TR-150508 - P

Washington State Department of Transportation

Lynn Peterson
Secretary of Transportation

Transportation Building
310 Maple Park Avenue S.E.
P.O. Box 47300
Olympia, WA 98504-7300
360-705-7000
TTY: 1-800-833-6388
www.wsdot.wa.gov

March 20, 2015

Kathy Hunter
Deputy Assistant Director, Trans. Safety
Washington Utilities and Transportation Commission
1300 S Evergreen Park Dr. SW
Olympia, WA 98504-7250

Re: Petition for Reconstruction and Installation of an Inter-Tie at the Barksdale Avenue Crossing (085836E) in DuPont within Pierce County, WA

Dear Ms. Hunter,

This letter is in support of the aforementioned WUTC petition on behalf of WSDOT for the highway-rail grade crossing upgrades at Barksdale Avenue (USDOT Crossing #085836E) within Pierce County, WA. The following supplemental information is a summary of the proposed improvements to the highway-rail grade crossing at Barksdale Avenue.

The Washington State Department of Transportation (WSDOT) is implementing a program of infrastructure improvement projects along the Pacific Northwest Rail Corridor (PNWRC) also known as the PNWRC Improvement Program. This program is comprised of approximately 17 component projects that when combined will: provide two additional roundtrips for the Cascades intercity passenger rail service between Seattle, WA and Portland, OR; improve on time reliability to 88%; and provide a 10 minute reduction in travel time between the aforementioned termini. One of the 17 PNWRC Improvement projects is the Point Defiance Bypass project. In addition to the Cascades service, the Amtrak long distance service, the Coast Starlight, will also utilize the Point Defiance Bypass alignment.

The Point Defiance Bypass project includes five highway-rail grade crossings that will be reconstructed to support the above mentioned passenger rail services between Lakewood, WA and DuPont, WA. Those highway-rail grade crossings are Clover Creek Drive SW, North Thorne Lane SW, Berkeley Street SW, 41st Division Drive, and Barksdale Avenue. The Berkeley Street SW highway-rail grade crossing improvements are being constructed by the city of Lakewood as part of their Madigan Access Improvement project. The city of Lakewood project will incorporate the necessary highway-rail grade crossing improvements to support the intercity and long distance passenger rail services.

The improvements at the Barksdale Avenue highway-rail grade crossing include new flashing light masts and gates, a constant warning-time grade crossing warning device

with an automatic horn system consisting of stationary horns and a new concrete crossing panel with rubber flange way fillers. The existing channelization will remain largely unchanged with a new raised median being constructed on the south side of the crossing. The sidewalk on the east side of the crossing will be reconfigured because the existing sidewalk encroaches on the railroad clearance envelope. Traffic controllers at the Interstate 5 interchange northbound and southbound ramp termini along with the Barksdale Avenue/DuPont-Steilacoom Road intersection highway will be replaced with a single controller to eliminate operations conflict when switching to preemption.

In conjunction with the attached petition, WSDOT is working closely with the city of DuPont, Sound Transit, BNSF, and Tacoma Rail on the proposed improvements for Barksdale Avenue. In addition, please find the signed Waiver of Hearing by Respondent found in Section 13 of this petition from each of the applicable project stakeholders as consent without a hearing.

If you should have any questions, please contact myself at (360)905-1578.

Sincerely,

Casey Liles, MSCE, PE
WSDOT Rail Division
Point Defiance Bypass Project Lead

CL:ts

Enclosure: WUTC Petition for Reconstruction and Installation of an Inter-Tie at the Barksdale Avenue Highway-Rail Grade Crossing, No. 085836E.

cc: David Smelser
Michael Williams
Chris Dunster
Devin Reck
Jason Dao
Thomas Slimak
Document Controls

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

WSDOT Rail Petitioner, vs. **Central Puget Sound Regional Transportation Authority;** **City of Lakewood;** **BNSF Railway Company;** **Tacoma Rail** Respondent	)	DOCKET NO. TR- PETITION TO CONSTRUCT OR RECONSTRUCT A HIGHWAY-RAIL GRADE CROSSING AND INSTALL AN INTER-TIE BETWEEN A HIGHWAY SIGNAL AND A RAILROAD CROSSING SIGNAL SYSTEM USDOT CROSSING # 085836E

Prior to submitting a Petition to **Construct** a highway-rail grade crossing and install an inter-tie between a Highway Signal and a Railroad Crossing Signal System to the Washington Utilities and Transportation Commission (UTC), State Environmental Protection Act (SEPA) requirements must be met. Washington Administrative Code (WAC) 197-11-865 (2) requires:

> **All actions of the utilities and transportation commission under statutes administered as of December 12, 1975, are exempted, except the following:**
>
> **(2) Authorization of the openings or closing of any highway/railroad grade crossing, or the direction of physical connection of the line of one railroad with that of another;**

Please attach sufficient documentation to demonstrate that the SEPA requirement has been fulfilled. For additional information on SEPA requirements contact the Department of Ecology.

The Petitioner asks the Washington Utilities and Transportation Commission to approve installation of an inter-tie between a highway signal and a railroad crossing signal system.

