



Transportation Solutions, Inc.

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RECEIVED  
JUL 16 2004

June 30, 2005

Mr. Ahmer Nizam  
Policy Research Specialist  
Washington Utilities and Transportation Commission  
P.O. Box 47250  
Olympia, Washington 98504-7250  
(360) 664-1345  
Fax (360) 586-1150  
ANizam@wutc.wa.gov

Mr. John Shurson  
BNSF Railway Company  
740 Carnegie Drive  
San Bernadino, California 92408-3571  
(909) 386-4470  
Fax (909) 386-4476  
John.Shurson@bnsf.com

Subject: RR-Highway Traffic Signal Intertie, 240th Street SE, Woodinville  
DOT Crossing No. 091811X; WUTC No. 1G.26.80  
Milepost 26.82, Line Segment 403, Woodinville Subdivision

Dear Mr. Nizam and Mr. Shurson:

As you know, Snohomish County and Costco Wholesale are installing a traffic signal at the intersection of Woodinville-Snohomish Road and 240th Street SE in southern Snohomish County, within a short distance of an at-grade railroad-highway grade crossing on 240th Street SE (DOT crossing no. 091811X). Snohomish County, the jurisdictional road authority, hereby petitions the WUTC for installation of intertie to allow railroad preemption of the traffic signal.

BNSF representative Robert Sutton and Snohomish County Traffic Engineer Jim Bloodgood met with Mr. Nizam in a preliminary site review on October 17, 2002. The design would provide "pre-signals" to prevent westbound motorists from driving to the tracks, and signal phasing would prohibit eastbound travel to the tracks during a preemption event. Snohomish County Traffic Signal Design Engineer Harold Wirch and BNSF Project Engineer Steve Hovey have prepared traffic signal preemption plan.

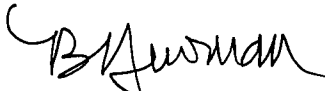
Enclosed please find a petition executed June 8, 2005, by County Deputy Executive Gary Weikel (original to Mr. Nizam). We have not obtained BNSF response to the "waiver of hearing." In the interest of expediency, this petition is being sent to both of you simultaneously, so WUTC and BNSF review can proceed concurrently.

The new highway signals is estimated for completion approximately August 25, 2005, when the Costco warehouse will be open for business. We hope to have preemption operational then or as soon as possible thereafter. Therefore, your attention to this matter is appreciated.

If I may be of any assistance whatsoever, please contact me at your earliest convenience (425-466-3601, [BruceN@tsinw.com](mailto:BruceN@tsinw.com)). You may also contact Jim Bloodgood, Snohomish County Traffic Engineer (425-388-6419, [Jim.Bloodgood@co.snohomish.wa.us](mailto:Jim.Bloodgood@co.snohomish.wa.us)) or Harold Wirch, Snohomish County Traffic Signal Design Engineer (425-388-6421, [Harold.Wirch@co.snohomish.wa.us](mailto:Harold.Wirch@co.snohomish.wa.us)).

Thank you for your attention to this issue.

Very truly yours,  
**Transportation Solutions, Inc.**



BRUCE R. NEWMAN, P.E., PTOE  
Transportation Engineer

cc: Mr. Jim Bloodgood, Snohomish County Traffic Engineer  
Mr. Harold Wirch, Snohomish County Traffic Signal Design Engineer

BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

SNOHOMISH COUNTY,	)	DOCKET NO. TR- <u>051088</u>
A MUNICIPAL CORPORATION	)	
Petitioner,	)	PETITION TO INSTALL INTER-TIE
	)	WITH TRAFFIC SIGNAL
vs.	)	
	)	WUTC CROSSING No. 1G.26.80
BURLINGTON NORTHERN	)	DOT CROSSING No. 091811X
SANTA FE RAILWAY	)	
Respondent.	)	
.....	)	

RECEIVED  
 11/15/04  
 10:41 AM  
 PUBLIC UTILITIES  
 DIVISION

Petitioner requests the Washington Utilities and Transportation Commission to enter an order authorizing the installation of an inter-tie between a highway signal and a crossing signal system as follows:

**1. Identifying information for the crossing:**

Existing highway, street, or road: 240th Street SE, a Snohomish County public street  
Existing railway (company): Burlington Northern Santa Fe Railway

Railroad activity at this crossing currently consists of a single daily round trip. This section of track is governed by a maximum train speed of 25 mph.

