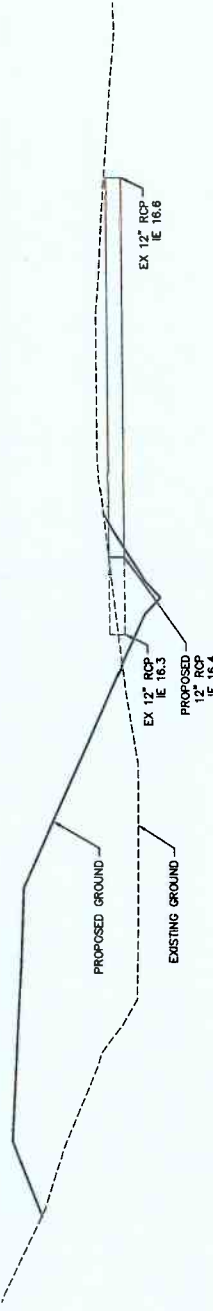
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D CULVERT SECTION
4/8
NOT TO SCALE



E CULVERT SECTION
4/8
NOT TO SCALE



F CULVERT SECTION
4/8
NOT TO SCALE

PROJECT NUMBER:	C. BURNSHAM
DESIGNED BY:	C. BURDEMAN
DRAWN BY:	C. BRECKLEY
CHECKED BY:	M. CLARK
DATE PLOTTED:	MARCH 2009
FILE:	PROJ000P072164.DWG



City of Fife
Department of Public Works
5411-23rd Street East
Fife, Washington 98424

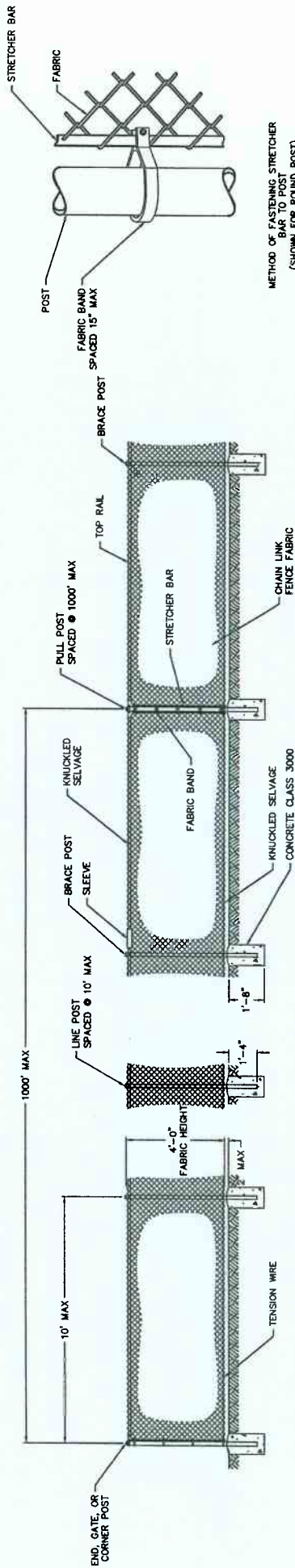


DAVID EVANS
AND ASSOCIATES INC.
2700 Pacific Hwy, Suite 200
Tacoma, Washington 98404
Phone: 252-8270790

S4TH AVENUE/UPRR PEDESTRIAN GRADE CROSSING	
SHEET	6
OF	10
DRAINAGE SECTIONS	

NOTES:

1. ALL CONCRETE POST BASES SHALL BE 10" MINIMUM DIAMETER.
2. TENSION WIRE SHALL BE PLACED WITHIN THE LIMITS OF THE FIRST FULL FABRIC HEAVE.
3. DETAILS ARE ILLUSTRATIVE AND SHALL NOT LIMIT HARDWARE DESIGN OR POST SELECTION OF ANY PARTICULAR FENCE TYPE.

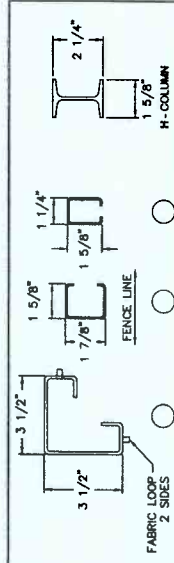


METHOD OF FASTENING STRETCHER BAR TO POST (SHOWN FOR ROUND POST)

TYPE B

POST AND RAIL SPECIFICATIONS

MEMBER	PIPE	ROLL FORMED SECTION	WEIGHT (P/L)	H-COLUMN WEIGHT (P/L)
END, CORNER OR PULL POST	2 1/2" DIAAL	(A)	8.10	
LINE OR BRACE POST	2" DIAAL	(B)	2.40	3.28
BRACE ON TOP RAIL	1 1/4" DIAAL	(C)	1.38	
GATE POST	3 1/2" DIAAL			



PROJECT: C. BURTRHAM
 DESIGNED BY: C. BURTRHAM
 DRAWN BY: C. BURTRHAM
 CHECKED BY: M. CLARK
 DATE PLOTTED: MARCH 2009
 FILE: FSD70177FEL54.JPG

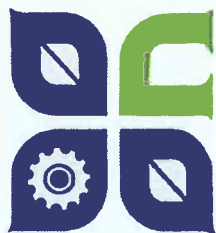


City of Seattle
 Department of Public Works
 5411-23rd Street East
 File, Washington 98142



DAVID EVANS AND ASSOCIATES INC.
 2700 Pacific Hwy, Suite 400
 Tacoma, WA 98409
 Phone: 252-8221700

54TH AVENUE/UFRR PEDESTRIAN GRADE CROSSING
 FENCE DETAILS



City of Fife

UPRR Pedestrian Grade Separated Crossing Type Size and Location Study

Prepared for:

CITY OF FIFE
5411 23rd street East
Fife, Washington 98424

Prepared by:

DAVID EVANS AND ASSOCIATES, INC.
3700 Pacific Highway East, Suite 311
Tacoma, Washington 98424

Contact Person:

Michael D. Clark, P.E.

