From:	Brown, Rob
To:	"Semenick, Stephen (BNSF)"; "Doyle, Weylin"; "Raezer, Connie"; Young, Betty (UTC); "Sullivan, Patrick"; "Jeff Stewart (FRA)"
Cc:	"McIntyre, Megan (BNSF)"; "Kevin Jeffers"; "Bryon Agan (DEA)"; Bieren, Chad
Subject:	RE: City of Kent Application to the FRA to Establish a Quiet Zone on the BNSF Mainline
Date:	Wednesday, April 3, 2019 4:05:42 PM
Attachments:	BNSF FRA QZ Application -20190403 - All.pdf

All,

The attached application from the City of Kent to the FRA for approval to establish a quiet zone on the BNSF mainline will be mailed tomorrow. Attached is an electronic copy for your use. Please feel free to contact me if you have any questions or comments.

Best Regards,

-Rob

Rob Brown, P.E., *Transportation Engineering Manager*
Transportation Engineering | Public Works Department
220 Fourth Avenue South, Kent, WA 98032
Phone **253-856-5571** |Cell **206-475-4945**
RBrown@KentWA.gov

CITY OF KENT, WASHINGTON
KentWA.gov **Facebook** Twitter **YouTube**

From: Brown, Rob
Sent: Saturday, March 30, 2019 12:21
To: Semenick, Stephen (BNSF) <Stephen.Semenick@BNSF.com>; 'Doyle, Weylin' <weylin.doyle@soundtransit.org>; Raezer, Connie <RaezerC@wsdot.wa.gov>; Young, Betty (UTC) <betty.young@utc.wa.gov>; 'Sullivan, Patrick' <Patrick.Sullivan@amtrak.com>
Cc: Jeff Stewart (FRA) <Jeffrey.P.Stewart@dot.gov>; McIntyre, Megan (BNSF) <Megan.McIntyre@BNSF.com>; Kevin Jeffers <Kevin.Jeffers@deainc.com>; Bryon Agan (DEA) <Bryon.Agan@deainc.com>; Bieren, Chad <CBieren@kentwa.gov>
Subject: City of Kent Application to the FRA to Establish a Quiet Zone on the BNSF Mainline

I wanted to give everyone an advanced courtesy notification that the city of Kent will be submitting an application to the FRA for approval to establish a New Quiet Zone on the BNSF mainline through the City per 49 CFR 222.39(b). We may be submitting the application as early as Wednesday, April 3rd. You will receive a copy of the application through certified mail. I will also send you an electronic copy in an email.

The application will have a 60-day comment period during which you may submit comments to the FRA. Information on how to submit comments to the FRA will be included in the copy of the application you will receive.

If our application to the FRA is successful, we will then petition the UTC to make the necessary grade crossing modifications to implement the New Quiet Zone.

Feel free to contact me if you have any questions. I will be out of the office between April 4th and April 8th, but I will be available before/after those days.

Best Regards,

-Rob

Rob Brown, P.E., *Transportation Engineering Manager*
Transportation Engineering | Public Works Department
220 Fourth Avenue South, Kent, WA 98032
Phone **253-856-5571** |Cell **206-475-4945**
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CITY OF KENT, WASHINGTON
KentWA.gov **Facebook** **Twitter** **YouTube**

PUBLIC WORKS ADMINISTRATION
Timothy J. LaPorte, P.E.
Public Works Director
400 West Gowe St
Kent, WA 98032
Fax: 253-856-6500

PHONE: 253-856-5500

April 4, 2019

Robert C. Lauby
Associate Administrator for Railroad Safety
Federal Railroad Administration
Mail Stop 25
1200 New Jersey Avenue SE
Washington, DC 20590

RE: Public Authority Application to FRA for Approval of the Establishment of a Quiet Zone on the BNSF Railway Mainline Crossings in Kent, Washington

Dear Mr. Lauby:

Please accept the attached application to the FRA for approval of a proposed New Quiet Zone on the BNSF Railway mainline in Kent, Washington. The City's request includes the eight (8) mainline grade crossings within the city limits. The proposed Quiet Zone includes a combination of supplemental safety measures and alternative safety measures.

Thank you for considering Kent's application. Please contact me if I can provide any additional information to aid in your decision making. I can be reached at 253-856-5571 or RBrown@KentWA.gov.

Sincerely,

Rob Brown, P.E.
Transportation Engineering Manager
Transportation Engineering | Public Works Department
220 Fourth Ave. So
Kent, WA 98032

CC: Stephen Semenick, BNSF Railway Company
Patrick Sullivan, National Railroad Passenger Corporation (Amtrak)
Weylin Doyle, Central Puget Sound Regional Transit Authority (Sound Transit)
Betty Young, Utilities and Transportation Commission
Connie Raezer, Washington State Department of Transportation
Jeffery P. Stewart, Federal Railroad Administration

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Application for Approval of a Quiet Zone on the BNSF Railway Mainline Within Kent, Washington

April 4, 2019

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INTRODUCTION

The City of Kent, Washington is requesting approval to establish a New Quiet Zone on the BNSF Railway Company's mainline crossing within the city limits under 49 CFR 222.39(b) *Public Authority Application to FRA*. There are eight (8) affected highway grade crossings within the proposed New Quiet Zone, covering a distance of 3.40 miles. All crossings are public and are under the jurisdiction of the City of Kent.

Crossing Number	Railroad Milepost	USDOT Crossing ID Number	Street or Highway Name
1	14.190	085625H	S 212 Street
2	15.942	085629K	E James Street
3	16.179	085633A	E Smith Street
4	16.289	085636V	E Meeker Street
5	16.339	085637C	E Gowe Street
6	16.436	085639R	E Titus Street
7	16.557	085640K	Willis Street/ State Route 516
8	17.090	085642Y	S 259th Street

The new Quiet Zone would be in effect 24 hours per day, seven days per week, with the exception of emergency and other situations as described in 49 CFR 222.23.

Pursuant to 49 CFR 222.39(b)(3), a party receiving this Notice of Intent may submit information or comments about the proposed Quiet Zone to the FRA Associate Administrator for Railroad Safety during the 60-day comment period following the date of this letter.

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49 CFR 222.39(b)(1)(i) –CURRENT GRADE CROSSING INVENTORY FORMS FOR EACH CROSSING

Current grade crossing inventory forms are included in Appendix A. Crossings were reviewed, and new traffic counts were taken in February 2019. Updates to each Grade Crossing Inventory Form were submitted to the Washington State Utilities and Transportation Commission for transmittal to the Federal Railroad Administration.

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49 CFR 222.39(b)(1)(ii) – PRESENT SAFETY MEASURES FOR EACH CROSSING

All public highway grade crossings within the proposed New Quiet Zone are currently equipped with active warning systems, warning signs, and constant warning time train detection. Specific details about each crossing are provided below. Additional photos of each grade crossing are contained in Appendix B.

Crossing 1. U.S. DOT Crossing 085625H. S. 212th St

Image source: FRA GIS


Image source: Google Street View

S 212th St crosses three mainline tracks at this crossing. S 212th St is six traffic lanes, three in each direction. The curb lane in each direction is an HOV lane. There are ten-foot wide non-motorized crossings on each side of S 212th St. The posted speed limit is 40 mph. The average daily traffic volume is 27,691 vehicles with a 14% truck volume.

The intersection of S 212th St and 77th Ave S is located approximately 125 feet west of the crossing. The intersection is a "Tee" configuration with 77th Ave S intersecting S 212th St from the north. The intersection is controlled by a traffic signal. The traffic signal is interconnected to the railroad signal with simultaneous preemption. There are no driveways between 77th Ave S and the crossing. The nearest roadway access point to the east is a driveway on the south side of S 212th St approximately 285 feet from the crossing.

Median islands separating directional traffic are present at the crossing. The medians are constructed of mountable traffic curb capped with asphalt. The eastern median island extends approximately 35 feet to the east of the crossing gate. The western median island extends approximately 125 feet to the west of the crossing gate.

This railroad crossing has active grade crossing warning devices consisting of flashing lights and gates. The crossing has 16 pair of flashing lights, eight pair per direction. Each direction has two pair mounted on a gantry above the direction of traffic, two overhead pair mounted above the opposing direction of traffic, two post-mounted pair in the median, and one pair mounted on each side of the roadway.

The crossing has two-quadrant gates consisting of two crossing gates and one pedestrian gate per direction. Each vehicular direction has one crossing gate mounted in the median, one mounted on the side of the roadway, and one pedestrian gate.

The crossing has two pedestrian bells, one on each side of the roadway mounted above each pedestrian gate.

The crossing is equipped with constant warning time train detection devices and power out indicators.

Warning signs for the crossing consist of Grade Crossing (R15-1, Crossbuck) signs at the crossing and Grade Crossing Advanced Warning Signs (W10-1) in advance of the crossing. A Grade Crossing and Intersection Advanced Warning Sign (W10-4) sign is present on southbound 77th Ave S approaching S 212th St. The crossing also has one shoulder-mounted Do Not Stop On Tracks (R8-8) sign for each vehicular direction.

Grade Crossing Pavement Marking symbols are present in each vehicular lane approaching the crossing. Stop lines are located across the traffic lanes in advance of the vehicular gates.

Crossing 2. U.S. DOT Crossing 085629K. E James St

Image source: FRA GIS


Image source: Google Street View

E James St crosses two mainline tracks at this crossing. E James St is four traffic lanes, two in each direction. There are sidewalks on the south side of E James St on either side of the crossing. There is also a sidewalk on the north side of E James St east of the crossing. The posted speed limit is 35 mph. The average daily traffic volume is 23,904 vehicles with a 6% truck volume. This crossing is located north of the Kent Station commuter rail station.

The intersection of E James St and Railroad Ave N is located approximately 130 feet east of the crossing. The intersection is a "Tee" configuration with Railroad Ave N intersecting E James St from the south. Railroad Ave N is stop controlled at E. James St and left turns from Railroad Ave N to E James St are prohibited through signing, a raised traffic island on the south side of the intersection, and a mountable median traffic curb. E James St intersects 1st Ave N to the west of the crossing. The intersection is an offset "Tee" configuration with the intersection of 1st Ave to the south being approximately 30 feet from the crossing. The intersection of E James and 1st Ave N to the north is approximately 15 feet from the crossing. Only right turns are permitted from either leg of 1st Ave N to E James St by signing and median curbing.

The channelization devices consisting of mountable median curbing with tubular markers are present on both sides of the crossing. To the east of the crossing, channelization devices extend from approximately 13 feet from the crossing gate to approximately 95 feet from the crossing gate. Mountable traffic curbing extends approximately an additional 185 feet to the east. To the west of the crossing, channelization devices extend approximately 3 feet from the crossing gate to approximately 40 feet from the crossing gate. Mountable traffic curbing extends approximately an additional 155 feet to the west where it connects to a raised traffic island.

This railroad crossing has active grade crossing warning devices consisting of flashing lights and gates. The crossing has 14 pair of flashing lights. There are six pair per direction on E James St. Each direction has two pair mounted on a gantry above the direction of traffic, two overhead pair mounted above the opposing direction of traffic, and one pair mounted on each side of the roadway. There is one pair of flashing side lights for northbound 1st Ave N post mounted at the crossing. There is one pair of flashing side lights southeast quadrant of the crossing directed parallel to the tracks to the south.

The crossing has two-quadrant gates consisting of one crossing gate per direction. Pedestrian gates are not present, but the crossing gates are behind the sidewalk in the southwest quadrant and shoulder in the northeast quadrant. The eastern crossing gate only extends to a distance of four feet from the roadway centerline.

The crossing has three pedestrian bells, one on each side of the roadway mounted above each crossing gate, and one mounted above the side lights in the southeast quadrant of the crossing.

The crossing is equipped with constant warning time train detection devices and power out indicators.

Warning signs for the crossing consist of Grade Crossing (R15-1, Crossbuck) signs at the crossing and Grade Crossing Advanced Warning Signs (W10-1) in advance of the crossing. A Grade Crossing and Intersection Advanced Warning Sign (W10-4) sign is present on northbound 1st Ave N approaching E James St. The crossing also has one shoulder-mounted Do Not Stop On Tracks (R8-8) sign for eastbound E James St.

Grade Crossing Pavement Marking symbols are present in each vehicular lane approaching the crossing. Stop lines are located across the traffic lanes in advance of the vehicular gates.

Crossing 3. U.S. DOT Crossing 085633A. E Smith St

Image source: FRA GIS

Image source: Google Street View

E Smith St crosses two mainline tracks at this crossing. E Smith St is four traffic lanes, two in each direction. There are sidewalks on the both sides of E smith St at the crossing. The posted speed limit is 30 mph. The average daily traffic volume is 17,117 vehicles with a 4% truck volume. This crossing is located at the south end of the Kent Station commuter rail station.

The intersection of E Smith St and Railroad Ave N is located approximately 63 feet east of the crossing. The intersection is a standard four leg configuration. Railroad Ave N is stop controlled at E. Smith St. There are no turn restrictions at this intersection. E James St intersects 1st Ave N to the west of the crossing. The intersection is a "Tee" configuration with the intersection of 1st Ave to the north being approximately 17 feet from the crossing. Only right turns are permitted from southbound 1st Ave N to E Smith St by signing and median curbing. There are no roadway access points to E Smith St between 1st Ave N and Railroad Ave N.

The channelization devices consisting of mountable median curbing with tubular markers are present on both sides of the crossing. To the east of the crossing, channelization devices extend approximately from the crossing gate to approximately 80 feet east of the crossing gate. To the west of the crossing, channelization devices extend from approximately 10 feet inside of the crossing gate to approximately 40 feet from the crossing gate. A combination of raised traffic island and mountable curb extend more than 300 feet to the west.

This railroad crossing has active grade crossing warning devices consisting of flashing lights and gates. The crossing has 15 pair of flashing lights. There are six pair per direction on E Smith St. Each direction has two pair mounted on a gantry above the direction of traffic, two overhead pair mounted above the opposing direction of traffic, and one pair mounted on each side of the roadway. There is one pair of flashing side lights for northbound Railroad Ave N post mounted at the crossing. There is one pair of flashing side lights in the northwest quadrant of the crossing directed at the Kent Station rail platform. There is one pair of flashing side lights in the southwest quadrant of the crossing directed southbound 1st Ave S although left turns are prohibited from 1st Ave S.

The crossing has two-quadrant gates consisting of one crossing gate per direction. Pedestrian gates included in the southwest and northeast quadrants with the crossing gates. The eastern crossing gate only extends to a distance of four feet from the roadway centerline.

The crossing has three pedestrian bells, one on each side of the roadway mounted above each crossing gate, and one mounted above the side lights in the northwest quadrant of the crossing.

The crossing is equipped with constant warning time train detection devices and power out indicators.

Warning signs for the crossing consist of Grade Crossing (R15-1, Crossbuck) signs at the crossing and Grade Crossing Advanced Warning Signs (W10-1) in advance of the crossing. Grade Crossing and Intersection Advanced Warning Signs (W10-2) signs are present on northbound and southbound Railroad Ave N approaching E Smith St. The crossing also has shoulder-mounted Do Not Stop On Tracks (R8-8) signs on E Smith St approaching the crossing.

Grade Crossing Pavement Marking symbols are present in each vehicular lane approaching the crossing. Stop lines are located across the traffic lanes in advance of the vehicular gates.

Crossing 4. U.S. DOT Crossing 085636V. E Meeker St

Image source: FRA GIS


Image source: Google Street View

E Meeker St crosses two mainline tracks at this crossing. E Meeker St is two traffic lanes, one in each direction. There are sidewalks approaching the crossing on both sides of the crossing on the north side of E Meeker and south side of E. Meeker approaching the crossing from the west side. There is a wide paved shoulder on the south side of E. Meeker east of the crossing. The posted speed limit is 25 mph. The average daily traffic volume is 4,139 vehicles with a 1% truck volume.

The intersection of E Meeker St and Railroad Ave is located approximately 105 feet east of the crossing. The intersection is a standard four leg configuration. Railroad Ave is stop controlled at E. Meeker St. There are no turn restrictions at this intersection. The E Meeker St intersects 1st Ave approximately 65 feet west of the crossing. The intersection is a standard four leg configuration. 1st Ave is stop controlled at E. Meeker St. There are no turn restrictions at this intersection. There are no roadway access points on the north side of E Meeker St between 1st Ave and Railroad Ave. There are no roadway access points on the south side of Meeker between 1st Ave and the crossing. There is access to the railroad bungalow adjacent to the crossing in the southeast quadrant. There also an access to a parking lot east of the crossing on the south side of E Meeker approximately 65 feet east of the crossing.

The channelization devices consisting of mountable median curbing with tubular markers are present on both sides of the crossing. To the east of the crossing, channelization devices extend approximately from the crossing gate to approximately 75 feet east of the crossing gate. To the west of the crossing, channelization devices extend from approximately the crossing gate to approximately 50 feet west of the crossing gate.

This railroad crossing has active grade crossing warning devices consisting of flashing lights and gates. The crossing has eight pair of flashing lights. There are four pair per direction on E Meeker St. Each direction has one pair mounted on a gantry above the direction of traffic, one overhead pair mounted above the opposing direction of traffic, and one pair mounted on each side of the roadway.

The crossing has two-quadrant gates consisting of one crossing gate per direction. Pedestrian gates are not present.

The crossing has two pedestrian bells, one on each side of the roadway mounted above each crossing gate.

The crossing is equipped with constant warning time train detection devices and power out indicators.

Warning signs for the crossing consist of Grade Crossing (R15-1, Crossbuck) signs at the crossing and Grade Crossing Advanced Warning Signs (W10-1) in advance of the crossing. Grade Crossing and Intersection Advanced Warning Signs (W10-2) signs are present on both northbound and southbound Railroad Ave and northbound and southbound 1st Ave approaching E Meeker St.

Grade Crossing Pavement Marking symbols are not present at this crossing. Stop lines are located across the traffic lanes in advance of the vehicular gates.

Crossing 5. U.S. DOT Crossing 085637C. E Gowe St

Image source: FRA GIS


Image source: Google Street View

E Gowe St crosses two mainline tracks at this crossing. E Gowe St is two traffic lanes, one in each direction. There are sidewalks on both sides of E Gowe St approaching the crossing from the west. There are wide paved shoulders on E Gowe St on the east side of the crossing. The posted speed limit is 25 mph. The average daily traffic volume is 4,099 vehicles with a 2% truck volume.

The intersection of E Gowe St and Railroad Ave is located approximately 90 feet east of the crossing. The intersection is a standard four leg configuration. Railroad Ave is stop controlled at E. Gowe St. There are no turn restrictions at this intersection. The E Gowe St intersects 1st Ave approximately 65 feet west of the crossing. The intersection is a standard four leg configuration. 1st Ave is stop controlled at E. Gowe St. There are no turn restrictions at this intersection. There are no roadway access points on west side of the crossing between 1st Ave and the crossing. East of the crossing on the north side there is access to the property just east of the crossing gate. East of the crossing on the south side there is a gated and locked access to BNSF property approximately 20 feet from the crossing. Further to the east there is an access to a parking lot approximately 45 feet east of the crossing.

The channelization devices consisting of mountable median curbing with tubular markers are present on both sides of the crossing. To the east of the crossing, channelization devices extend from approximately the crossing gate to approximately 75 feet east of the crossing gate. To the west of the crossing, channelization devices extend from approximately the crossing gate to approximately 45 feet west of the crossing gate.

This railroad crossing has active grade crossing warning devices consisting of flashing lights and gates. The crossing has eight pair of flashing lights. There are four pair per direction on E Gowe St. Each direction has one pair mounted on a gantry above the direction of traffic, one overhead pair mounted above the opposing direction of traffic, and one pair mounted on each side of the roadway.

The crossing has two-quadrant gates consisting of one crossing gate per direction. Pedestrian gates are not present.

The crossing has two pedestrian bells, one on each side of the roadway mounted above each crossing gate.

The crossing is equipped with constant warning time train detection devices and power out indicators.

Warning signs for the crossing consist of Grade Crossing (R15-1, Crossbuck) signs at the crossing and Grade Crossing Advanced Warning Signs (W10-1) in advance of the crossing. Grade Crossing and Intersection Advanced Warning Signs (W10-2) signs are present on both northbound and southbound Railroad Ave S and northbound and southbound 1st Ave S approaching E Gowe St.

Grade Crossing Pavement Marking symbols are not present at this crossing. Stop lines are located across the traffic lanes in advance of the vehicular gates.

Crossing 6. U.S. DOT Crossing 085639R. E Titus St

Image source: FRA GIS


Image source: Google Street View

E Titus St crosses two mainline tracks and one yard track at this crossing. The yard track is outside of crossing active warning device envelope. E Titus St is two traffic lanes, one in each direction. There are sidewalks on both sides of E Titus St approaching the crossing from the west. There are wide paved shoulders on E Titus St on the east side of the crossing with sidewalk segments near the Railroad Ave S intersection. The posted speed limit is 25 mph. The average daily traffic volume is 1,933 vehicles with a 1% truck volume.

The intersection of E Titus St and Railroad Ave is located approximately 95 feet east of the crossing gate and approximately 65 feet east of the stop line for westbound traffic on the east side of the yard track. The intersection is a standard four leg configuration. Railroad Ave is stop controlled at E. Titus St. There are no turn restrictions at this intersection. The E Titus St intersects 1st Ave approximately 80 feet west of the crossing. The intersection is a standard four leg configuration. 1st Ave is stop controlled at E. Titus St. There are no turn restrictions at this intersection. In the northwest quadrant there is an alley adjacent to the crossing. Access is restricted to right-in/right-out. In the southwest quadrant there is an illegal driveway adjacent to the crossing. In the southeast quadrant there is a driveway approximately 30 feet from the crossing and approximately 15 feet from the yard track that serves a small business. The former access points in the northeast quadrant have been closed by BNSF.

The channelization devices consisting of mountable median curbing with tubular markers are present on both sides of the crossing. To the east of the crossing, channelization devices extend from approximately the crossing gate to approximately 75 feet east of the crossing gate. To the west of the crossing, channelization devices extend from approximately the crossing gate to approximately 45 feet west of the crossing gate.

This railroad crossing has active grade crossing warning devices consisting of flashing lights and gates. The crossing has four pair of flashing lights. There are two pair per direction on E Meeker St, one pair mounted on each side of the roadway. As noted above, the yard track is located outside of these warning devices.

The crossing has two-quadrant gates consisting of one crossing gate per direction. Pedestrian gates are not present. The yard track is located outside of theses warning devices.

The crossing has two pedestrian bells, one on each side of the roadway mounted above each crossing gate.

The crossing is equipped with constant warning time train detection devices and power out indicators.

Warning signs for the crossing consist of Grade Crossing (R15-1, Crossbuck) signs at the crossing and Grade Crossing Advanced Warning Signs (W10-1) in advance of the crossing. Grade Crossing and Intersection Advanced Warning Signs (W10-2) signs are present on both northbound and southbound Railroad Ave S and northbound and southbound 1st Ave S approaching E Meeker St.

Grade Crossing Pavement Marking symbols are not present at this crossing. Stop lines are located across the traffic lanes in advance of the vehicular gates.

Crossing 7. U.S. DOT Crossing 085640K. E Willis St/SR 516

Image source: FRA GIS


Image source: Google Street View

E Willis St crosses two mainline tracks at this crossing. E Willis St is four traffic lanes, two in each direction. There are sidewalks on the north side of E Willis St on either side of the crossing. There wide paved shoulders on the south side of E Willis St on both sides of the crossing. The posted speed limit is 30 mph. The average daily traffic volume is 16,807 vehicles with a 6% truck volume.

E. Willis intersects Railroad Ave S to the east. The intersection is an offset "Tee" configuration with the intersection of Railroad Ave S to the south being approximately 10 feet from the crossing. Only right turns are permitted from northbound Railroad Ave S through signing and channelization devices. The intersection of E Willis St and Railroad Ave S to the north is approximately 110 feet from the crossing. There are no turn restrictions at this intersection. There are no access points between the crossing and either Railroad Ave S intersection.

E Willis St intersects 1st Ave S to the west of the crossing. The intersection is an offset "Tee" configuration with the intersection of 1st Ave S to the south being approximately 23 feet from the crossing. Only right turns are permitted from northbound Railroad Ave S through signing and channelization devices. The intersection of E Willis St and 1st Ave S to the north is approximately 110 feet from the crossing. There are no turn restrictions at this intersection. There are no access points between the crossing and either 1st Ave S intersection.

The channelization devices consisting of mountable median curbing with tubular markers are present on both sides of the crossing. To the east of the crossing, channelization devices extend approximately from the crossing gate to approximately 75 feet from the crossing gate. To the west of the crossing, channelization devices also extend approximately from the crossing gate to approximately 75 feet from the crossing gate.

This railroad crossing has active grade crossing warning devices consisting of flashing lights and gates. The crossing has 14 pair of flashing lights. There are six pair per direction on E Willis St. Each direction has two pair mounted on a gantry above the direction of traffic, two overhead pair mounted above the opposing direction of traffic, and one pair mounted on each side of the roadway. There is one pair of flashing side lights for northbound 1st Ave N post mounted at the crossing on the south side and another pair for northbound 1st Ave N post mounted in the northeast quadrant.

The crossing has two-quadrant gates consisting of one crossing gate per direction. Pedestrian gates are not present.

The crossing has two pedestrian bells, one on each side of the roadway mounted above each crossing gate.

The crossing is equipped with constant warning time train detection devices and power out indicators.

Warning signs for the crossing consist of Grade Crossing (R15-1, Crossbuck) signs at the crossing and Grade Crossing Advanced Warning Signs (W10-1) in advance of the crossing. Grade Crossing and Intersection Advanced Warning Sign (W10-2) signs are present on southbound 1st Ave N and southbound Railroad Ave S approaching E Willis St. A Grade Crossing and Intersection Advanced Warning Sign (W10-4) sign is present on northbound 1st Ave S approaching Willis. The crossing also has one shoulder-mounted Do Not Stop On Tracks (R8-8) sign for westbound E James St.

Grade Crossing Pavement Marking symbols are present in each vehicular lane approaching the crossing. Stop lines are located across the traffic lanes in advance of the vehicular gates.

Crossing 8. U.S. DOT Crossing 085642Y. S 259th St

Image source: FRA GIS


Image source: Google Street View

S 259th St crosses two mainline tracks at this crossing. S 259th St is two traffic lanes, one in each direction. There are no pedestrian accommodations at this crossing. The posted speed limit is 25 mph. The average daily traffic volume is 2,794 vehicles with a 6% truck volume.

The intersection of S 259th St and 1st Ave S is located approximately 40 feet west of the crossing. The intersection is a standard four leg configuration. 1st Ave S is stop controlled at S 259th St. There are no turn restrictions at this intersection. There are no roadway access points on west side of the crossing between 1st Ave and the crossing. East of the crossing on the north side there is an access to a commercial property approximately 185 feet east of the crossing. East of the crossing on the south side there is an access to a commercial property approximately 40 feet from the crossing.

No channelization devices are present at this crossing.

This railroad crossing has active grade crossing warning devices consisting of flashing lights and gates. The crossing has nine pair of flashing lights. There are four pair per direction on S 259th St. Each direction has one pair mounted on a gantry above the direction of traffic, one overhead pair mounted above the opposing direction of traffic, and one pair mounted on each side of the roadway. There is one additional pair of post mounted flashing lights in the southwest quadrant for traffic southbound on 1st Ave S.

The crossing has two-quadrant gates consisting of one crossing gate per direction. Pedestrian gates are not present.

The crossing has two pedestrian bells, one on each side of the roadway mounted above each crossing gate.

The crossing is equipped with constant warning time train detection devices and power out indicators.

Warning signs for the crossing consist of Grade Crossing (R15-1, Crossbuck) signs at the crossing and Grade Crossing Advanced Warning Signs (W10-1) in advance of the crossing. Grade Crossing and Intersection Advanced Warning Signs (W10-2) signs are present on both northbound and southbound 1st Ave S approaching S 259th St.