**2. Description of current signals and/or gates at the crossing:**

One set of railroad tracks crosses 240th Street SE approximately 85 feet east of the Woodinville-Snohomish Road centerline (and approximately 45 feet east of the stop bar for westbound vehicular traffic). Westbound traffic is currently stop-controlled.

The crossing is controlled with shoulder-mounted flashing warning beacons, crossbucks, and static signing. "Do not stop on tracks" signs are provided. Photographs are included in Exhibit 1.

There is a single westbound lane and a single eastbound lane.

**3. Type of current crossing circuitry:**

The system uses train detection and simultaneous preemption with 30 seconds' notice prior to train arrival.

**4. Project description and justification:**

(a) Description of proposed inter-tie, including sequencing and advance preemption time, if any:

Construction of a traffic signal is currently underway, associated with a Costco Wholesale warehouse with its primary access as the west leg of the subject intersection. Intersection plans are illustrated in Exhibit 2.

The east leg of the intersection, which includes the grade crossing, includes a single westbound lane and a single eastbound lane. No change to this cross-section is proposed.

During normal (non-preemption) operations, left-turn traffic from Woodinville-Snohomish Road will operate in protected-permitted mode. Left-turn traffic from 240th Street SE will operate in permitted-only mode.

Safety measures incorporated into the traffic signal design and operation will include:

1. Railroad preemption #2 will be initiated as soon as the traffic signal controller receives a request from the railroad detection system.
2. Railroad preemption #2 will terminate all traffic signal green, walk, and flashing don't walk indications and turn on an internally illuminated "NO RIGHT TURN" sign for northbound traffic.
3. Railroad preemption #2 will then clear the space between the railroad westbound stop bar and the roadway intersection (green). This will include service to a special preemption-only westbound protected left-turn phase, allowing westbound traffic to proceed without yielding to eastbound traffic.
4. The intersection westbound signal head will be visibility limited to prevent drivers from seeing these indications before reaching the railroad stop bar.
5. After clearing the tracks, limited service will be implemented, all pedestrian phases, eastbound left turn, southbound thru, northbound left turn and northbound thru traffic will be allowed to proceed on demand.
6. In addition, the traffic signal will clear the track in the termination of westbound green during normal traffic signal operation. A second set of signals controlling the approach to the westbound railroad stop bar is mounted on the back side of the eastbound mast arm. These "presignal" heads will change from green to yellow, and yellow to red, before the intersection signal heads. The westbound traffic signal heads will remain green long enough to clear the area between the westbound railroad stop bar and the roadway intersection.
7. Supplemental vehicle detection will be provided on the west side of the tracks to detect vehicles queued and decrease the probability of vehicles queuing onto the railroad tracks.
8. The simultaneous preemption will start 35 seconds before the train reaches the 240th Street crossing to ensure that the traffic signal controller MPT requirement and MUTCD/FRA minimums are met.

Installation of gates was considered and deemed not warranted. The volumes of vehicular traffic are relatively low, and a single train trip (at 25 mph) per day occurs. Based on guidelines in the Washington State Department of Transportation Design Manual, Figure 930-2, flashing warning beacons are the recommended treatment for such a crossing with a single main line track and train speed less than 60 mph. However, to

provide additional protection and deter automobiles from entering the track area during the preemption interval, presignals and other signing will be installed.

Westbound traffic will be presented with supplemental traffic signal displays mounted on the east side of the traffic signal mast arm located in the intersection's southeast corner. These will prohibit entering the crossing area during preemption. The traffic signal displays on the far side of the intersection will be optically programmed to obscure visibility by motorists who have not yet reached the railroad tracks.

Eastbound traffic will also be prohibited from crossing the railroad tracks during the preemption interval. As described in paragraph 2, above, a sign will be activated that prohibits northbound right turns during preemption. As described in paragraph 5, above, the eastbound through and southbound left-turn movements will not be served during the preemption interval (i.e., their signal displays will remain red).

Similar grade crossings (with approximately the same separation between rail crossing and signalized intersection) exist adjacent to this crossing at NE 200th Street and NE 195th Street. The NE 195th Street crossing serves five lanes of traffic and approximately 24,000 vehicles per day. Both operate without crossing gates, although it is acknowledged that the configuration of these adjacent grade crossings is not necessarily precedent for what is appropriate at 240th Street SE.