☐ **Construction** ☑ **Reconstruction**

Project Summary:

The Barksdale Avenue highway-rail grade crossing is part of the Point Defiance Bypass Project that has been proposed to respond to deficiencies in the existing rail operations around Point Defiance between Tacoma and Nisqually in Washington State. As part of the Pacific Northwest Rail Corridor (PNWRC) Improvement Program, when combined with the other component projects, this Project would allow for two additional round trips of the Amtrak Cascades service between Seattle, Washington, and Portland, Oregon with improved reliability and reduced travel time. This Project would also support Amtrak's longer-distance Pacific Northwest passenger rail service, the Coast Starlight.

- Flashing light masts and gates are set between 5 feet and 7 feet from face of curb.
- The crossing will have a constant warning-time grade crossing warning device with an automatic horn system consisting of stationary horns.
- Crossing surface will be concrete panels with attached rubber flange way fillers.
- The existing channelization configuration will remain largely unchanged. A new median will be constructed on the south side of the tracks.
- Only minor changes to the roadway profile will occur where the crossing panels are replaced with new panels; the new panels, 10' wide overall, will be approximately 9" wider on each side of the tracks than the existing panels.
- Existing crossing gates will be replaced with new gates. Some of the existing gates are too close to the curb line and will be relocated away from the curb. This will require excavation of the foundations and installation of new foundations.
- Sidewalks on the east side of street encroach into the railroad clearance envelope and will be revised to comply with WUTC/Sound Transit requirements. Existing curb and gutter on the west side of the street also encroach into the clearance envelope and will be modified.
- Advance pre-emption sequence will be extended to the Barksdale-Steilacoom Road intersection.
- All three traffic signals are run off one traffic signal controller to eliminate operational conflict when going to preemption.

Section 1 – Petitioner's Information

WSDOT Rail Division
Petitioner

P.O. Box 47407
Street Address

Olympia, WA 98504
City, State and Zip Code

Mailing Address, if different than the street address

David Smelser
Contact Person Name

360-705-6916; David.Smelser@wsdot.wa.gov
Contact Phone Number and E-mail Address

Section 2 – Respondent's Information

Central Puget Sound Regional Transportation Authority ("Sound Transit")
Respondent

401 South Jackson Street
Street Address

Seattle, WA 98104-2826
City, State and Zip Code

Mailing Address, if different than the street address

Jodi Mitchell
Contact Person Name

206-398-5080; Jodi.Mitchell@SoundTransit.org
Contact Phone Number and E-mail Address

Section 2 – Respondent's Information (cont'd)

City of DuPont, Washington
Respondent

1700 Civic Drive
Street Address

DuPont, WA 98327
City, State and Zip Code

Mailing Address, if different than the street address

Peter Zahn
Contact Person Name

253-912-5381; publicworks@dupontwa.gov
Contact Phone Number and E-mail Address

BNSF Railway Company
Respondent

2454 Occidental Avenue S; Suite 2D
Street Address

Seattle, WA 98134
City, State and Zip Code

Mailing Address, if different than the street address

Richard Wagner
Contact Person Name

206-625-6152; Richard.Wagner@BNSF.com
Contact Phone Number and E-mail Address

Section 2 – Respondent's Information (cont'd)

Tacoma Rail
Respondent

2601 SR 509 North Frontage Road
Street Address

Tacoma, WA 98421
City, State and Zip Code

Mailing Address, if different than the street address

Kyle Kellem
Contact Person Name

253-377-3554; kkellem@cityoftacoma.org
Contact Phone Number and E-mail Address

Section 3 – Crossing Location

1. Existing highway/roadway **Barksdale Avenue**

2. Existing railroad **Tacoma Municipal Belt Line**

3. USDOT Crossing No. **085836E**

4. Located in the____ 1/4 of the ____1/4 of Sec. **36** , Twp. **19N** , Range **02E** W.M.

5. GPS location, if known **47.093454, -122.624138**

7. Railroad mile post (nearest tenth) **7.6**

8. City **DuPont** County **Pierce**

Section 4 – Proposed or Existing Crossing Information

1. Railroad company **Sound Transit**
Note: Sound Transit owns crossing property while Tacoma Rail and BNSF Railway Company share a franchising agreement of the rail.

2. Type of railroad at crossing ☑ Common Carrier ☐ Logging ☐ Industrial

☑ Passenger ☐ Excursion

3. Type of tracks at crossing ☑ Main Line ☐ Siding or Spur

4. Number of tracks at crossing **1**

5. Average daily train traffic, freight **2**

Authorized freight train speed **40 mph** Operated freight train speed **40 mph**

6. Average daily train traffic, passenger **16**

Authorized passenger train speed **79 mph** Operated passenger train speed **79 mph**

7. Will the proposed crossing eliminate the need for one or more existing crossings?
Yes ____ No ✓

8. If so, state the distance and direction from the proposed crossing.

_____

_____

9. Does the petitioner propose to close any existing crossings?
Yes ____ No ✓

Section 5 – Temporary Crossing

1. Is the crossing proposed to be temporary? Yes ____ No ✓

2. If so, describe the purpose of the crossing and the estimated time it will be needed

_____

3. Will the petitioner remove the crossing at completion of the activity requiring the temporary crossing? Yes ____ No ____ **N/A**