September 18, 2007

RECEIVED
AUG 21 2007
City of Fife

**UPRR Pedestrian Grade Separated Crossing
Bridge TS&L Report**

TABLE OF CONTENTS

Summary	1
Option Descriptions	2
Environmental Considerations	3
Wetland Location Exhibit	4
Connectivity	5
Construction Duration	5
UPRR Issues	5
Public Acceptance	6
Maintenance	6
Constructability	7
Right-of-way	7
Cost Estimates	8
Decision Matrix	11
Option A	12
Option A with MSE Wall	13
Option B	14
Option B with MSE Wall	15
Option C	16
Option C Tunnel	17
Wetland Exhibit	18

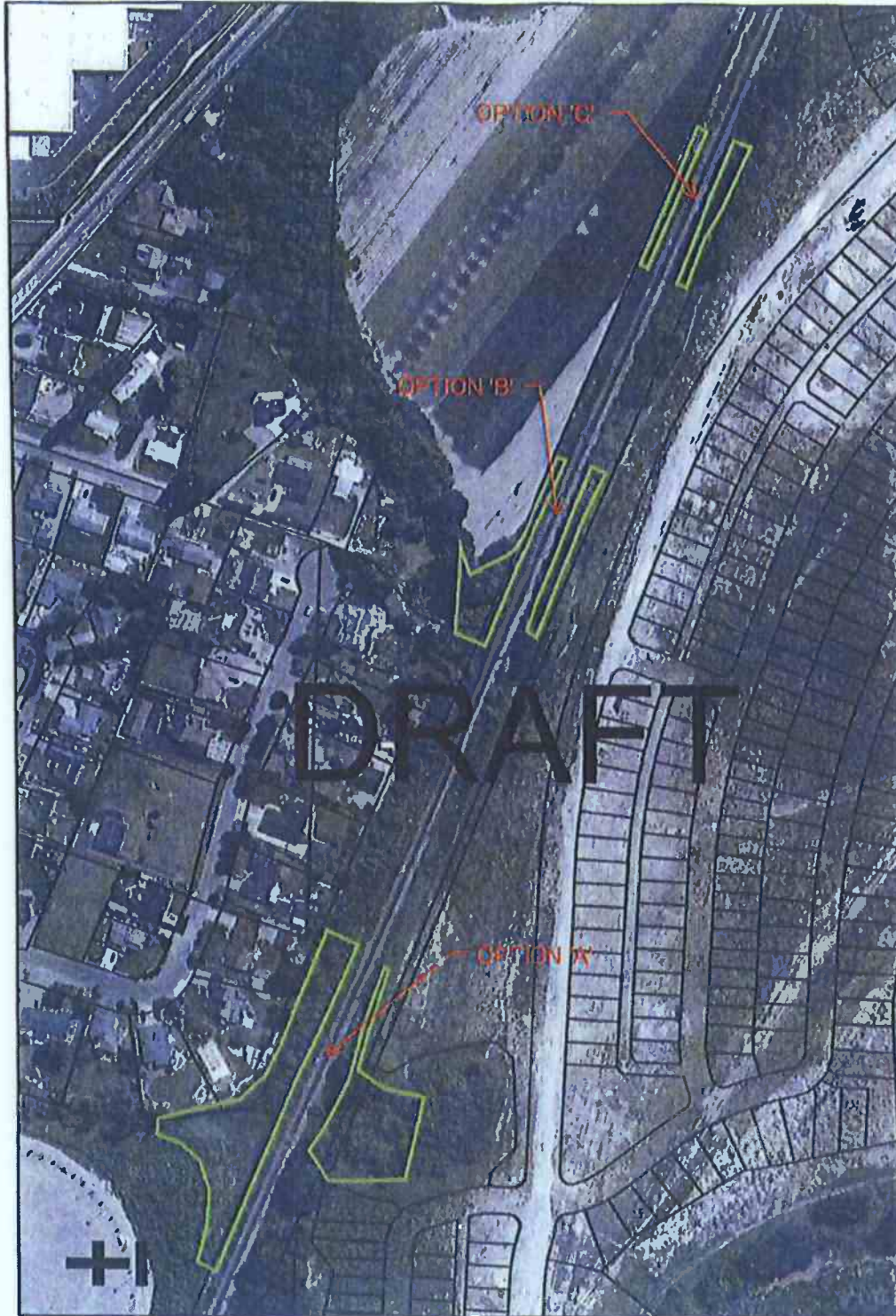
SUMMARY

This Type, Size and Location (TS&L) was developed for a proposed pedestrian grade separation over or under the Union Pacific Railroad (UPRR) located between 54th Avenue East and 70th Avenue East, in Fife, Washington. The purpose of the report is to identify relevant information to be used in determining the most reasonable pedestrian crossing solution. Following the meeting on July 18, 2007 between the City of Fife and staff from David Evans and Associates Inc, it was determined that three option locations would be considered. The Option A location would link the southeastern corner of Columbia Junior High School to the 5 acre park on Radiance Boulevard. Option B is located approximately mid way between 54th and 70th Avenues. Option C is approximately 800 feet east of the option B.

For the purposes of this report, it was agreed that the overpass structures to be analyzed would consist of pre-cast concrete girders supported by cast-in-place concrete piers and/or abutments. Steel structures are also viable options, however, current steel prices would likely result in an approximate 20% increase in construction cost.

Structural aesthetics will be considered as the design is developed. The design approach will be to blend in with the surrounding community. Depending on the alternative that is selected that may involve considerations such as impacts to the junior high school, Mount Rainier views, or public security concerns. In addition, we have identified opportunities to reduce project cost through the use of MSE walls or excavation in the case of the tunnel option.

