UTC
LITIES AND TRANSPORTATION COMMISSION

TR-081229-P

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

| | | |
|---|---|---|
| **Washington State Department of Transportation**<br><br>Petitioner,<br><br>vs.<br>**Central Puget Sound Regional Transportation Authority and the City of Lakewood**<br><br>Respondent | ) | DOCKET NO. TR-<br><br>PETITION TO MODIFY A HIGHWAY-RAIL GRADE CROSSING<br>**Steilacoom Blvd SW**<br><br>USDOT CROSSING # **085400D**<br>UTC CROSSING # **1J 7.88** |

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The Petitioner asks the Washington Utilities and Transportation Commission to approve modification of a highway-rail grade crossing.

*Section 1 – Petitioner's Information*

| |
|---|
| **Washington State Department of Transportation**<br>Petitioner |
| **310 North Maple Park Ave SE**<br>Street Address |
| **Olympia, WA 98504**<br>City, State and Zip Code |
| **PO Box 47387, Olympia, WA 98504-7387**<br>Mailing Address, if different than the street address |
| **Kevin Jeffers**<br>Contact Person Name |
| **360-705-7982; JefferK@wsdot.wa.gov**<br>Contact Phone Number and E-mail Address |

*Section 2 – Respondent's Information*

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

Respondent

**401 South Jackson Street**

Street Address

**Seattle, WA 98104-2826**

City, State and Zip Code

Mailing Address, if different than the street address

**Jodi Mitchell**

Contact Person Name

**206-398-5080; Jodi.Mitchell@SoundTransit.org**

Contact Phone Number and E-mail Address

## *Section 3 – Current Crossing Information*

1. Railroad company(ies) _____
   - Tracks owned by: **Sound Transit**
   - Operating railroad: **Tacoma Rail, BNSF**

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

   ☐ Passenger ☐ Excursion

3. Type of tracks at crossing ☑ Main Line, number of tracks **1**
   ☐ Siding or Spur, number of tracks ____

4. Average daily train traffic, freight **2 per day (trains typically operate 4-5 days/week, max.)**

   Authorized freight train speed **10 mph** Operated freight train speed **10 mph**

5. Average daily train traffic, passenger **0**

   Authorized passenger train speed **N/A** Operated passenger train speed **N/A**

6. Describe current crossing configuration including type of train detection, active warning devices, preemption, etc.:
**There is currently a single track crossing with gates and cantilever-mounted flashing lights.**

**The existing detection circuitry is either motions sensors or constant warning time.**

**There are no existing medians.**

## *Section 4 – Expected Crossing Characteristics After Modification*

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

   ☑Passenger ☐ Excursion

2. Type of tracks at crossing ☑ Main Line, number of tracks **2**
   ☐ Siding or Spur, number of tracks _____

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

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

4. Average daily train traffic, passenger **24**

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

5. Will the modified crossing eliminate the need for one or more existing crossings?
   Yes ____ No **X**

6. If so, state the distance and direction from the modified crossing.

   _____

   _____

   _____

7. Does the petitioner propose to close any existing crossings and if yes, which crossings?
   Yes ____ No **X**

   _____

## *Section 5 – Proposed Temporary Crossing*

1. Will a temporary crossing be installed? Yes ____ No __X__

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

_____

_____

_____

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

Approximate date of removal _____

## *Section 6 – Current Highway Traffic Information*

1. Name of roadway/highway **Steilacoom Blvd SW**

2. Roadway classification **Secondary Arterial**

3. Road authority **City of Lakewood**

4. Average annual daily traffic (AADT) **20,170 (in year 2006)**

5. Number of lanes **2WB lanes, 2EB lanes, plus single Two Way Left Turn Lane**

6. Roadway speed **35mph**

7. Is the crossing part of an established truck route? Yes **X** No ____

8. If so, trucks are what percent of total daily traffic? **2.3% (PM peak)**

9. Is the crossing part of an established school bus route? Yes **X** No ____

10. If so, how many school buses travel over the crossing each day? **44**

11. Describe any changes to the information in 1 through 7, above, expected within ten years: **AADT estimated to grow to 27,640 (in year 2020); as part of the project, a new median will be installed on east side of crossing, C-curb will be installed on west side of crossing. The median and C-curb will discourage motorists from evading the crossing gates.**

## *Section 7 – Alternatives to the Proposed Modifications*

1. Does a safer location for a crossing exist within a reasonable distance of the current or proposed location? Yes ____ No **X**

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

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

4. If a barrier exists, describe:
- ♦ Whether petitioner can relocate the crossing to avoid the obstruction and if not, why not.
- ♦ How the barrier can be removed.
- ♦ How the petitioner or another party can mitigate the hazard caused by the barrier.

**Views are obstructed by buildings in 2 quadrants and a cemetery in the third quadrant.**

**It is infeasible to relocate the buildings or structures, and the existing street grid cannot accommodate a crossing at another location. The barriers to sight lines will be addressed with active warning devices (gates and cantilever mounted flashing lights), as well as revised advance pre-emption timing at the intersection of Steilacoom Blvd and Lakeview Ave. Also, medians will be installed east of the crossing and C-curb installed west of the crossing to discourage risky/illegal motorist behavior.**

5. Is it feasible to construct an over-crossing or under-crossing at the proposed location as an alternative to an at-grade crossing?
Yes ____ No **X**

6. If an over-crossing or under-crossing is not feasible, explain why.
**The existing site has multiple businesses near the crossing, as well as nearby roadway intersections. The grades required for the roadway approaches would not meet AASHTO guidelines for vertical curvature unless the street grid in this area were significantly reconfigured.**

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

Yes ____ No **X**

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

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

Yes ____ No **X**

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

## *Section 8 – Sight Distance*

1. Complete the following table, describing the sight distance for motorists when approaching the tracks from either direction after modification. **"Number of feet from proposed crossing" is measured from the centerline of track along the centerline of the outside lane. Sight distance is measured from the edge of traveled way (edge of fog line or curb line) along the CL of track at the crossing. NOTE - for "Left" sight distances, the edge of traveled way is on the *opposite* side of the roadway.**

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

| Direction of sight (left or right) | Number of feet from proposed crossing | Provides an unobstructed view for how many feet |
|---|---|---|
| Right | 300 | **50** |
| Right | 200 | **50** |
| Right | 100 | **60** |
| Right | 50 | **100** |
| Right | 25 | **95** |
| Left | 300 | **20** |
| Left | 200 | **25** |
| Left | 100 | **35** |
| Left | 50 | **70** |
| Left | 25 | **285** |

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

| Direction of sight (left or right) | Number of feet from proposed crossing | Provides an unobstructed view for how many feet |
|---|---|---|
| Right | 300 | **50** |
| Right | 200 | **55** |
| Right | 100 | **100** |
| Right | 50 | **205** |
| Right | 25 | **95** |
| Left | 300 | **65** |
| Left | 200 | **75** |
| Left | 100 | **100** |
| Left | 50 | **180** |
| Left | 25 | **435** |

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

Yes ____ No **X** **(Revised grade approach from west will be approximately 0.48% upward toward the crossing; approaching from east will be nearly level: 0.19%)**

3. If not, state in feet the length of level grade from the center of the railway on both approaches to the crossing. _____

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

Yes **X** No ____

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

_____

_____

_____

_____

## *Section 9 – Illustration of Modified Crossing Configuration*

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

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

**Existing features (buildings, trees, etc) that are obstructions are shown on the accompanying plan in "screened" or "grayscale" lines.**

## *Section 10 – Proposed Warning Signals or Devices*

1. Explain in detail the number and type of proposed automatic signals or other warning devices planned at the crossing, including a cost estimate for each. If the proposed medications include adding or modifying preemption, contact UTC for the additional worksheets.