Approximate date of removal _____

Section 6 – Current Highway Traffic Information

1. Name of roadway/highway **Barksdale Ave**

2. Roadway classification **Minor Arterial**

3. Road authority **City of Dupont / WSDOT**

4. Average annual daily traffic (AADT) **13000 (2013)**

5. Number of lanes **5 (2 northbound, 3 southbound**

6. Roadway speed **25 mph**

7. Is the crossing part of an established truck route? Yes _____ No ✓

8. If so, trucks are what percent of total daily traffic? _____

9. Is the crossing part of an established school bus route? Yes ✓ No _____

10. If so, how many school buses travel over the crossing each day? **12**

11. Describe any changes to the information in 1 through 7, above, expected within ten years:

Section 7 – Alternatives to the Proposal

1. Does a safer location for a crossing exist within a reasonable distance of the proposed location?
   Yes ____ No ✓

2. If a safer location exists, explain why the crossing should not be located at that site.

   _____

   _____

   _____

   _____

3. Are there any hillsides, embankments, buildings, trees, railroad loading platforms or other barriers in the vicinity which may obstruct a motorist's view of the crossing?
   Yes ✓ No ____

4. If a barrier exists, describe:
   - ♦ Whether petitioner can relocate the crossing to avoid the obstruction and if not, why not.
   - ♦ How the barrier can be removed.

♦ How the petitioner or another party can mitigate the hazard caused by the barrier.

Stopping sight distances are maintained but due to curves in Barksdale Ave views of the crossing are obstructed further away by trees and shrubs in both directions. See Section 8.

5. Is it feasible to construct an over-crossing or under-crossing at the proposed location as an alternative to an at-grade crossing?

Yes ____ No ✓

6. If an over-crossing or under-crossing is not feasible, explain why.

The existing site is surrounded by Interstate 5, on-ramps and off-ramps, and local roads. Constructing an overcrossing or undercrossing would require elimination, reconstruction and/or relocation of these facilities.

7. Does the railway line, at any point in the vicinity of the proposed crossing, pass over a fill area or trestle or through a cut where it is feasible to construct an over-crossing or an under-crossing, even though it may be necessary to relocate a portion of the roadway to reach that point?

Yes ____ No ✓

8. If such a location exists, state:
   - ♦ The distance and direction from the proposed crossing.
   - ♦ The approximate cost of construction.
   - ♦ Any reasons that exist to prevent locating the crossing at this site.

9. Is there an existing public or private crossing in the vicinity of the proposed crossing?

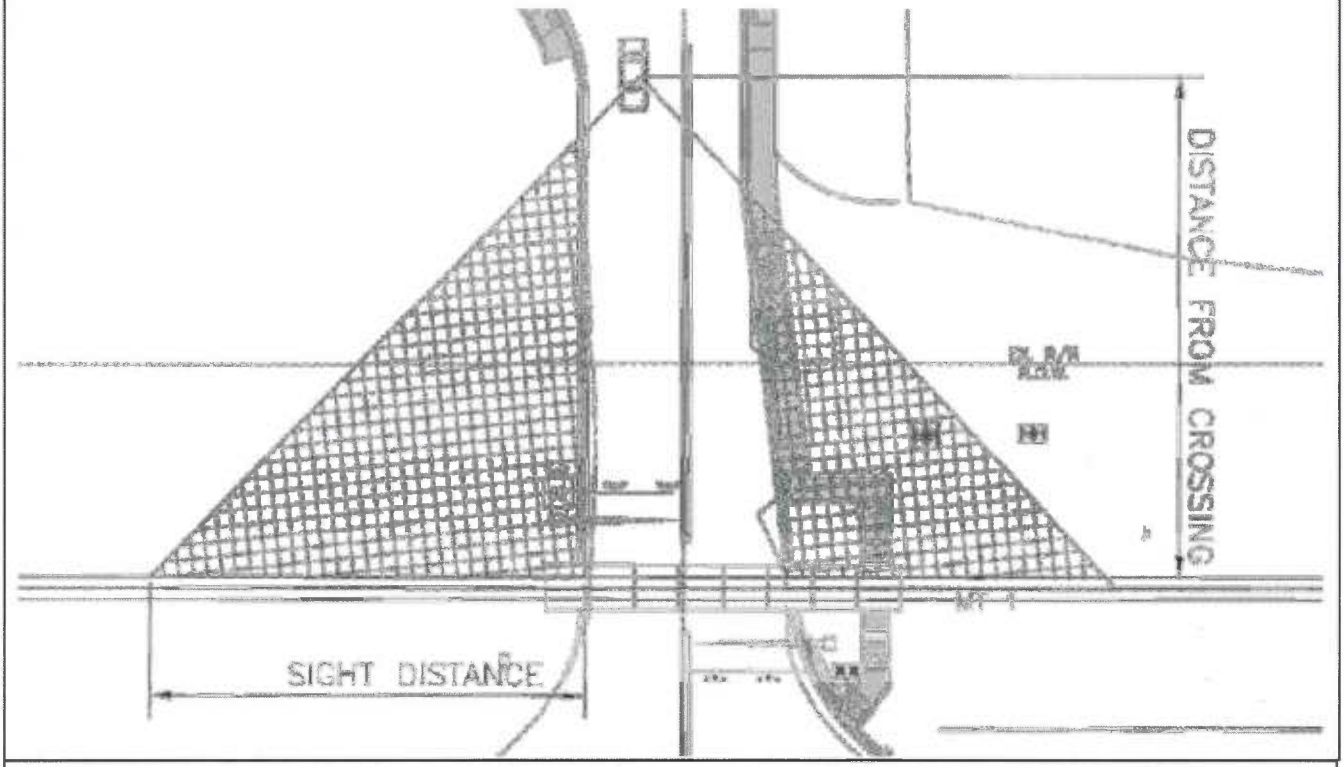
Yes ____ No ✓

10. If a crossing exists, state:
    - ♦ The distance and direction from the proposed crossing.
    - ♦ Whether it is feasible to divert traffic from the proposed to the existing crossing.