WETLAND LOCATION EXHIBIT



Legend

- Wetlands
- parcels

**Approximate Wetland Locations
Near Fife UPRR Pedestrian Crossings**

Item	Description	Unit	Quantity	ESTIMATE (low)		ESTIMATE (high)	
				Unit Price	Amount	Unit Price	Amount
Option B							
1	Bridge Structure	SF	8,250.00	\$200.00	\$1,650,000.00	\$400.00	\$3,300,000.00
2	Cast-in-place retaining wall and walkway concrete	CY	478.00	\$500.00	\$239,000.00	\$500.00	\$239,000.00
3	Reinforcing Rebar	LB	95,600.00	\$1.00	\$95,600.00	\$1.00	\$95,600.00
4	Bridge Rail (on MSE)	LF	810.00	\$75.00	\$60,750.00	\$75.00	\$60,750.00
5	Drilled Shafts	LF	1,600.00	\$250.00	\$400,000.00	\$250.00	\$400,000.00
6	Lighting (assume 12 luminaires @\$ 5000)	LS	1.00	\$60,000.00	\$60,000.00	\$60,000.00	\$60,000.00
7	Drainage (to City system)	LS	1.00	\$15,000.00	\$15,000.00	\$15,000.00	\$15,000.00
8	Railroad Flagging	LS	1.00	\$100,000.00	\$100,000.00	\$100,000.00	\$100,000.00
	Base Estimate (Items Nos. 1-8)				\$2,620,350.00		\$4,270,350.00
	30% Contingency				\$786,105.00		\$1,281,105.00
	5% Permits				\$131,017.50		\$213,517.50
	25% Design & Construction Management				\$655,087.50		\$1,067,587.50
	GRAND TOTAL				\$3,406,455.00		\$5,551,455.00

Item	Description	Unit	Quantity	ENGINEER'S ESTIMATE (low)		ENGINEER'S ESTIMATE (high)	
				Unit Price	Amount	Unit Price	Amount
Option B w/MSE walls							
1	Bridge Structure	SF	1,375.00	\$200.00	\$275,000.00	\$400.00	\$550,000.00
2	MSE wall	SF	33,500.00	\$25.00	\$837,500.00	\$30.00	\$1,005,000.00
3	Abutment wall & walkway	CY	250.00	\$500.00	\$125,000.00	\$500.00	\$125,000.00
4	Reinforcing Rebar	LB	10,000.00	\$1.00	\$10,000.00	\$1.00	\$10,000.00
5	Bridge Rail (on MSE)	LF	1,910.00	\$75.00	\$143,250.00	\$75.00	\$143,250.00
6	Drilled Shafts	LF	400.00	\$250.00	\$100,000.00	\$250.00	\$100,000.00
7	Lighting (assume 12 luminaires @\$ 5000)	LS	1.00	\$60,000.00	\$60,000.00	\$60,000.00	\$60,000.00
8	Drainage (to City system)	LS	1.00	\$15,000.00	\$15,000.00	\$15,000.00	\$15,000.00
9	Structural fill	CY	20,000.00	\$15.00	\$300,000.00	\$20.00	\$400,000.00
10	Railroad Flagging	LS	1.00	\$100,000.00	\$100,000.00	\$100,000.00	\$100,000.00
	Base Estimate (Items Nos. 1-10)				\$1,965,750.00		\$2,508,250.00
	30% Contingency				\$589,725.00		\$752,475.00
	5% Permits				\$98,287.50		\$125,412.50
	25% Design & Construction Management				\$491,437.50		\$627,062.50
	GRAND TOTAL				\$2,555,475.00		\$3,260,725.00

				ENGINEER'S ESTIMATE	
Item	Description	Unit	Quantity	Unit Price	Amount
Option C					
1	Excavation	CY	2,500.00	\$12.00	\$30,000.00
2	Pilewall	SF	23,520.00	\$150.00	\$3,528,000.00
3	Conc Facia Panel	SF	13,440.00	\$35.00	\$470,400.00
4	Roof Slab	SF	1,400.00	\$40.00	\$56,000.00
5	Slab on grade	CY	83.00	\$500.00	\$41,500.00
6	Lighting	LS	1.00	\$60,000.00	\$60,000.00
7	Drainage	LS	1.00	\$30,000.00	\$30,000.00
8	Sump Pump Liftstation	LS	1.00	\$50,000.00	\$50,000.00
9	Shoofly Track (including grade improvements)	LF	2,600.00	\$400.00	\$1,040,000.00
10	Railroad Flagging	LS	1.00	\$200,000.00	\$200,000.00
					\$0.00
	Base Estimate (Items Nos. 1-10)				\$5,505,900.00
	35% Contingency				\$1,927,065.00
	5% Permits				\$275,295.00
	25% Design & Construction Management				\$1,376,475.00
	GRAND TOTAL				\$7,432,965.00