- (b) Justification, including pertinent traffic and train counts, times when traffic backs up over the crossing and alternatives considered to an inter-tie:

A Costco Wholesale warehouse is now under construction on west side of Woodinville-Snohomish Road. Costco is responsible for installation traffic signal at this intersection. Coordination appears to be justified based on the close proximity of tracks and the possibility for vehicles to queue on or near the tracks.

Limited vehicular queuing is expected at this crossing. A traffic study associated with the development project's SEPA determination forecasted the automobiles' 95th percentile queue lengths as follows:

Table 1. Forecast 95th Percentile Automotive Queues, Westbound

Time Period	Year 2004 Existing	Year 2010 Without Project*	Year 2010 With Project*
Morning Peak Hour	63 feet	233 feet	39 feet
Afternoon Peak Hour	53 feet	822 feet	82 feet

\* "Project" refers to Costco development and signal installation.

Source: Transportation Solutions, Inc., Transportation Impact Analysis, July 1, 2004.

Excessive queuing could be expected without the proposed project due to increased traffic volumes and greater delays for the existing stop-controlled movements. However,

installation of the traffic signal will allow 240th Street traffic to exit much more efficiently and substantially improve safety of the railroad-grade crossing.

Traffic counts on 240th Street SE are relatively light, as summarized in Table 2. 240th Street SE serves primarily residential use that is accessible by multiple other routes.

Table 2. 240th Street SE Hourly Traffic Volumes

Time Period	Direction	Year 2004 Existing	Year 2010 Without Project	Year 2010 With Project
Morning Peak Hour	Westbound	129	167	167
	Eastbound	47	186	188
Afternoon Peak Hour	Westbound	49	223	254
	Eastbound	88	113	142

Source: Transportation Solutions, Inc.

The tracks carry a single round-trip train trip daily, traveling with a maximum speed of 25 mph.

Development of the "Wellington Hills" industrial development east of the railroad tracks has been proposed, and preliminary grading work on the site was completed in 2002. However, work on this project has been halted. When an applicant pursues a development permit, the need for frontage improvements, widening of 240th Street SE, and modifications to the grade crossing will be evaluated. Nonetheless, traffic volumes associated with the Wellington Hills project were included in the year 2010 traffic volume estimates and queuing calculations.

(c) Effects of proposed changes on warning devices and warning times for drivers:

In conjunction with the traffic signal, motorists will have substantially greater protection from the railroad crossing. Supplemental warning time will also be provided, which allows a vehicle making a southbound left-turn to complete this movement before track clearance can effectively begin.

**5. Drawings.** Please attach sketches, drawn to scale, accurately showing the current and proposed layout of the highway (including shoulders, sidewalks, lanes of travel, bike lanes and crossing warning devices), the intersection to which the inter-tie is proposed, and of the railway in the vicinity of the crossing.

The attached Exhibit 2A illustrates the existing roadway configuration. The attached Exhibit 2B illustrates the proposed changes.

I certify under penalty of perjury that the foregoing is true and correct.

Dated at Everett, Washington, this 8<sup>th</sup> day of June, 2005.

Petitioner

\_\_\_\_\_  
Road authority or railroad

Responsible official:

*Gary Weikel*  
*for Snohomish County Executive*

\_\_\_\_\_  
GARY WEIKEL  
Deputy Executive

*3000 Rockefeller Ave 716407*  
*Everett, WA 98201*

\_\_\_\_\_  
(Address)

*D-4*

**WAIVER OF HEARING BY RESPONDENT**

The respondent has investigated the conditions existing at and in the vicinity of the grade crossing described herein and is satisfied that such conditions are substantially as described in the petition. Respondent consents to the interconnection of the specified traffic signal with the railroad crossing signal system as set forth in the petition. Hearing in this proceeding is hereby waived.

Dated at \_\_\_\_\_, Washington, on the \_\_\_\_\_ day of \_\_\_\_\_, 2005.

Respondent

\_\_\_\_\_  
Road authority or railroad

Responsible official:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_  
(Address)

## INSTRUCTIONS

Petitioner can be the railroad, the road authority or the Washington Utilities and Transportation Commission. If the railroad is the petitioner, the road authority will be the respondent. If the road authority is the petitioner, the railroad will be the respondent.