**Modifications to the existing warning devices include relocating the existing cantilever and gate on the east side of the tracks. The cantilever and gate will be relocated approximately 15' eastward to accommodate the construction of a new second main track. (The new second track will be located approximately 15' east of the existing single track). The existing cantilever and gate are in good condition, appear to have been installed relatively recently, and are suitable for the proposed lane and median configuration.**

**The cantilever and gate on the west side of the tracks will remain in place. They are in good condition and are suitable for the proposed lane configuration.**

**The control equipment for the railroad warning devices will be upgraded to modern constant warning time units, replacing the existing bungalow and hardware. The new circuitry will allow for additional advanced pre-emption time. The interconnection between the grade crossing control equipment and the roadway signal traffic controller will be upgraded to a 6-wire supervisory configuration. The roadway authority can use 2 or 6 of these wires, depending upon their interconnection wiring preferences.**

**There will be an activated blank-out sign with the message or symbol "No Right Turn" at the intersection of Steilacoom Blvd SW and Lakeview Ave SW, visible to northbound motorists on Lakeview Ave SW. During railroad pre-emption of the traffic signal at this intersection, the blank-out sign will illuminate, thus discouraging northbound motorists on Lakeview Avenue from turning right (eastbound) onto Steilacoom.**

**The approximate cost for crossing signal improvements at Steilacoom Blvd SW is $350,000.**

## *Section 11 – Justification of Installation of Wayside Horn (if applicable)*

1. Describe in detail why this crossing should have a wayside horn installed. Also include a description of where the wayside horns and indicator lights will be installed at the crossing.

*Section 12 – Additional Information*

Provide any additional information supporting the proposal, including information such as the public benefits that would be derived from modifying the crossing as proposed.

**New concrete crossing panels will be installed on both tracks, and the roadway repaved to match the elevation of the panels.**

**Of the two tracks to be constructed through the crossing (one on the current alignment, and one new track), only one of the tracks will be in service in the near future. The other track will be a "stub," constructed at the same time as the first track in order to avoid multiple construction disruptions to the community. The ends of the stub will be connected with through tracks at a later date.**

*Section 13 – Waiver of Hearing by Respondent*

**Waiver of Hearing**

The undersigned represents the Respondent in the petition to modify a highway-railroad grade crossing.

We have investigated the conditions at the crossing proposed for modification. We are satisfied the conditions are the same as described by the Petitioner in this docket. We agree the crossing be modified and consent to a decision by the commission without a hearing.

Dated at _____ , Washington, on the _____ day of

_____, 20 ____.

_____

Printed name of Respondent

_____

Signature of Respondent's Representative

_____

Title

_____

Phone number and e-mail address

_____

_____

Mailing address

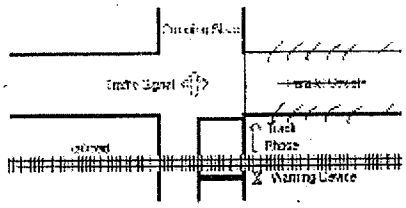
# GUIDE FOR DETERMINING TIME REQUIREMENTS FOR TRAFFIC SIGNAL PREEMPTION AT HIGHWAY-RAIL GRADE CROSSINGS

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

City: Lakewood
County: Pierce
District:

Date: 6/13/2008
Completed by: Tony Wang
District Approval:

Show North Arrow




Parallel Street Name: Lakeview Ave.
Crossing Street Name: Steilacoom Blvd SW

Railroad: Sound Transit (Amtrak)
Railroad Contact: [illegible]
Crossing DOT#: 085400D
Phone: [illegible]

SECTION 1: RIGHT-OF-WAY TRANSFER TIME CALCULATION

Preempt verification and response time

| | | | Remarks |
|---|---|---|---|
| 1. Preempt delay time (seconds) | 1. | 0 | |
| 2. Controller response time to preempt (seconds) | 2. | 0 | Controller type: Traconex Imps 490 |
| 3. Preempt verification and response time (seconds): add lines 1 and 2 | 3. | 0 | |

Worst-case conflicting vehicle time

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

Worst-case conflicting pedestrian time

| | | | Remarks |
|---|---|---|---|
| 10. Worst-case conflicting pedestrian phase number | 10. | 2 | |
| 11. Minimum walk time during right-of-way transfer (seconds) | 11. | 0 | omitted |
| 12. Pedestrian clearance time during right of way transfer (seconds) | 12. | 0 | |
| 13. Vehicle yellow change time, if not included on line 12 (seconds) | 13. | 3.5 | |
| 14. Vehicle red clearance time, if not included on line 12 (seconds) | 14. | 1.0 | |
| 15. Worst-case conflicting pedestrian time (seconds): add lines 11 through 14 | 15. | 4.5 | |

Worst-case conflicting vehicle or pedestrian time

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

Page 1

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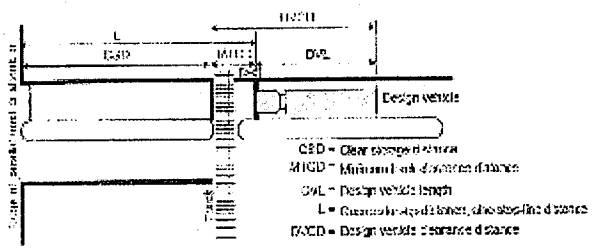
SECTION 2: QUEUE CLEARANCE TIME CALCULATION




| | | | Remarks |
|---|---|---|---|
| 18. Clear storage distance (CSD, feet) | 18. | 120 | |
| 19. Minimum track clearance distance (MTCD, feet) | 19. | 66 | Skewed Crossing |
| 20. Design vehicle length (DVL, feet) | 20. | 67 | Design vehicle type: |
| 21. Queue storage distance, L (feet): add lines 18 and 19 | 21. | 186 | |
| 22. Time required for design vehicle to start moving (seconds): calculate as 2+(L÷20) | 22. | 11.3 | Remarks |
| 23. Design vehicle clearance distance, DVCD (feet): add lines 19 and 20 | 23. | 133 | |
| 24. Time for design vehicle to accelerate through the DVCD (seconds) | 24. | 16 | Read from figure 2 in instructions. |
| 25. Queue clearance time (seconds): add lines 22 and 24 | 25. | 27.3 | |