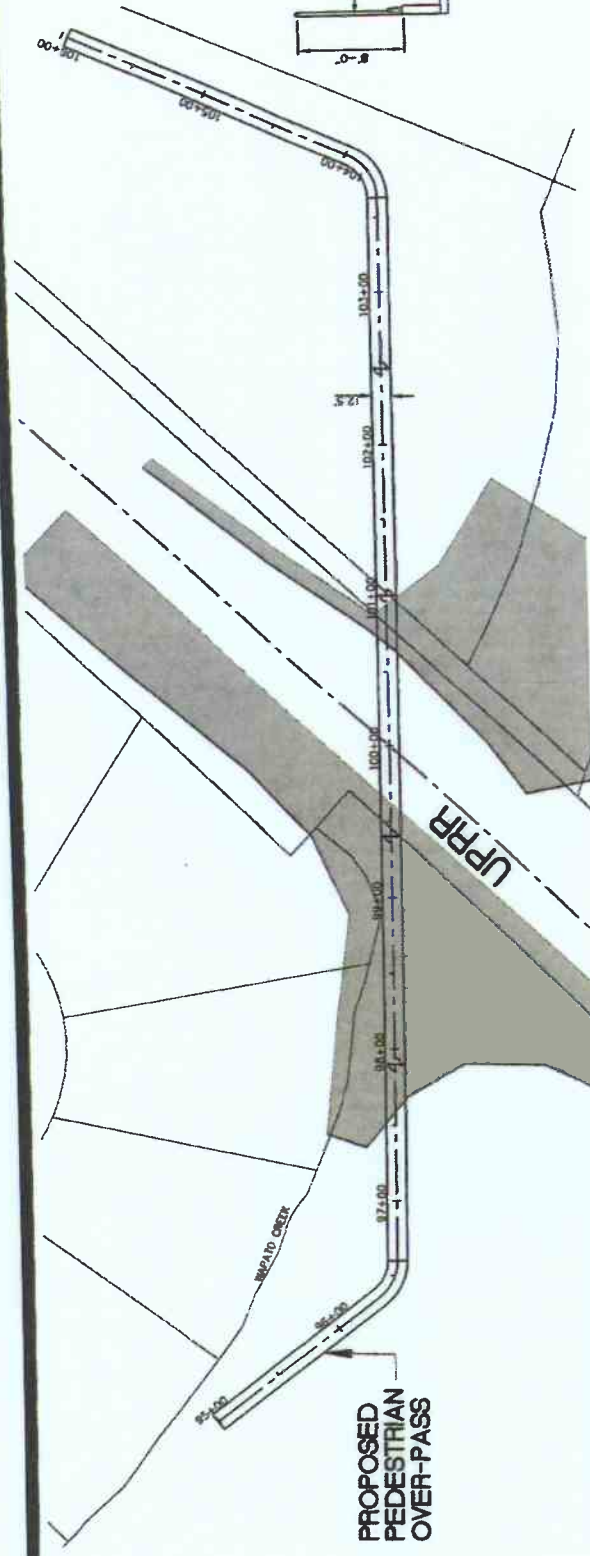
				ENGINEER'S ESTIMATE (low)	
Item	Description	Unit	Quantity	Unit Price	Amount
Option C w/excavation					
1	Excavation	CY	8,000.00	\$12.00	\$96,000.00
2	Pilewall	SF	5,630.00	\$150.00	\$844,500.00
3	Conc Facia Panel	SF	3,940.00	\$35.00	\$137,900.00
4	Roof Slab	SF	1,400.00	\$40.00	\$56,000.00
5	Walkway	CY	83.00	\$500.00	\$41,500.00
6	Lighting	LS	1.00	\$60,000.00	\$60,000.00
7	Drainage (to City system)	LS	1.00	\$30,000.00	\$30,000.00
8	Sump Pump Liftstation	LS	1.00	\$50,000.00	\$50,000.00
9	Shoofly Track (including grade improvements)	LF	2,600.00	\$400.00	\$1,040,000.00
10	Railroad Flagging	LS	1.00	\$200,000.00	\$200,000.00
					\$0.00
	Base Estimate (Items Nos. 1-10)				\$2,555,900.00
	35% Contingency				\$894,565.00
	5% Permits				\$127,795.00
	25% Design & Construction Management				\$638,975.00
	GRAND TOTAL				\$3,450,465.00

OPTION A

DRAFT



NORTH
 BASE OF BEARINGS
 WASHINGTON STATE PLUMBING SYSTEM
 HORIZONTAL SCALE IN FEET
 1" = 10'
 VERTICAL SCALE IN FEET
 1" = 10'

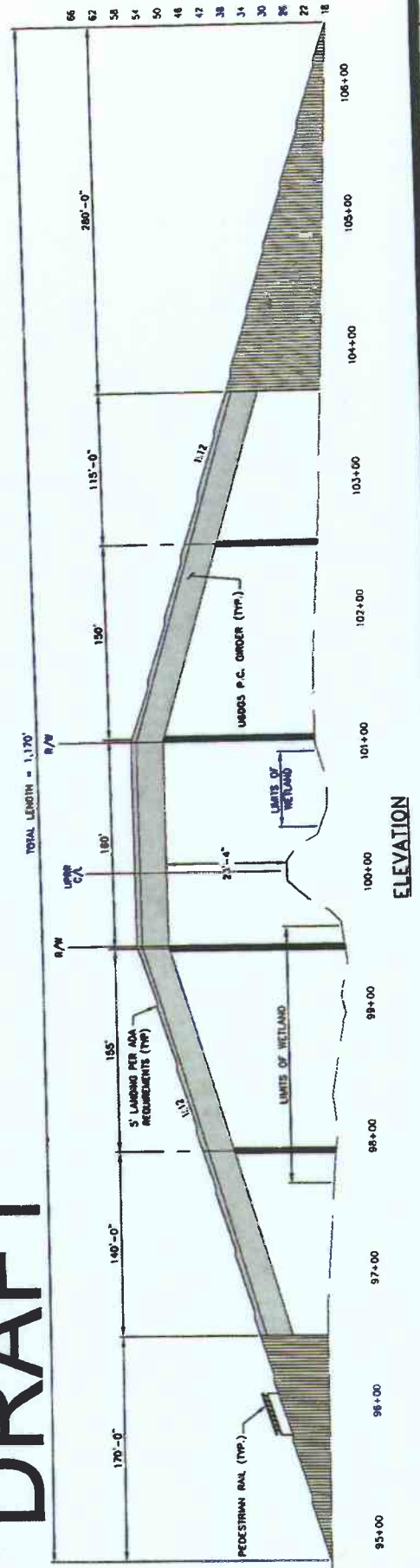


DRAFT

PLAN

TOTAL LENGTH = 1,170'

TYPICAL SECTION



ELEVATION

CITY OF FFE
 U.P.R.R. PEDESTRIAN GRADE SEPARATION
 TYPE, SIZE AND LOCATION STUDY
 OPTION 'A'