Grade Crossing Pavement Marking symbols are present in each vehicular lane approaching the crossing. Stop lines are located across the traffic lanes in advance of the vehicular gates.

49 CFR 222.39(b)(1)(iii) – DETAILED INFORMATION ABOUT DIAGNOSTIC TEAM REVIEW

A diagnostic team review of all eight crossings within the proposed New Quiet Zone was conducted on November 15, 2017. The final notes from the diagnostic team's review can be found in Appendix C.

The diagnostic team consisted of the members listed below.

BNSF Railway Company
- Megan McIntyre, Assistant Director Public Projects
- Stephan Semenick, Manager Public Projects - WA & B.C.
- Ciano Hipol, Signal Supervisor - Seattle
- Paul D. Robinson, Signal Supervisor - Vancouver
- Lennie D. Facklam, Assistant Director Signal Design - Highway Crossings

City of Kent, Washington
- Chad Bieren, City Engineer
- Kelly Peterson, Transportation Engineering Manager
- Rob Brown, Acting City Traffic Engineer

David Evans and Associates, consultants to the City
- Bryon Agan, Transportation Project Manager
- Kevin Jeffers, Rail Engineer

Federal Railroad Administration
- Jeffery Stewart, Grade Crossing Inspector, Region 8

Washington State Utilities and Transportation Commission
- Betty Young, Transportation Planning Specialist – Rail Safety
- Bob Boston, Rail Program Specialist

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49 CFR 222.39(b)(1)(iv) – EFFORTS BY PUBLIC AUTHORITY TO ADDRESS COMMENTS SUBMITTED IN RESPONSE TO NOTICE OF INTENT

The City of Kent has attempted, in good faith, to address all of the issues and concerns that were submitted in response to the Notice of Intent. All the comments received and the City's responses to those comments are contained in Appendix D.

BNSF Railway Company is the company that is operating the public highway-rail grade crossings within the proposed New Quiet Zone.

The Washington State Department of Transportation is the State agency responsible for highway safety.

The Washington State Utilities and Transportation Commission is the State agency responsible for grade crossing safety.

The Notice of Intent was also sent to the Puget Sound Regional Transit Authority (dba Sound Transit), operators of the Sounder commuter rail, and Amtrak Corporation. Sound Transit returned one comment which is included in Appendix D.

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49 CFR 222.39(b)(1)(v) – DETAILED INFORMATION AS TO WHICH SAFETY IMPROVEMENTS ARE PROPOSED

Detailed information on the proposed safety measures at each crossing are detailed below. Proposed safety improvements are separated into three sections for each crossing, supplementary safety measures (SSMs), alternative safety measures (ASMs), and other grade crossing improvements.

Plans showing the proposed safety improvements at each crossing are included in Appendix E.

Crossing 1. U.S. DOT Crossing 085625H. S. 212th St

Supplementary Safety Measures (49 CFR 222 Appendix A)

Supplementary safety measures consisting of the existing gates and new channelization devices will be installed at this in compliance with 49 CFR 222 Appendix A (A)(3). The existing crossing currently has automatic gates and median islands consisting of mountable traffic curb capped with asphalt.

The existing median island to the east is approximately 45 feet long. It will be extended approximately 80 feet to east. Channelization devices in the form of tubular markers spaced 40 inches on-center will be installed on top of the median island. Channelization devices will extend approximately 120 feet east of the gate.

The existing median island to the west of the crossing currently extends approximately 135 feet west of the crossing. Channelization devices in the form of delineator posts spaced 40 inches on-center will be installed on top of the median island. Channelization devices will extend approximately 110 feet west of the gate.

Alternative Safety Measures (49 CFR 222 Appendix B)

No alternative safety measures are proposed at this crossing.

Additional Grade Crossing Modifications

No Train Horn (W10-9, W10-9P) signing will be installed on the approaches to the crossing and on southbound 77th Ave S under the existing advanced grade crossing warning sign when the proposed New Quiet Zone becomes effective. Look (R15-8) signs will be installed on non-motorized approaches that are not controlled by pedestrian gates in the northwest and southeast quadrants.

Dynamic envelope pavement markings will be installed at this crossing.

Detectable warning surfaces will be installed on the non-motorized approaches to the crossing in all four quadrants.

Crossing 2. U.S. DOT Crossing 085629K. E James St

Supplementary Safety Measures (49 CFR 222 Appendix A)

No supplementary safety measures are proposed at this crossing.

Alternative Safety Measures (49 CFR 222 Appendix B)

Alternative safety measures in the form of modified supplementary safety measures are proposed at this crossing. The existing gates with new channelization devices that do not meet the requirements of an SSM are proposed in accordance with 49 CFR 222 Appendix B(I). Channelization devices will be installed but there are intersections within 60 feet of the crossing. Calculations for the proposed effectiveness are included in Section VII of this document.

The existing channelization devices on both sides of the crossing will be replaced with new channelization devices. To the east, the new channelization devices will begin at the gate and extend approximately 110 feet to the east. On the west side, the new channelization devices will begin at the crossing gate and extended to a point approximately 110 feet west of the crossing gate. The west end of the new channelization devices will tie into the existing mountable traffic curb.

Additional Grade Crossing Modifications

No Train Horn (W10-9, W10-9P) signing will be installed on the approaches to the crossing and northbound 1st Ave S under the existing advanced grade crossing warning sign when the proposed New Quiet Zone becomes effective. Do Not Stop On Tracks (R8-8) signs will be installed approaching the crossing on both sides of the crossing. Look (R15-8) signs will be installed on non-motorized approaches that are not controlled by crossing gates in the northwest and southeast quadrants.

Dynamic envelope pavement markings will be installed at this crossing. The existing stop lines for the crossing will be relocated to be eight feet from the crossing gates.

Detectable warning surfaces will be installed on the sidewalk approaching the crossing in the southwest quadrant. Detectable warning surfaces will also be installed on the paved shoulders approaching the crossing in the other three quadrants.

Crossing 3. U.S. DOT Crossing 085633A. E Smith St

Supplementary Safety Measures (49 CFR 222 Appendix A)

No supplementary safety measures are proposed at this crossing.

Alternative Safety Measures (49 CFR 222 Appendix B)

Alternative safety measures in the form of modified supplementary safety measures are proposed at this crossing. The existing gates with new channelization devices that do not meet the requirements of an SSM are proposed in accordance with 49 CFR 222 Appendix B (I). Channelization devices will be installed but there are intersections within 60 feet of the crossing and the gate arm in the west side does not extend to within one foot of the channelization devices. Calculations for the proposed effectiveness are included in the next Section VII this document.

The existing channelization devices on both sides of the crossing will be replaced with new channelization devices. To the east, the new channelization devices will begin at the gate and extend approximately 95 feet to the east. On the west side, the new channelization devices will begin at the crossing gate and extended approximately 56 feet to the west of the crossing gate and tie into the existing raised traffic island. Channelization devices in the form of delineator posts spaced 40 inches on-center will be installed on top of the median island for approximately 54 feet creating approximately 110 feet of channelization devices.

Additional Grade Crossing Modifications

No Train Horn (W10-9, W10-9P) signing will be installed on the approaches to the crossing and on Railroad Ave S under the existing advanced grade crossing warning signs when the proposed New Quiet Zone becomes effective. Look (R15-8) signs will be installed on non-motorized approaches that are not controlled by crossing gates in the northwest and southeast quadrants.

The grade crossing pavement marking symbols east of the crossing will be relocated to a location approximately 250’ west of the crossing. Dynamic envelope pavement markings will be installed at this crossing. The existing stop lines for the crossing will be relocated to be eight feet from the crossing gates.

Detectable warning surfaces will be installed on the sidewalk approaching the crossing in the southwest quadrant. Detectable warning surfaces will also be installed on the paved shoulders approaching the crossing in the other three quadrants.

Fencing will be installed on the west side of the railroad tracks between E Meeker St and E Smith St. to deter trespassing and pedestrian crossings between E Smith St and E Meeker St.

Crossing 4. U.S. DOT Crossing 085636V. E Meeker St

Supplementary Safety Measures (49 CFR 222 Appendix A)

Supplementary safety measures consisting of the existing gates and new channelization devices will be installed at this crossing in compliance with 49 CFR 222 Appendix A (A)(3). The existing crossing currently has automatic gates and channelization devices. The driveway access in the southeast quadrant to the BNSF signal control equipment will be closed. A traffic barrier curb will be installed in the southeast quadrant extending from the projection of the stop bar to a point 62 feet east of the crossing gate to formalize the existing driveway near Railroad Ave S.

To the east side, the channelization devices will be replaced and extended from the crossing gate to approximately 95 feet from the crossing gate.

To the west, the mounted channelization devices will be replaced and extended from the crossing gate to approximately 65 feet from the crossing gate.

Alternative Safety Measures (49 CFR 222 Appendix B)

No alternative safety measures are proposed at this crossing.

Additional Grade Crossing Modifications

The eastbound and westbound lanes approaching and through the crossing will be reduced from approximately 20 feet to 12 feet by installing edge lines and hachuring the shoulders.

No Train Horn (W10-9, W10-9P) signing will be installed on the approaches to the crossing and under the existing advanced grade crossing warning signs on the adjacent intersecting streets when the proposed New Quiet Zone becomes effective. Do Not Stop On Tracks (R8-8) signs will be installed on both approaches to the crossing. Look (R15-8) signs will be installed on non-motorized approaches in all four quadrants.

Dynamic envelope pavement markings will be installed at this crossing.

Detectable warning surfaces will be installed on the paved shoulders approaching the crossing in all four quadrants.

Fencing will be installed to deter pedestrian trespassing and pedestrian crossings between roadway crossings. A fence will be installed on the west side of the railroad tracks between E Gowe St and E Meeker St. A fence will also be installed on the west side of the railroad tracks between E Meeker St and E Smith St. A fence will be installed between E Meeker St and the BNSF depot building south of E. Meeker St on the east side of the railroad tracks.

Crossing 5. U.S. DOT Crossing 085637C. E Gowe St

Supplementary Safety Measures (49 CFR 222 Appendix A)

Supplementary safety measures consisting of the existing gates and new channelization devices will be installed at this in compliance with 49 CFR 222 Appendix A (A)(3). The existing crossing currently has automatic gates and channelization devices. BNSF has installed a gated access to the paved area on the east side of the tracks. The driveway access in the southeast quadrant will be closed. The driveway in the northeast quadrant will be relocated to 62 feet east of the crossing gate.

Alternative Safety Measures (49 CFR 222 Appendix B)

No alternative safety measures are proposed at this crossing.

Additional Grade Crossing Modifications

The eastbound and westbound lanes approaching and through the crossing will be reduced from approximately 20 feet to 12 feet by installing edge lines and hachuring the shoulders.

No Train Horn (W10-9, W10-9P) signing will be installed on the approaches to the crossing and under the existing advanced grade crossing warning signs on the adjacent intersecting streets when the proposed New Quiet Zone becomes effective. Do Not Stop On Tracks (R8-8) signs will be installed on both approaches to the crossing. Look (R15-8) signs will be installed on non-motorized approaches in all four quadrants.

Dynamic envelope pavement markings will be installed at this crossing. Pavement markings will be installed to direct pedestrians around the existing railroad signal equipment. The existing stop lines for the crossing will be relocated to be eight feet from the crossing gates.

Detectable warning surfaces will be installed on the paved shoulders approaching the crossing in all four quadrants.

A fence will be installed on the west side of the railroad tracks between E Titus St and E Gowe St. A fence will also be installed on the west side of the railroad tracks between E Gowe St and E Meeker St. A fence will be installed between E Gowe St and the BNSF depot building north of E. Gowe St on the east side of the railroad tracks.

Crossing 6. U.S. DOT Crossing 085639R. E Titus St

Supplementary Safety Measures (49 CFR 222 Appendix A)

No supplementary safety measures are proposed at this crossing.

Alternative Safety Measures (49 CFR 222 Appendix B)

No alternative safety measures are proposed at this crossing.

Additional Grade Crossing Modifications

The existing channelization devices on both sides of the crossing will be replaced with new channelization devices. To the east, the new channelization devices will begin at the gate and extend approximately 65 feet to the east. On the west side, the new channelization devices will begin at the crossing gate and extended approximately 72 to the west.

The eastbound and westbound lanes approaching and through the crossing will be reduced from approximately 20 feet to 12 feet by installing edge lines and hachuring the shoulders.

The illegal driveway access in the southwest quadrant will be closed.

No Train Horn (W10-9, W10-9P) signing will be installed on the approaches to the crossing and under the existing advanced grade crossing warning signs on the adjacent intersecting streets when the proposed New Quiet Zone becomes effective. Do Not Stop On Tracks (R8-8) signs will be installed on both approaches to the crossing. The yard track on the east side of the mainline is outside the crossing gates. A Stop Here on Red (R10-6a) sign will be installed on the eastbound approach prior to the yard track crossing. A Stop Here on Red (R10-6a) sign will also be installed on the westbound approach for consistency at the crossing. Look (R15-8) signs will be installed on non-motorized approaches in all four quadrants. A Right Turn Only (R3-5R) will be added at the commercial driveway in the southwest quadrant. A Right Turn Only (R3-5R) will be added at the alley in the northwest quadrant.

Dynamic envelope pavement markings will be installed at this crossing. Pavement markings will be installed to direct pedestrians around the existing railroad signal equipment.

Detectable warning surfaces will be installed on the paved shoulders approaching the crossing in all four quadrants.

A fence will be installed on the west side of the railroad tracks between E Titus St and E Gowe St.

Crossing 7. U.S. DOT Crossing 085640K. E Willis St/SR 516

Supplementary Safety Measures (49 CFR 222 Appendix A)

No supplementary safety measures are proposed at this crossing.

Alternative Safety Measures (49 CFR 222 Appendix B)

Alternative safety measures in the form of modified supplementary safety measures are proposed at this crossing. The existing gates and new channelization devices that do not meet the requirements of an SSM are proposed in accordance with 49 CFR 222 Appendix B(I). Channelization devices will be installed but there are intersections within 60 feet of the crossing. Calculations for the proposed effectiveness are included in Section VII of this document.

The existing channelization devices on both sides of the crossing will be replaced with new channelization devices. To the east, the new channelization devices will begin at the gate and extend approximately 100 feet to the east. On the west side, the new channelization devices will begin at the crossing gate and extended approximately 100 to the west.

Additional Grade Crossing Modifications

No Train Horn (W10-9, W10-9P) signing will be installed on the approaches to the crossing and under the existing advanced grade crossing warning signs on northbound and southbound 1st Ave S and on southbound Railroad Ave S when the proposed New Quiet Zone becomes effective. A Do Not Stop On Tracks (R8-8) sign will be installed on the east approaches to the crossing. Look (R15-8) signs will be installed on non-motorized approaches in all four quadrants.

The grade crossing pavement marking symbols west of the crossing will be relocated to a location approximately 250’ west of the crossing. The grade crossing pavement marking symbols east of the crossing will be relocated to a location approximately 230’ east of the crossing. Dynamic envelope pavement markings will be installed at this crossing. Pavement markings will be installed to direct pedestrians around the existing railroad signal equipment.

Detectable warning surfaces will be installed on the paved shoulders approaching the crossing in all four quadrants.

Crossing 8. U.S. DOT Crossing 085642Y. S 259th St

Supplementary Safety Measures (49 CFR 222 Appendix A)

No supplementary safety measures are proposed at this crossing.

Alternative Safety Measures (49 CFR 222 Appendix B)

No alternative safety measures are proposed at this crossing.

Additional Grade Crossing Modifications

New channelization devices will be installed east of the crossing. The new channelization devices will begin at the gate and extend approximately 110 feet to the east.

No Train Horn (W10-9, W10-9P) signing will be installed on the approaches to the crossing and under the existing advanced grade crossing warning signs on northbound and southbound 1st Ave when the proposed New Quiet Zone becomes effective. Do Not Stop On Tracks (R8-8) signs will be installed on both approaches to the crossing. Signs prohibiting commercial truck parking on the north side S 259th St will be installed

The grade crossing pavement marking symbol east of the crossing will be relocated to 100’ east of the crossing. Dynamic envelope pavement markings will be installed at this crossing.

49 CFR 222.39(b)(1)(vi) – COMMITMENT TO IMPLEMENT THE PROPOSED SAFETY IMPROVEMENTS

If the New Quiet Zone is approved by the Federal Railroad Administration, the City of Kent, Washington will implement the safety and other improvements detailed in this application prior to the establishment of a New Quiet Zone.

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49 CFR 222.39(b)(1)(vii) – DEMONSTRATE THROUGH DATA AND ANALYSIS THAT THE PROPOSED IMPLEMENTATION OF THESE MEASURES WILL REDUCE THE QUIET ZONE RISK INDEX TO A LEVEL AT, OR BELOW, EITHER THE RISK INDEX WITH TRAIN HORNS OR THE NATIONWIDE SIGNIFICANT RISK THRESHOLD

49 CFR Part 222 allows a Quiet Zone to be established through several methods. This application is requesting approval to establish a Quiet Zone by reducing the Quiet Zone Risk Index (QZRI) to a level at, or below, the Risk Index with Horns (RIWH) through the use of supplementary safety measures (SSMs) and alternative safety measures (ASMs) in the form of modified SSMs.

SSMs will be installed at three grade crossings within the proposed New Quiet Zone. Gates are present at all crossings. Channelization devices meeting the requirements of 49 CFR 222.9 will be installed at Crossing 1 (085625H, S 212th St), Crossing 4 (085636V, E Meeker St), and Crossing 5 (085637C, E Gowe St). The effectiveness rate of this SSM is 0.75 per 49 CFR 222 Appendix A(A)(3).

ASMs/Modified SSMs

49 CFR 222 Appendix B allows ASMs in the form of modified SSMs to be used and an effectiveness rate to be calculated for each modified SSM. Kevin Jeffers from David Evans and Associates, acting on behalf of the City, discussed the methodology with Ron Ries, FRA Staff Director, Highway-Rail Crossing and Trespasser Programs Division, in July 2018.

Calculations for the modified SSM effectiveness rates are included in Appendix F.

Intersection Within 60 feet of the Crossing Effective Rate

The proposed modified SSMs are based on the gates and channelization devices SSM with an effectiveness rate of 0.75. The effectiveness of each SSM is based on each side of a crossing providing one half of the SSM effectiveness rate of 0.75, or a contribution of 0.375 per side. The reduction in effectiveness for each side is calculated based on the lowest contributing factor for that side. This provides a more conservative (numerically lower) effective rate for the modified SSM than calculating the effectiveness rate using each quadrant of the crossing where each quadrant would contribute one-fourth of the total effective rate.

For example, if a modified SSM consisting of gates and channelization is installed at a crossing, the effectiveness rate of the full SSM would be 0.75. Using the quadrant method, the effectiveness rate of each quadrant would contribute one-quarter of the total or an effectiveness rate of 0.1875 per quadrant. In this example it is assumed there is an intersection within 60 feet of the crossing in one quadrant and that driveway is shown to reduce the effectiveness of the modified SSM in that quadrant by 50%. Using the quadrant method, the overall crossing effectiveness rate would be one quadrant contributing 50% of 0.1875 and three quadrants contributing 0.1875. The calculated modified SSM effectiveness rate would be 0.66 (50% x 0.1875) + (3 x 0.1875).

The same example would give a lower modified SSM effectiveness rate using the lowest controlling element per side method. Each side would contribute one half of the total 0.75, or 0.375 per side, of the crossing. Effectiveness reductions would be calculated for intersections on each side of the crossing. The lowest effectiveness for each side would then be used to calculate that side's contribution to the overall effectiveness rate. Using the example above, one side of the crossing would contribute an

0.1875 (50% * 0.375) and the other would contribute 0.375. The effectiveness rate for the modified SSM would be 0.56 (0.18+0.38).

The modified SSM effectiveness rate for gates and channelization devices for this application was calculated using the controlling element per side method. The percentage of effectiveness was calculated as the distance from the crossing gate to the start of the intersection divided by 60 feet, but not greater than 100%. Where there is more than one intersection on the same side of the crossing, the lesser distance of the two governed the calculation for the crossing. The effectiveness rate contribution of each side of the crossing was calculated and the two side are added together to yield the proposed modified SSM effectiveness rate for that crossing.

Gate Arm Length Effective Rate Adjustment

An adjustment for a gate arm not extending to within one foot of the channelization device or median was calculated based on the percentage of the actual length of the gate arm over the traveled way compared to the length the gate arm necessary to be to be within one foot from the channelization device, but not greater than 100%. These percentages where then applied to the effectiveness rates calculated for each side of the crossing and the results were added together.

Crossing 2. U.S. DOT Crossing 085629K. E James St

The intersection of 1st Avenue N and E James St is an offset "Tee" intersection west of the crossing. 1st Avenue N intersects E James St 15 feet from the crossing on the north side and 30 feet from the crossing on the south side. Railroad Ave N intersects E James St 130 feet east of the crossing.

The closer intersection was used to calculate the west side's effectiveness rate. The intersection to the north is 15 feet from the crossing and the required distance for the SSM is 60 feet. The west side's contributing percentage of 25% (15' / 60') multiplied by the west side's effectiveness rate contribution of 0.375 gives an effectiveness rate contribution of 0.094

The nearest intersection on the east side of the crossing is more than 60 feet from the crossing so the east side's effectiveness rate contribution is 0.375. The overall modified SSM effectiveness rate is the sum of the two sides at 0.47.

Crossing 3. U.S. DOT Crossing 085633A. E Smith St

The intersection of 1st Avenue N and E Smith St is a "Tee" intersection west of the crossing. 1st Avenue N intersects E James St 17 feet from the crossing on the north. Railroad Ave N intersects E Smith St 63 feet east of the crossing.

The north leg of 1st Avenue N is 17 feet from the crossing. The west side's contributing percentage of 28% (17' / 60') multiplied by the west side's effectiveness rate contribution of 0.375 gives an effectiveness rate contribution of 0.106.

The nearest intersection on the east side of the crossing is more than 60 feet from the crossing so the east side's effectiveness rate contribution is 0.375.

The gate on the east side of the crossing for westbound traffic ends four feet from the channelization devices. The gate covers 21 feet of the 24-foot traveled way. The gate on the west side for eastbound traffic is within one foot of the channelization devices. Following the methodology described above, the

percentage of the required gate length over the traveled way was calculated to be 87.5% (21' / 24'). The percentage of the west side's effectiveness rate is 100% because the gate extends over the traveled way.

The effectiveness rate adjustments were applied to the effectiveness rate contributions for each side of the crossing. The contributing effectiveness rate for the west side is 0.106 (0.106 x 100% gate adjustment). The contributing effectiveness rate for the east side is 0.328 (0.375 x 87.5% gate adjustment). The modified SSM effectiveness Rate is the sum of the east side and the west side at 0.43 (0.106 + 0.328).

Crossing 7. U.S. DOT Crossing 085640K. E Willis St/SR 516

The intersection of 1st Avenue N and E Willis St is an offset "Tee" intersection west of the crossing. 1st Avenue N intersects E Willis St 110 feet from the crossing on the north side and 10 feet from the crossing on the south side. Railroad Ave N intersects E Willis St 110 feet east of the crossing on the north side and 23 feet on the south side.

The closer intersection was used to calculate the west side's effectiveness rate. The southern intersection is 10 feet from the crossing and the required distance for the SSM is 60 feet. The west side's contributing percentage of 17% (10' / 60') multiplied by the west side's effectiveness rate contribution of 0.375 gives an effectiveness rate contribution of 0.063

The closer intersection was used to calculate the east side's effectiveness rate. The southern intersection is 23 feet from the crossing and the required distance for the SSM is 60 feet. The east side's contributing percentage of 38% (23' / 60') multiplied by the east side's effectiveness rate contribution of 0.375 gives an effectiveness rate contribution of 0.144

The overall modified SSM effectiveness rate is the sum of the two sides at 0.21.

Quiet Zone Risk Calculations

A spreadsheet with the Quiet Zone risk calculations is included in Appendix F.

Quiet Zone risk calculations were performed following the procedure in 49 CFR 222 Appendix C Section II subsection C *New Quiet Zone – Public Authority Application to FRA*. The risk index for each crossing and the Crossing Corridor Risk Index were calculated using the FRA's online Quiet Zone Calculator. The Corridor Crossing Risk Index is 140,077.33. This is also the Risk Index with Horns (RIWH). Specific crossing risk indices are shown in a spreadsheet in Appendix F.

The Initial Quiet Zone Risk Index was calculated by increasing by 66.8%. The initial Quiet Zone Risk Index was calculated to be 233,648.98.

The Quiet Zone Risk Index was reduced through SSMs at three crossings and ASMs/Modified SSMs at three crossings. Calculations are shown in the spreadsheet in Appendix F. Using the SSMs and ASMs/Modified SSMs described above, the Quiet Zone Risk Index is reduced to 134,553.50.

The Quiet Zone Risk Index is less than the Risk Index with Horns. If the risk reduction calculations for the ASMs/Modified SSMs are approved by the FRA the risk is sufficiently reduced to qualify for a New Quiet Zone.

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49 CFR 222.39(b)(3) – 60-DAY COMMENT PERIOD NOTIFICATION

The following parties will receive this notification in accordance with 49 CFR 222.39(b)(3):

1. Railroads operating over the highway-rail grade crossings:

   Stephen Semenick
   Manager Public Projects – WA & B.C.
   BNSF Railway Company
   2454 Occidental Ave S, Suite 2D
   Seattle, WA 98134

   Patrick Sullivan
   Superintendent Operations
   National Railroad Passenger Corporation (Amtrak)
   187 South Holgate Street
   Seattle, WA 98134

   Weylin Doyle
   Commuter Rail Transportation Superintendent
   Central Puget Sound Regional Transit Authority (DBA Sound Transit)
   401 South Jackson Street
   Seattle, WA 98104

2. State agency responsible for highway and road safety:

   Connie Raezer
   WSDOT Railroad Liaison
   Development Division
   310 Maple Park Avenue SE, 2B
   Mailstop 47329
   Olympia, WA 98504-7329

3. State agency responsible for grade crossing safety:

   Betty Young
   Transportation Planning Specialist
   Utilities and Transportation Commission
   1300 S Evergreen Park Drive SW
   Olympia, WA 98504

4. Federal Railroad Administration

Robert C. Lauby
Associate Administrator for Railroad Safety
Federal Railroad Administration
Mail Stop 25
1200 New Jersey Avenue SE
Washington, DC 20590

Jeffrey P. Stewart
FRA Region 8 Grade Crossing Inspector
Federal Railroad Administration
500 E. Broadway, Suite 240
Vancouver, WA 98660

Action Required:

In accordance with 49 CFR 222.39(b)(3)(iii), any party receiving this Application to the FRA to Establish a New Quiet Zone under 49 CFR 222.39(b) *Public Authority Application to the FRA,* may submit comments about the proposed New Quiet Zone to the Federal Railroad Administration Associate Administrator for Railroad Safety during the 60 days following the date of this Notice. The comment period will terminate if all parties either submit comments or signed statements indicating they do not have any comments.

Attached for your convenience is a form to facilitate your response. If you have any questions about this application or the proposed New Quiet Zone, please contact me directly.

Rob Brown, P.E.
Transportation Engineering Manager

Enclosure: City of Kent, Washington Application to the FRA

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Enclosure

Date:_____

Return to: Robert C. Lauby
Associate Administrator for Railroad Safety
Federal Railroad Administration
Mail Stop 25
1200 New Jersey Avenue SE
Washington, DC 20590

SUBJECT: Kent Washington BNSF Mainline Quiet Zone
Application to the FRA to Establish a Railroad Quiet Zone by Public Authority Designation
Title 49 Code of Federal Regulations 222.39(b)(1)

We have received the City of Kent, Washington's application to the FRA dated April 4, 2019 and offer the following:

☐ No Comment ☐ Comment:

_____

_____

_____

_____

_____

_____

_____
Signature

From: (Please Print)

_____
Name

_____
Organization

_____
Address

_____

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Appendix A

Current Grade Crossing Inventory Forms

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U. S. DOT CROSSING INVENTORY FORM

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION

OMB No. 2130-0017

Instructions for the initial reporting of the following types of new or previously unreported crossings: For public highway-rail grade crossings, complete the entire inventory Form. For private highway-rail grade crossings, complete the Header, Parts I and II, and the Submission Information section. For public pathway grade crossings (including pedestrian station grade crossings), complete the Header, Parts I and II, and the Submission Information section. For Private pathway grade crossings, complete the Header, Parts I and II, and the Submission Information section. For grade-separated highway-rail or pathway crossings (including pedestrian station crossings), complete the Header, Part I, and the Submission Information section. For changes to existing data, complete the Header, Part I Items 1-3, and the Submission Information section, in addition to the updated data fields. Note: For private crossings only, Part I Item 20 and Part III Item 2.K. are required unless otherwise noted. An asterisk * denotes an optional field.