SECTION 3: MAXIMUM PREEMPTION TIME CALCULATION

| | | | Remarks |
|---|---|---|---|
| 26. Right-of-way transfer time (seconds): line 17 | 26. | 10.5 | |
| 27. Queue clearance time (seconds): line 25 | 27. | 27.3 | |
| 28. Desired minimum separation time (seconds) | 28. | 4.0 | |
| 29. Maximum preemption time (seconds): add lines 26 through 28 | 29. | 41.8 | |

SECTION 4: SUFFICIENT WARNING TIME CHECK

| | | | Remarks |
|---|---|---|---|
| 30. Required minimum time, MWT (seconds): per regulations | 30. | 20 | |
| 31. Clearance time, CT (seconds): get from railroad | 31. | 2.0 | rail signal design |
| 32. Minimum warning time, MWT (seconds): add lines 30 and 31 | 32. | 22 | Excludes buffer time (BT) |
| 33. Advance preemption time, APT, provided (seconds): get from railroad | 33. | 19.8 | |
| 34. Warning time provided by the railroad (seconds): add lines 32 and 33 | 34. | 41.8 | |
| 35. Additional warning time required from railroad (seconds): subtract line 34 from line 29, round up to nearest full second, enter 0 if less than 0 | 35. | 0 | |

If the additional warning time required (line 35) is greater than zero, additional warning time has to be requested from the railroad. Alternatively, the maximum preemption time (line 29) may be decreased after performing an engineering study to investigate the possibility of reducing the values on lines 1, 5, 6, 7, 8, 11, 12, 13 and 14.

Remarks: _____

## ⟨X⟩ ROADWAY CONSTRUCTION NOTES

1. CEMENT CONCRETE TRAFFIC CURB AND GUTTER PER C.O.T. STD. PLAN NO. SU-03.
2. MODIFIED WSDOT CEMENT CONC. SIDEWALK FOR MEDIAN (PER DETAIL DRAWING RDDET113A).
3. CEMENT CONCRETE SIDEWALK (PER C.O.T. STD. PLAN SU-04).
4. CONCRETE CROSSING PANELS WITH ELASTOMERIC FLANGE FILLER. SEE TRACK PLAN AND PROFILE DRAWINGS.
5. CROSSING SIGNAL EQUIPMENT. SEE GRADE CROSSING SIGNAL PLANS.
6. CEMENT CONCRETE TRAFFIC BARRIER CURB PER CITY OF LAKEWOOD STD. PLAN S-2F.
7. CEMENT CONCRETE SIDEWALK (PER CITY OF LAKEWOOD STD. PLAN S-2A).
8. (NOT USED)
9. CEMENT CONCRETE DRIVEWAY ENTRANCE TYPE 2 PER C.O.T. STD. PLAN SU-08 MODIFIED WITH CURB AT BACK OF S/W. (SEE TYPICAL SECTIONS).
10. CRUSHED SURFACING BASE COURSE (ACCESS PAD TO RAILROAD SIGNAL EQUIPMENT: 6" CSBC COMPACTED DEPTH OVER GRAVEL BORROW SUBGRADE).
11. (NOT USED)
12. (NOT USED)
13. TYPE C PRECAST TRAFFIC CURB (PER WSDOT STD. PLAN F-2).
14. CEMENT CONCRETE TRAFFIC CURB PER C.O.T. STD. PLAN NO. SU-03.
15. CHAINLINK FENCE TYPE 3 (PER WSDOT STD. PLAN L-20.10-00). (NOT USED)
16. BEAM GUARDRAIL TYPE 1 PER WSDOT STD. PLAN NO. C-1 (NOT USED)
17. (NOT USED)
18. (NOT USED)
19. (NOT USED)
20. CEMENT CONC. DRIVEWAY ENTRANCE-MODIFIED (PER DETIAL DRAWING RDDET114A).
21. STATION/OFFSET LOCATION FOR DETECTABLE WARNING PATTERN. SEE DRAWINGS RDDET110A AND RDDET111A.
22. CEMENT CONCRETE TRAFFIC CURB AND GUTTER PER CITY OF LAKEWOOD STD. PLAN S-2F.
23. ADJUST UTILITY TO GRADE.
24. TYPICAL CURB AND GUTTER/SIDEWALK TRANSITION AT RAIL CROSSING (PER DETIAL DRAWING RDDET110A.)
25. (NOT USED)
26. (NOT USED)
27. CEMENT CONC. TRAFFIC CURB AND GUTTER PER WSDOT STD. PLAN F-10.12-00. (NOT USED)
28. CEMENT CONC. SIDEWALK (PER WSDOT STD. PLAN F-30.10-00). (NOT USED)
29. (NOT USED)
30. (NOT USED)
31. CEMENT CONC. SIDEWALK (PER CITY OF LAKEWOOD STD PLAN S-2B).
32. (NOT USED)
33. (NOT USED)
34. (NOT USED)
35. TYPICAL CURB AND GUTTER TRANSITION AT RAIL CROSSING (PER DETAIL DRAWING RDDET110A). (NOT USED)
36. (NOT USED)
37. (NOT USED)
38. TYPICAL CURB AND GUTTER/PLANTER/SIDEWALK TRANSITION AT RAIL CROSSING (PER DETAIL DRAWING RDDET111A).
39. (NOT USED)
40. TYPICAL DEPRESSED SIDEWALK AT RAIL CROSSING (PER DETAIL DRAWING RDDET111A). (NOT USED)
41. CONCRETE PAD FOR BUS STOP (PER DETAIL DRAWING RDDET112A).