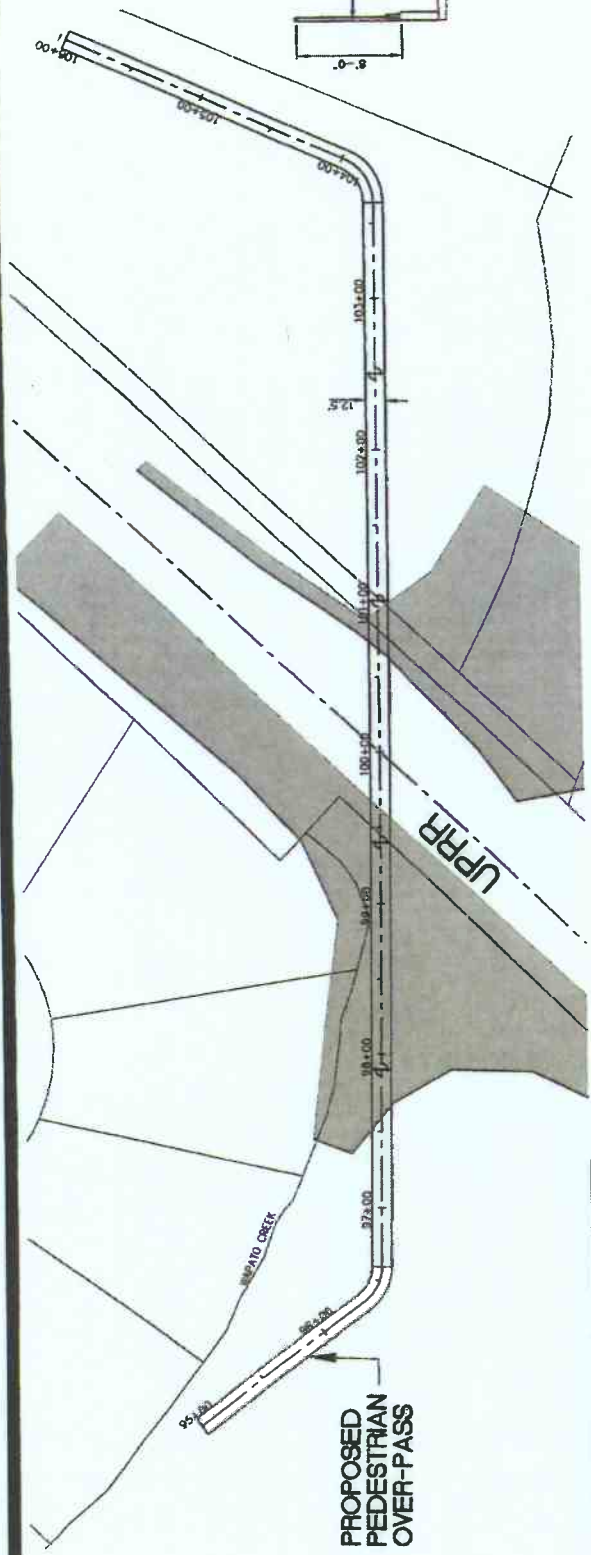
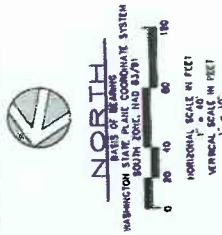


City of Fire
 Department of Public Works
 5411-23rd Street East
 Fire, Washington 98424



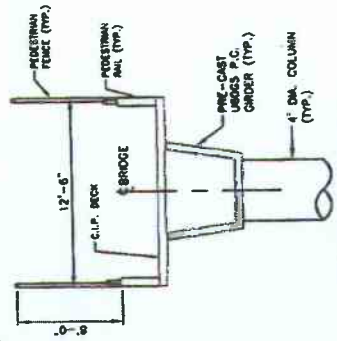
PROJECT ENGINEER	K. CLARK	DATE	10/27/11
DESIGNED BY	G. WELSH	APPROVED	
DRAWN BY	A. COCHRAN	DATE	10/27/11
CHECKED BY	S. SHANLEY	DATE	10/27/11
BASE EXPANDED	08/27/10	DATE	10/27/11
FILE	FFPD000011 - OPTION A.dwg	DATE	10/27/11

OPTION A WITH MSE WALL

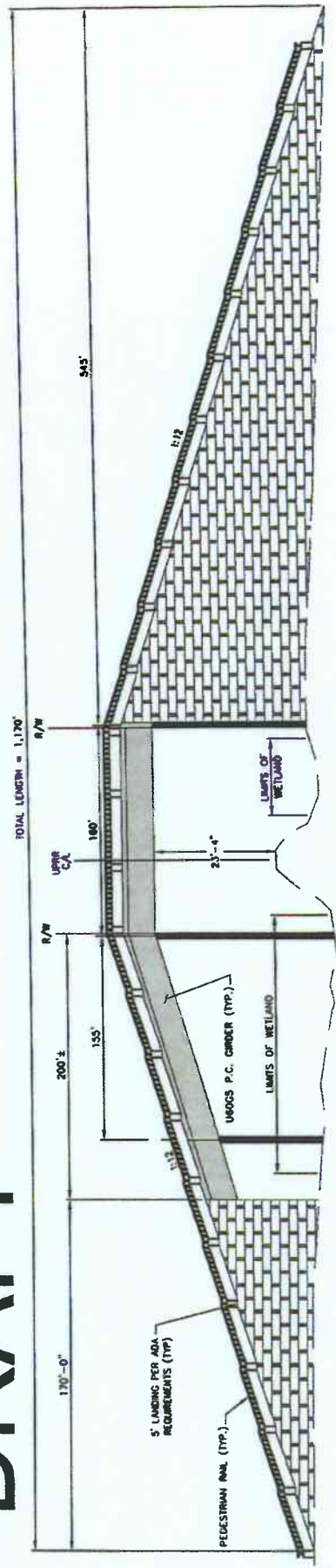


PLAN

DRAFT



TYPICAL SECTION



ELEVATION

PROJECT ENGINEER	M. CLARK	DATE	06/20/07
DESIGNED BY	G. NELSON	DATE	06/20/07
DRAWN BY	A. COOMAN	DATE	06/20/07
CHECKED BY	S. BRUNNEN	DATE	06/20/07
DATE PLOTTED	06/20/07	SCALE	AS SHOWN
FILE	1110000011-07.PWS-012	PROJECT	UPRR



City of Fife
 Department of Public Works
 5411-23rd Street East
 Fife, Washington 98424