A. Revision Date *(MM/DD/YYYY)*	B. Reporting Agency	C. Reason for Update *(Select only one)*	D. DOT Crossing Inventory Number
03 / 27 / 2019	☒ Railroad ☐ Transit ☐ State ☐ Other	☒ Change in Data ☐ New Crossing ☐ Closed ☐ No Train Traffic ☐ Quiet Zone Update ☐ Re-Open ☐ Date Change Only ☐ Change in Primary Operating RR ☐ Admin. Correction	085625H

Part I: Location and Classification Information

1. Primary Operating Railroad	2. State	3. County
BNSF Railway Company [BNSF]	WASHINGTON	KING

4. City / Municipality	5. Street/Road Name & Block Number	6. Highway Type & No.
☒ In ☐ Near KENT	S 212TH STREET *(Street/Road Name)* | * *(Block Number)*	LS

7. Do Other Railroads Operate a Separate Track at Crossing?	8. Do Other Railroads Operate Over Your Track at Crossing?
☐ Yes ☒ No If Yes, Specify RR	☒ Yes ☐ No If Yes, Specify RR ATK

9. Railroad Division or Region	10. Railroad Subdivision or District	11. Branch or Line Name	12. RR Milepost
☐ None NORTHWEST	☐ None SEATTLE	☐ None SEATTLE-VANC WA	*(prefix)* | 0014.19 | *(nnnn.nnn)* | *(suffix)*

13. Line Segment *	14. Nearest RR Timetable Station *	15. Parent RR *(if applicable)*	16. Crossing Owner *(if applicable)*
0051	KENT	☒ N/A	☐ N/A BNSF

17. Crossing Type	18. Crossing Purpose	19. Crossing Position	20. Public Access *(if Private Crossing)*	21. Type of Train	22. Average Passenger Train Count Per Day
☒ Public ☐ Private	☒ Highway ☐ Pathway, Ped. ☐ Station, Ped.	☒ At Grade ☐ RR Under ☐ RR Over	☐ Yes ☐ No	☒ Freight ☐ Transit ☒ Intercity Passenger ☐ Shared Use Transit ☒ Commuter ☐ Tourist/Other	☐ Less Than One Per Day ☒ Number Per Day 21

23. Type of Land Use
☒ Open Space ☐ Farm ☐ Residential ☐ Commercial ☐ Industrial ☐ Institutional ☐ Recreational ☐ RR Yard

24. Is there an Adjacent Crossing with a Separate Number?	25. Quiet Zone *(FRA provided)*
☐ Yes ☒ No If Yes, Provide Crossing Number	☒ No ☐ 24 Hr ☐ Partial ☐ Chicago Excused Date Established

26. HSR Corridor ID	27. Latitude in decimal degrees	28. Longitude in decimal degrees	29. Lat/Long Source
☒ N/A	*(WGS84 std: nn.nnnnnnn)* 47.4119833	*(WGS84 std: -nnn.nnnnnnn)* -122.2362299	☒ Actual ☐ Estimated

30.A. Railroad Use *	31.A. State Use *
30.B. Railroad Use *	31.B. State Use *
30.C. Railroad Use *	31.C. State Use *
30.D. Railroad Use *	31.D. State Use *
32.A. Narrative *(Railroad Use)* *	32.B. Narrative *(State Use)* *

33. Emergency Notification Telephone No. *(posted)*	34. Railroad Contact *(Telephone No.)*	35. State Contact *(Telephone No.)*
800-832-5452	817-352-1549	360-664-1262

Part II: Railroad Information

1. Estimated Number of Daily Train Movements

1.A. Total Day Thru Trains *(6 AM to 6 PM)*	1.B. Total Night Thru Trains *(6 PM to 6 AM)*	1.C. Total Switching Trains	1.D. Total Transit Trains	1.E. Check if Less Than One Movement Per Day ☐ How many trains per week?
24	24	0	0	329

2. Year of Train Count Data *(YYYY)*	3. Speed of Train at Crossing
2017	3.A. Maximum Timetable Speed *(mph)* 79 3.B. Typical Speed Range Over Crossing *(mph)* From 1 to 79

4. Type and Count of Tracks
Main 2 Siding 0 Yard 0 Transit 0 Industry 0

5. Train Detection *(Main Track only)*
☒ Constant Warning Time ☐ Motion Detection ☐AFO ☐ PTC ☐ DC ☐ Other ☐ None

6. Is Track Signaled?	7.A. Event Recorder	7.B. Remote Health Monitoring
☒ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No

U. S. DOT CROSSING INVENTORY FORM

A. Revision Date *(MM/DD/YYYY)*	PAGE 2	D. Crossing Inventory Number *(7 char.)*
03/27/2019		085625H

Part III: Highway or Pathway Traffic Control Device Information

1. Are there Signs or Signals? ☒ Yes ☐ No

2. Types of Passive Traffic Control Devices associated with the Crossing

2.A. Crossbuck Assemblies *(count)*	2.B. STOP Signs *(R1-1) (count)*	2.C. YIELD Signs *(R1-2) (count)*	2.D. Advance Warning Signs *(Check all that apply; include count)* ☐ None
4	0		☒ W10-1 2 ☐ W10-3 ☐ W10-11 ☐ W10-2 ☒ W10-4 1 ☐ W10-12

2.E. Low Ground Clearance Sign *(W10-5)*	2.F. Pavement Markings	2.G. Channelization Devices/Medians	2.H. EXEMPT Sign *(R15-3)*	2.I. ENS Sign *(I-13)* Displayed
☐ Yes *(count_____)* ☒ No	☒ Stop Lines ☐ Dynamic Envelope ☒ RR Xing Symbols ☐ None	☐ All Approaches ☐ Median ☐ One Approach ☐ None	☐ Yes ☒ No	☒ Yes ☐ No

2.J. Other MUTCD Signs ☒ Yes ☐ No

Specify Type R8-8 Count 2
Specify Type _____ Count _____
Specify Type _____ Count _____

2.K. Private Crossing Signs *(if private)* ☐ Yes ☐ No

2.L. LED Enhanced Signs *(List types)*

3. Types of Train Activated Warning Devices at the Grade Crossing *(specify count of each device for all that apply)*

3.A. Gate Arms *(count)*	3.B. Gate Configuration	3.C. Cantilevered *(or Bridged)* Flashing Light Structures *(count)*	3.D. Mast Mounted Flashing Lights *(count of masts)* 2	3.E. Total Count of Flashing Light Pairs
Roadway 6 Pedestrian 2	☒ 2 Quad ☐ Full *(Barrier)* Resistance ☐ 3 Quad ☐ 4 Quad ☐ Median Gates	Over Traffic Lane 2 ☒ Incandescent Not Over Traffic Lane 0 ☐ LED	☒ Incandescent ☐ LED ☒ Back Lights Included ☐ Side Lights Included	16

3.F. Installation Date of Current Active Warning Devices: *(MM/YYYY)*	3.G. Wayside Horn	3.H. Highway Traffic Signals Controlling Crossing	3.I. Bells *(count)*
_____/_____ ☐ Not Required	☐ Yes Installed on *(MM/YYYY)* _____/_____ ☒ No	☒ Yes ☐ No	2

3.J. Non-Train Active Warning
☐ Flagging/Flagman ☐ Manually Operated Signals ☐ Watchman ☐ Floodlighting ☒ None

3.K. Other Flashing Lights or Warning Devices
Count 0 Specify type _____

4.A. Does nearby Hwy Intersection have Traffic Signals?	4.B. Hwy Traffic Signal Interconnection	4.C. Hwy Traffic Signal Preemption	5. Highway Traffic Pre-Signals	6. Highway Monitoring Devices *(Check all that apply)*
☒ Yes ☐ No	☐ Not Interconnected ☒ For Traffic Signals ☐ For Warning Signs	☒ Simultaneous ☐ Advance	☐ Yes ☐ No Storage Distance * _____ Stop Line Distance * _____	☐ Yes - Photo/Video Recording ☐ Yes – Vehicle Presence Detection ☒ None

Part IV: Physical Characteristics

1. Traffic Lanes Crossing Railroad	2. Is Roadway/Pathway Paved?	3. Does Track Run Down a Street?	4. Is Crossing Illuminated? *(Street lights within approx. 50 feet from nearest rail)*
☐ One-way Traffic ☒ Two-way Traffic ☐ Divided Traffic Number of Lanes 6	☒ Yes ☐ No	☐ Yes ☒ No	☒ Yes ☐ No

5. Crossing Surface *(on Main Track, multiple types allowed)* Installation Date * *(MM/YYYY)* _____/_____ Width * 40 Length * 115
☐ 1 Timber ☐ 2 Asphalt ☐ 3 Asphalt and Timber ☒ 4 Concrete ☐ 5 Concrete and Rubber ☐ 6 Rubber ☐ 7 Metal
☐ 8 Unconsolidated ☐ 9 Composite ☐ 10 Other *(specify)* _____

6. Intersecting Roadway within 500 feet?	7. Smallest Crossing Angle	8. Is Commercial Power Available? *
☒ Yes ☐ No If Yes, Approximate Distance *(feet)* 125	☐ 0° – 29° ☐ 30° – 59° ☒ 60° - 90°	☒ Yes ☐ No

Part V: Public Highway Information

1. Highway System	2. Functional Classification of Road at Crossing	3. Is Crossing on State Highway System?	4. Highway Speed Limit
☐ (01) Interstate Highway System ☒ (02) Other Nat Hwy System (NHS) ☐ (03) Federal AID, Not NHS ☐ (08) Non-Federal Aid	☐ (0) Rural ☒ (1) Urban ☐ (1) Interstate ☐ (5) Major Collector ☐ (2) Other Freeways and Expressways ☒ (3) Other Principal Arterial ☐ (6) Minor Collector ☐ (4) Minor Arterial ☐ (7) Local	☐ Yes ☒ No	40 MPH ☒ Posted ☐ Statutory

5. Linear Referencing System *(LRS Route ID)* *

6. LRS Milepost *

7. Annual Average Daily Traffic *(AADT)*	8. Estimated Percent Trucks	9. Regularly Used by School Buses?	10. Emergency Services Route
Year 2019 AADT 27691	14 %	☒ Yes ☐ No Average Number per Day 12	☒ Yes ☐ No

Submission Information - *This information is used for administrative purposes and is not available on the public website.*

Submitted by _____ Organization _____ Phone _____ Date _____

U. S. DOT CROSSING INVENTORY FORM

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION

OMB No. 2130-0017

Instructions for the initial reporting of the following types of new or previously unreported crossings: For public highway-rail grade crossings, complete the entire inventory Form. For private highway-rail grade crossings, complete the Header, Parts I and II, and the Submission Information section. For public pathway grade crossings (including pedestrian station grade crossings), complete the Header, Parts I and II, and the Submission Information section. For Private pathway grade crossings, complete the Header, Parts I and II, and the Submission Information section. For grade-separated highway-rail or pathway crossings (including pedestrian station crossings), complete the Header, Part I, and the Submission Information section. For changes to existing data, complete the Header, Part I Items 1-3, and the Submission Information section, in addition to the updated data fields. Note: For private crossings only, Part I Item 20 and Part III Item 2.K. are required unless otherwise noted. An asterisk * denotes an optional field.

A. Revision Date *(MM/DD/YYYY)*	**B. Reporting Agency**	**C. Reason for Update** *(Select only one)*	**D. DOT Crossing Inventory Number**
03 / 27 / 2019	☒ Railroad ☐ Transit ☐ State ☐ Other	☒ Change in Data ☐ New Crossing ☐ Closed ☐ No Train Traffic ☐ Quiet Zone Update ☐ Re-Open ☐ Date Change Only ☐ Change in Primary Operating RR ☐ Admin. Correction	085629K

Part I: Location and Classification Information

1. Primary Operating Railroad	**2. State**	**3. County**
BNSF Railway Company [BNSF]	WASHINGTON	KING

4. City / Municipality	**5. Street/Road Name & Block Number**	**6. Highway Type & No.**
☒ In ☐ Near KENT	JAMES ST *(Street/Road Name)* | * *(Block Number)*	L

7. Do Other Railroads Operate a Separate Track at Crossing? ☐ Yes ☒ No	**8. Do Other Railroads Operate Over Your Track at Crossing?** ☒ Yes ☐ No
If Yes, Specify RR	If Yes, Specify RR ATK

9. Railroad Division or Region	**10. Railroad Subdivision or District**	**11. Branch or Line Name**	**12. RR Milepost**
☐ None NORTHWEST	☐ None SEATTLE	☐ None SEATTLE-VANC WA	| 0015.942 | *(prefix) | (nnnn.nnn) | (suffix)*

13. Line Segment *	**14. Nearest RR Timetable Station** *	**15. Parent RR** *(if applicable)*	**16. Crossing Owner** *(if applicable)*
0051	KENT	☒ N/A	☐ N/A BNSF

17. Crossing Type	**18. Crossing Purpose**	**19. Crossing Position**	**20. Public Access** *(if Private Crossing)*	**21. Type of Train**	**22. Average Passenger Train Count Per Day**
☒ Public ☐ Private	☒ Highway ☐ Pathway, Ped. ☐ Station, Ped.	☒ At Grade ☐ RR Under ☐ RR Over	☐ Yes ☐ No	☒ Freight ☐ Transit ☒ Intercity Passenger ☐ Shared Use Transit ☒ Commuter ☐ Tourist/Other	☐ Less Than One Per Day ☒ Number Per Day 21

23. Type of Land Use
☐ Open Space ☐ Farm ☐ Residential ☒ Commercial ☐ Industrial ☐ Institutional ☐ Recreational ☐ RR Yard

24. Is there an Adjacent Crossing with a Separate Number?	**25. Quiet Zone** *(FRA provided)*
☐ Yes ☒ No If Yes, Provide Crossing Number	☒ No ☐ 24 Hr ☐ Partial ☐ Chicago Excused Date Established

26. HSR Corridor ID	**27. Latitude in decimal degrees**	**28. Longitude in decimal degrees**	**29. Lat/Long Source**
☒ N/A	*(WGS84 std: nn.nnnnnnn)* 47.3867047	*(WGS84 std: -nnn.nnnnnnn)* -122.2331250	☐ Actual ☒ Estimated

30.A. Railroad Use *	**31.A. State Use** *
30.B. Railroad Use *	**31.B. State Use** *
30.C. Railroad Use *	**31.C. State Use** *
30.D. Railroad Use *	**31.D. State Use** *
32.A. Narrative *(Railroad Use)* *	**32.B. Narrative** *(State Use)* *

33. Emergency Notification Telephone No. *(posted)*	**34. Railroad Contact** *(Telephone No.)*	**35. State Contact** *(Telephone No.)*
800-832-5452	817-352-1549	360-664-1262

Part II: Railroad Information

1. Estimated Number of Daily Train Movements

1.A. Total Day Thru Trains *(6 AM to 6 PM)*	1.B. Total Night Thru Trains *(6 PM to 6 AM)*	1.C. Total Switching Trains	1.D. Total Transit Trains	1.E. Check if Less Than One Movement Per Day ☐ How many trains per week?
32	32	0	0	

2. Year of Train Count Data *(YYYY)*	3. Speed of Train at Crossing
2013	3.A. Maximum Timetable Speed *(mph)* 79 3.B. Typical Speed Range Over Crossing *(mph)* From 1 to 79

4. Type and Count of Tracks
Main 2 Siding 0 Yard 0 Transit 0 Industry 0

5. Train Detection *(Main Track only)*
☒ Constant Warning Time ☐ Motion Detection ☐AFO ☐ PTC ☐ DC ☐ Other ☐ None

6. Is Track Signaled?	7.A. Event Recorder	7.B. Remote Health Monitoring
☒ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No

U. S. DOT CROSSING INVENTORY FORM

A. Revision Date *(MM/DD/YYYY)*	PAGE 2	D. Crossing Inventory Number *(7 char.)*
03/27/2019		085629K

Part III: Highway or Pathway Traffic Control Device Information

1. Are there Signs or Signals? ☒ Yes ☐ No

2. Types of Passive Traffic Control Devices associated with the Crossing

2.A. Crossbuck Assemblies *(count)*	2.B. STOP Signs *(R1-1) (count)*	2.C. YIELD Signs *(R1-2) (count)*	2.D. Advance Warning Signs *(Check all that apply; include count)* ☐ None
2	0	0	☒ W10-1 2 ☐ W10-3 ☐ W10-11 ☐ W10-2 ☒ W10-4 1 ☐ W10-12

2.E. Low Ground Clearance Sign *(W10-5)*	2.F. Pavement Markings	2.G. Channelization Devices/Medians	2.H. EXEMPT Sign *(R15-3)*	2.I. ENS Sign *(I-13)* Displayed
☐ Yes *(count_____)* ☒ No	☒ Stop Lines ☐ Dynamic Envelope ☐ RR Xing Symbols ☐ None	☒ All Approaches ☐ Median ☐ One Approach ☐ None	☐ Yes ☒ No	☒ Yes ☐ No

2.J. Other MUTCD Signs ☒ Yes ☐ No	2.K. Private Crossing Signs *(if private)*	2.L. LED Enhanced Signs *(List types)*
Specify Type _____ Count _____ Specify Type R8-8 Count 1 Specify Type _____ Count _____	☐ Yes ☐ No	

3. Types of Train Activated Warning Devices at the Grade Crossing *(specify count of each device for all that apply)*

3.A. Gate Arms *(count)*	3.B. Gate Configuration	3.C. Cantilevered *(or Bridged)* Flashing Light Structures *(count)*	3.D. Mast Mounted Flashing Lights *(count of masts)* 2	3.E. Total Count of Flashing Light Pairs
Roadway 2 Pedestrian 0	☒ 2 Quad ☐ Full *(Barrier)* Resistance ☐ 3 Quad ☐ 4 Quad ☐ Median Gates	Over Traffic Lane 2 ☒ Incandescent Not Over Traffic Lane 0 ☐ LED	☒ Incandescent ☐ LED ☒ Back Lights Included ☒ Side Lights Included	14

3.F. Installation Date of Current Active Warning Devices: *(MM/YYYY)*	3.G. Wayside Horn	3.H. Highway Traffic Signals Controlling Crossing	3.I. Bells *(count)*
_____/_____ ☒ Not Required	☐ Yes Installed on *(MM/YYYY)* _____/_____ ☒ No	☐ Yes ☒ No	3

3.J. Non-Train Active Warning	3.K. Other Flashing Lights or Warning Devices
☐ Flagging/Flagman ☐ Manually Operated Signals ☐ Watchman ☐ Floodlighting ☒ None	Count 0 Specify type _____

4.A. Does nearby Hwy Intersection have Traffic Signals?	4.B. Hwy Traffic Signal Interconnection	4.C. Hwy Traffic Signal Preemption	5. Highway Traffic Pre-Signals	6. Highway Monitoring Devices *(Check all that apply)*
☐ Yes ☒ No	☒ Not Interconnected ☐ For Traffic Signals ☐ For Warning Signs	☐ Simultaneous ☐ Advance	☐ Yes ☒ No Storage Distance * _____ Stop Line Distance * _____	☐ Yes - Photo/Video Recording ☐ Yes – Vehicle Presence Detection ☒ None

Part IV: Physical Characteristics

1. Traffic Lanes Crossing Railroad	2. Is Roadway/Pathway Paved?	3. Does Track Run Down a Street?	4. Is Crossing Illuminated? *(Street lights within approx. 50 feet from nearest rail)*
☐ One-way Traffic ☒ Two-way Traffic ☐ Divided Traffic Number of Lanes 4	☒ Yes ☐ No	☐ Yes ☒ No	☒ Yes ☐ No

5. Crossing Surface *(on Main Track, multiple types allowed)* Installation Date * *(MM/YYYY)* _____/_____ Width * 40 Length * 75

☐ 1 Timber ☐ 2 Asphalt ☐ 3 Asphalt and Timber ☒ 4 Concrete ☐ 5 Concrete and Rubber ☐ 6 Rubber ☐ 7 Metal
☐ 8 Unconsolidated ☐ 9 Composite ☐ 10 Other *(specify)* _____

6. Intersecting Roadway within 500 feet?	7. Smallest Crossing Angle	8. Is Commercial Power Available? *
☒ Yes ☐ No If Yes, Approximate Distance *(feet)* 15	☐ 0° – 29° ☐ 30° – 59° ☒ 60° - 90°	☒ Yes ☐ No

Part V: Public Highway Information

1. Highway System	2. Functional Classification of Road at Crossing	3. Is Crossing on State Highway System?	4. Highway Speed Limit
☐ (01) Interstate Highway System ☒ (02) Other Nat Hwy System (NHS) ☐ (03) Federal AID, Not NHS ☐ (08) Non-Federal Aid	☐ (0) Rural ☒ (1) Urban ☐ (1) Interstate ☐ (5) Major Collector ☐ (2) Other Freeways and Expressways ☒ (3) Other Principal Arterial ☐ (6) Minor Collector ☐ (4) Minor Arterial ☐ (7) Local	☐ Yes ☒ No	35 MPH ☒ Posted ☐ Statutory

5. Linear Referencing System *(LRS Route ID)* *

6. LRS Milepost *

7. Annual Average Daily Traffic *(AADT)*	8. Estimated Percent Trucks	9. Regularly Used by School Buses?	10. Emergency Services Route
Year 2019 AADT 23904	6 %	☒ Yes ☐ No Average Number per Day 61	☒ Yes ☐ No

Submission Information - *This information is used for administrative purposes and is not available on the public website.*

Submitted by _____ Organization _____ Phone _____ Date _____

U. S. DOT CROSSING INVENTORY FORM

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION

OMB No. 2130-0017

Instructions for the initial reporting of the following types of new or previously unreported crossings: For public highway-rail grade crossings, complete the entire inventory Form. For private highway-rail grade crossings, complete the Header, Parts I and II, and the Submission Information section. For public pathway grade crossings (including pedestrian station grade crossings), complete the Header, Parts I and II, and the Submission Information section. For Private pathway grade crossings, complete the Header, Parts I and II, and the Submission Information section. For grade-separated highway-rail or pathway crossings (including pedestrian station crossings), complete the Header, Part I, and the Submission Information section. For changes to existing data, complete the Header, Part I Items 1-3, and the Submission Information section, in addition to the updated data fields. Note: For private crossings only, Part I Item 20 and Part III Item 2.K. are required unless otherwise noted. An asterisk * denotes an optional field.

A. Revision Date *(MM/DD/YYYY)*	B. Reporting Agency	C. Reason for Update *(Select only one)*	D. DOT Crossing Inventory Number
03 / 27 / 2019	☒ Railroad ☐ Transit ☐ State ☐ Other	☒ Change in Data ☐ New Crossing ☐ Closed ☐ No Train Traffic ☐ Quiet Zone Update ☐ Re-Open ☐ Date Change Only ☐ Change in Primary Operating RR ☐ Admin. Correction	085633A

Part I: Location and Classification Information

1. Primary Operating Railroad	2. State	3. County
BNSF Railway Company [BNSF]	WASHINGTON	KING

4. City / Municipality	5. Street/Road Name & Block Number	6. Highway Type & No.
☒ In ☐ Near KENT	SMITH ST *(Street/Road Name)* | * *(Block Number)*	L

7. Do Other Railroads Operate a Separate Track at Crossing? ☐ Yes ☒ No	8. Do Other Railroads Operate Over Your Track at Crossing? ☐ Yes ☒ No
If Yes, Specify RR	If Yes, Specify RR

9. Railroad Division or Region	10. Railroad Subdivision or District	11. Branch or Line Name	12. RR Milepost
☐ None NORTHWEST	☐ None SEATTLE	☐ None SEATTLE-VANC WA	*(prefix)* | 0016.179 *(nnnn.nnn)* | *(suffix)*

13. Line Segment *	14. Nearest RR Timetable Station *	15. Parent RR *(if applicable)*	16. Crossing Owner *(if applicable)*
0051	KENT	☒ N/A	☐ N/A BNSF

17. Crossing Type	18. Crossing Purpose	19. Crossing Position	20. Public Access *(if Private Crossing)*	21. Type of Train	22. Average Passenger Train Count Per Day
☒ Public ☐ Private	☒ Highway ☐ Pathway, Ped. ☐ Station, Ped.	☒ At Grade ☐ RR Under ☐ RR Over	☐ Yes ☐ No	☒ Freight ☐ Transit ☒ Intercity Passenger ☐ Shared Use Transit ☒ Commuter ☐ Tourist/Other	☐ Less Than One Per Day ☒ Number Per Day 21

23. Type of Land Use
☐ Open Space ☐ Farm ☐ Residential ☒ Commercial ☐ Industrial ☐ Institutional ☐ Recreational ☐ RR Yard

24. Is there an Adjacent Crossing with a Separate Number?	25. Quiet Zone *(FRA provided)*
☐ Yes ☒ No If Yes, Provide Crossing Number	☒ No ☐ 24 Hr ☐ Partial ☐ Chicago Excused Date Established

26. HSR Corridor ID	27. Latitude in decimal degrees	28. Longitude in decimal degrees	29. Lat/Long Source
☒ N/A	*(WGS84 std: nn.nnnnnnn)* 47.3831567	*(WGS84 std: -nnn.nnnnnnn)* -122.2330888	☐ Actual ☒ Estimated

30.A. Railroad Use *	31.A. State Use *
30.B. Railroad Use *	31.B. State Use *
30.C. Railroad Use *	31.C. State Use *
30.D. Railroad Use *	31.D. State Use *
32.A. Narrative *(Railroad Use)* *	32.B. Narrative *(State Use)* *

33. Emergency Notification Telephone No. *(posted)*	34. Railroad Contact *(Telephone No.)*	35. State Contact *(Telephone No.)*
800-832-5452	817-352-1549	360-664-1262

Part II: Railroad Information

1. Estimated Number of Daily Train Movements

1.A. Total Day Thru Trains *(6 AM to 6 PM)*	1.B. Total Night Thru Trains *(6 PM to 6 AM)*	1.C. Total Switching Trains	1.D. Total Transit Trains	1.E. Check if Less Than One Movement Per Day ☐ How many trains per week?
32	32	0	0	

2. Year of Train Count Data *(YYYY)*	3. Speed of Train at Crossing
2013	3.A. Maximum Timetable Speed *(mph)* 79 3.B. Typical Speed Range Over Crossing *(mph)* From 1 to 79

4. Type and Count of Tracks
Main 2 Siding 0 Yard 0 Transit 0 Industry 0

5. Train Detection *(Main Track only)*
☒ Constant Warning Time ☐ Motion Detection ☐AFO ☐ PTC ☐ DC ☐ Other ☐ None

6. Is Track Signaled?	7.A. Event Recorder	7.B. Remote Health Monitoring
☒ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No

U. S. DOT CROSSING INVENTORY FORM

A. Revision Date *(MM/DD/YYYY)*	PAGE 2	D. Crossing Inventory Number *(7 char.)*
03/27/2019		085633A

Part III: Highway or Pathway Traffic Control Device Information

1. Are there Signs or Signals? ☒ Yes ☐ No

2. Types of Passive Traffic Control Devices associated with the Crossing

2.A. Crossbuck Assemblies *(count)*	2.B. STOP Signs *(R1-1) (count)*	2.C. YIELD Signs *(R1-2) (count)*	2.D. Advance Warning Signs *(Check all that apply; include count)* ☐ None
2	0	0	☒ W10-1 2 ☐ W10-3 ☐ W10-11 ☒ W10-2 2 ☐ W10-4 ☐ W10-12