## ⟨X⟩ ROADWAY CONSTRUCTION NOTES (CONT.)

42. DUAL FACED CEMENT CONC. TRAFFIC CURB (PER WSDOT STD. PLAN F-10.12-00). (NOT USED)
43. (NOT USED)
44. (NOT USED)
45. (NOT USED)
46. HMA CURB (PER DETAIL DRAWING RDDET113A).
47. (NOT USED)
48. SIDEWALK RAMP TYPE 2 PER CITY OF LAKEWOOD STD. PLAN S-3B.
49. (NOT USED)
50. HMA SIDEWALK RAMP (PER DETAIL DRAWING RDDET113A).
51. CURB AND GUTTER TRANSITION TO HMA CURB (PER DETAIL DRAWING RDDET113A).
52. CEMENT CONCRETE SIDEWALK RAMP TYPE 2 MODIFIED (PER DETAIL DRAWING RDDET110A). (NOT USED)
53. (NOT USED)
54. MOUNTABLE CEMENT CONCRETE TRAFFIC CURB AND GUTTER (PER DETAIL DRAWING RDDET114A).
55. (NOT USED)
56. CEMENT CONCRETE DRIVEWAY ENTRANCE TYPE 1 (PER C.O.T. STD. PLAN NO. SU-07).
57. (NOT USED)
58. CEMENT CONC. SIDEWALK RAMP TYPE 3B PER WSDOT STD. PLAN F-40.15-00. (NOT USED)
59. STORMWATER CURB BREAK (PER DETAIL DRAWING RDDET112A). (NOT USED)
60. (NOT USED)
61. CEMENT CONC. TRAFFIC CURB (PER WSDOT STD. PLAN F-10.12-00). (NOT USED)
62. PRECAST DUAL FACED SLOPED MOUNTABLE CURB (PER WSDOT STD PLAN F-10.64-01). (NOT USED)
63. CEMENT CONC. SIDEWALK RAMP TYPE 5 PER WSDOT STD PLAN F-42.10-00. (NOT USED)
64. BEAM GUARDRAIL ANCHOR TYPE 1 (PER WSDOT STD PLAN C-6 WITH END SECTION DESIGN C PER WSDOT STD PLAN C-7). (NOT USED)

## GENERAL NOTES – ROADWAY CONSTRUCTION

1. SEE UTILITY RELOCATION AND PROTECTION PLANS FOR STORM DRAINAGE, MISC. CONDUIT AND CASING INSTALLATION.
2. SEE SHEETS RDAL121A-RDAL125A FOR ROADWAY MEDIAN DETAILS.
3. SEE SHEETS RDTS110A-RDTS128A FOR PAVEMENT SECTIONS.
4. CURB AND CURB AND GUTTER DEFINED BY FACE OF CURB UNLESS OTHERWISE NOTED. ALL ELEVATIONS ARE PROVIDED AT TOP OF CURB UNLESS OTHERWISE NOTED AND DO NOT RELECT CURB CUTS OR SIDEWALK RAMPS.
5. ALL CURB RETURN ELEVATIONS ARE TO TOP OF CURB UNLESS OTHERWISE NOTED. AT CURB CUT RAMPS, CURB RETURN ELEVATIONS ARE INDICATED AT A POINT 6" ABOVE GUTTER FLOWLINE UNLESS OTHERWISE NOTED.
6. ALL UNITS ARE IN FEET UNLESS OTHERWISE SPECIFIED.
7. DRIVEWAYS ARE STATIONED AT CENTERLINE OF DRIVEWAY

| | | | | | | |
|---|---|---|---|---|---|---|
| FILE NAME | PD_RDCNA.dwg | | | | REGION NO. | STATE |
| TIME | 10:40am | | | | 10 | WASH |
| DATE | May 09, 2008 | | | | JOB NUMBER 43088 | |
| PLOTTED BY | cwilcox | | | | | |
| DESIGNED BY | RDH | | | | | |
| ENTERED BY | RDH | | | | | |
| CHECKED BY | XXX | | | | CONTRACT NO. C090010775 | |
| PROJ. ENGR. | | | | | | |
| REGIONAL ADM. | | REVISION | DATE | BY | | |

SOUNDTRANSIT

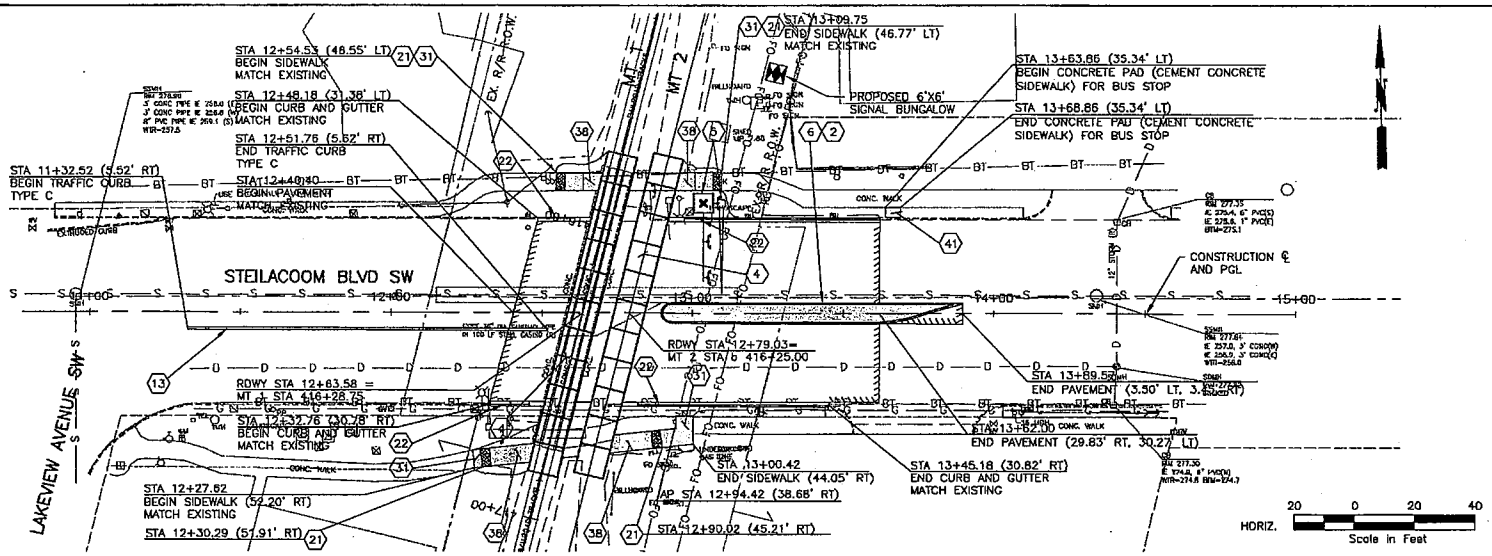
HDR ENGINEERING INC.