The original and two copies of the petition must be filed with the Washington Utilities and Transportation Commission.

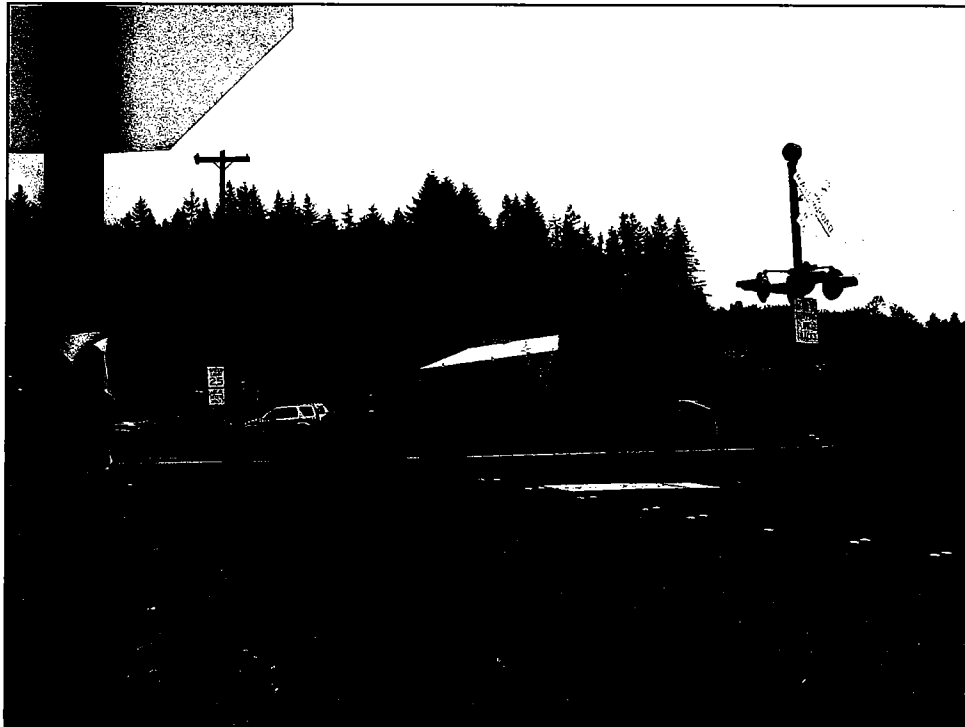
If the waiver of hearing is executed, the petition will be investigated and a decision made within approximately two weeks from receipt of the documents.

If the waiver of hearing is not executed on the petition filed, a copy of the petition will be served upon the respondent by the Commission for answer within 20 days. Upon receipt of respondent's answer or after the 20 day period has elapsed, the application will be processed. Time for making a decision will depend on whether an answer is filed and the content of the answer.





At crossing, looking north. Unsignalized intersection to be signalized is to the left.



From stop bar, looking toward rail crossing (toward southeast).