2.E. Low Ground Clearance Sign *(W10-5)*	2.F. Pavement Markings	2.G. Channelization Devices/Medians	2.H. EXEMPT Sign *(R15-3)*	2.I. ENS Sign *(I-13)* Displayed
☐ Yes *(count_____)* ☒ No	☒ Stop Lines ☐ Dynamic Envelope ☒ RR Xing Symbols ☐ None	☒ All Approaches ☐ Median ☐ One Approach ☐ None	☐ Yes ☒ No	☒ Yes ☐ No

2.J. Other MUTCD Signs ☒ Yes ☐ No	2.K. Private Crossing Signs *(if private)*	2.L. LED Enhanced Signs *(List types)*
Specify Type R8-8 Count 2 Specify Type _____ Count _____ Specify Type _____ Count _____	☐ Yes ☐ No	

3. Types of Train Activated Warning Devices at the Grade Crossing *(specify count of each device for all that apply)*

3.A. Gate Arms *(count)*	3.B. Gate Configuration	3.C. Cantilevered *(or Bridged)* Flashing Light Structures *(count)*	3.D. Mast Mounted Flashing Lights *(count of masts)* 2	3.E. Total Count of Flashing Light Pairs
Roadway 2 Pedestrian 0	☒ 2 Quad ☐ Full *(Barrier)* Resistance ☐ 3 Quad ☐ 4 Quad ☐ Median Gates	Over Traffic Lane 2 ☒ Incandescent Not Over Traffic Lane 0 ☐ LED	☒ Incandescent ☐ LED ☒ Back Lights Included ☐ Side Lights Included	15

3.F. Installation Date of Current Active Warning Devices: *(MM/YYYY)*	3.G. Wayside Horn	3.H. Highway Traffic Signals Controlling Crossing	3.I. Bells *(count)*
_____/_____ ☒ Not Required	☐ Yes Installed on *(MM/YYYY)* _____/_____ ☒ No	☐ Yes ☒ No	3

3.J. Non-Train Active Warning	3.K. Other Flashing Lights or Warning Devices
☐ Flagging/Flagman ☐ Manually Operated Signals ☐ Watchman ☐ Floodlighting ☒ None	Count 0 Specify type _____

4.A. Does nearby Hwy Intersection have Traffic Signals?	4.B. Hwy Traffic Signal Interconnection	4.C. Hwy Traffic Signal Preemption	5. Highway Traffic Pre-Signals	6. Highway Monitoring Devices *(Check all that apply)*
☐ Yes ☒ No	☒ Not Interconnected ☐ For Traffic Signals ☐ For Warning Signs	☐ Simultaneous ☐ Advance	☐ Yes ☒ No Storage Distance * _____ Stop Line Distance * _____	☐ Yes - Photo/Video Recording ☐ Yes – Vehicle Presence Detection ☒ None

Part IV: Physical Characteristics

1. Traffic Lanes Crossing Railroad	2. Is Roadway/Pathway Paved?	3. Does Track Run Down a Street?	4. Is Crossing Illuminated? *(Street lights within approx. 50 feet from nearest rail)*
☐ One-way Traffic ☒ Two-way Traffic ☐ Divided Traffic Number of Lanes 4	☒ Yes ☐ No	☐ Yes ☒ No	☒ Yes ☐ No

5. Crossing Surface *(on Main Track, multiple types allowed)* Installation Date * *(MM/YYYY)* _____/_____ Width * 40 Length * 90

☐ 1 Timber ☐ 2 Asphalt ☐ 3 Asphalt and Timber ☒ 4 Concrete ☐ 5 Concrete and Rubber ☐ 6 Rubber ☐ 7 Metal
☐ 8 Unconsolidated ☐ 9 Composite ☐ 10 Other *(specify)* _____

6. Intersecting Roadway within 500 feet?	7. Smallest Crossing Angle	8. Is Commercial Power Available? *
☒ Yes ☐ No If Yes, Approximate Distance *(feet)* 17	☐ 0° – 29° ☐ 30° – 59° ☒ 60° - 90°	☒ Yes ☐ No

Part V: Public Highway Information

1. Highway System	2. Functional Classification of Road at Crossing	3. Is Crossing on State Highway System?	4. Highway Speed Limit
☐ (01) Interstate Highway System ☐ (02) Other Nat Hwy System (NHS) ☐ (03) Federal AID, Not NHS ☒ (08) Non-Federal Aid	☐ (0) Rural ☒ (1) Urban ☐ (1) Interstate ☒ (5) Major Collector ☐ (2) Other Freeways and Expressways ☐ (3) Other Principal Arterial ☐ (6) Minor Collector ☐ (4) Minor Arterial ☐ (7) Local	☐ Yes ☒ No	30 MPH ☒ Posted ☐ Statutory

5. Linear Referencing System *(LRS Route ID)* *

6. LRS Milepost *

7. Annual Average Daily Traffic *(AADT)*	8. Estimated Percent Trucks	9. Regularly Used by School Buses?	10. Emergency Services Route
Year 2019 AADT 17117	4 %	☒ Yes ☐ No Average Number per Day 61	☒ Yes ☐ No

Submission Information - *This information is used for administrative purposes and is not available on the public website.*

Submitted by _____ Organization _____ Phone _____ Date _____

U. S. DOT CROSSING INVENTORY FORM

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION

OMB No. 2130-0017

Instructions for the initial reporting of the following types of new or previously unreported crossings: For public highway-rail grade crossings, complete the entire inventory Form. For private highway-rail grade crossings, complete the Header, Parts I and II, and the Submission Information section. For public pathway grade crossings (including pedestrian station grade crossings), complete the Header, Parts I and II, and the Submission Information section. For Private pathway grade crossings, complete the Header, Parts I and II, and the Submission Information section. For grade-separated highway-rail or pathway crossings (including pedestrian station crossings), complete the Header, Part I, and the Submission Information section. For changes to existing data, complete the Header, Part I Items 1-3, and the Submission Information section, in addition to the updated data fields. Note: For private crossings only, Part I Item 20 and Part III Item 2.K. are required unless otherwise noted. An asterisk * denotes an optional field.

A. Revision Date (MM/DD/YYYY)	B. Reporting Agency	C. Reason for Update (Select only one)	D. DOT Crossing Inventory Number
03 / 27 / 2019	☒ Railroad ☐ Transit ☐ State ☐ Other	☒ Change in Data ☐ New Crossing ☐ Closed ☐ No Train Traffic ☐ Quiet Zone Update ☐ Re-Open ☐ Date Change Only ☐ Change in Primary Operating RR ☐ Admin. Correction	085636V

Part I: Location and Classification Information

1. Primary Operating Railroad	2. State	3. County
BNSF Railway Company [BNSF]	WASHINGTON	KING

4. City / Municipality	5. Street/Road Name & Block Number	6. Highway Type & No.
☒ In ☐ Near KENT	MEEKER ST (Street/Road Name) | * (Block Number)	L

7. Do Other Railroads Operate a Separate Track at Crossing?	8. Do Other Railroads Operate Over Your Track at Crossing?
☐ Yes ☒ No If Yes, Specify RR	☒ Yes ☐ No If Yes, Specify RR ATK

9. Railroad Division or Region	10. Railroad Subdivision or District	11. Branch or Line Name	12. RR Milepost
☐ None NORTHWEST	☐ None SEATTLE	☐ None SEATTLE-VANC WA	(prefix) | 0016.289 (nnnn.nnn) | (suffix)

13. Line Segment *	14. Nearest RR Timetable Station *	15. Parent RR (if applicable)	16. Crossing Owner (if applicable)
0051	KENT	☒ N/A	☐ N/A BNSF

17. Crossing Type	18. Crossing Purpose	19. Crossing Position	20. Public Access (if Private Crossing)	21. Type of Train		22. Average Passenger Train Count Per Day
☒ Public ☐ Private	☒ Highway ☐ Pathway, Ped. ☐ Station, Ped.	☒ At Grade ☐ RR Under ☐ RR Over	☐ Yes ☐ No	☒ Freight ☒ Intercity Passenger ☒ Commuter	☐ Transit ☐ Shared Use Transit ☐ Tourist/Other	☐ Less Than One Per Day ☒ Number Per Day 21

23. Type of Land Use
☐ Open Space ☐ Farm ☐ Residential ☒ Commercial ☐ Industrial ☐ Institutional ☐ Recreational ☐ RR Yard

24. Is there an Adjacent Crossing with a Separate Number?	25. Quiet Zone (FRA provided)
☐ Yes ☒ No If Yes, Provide Crossing Number	☒ No ☐ 24 Hr ☐ Partial ☐ Chicago Excused Date Established

26. HSR Corridor ID	27. Latitude in decimal degrees	28. Longitude in decimal degrees	29. Lat/Long Source
☒ N/A	(WGS84 std: nn.nnnnnnn) 47.3816072	(WGS84 std: -nnn.nnnnnnn) -122.2330709	☐ Actual ☒ Estimated

30.A. Railroad Use *	31.A. State Use *
30.B. Railroad Use *	31.B. State Use *
30.C. Railroad Use *	31.C. State Use *
30.D. Railroad Use *	31.D. State Use *
32.A. Narrative (Railroad Use) *	32.B. Narrative (State Use) *

33. Emergency Notification Telephone No. (posted)	34. Railroad Contact (Telephone No.)	35. State Contact (Telephone No.)
800-832-5452	817-352-1549	360-664-1262

Part II: Railroad Information

1. Estimated Number of Daily Train Movements

1.A. Total Day Thru Trains (6 AM to 6 PM)	1.B. Total Night Thru Trains (6 PM to 6 AM)	1.C. Total Switching Trains	1.D. Total Transit Trains	1.E. Check if Less Than One Movement Per Day ☐ How many trains per week?
32	32	0	0	

2. Year of Train Count Data (YYYY)	3. Speed of Train at Crossing
2013	3.A. Maximum Timetable Speed (mph) 79 3.B. Typical Speed Range Over Crossing (mph) From 1 to 79

4. Type and Count of Tracks
Main 2 Siding 0 Yard 0 Transit 0 Industry 0

5. Train Detection (Main Track only)
☒ Constant Warning Time ☐ Motion Detection ☐ AFO ☐ PTC ☐ DC ☐ Other ☐ None

6. Is Track Signaled?	7.A. Event Recorder	7.B. Remote Health Monitoring
☒ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No

U. S. DOT CROSSING INVENTORY FORM

A. Revision Date *(MM/DD/YYYY)*	PAGE 2	D. Crossing Inventory Number *(7 char.)*
03/27/2019		085636V

Part III: Highway or Pathway Traffic Control Device Information

1. Are there Signs or Signals? ☒ Yes ☐ No

2. Types of Passive Traffic Control Devices associated with the Crossing

2.A. Crossbuck Assemblies *(count)*	2.B. STOP Signs *(R1-1) (count)*	2.C. YIELD Signs *(R1-2) (count)*	2.D. Advance Warning Signs *(Check all that apply; include count)* ☐ None
2	0	0	☒ W10-1 2 ☐ W10-3 ☐ W10-11 ☒ W10-2 4 ☐ W10-4 ☐ W10-12

2.E. Low Ground Clearance Sign *(W10-5)*	2.F. Pavement Markings	2.G. Channelization Devices/Medians	2.H. EXEMPT Sign *(R15-3)*	2.I. ENS Sign *(I-13)* Displayed
☐ Yes *(count_____)* ☒ No	☒ Stop Lines ☐ Dynamic Envelope ☐ RR Xing Symbols ☐ None	☒ All Approaches ☐ Median ☐ One Approach ☐ None	☐ Yes ☒ No	☒ Yes ☐ No

2.J. Other MUTCD Signs ☐ Yes ☒ No	2.K. Private Crossing Signs *(if private)*	2.L. LED Enhanced Signs *(List types)*
Specify Type _____ Count _____ Specify Type _____ Count _____ Specify Type _____ Count _____	☐ Yes ☐ No	

3. Types of Train Activated Warning Devices at the Grade Crossing *(specify count of each device for all that apply)*

3.A. Gate Arms *(count)*	3.B. Gate Configuration	3.C. Cantilevered *(or Bridged)* Flashing Light Structures *(count)*	3.D. Mast Mounted Flashing Lights *(count of masts)* 2	3.E. Total Count of Flashing Light Pairs
Roadway 2 Pedestrian 0	☒ 2 Quad ☐ Full *(Barrier)* Resistance ☐ 3 Quad ☐ 4 Quad ☐ Median Gates	Over Traffic Lane 2 ☒ Incandescent Not Over Traffic Lane 0 ☐ LED	☒ Incandescent ☐ LED ☒ Back Lights Included ☐ Side Lights Included	8

3.F. Installation Date of Current Active Warning Devices: *(MM/YYYY)*	3.G. Wayside Horn	3.H. Highway Traffic Signals Controlling Crossing	3.I. Bells *(count)*
_____/_____ ☒ Not Required	☐ Yes Installed on *(MM/YYYY)* _____/_____ ☒ No	☐ Yes ☒ No	2

3.J. Non-Train Active Warning	3.K. Other Flashing Lights or Warning Devices
☐ Flagging/Flagman ☐ Manually Operated Signals ☐ Watchman ☐ Floodlighting ☒ None	Count 0 Specify type _____

4.A. Does nearby Hwy Intersection have Traffic Signals?	4.B. Hwy Traffic Signal Interconnection	4.C. Hwy Traffic Signal Preemption	5. Highway Traffic Pre-Signals	6. Highway Monitoring Devices *(Check all that apply)*
☐ Yes ☒ No	☒ Not Interconnected ☐ For Traffic Signals ☐ For Warning Signs	☐ Simultaneous ☐ Advance	☐ Yes ☒ No Storage Distance * _____ Stop Line Distance * _____	☐ Yes - Photo/Video Recording ☐ Yes – Vehicle Presence Detection ☒ None

Part IV: Physical Characteristics

1. Traffic Lanes Crossing Railroad	2. Is Roadway/Pathway Paved?	3. Does Track Run Down a Street?	4. Is Crossing Illuminated? *(Street lights within approx. 50 feet from nearest rail)*
☐ One-way Traffic ☒ Two-way Traffic ☐ Divided Traffic Number of Lanes 2	☒ Yes ☐ No	☐ Yes ☒ No	☒ Yes ☐ No

5. Crossing Surface *(on Main Track, multiple types allowed)* Installation Date * *(MM/YYYY)* _____/_____ Width * 40 Length * 65

☐ 1 Timber ☐ 2 Asphalt ☐ 3 Asphalt and Timber ☒ 4 Concrete ☐ 5 Concrete and Rubber ☐ 6 Rubber ☐ 7 Metal
☐ 8 Unconsolidated ☐ 9 Composite ☐ 10 Other *(specify)* _____

6. Intersecting Roadway within 500 feet?	7. Smallest Crossing Angle	8. Is Commercial Power Available? *
☒ Yes ☐ No If Yes, Approximate Distance *(feet)* 65	☐ 0° – 29° ☐ 30° – 59° ☒ 60° - 90°	☒ Yes ☐ No

Part V: Public Highway Information

1. Highway System	2. Functional Classification of Road at Crossing	3. Is Crossing on State Highway System?	4. Highway Speed Limit
☐ (01) Interstate Highway System ☐ (02) Other Nat Hwy System (NHS) ☐ (03) Federal AID, Not NHS ☒ (08) Non-Federal Aid	☐ (0) Rural ☒ (1) Urban ☐ (1) Interstate ☐ (5) Major Collector ☐ (2) Other Freeways and Expressways ☐ (3) Other Principal Arterial ☐ (6) Minor Collector ☒ (4) Minor Arterial ☐ (7) Local	☐ Yes ☒ No	25 MPH ☒ Posted ☐ Statutory

5. Linear Referencing System *(LRS Route ID)* *

6. LRS Milepost *

7. Annual Average Daily Traffic *(AADT)*	8. Estimated Percent Trucks	9. Regularly Used by School Buses?	10. Emergency Services Route
Year 2019 AADT 4139	1 %	☐ Yes ☒ No Average Number per Day _____	☒ Yes ☐ No

Submission Information - *This information is used for administrative purposes and is not available on the public website.*

Submitted by _____ Organization _____ Phone _____ Date _____

U. S. DOT CROSSING INVENTORY FORM

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION

OMB No. 2130-0017

Instructions for the initial reporting of the following types of new or previously unreported crossings: For public highway-rail grade crossings, complete the entire inventory Form. For private highway-rail grade crossings, complete the Header, Parts I and II, and the Submission Information section. For public pathway grade crossings (including pedestrian station grade crossings), complete the Header, Parts I and II, and the Submission Information section. For Private pathway grade crossings, complete the Header, Parts I and II, and the Submission Information section. For grade-separated highway-rail or pathway crossings (including pedestrian station crossings), complete the Header, Part I, and the Submission Information section. For changes to existing data, complete the Header, Part I Items 1-3, and the Submission Information section, in addition to the updated data fields. Note: For private crossings only, Part I Item 20 and Part III Item 2.K. are required unless otherwise noted. An asterisk * denotes an optional field.

A. Revision Date *(MM/DD/YYYY)*	B. Reporting Agency	C. Reason for Update *(Select only one)*	D. DOT Crossing Inventory Number
03 / 27 / 2019	☒ Railroad ☐ Transit ☐ State ☐ Other	☒ Change in Data ☐ New Crossing ☐ Closed ☐ No Train Traffic ☐ Quiet Zone Update ☐ Re-Open ☐ Date Change Only ☐ Change in Primary Operating RR ☐ Admin. Correction	085637C

Part I: Location and Classification Information

1. Primary Operating Railroad	2. State	3. County
BNSF Railway Company [BNSF]	WASHINGTON	KING

4. City / Municipality	5. Street/Road Name & Block Number	6. Highway Type & No.
☒ In ☐ Near KENT	GOWE ST *(Street/Road Name)* | * *(Block Number)*	L

7. Do Other Railroads Operate a Separate Track at Crossing? ☐ Yes ☒ No	8. Do Other Railroads Operate Over Your Track at Crossing? ☒ Yes ☐ No
If Yes, Specify RR	If Yes, Specify RR ATK

9. Railroad Division or Region	10. Railroad Subdivision or District	11. Branch or Line Name	12. RR Milepost
☐ None NORTHWEST	☐ None SEATTLE	☐ None SEATTLE-VANC WA	*(prefix)* | 0016.339 *(nnnn.nnn)* | *(suffix)*

13. Line Segment *	14. Nearest RR Timetable Station *	15. Parent RR *(if applicable)*	16. Crossing Owner *(if applicable)*
0051	KENT	☒ N/A	☐ N/A BNSF

17. Crossing Type	18. Crossing Purpose	19. Crossing Position	20. Public Access *(if Private Crossing)*	21. Type of Train	22. Average Passenger Train Count Per Day
☒ Public ☐ Private	☒ Highway ☐ Pathway, Ped. ☐ Station, Ped.	☒ At Grade ☐ RR Under ☐ RR Over	☐ Yes ☐ No	☒ Freight ☐ Transit ☒ Intercity Passenger ☐ Shared Use Transit ☒ Commuter ☐ Tourist/Other	☐ Less Than One Per Day ☒ Number Per Day 21

23. Type of Land Use
☐ Open Space ☐ Farm ☐ Residential ☒ Commercial ☐ Industrial ☐ Institutional ☐ Recreational ☐ RR Yard

24. Is there an Adjacent Crossing with a Separate Number?	25. Quiet Zone *(FRA provided)*
☐ Yes ☒ No If Yes, Provide Crossing Number	☒ No ☐ 24 Hr ☐ Partial ☐ Chicago Excused Date Established

26. HSR Corridor ID	27. Latitude in decimal degrees	28. Longitude in decimal degrees	29. Lat/Long Source
☒ N/A	*(WGS84 std: nn.nnnnnnn)* 47.3809482	*(WGS84 std: -nnn.nnnnnnn)* -122.2330630	☐ Actual ☒ Estimated

30.A. Railroad Use *	31.A. State Use *
30.B. Railroad Use *	31.B. State Use *
30.C. Railroad Use *	31.C. State Use *
30.D. Railroad Use *	31.D. State Use *
32.A. Narrative *(Railroad Use)* *	32.B. Narrative *(State Use)* *

33. Emergency Notification Telephone No. *(posted)*	34. Railroad Contact *(Telephone No.)*	35. State Contact *(Telephone No.)*
800-832-5452	817-352-1549	360-664-1262

Part II: Railroad Information

1. Estimated Number of Daily Train Movements

1.A. Total Day Thru Trains *(6 AM to 6 PM)*	1.B. Total Night Thru Trains *(6 PM to 6 AM)*	1.C. Total Switching Trains	1.D. Total Transit Trains	1.E. Check if Less Than One Movement Per Day ☐ How many trains per week?
32	32	0	0	

2. Year of Train Count Data *(YYYY)*	3. Speed of Train at Crossing
2013	3.A. Maximum Timetable Speed *(mph)* 79 3.B. Typical Speed Range Over Crossing *(mph)* From 1 to 79

4. Type and Count of Tracks
Main 2 Siding 0 Yard 0 Transit 0 Industry 0

5. Train Detection *(Main Track only)*
☒ Constant Warning Time ☐ Motion Detection ☐AFO ☐ PTC ☐ DC ☐ Other ☐ None

6. Is Track Signaled?	7.A. Event Recorder	7.B. Remote Health Monitoring
☒ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No

U. S. DOT CROSSING INVENTORY FORM

A. Revision Date *(MM/DD/YYYY)*	PAGE 2	D. Crossing Inventory Number *(7 char.)*
03/27/2019		085637C

Part III: Highway or Pathway Traffic Control Device Information

1. Are there Signs or Signals? ☒ Yes ☐ No

2. Types of Passive Traffic Control Devices associated with the Crossing

2.A. Crossbuck Assemblies *(count)*	2.B. STOP Signs *(R1-1) (count)*	2.C. YIELD Signs *(R1-2) (count)*	2.D. Advance Warning Signs *(Check all that apply; include count)* ☐ None
2	0	0	☒ W10-1 2 ☐ W10-3 ☐ W10-11 ☒ W10-2 4 ☐ W10-4 ☐ W10-12

2.E. Low Ground Clearance Sign *(W10-5)*	2.F. Pavement Markings	2.G. Channelization Devices/Medians	2.H. EXEMPT Sign *(R15-3)*	2.I. ENS Sign *(I-13)* Displayed
☐ Yes *(count_____)* ☒ No	☒ Stop Lines ☐ Dynamic Envelope ☐ RR Xing Symbols ☐ None	☒ All Approaches ☐ Median ☐ One Approach ☐ None	☐ Yes ☒ No	☒ Yes ☐ No

2.J. Other MUTCD Signs ☐ Yes ☒ No	2.K. Private Crossing Signs *(if private)*	2.L. LED Enhanced Signs *(List types)*
Specify Type _____ Count _____ Specify Type _____ Count _____ Specify Type _____ Count _____	☐ Yes ☐ No	

3. Types of Train Activated Warning Devices at the Grade Crossing *(specify count of each device for all that apply)*

3.A. Gate Arms *(count)*	3.B. Gate Configuration	3.C. Cantilevered *(or Bridged)* Flashing Light Structures *(count)*	3.D. Mast Mounted Flashing Lights *(count of masts)* 2	3.E. Total Count of Flashing Light Pairs
Roadway 2 Pedestrian 0	☒ 2 Quad ☐ Full *(Barrier)* Resistance ☐ 3 Quad ☐ 4 Quad ☐ Median Gates	Over Traffic Lane 2 ☒ Incandescent Not Over Traffic Lane 0 ☐ LED	☒ Incandescent ☐ LED ☒ Back Lights Included ☐ Side Lights Included	8

3.F. Installation Date of Current Active Warning Devices: *(MM/YYYY)*	3.G. Wayside Horn	3.H. Highway Traffic Signals Controlling Crossing	3.I. Bells *(count)*
_____/_____ ☒ Not Required	☐ Yes Installed on *(MM/YYYY)* _____/_____ ☒ No	☐ Yes ☒ No	2

3.J. Non-Train Active Warning	3.K. Other Flashing Lights or Warning Devices
☐ Flagging/Flagman ☐ Manually Operated Signals ☐ Watchman ☐ Floodlighting ☒ None	Count 0 Specify type _____

4.A. Does nearby Hwy Intersection have Traffic Signals?	4.B. Hwy Traffic Signal Interconnection	4.C. Hwy Traffic Signal Preemption	5. Highway Traffic Pre-Signals	6. Highway Monitoring Devices *(Check all that apply)*
☐ Yes ☒ No	☒ Not Interconnected ☐ For Traffic Signals ☐ For Warning Signs	☐ Simultaneous ☐ Advance	☐ Yes ☒ No Storage Distance * _____ Stop Line Distance * _____	☐ Yes - Photo/Video Recording ☐ Yes – Vehicle Presence Detection ☒ None

Part IV: Physical Characteristics

1. Traffic Lanes Crossing Railroad	2. Is Roadway/Pathway Paved?	3. Does Track Run Down a Street?	4. Is Crossing Illuminated? *(Street lights within approx. 50 feet from nearest rail)*
☐ One-way Traffic ☒ Two-way Traffic ☐ Divided Traffic Number of Lanes 2	☒ Yes ☐ No	☐ Yes ☒ No	☒ Yes ☐ No

5. Crossing Surface *(on Main Track, multiple types allowed)* Installation Date * *(MM/YYYY)* _____/_____ Width * 40 Length * 65
☐ 1 Timber ☐ 2 Asphalt ☐ 3 Asphalt and Timber ☒ 4 Concrete ☐ 5 Concrete and Rubber ☐ 6 Rubber ☐ 7 Metal
☐ 8 Unconsolidated ☐ 9 Composite ☐ 10 Other *(specify)* _____

6. Intersecting Roadway within 500 feet?	7. Smallest Crossing Angle	8. Is Commercial Power Available? *
☒ Yes ☐ No If Yes, Approximate Distance *(feet)* 65	☐ 0° – 29° ☐ 30° – 59° ☒ 60° - 90°	☒ Yes ☐ No

Part V: Public Highway Information

1. Highway System	2. Functional Classification of Road at Crossing	3. Is Crossing on State Highway System?	4. Highway Speed Limit
☐ (01) Interstate Highway System ☐ (02) Other Nat Hwy System (NHS) ☐ (03) Federal AID, Not NHS ☒ (08) Non-Federal Aid	☐ (0) Rural ☒ (1) Urban ☐ (1) Interstate ☒ (5) Major Collector ☐ (2) Other Freeways and Expressways ☐ (3) Other Principal Arterial ☐ (6) Minor Collector ☐ (4) Minor Arterial ☐ (7) Local	☐ Yes ☒ No	25 MPH ☒ Posted ☐ Statutory

5. Linear Referencing System *(LRS Route ID)* *

6. LRS Milepost *

7. Annual Average Daily Traffic *(AADT)*	8. Estimated Percent Trucks	9. Regularly Used by School Buses?	10. Emergency Services Route
Year 2019 AADT 4099	02 %	☒ Yes ☐ No Average Number per Day 3	☒ Yes ☐ No

Submission Information - *This information is used for administrative purposes and is not available on the public website.*

Submitted by _____ Organization _____ Phone _____ Date _____

U. S. DOT CROSSING INVENTORY FORM

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION

OMB No. 2130-0017

Instructions for the initial reporting of the following types of new or previously unreported crossings: For public highway-rail grade crossings, complete the entire inventory Form. For private highway-rail grade crossings, complete the Header, Parts I and II, and the Submission Information section. For public pathway grade crossings (including pedestrian station grade crossings), complete the Header, Parts I and II, and the Submission Information section. For Private pathway grade crossings, complete the Header, Parts I and II, and the Submission Information section. For grade-separated highway-rail or pathway crossings (including pedestrian station crossings), complete the Header, Part I, and the Submission Information section. For changes to existing data, complete the Header, Part I Items 1-3, and the Submission Information section, in addition to the updated data fields. Note: For private crossings only, Part I Item 20 and Part III Item 2.K. are required unless otherwise noted. An asterisk * denotes an optional field.