POINT DEFIANCE BYPASS PROJECT
100% PS&E SUBMITTAL
ROADWAY CONSTSTRUCTION NOTES

ROADWAY CONSTRUCTION NOTES

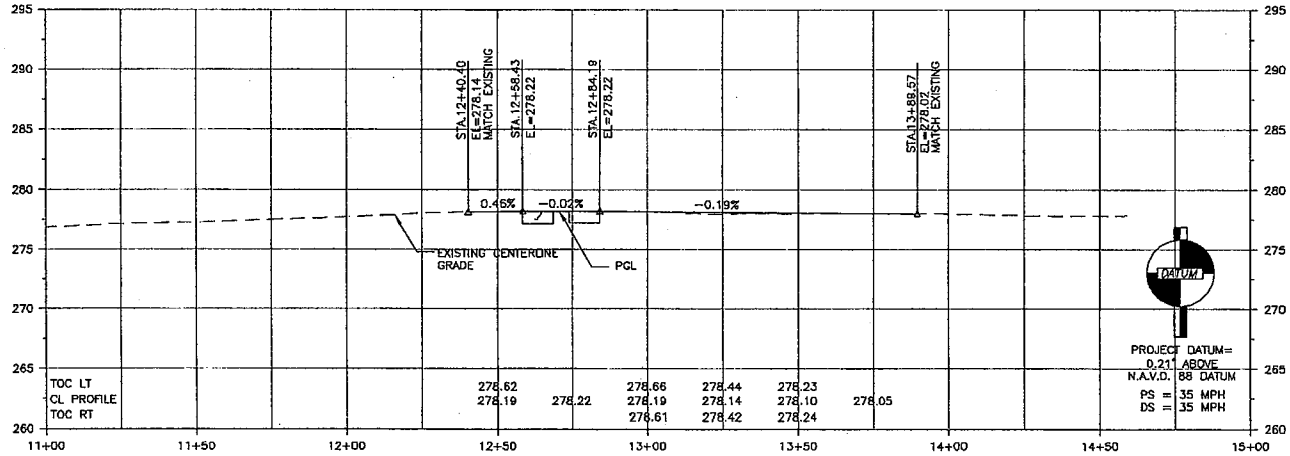
RDCNA

SHEET X OF X SHEETS



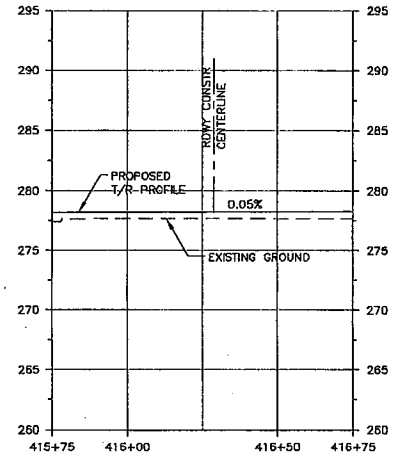

## GENERAL NOTES:

1. SEE DRAWING RDCNA FOR CONSTRUCTION NOTES AND ADDITIONAL GENERAL NOTES.
2. PROPOSED FIBER OPTIC TO BE WITHIN LIMITS OF PROPOSED PAVING. SEE UT AND FOD SHEETS FOR LOCATION OF FIBER OPTIC.




## STEILACOOM BLVD SW

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




## MT 1 TRACK PROFILE

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

| | |
|---|---|
| FILE NAME | PD_RD122A.dwg |
| TIME | 9:08pm |
| DATE | May 08, 2008 |
| PLOTTED BY | cwilcox |
| DESIGNED BY | CLG |
| ENTERED BY | CLG |
| CHECKED BY | CR |
| PROJ. ENGR. | BB |
| REGIONAL ADM. | |

| REVISION | DATE | BY |
|---|---|---|
| | | |

| REGION NO. | STATE |
|---|---|
| 10 | WASH |
| JOB NUMBER 43088 | |
| CONTRACT NO. CONDO10776 | |

SOUNDTRANSIT

HDR ENGINEERING INC.

POINT DEFIANCE BYPASS PROJECT
100% PS&E SUBMITTAL
STEILACOOM BLVD SW

ROADWAY PLAN AND PROFILE

RD122A

SHEET OF X SHEETS

## (x) ROADWAY CHANNELIZATION NOTES

14. PAINTED TWO WAY LEFT TURN STRIP WITH RAISED PAVEMENT MARKERS PER C.O.T. CHANNELIZATION DETAILS, RAISED PAVEMENT MARKERS AND PAINT STRIPING STD. PLAN.
15. PAINTED 4" LANE STRIPE WITH RAISED PAVEMENT MARKERS PER C.O.T. CHANNELIZATION DETAILS, RAISED PAVEMENT MARKERS AND PAVEMENT STRIPING STD. PLAN.
21. PLASTIC PAVEMENT "ONLY" PER C.O.T. PLASTIC PAVEMENT "ONLY" STD. PLAN.
22. THERMOPLASTIC TRAFFIC ARROW PER C.O.T. TYPICAL THERMOPLASTIC TRAFFIC ARROW STD. PLAN.
40. PLASTIC TYPE D STOP BAR PER WSDOT STD. PLAN M-11.10-01.
41. PLASTIC TYPE D RAILROAD CROSSING SYMBOL PER WSDOT STD. PLAN M-11.10-01, WITH EXCEPTIONS TO STANDARD LAYOUT DIMENSIONS AS NOTED IN PLAN VIEW.
42. PLASTIC TYPE D EDGE LINE YELLOW PER WSDOT STD. SPECIFICATIONS.
43. PLASTIC TYPE D EDGE LINE WHITE PER WSDOT STD. SPECIFICATIONS. (NOT USED)
44. CITY OF LAKEWOOD DURABLE MARKING TRAFFIC ARROW TYPE 2SR PER WSDOT STD. PLAN M-24.40-01.
45. PLASTIC TYPE D CROSSWALK LINE PER WSDOT STD. PLAN M-15.10-01. (NOT USED)
46. PLASTIC TYPE D WIDE LINE PER WSDOT STD. SPECIFICATIONS. (NOT USED)
47. PLASTIC TYPE D DOUBLE YELLOW CENTER LINE PER WSDOT STD. SPECIFICATIONS. (NOT USED)
48. PLASTIC TYPE D LANE LINE PER WSDOT STD. SPECIFICATIONS. (NOT USED)
49. CITY OF LAKEWOOD DURABLE MARKING RAILROAD CROSSING SYMBOL PER WSDOT STD. PLAN M-11.10-01, WITH EXCEPTIONS TO STANDARD LAYOUT DIMENSIONS AS NOTED IN PLAN VIEW.
50. CITY OF LAKEWOOD DURABLE MARKING STOP BAR PER WSDOT STD. PLAN M-11.10-00.
51. CITY OF LAKEWOOD DURABLE MARKING TRAFFIC ARROW TYPE 2SL PER WSDOT STD. PLAN M-24.40-01.
52. CITY OF LAKEWOOD DURABLE MARKING TRAFFIC LETTTERS "ONLY", DIMENSIONS PER WSDOT STD. SPECIFICATIONS.
53. CITY OF LAKEWOOD DURABLE MARKING EDGE LINE YELLOW, DIMENSIONS PER WSDOT STD. SPECIFICATIONS.
54. CITY OF LAKEWOOD DURABLE MARKING 24" STOP BAR PER CITY OF LAKEWOOD STD. PLAN CH-1.
55. PLASTIC TYPE D TRAFFIC ARROW TYPE 2SL PER WSDOT STD. PLAN M-24.40-01. (NOT USED)
56. PLASTIC TYPE D TRAFFIC LETTERS "ONLY" PER WSDOT STD. SPECIFICATIONS. (NOT USED)
57. CITY OF LAKEWOOD DURABLE MARKING BICYCLE LANE SYMBOL PER WSDOT STD. PLAN M-9.50-01.
58. CITY OF LAKEWOOD DURABLE MARKING EDGE LINE WHITE, DIMENSIONS PER WSDOT STD. SPECIFICATIONS.
59. CITY OF LAKEWOOD DURABLE MARKING WIDE LINE, DIMENSIONS PER WSDOT STD. SPECIFICATIONS.
60. CITY OF LAKEWOOD DURABLE MARKING DOUBLE YELLOW CENTER LINE, DIMENSIONS PER WSDOT STD. SPECIFICATIONS.
61. TYPE 1 AND 2 RPM DOUBLE YELLOW CENTER LINE PER WSDOT STD. PLAN M-20.50.01. (NOT USED)
62. RAISED PAVEMENT MARKER TYPE 1Y DOUBLE YELLOW CENTER LINE PER WSDOT STD. PLAN M-20.50-01. (NOT USED)
63. RAISED PAVEMENT MARKER TYPE 1W AND LANE LINE PER DETAIL SHEET RDDET112A.
64. RAISED PAVEMENT MARKER TYPE 1Y AND TWO WAY LEFT TURN LINE PER DETAIL SHEET RDDET112A.
65. PLASTIC TYPE D TRAFFIC ARROW TYPE 6SL, DIMENSIONS PER WSDOT STD. PLAN M-24.40.01. LAYOUT PER LANE REDUCTION DETAIL ON SHEET RDDET118A. (NOT USED)
66. PLASTIC TYPE D TRAFFIC ARROW TYPE 2SR PER WSDOT STD. PLAN M-24.40-01. (NOT USED)
67. CITY OF LAKEWOOD DURABLE MARKING CROSSWALK PER CITY OF LAKEWOOD STD. PLAN CH-1.
68. CITY OF LAKEWOOD DURABLE MARKING LANE LINE PER SPECIFICATION SECTION 01900. REVISIONS TO WSDOT STD. SPECIFICATION 8-22 AND 9-34. DIMENSIONS PER WSDOT STD. SPECIFICATIONS.
69. PLASTIC TYPE D STOP LINE PER WSDOT STD. PLAN M-15.10-01. (NOT USED)
70. PAINT TOP AND EXPOSED SIDES OF CURB YELLOW, WITH GLASS BEADS, PER SPECIFICATION SECTION 01900.