**EXHIBIT 1. EXISTING CROSSING CONFIGURATION.**

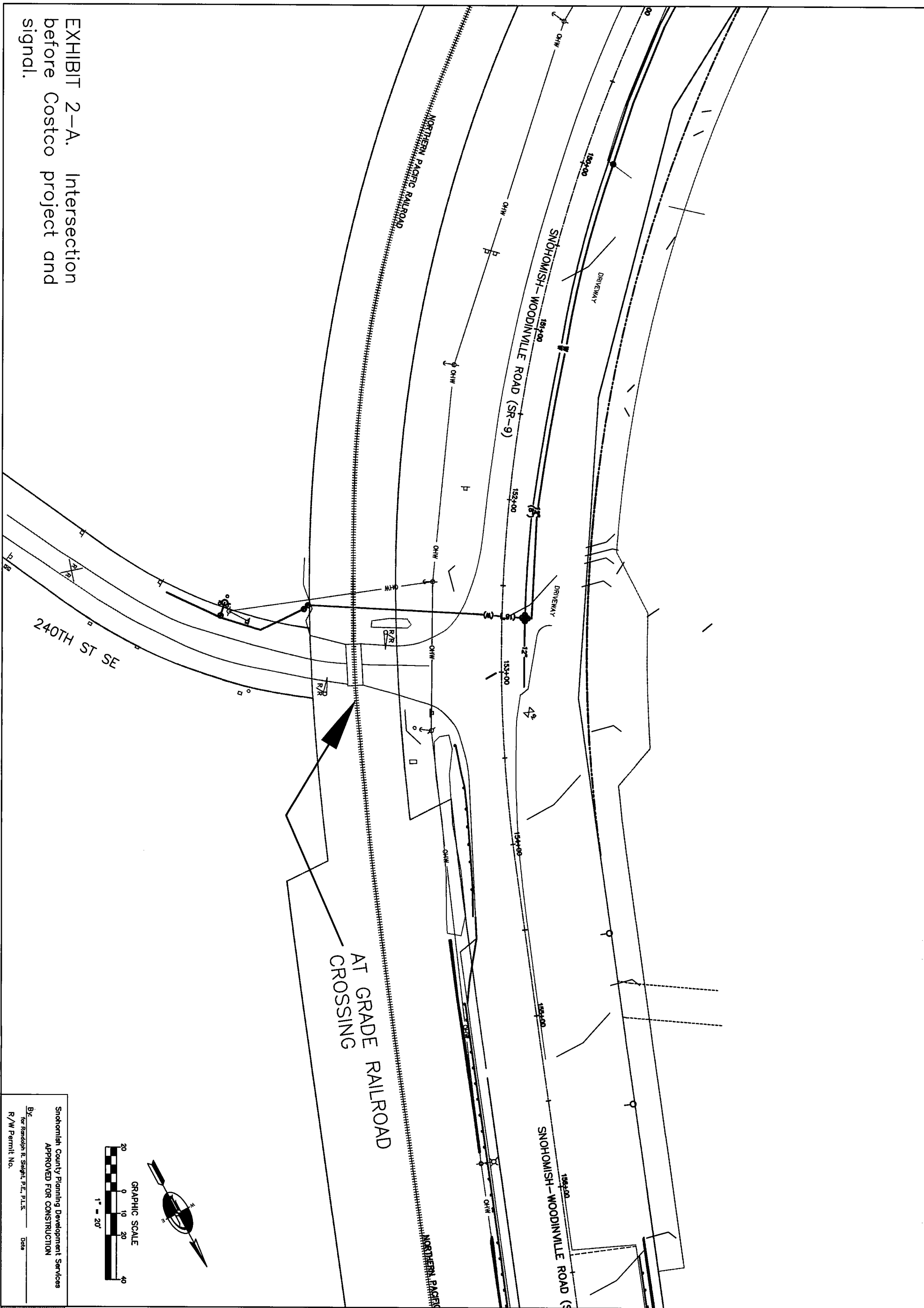


EXHIBIT 2-A. Intersection before Costco project and signal.

AT GRADE RAILROAD CROSSING

Snohomish County Planning Development Services  
 APPROVED FOR CONSTRUCTION

By: \_\_\_\_\_ Date: \_\_\_\_\_  
 for Randolph R. Slight, P.E., P.L.S.  
 R/W Permit No. \_\_\_\_\_

GRAPHIC SCALE  
 1" = 20'

DATE	DESCRIPTION	BY
04/26/04	RELOCATED CONTROLLER TO NE	BRN
07/20/04	MATCHES HRW ULTIMATE LAYOUT	BRN
8/30/04	REVISIONS PER HRW	BRN
11/12/04	REVISIONS PER HRW	BRN
12/01/04	REVISIONS PER HRW	BRN