CITY OF FIFE
 UPRR PEDESTRIAN GRADE SEPARATION
 TYPE, SIZE AND LOCATION STUDY
 OPTION 'A' W/ MBE WALL

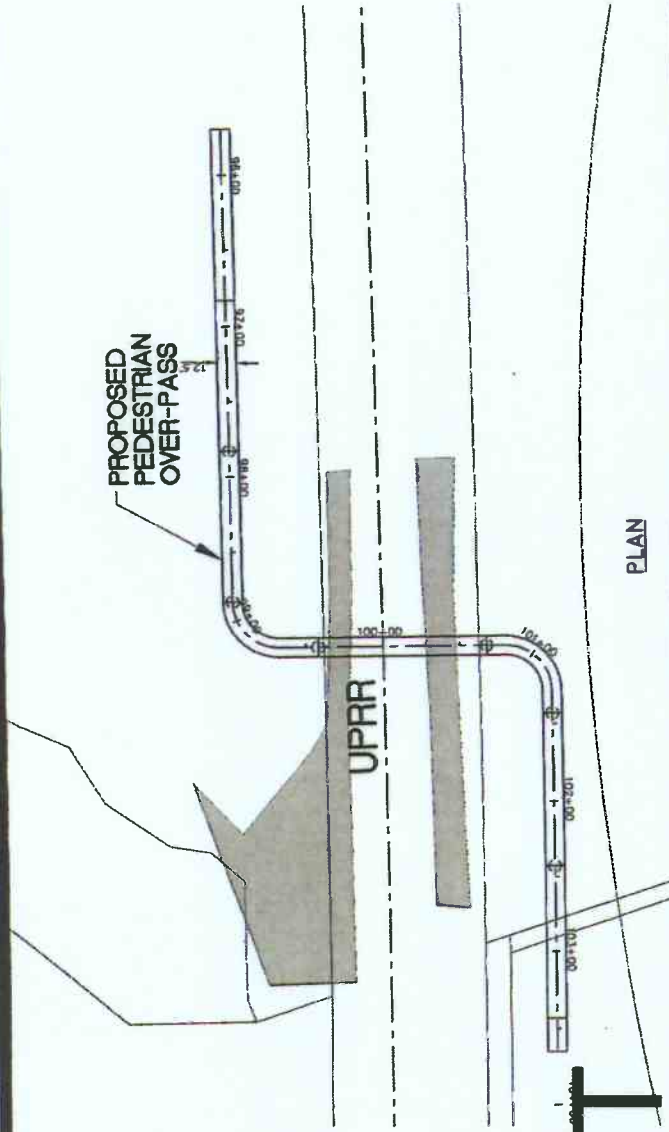
SHEET _____ OF _____



NORTH
 BASE OF BEARING
 WASHINGTON STATE PLANE COORDINATE SYSTEM
 SOUTH ZONE, NAD 83 (N)

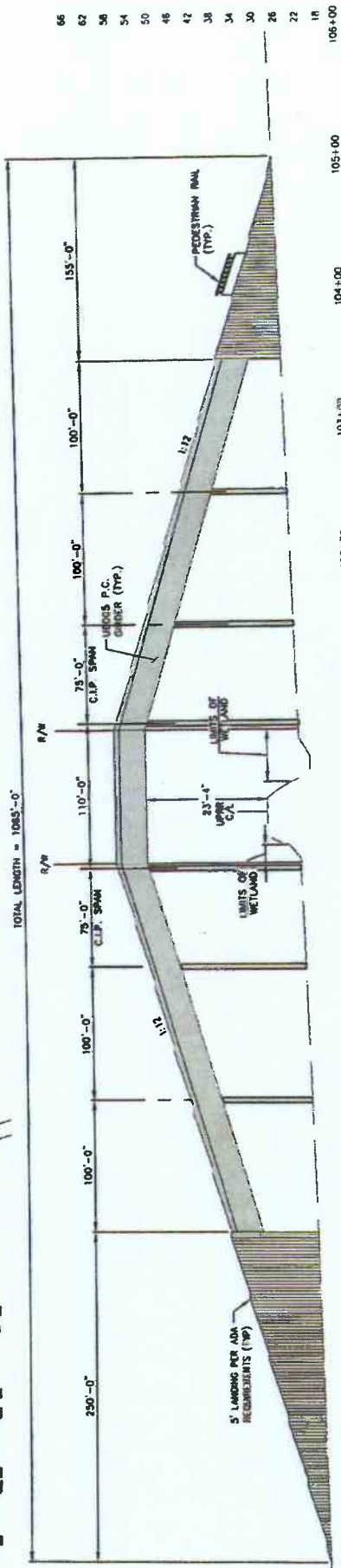
HORIZONTAL SCALE IN FEET
 1" = 40'

VERTICAL SCALE IN FEET, V'
 1" = 10'

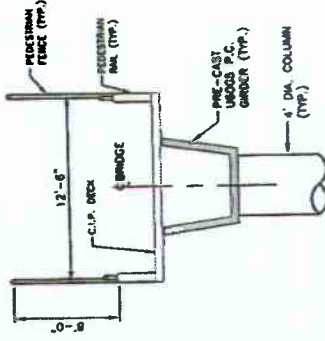


PLAN

TOTAL LENGTH = 1085'-0"



ELEVATION



TYPICAL SECTION

66	106+00
62	105+00
58	104+00
54	103+00
50	102+00
46	101+00
42	100+00
38	99+00
34	98+00
30	97+00
26	96+00
22	95+00
18	94+00

DRAFT

PROJECT LEADER:	K. CLARK
DESIGNED BY:	G. HEDSON
DRAWN BY:	A. COBBIN
CHECKED BY:	S. BARNABELLI
DATE PLOTTED:	06/21/07
FILE:	PT 02000811 - OPTION B.rvt



City of Fife
 Department of Public Works
 5411-23rd Street East
 Fife, Washington 98424



CITY OF FIFE
 UP-FAR PEDESTRIAN GRADE SEPARATION
 TYPE SIZE AND LOCATION STUDY
 OPTION 'B'

SHEET	18
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NORTH
 NORTH ARROW
 WASHINGTON STATE PLANE COORDINATE SYSTEM
 SOUTH ZONE, NAD 83/91
 HORIZONTAL SCALE IN FEET
 1" = 40'
 VERTICAL SCALE IN FEET
 1" = 10'