## GENERAL NOTES – ROADWAY CHANNELIZATION

1. ALL UNITS ARE IN FEET UNLESS OTHERWISE SPECIFIED.

| | | | | | |
|---|---|---|---|---|---|
| FILE NAME | PD_RDCHCNA.dwg | | | | |
| TIME | 10:23am | | | | |
| DATE | May 09, 2008 | | | | |
| PLOTTED BY | cwilcox | | | | |
| DESIGNED BY | RDH | | | | |
| ENTERED BY | RDH | | | | |
| CHECKED BY | XXX | | | | |
| PROJ. ENGR. | | | | | |
| REGIONAL ADM. | | REVISION | DATE | BY | |

REGION NO. 10 STATE WASH
JOB NUMBER 43068
CONTRACT NO. CON0010776

SOUNDTRANSIT

EXPIRES 11/09/

HDR ENGINEERING INC.

POINT DEFIANCE BYPASS PROJECT
100% PS&E SUBMITTAL
ROADWAY CHANNELIZATION NOTES

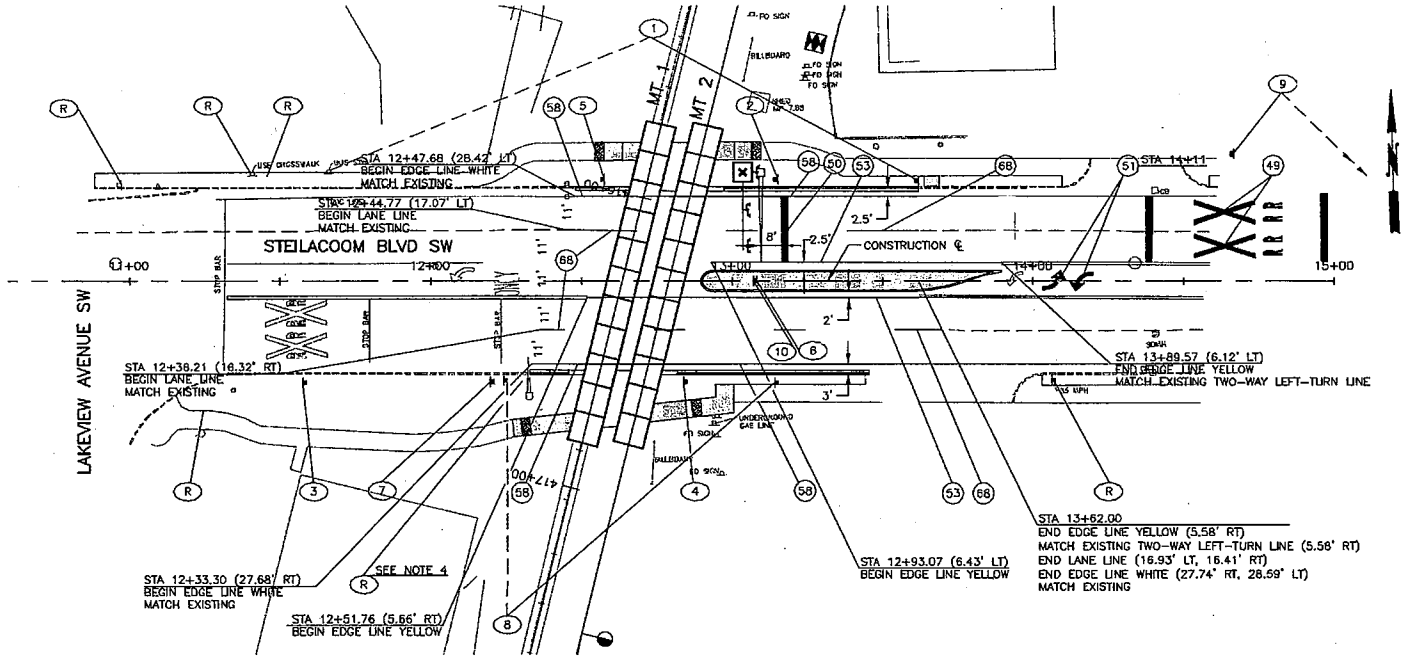
ROADWAY CHANNELIZATION NOTES

RDCHCNA

SHEET X OF X SHEETS

## GENERAL NOTES:

1. SEE DRAWING RDCHCNA FOR CHANNELIZATION NOTES AND ADDITIONAL GENERAL NOTES.
2. SEE DRAWING RDS111A FOR SIGN SCHEDULE AND RDS110A FOR NOTES..
3. LANE AND SHOULDER WIDTHS ARE APPROXIMATE. MATCH EXISTING.
4. EXISTING R15-1 RR CROSSING (CROSS BUCK SIGN) MOUNTED ON LUMINAIRE TO REMAIN.