TRAFFIC SIGNAL PLANS  
 WOODINVILLE COSTCO  
 COSTCO WHOLESALE  
 SNOHOMISH COUNTY, WASHINGTON

**COSTCO WHOLESALE**

**TSI**  
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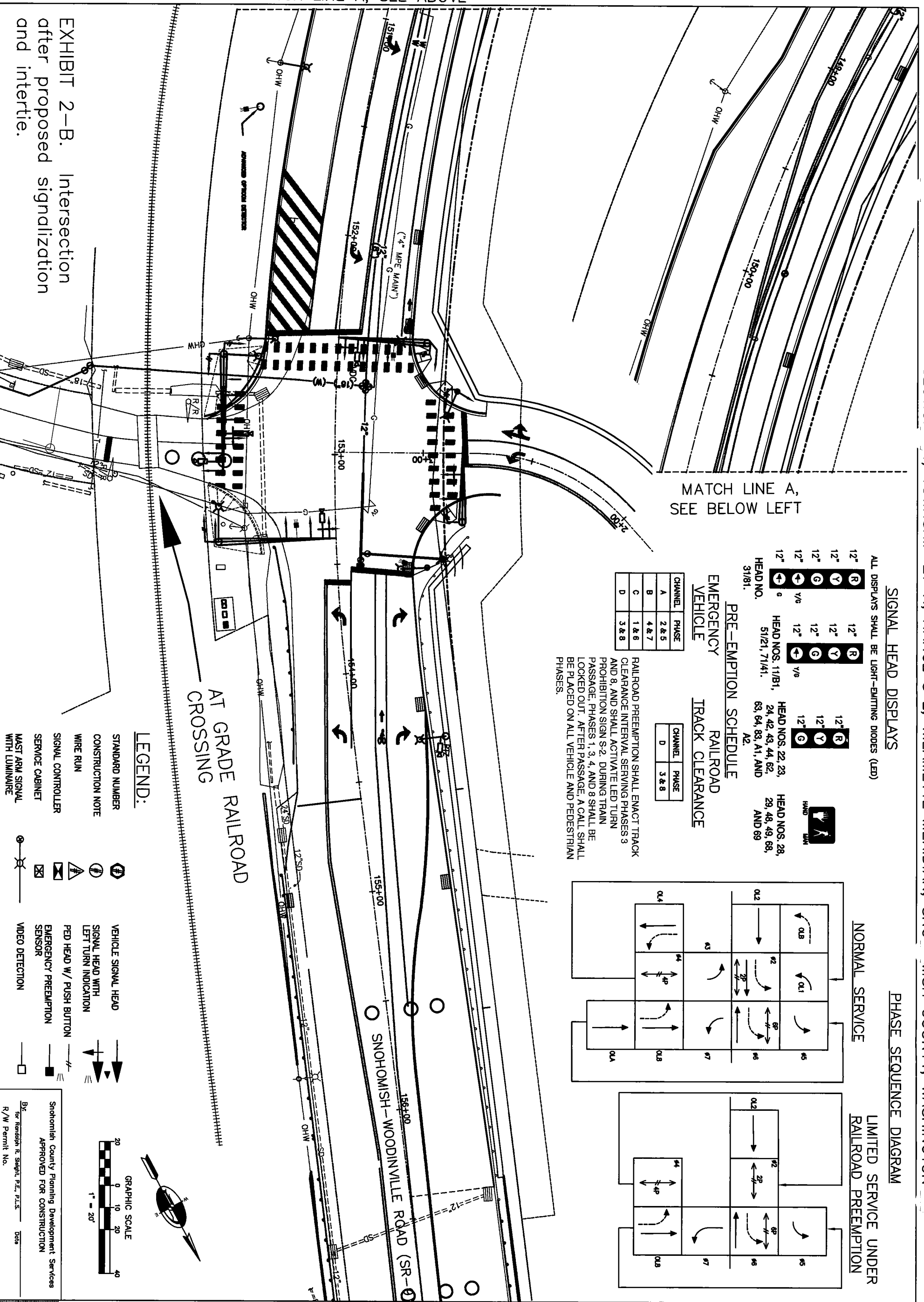
EX. 2A  
 COUNTY PROJECT FILE NO. 03-111038-001-CP

BRIDGE & HIGHWAY ENGINEER  
 STATE OF WASHINGTON  
 PROFESSIONAL  
 EXPIRES MAY 9, 2006

DATE 11/2/04  
 DRAWN IBRV/RH  
 DESIGNED IBRV/RH  
 CHECKED IDDM  
 PROJECT # 1203092

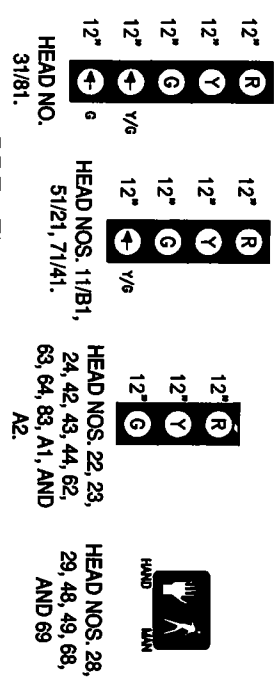
MATCH LINE A, SEE ABOVE

MATCH LINE A, SEE BELOW LEFT



**SIGNAL HEAD DISPLAYS**

ALL DISPLAYS SHALL BE LIGHT-EMITTING DIODES (LED)