Section 8 – Sight Distance

1. Complete the following table, describing the sight distance for motorists when approaching the tracks from either direction. **"Number of feet from proposed crossing" is measured from the outside track along the centerline of the "outside" lane. Sight distance is measured from the driver's position within the lane facing the crossing with the front of the vehicle the number of feet from the proposed crossing.**

Note that sight distances from the I-5 Southbound Off Ramps are NOT reflected in the tables below. The I-5 Off Ramps are both parallel and very close to the tracks. Motorists on the Off-Ramp may have their forward visibility along the track, at certain angles, obstructed somewhat by the railroad crossing cantilever mast and gate mechanism. Since the tracks also extend behind motorists on the Off-Ramp, rearward visibility, though unlimited by obstacles, is likely to be zero, based on motorists' tendency to not look behind them. "Number of feet from proposed crossing" is measured from the outside track along the centerline of the "outside" lane. Sight distance is measured from the driver's position within the lane facing the crossing with the front of the vehicle the number of feet from the proposed crossing.



a. Approaching the crossing from **NORTH**, the current approach provides an unobstructed view as follows:
(North, South, East, West)

Direction of sight (left or right)	Number of feet from proposed crossing	Provides an unobstructed view for how many feet
Right	300	580 (obscured by trees)
Right	200	590 (obscured by trees)
Right	100	630 (obscured by trees)
Right	50	400 (obscured by trees)
Right	25	460 (obscured by trees)

Left	300	990 (obscured by trees)
Left	200	230 (obscured by trees)
Left	100	260 (obscured by trees)
Left	50	330 (obscured by trees)
Left	25	360 (obscured by trees)

b. Approaching the crossing from **SOUTHEAST,** the current approach provides an unobstructed view as follows: (Opposite direction-North, South, East, West)

Direction of sight (left or right)	Number of feet from proposed crossing	Provides an unobstructed view for how many feet
Right	300	200 (obscured by trees)
Right	200	320 (obscured by trees)
Right	100	350 (obscured by trees)
Right	50	380 (obscured by trees)
Right	25	390 (obscured by trees)
Left	300	90 (obscured by trees)
Left	200	150 (obscured by trees)
Left	100	280 (obscured by trees)
Left	50	680 (obscured by trees)
Left	25	1350 (obscured by trees)

2. Will the new crossing provide a level approach measuring 25 feet from the center of the railway on both approaches to the crossing?

Yes ____ No ✓

3. If not, state in feet the length of level grade from the center of the railway on both approaches to the crossing. **Looking north along the track: Right 0.76% for 10' to match existing grade; Left 0.37% for 10' to match existing grade.**

4. Will the new crossing provide an approach grade of not more than five percent prior to the level grade?

Yes ✓ No ____

5. If not, state the percentage of grade prior to the level grade and explain why the grade exceeds five percent.

_____

_____

Section 9 – Illustration of Proposed Crossing Configuration

Attach a detailed diagram, drawing, map or other illustration showing the following:

- ♦ The vicinity of the proposed crossing.
- ♦ Layout of the railway and highway 500 feet adjacent to the crossing in all directions.
- ♦ Percent of grade.
- ♦ Obstructions of view as described in Section 7 or identified in Section 8.
- ♦ Traffic control layout showing the location of the existing and proposed signage.

Section 10 – Sidewalks

1. Provide the following information:
   a. Provide a description of the type of sidewalks proposed.
   b. Describe who will maintain the sidewalks.
   c. Attach a proposed diagram or design of the crossing including the sidewalks.

This project will construct a new sidewalk on the north side of Barksdale across the railroad tracks. At the railroad crossing the pedestrian sidewalks will contain a buffer strip between the sidewalk and the concrete curb that will be used for the railroad warning devices. In advance of the pedestrian track crossing, truncated domes will be installed on the sidewalk surface to delineate the boundary between sidewalk and travel way for visually impaired pedestrians. Sidewalks will be maintained by WSDOT.

Section 11–Proposed Warning Signals or Devices

1. Explain in detail the number and type of automatic signals or other warning devices planned at the proposed crossing, including a cost estimate for each. If requesting pre-emption include the type of train detection circuitry, sequencing and advanced preemption time, justification for the changes and its effects on current warning devices and warning times for drivers.

The crossing will have active warning devices, including crossing gates, controlled by constant motion predictors. The warning lights are mounted on cantilevers.

All three traffic signals are proposed to run by one traffic signal controller. The railroad control equipment for the crossing is interconnected with the traffic signal controller using a 6-wire connection. Upon a preemption signal from the railroad control equipment the traffic signal controller will transfer right-of-way by stopping all vehicles moving towards the crossing and provide green lights for track clearance before the gates start to drop. Once the track clearance interval is complete and the gates are down, limited service will be provided for vehicles moving away from the crossing.

The traffic signal system will have a generator for backup power.

Blank-out signs with the symbol "No Right Turn" are proposed at the intersections of Barksdale/Dupont-Steilacom and the Southbound Off-Ramp from Interstate 5. This sign is illuminated when the railroad advanced pre-emption starts.