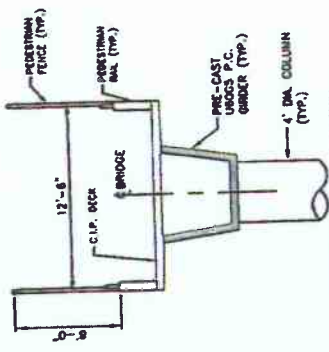
PROPOSED PEDESTRIAN OVER-PASS

UPRR

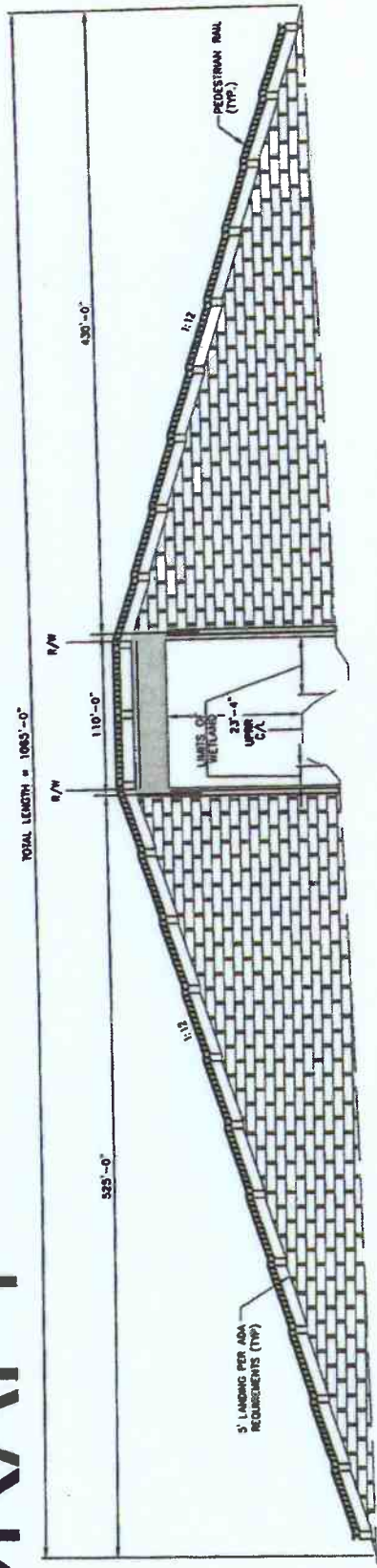
PLAN

TOTAL LENGTH = 1065'-0"

DRAFT



TYPICAL SECTION



ELEVATION



City of Fife
 Department of Public Works
 54th Street East
 Fife, Washington 98424



PROJECT ENGINEER	M. CLARK	DATE	04/26/07
DESIGNED BY	O. HELLSON	DATE	04/26/07
DRAWN BY	A. COCHRAN	DATE	04/26/07
CHECKED BY	S. SHANLEY	DATE	04/26/07
SCALE	AS SHOWN	DATE	04/26/07
FILE NUMBER	PF20060011-071008.dwg	DATE	04/26/07

CITY OF FIFE
 UPRR PEDESTRIAN GRADE SEPARATION
 TYPE, SIZE AND LOCATION STUDY
 OPTION B W/ MSE WALL

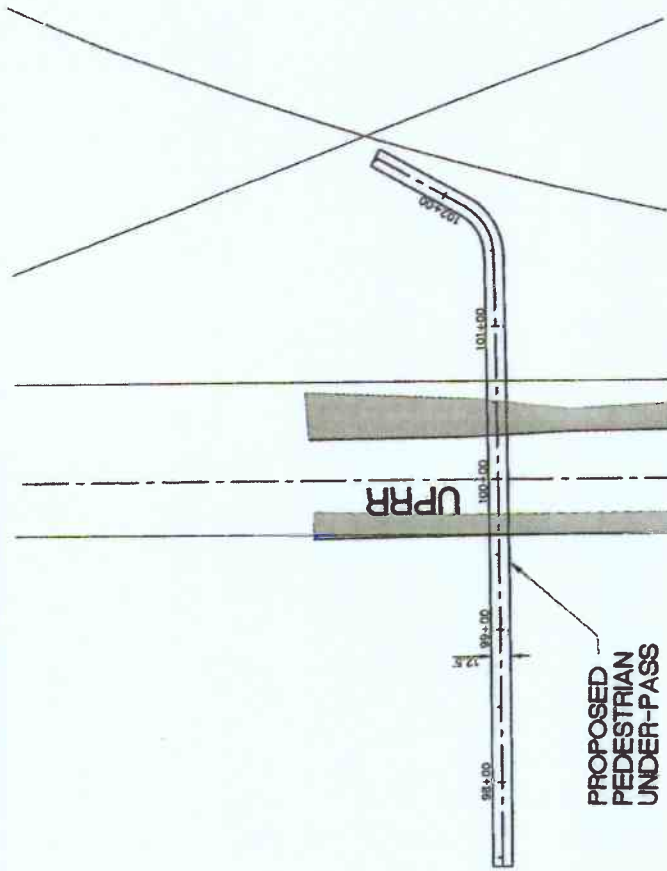


NORTH
 BASIS OF PROJECTIONS: NAD 83
 WASHINGTON STATE PLANNING SYSTEM
 EQUINOXIAL ZONE, NAD 83 (N)

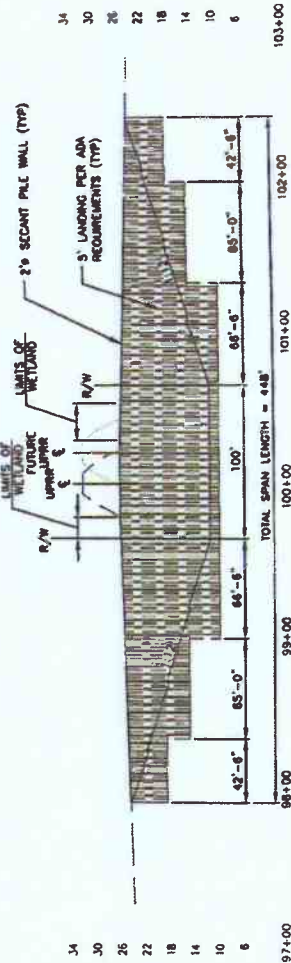
HORIZONTAL SCALE IN FEET
 1" = 10'

VERTICAL SCALE IN FEET
 1" = 10'

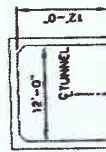
DRAFT



PLAN



ELEVATION



TYPICAL SECTION
N.I.S.