A. Revision Date *(MM/DD/YYYY)*	B. Reporting Agency	C. Reason for Update *(Select only one)*	D. DOT Crossing Inventory Number
03 / 27 / 2019	☒ Railroad ☐ Transit ☐ State ☐ Other	☒ Change in Data ☐ New Crossing ☐ Closed ☐ No Train Traffic ☐ Quiet Zone Update ☐ Re-Open ☐ Date Change Only ☐ Change in Primary Operating RR ☐ Admin. Correction	085639R

Part I: Location and Classification Information

1. Primary Operating Railroad	2. State	3. County
BNSF Railway Company [BNSF]	WASHINGTON	KING

4. City / Municipality	5. Street/Road Name & Block Number	6. Highway Type & No.
☒ In ☐ Near KENT	TITUS ST *(Street/Road Name)* | * *(Block Number)*	L

7. Do Other Railroads Operate a Separate Track at Crossing?	8. Do Other Railroads Operate Over Your Track at Crossing?
☐ Yes ☒ No If Yes, Specify RR	☒ Yes ☐ No If Yes, Specify RR ATK

9. Railroad Division or Region	10. Railroad Subdivision or District	11. Branch or Line Name	12. RR Milepost
☐ None NORTHWEST	☐ None SEATTLE	☐ None SEATTLE-VANC WA	*(prefix)* | 0016.436 *(nnnn.nnn)* | *(suffix)*

13. Line Segment *	14. Nearest RR Timetable Station *	15. Parent RR *(if applicable)*	16. Crossing Owner *(if applicable)*
0051	KENT	☒ N/A	☐ N/A BNSF

17. Crossing Type	18. Crossing Purpose	19. Crossing Position	20. Public Access *(if Private Crossing)*	21. Type of Train	22. Average Passenger Train Count Per Day
☒ Public ☐ Private	☒ Highway ☐ Pathway, Ped. ☐ Station, Ped.	☒ At Grade ☐ RR Under ☐ RR Over	☐ Yes ☐ No	☒ Freight ☐ Transit ☒ Intercity Passenger ☐ Shared Use Transit ☒ Commuter ☐ Tourist/Other	☐ Less Than One Per Day ☒ Number Per Day 21

23. Type of Land Use
☐ Open Space ☐ Farm ☐ Residential ☒ Commercial ☐ Industrial ☐ Institutional ☐ Recreational ☐ RR Yard

24. Is there an Adjacent Crossing with a Separate Number?	25. Quiet Zone *(FRA provided)*
☐ Yes ☒ No If Yes, Provide Crossing Number	☒ No ☐ 24 Hr ☐ Partial ☐ Chicago Excused Date Established

26. HSR Corridor ID	27. Latitude in decimal degrees	28. Longitude in decimal degrees	29. Lat/Long Source
☒ N/A	*(WGS84 std: nn.nnnnnnn)* 47.3797750	*(WGS84 std: -nnn.nnnnnnn)* -122.2330304	☐ Actual ☒ Estimated

30.A. Railroad Use *	31.A. State Use *
30.B. Railroad Use *	31.B. State Use *
30.C. Railroad Use *	31.C. State Use *
30.D. Railroad Use *	31.D. State Use *
32.A. Narrative *(Railroad Use)* *	32.B. Narrative *(State Use)* *

33. Emergency Notification Telephone No. *(posted)*	34. Railroad Contact *(Telephone No.)*	35. State Contact *(Telephone No.)*
800-832-5452	817-352-1549	360-664-1262

Part II: Railroad Information

1. Estimated Number of Daily Train Movements

1.A. Total Day Thru Trains *(6 AM to 6 PM)*	1.B. Total Night Thru Trains *(6 PM to 6 AM)*	1.C. Total Switching Trains	1.D. Total Transit Trains	1.E. Check if Less Than One Movement Per Day ☐ How many trains per week?
32	32	0	0	

2. Year of Train Count Data *(YYYY)*	3. Speed of Train at Crossing
2013	3.A. Maximum Timetable Speed *(mph)* 79 3.B. Typical Speed Range Over Crossing *(mph)* From 1 to 79

4. Type and Count of Tracks
Main 2 Siding 0 Yard 1 Transit 0 Industry 0

5. Train Detection *(Main Track only)*
☒ Constant Warning Time ☐ Motion Detection ☐ AFO ☐ PTC ☐ DC ☐ Other ☐ None

6. Is Track Signaled?	7.A. Event Recorder	7.B. Remote Health Monitoring
☒ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No

U. S. DOT CROSSING INVENTORY FORM

A. Revision Date *(MM/DD/YYYY)*	PAGE 2	D. Crossing Inventory Number *(7 char.)*
03/27/2019		085639R

Part III: Highway or Pathway Traffic Control Device Information

1. Are there Signs or Signals? ☒ Yes ☐ No

2. Types of Passive Traffic Control Devices associated with the Crossing

2.A. Crossbuck Assemblies *(count)*	2.B. STOP Signs *(R1-1) (count)*	2.C. YIELD Signs *(R1-2) (count)*	2.D. Advance Warning Signs *(Check all that apply; include count)* ☐ None
3	0	0	☒ W10-1 2 ☐ W10-3 ☐ W10-11 ☒ W10-2 4 ☐ W10-4 ☐ W10-12

2.E. Low Ground Clearance Sign *(W10-5)*	2.F. Pavement Markings	2.G. Channelization Devices/Medians	2.H. EXEMPT Sign *(R15-3)*	2.I. ENS Sign *(I-13)* Displayed
☐ Yes *(count_____)* ☒ No	☒ Stop Lines ☐ Dynamic Envelope ☐ RR Xing Symbols ☐ None	☒ All Approaches ☐ Median ☐ One Approach ☐ None	☐ Yes ☒ No	☒ Yes ☐ No

2.J. Other MUTCD Signs ☐ Yes ☒ No	2.K. Private Crossing Signs *(if private)*	2.L. LED Enhanced Signs *(List types)*
Specify Type _____ Count _____ Specify Type _____ Count _____ Specify Type _____ Count _____	☐ Yes ☐ No	

3. Types of Train Activated Warning Devices at the Grade Crossing *(specify count of each device for all that apply)*

3.A. Gate Arms *(count)*	3.B. Gate Configuration	3.C. Cantilevered *(or Bridged)* Flashing Light Structures *(count)*	3.D. Mast Mounted Flashing Lights *(count of masts)* 2	3.E. Total Count of Flashing Light Pairs
Roadway 2 Pedestrian 0	☒ 2 Quad ☐ Full *(Barrier)* Resistance ☐ 3 Quad ☐ 4 Quad ☐ Median Gates	Over Traffic Lane 0 ☐ Incandescent Not Over Traffic Lane 0 ☐ LED	☒ Incandescent ☐ LED ☐ Back Lights Included ☐ Side Lights Included	4

3.F. Installation Date of Current Active Warning Devices: *(MM/YYYY)*	3.G. Wayside Horn	3.H. Highway Traffic Signals Controlling Crossing	3.I. Bells *(count)*
_____/_____ ☒ Not Required	☐ Yes Installed on *(MM/YYYY)* _____/_____ ☒ No	☐ Yes ☒ No	2

3.J. Non-Train Active Warning	3.K. Other Flashing Lights or Warning Devices
☐ Flagging/Flagman ☐ Manually Operated Signals ☐ Watchman ☐ Floodlighting ☒ None	Count 0 Specify type _____

4.A. Does nearby Hwy Intersection have Traffic Signals?	4.B. Hwy Traffic Signal Interconnection	4.C. Hwy Traffic Signal Preemption	5. Highway Traffic Pre-Signals	6. Highway Monitoring Devices *(Check all that apply)*
☐ Yes ☒ No	☒ Not Interconnected ☐ For Traffic Signals ☐ For Warning Signs	☐ Simultaneous ☐ Advance	☐ Yes ☒ No Storage Distance * _____ Stop Line Distance * _____	☐ Yes - Photo/Video Recording ☐ Yes – Vehicle Presence Detection ☒ None

Part IV: Physical Characteristics

1. Traffic Lanes Crossing Railroad	2. Is Roadway/Pathway Paved?	3. Does Track Run Down a Street?	4. Is Crossing Illuminated? *(Street lights within approx. 50 feet from nearest rail)*
☐ One-way Traffic ☒ Two-way Traffic ☐ Divided Traffic Number of Lanes 2	☒ Yes ☐ No	☐ Yes ☒ No	☒ Yes ☐ No

5. Crossing Surface *(on Main Track, multiple types allowed)* Installation Date * *(MM/YYYY)* _____/_____ Width * 65 Length * 65

☐ 1 Timber ☐ 2 Asphalt ☐ 3 Asphalt and Timber ☒ 4 Concrete ☐ 5 Concrete and Rubber ☐ 6 Rubber ☐ 7 Metal
☐ 8 Unconsolidated ☐ 9 Composite ☐ 10 Other *(specify)* _____

6. Intersecting Roadway within 500 feet?	7. Smallest Crossing Angle	8. Is Commercial Power Available? *
☒ Yes ☐ No If Yes, Approximate Distance *(feet)* 65	☐ 0° – 29° ☐ 30° – 59° ☒ 60° - 90°	☒ Yes ☐ No

Part V: Public Highway Information

1. Highway System	2. Functional Classification of Road at Crossing	3. Is Crossing on State Highway System?	4. Highway Speed Limit
☐ (01) Interstate Highway System ☐ (02) Other Nat Hwy System (NHS) ☐ (03) Federal AID, Not NHS ☒ (08) Non-Federal Aid	☐ (0) Rural ☒ (1) Urban ☐ (1) Interstate ☐ (5) Major Collector ☐ (2) Other Freeways and Expressways ☐ (3) Other Principal Arterial ☐ (6) Minor Collector ☐ (4) Minor Arterial ☒ (7) Local	☐ Yes ☒ No	25 MPH ☒ Posted ☐ Statutory

5. Linear Referencing System *(LRS Route ID)* *

6. LRS Milepost *

7. Annual Average Daily Traffic *(AADT)*	8. Estimated Percent Trucks	9. Regularly Used by School Buses?	10. Emergency Services Route
Year 2019 AADT 1933	01 %	☒ Yes ☐ No Average Number per Day 1	☒ Yes ☐ No

Submission Information - *This information is used for administrative purposes and is not available on the public website.*

Submitted by _____ Organization _____ Phone _____ Date _____

U. S. DOT CROSSING INVENTORY FORM

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION

OMB No. 2130-0017

Instructions for the initial reporting of the following types of new or previously unreported crossings: For public highway-rail grade crossings, complete the entire inventory Form. For private highway-rail grade crossings, complete the Header, Parts I and II, and the Submission Information section. For public pathway grade crossings (including pedestrian station grade crossings), complete the Header, Parts I and II, and the Submission Information section. For Private pathway grade crossings, complete the Header, Parts I and II, and the Submission Information section. For grade-separated highway-rail or pathway crossings (including pedestrian station crossings), complete the Header, Part I, and the Submission Information section. For changes to existing data, complete the Header, Part I Items 1-3, and the Submission Information section, in addition to the updated data fields. Note: For private crossings only, Part I Item 20 and Part III Item 2.K. are required unless otherwise noted. An asterisk * denotes an optional field.

A. Revision Date *(MM/DD/YYYY)*	B. Reporting Agency	C. Reason for Update *(Select only one)*	D. DOT Crossing Inventory Number
03 / 27 / 2019	☒ Railroad ☐ Transit ☐ State ☐ Other	☒ Change in Data ☐ New Crossing ☐ Closed ☐ No Train Traffic ☐ Quiet Zone Update ☐ Re-Open ☐ Date Change Only ☐ Change in Primary Operating RR ☐ Admin. Correction	085640K

Part I: Location and Classification Information

1. Primary Operating Railroad	2. State	3. County
BNSF Railway Company [BNSF]	WASHINGTON	KING

4. City / Municipality	5. Street/Road Name & Block Number	6. Highway Type & No.
☒ In ☐ Near KENT	SR516 WILLIS ST *(Street/Road Name)* | * *(Block Number)*	FAP516

7. Do Other Railroads Operate a Separate Track at Crossing? ☐ Yes ☒ No	8. Do Other Railroads Operate Over Your Track at Crossing? ☒ Yes ☐ No
If Yes, Specify RR	If Yes, Specify RR ATK

9. Railroad Division or Region	10. Railroad Subdivision or District	11. Branch or Line Name	12. RR Milepost
☐ None NORTHWEST	☐ None SEATTLE	☐ None SEATTLE-VANC WA	*(prefix)* | 0016.557 *(nnnn.nnn)* | *(suffix)*

13. Line Segment *	14. Nearest RR Timetable Station *	15. Parent RR *(if applicable)*	16. Crossing Owner *(if applicable)*
0051	KENT	☒ N/A	☐ N/A BNSF

17. Crossing Type	18. Crossing Purpose	19. Crossing Position	20. Public Access *(if Private Crossing)*	21. Type of Train	22. Average Passenger Train Count Per Day
☒ Public ☐ Private	☒ Highway ☐ Pathway, Ped. ☐ Station, Ped.	☒ At Grade ☐ RR Under ☐ RR Over	☐ Yes ☐ No	☒ Freight ☐ Transit ☒ Intercity Passenger ☐ Shared Use Transit ☒ Commuter ☐ Tourist/Other	☐ Less Than One Per Day ☒ Number Per Day 21

23. Type of Land Use
☐ Open Space ☐ Farm ☒ Residential ☐ Commercial ☐ Industrial ☐ Institutional ☐ Recreational ☐ RR Yard

24. Is there an Adjacent Crossing with a Separate Number?	25. Quiet Zone *(FRA provided)*
☐ Yes ☒ No If Yes, Provide Crossing Number	☒ No ☐ 24 Hr ☐ Partial ☐ Chicago Excused Date Established

26. HSR Corridor ID	27. Latitude in decimal degrees	28. Longitude in decimal degrees	29. Lat/Long Source
☒ N/A	*(WGS84 std: nn.nnnnnnn)* 47.3777923	*(WGS84 std: -nnn.nnnnnnn)* -122.2329736	☐ Actual ☒ Estimated

30.A. Railroad Use *	31.A. State Use *
30.B. Railroad Use *	31.B. State Use *
30.C. Railroad Use *	31.C. State Use *
30.D. Railroad Use *	31.D. State Use *
32.A. Narrative *(Railroad Use)* *	32.B. Narrative *(State Use)* *

33. Emergency Notification Telephone No. *(posted)*	34. Railroad Contact *(Telephone No.)*	35. State Contact *(Telephone No.)*
800-832-5452	817-352-1549	360-664-1262

Part II: Railroad Information

1. Estimated Number of Daily Train Movements

1.A. Total Day Thru Trains *(6 AM to 6 PM)*	1.B. Total Night Thru Trains *(6 PM to 6 AM)*	1.C. Total Switching Trains	1.D. Total Transit Trains	1.E. Check if Less Than One Movement Per Day ☐ How many trains per week?
32	32	0	0	

2. Year of Train Count Data *(YYYY)*	3. Speed of Train at Crossing
2013	3.A. Maximum Timetable Speed *(mph)* 79 3.B. Typical Speed Range Over Crossing *(mph)* From 1 to 79

4. Type and Count of Tracks
Main 2 Siding 0 Yard 0 Transit 0 Industry 0

5. Train Detection *(Main Track only)*
☒ Constant Warning Time ☐ Motion Detection ☐AFO ☐ PTC ☐ DC ☐ Other ☐ None

6. Is Track Signaled?	7.A. Event Recorder	7.B. Remote Health Monitoring
☐ Yes ☒ No	☐ Yes ☐ No	☐ Yes ☐ No

U. S. DOT CROSSING INVENTORY FORM

A. Revision Date *(MM/DD/YYYY)*	PAGE 2	D. Crossing Inventory Number *(7 char.)*
03/27/2019		085640K

Part III: Highway or Pathway Traffic Control Device Information

1. Are there Signs or Signals? ☒ Yes ☐ No

2. Types of Passive Traffic Control Devices associated with the Crossing

2.A. Crossbuck Assemblies *(count)*	2.B. STOP Signs *(R1-1) (count)*	2.C. YIELD Signs *(R1-2) (count)*	2.D. Advance Warning Signs *(Check all that apply; include count)* ☐ None
2	0	0	☒ W10-1 2 ☐ W10-3 ☐ W10-11 ☐ W10-2 ☒ W10-4 3 ☐ W10-12

2.E. Low Ground Clearance Sign *(W10-5)*	2.F. Pavement Markings	2.G. Channelization Devices/Medians	2.H. EXEMPT Sign *(R15-3)*	2.I. ENS Sign *(I-13)* Displayed
☐ Yes *(count_____)* ☒ No	☒ Stop Lines ☐ Dynamic Envelope ☒ RR Xing Symbols ☐ None	☒ All Approaches ☐ Median ☐ One Approach ☐ None	☐ Yes ☒ No	☒ Yes ☐ No

2.J. Other MUTCD Signs ☒ Yes ☐ No	2.K. Private Crossing Signs *(if private)*	2.L. LED Enhanced Signs *(List types)*
Specify Type R8-8 Count 1 Specify Type _____ Count _____ Specify Type _____ Count _____	☐ Yes ☐ No	

3. Types of Train Activated Warning Devices at the Grade Crossing *(specify count of each device for all that apply)*

3.A. Gate Arms *(count)*	3.B. Gate Configuration	3.C. Cantilevered *(or Bridged)* Flashing Light Structures *(count)*	3.D. Mast Mounted Flashing Lights *(count of masts)* 2	3.E. Total Count of Flashing Light Pairs
Roadway 2 Pedestrian 0	☒ 2 Quad ☐ Full *(Barrier)* Resistance ☐ 3 Quad ☐ 4 Quad ☐ Median Gates	Over Traffic Lane 2 ☒ Incandescent Not Over Traffic Lane 0 ☐ LED	☒ Incandescent ☐ LED ☒ Back Lights Included ☒ Side Lights Included	14

3.F. Installation Date of Current Active Warning Devices: *(MM/YYYY)*	3.G. Wayside Horn	3.H. Highway Traffic Signals Controlling Crossing	3.I. Bells *(count)*
_____/_____ ☒ Not Required	☐ Yes Installed on *(MM/YYYY)* _____/_____ ☒ No	☐ Yes ☒ No	2

3.J. Non-Train Active Warning	3.K. Other Flashing Lights or Warning Devices
☐ Flagging/Flagman ☐ Manually Operated Signals ☐ Watchman ☐ Floodlighting ☒ None	Count 0 Specify type _____

4.A. Does nearby Hwy Intersection have Traffic Signals?	4.B. Hwy Traffic Signal Interconnection	4.C. Hwy Traffic Signal Preemption	5. Highway Traffic Pre-Signals	6. Highway Monitoring Devices *(Check all that apply)*
☐ Yes ☒ No	☒ Not Interconnected ☐ For Traffic Signals ☐ For Warning Signs	☐ Simultaneous ☐ Advance	☐ Yes ☒ No Storage Distance * _____ Stop Line Distance * _____	☐ Yes - Photo/Video Recording ☐ Yes – Vehicle Presence Detection ☒ None

Part IV: Physical Characteristics

1. Traffic Lanes Crossing Railroad	2. Is Roadway/Pathway Paved?	3. Does Track Run Down a Street?	4. Is Crossing Illuminated? *(Street lights within approx. 50 feet from nearest rail)*
☐ One-way Traffic ☒ Two-way Traffic ☐ Divided Traffic Number of Lanes 4	☒ Yes ☐ No	☐ Yes ☒ No	☒ Yes ☐ No

5. Crossing Surface *(on Main Track, multiple types allowed)* Installation Date * *(MM/YYYY)* _____/_____ Width * 25 Length * 65
☐ 1 Timber ☐ 2 Asphalt ☐ 3 Asphalt and Timber ☒ 4 Concrete ☐ 5 Concrete and Rubber ☐ 6 Rubber ☐ 7 Metal
☐ 8 Unconsolidated ☐ 9 Composite ☐ 10 Other *(specify)* _____

6. Intersecting Roadway within 500 feet?	7. Smallest Crossing Angle	8. Is Commercial Power Available? *
☒ Yes ☐ No If Yes, Approximate Distance *(feet)* 10	☐ 0° – 29° ☐ 30° – 59° ☒ 60° - 90°	☒ Yes ☐ No

Part V: Public Highway Information

1. Highway System	2. Functional Classification of Road at Crossing	3. Is Crossing on State Highway System?	4. Highway Speed Limit
☐ (01) Interstate Highway System ☒ (02) Other Nat Hwy System (NHS) ☐ (03) Federal AID, Not NHS ☐ (08) Non-Federal Aid	☐ (0) Rural ☒ (1) Urban ☐ (1) Interstate ☐ (5) Major Collector ☐ (2) Other Freeways and Expressways ☒ (3) Other Principal Arterial ☐ (6) Minor Collector ☐ (4) Minor Arterial ☐ (7) Local	☒ Yes ☐ No	30 MPH ☒ Posted ☐ Statutory
		5. Linear Referencing System *(LRS Route ID)* *	
		6. LRS Milepost *	

7. Annual Average Daily Traffic *(AADT)*	8. Estimated Percent Trucks	9. Regularly Used by School Buses?	10. Emergency Services Route
Year 2019 AADT 16807	06 %	☒ Yes ☐ No Average Number per Day 25	☒ Yes ☐ No

Submission Information - *This information is used for administrative purposes and is not available on the public website.*

Submitted by _____ Organization _____ Phone _____ Date _____

U. S. DOT CROSSING INVENTORY FORM

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION

OMB No. 2130-0017

Instructions for the initial reporting of the following types of new or previously unreported crossings: For public highway-rail grade crossings, complete the entire inventory Form. For private highway-rail grade crossings, complete the Header, Parts I and II, and the Submission Information section. For public pathway grade crossings (including pedestrian station grade crossings), complete the Header, Parts I and II, and the Submission Information section. For Private pathway grade crossings, complete the Header, Parts I and II, and the Submission Information section. For grade-separated highway-rail or pathway crossings (including pedestrian station crossings), complete the Header, Part I, and the Submission Information section. For changes to existing data, complete the Header, Part I Items 1-3, and the Submission Information section, in addition to the updated data fields. Note: For private crossings only, Part I Item 20 and Part III Item 2.K. are required unless otherwise noted. An asterisk * denotes an optional field.

A. Revision Date (MM/DD/YYYY)	B. Reporting Agency	C. Reason for Update (Select only one)	D. DOT Crossing Inventory Number
03 / 27 / 2019	☒ Railroad ☐ Transit ☐ State ☐ Other	☒ Change in Data ☐ New Crossing ☐ Closed ☐ No Train Traffic ☐ Quiet Zone Update ☐ Re-Open ☐ Date Change Only ☐ Change in Primary Operating RR ☐ Admin. Correction	085642Y

Part I: Location and Classification Information

1. Primary Operating Railroad	2. State	3. County
BNSF Railway Company [BNSF]	WASHINGTON	KING

4. City / Municipality	5. Street/Road Name & Block Number	6. Highway Type & No.
☐ In ☒ Near KENT	S 259TH STREET (Street/Road Name) | * (Block Number)	L

7. Do Other Railroads Operate a Separate Track at Crossing?	8. Do Other Railroads Operate Over Your Track at Crossing?
☐ Yes ☒ No If Yes, Specify RR	☒ Yes ☐ No If Yes, Specify RR ATK

9. Railroad Division or Region	10. Railroad Subdivision or District	11. Branch or Line Name	12. RR Milepost (prefix) | (nnnn.nnn) | (suffix)
☐ None NORTHWEST	☐ None SEATTLE	☐ None SEATTLE-VANC WA	| 0017.09 |

13. Line Segment *	14. Nearest RR Timetable Station *	15. Parent RR (if applicable)	16. Crossing Owner (if applicable)
0051	KENT	☒ N/A	☒ N/A

17. Crossing Type	18. Crossing Purpose	19. Crossing Position	20. Public Access (if Private Crossing)	21. Type of Train	22. Average Passenger Train Count Per Day
☒ Public ☐ Private	☒ Highway ☐ Pathway, Ped. ☐ Station, Ped.	☒ At Grade ☐ RR Under ☐ RR Over	☐ Yes ☐ No	☒ Freight ☒ Intercity Passenger ☒ Commuter ☐ Transit ☐ Shared Use Transit ☐ Tourist/Other	☐ Less Than One Per Day ☒ Number Per Day 21

23. Type of Land Use
☐ Open Space ☐ Farm ☐ Residential ☒ Commercial ☐ Industrial ☐ Institutional ☐ Recreational ☐ RR Yard

24. Is there an Adjacent Crossing with a Separate Number?	25. Quiet Zone (FRA provided)
☐ Yes ☒ No If Yes, Provide Crossing Number	☒ No ☐ 24 Hr ☐ Partial ☐ Chicago Excused Date Established

26. HSR Corridor ID	27. Latitude in decimal degrees (WGS84 std: nn.nnnnnnn)	28. Longitude in decimal degrees (WGS84 std: -nnn.nnnnnnn)	29. Lat/Long Source
☒ N/A	47.3700634	-122.2329076	☒ Actual ☐ Estimated

30.A. Railroad Use *	31.A. State Use *
30.B. Railroad Use *	31.B. State Use *
30.C. Railroad Use *	31.C. State Use *
30.D. Railroad Use *	31.D. State Use *
32.A. Narrative (Railroad Use) *	32.B. Narrative (State Use) *

33. Emergency Notification Telephone No. (posted)	34. Railroad Contact (Telephone No.)	35. State Contact (Telephone No.)
800-832-5452	817-352-1549	360-664-1262

Part II: Railroad Information

1. Estimated Number of Daily Train Movements

1.A. Total Day Thru Trains (6 AM to 6 PM)	1.B. Total Night Thru Trains (6 PM to 6 AM)	1.C. Total Switching Trains	1.D. Total Transit Trains	1.E. Check if Less Than One Movement Per Day ☐ How many trains per week?
24	23	0	0	329

2. Year of Train Count Data (YYYY)	3. Speed of Train at Crossing
2017	3.A. Maximum Timetable Speed (mph) 79 3.B. Typical Speed Range Over Crossing (mph) From 1 to 79

4. Type and Count of Tracks
Main 2 Siding 0 Yard 0 Transit 0 Industry 0

5. Train Detection (Main Track only)
☒ Constant Warning Time ☐ Motion Detection ☐AFO ☐ PTC ☐ DC ☐ Other ☐ None

6. Is Track Signaled?	7.A. Event Recorder	7.B. Remote Health Monitoring
☐ Yes ☒ No	☐ Yes ☐ No	☐ Yes ☐ No

U. S. DOT CROSSING INVENTORY FORM

A. Revision Date *(MM/DD/YYYY)*	PAGE 2	D. Crossing Inventory Number *(7 char.)*
03/27/2019		085642Y

Part III: Highway or Pathway Traffic Control Device Information

1. Are there Signs or Signals? ☒ Yes ☐ No

2. Types of Passive Traffic Control Devices associated with the Crossing

2.A. Crossbuck Assemblies *(count)*	2.B. STOP Signs *(R1-1)* *(count)*	2.C. YIELD Signs *(R1-2)* *(count)*	2.D. Advance Warning Signs *(Check all that apply; include count)* ☐ None
2	0		☐ W10-1 ____ ☐ W10-3 ____ ☐ W10-11 ____ ☒ W10-2 2 ☐ W10-4 ____ ☐ W10-12 ____

2.E. Low Ground Clearance Sign *(W10-5)*	2.F. Pavement Markings	2.G. Channelization Devices/Medians	2.H. EXEMPT Sign *(R15-3)*	2.I. ENS Sign *(I-13)* Displayed
☐ Yes *(count_____)* ☒ No	☒ Stop Lines ☐ Dynamic Envelope ☒ RR Xing Symbols ☐ None	☐ All Approaches ☐ Median ☐ One Approach ☒ None	☐ Yes ☒ No	☒ Yes ☐ No