The I-5 ramp meters are independently connected to the railroad bungalow and preempted by the railroad.

2. Provide an estimate for maintaining the signals for 12 months. _____

3. Is the petitioner prepared to pay to the respondent railroad company its share of installing the warning devices as provided by law?

Yes ✓ No ____

Section 12 – Traffic Signal Preemption

Complete the attached Guide for Determining Time Requirements for Traffic Signal Preemption at Highway-Rail Grade Crossings.

1. Specify simultaneous or advance preemption requested.
   Advance preemption

If advance preemption, what is the preemption time.
28 seconds

Section 13 – Waiver of Hearing by Respondent

Waiver of Hearing

The undersigned represents the Respondent in the petition to install an inter-tie between the highway signal and the railroad crossing signal system at the following crossing.

USDOT Crossing No. **085836E**

We have investigated the conditions at the crossing. We are satisfied the conditions are the same as described by the Petitioner in this docket. We agree the inter-tire should be installed and consent to a decision by the commission without a hearing.

Dated at SEATTLE, Washington, on the 3RD day of MARCH, 20 15.

RICHARD W WAGNER
Printed name of Respondent

Signature of Respondent's Representative

MGR PUBLIC PROJECTS NW DIVISION
Title

206.625.6152
Phone number and e-mail address

RICHARD.WAGNER@BNSF.COM

Mailing address

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UTIL. AND TRANSP.
COMMISSION

Section 13 – Waiver of Hearing by Respondent

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Dated at DuPont, Washington, on the 24 day of FEBRUARY, 20 15.

Thomas E Danek, JR.
Printed name of Respondent

Signature of Respondent's Representative

CITY ADMINISTRATOR
Title

(253) 912-5215 tdanek@dupontwa.gov
Phone number and e-mail address

1700 CIVIC DR

DuPont, WA 98327
Mailing address

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Dated at Tacoma, Washington, on the 19th day of January, 20 15.

Tacoma Rail

Printed name of Respondent

Signature of Respondent's Representative

Roadmaster

Title

253-377-3554 KKellem@cityoftacoma.org

Phone number and e-mail address

2601 SR 509 N Frontage Rd.

Tacoma, WA 98421

Mailing address

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COMMISSION

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USDOT Crossing No. **085836E**

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Dated at Seattle, Washington, on the 24 day of February, 20 15.

DALE LEWIS

Printed name of Respondent

Dale Lewis

Signature of Respondent's Representative

Rail Passenger Safety Mgr

Title

206 903-7363

Phone number and e-mail address

401 S Jackson St

Seattle, WA 98104

Mailing address

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COMMISSION

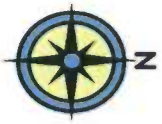
WASHINGTON UTC UTILITIES AND TRANSPORTATION COMMISSION

WORKSHEET FOR DETERMINING TIME REQUIREMENTS FOR TRAFFIC SIGNAL PREEMPTION AT HIGHWAY-RAIL GRADE CROSSINGS

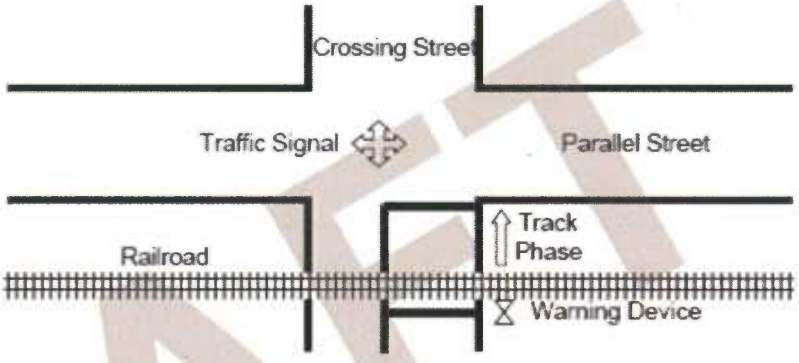
For Future Conditions

Client	WSDOT Rail	Date	11/17/2014
City	Dupont	Completed by	CPS
County	Pierce	Checked by	JJS

North Arrow



Parallel Street Name	Dupont-Steilacom
Crossing Street Name	Barksdale
Number of Tracks	1



Railroad
085836E
Crossing DOT #

Railroad Contact

Train Crossing Speed 79

SECTION1: RIGHT-OF-WAY TRANSFER TIME CALCULATION

Preempt verification and response time

			Remarks
1. Preemption delay time (seconds)	1	0.0	
2. Controller response time to preempt (seconds)	2	0.0	
3. Preempt verification and response time (seconds): add lines 1 and 2	3	0.0	

Worst-case conflicting vehicle time

			Remarks
4. Worst-case conflicting vehicle phase number	4	2	
5. Minimum green time during right-of-way transfer (seconds)	5	6.0	
6. Other green time during right-of-way transfer (seconds)	6	0	
7. Yellow change time (seconds)	7	3.5	
8. Red clearance time (seconds)	8	1	
9. Worst-case conflicting vehicle time (seconds): add lines 5 through 8	9	10.5	