HORIZ. 20 0 20 40
Scale In Feet

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| FILE NAME | PD_RDCH111A.dwg | | | | REGION NO. | STATE | |
| TIME | 9:23pm | | | | 10 | WASH | |
| DATE | May 08, 2008 | | | | JOB NUMBER | | |
| PLOTTED BY | cwiloox | | | | 43098 | | |
| DESIGNED BY | CLG | | | | CONTRACT NO. | | |
| ENTERED BY | CLG | | | | CONO010775 | | |
| CHECKED BY | CR | | | | | | |
| PROJ. ENGR. | BB | | | | | | |
| REGIONAL ADM. | | REVISION | DATE | BY | | | |

SOUNDTRANSIT

HDR ENGINEERING INC.

POINT DEFIANCE BYPASS PROJECT
100% PS&E SUBMITTAL
STEILACOOM BLVD SW

CHANNELIZATION AND SIGNING PLAN

RDCH 111A

SHEET X OF X SHEETS

GENERAL NOTES:

1. SEE DRAWING RDS110A FOR SIGNING LEGEND AND ADDITIONAL GENERAL NOTES.

| Sheet Number | Sign Number | Sign Code | Location | Size | | Sheeting Type | Letter Size or Code | Post Material | Post Size | Post Length | Clearance | | Remarks | Action |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | X | Y | | | | | | V | W | | |
| RDCH111A | 1 | R7-107A MOD | 13+61.87 | 12 | 30 | - | - | STEEL | 2.5" SQ | 13.5' | 7' | 5.2' | NO PARKING BUS STOP SYMBOL WITH TRANSIT LOGO, LOCAL BUS ROUTE 3 TO LAKEWOOD | RELOCATE |
| RDCH111A | 2 | R8-10L | 13+15.12 | 24 | 36 | III or IV | STANDARD | WOOD | 4"x4" | 13.0' | 7' | 5.8' | STOP HERE WHEN FLASHING | NEW |
| RDCH111A | 3 | W10-1 | 11+57.51 | DIA | 36 | III or IV | STANDARD | WOOD | 4"x4" | 13.0' | 7' | 6.1' | RAILROAD ADVANCE SIGN | NEW |
| RDCH111A | 4 | R8-8 | 12+83.82 | 24 | 30 | III or IV | STANDARD | WOOD | 4"x4" | 12.5' | 7' | 6.1' | DO NOT STOP ON TRACKS | NEW |
| RDCH111A | 5 | R8-8 | 12+57.48 | 24 | 30 | III or IV | STANDARD | WOOD | 4"x4" | 12.5' | 7' | 5.9' | DO NOT STOP ON TRACKS | NEW |
| RDCH111A | 6 | R8-8 | 13+07.18 | 24 | 30 | III or IV | STANDARD | WOOD | 4"x4" | 12.5' | 7' | 5.7' | DO NOT STOP ON TRACKS | NEW |
| RDCH111A | 7 | R8-10L | 12+19.70 | 24 | 36 | III or IV | STANDARD | WOOD | 4"x4" | 13.0' | 7' | 6.5' | STOP HERE WHEN FLASHING | NEW |
| RDCH111A | 8 | I-11MOD | 13+14.06 | 30 | 48 | - | - | WOOD | 4"x4" | 14.0' | 7' | 6.3' | RECYCLING SIGN CODE REFERENCED IN FWHA 2004 STANDARD HIGHWAY | RELOCATE |
| RDCH111A | 9 | W10-1 | 14+66.51 | DIA | 36 | - | - | WOOD | 4"x4" | 13.0' | 7' | 14.3 | RAILROAD ADVANCE SIGN LOCATE SIGN 1.5' FROM BACK OF EXISTING SIDEWALK | RELOCATE |
| RDCH111A | 10 | R8-8 | 13+07.18 | 24 | 30 | III or IV | STANDARD | - | - | - | - | - | NO STOPPING ON TRACKS MOUNT ON SAME POST AS SIGN #6 | NEW |

| | | | | | |
|---|---|---|---|---|---|
| FILE NAME | PD_RDS111A.dwg | | | REGION NO. | STATE |
| TIME | 9:30pm | | | 10 | WASH |
| DATE | May 08, 2008 | | | JOB NUMBER | |
| PLOTTED BY | cwilcox | | | 43088 | |
| DESIGNED BY | CLG | | | CONTRACT NO. | |
| ENTERED BY | JTB | | | CON010775 | |
| CHECKED BY | CR | | | | |
| PROJ. ENGR. | BB | | | | |
| REGIONAL ADM. | | REVISION | DATE | BY | |

SOUNDTRANSIT

HDR ENGINEERING INC.