2.J. Other MUTCD Signs ☐ Yes ☒ No	2.K. Private Crossing Signs *(if private)*	2.L. LED Enhanced Signs *(List types)*
Specify Type ____ Count ____ Specify Type ____ Count ____ Specify Type ____ Count ____	☐ Yes ☐ No	

3. Types of Train Activated Warning Devices at the Grade Crossing *(specify count of each device for all that apply)*

3.A. Gate Arms *(count)*	3.B. Gate Configuration	3.C. Cantilevered *(or Bridged)* Flashing Light Structures *(count)*	3.D. Mast Mounted Flashing Lights *(count of masts)* 2	3.E. Total Count of Flashing Light Pairs
Roadway 2 Pedestrian ____	☒ 2 Quad ☐ Full *(Barrier)* Resistance ☐ 3 Quad ☐ 4 Quad ☐ Median Gates	Over Traffic Lane 2 ☒ Incandescent Not Over Traffic Lane 0 ☐ LED	☒ Incandescent ☐ LED ☒ Back Lights Included ☒ Side Lights Included	9

3.F. Installation Date of Current Active Warning Devices: *(MM/YYYY)*	3.G. Wayside Horn	3.H. Highway Traffic Signals Controlling Crossing	3.I. Bells *(count)*
_____/_____ ☐ Not Required	☐ Yes Installed on *(MM/YYYY)* _____/_____ ☒ No	☐ Yes ☒ No	2

3.J. Non-Train Active Warning	3.K. Other Flashing Lights or Warning Devices
☐ Flagging/Flagman ☐ Manually Operated Signals ☐ Watchman ☐ Floodlighting ☒ None	Count 0 Specify type ____

4.A. Does nearby Hwy Intersection have Traffic Signals?	4.B. Hwy Traffic Signal Interconnection	4.C. Hwy Traffic Signal Preemption	5. Highway Traffic Pre-Signals	6. Highway Monitoring Devices *(Check all that apply)*
☐ Yes ☒ No	☒ Not Interconnected ☐ For Traffic Signals ☐ For Warning Signs	☐ Simultaneous ☐ Advance	☐ Yes ☐ No Storage Distance * ____ Stop Line Distance * ____	☐ Yes - Photo/Video Recording ☐ Yes – Vehicle Presence Detection ☒ None

Part IV: Physical Characteristics

1. Traffic Lanes Crossing Railroad	2. Is Roadway/Pathway Paved?	3. Does Track Run Down a Street?	4. Is Crossing Illuminated? *(Street lights within approx. 50 feet from nearest rail)*
☐ One-way Traffic ☒ Two-way Traffic ☐ Divided Traffic Number of Lanes 2	☒ Yes ☐ No	☐ Yes ☒ No	☒ Yes ☐ No

5. Crossing Surface *(on Main Track, multiple types allowed)* Installation Date * *(MM/YYYY)* _____/_____ Width * 25 Length * 30

☐ 1 Timber ☐ 2 Asphalt ☐ 3 Asphalt and Timber ☒ 4 Concrete ☐ 5 Concrete and Rubber ☐ 6 Rubber ☐ 7 Metal
☐ 8 Unconsolidated ☐ 9 Composite ☐ 10 Other *(specify)* ____

6. Intersecting Roadway within 500 feet?	7. Smallest Crossing Angle	8. Is Commercial Power Available? *
☒ Yes ☐ No If Yes, Approximate Distance *(feet)* 40	☐ 0° – 29° ☐ 30° – 59° ☒ 60° - 90°	☒ Yes ☐ No

Part V: Public Highway Information

1. Highway System	2. Functional Classification of Road at Crossing	3. Is Crossing on State Highway System?	4. Highway Speed Limit
☐ (01) Interstate Highway System ☐ (02) Other Nat Hwy System (NHS) ☐ (03) Federal AID, Not NHS ☒ (08) Non-Federal Aid	☐ (0) Rural ☒ (1) Urban ☐ (1) Interstate ☐ (5) Major Collector ☐ (2) Other Freeways and Expressways ☐ (3) Other Principal Arterial ☐ (6) Minor Collector ☐ (4) Minor Arterial ☒ (7) Local	☐ Yes ☒ No	25 MPH ☒ Posted ☐ Statutory

5. Linear Referencing System *(LRS Route ID)* *

6. LRS Milepost *

7. Annual Average Daily Traffic *(AADT)*	8. Estimated Percent Trucks	9. Regularly Used by School Buses?	10. Emergency Services Route
Year 2019 AADT 2794	06 %	☒ Yes ☐ No Average Number per Day 6	☐ Yes ☒ No

Submission Information - *This information is used for administrative purposes and is not available on the public website.*

Submitted by ____ Organization ____ Phone ____ Date ____

Appendix B

Grade Crossing Photos

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085625H S 212TH ST

Looking east from 77th Ave S


Looking west


Looking east


Looking west

Looking east

Looking west

085629K E JAMES ST

Looking east. 1st Ave N is to the right.

Looking west

Looking east from 1st Ave N.

Looking west

Looking north at 1st Ave N

Looking east. 1st Ave N to the right

085633A E SMITH ST

Looking east.

Looking west from Railroad Ave N

Looking east from south side

Looking west

Looking east from north side

Looking west from north side

085636V E MEEKER ST

Looking east

Looking west from Railroad Ave

Looking east

Looking west

Looking east

Looking west

085637C E GOWE ST

Looking east from 1st Ave S

Looking west from Railroad Ave S

Looking east

Looking west

Looking north

Looking west

085639R E TITUS ST

Looking east

Looking west from Railroad Avenue S

Looking northeast from 1st Avenue S

Looking west

Looking north from yard track

Looking north from west side of crossing

085640K E WILLIS ST (SR 516)

Looking east from south side.

Looking west from south side.

Looking north west

Looking northwest from 1st Avenue S

Looking southeast at 1st Avenue S

Looking southwest at Railroad Avenue S

085642Y S 259TH ST

Looking east

Looking west

Looking east from 1st Avenue S

Looking west

Looking south

Appendix C

Final Diagnostic Team Notes

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Diagnostic Site Visit Field Notes - Final

BNSF Main Line Crossings in Kent, WA

November 15, 2017

The group met at the City of Kent's office at 8:30 on November 15, 2017. Attendees included:

Jeff Stewart, FRA
Ciano Hipol, BNSF
Paul D. Robinson, BNSF
Lennie D. Facklam, BNSF
Stephan Semenick, BNSF
Megan McIntyre, BNSF
Kelly Peterson, City of Kent
Chad Bieren, City of Kent
Rob Brown, City of Kent
Bob Boston, UTC
Betty Young, UTC
Bryon Agan, DEA for City
Kevin Jeffers DEA for City

After a safety briefing and introductions, the purpose of the Diagnostic was described as the first step in establishing a Quiet Zone using identified funding for improvements. Using the Federal Railroad Administration (FRA) Quiet Zone (QZ) calculator, David Evans and Associates (DEA) determined that risks could be reduced sufficiently with improvements at South Smith Street, but all agree suggested improvements at each of the eight BNSF main line crossings outlined below within the City should be reviewed and may be implemented, where feasible

BNSF noted that the American Railway Engineering and Maintenance of Way Association (AREMA) guidance on interconnection has changed since 2013. The current preemption times for several of the crossings are too short .*{City of Kent later confirmed that only S 212th currently has preemption in place and the downtown signals are not interconnected.}* Malfunctions of the gates have been observed and are being corrected by BNSF. It was noted that when Sounder commuter trains stop at the station between Smith and James, both crossings stay activated until the train departs, a situation that cannot be changed until BNSF upgrades its system. BNSF implemented the planned changes shortly after diagnostics review meeting.

BNSF has concerns with several of the crossings in the proposed quiet zone that have queuing issues that result in vehicles backed up across BNSF tracks from downstream traffic signals. There are Smith Street interconnect circuits in BNSF bungalow. BNSF believes they requested this from the agency long ago and the agency has yet to connect it at the traffic signal. BNSF recommends that the City work with them for interconnect at all locations where queuing is an issue prior to implementation of Quiet Zone.

With the passage of ST3, Sound Transit (ST) is planning to extend station platforms and build a parking garage east of the tracks south of James Street, between Central Ave and the BNSF railroad, which could change pedestrian use of the James Street crossing. In November 2017, the ST Board

approved this location for the garage. Additional pedestrian access improvements will be constructed as part of the Sound Transit project.

Several of the crossings reviewed have driveways within 60 feet of the crossing gate, at these locations, mountable medians with channelization devices are not fully compliant as Supplemental Safety Measures but the requirements for their use can be adjusted to qualify as an Alternative Safety Measure (ASM) with FRA approval. If designers utilize ASM(s) to upgrade crossing safety at one or more crossing within the QZ, the City will need to submit application for approval to the FRA in accordance with 49 CFR 222.39 (b).

Parking on BNSF property between the Titus and Gowe Street crossings is close to the tracks and BNSF feels it encourages trespassing across the tracks. Trespassing also occurs approximately 1,800 feet north of James, south of the SR 167 overpass. It is assumed the pedestrians are walking across the tracks from 1st Ave. N. through an unfenced commercial property to gain access to Central Ave.

Existing medians at Willis, Titus, Gowe, Meeker Smith and James Street are all mountable with channelization devices. The City prefers mountable medians to accommodate emergency vehicles responding to emergency calls. BNSF prefers non-mountable medians with vertical curbs, as mountable medians are easier to drive over and the channelization devices could require additional maintenance compared to the vertical face curbs. FRA rules recognize both types as reducing risks at crossings.

The group adjourned and reconvened in the field. A safety briefing was performed at each location and each person wore appropriate personal protective equipment including orange reflective vest, hardhat, safety glasses, and steel-toed boots.

The following lists observations at each crossing and notes the improvements discussed and what the group either agreed needed to be done or what should be further analyzed. Observations of illegal behaviors by drivers and pedestrians are also noted.

1. S 259th St; USDOT 085642Y
    a. Once the Quiet Zone is approved by the FRA, install W10-9 (No Train Horn) sign on both sides of the crossing and possibly on both 1st Avenue South approaches, per MUTCD.
    b. Install W10-2 (Parallel Railroad Crossing) signs on both 1st Avenue South approaches to South 259th Street advising motorists of the grade crossing immediately east of 1st Ave South
    c. Install mountable median curb with channelization for approximately 100 feet east of the crossing gate arms.
    d. Investigate the potential closure of the driveway in the SE quadrant. Coordination with the Fire Dept. will be required. If complete closure is not possible, then a partial closure to the length of the median will be implemented through the installation of mountable median curbing with channelization.
    e. Add signage and enforce no truck parking in the NE quadrant to improve visibility of the flashing lights.

f. Move the advance warning pavement markings on the east side to align with the W10-1 sign.
g. BNSF is concerned with the visibility of these lights related to vegetation and utility poles. BNSF suggests relocated lights. City will review options to increase visibility of lights.

Other items discussed:

- The addition of wayside horns, which was tabled in favor of the medians.
- Moving the light cantilevers closer to the roadway edge, which was tabled in favor of restricting parking.
- Placement of mountable median with channelization devises was discussed on the west side of the crossing, but a truck turning left from SB 1st Ave. South showed this this would restrict these movements. The City will not restrict this turn, so they will not install this median. Per Kevin Jeffers "When I ran the calculator, I assumed no median on either side here and the risk was such that the entire area qualified."
- Placement of channelization approximately 30' west crossing arms, however a semi was observed driving over this area.
- City will seek funding to upgrade the lights to LED's – 18 lights in place at this time. UTC Comment: UTC staff believes this is a high priority and should occur prior to, or as a part of, the implementation of a QZ.

2. Willis (SR 516); 085640K
    a. Once the Quiet Zone is approved by the FRA, install W10-9 (No Train Horn) sign on both sides of the crossing and possibly on 1st Avenue South, southern approach, and Railroad Avenue, northern approach, per MUTCD.
    b. Install W10-4 (Parallel Railroad Crossing (T)) signs on 1st Avenue South, southern approach, advising motorists of the grade crossing immediately east of 1st Avenue South if intersections are within 100' of crossing.
    c. Add R8-8 (Do Not Stop on Tracks) sign to the west for eastbound traffic.
    d. Replace the existing mountable median curb with channelization on Willis St with new mountable median curb with channelization delineators at 80" typical spacing through adjacent street intersections with Railroad Ave and 1st Ave South. Also, consider extending the median closer to the tracks, if clearance allows. Medians must extend to be at least within 1 foot of the gate and will be a minimum of the preferred 100 feet or longer as allowed by geometric constraints and as presented during UTC Petition Process. BNSF Prefers non-mountable medians so that drivers can't cross over the medians and drive around the lowered railroad gates.
    e. Improve maintenance of the channelization paddles on the median curbs, by replacing missing paddles.

f. Move the advance warning pavement markings on the west side back to align with the W10-1 sign.
g. Renew the stop lines.
h. Remove the south-facing light in the NE quadrant, if required for the QZ.
i. To deter illegal left turns from Railroad Avenue in the SE quadrant, add channelization (length to be minimum of 1 car length or longer as determined by geometric constraints and as presented in UTC Petition Process) at the Railroad Avenue roadway centerline up to the unmarked crosswalk at Willis St. The use of a "pork chop" island was discussed but could not be made large enough to meet design standards. Extending the median curb in Willis Street closer to the tracks (see Item d above) also addresses this concern.
j. Install tactile warning strips on existing sidewalks on the north and shoulders to the south.
k. Install R15-8 (LOOK with arrows) signs to alert pedestrians of all four non-gated approaches and to look in both directions for trains at the crossing.
l. Define the pedestrian paths using paint behind the gates and cantilever bases.

Other items discussed:

The locations of the gate and cantilever bases appear to be too close to the traveled way, which is delineated by the white shoulder stripe to the south; the shoulder stripe is missing on the north side of Willis. The wind guard for the gates extends over the traveled way. The City will examine MUTCD (8C-01) and will advise if they determine this is warranted for the QZ. Per BNSF, the crossing gate assemblies, including the wind guards, should be relocated away from the traveled way. The addition of curbing adjacent to auto traffic was also discussed and but may not be feasible without narrowing the roadway. BNSF will measure the gate arms in relation to the traveled way. City to determine if it is too close and next steps.

BNSF thought that the road had been widened closer to the railroad equipment. The City noted that the roadway has not been altered since the late 1960s or early 1970s.

BNSF stated the preemption time for the signal at Central is not long enough to address the queuing over the tracks that occurs. *{City of Kent later confirmed that only S 212th currently has preemption in place}* This has been studied by BNSF but, to BNSF's knowledge, no action by the City to increase the clearing time has occurred Queuing over the tracks was said to have been observed by BNSF. The City needs to assess this concern by reviewing BNSF's previous study which addresses queuing without increasing the clearing time.

Vehicles speeds appear to be higher than the posted 30 MPH. The City will consider traffic calming, such as lighted signs that detect and display vehicle speeds.

Two illegal vehicle movements were observed. A northbound truck made a left turn from 1st Ave S to westbound Wills St against the no left turn restriction; the City will consider no trucks being permitted on 1st Ave S. between Crow St and Willis St. A car made a U-turn on the tracks from WB Willis to EB Willis to enter Railroad Ave south of Willis St. Extending the median closer to the tracks will help address this issue.

Seek funding to upgrade the lights to LED's if required for the QZ. There are 28 lights in place at this time. UTC Comment: UTC staff believes this is a high priority and should occur prior to, or as a part of, the implementation of a QZ Kent will seek grant funding that will be separate from the QZ.

3. S Titus St; 085639R
    a. Once the Quiet Zone is approved by the FRA, install W10-9 (No Train Horn) signs on both sides of the crossing and possibly on both of the 1st Avenue South and Railroad Avenue approaches, per MUTCD.
    b. Install W10-2 (Grade Crossing and Intersection) signs on the 1st Avenue South and Railroad Avenue South approaches to Titus Street if intersections are within 100' of crossing.
    c. Move the R15-1 (Crossbucks) sign to be in line with the WB stop bar and add a R8-10 (Stop Here When Flashing) sign below it.
    d. Replace the existing mountable median curb with channelization on both approaches to the crossing with new mountable median curb with channelization delineators at 80" typical spacing to adjacent marked crosswalks at the intersections with Railroad Ave and 1st Ave S will be a minimum of 60' long (preferred 100') or longer as allowed be geometric constraints and as presented during UTC Petition Process. BNSF Prefers non-mountable medians so that drivers can't cross over the medians and drive around the lowered railroad gates.
    e. Add a section of mountable median curb with channelization between the industrial spur track and the eastern main track to the points allowed by track clearances. BNSF suggests farther discussions with Kent and UTC to determine if this should be implemented or not.
    f. Install R3-5R (Right Turn Only) sign and add curbing for the southeast quadrant driveway to deter illegal left turns out of the driveway.
    g. Close the illegal driveway between the industrial spur track and the east main track. BNSF will review property rights along this area and close the driveway between the industrial spur track and the east main track, if possible.
    h. Eliminate parking along the east side of the main tracks between Titus and Gowe Streets. BNSF has reviewed property rights along this area and is blocking off parking area now.

i. Block or remove the potentially illegal driveway in the SW quadrant with curbing, analyze effectiveness and consider concrete blocks or barriers behind the sidewalk, if needed.
j. Construct a fence along the west side of the main tracks to deter trespassing between Titus and Gowe Streets. Note that BNSF fiber and signal cables are in the area near the guardrail so BNSF's locations service (not just the typical One-call services) should be contacted at least 48 hours before digging.
k. Install tactile warning strips on the existing shoulders in all four quadrants.
l. Install R15-8 (LOOK with Arrows) signs to alert pedestrians at all four non-gated approaches to look for trains at the crossing.
m. Define the pedestrian paths using paint behind the gates and cantilever bases in the SW and NE quadrants.
n. Improve maintenance of the channelization paddles on the median curbs, by replacing missing paddles.

Other items discussed:

Closing the crossing was discussed. The City's police use this as a direct access to Central for emergency response from the police headquarters located approximately 3 blocks to the west. The City is not considering a closure at this time.

Relocation of the lights at the gate to the east to encompass the industrial spur track was discussed, but was tabled in favor of moving the R15-1 sign and adding the R8-10 sign.

The addition of a fence along the east side of the main tracks was discussed and was tabled in favor of eliminating parking on this side of the tracks and the addition of the fence on the west side of the tracks between Titus and Willis.

Two illegal trespassing incidents were observed to the north between Titus and Gowe Streets. Installation of fencing on the west side and the elimination of parking to the east of the main track will reduce trespassing.

The City will seek funding to upgrade the lights to LED's , if required for the QZ. There are 8 lights in place at this time. UTC Comment: UTC staff believes this is a high priority and should occur prior to, or as a part of, the implementation of a QZ.

4. S Gowe St; 085637C
   a. Once the Quiet Zone is approved by the FRA, install W10-9 (No Train Horn) signs on both sides of the crossing and possibly on both 1st Avenue South and Railroad Avenue approaches, per MUTCD.

b. Install W10-2 (Grade Crossing and Intersection) signs on 1st Avenue South and Railroad Avenue South approaches to Gowe Street if intersections are within 100' of crossing..
c. Add R8-8 (Do Not Stop on Tracks) signs for both EB and WB traffic.
d. Replace the existing mountable median curb with channelization on both approaches to the crossing with new mountable median curb with channelization delineators at 80" typical spacing on both approaches to the crossing to adjacent marked crosswalks at the intersections with Railroad Ave and 1st Ave will be a minimum of 60' long (preferred 100') or longer as allowed be geometric constraints and as presented during UTC Petition Process. BNSF Prefers non-mountable medians so that drivers can't cross over the medians and drive around the lowered railroad gates.
e. Close the western-most driveway in the SE quadrant
f. The City will investigate closing the driveway in the SE quadrant that is farther to the east of the crossing near Railroad Ave S.
g. Eliminate parking along the east side of the main tracks between Titus and Gowe Street. BNSF has review property rights along this area and is completing work now.
h. Construct a fence along with west side of the main tracks, at the back of the existing W-beam guardrail to deter trespassing between Titus and Gowe Streets. Note that BNSF fiber and signal cables are in the area near the guardrail so BNSF's locations service (not just the typical One-call services) should be contacted at least 48 hours before digging.
i. Construct a fence along the west side of the main tracks within the park property to deter trespassing between Gowe and Meeker Streets. Note that BNSF fiber and signal cables are in the area so BNSF's locations service (not just the typical One-call services) should be contacted at least 48 hours before digging.
j. Remove the asphalt concrete pavement that links the shoulder to the BNSF work area behind the old station building to deter trespassing to the north if required as a part of the QZ.
k. Construct a fence in the NE quadrant form the Gowe ROW, north to the corner of the BNSF building to deter trespassing to the north if required by the QZ. Length to be coordinated with BNSF and included the QZ Process.
l. Install tactile warning strips on existing shoulders.
m. Install R15-8(LOOK with Arrows) signs to alert pedestrians at all four non-gated approaches to look for trains at the crossing.
n. Define the pedestrian paths with paint behind the gates and cantilever bases in the SW and NE quads. BNSF Comment: "To Kent: Was adding "do not stop on tracks" signs included?"
o. Improve maintenance of the channelization paddles on the median curbs, by replacing missing paddles.

Other items discussed:

Closing of the driveway in the NE quadrant was discussed. BNSF preferred to keep it open for their use at this time.

Adding a section of median between the two main tracks was discussed, but City maintenance within that area was a concern, thus it was tabled.

The locations of the gate and cantilever bases appear to be too close to the traveled way, which is delineated by the white shoulder stripe to the south; the shoulder stripe is missing to the north. The wind guard for the gates appear to extend over the traveled way. The City will work with BNSF to restripe the lanes to narrow them and provide more distance between the edge of traveled way and gates.

The addition of curb, gutter and sidewalk closer to the beginning of the crossing limits was an apparent recommendation from the diagnostic report circulated in 2015. This is no longer being proposed by the City and needs to be documented in the resulting report for the diagnostic analysis.

BNSF feels the city needs to assess queuing concerns by reviewing BNSF's previous study. BNSF has stated that they feel the City's preemption does not have sufficient time at this location, amongst others.

Closure of the crossing or changing the tracking patterns to force one-way traffic at this and other downtown crossings was discussed. The City is not open to closure or creating one-way streets at this time.

Queuing of WB traffic from 1st Avenue South was observed after a train cleared and a vehicle attempted a left turn from westbound Gowe Street to southbound 1st Avenue.

City to seek funding to upgrade the lights to LED's if required for the QZ. There are currently 16 lights in place at this time. UTC Comment: UTC staff believes this is a high priority and should occur prior to, or as a part of, the implementation of a QZ.

5. S Meeker St; 085636V
    a. Once Quiet Zone is approved by the FRA, install W10-9 (No Train Horn) sign on both sides of the crossing and possibly on both 1st Avenue South and Railroad Avenue approaches, per MUTCD.
    b. Install W10-2 (Grade Crossing and Intersection) signs on 1st Avenue South and Railroad Avenue South approaches to Meeker Street if intersections are within 100' of crossing.
    c. Add R8-8 (Do Not Stop on Tracks) signs for both EB and WB traffic.
    d. Replace the existing mountable median curb with channelization with new mountable median curb with channelization delineators at 80" typical spacing to marked crosswalks at the intersections with Railroad Ave and 1st Ave will be a minimum of 60'

long(preferred 100') or longer as allowed be geometric constraints and as presented during UTC Petition Process. BNSF Prefers non-mountable medians so that drivers can't cross over the medians and drive around the lowered railroad gates.

e. Construct a fence along the west side of the main tracks within the park properties both and north and south of the street to deter trespassing. Note that BNSF fiber and signal cables are in the area so BNSF's locations service (not just the typical One-call services) should be contacted at least 48 hours before digging. Fence location and length and will be coordinate with BNSF.
f. Construct a fence in the SE quadrant from the Meeker St ROW south to the corner of the BNSF building to deter trespassing to the south if required by the QZ. Fence location and length and will be coordinate with BNSF.
g. Install concrete barrier or blocks in the SE quadrant on BNSF property in the area of the signal bungalow to stop unauthorized left turns out of the BNSF property.
h. Install tactile warning strips on existing shoulders.
i. Install R15-8 (LOOK with Arrows) signs to alert pedestrians on the non-gated sides of the approaches to look for trains at the crossing.
j. Trim large tree west of the tracks in the SW quadrant to allow adequate visibility of the railroad crossing signal flashing lights for the eastbound approach to the crossing.
k. Improve maintenance of the channelization paddles on the median curbs, by replacing missing paddles.

Other items discussed:

The lights were observed to be already upgraded with LED's.

The locations of the gate and cantilever bases appear to be too close to the traveled way, which is delineated by the white shoulder stripe to the south; the shoulder strip is missing to the north. The wind guard for the gates may extend over the traveled way. The City will work with BNSF to restripe the lanes to narrow them and provide more distance between the edge of traveled way and gates. BNSF would like to work with City now to get this work completed.

The addition of curb, gutter and sidewalk closer to the beginning of the crossing limits was an apparent recommendation from the diagnostic report circulated in 2015. These are no longer being proposed by the City and needs to be documented in the diagnostic analysis report.

The City needs to assess queuing concerns by reviewing BNSF's previous study. BNSF has stated that the City's preemption does not have sufficient time at this location, amongst others.

Closure of the crossing or changing the tracking patterns to force one-way traffic at this and other downtown crossings was discussed. The City is not open to closure or creating one-way streets at this time.

Trespassing between Meeker and Smith Streets was observed with the violators walking north from one crossing to the other.

6. S Smith St; 085633A
    a. Once quiet Zone is approved by FRA, install W10-9 (No Train Horn) sign on both sides of the crossing and possibly on both Railroad Avenue approaches, per MUTCD.
    b. Install W10-2 (Grade Crossing and Intersection) signs on Railroad Avenue South approaches to Smith Street if intersections are within 100' of crossing.
    c. Replace R8-8 (Do Not Stop on Tracks) signs for both EB and WB traffic with larger, more reflective signs.
    d. Refresh the pavement markings, including the stop lines.
    e. Replace the existing mountable median curb with channelization with new mountable median curb with channelization delineators at 80" typical spacing on east side of tracks and will be a minimum of 60' long (preferred 100') or longer as allowed be geometric constraints and as presented during UTC Petition Process. BNSF Prefers non-mountable medians so that drivers can't cross over the medians and drive around the lowered railroad gates.
    f. Replace the existing mountable median curb with channelization delineators at 80" typical spacing with new on the west side of the tracks, extend to the existing C-curb island, and add channelization devises (i.e. "candle sticks") to a point at least 100' from the crossing gate. BNSF Prefers non-mountable medians so that drivers can't cross over the medians and drive around the lowered railroad gates.
    g. Construct a fence along the west side of the main tracks within the park properties to the south of the street to deter trespassing. This should roughly align with the SW pedestrian gate at the sidewalk. Note that BNSF fiber and signal cables are in the area so BNSF's locations service (not just the typical One-call services) should be contacted at least 48 hours before digging. Fence length and location will be coordinate with BNSF.
    h. Consider and evaluate the addition of pedestrian gate and flashing lights in the SE quadrant to block the sidewalk. This was recommended by the diagnostics team.
    i. Consider and evaluate the addition of pedestrian gate in the NW quadrant between the tracks and ST ramp from the platform keeping the existing flashing lights that face north. BNSF measured the distance from the existing west main track and believes this can be done without violating statutory clearance.
    j. If gates are not added in the SE and NW quadrants, install R15-8 (LOOK with Arrows) signs to alert pedestrians on the non-gated sides of the approaches to look for trains at the crossing. This was recommended by the diagnostics team and per BNSF if this not

installed then a Side Light Assembly needs to be installed on existing device for the sidewalk.

k. Install tactile warning strips for the pedestrian crossings on sidewalks where not already installed.
l. Extend or supplement the pedestrian railing in the NE quadrant from the ST passenger platform to deter pedestrians from cutting between the gate and the railing keeping pedestrians on the paved sidewalk.
m. Improve maintenance of the channelization paddles on the median curbs, by replacing missing paddles.