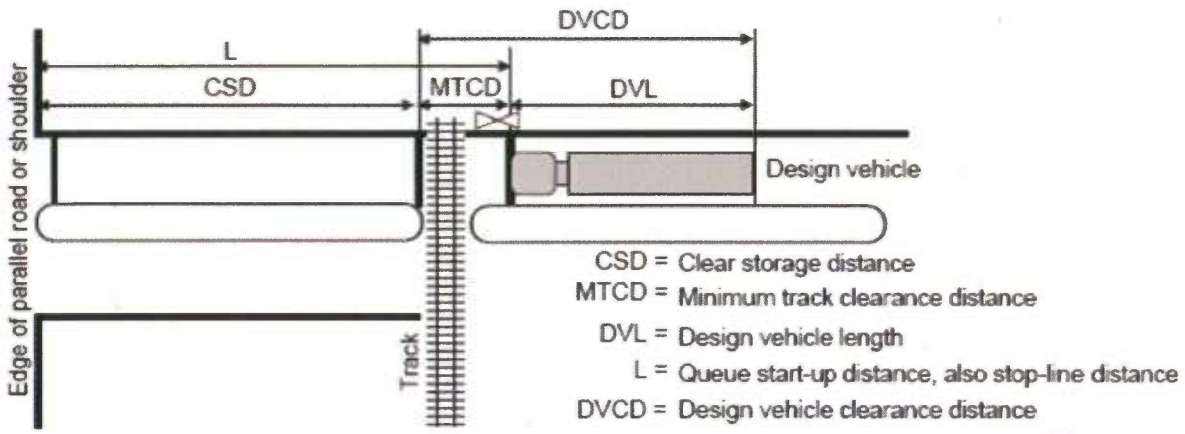
Worst-case conflicting pedestrian time

			Remarks
10. Worst-case conflicting pedestrian phase number	10	2	
11. Minimum walk time during right-of-way transfer (seconds)	11	0.0	MUTCD allows zero
12. Pedestrian clearance time during right-of-way transfer (seconds)	12	0.0	
13. Vehicle yellow change time, if not included on line 12 (seconds)	13	3.5	
14. Vehicle red clearance time, if not included on line 12 (seconds)	14	1.0	
15. Worst-case conflicting pedestrian time (seconds): add lines 11 through 14	15	4.5	

Worst-case conflicting vehicle or pedestrian time

16. Worst-case conflicting vehicle or pedestrian time (seconds): maximum of lines 9 and 15	16	10.5
17. Right-of-way transfer time (seconds): add lines 3 and 16	17	10.5

SECTION 2: QUEUE CLEARANCE TIME CALCULATION



			Remarks
18. Clear storage distance (CSD) (feet)	18	220	
19. Minimum track clearance distance (MTCD) (feet)	19	60	Skewed crossing
20. Design vehicle length (DVL) (feet)	20	74	Design vehicle: WB-65
21. Queue start-up distance, L add line 18 and 19 (feet)	21	280	
22. Time required for design vehicle to start moving (seconds): calculate as 2+(L÷20)	22	16	
23. Design vehicle clearance distance, DVCD (feet): add lines 19 and 20	23	134	
24. Time for design vehicle to accelerate through the DVCD (seconds)	24	17	Read from Figure 2 in Instructions
25. Queue clearance time: add lines 22 and 24 (seconds)	25	33	

SECTION 3: MAXIMUM PREEMPTION TIME CALCULATION

			Remarks
26. Right-of-way transfer time: line 17	26	10.5	
27. Queue clearance time: line 25	27	33	
28. Desired minimum separation time	28	4.0	
29. Maximum preemption time: add lines 26 through 28	29	47.5	