PROJECT ENGINEER	M. CLARK
DESIGNED BY	C. NELSON
DRAWN BY	A. COCHRAN
CHECKED BY	S. SHANMATEL
DATE PLOTTED	09/11/07

DATE	APPROVED



City of Fife
 Department of Public Works
 5411-23rd Street East
 Fife, Washington 98424

DESIGNED BY
DAVID EVANS ASSOCIATES, INC.
 10000 1st Avenue, Suite 200
 Tukwila, Washington 98148
 Phone: 206.835.8200

CITY OF FIFE
 UPRR PEDESTRIAN GRADE SEPARATION
 TYPE, SIZE AND LOCATION STUDY
 OPTION 'C'

DATE	

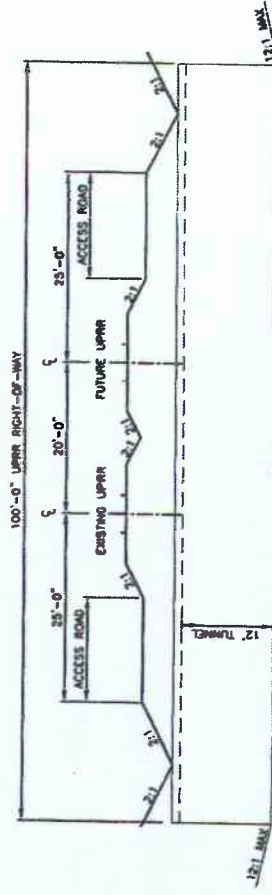
OPTION C TUNNEL

DRAFT



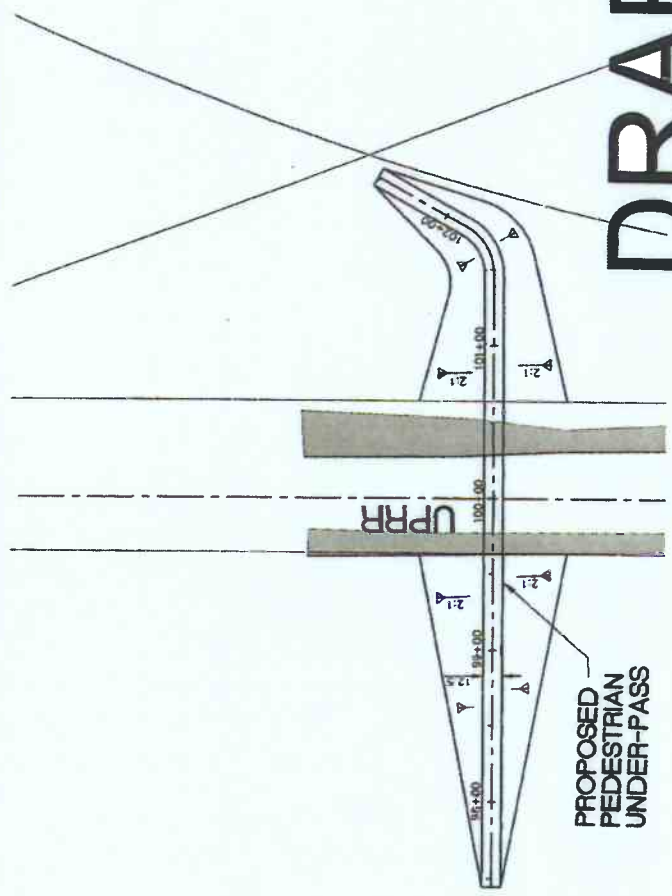
NORTH

WASHINGTON STATE ENGINEERING
AND SURVEYING BOARD
SOUTH 20th, 3400 82nd Ave
0 20 40 60 80 100 120 140 160 180
HORIZONTAL SCALE IN FEET
1" = 40'
VERTICAL SCALE IN FEET
1" = 10'



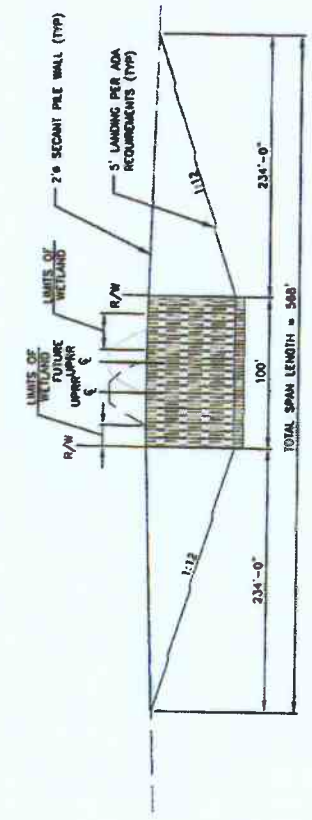
TYPICAL SECTION UPRR RIGHT-OF-WAY
N.T.S.

DRAFT

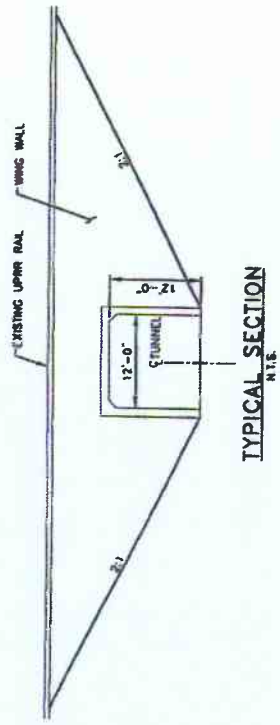


PROPOSED
PEDESTRIAN
UNDER-PASS

PLAN



ELEVATION



TYPICAL SECTION
N.T.S.

PROJECT ENGINEER: M. CLARK
DESIGNED BY: G. HEDSON
CHECKED BY: S. COCHRAN
DATE PLOTTED: 08/21/07
FILE: F:\2006\08011-07\1000.dwg



City of Fife
Department of Public Works
548-23rd Street East
Fife, Washington 98424

DAVID EVANS
ARCHITECTS
1500 1st Avenue
Tacoma, Washington 98402
Phone: 252-51376

CITY OF FIFE
UPRR PEDESTRIAN GRADE SEPARATION
TYPE, SIZE AND LOCATION STUDY
OPTION 'C'

SHEET
OF