Other items discussed:

Narrowing or rerouting the ST ramp from the platform in the NW quadrant to increase space for a pedestrian gates was discussed, but this would require acquiring ROW from the private owner. Similarly, adding a gate that blocks the ramp would also require ROW and is less desirable. Per BNSF, one of these options needs to be investigated farther and coordinated with BNSF as challenging property acquisition does not eliminate these options.

The gate in the NE quadrant is about 4' short of reaching the center of the roadway. BNSF believes it complies with FRA CFR 234 by covering 90% of the crossing roadway. If this issue needs to be addressed for the QZ, BNSF would also request the existing "scissor" pedestrian gate be removed from the roadway gate mechanism and an independent pedestrian gate with its own post and foundation be installed. The City will examine MUTCD (8C-01) and advise if they believe this is warranted for the QZ. City will determine if Implementation of l above affects the need for a pedestrian gate.

The gate in the SW quadrant has a "scissor" pedestrian gate, similar to the NE gate. BNSF proposes this be removed from the roadway gate mechanism and an independent pedestrian gate be installed with its own post and foundation.

The city needs to assess queuing concerns by reviewing BNSF's previous study. BNSF has stated they feel that the City' preemption does not have sufficient time at this location.

Closure of the crossing or changing the tracking patterns to force one-way traffic at this and other downtown crossings was discussed. The City is not open to closure or creating one-way streets at this time.

Trespassing between Meeker and Smith Streets was observed with violators walking north from one crossing to the other.

BNSF will to remove bent sign along tracks.

The City will seek funding to upgrade the lights to LED's if required for the QZ. There are currently over 30 lights in place at this time. UTC Comment: UTC staff believes this is a high priority and should occur prior to, or as a part of, the implementation of a QZ.

7. S James St; 085629K
    a. Once Quiet Zone is approved by the FRA, install W10-9 (No Train Horn) sign on both sides of the crossing and possibly on the southern 1st Avenue S approach, per MUTCD.
    b. Install W10-2 (Grade Crossing and Intersection) signs on Railroad Avenue South approaches to James Street if intersections are within 100' of crossing.
    c. Install W10-4 (Parallel Railroad Crossing (T)) on the northbound 1st Avenue South approach to James Street if intersection is within 100' of crossing.
    d. Add R8-8 (Do Not Stop on Tracks) signs for both EB and WB traffic.
    e. Refresh the shoulder pavement markings.
    f. Replace the existing mountable median curb with channelization delineators at 80" typical spacing with new both sides of tracks and extend them to be at least 100 feet from the crossing gates. BNSF Prefers non-mountable medians so that drivers can't cross over the medians and drive around the lowered railroad gates.
    g. Turn the south facing flashing light located in the SE quadrant to face east and add a R15-2P "2 Tracks" sign.
    h. Install tactile warning strips for pedestrian crossings on existing shoulders.
    i. Install R15-8 ("LOOK" with arrows) signs to alert pedestrians on the non-gated sides of the approaches to LOOK for trains at the crossing.
    j. Add a curb along the north edge of the traveled way to better protect the warning devices
    k. Add a fence along the eastern RR ROW line, about 1,800 feet north of the crossing, where trespassing has been observed. Fence location and length will be coordinated with BNSF.
    l. Improve maintenance of the channelization paddles on the median curbs, by replacing missing paddles.

Other items discussed:

Constructing a fence along east side of the main tracks on BNSF property to the south end of the station platform to deter trespassing, along with adding barriers behind the sidewalk in the SE quadrant with No Trespassing signs in BNSF ROW was discussed. If a fence is constructed, consider adding a paved path on the east side of the fence to further discourage trespassing. This was tabled until ST plans their improvements that will add parking to the east. BNSF Believes barricades and fencing needs to be installed as part of the QZ treatment. BNSF may consider deferring the paved walkway east of the

fence to the ST project. Megan to investigate BNSF ROW limits and barricading BNSF property in SE quadrant.

Pedestrian gates in SE quadrant was discussed. This was tabled this until ST plans their improvements that will add parking to the east.

On north side of James Street, west of the grade crossing, rebuilding the shoulder to be a minimum of 4' wide was discussed, but it was measured while on site and found to be more than 48" and sufficient.

The City will assess queuing concerns by reviewing BNSF's previous study. UTC Comment (at queuing issues): Consider installing dynamic envelope striping at the crossing to alert drivers where they should not stop when in a queue.

Where the trespassing is known, about 1,800 feet north of the crossing, BNSF will consider adding more No Trespassing signs.

Observed trespassers along the east side of the tracks walking north from the station area.

City to seek funding to upgrade the lights to LED's if required for the QZ. There are currently 30 lights in place at this time. UTC Comment: UTC staff believes this is a high priority and should occur prior to, or as a part of, the implementation of a QZ

8. S 212th St; 085625H
    a. Once the Quiet Zone is approved by FRA, install W10-9 (No Train Horn) sign on both sides of the crossing and possibly on the northern 1st Avenue South approach, per MUTCD.
    b. Install W10-4 (Parallel Railroad Crossing (T)) on the northbound 77th Avenue South approach to 212th Street if intersections are within 100' of crossing.
    c. Replace R8-8 (Do Not Stop on Tracks) signs for both EB and WB traffic with larger, more reflective signs.
    d. Install delineators at 80" typical spacing to the west approach along the south side of the existing mountable island and to the east approach along the north side of the existing mountable island and will be a minimum of 60' long (preferred 100') or longer as allowed be geometric constraints and as presented during UTC Petition Process. BNSF Prefers non-mountable medians so that drivers can't cross over the medians and drive around the lowered railroad gates.
    e. Install median with delineators along north side of turn lane past the existing island to create 100' mountable median with channelization devises measured from the EB gate.

f. Refresh the stop lines on the east and west approaches.
g. Install R15-8 (LOOK with Arrows) signs to alert pedestrians on the non-gated SE quad to look for trains at the crossing.
h. Install tactile warning strips for pedestrian crossings on existing sidewalks.

Other items discussed:

Discussed taller barriers in the center islands to better protect the median gates from wayward traffic. There were two incidents where the gates were hit by out-of-control vehicles last summer and one where a vehicle hit the bungalow. This was tabled until future grant funding can be secured. BNSF signal engineering is opposed to tabling this issue.

The preemption time for the signals at 77th Ave South may not be long enough to meet current guidance upgrade to the traffic signal. The City needs to assess this concern with the BNSF. (Outside of the QZ limits.) BNSF requests City of Kent to work with them in early 2018 to address this preemption along with other crossing preemptions.

BNSF would also prefer that the existing “scissor” pedestrian gates in the SW and NE quadrants be removed from the roadway gate mechanism. While all agreed that the pedestrian gates do not appear to be required, the City prefers to undertake any change outside of the QZ process. An alternative option is to remove the pedestrian gate arm.

Appendix D

Comments Received from the Notice of Intent and Responses from the City of Kent

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Comments Received from the Notice of Intent and Responses from the City of Kent

Crossing ID	Organization	Comment	City of Kent Response
All	Sound Transit	QUESTION: What is the timing of establishing a quiet zone through the City of Kent on BNSF Railway?	If our application is approved by the FRA, we believe the Quiet Zone will be implemented between one and three years from the time NOI is issued.
All	Washington State Department of Transportation	No comments.	Thank you for reviewing the NOI.
All	Washington State Utilities and Transportation Commission	LED light upgrades: Staff strongly recommends that, in addition to the proposed upgrades, all crossing signals be upgraded to LEDs prior to quiet zone establishment. Staff acknowledges that these upgrades are outside of the quiet zone requirements; however, the absence of a train horn only increases the need for railroad warning devices to be seen, and Staff believes these upgrades would improve visibility of the crossing signals for motor vehicles and pedestrians.	The City will look for grants and funding opportunities to pursue upgrading the signals to LED. An inquiry has been made with BNSF to discuss the upgrade process and costs.
All	Washington State Utilities and Transportation Commission	Vehicle queuing/traffic signal preemption: At the Nov. 2017 onsite meeting, Staff observed vehicles queuing over several crossings while drivers were waiting for nearby traffic signals. Only the S. 212th crossing currently has traffic signal preemption in place. Based on a 2011 study prepared for BNSF by Campbell Technology Corporation, the simultaneous preemption at the S. 212th crossing does not provide enough time for a design vehicle to clear the track during a worst-case scenario. Staff acknowledges that . this is outside of the quiet zone requirements; however, Staff recommends that the traffic signal preemption issue at S. 212th be addressed as soon as possible to prevent vehicle/train collisions. In addition, if there is vehicle queuing at other crossings located within 200 feet of a traffic signal, the crossings should be evaluated for preemption.	The City has concerns about the impacts to traffic with preemption and the possible safety implications to the overall system is preemption is implemented in the downtown area. The City and BNSF have begun to discuss the level of effort that would be necessary to interconnect the railroad and traffic signals in the downtown area. The track clearance green time adjustement, the removal of the pedestrian recall on 77th Ave S, and the removal of pedestrian walk recall on coordinated phases at the S 212th St and 77th Ave S intersection have been changed as recommended in BNSF's 2011 study. In additon, the annual preemption testing recommended in the repoty has also been implemented.
085625H S 212th St	BNSF	Non-mountable medians strongly preferred to the proposed mountable medians with delineators.	Thank you for the comment. Mountable curb with vertical channelization elements meet the requirements for an SSM and is also the basis for an ASM based on a modidied SSM while also providing better access for EMS response. The City acknowledges, and accepts, that there will be increased maintenance requirements with mountable curb and vertical channelization.
085625H S 212th St	BNSF	Taller barriers at the center islands to better protect median signal gate arms are recommended. Two previously incidents where vehicles struck the signal equipment.	As discussed during the diagnostic, taller barriers present a design challenge due the the roadway design speed and clear zone requirements.
085625H S 212th St	BNSF	Installation of LED lights for all signals strongly recommended.	The City will look for grants and funding opportunities to pursue upgrading the signals to LED.
085625H S 212th St	BNSF	The 2011 study prepared for BNSF by Campbell Technology Corporation identified the simultaneous preemption currently in place does not provide enough time for a design vehicle to clear the track. It is strongly recommended that the City addresses the queuing concerns at this location.	This is something the City is evaluating.
085629K E James St	BNSF	Non-mountable medians strongly preferred to the proposed mountable medians with delineators.	Thank you for the comment. Mountable curb with vertical channelization elements meet the requirements for an SSM and is also the basis for an ASM based on a modidied SSM while also providing better access for EMS response. The City acknowledges, and accepts, that there will be increased maintenance requirements with mountable curb and vertical channelization.
085629K E James St	BNSF	City previously proposed addition of a fence along the eastern ROW line, approximately 1,800' north of the crossing where pedestrian trespassing has been observed. Please confirm this will be installed.	Confirmed. The referenced tresspass fence will be installed prior to the establishment of a New Quiet Zone.

Comments Received from the Notice of Intent and Responses from the City of Kent

Crossing ID	Organization	Comment	City of Kent Response
085629K E James St	BNSF	Crossing currently has significant vehicle queues. BNSF previously issued a study which recommended interconnection at the crossing, but the City has not addressed BNSF's concerns to date.	The City has concerns about the effects of signal preemption on traffic operations and the overall impacts to traffic in the area of the railroad crossings in downtown. The BNSF study did not address traffic issues and the related safety concerns related to traffic. However, we have initiated communications with BNSF to discuss further. To reduce the risk of vehicle queuing on the tracks the City is proposing additional signing (Do Not Stop On Tracks (R8-8)) and dynamic envelope pavement markings.
085629K E James St	BNSF	Installation of LED lights for all signals strongly recommended.	The City will look for grants and funding opportunities to pursue upgrading the signals to LED.
085633A E Smith St	BNSF	Non-mountable medians strongly preferred to the proposed mountable medians with delineators.	Thank you for the comment. Mountable curb with vertical channelization elements meet the requirements for an SSM and is also the basis for an engineered ASM while also providing better access for EMS response. The City acknowledges, and accepts, that there will be increased maintenance requirements with mountable curb and vertical channelization.
085633A E Smith St	BNSF	City previously proposed addition of a fence along the eastern ROW line to deter pedestrian trespassing. Please confirm the fence installation.	Confirmed. Additional pedestain railing will we installed in the northeast quadrant to deter pedestriance from walking around the back of the crossing gate from the platform.
085633A E Smith St	BNSF	Crossing currently has significant vehicle queues. BNSF previously issued a study which recommended interconnection at the crossing, but the City has not addressed BNSF's concerns to date.	The City has concerns about the effects of signal preemption on traffic operations and the overall impacts to traffic in the area of the railroad crossings in downtown. The BNSF study did not address traffic issues and the related safety concerns related to traffic. However, we have initiated communications with BNSF to discuss further. To reduce the risk of vehicle queuing on the tracks the City is proposing additional signing (Do Not Stop On Tracks (R8-8)) and dynamic envelope pavement markings.
085633A E Smith St	BNSF	Installation of LED lights for all signals strongly recommended.	The City will look for grants and funding opportunities to pursue upgrading the signals to LED.
085636V E Meeker St	BNSF	Non-mountable medians strongly preferred to the proposed mountable medians with delineators.	Thank you for the comment. Mountable curb with vertical channelization elements meet the requirements for an SSM and is also the basis for an ASM based on a modidied SSM while also providing better access for EMS response. The City acknowledges, and accepts, that there will be increased maintenance requirements with mountable curb and vertical channelization.
085636V E Meeker St	BNSF	East median proposed at 98'. Preferred length is 100' or greater.	We agree that 100 feet or greater is preferrable but 98 feet is the distance from the crossing gate to the crosswalk on the west side of the intersection of Railroad Ave S.
085636V E Meeker St	BNSF	City previously proposed addition of fence along the west side of the mainline within park properties both north and south of the street to deter pedestrian trespassing. Please confirm the fence installation.	Confirmed. A new fence will be installed on the west side of the mainline between Smith and Meeker and also between Meeker and Gowe.

Comments Received from the Notice of Intent and Responses from the City of Kent

Crossing ID	Organization	Comment	City of Kent Response
085636V E Meeker St	BNSF	Crossing currently has significant vehicle queues. BNSF previously issued a study which recommended interconnection at the crossing, but the City has not addressed BNSF's concerns to date.	We have not observed significant vehicle queuing at the Meeker St crossing. Queuing would better be characterized as occasional. The nearest signalized intersection is over 400 feet to the east. We will discuss interconnecting the the traffic signal to the east with BNSF. To reduce the risk of vehicle queuing on the tracks the City is proposing additional signing (Do Not Stop On Tracks (R8-8)) and dynamic envelope pavement markings.
085636V E Meeker St	BNSF	Installation of LED lights for all signals strongly recommended.	The City will look for grants and funding opportunities to pursue upgrading the signals to LED.
085637C E Gowe St	BNSF	Non-mountable medians strongly preferred to the proposed mountable medians with delineators.	Thank you for the comment. Mountable curb with vertical channelization elements meet the requirements for an SSM and is also the basis for an ASM based on a modidied SSM while also providing better access for EMS response. The City acknowledges, and accepts, that there will be increased maintenance requirements with mountable curb and vertical channelization.
085637C E Gowe St	BNSF	East median proposed at 98'. Preferred length is 100' or greater.	The current design proposes approximately 100 of median channelization.
085637C E Gowe St	BNSF	City previously proposed addition of fence along the west side of the mainline within park properties both north and south of the street to deter pedestrian trespassing. Please confirm the fence installation.	Confirmed. A new fence will be installed on the west side of the mainline between Meeker and Gowe and between Gowe and Titus.
085637C E Gowe St	BNSF	Installation of LED lights for all signals strongly recommended.	The City will look for grants and funding opportunities to pursue upgrading the signals to LED.
085637C E Gowe St	BNSF	Crossing currently has significant vehicle queues. BNSF previously issued a study which recommended interconnection at the crossing, but the City has not addressed BNSF's concerns to date.	We have not observed significant vehicle queuing at Gowe St crossing. Queuing would better be characterized as occasional. The nearest signalized intersection is over 400 feet to the east and this is a low-volume street. We will discuss interconnecting the the traffic signal to the east with BNSF. To reduce the risk of vehicle queuing on the tracks the City is proposing additional signing (Do Not Stop On Tracks (R8-8)) and dynamic envelope pavement markings.
085639R E Titus St	BNSF	Non-mountable medians strongly preferred to the proposed mountable medians with delineators.	Thank you for the comment. Mountable curb with vertical channelization elements meet the requirements for an SSM and is also the basis for an ASM based on a modidied SSM while also providing better access for EMS response. The City acknowledges, and accepts, that there will be increased maintenance requirements with mountable curb and vertical channelization.
085639R E Titus St	BNSF	Please confirm ASM applications for the center medians will be submitted to and reviewed by the FRA.	Confirmed. All ASMs will be submitted to the FRA for review and approval.
085639R E Titus St	BNSF	Please be aware that the spur track adjacent to this crossing will not be a part of the quiet zone, and as a result the train horn will be sounded when trains occupy the crossing.	Thank you. We are aware of this. This was discussed during the diagnostic.
085639R E Titus St	BNSF	City previously proposed addition of fence along the west side of the mainline between Titus and Gowe to deter pedestrian trespassing. Please confirm the fence installation.	Confirmed. A new fence will be installed on the west side of the mainline between Gowe and Titus.
085639R E Titus St	BNSF	Installation of LED lights for all signals strongly recommended.	The City will look for grants and funding opportunities to pursue upgrading the signals to LED.

Comments Received from the Notice of Intent and Responses from the City of Kent

Crossing ID	Organization	Comment	City of Kent Response
085640K E Willis St State Route 516	BNSF	Non-mountable medians strongly preferred to the proposed mountable medians with delineators.	Thank you for the comment. Mountable curb with vertical channelization elements meet the requirements for an SSM and is also the basis for an ASM based on a modidied SSM while also providing better access for EMS response. The City acknowledges, and accepts, that there will be increased maintenance requirements with mountable curb and vertical channelization.
085640K E Willis St State Route 516	BNSF	Crossing currently has significant vehicle queues. BNSF previously issued a study which recommended interconnection at the crossing, but the City has not addressed BNSF's concerns to date.	The City has concerns about the effects of signal preemption on traffic operations and the overall impacts to traffic in the area of the railroad crossings in downtown. The BNSF study did not address traffic issues and the related safety concerns related to traffic. However, we have initiated communications with BNSF to discuss further. To reduce the risk of vehicle queuing on the tracks the City is proposing additionaldynamic pavement markings at each crossing.
085640K E Willis St State Route 516	BNSF	Please confirm ASM applications for the center medians will be submitted to and reviewed by the FRA.	Confirmed. All ASMs will be submitted to the FRA for review and approval.
085640K E Willis St State Route 516	BNSF	Installation of LED lights for all signals strongly recommended.	The City will look for grants and funding opportunities to pursue upgrading the signals to LED.
085640K E Willis St State Route 516	Washington State Utilities and Transportation Commission	Staff recommends ensuring that the removal and replacement of the existing median barrier/channelization is close enough to tracks to deter illegal left turns from Railroad Ave. in the SE quadrant, as discussed in the Nov. 2017 onsite meeting notes.	The current design proposes approximately 100 of median channelization east of the crossing. This will extend approximately 60 feet east of the intersection in the southeast quadrant.
085642Y S 259th St	BNSF	Non-mountable medians strongly preferred to the proposed mountable medians with delineators.	Thank you for the comment. Mountable curb with vertical channelization elements meet the requirements for an SSM and is also the basis for an ASM based on a modidied SSM while also providing better access for EMS response. The City acknowledges, and accepts, that there will be increased maintenance requirements with mountable curb and vertical channelization.
085642Y S 259th St	BNSF	Center median strongly recommended on west side of crossing, currently only proposed on east side of crossing.	The industrian area and truck traffic on 1st Ave S north of 259th makes median channelization impossible. S 259th St is a low-volume street with good visibiliy from the west side.
085642Y S 259th St	BNSF	Truck entrance in NE quadrant can cause vehicle queuing on tracks while trucks maneuver into storage facility. The City needs to address these concerns with traffic control plans.	The the west edge of the commercial driveway in the northeast quadrant is approximately 190 feet from the crossing. There is a reasonable amount of storage between the crossing and the driveway. The business served by that driveway is relatively small so truck volumes are low.
085642Y S 259th St	BNSF	Please confirm ASM applications for the center medians will be submitted to and reviewed by the FRA.	Confirmed. All ASMs will be submitted to the FRA for review and approval.
085642Y S 259th St	BNSF	Installation of LED lights for all signals strongly recommended.	The City will look for grants and funding opportunities to pursue upgrading the signals to LED.

Appendix E

Grade Crossing Modification Plans

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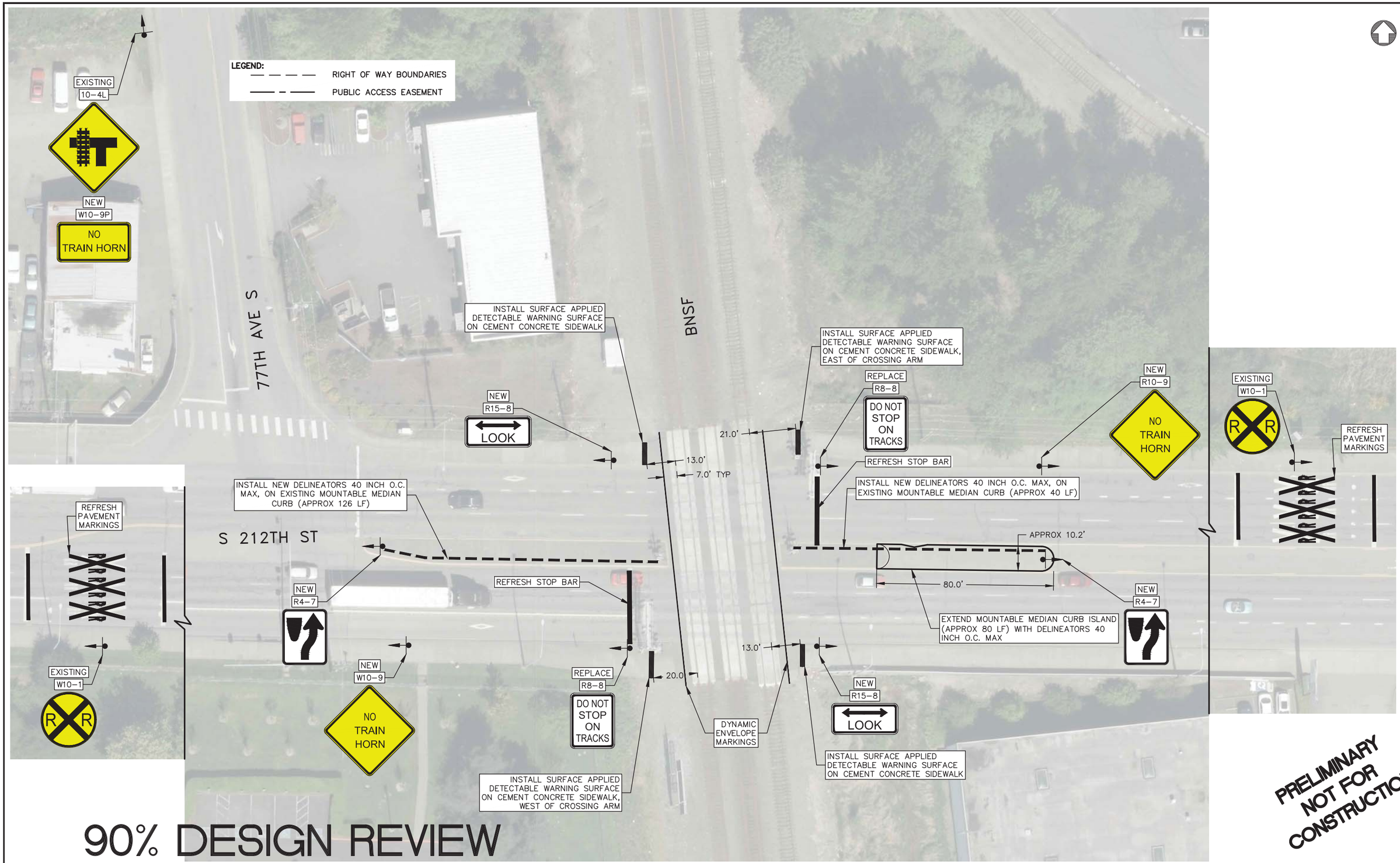

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NOT FOR
CONSTRUCTION

90% DESIGN REVIEW

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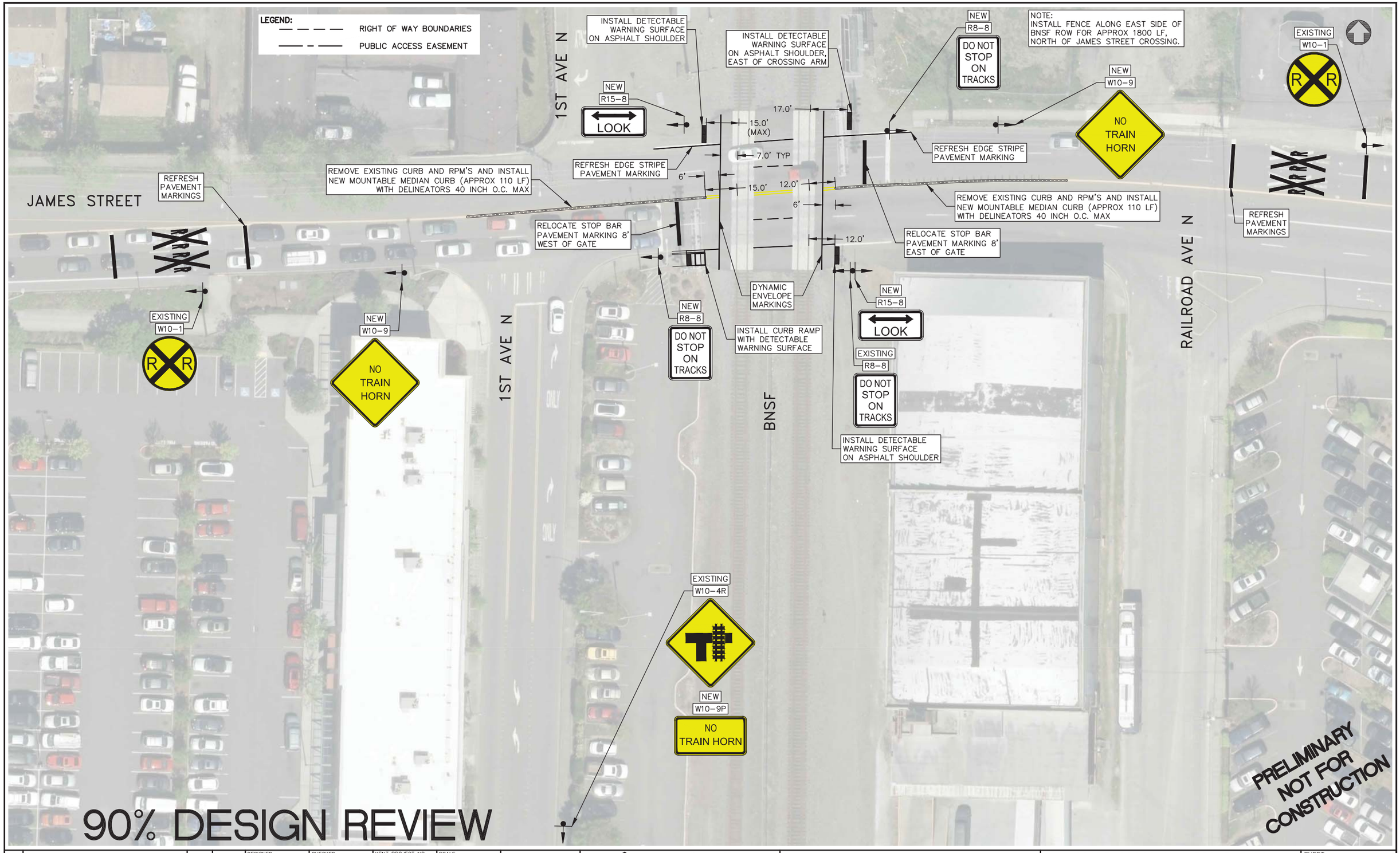
DRAWN: ____ PROJECT ENGR: ____ CONST. MGMT. REVIEW
APPROVED: ____ CITY ENGINEER
DATE 2/14/2018
SCALE: HORIZ: NONE VERT: NONE
BAR IS HALF INCH ON ORIGINAL DRAWING ADJUST SCALES ACCORDINGLY
0" 0.5"

City of Kent
Public Works Department
Engineering Division

RAILROAD QUIET ZONE – CHANNELIZATION

GRADE CROSSING IMPROVEMENTS
USDOT CIN 085625H
BNSF RAILWAY AT S 212TH STREET

SHEET 2 OF 2
FILE NO.