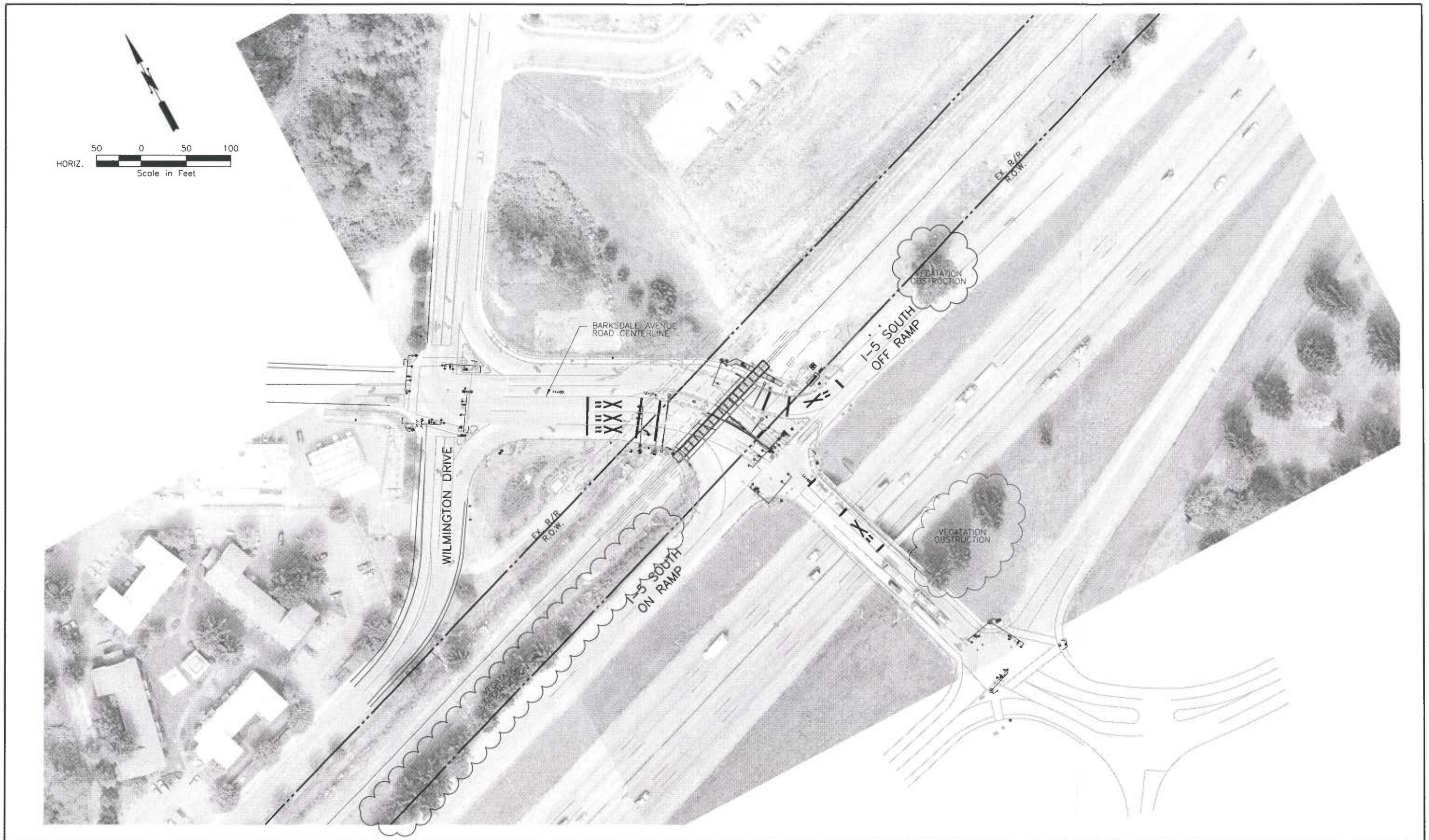
SECTION 4: SUFFICIENT WARNING TIME CHECK

			Remarks
30. Required minimum time, MT: per regulations	30	20	
31. Clearance time, CT: get from railroad	31	0.0	
32. Minimum warning time, MWT: add lines 30 and 31	32	20.0	
33. Advance preemption time, APT, if provided: get from railroad	33	0.0	
34. Warning time provided by the railroad: add lines 32 and 33	34	20.0	
35. Additional warning time required from railroad: subtract line 34 from line 29, round up to nearest full second, enter 0 if less than 0	35	28.0	

News Employment Good To Go! Contact Us

Washington State Department of Transportation

WSDOT GeoPortal



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DATE	12/18/2014				JOB NUMBER		
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DESIGNED BY	CS				CONTRACT NO.		
ENTERED BY	KB						
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REGIONAL ADM.		REVISION	DATE	BY			