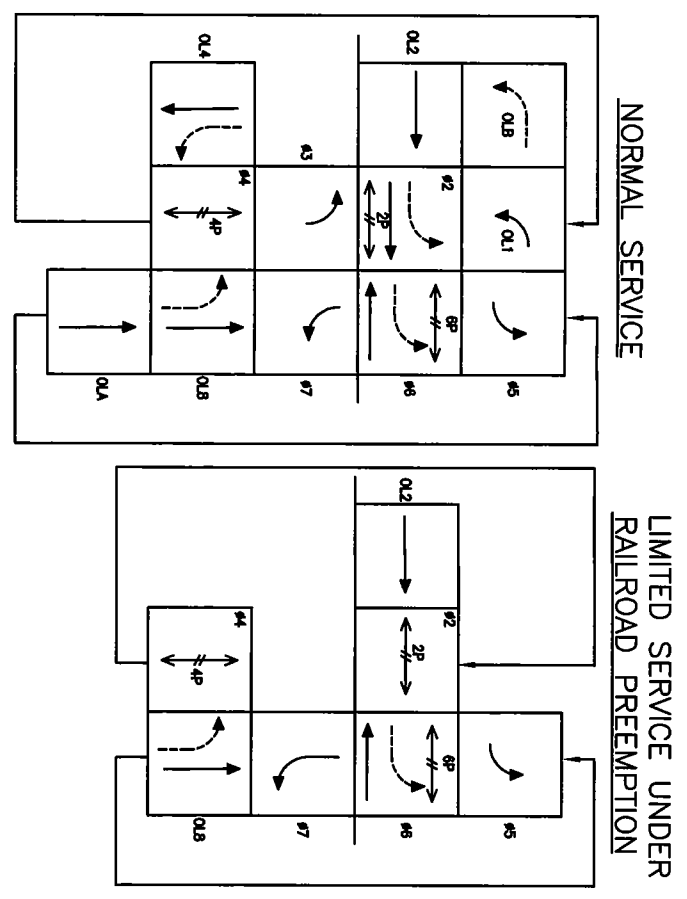


CHANNEL	PHASE
A	2 & 5
B	4 & 7
C	1 & 6
D	3 & 8

CHANNEL	PHASE
D	3 & 8

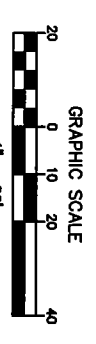
RAILROAD PREEMPTION SHALL ENACT TRACK CLEARANCE INTERVAL SERVING PHASES 3 AND 8, AND SHALL ACTIVATE LED TURN PROHIBITION SIGN S-2. DURING TRAIN PASSAGE, PHASES 1, 3, 4, AND 8 SHALL BE LOCKED OUT. AFTER PASSAGE, A CALL SHALL BE PLACED ON ALL VEHICLE AND PEDESTRIAN PHASES.

**PHASE SEQUENCE DIAGRAM**



**LEGEND:**

- STANDARD NUMBER
- CONSTRUCTION NOTE
- WIRE RUN
- SIGNAL CONTROLLER
- SERVICE CABINET
- MAST ARM SIGNAL WITH LUMINAIRE
- VEHICLE SIGNAL HEAD
- SIGNAL HEAD WITH LEFT TURN INDICATION
- PED HEAD W/ PUSH BUTTON
- EMERGENCY PREEMPTION SENSOR
- VIDEO DETECTION



Snohomish County Planning Development Services  
APPROVED FOR CONSTRUCTION

By: *Ramadan R. Soghat, P.E., P.L.S.* Date: \_\_\_\_\_  
R/W Permit No. \_\_\_\_\_

DATE	DESCRIPTION	BY
04/26/04	RELOCATED CONTROLLER TO NE	BRN
07/20/04	MATCHES HRW ULTIMATE LAYOUT	BRN
8/30/04	REVISIONS PER HRW	BRN
11/12/04	REVISIONS PER HRW	BRN
12/01/04	REVISIONS PER HRW	BRN

TRAFFIC SIGNAL PLANS  
WOODINVILLE COSTCO  
COSTCO WHOLESALE  
SNOHOMISH COUNTY, WASHINGTON



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EX. 2B  
COUNTY PROJECT FILE NO. 03-111038-001-CP