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0" 0.5"

City of Kent
Public Works Department
Engineering Division

RAILROAD QUIET ZONE – CHANNELIZATION

GRADE CROSSING IMPROVEMENTS
USDOT CIN 085629K
BNSF RAILWAY AT JAMES STREET

SHEET 2 OF 2
FILE NO.

LEGEND:
RIGHT OF WAY BOUNDARIES
PUBLIC ACCESS EASEMENT

EXISTING W10-2R
NEW W10-9P
NO TRAIN HORN
240.0'

RELOCATE W10-1
RELOCATE R2-1
SPEED LIMIT 30
REMOVE EXISTING AND INSTALL NEW PAVEMENT MARKINGS

INSTALL SURFACE APPLIED DETECTABLE WARNING SURFACE ON CEMENT CONCRETE SIDEWALK, EAST OF CROSSING ARM
REFRESH EXISTING PAVEMENT MARKINGS WITHIN CROSSING
INSTALL DETECTABLE WARNING SURFACE ON ASPHALT SHOULDER
EXTEND RAILING
EXISTING R8-8
DO NOT STOP ON TRACKS
NEW W10-9
NO TRAIN HORN
RELOCATE STOP BAR PAVEMENT MARKING 8' EAST OF GATE
NEW R15-8
LOOK
16.0'
7.0'
12.0'
10.0'
12.0'
REMOVE EXISTING DETECTABLE WARNING SURFACE
DYNAMIC ENVELOPE MARKINGS
REMOVE EXISTING CURB AND RPM'S AND INSTALL NEW MOUNTABLE MEDIAN CURB (APPROX 95 LF) WITH DELINEATORS 40 INCH O.C. MAX
REMOVE EXISTING CURB AND RPM'S AND INSTALL NEW MOUNTABLE MEDIAN CURB (APPROX 56 LF) WITH DELINEATORS 40 INCH O.C. MAX
RELOCATE STOP BAR PAVEMENT MARKING 8' WEST OF GATE
19.0'
INSTALL SURFACE APPLIED DETECTABLE WARNING SURFACE ON CEMENT CONCRETE SIDEWALK
NEW R15-8
LOOK
CROSSING ARM FOUNDATION
NEW W10-9
NO TRAIN HORN
INSTALL NEW DELINEATORS 80 INCH O.C. MAX, ON EXISTING ISLAND (54 LF)
EXISTING R8-8
DO NOT STOP ON TRACKS
INSTALL FENCE BETWEEN SMITH STREET AND E MEEKER ST
EXISTING W10-2L
NEW W10-9P
NO TRAIN HORN
EXISTING W10-1
REMOVE EXISTING AND INSTALL NEW PAVEMENT MARKINGS
INSTALL SURFACE APPLIED DETECTABLE WARNING SURFACE ON CEMENT CONCRETE SIDEWALK, WEST OF CROSSING ARM, NORTH AND SOUTH SIDE OF CROSSING ARM FOUNDATION

1ST AVE N
RAILROAD AVE N
SMITH STREET
BNSF
RAILROAD AVE N

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BAR IS HALF INCH ON ORIGINAL DRAWING ADJUST SCALES ACCORDINGLY
0" 0.5"

City of Kent
Public Works Department
Engineering Division

RAILROAD QUIET ZONE – CHANNELIZATION

GRADE CROSSING IMPROVEMENTS
USDOT CIN 085633A
BNSF RAILWAY AT SMITH STREET

SHEET 2 OF 2
FILE NO.

1ST AVE S

1ST AVE N

EXISTING W10-1

NEW W10-9 NO TRAIN HORN

EXISTING W10-2L

EXISTING W10-2R

NEW W10-9P NO TRAIN HORN

NEW R8-8 DO NOT STOP ON TRACKS

NEW R15-8 LOOK

REMOVE EXISTING CURB AND RPM'S AND INSTALL NEW MOUNTABLE MEDIAN CURB (APPROX 65 LF) WITH DELINEATORS 40 INCH O.C. MAX

REFRESH STOP BAR

BNSF

INSTALL DETECTABLE WARNING SURFACE ON ASPHALT SHOULDER, WEST OF CROSSING ARM

INSTALL DETECTABLE WARNING SURFACE ON ASPHALT SHOULDER

INSTALL FENCE BETWEEN E MEEKER ST AND SMITH STREET

INSTALL FENCE BETWEEN E MEEKER ST AND E GOWE STREET

INSTALL DETECTABLE WARNING SURFACE ON ASPHALT SHOULDER

DYNAMIC ENVELOPE MARKINGS

REFRESH EXISTING PAVEMENT MARKINGS WITHIN CROSSING

INSTALL FENCE

CLOSE ACCESS

CROSSING ARM FOUNDATION

INSTALL DETECTABLE WARNING SURFACE ON ASPHALT SHOULDER, EAST OF CROSSING ARM (BOTH SIDES OF CROSSING ARM FOUNDATION)

INSTALL TRAFFIC BARRIER CURB FROM STOP BAR TO 62' EAST OF GATE

REMOVE EXISTING CURB AND RPM'S AND INSTALL NEW MOUNTABLE MEDIAN CURB (APPROX 98 LF) WITH DELINEATORS 40 INCH O.C. MAX

NEW PAVEMENT MARKINGS (TYP.)

15.0' (MAX)

11.0'

10.0'

12.0'

7.0'

20.0' (TYP)

E GOWE ST

E MEEKER ST

RAILROAD AVE S

EXISTING W10-2L NEW W10-9P NO TRAIN HORN

EXISTING W10-1 NEW W10-9P NO TRAIN HORN

EXISTING W10-2R NEW W10-9P NO TRAIN HORN

NEW R15-8 LOOK

NEW R8-8 DO NOT STOP ON TRACKS

NEW R15-8 LOOK

NEW R15-8 LOOK

PRELIMINARY NOT FOR CONSTRUCTION

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APPROVED: ____ CITY ENGINEER
DATE 2/14/2018
SCALE: HORIZ: NONE VERT: NONE
BAR IS HALF INCH ON ORIGINAL DRAWING ADJUST SCALES ACCORDINGLY
0" 0.5"

City of Kent
Public Works Department
Engineering Division

RAILROAD QUIET ZONE – CHANNELIZATION

GRADE CROSSING IMPROVEMENTS
USDOT CIN 085636V
BNSF AT E MEEKER ST

SHEET 2 OF 2
FILE NO.

LEGEND:
RIGHT OF WAY BOUNDARIES
PUBLIC ACCESS EASEMENT

NEW PAVEMENT MARKINGS (TYP.)

EXISTING W10-2L

1ST AVE S

1ST AVE N

EXISTING W10-2R

NEW W10-9P NO TRAIN HORN

EXISTING W10-1

NEW W10-9P NO TRAIN HORN

E GOWE ST

NEW W10-9P NO TRAIN HORN

REMOVE EXISTING CURB AND RPM'S AND INSTALL NEW MOUNTABLE MEDIAN CURB (APPROX 70 LF) WITH DELINEATORS 40 INCH O.C. MAX

12.0'

12.0'

RELOCATE STOP BAR 8' WEST OF GATE

NEW R8-8 DO NOT STOP ON TRACKS

NEW R15-8 LOOK

INSTALL DETECTABLE WARNING SURFACE ON ASPHALT SHOULDER

INSTALL FENCE BETWEEN E GOWE ST AND E MEEKER ST

7.0'

15.0' (MAX)

12.0'

15.0' (MAX)

NEW R15-8 LOOK

INSTALL DETECTABLE WARNING SURFACE ON ASPHALT SHOULDER, WEST OF CROSSING ARM

REFRESH EXISTING PAVEMENT MARKINGS WITHIN CROSSING

BNSF

DYNAMIC ENVELOPE MARKINGS

12.0'

15.0'(MAX)

INSTALL FENCE

PAINT LINE TO DELINEATE PEDESTRIAN PATH (TYP)

FENCE TO BE INSTALLED BETWEEN E TITUS ST AND E GOWE ST

12.0'

NEW R15-8 LOOK

INSTALL DETECTABLE WARNING SURFACE ON ASPHALT SHOULDER, EAST OF CROSSING ARM

INSTALL DETECTABLE WARNING SURFACE ON ASPHALT SHOULDER

12.0'

GATED ACCESS CONTROLLED BY BNSF

NEW R8-8 DO NOT STOP ON TRACKS

INSTALL TRAFFIC BARRIER CURB FROM STOP BAR TO 62' EAST OF GATE

EXISTING W10-2R

DRIVEWAY TO BE CLOSED

NEW R15-8 LOOK

20.0' (TYP)

12.0'

REMOVE EXISTING CURB AND RPM'S AND INSTALL NEW MOUNTABLE MEDIAN CURB (APPROX 100 LF) WITH DELINEATORS 40 INCH O.C. MAX

EXISTING W10-2L

RELOCATE STOP BAR 8' WEST OF GATE

NEW W10-9P NO TRAIN HORN

E MEEKER ST

EXISTING W10-1

NEW W10-9P NO TRAIN HORN

RAILROAD AVE S

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APPROVED: ____ CITY ENGINEER
DATE 2/14/2018
SCALE: HORIZ: NONE VERT: NONE
BAR IS HALF INCH ON ORIGINAL DRAWING ADJUST SCALES ACCORDINGLY
0" 0.5"

City of Kent
Public Works Department
Engineering Division

RAILROAD QUIET ZONE – CHANNELIZATION

GRADE CROSSING IMPROVEMENTS
USDOT CIN 085637C
BNSF AT E GOWE ST

SHEET 2 OF 2
FILE NO.

FENCE TO BE INSTALLED BETWEEN E TITUS ST AND E GOWE ST

EXISTING W10-2L

NEW W10-9P
NO TRAIN HORN

NEW R15-8
LOOK

NEW R3-5R
ONLY

1ST AVE S

BNSF

NEW R15-8
LOOK

INSTALL DETECTABLE WARNING SURFACE ON ASPHALT SHOULDER

BNSF TO BLOCK DRIVEWAY AND ELIMINATE PARKING

PAINT LINE TO DELINEATE PEDESTRIAN PATH

EXISTING R15-1
CROSSING RAILROAD

EXISTING R15-2P
3 TRACKS

NEW R10-6a
STOP HERE ON RED

RELOCATE STOP BAR PAVEMENT MARKING 8' WEST OF GATE

REFRESH EXISTING PAVEMENT MARKINGS WITHIN CROSSING

REMOVE EXISTING CURB AND RPM'S AND INSTALL NEW MOUNTABLE MEDIAN CURB (APPROX 72 LF) WITH DELINEATORS 40 INCH O.C. MAX

8.0'
6.0'
12.0'
20.0' (TYP)
11.0'
7.0' TYP
13.0'
7.0'
6.0'
12.0'
12.0'
12.0'

DYNAMIC ENVELOPE MARKINGS

E TITUS ST

EXISTING W10-1

NEW W10-9P
NO TRAIN HORN

RELOCATE STOP BAR PAVEMENT MARKING 8' EAST OF GATE

CLOSE EXISTING DRIVEWAY

NEW R10-6a
STOP HERE ON RED

PAINT LINE TO DELINEATE PEDESTRIAN PATH

INSTALL DETECTABLE WARNING SURFACE ON ASPHALT SHOULDER

NEW R15-8
LOOK

NEW R15-8
LOOK

NEW R3-5R
ONLY

NEW PAVEMENT MARKINGS (TYP.)

EXISTING W10-2R

NEW W10-9P
NO TRAIN HORN

REMOVE EXISTING CURB AND RPM'S AND INSTALL NEW MOUNTABLE MEDIAN CURB (APPROX 65 LF) WITH DELINEATORS 40 INCH O.C. MAX

EXISTING W10-1

NEW W10-9P
NO TRAIN HORN

RAILROAD AVE S

EXISTING W10-2R

NEW W10-9P
NO TRAIN HORN

EXISTING W10-2L

NEW W10-9P
NO TRAIN HORN

RAILROAD AVE S

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SCALE: HORIZ: NONE VERT: NONE
BAR IS HALF INCH ON ORIGINAL DRAWING ADJUST SCALES ACCORDINGLY 0" 0.5"

City of Kent
Public Works Department
Engineering Division

RAILROAD QUIET ZONE – CHANNELIZATION

GRADE CROSSING IMPROVEMENTS
USDOT CIN 085639R
BNSF RAILWAY AT E TITUS STREET

SHEET 2 OF 2
FILE NO.

LEGEND:

— — — — RIGHT OF WAY BOUNDARIES

——— – ——— PUBLIC ACCESS EASEMENT

EXISTING W10-4L

NEW W10-9P — NO TRAIN HORN

1ST AVE S

INSTALL DETECTABLE WARNING SURFACE ON ASPHALT SHOULDER

NEW R15-8 — LOOK

DYNAMIC ENVELOPE MARKINGS

INSTALL DETECTABLE WARNING SURFACE ON ASPHALT SHOULDER, EAST OF CROSSING ARM

EXISTING W10-4R

NEW W10-9P — NO TRAIN HORN

NEW R15-8 — LOOK

EXISTING R8-8 — DO NOT STOP ON TRACKS

RAILROAD AVE S

EXISTING W10-1

NEW PAVEMENT MARKINGS

NEW W10-9P — NO TRAIN HORN

15.0'

7.0' TYP

15.0'

REMOVE EXISTING CURB AND RPM'S AND INSTALL NEW MOUNTABLE MEDIAN CURB (APPROX 100 LF) WITH DELINEATORS 40 INCH O.C. MAX WITH DELINEATORS 40 INCH O.C. MAX

6'

12.0'

PAINT LINE TO DELINEATE PEDESTRIAN PATH

REFRESH STOP BAR

E WILLIS ST

REFRESH STOP BAR

PAINT LINE TO DELINEATE PEDESTRIAN PATH

12.0'

6'

REFRESH EXISTING PAVEMENT MARKINGS WITHIN CROSSING

15.0'

INSTALL DETECTABLE WARNING SURFACE ON ASPHALT SHOULDER

EXISTING W10-1

NEW PAVEMENT MARKINGS

REMOVE PAVEMENT MARKINGS

NEW W10-9 — NO TRAIN HORN

NEW R8-8 — DO NOT STOP ON TRACKS

NEW R15-8 — LOOK

NEW R15-8 — LOOK

INSTALL DETECTABLE WARNING SURFACE ON ASPHALT SHOULDER, WEST OF CROSSING ARM

1ST AVE S

BNSF

RAILROAD AVE S

EXISTING W10-4R

NEW W10-9P — NO TRAIN HORN

EXISTING R3-5R — ONLY

EXISTING W10-1

NEW PAVEMENT MARKINGS

REMOVE EXISTING CURB AND RPM'S AND INSTALL NEW MOUNTABLE MEDIAN CURB (APPROX 100 LF) WITH DELINEATORS 40 INCH O.C. MAX

PRELIMINARY NOT FOR CONSTRUCTION

90% DESIGN REVIEW

NO.	REVISION	BY	DATE

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DRAWN: ____ PROJECT ENGR: ____ CONST. MGMT. REVIEW ____

APPROVED: ____ CITY ENGINEER

DATE 2/14/2018

SCALE: HORIZ: NONE VERT: NONE

BAR IS HALF INCH ON ORIGINAL DRAWING ADJUST SCALES ACCORDINGLY

0" 0.5"

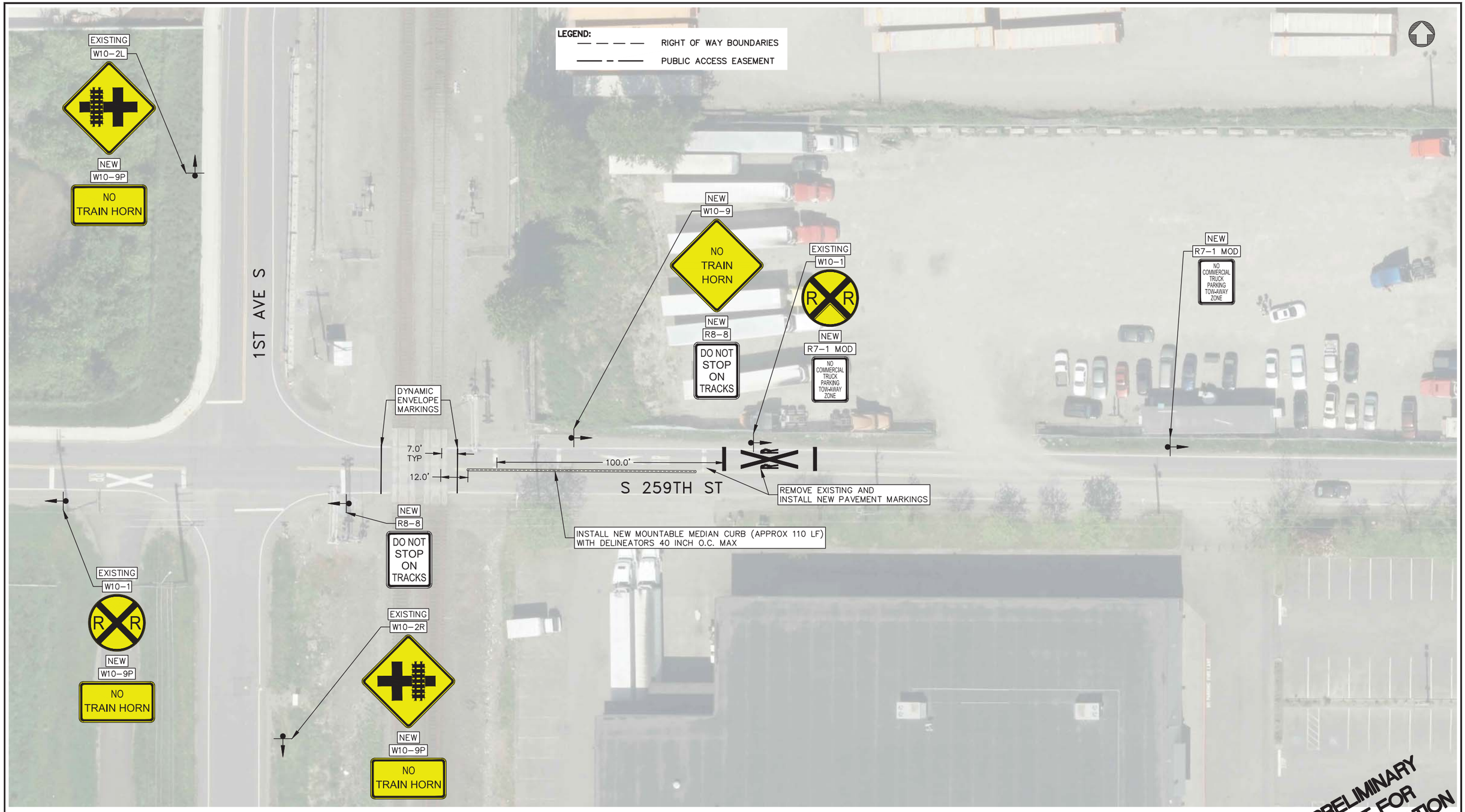
City of Kent
Public Works Department
Engineering Division

RAILROAD QUIET ZONE – CHANNELIZATION

GRADE CROSSING IMPROVEMENTS
USDOT CIN 085640K
BNSF RAILWAY AT E WILLIS STREET

SHEET 2 OF 2

FILE NO.



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0" 0.5"

City of Kent
Public Works Department
Engineering Division

RAILROAD QUIET ZONE – CHANNELIZATION

GRADE CROSSING IMPROVEMENTS
USDOT CIN 085642Y
BNSF RAILWAY AT S 259TH STREET

SHEET 2 OF 2
FILE NO.

Appendix F

Modified SSM Calculations

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FRA Quiet Zone Risk Indices
Road Authority: City of Kent, WA **Railroad:** BNSF Railway Company **Date:** March 31, 2019
FRA Online Calculator Scenario: KENT BNSF_54689

Crossing Numnber	US DOT Crossing	Street	Warning Device	SSM	Pre SSM	Base Risk Index (w/ Horns)	Initial Quiet Zone Risk Index w/o Horns (+66.8%)	SSM Effectiveness Rate	ASM / Modified SSM Effectiveness	Quiet Zone Risk Index	Modified SSM Description
49CFR222 Appendix C Section II (C)						Step 2	Step 4	Step 5	Step 5a	Step 5	
1	085625H	S 212TH STREET	Gates	12	0	100,792.16	168,121.33	0.75	-	42,030.33	
2	085629K	JAMES ST	Gates	0	0	293,671.25	489,843.64	-	0.47	259,617.13	Channelization devices > 60' long with NW intersection 15' from crossing.
3	085633A	SMITH ST	Gates	0	0	184,060.57	307,013.03	-	0.43	174,997.43	Channelization devices >60' with NW intersect. 17' from crossing; WB gate arm 4' from C/L roadway
4	085636V	MEEKER ST	Gates	12	0	57,228.24	95,456.70	0.75	-	23,864.18	
5	085637C	GOWE ST	Gates	12	0	134,692.30	224,666.76	0.75	-	56,166.69	
6	085639R	TITUS ST	Gates	0	0	114,408.93	190,834.10	-	-	190,834.10	
7	085640K	SR516 WILLIS ST	Gates	0	0	183,676.38	306,372.20	-	0.21	242,034.04	Channelization devices > 60' long with SW intersection 10' from crossing, SE intersection 23' from crossing.
8	085642Y	S 259TH STREET	Gates	0	0	52,088.78	86,884.09	-	-	86,884.09	
Crossing Corridor Risk Index/Risk Index with Horns:						**140,077.33**	233,648.98			**134,553.50**	Quiet Zone Risk Index (QZRI)

Nationwide Significant Risk Threshold (NSRT): 14,723.00
Risk Index with Horns (RIWH): **140,077.33**
Quiet Zone Risk Index (QZRI): **134,553.50**
QZ Risk Reduction Qualifies for Quiet Zone (Yes/No): Yes

Calculations for Proposed Adjustment to SSM Effectiveness Rate
Road Authority: City of Kent, WA
FRA Online Calculator Scenario: KENT BNSF_54689

Date: March 31, 2019

085629K	E JAMES ST	Mountable medians w/ Channelization > 60' long with NW intersection 15' from crossing and SW intersection 30' from crossing.

Minimum SSM-Allowed Median by Rule 60 ft.
SSM Effectiveness Rate by Rule 0.75
SSM Effectiveness per Side 0.375

			Min SSM Allowed	Percent Provided	SSM Effectiveness Rate per Side	Resulting Effectiveness Rate
West side	EB Gate to Start of NW Intersection (1st Ave N) (ft.)	15	60	25%	0.375	0.094
	EB Gate to Start of SW Intersection (1st Ave N) (ft.)	30	60	50%	0.375	0.188
	Controlling Effectivness for West Side					0.094

			Min SSM Allowed	Percent Provided	SSM Effectiveness per Side	Resulting Effectiveness Rate
East side	WB Gate to Start of NE Intersection (Railiroad Ave N) (ft.)	N/A	60	100%	0.375	0.375
	WB Gate to Start of SE Intersection (Railroad Ave N) (ft.)	130	60	100%	0.375	0.375
	Controlling Effectivness for East Side					0.375

Proposed ASM/Modified SSM Effectiveness Rate 0.47 (Sum of both sides)

085629K	E SMITH ST	Mountable medians w/ Channelization > 60' long with NW intersect. 17' from X'ing; WB gate arm 4' from C/L roadway

Minimum SSM-Allowed Median by Rule 60 ft
SSM Effectiveness Rate by Rule 0.75
SSM Effectiveness per Side 0.375

			Min SSM Allowed	Percent Provided	SSM Effectiveness per Side	Resulting Effectiveness Rate
West side	EB Gate to Start of NW Intersection (1st Ave N) (ft.)	17	60	28%	0.375	0.106
	EB Gate to Start of SW Intersection (1st Ave N) (ft.)	N/A	60	100%	0.375	0.375
	Controlling Effectivness for West Side					0.106

			Min SSM Allowed	Percent Provided	SSM Effectiveness per Side	Resulting Effectiveness Rate
East side	WB Gate to Start of NE Intersection (Railiroad Ave N) (ft.)	63	60	100%	0.375	0.375
	WB Gate to Start of SE Intersection (Railroad Ave N) (ft.)	63	60	100%	0.375	0.375
	Controlling Effectivness for East Side					0.375

Adjustment for Gate Arm Length

	West Side	East Side
Required Gate Arm Over Traveled Way (within 1' of C/L Roadway) (ft)	22	24
Actual Gate Arm Over Traveled Way (ft)	22	21
Precent Provided	100.0%	87.5%
Controlling Effectiveness (from above)	0.106	0.375
Adjusted Effectiveness Rate	0.106	0.328

Proposed ASM/Modified SSM Effectiveness Rate 0.43 (Sum of both sides)

085640K	E WILLIS ST	Mountable medians w/ Channelization > 60' long with SW intersection 10' from crossing and SE intersection 23' from crossing.

Minimum SSM-Allowed Median by Rule 60 ft.
SSM Effectiveness Rate by Rule 0.75
SSM Effectiveness per Side 0.375

			Min SSM Allowed	Percent Provided	SSM Effectiveness per Side	Resulting Effectiveness Rate
West side	EB Gate to Start of NW Intersection (1st Ave N) (ft.)	110	60	100%	0.375	0.375
	EB Gate to Start of SW Intersection (1st Ave N) (ft.)	10	60	17%	0.375	0.063
	Controlling Effectivness for West Side					0.063

			Min SSM Allowed	Percent Provided	SSM Effectiveness per Side	Resulting Effectiveness Rate
East side	WB Gate to Start of NE Intersection (Railiroad Ave N) (ft.)	110	60	100%	0.375	0.375
	WB Gate to Start of SE Intersection (Railroad Ave N) (ft.)	23	60	38%	0.375	0.144
	Controlling Effectivness for East Side					0.144

Proposed ASM/Modified SSM Effectiveness Rate 0.21 (Sum of both sides)

SSM No.	SSM Description	SSM Effectivness Rate
0	No SSM	0.00
1	Temporary Closure of a Public Highway-Rail Grade Crossing	1.00
2	Permanent Closure of a Public Highway-Rail Grade Crossing	1.00
3	Grade Separation of a Public Highway-Rail Grade Crossing	1.00
4	Four-Quadrant Gates Upgrade from Two Quadrant gates, No Vehicle Presence Detection	0.82
5	Four-Quadrant Gates Upgrade from Two Quadrant Gates, with medians and no Vehicle Presence Detection	0.92
6	Four-Quadrant Gates Upgrade from Two Quadrant Gates, with Vehicle Presence Detection	0.77
7	Four-Quadrant Gates Upgrade from Two Quadrant Gates, with medians and Vehicle Presence Detection	0.92
8	Four-Quadrant Gates New Installation, No Vehicle Presence Detection	0.82
9	Four-Quadrant Gates New Installation with medians and no Vehicle Presence Detection	0.92
10	Four-Quadrant Gates New Installation with Vehicle Presence Detection	0.77
11	Four-Quadrant Gates New Installation with medians and Vehicle Presence Detection	0.92
12	Mountable medians with Reflective Traffic Channelization Devices	0.75
13	Non-Traversable Curb Medians with or without Channelization Devices	0.80
14	One-Way Streets with Gates	0.82