SOUNDTRANSIT

RAILPROS

Washington State Department of Transportation

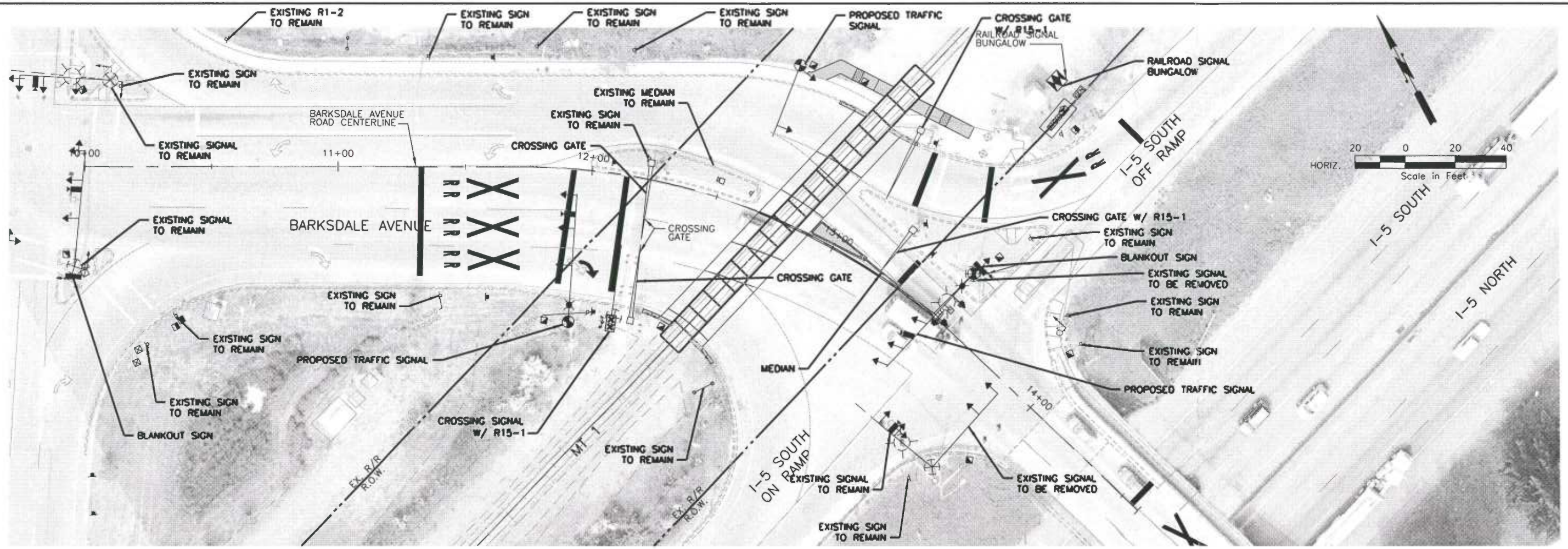
POINT DEFIANCE BYPASS
TRACK & SIGNAL IMPROVEMENTS

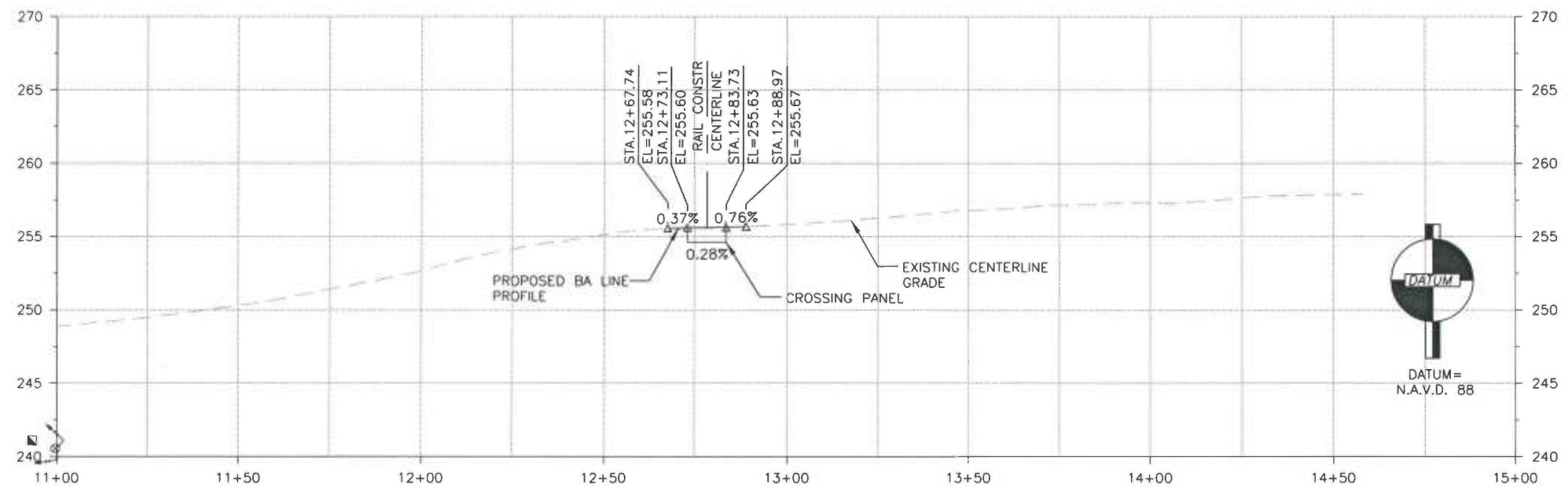
BARKSDALE AVENUE

CROSSING PLAN

BK-1

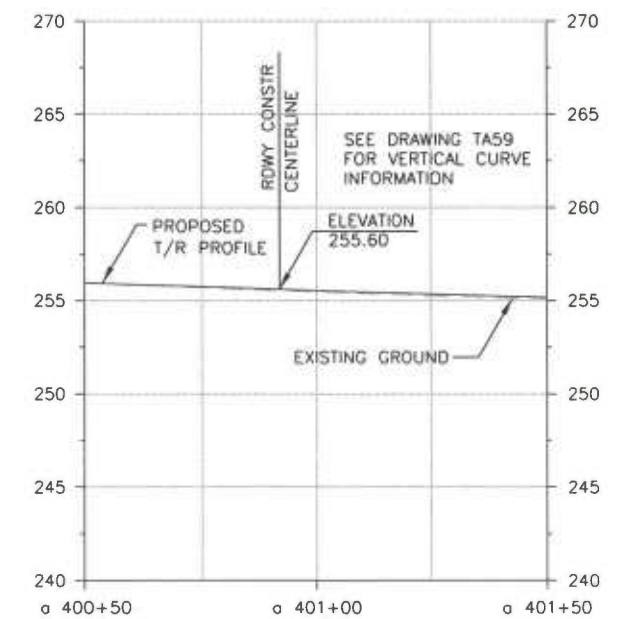
SHEET 1 OF 2 SHEETS





BA LINE PROFILE

SCALE (FULL SIZE): 1" = 20' HORIZ.
1" = 5' VERT.



MT1 LINE PROFILE

SCALE (FULL SIZE): 1" = 20' HORIZ.
1" = 5' VERT.

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DATE	12/18/2014				
PLOTTED BY	cstewart			JOB NUMBER	
DESIGNED BY	CS				
ENTERED BY	KB			CONTRACT NO.	
CHECKED BY	JM				
PROJ. ENGR.					
REGIONAL ADM.		REVISION	DATE	BY	

SOUNDTRANSIT

RAILPROS

Washington State Department of Transportation

POINT DEFIANCE BYPASS
TRACK & SIGNAL IMPROVEMENTS

BARKSDALE AVENUE

CROSSING PLAN AND PROFILE

BK-2

SHEET 2 OF 2 SHEETS