POINT DEFIANCE BYPASS PROJECT
100% PS&E SUBMITTAL
STEILACOOM BLVD SW

SIGN SCHEDULE

RDS111A

SHEET X OF X SHEETS

## ⟨X⟩ ROADWAY CONSTRUCTION NOTES

1. CEMENT CONCRETE TRAFFIC CURB AND GUTTER PER C.O.T. STD. PLAN NO. SU-03.
2. MODIFIED WSDOT CEMENT CONC. SIDEWALK FOR MEDIAN (PER DETAIL DRAWING RDDET113A).
3. CEMENT CONCRETE SIDEWALK (PER C.O.T. STD. PLAN SU-04).
4. CONCRETE CROSSING PANELS WITH ELASTOMERIC FLANGE FILLER. SEE TRACK PLAN AND PROFILE DRAWINGS.
5. CROSSING SIGNAL EQUIPMENT. SEE GRADE CROSSING SIGNAL PLANS.
6. CEMENT CONCRETE TRAFFIC BARRIER CURB PER CITY OF LAKEWOOD STD. PLAN S-2F.
7. CEMENT CONCRETE SIDEWALK (PER CITY OF LAKEWOOD STD. PLAN S-2A).
8. (NOT USED)
9. CEMENT CONCRETE DRIVEWAY ENTRANCE TYPE 2 PER C.O.T. STD. PLAN SU-08 MODIFIED WITH CURB AT BACK OF S/W. (SEE TYPICAL SECTIONS).
10. CRUSHED SURFACING BASE COURSE (ACCESS PAD TO RAILROAD SIGNAL EQUIPMENT: 6" CSBC COMPACTED DEPTH OVER GRAVEL BORROW SUBGRADE).
11. (NOT USED)
12. (NOT USED)
13. TYPE C PRECAST TRAFFIC CURB (PER WSDOT STD. PLAN F-2).
14. CEMENT CONCRETE TRAFFIC CURB PER C.O.T. STD. PLAN NO. SU-03.
15. CHAINLINK FENCE TYPE 3 (PER WSDOT STD. PLAN L-20.10-00). (NOT USED)
16. BEAM GUARDRAIL TYPE 1 PER WSDOT STD. PLAN NO. C-1 (NOT USED)
17. (NOT USED)
18. (NOT USED)
19. (NOT USED)
20. CEMENT CONC. DRIVEWAY ENTRANCE-MODIFIED (PER DETIAL DRAWING RDDET114A).
21. STATION/OFFSET LOCATION FOR DETECTABLE WARNING PATTERN. SEE DRAWINGS RDDET110A AND RDDET111A.
22. CEMENT CONCRETE TRAFFIC CURB AND GUTTER PER CITY OF LAKEWOOD STD. PLAN S-2F.
23. ADJUST UTILITY TO GRADE.
24. TYPICAL CURB AND GUTTER/SIDEWALK TRANSITION AT RAIL CROSSING (PER DETIAL DRAWING RDDET110A.)
25. (NOT USED)
26. (NOT USED)
27. CEMENT CONC. TRAFFIC CURB AND GUTTER PER WSDOT STD. PLAN F-10.12-00. (NOT USED)
28. CEMENT CONC. SIDEWALK (PER WSDOT STD. PLAN F-30.10-00). (NOT USED)
29. (NOT USED)
30. (NOT USED)
31. CEMENT CONC. SIDEWALK (PER CITY OF LAKEWOOD STD PLAN S-2B).
32. (NOT USED)
33. (NOT USED)
34. (NOT USED)
35. TYPICAL CURB AND GUTTER TRANSITION AT RAIL CROSSING (PER DETAIL DRAWING RDDET110A). (NOT USED)
36. (NOT USED)
37. (NOT USED)
38. TYPICAL CURB AND GUTTER/PLANTER/SIDEWALK TRANSITION AT RAIL CROSSING (PER DETAIL DRAWING RDDET111A).
39. (NOT USED)
40. TYPICAL DEPRESSED SIDEWALK AT RAIL CROSSING (PER DETAIL DRAWING RDDET111A). (NOT USED)
41. CONCRETE PAD FOR BUS STOP (PER DETAIL DRAWING RDDET112A).

## ⟨X⟩ ROADWAY CONSTRUCTION NOTES (CONT.)

42. DUAL FACED CEMENT CONC. TRAFFIC CURB (PER WSDOT STD. PLAN F-10.12-00). (NOT USED)
43. (NOT USED)
44. (NOT USED)
45. (NOT USED)
46. HMA CURB (PER DETAIL DRAWING RDDET113A).
47. (NOT USED)
48. SIDEWALK RAMP TYPE 2 PER CITY OF LAKEWOOD STD. PLAN S-3B.
49. (NOT USED)
50. HMA SIDEWALK RAMP (PER DETAIL DRAWING RDDET113A).
51. CURB AND GUTTER TRANSITION TO HMA CURB (PER DETAIL DRAWING RDDET113A).
52. CEMENT CONCRETE SIDEWALK RAMP TYPE 2 MODIFIED (PER DETAIL DRAWING RDDET110A). (NOT USED)
53. (NOT USED)
54. MOUNTABLE CEMENT CONCRETE TRAFFIC CURB AND GUTTER (PER DETAIL DRAWING RDDET114A).
55. (NOT USED)
56. CEMENT CONCRETE DRIVEWAY ENTRANCE TYPE 1 (PER C.O.T. STD. PLAN NO. SU-07).
57. (NOT USED)
58. CEMENT CONC. SIDEWALK RAMP TYPE 3B PER WSDOT STD. PLAN F-40.15-00. (NOT USED)
59. STORMWATER CURB BREAK (PER DETAIL DRAWING RDDET112A). (NOT USED)
60. (NOT USED)
61. CEMENT CONC. TRAFFIC CURB (PER WSDOT STD. PLAN F-10.12-00). (NOT USED)
62. PRECAST DUAL FACED SLOPED MOUNTABLE CURB (PER WSDOT STD PLAN F-10.64-01). (NOT USED)
63. CEMENT CONC. SIDEWALK RAMP TYPE 5 PER WSDOT STD PLAN F-42.10-00. (NOT USED)
64. BEAM GUARDRAIL ANCHOR TYPE 1 (PER WSDOT STD PLAN C-6 WITH END SECTION DESIGN C PER WSDOT STD PLAN C-7). (NOT USED)

## GENERAL NOTES – ROADWAY CONSTRUCTION

1. SEE UTILITY RELOCATION AND PROTECTION PLANS FOR STORM DRAINAGE, MISC. CONDUIT AND CASING INSTALLATION.
2. SEE SHEETS RDAL121A-RDAL125A FOR ROADWAY MEDIAN DETAILS.
3. SEE SHEETS RDTS110A-RDTS128A FOR PAVEMENT SECTIONS.
4. CURB AND CURB AND GUTTER DEFINED BY FACE OF CURB UNLESS OTHERWISE NOTED. ALL ELEVATIONS ARE PROVIDED AT TOP OF CURB UNLESS OTHERWISE NOTED AND DO NOT RELECT CURB CUTS OR SIDEWALK RAMPS.
5. ALL CURB RETURN ELEVATIONS ARE TO TOP OF CURB UNLESS OTHERWISE NOTED. AT CURB CUT RAMPS, CURB RETURN ELEVATIONS ARE INDICATED AT A POINT 6" ABOVE GUTTER FLOWLINE UNLESS OTHERWISE NOTED.
6. ALL UNITS ARE IN FEET UNLESS OTHERWISE SPECIFIED.
7. DRIVEWAYS ARE STATIONED AT CENTERLINE OF DRIVEWAY

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| FILE NAME | PD_RDCNA.dwg | | | | REGION NO. | STATE | |
| TIME | 10:40am | | | | 10 | WASH | |
| DATE | May 09, 2008 | | | | JOB NUMBER | | |
| PLOTTED BY | cwilcox | | | | 43068 | | |
| DESIGNED BY | RDH | | | | CONTRACT NO. | | |
| ENTERED BY | RDH | | | | CON0010776 | | |
| CHECKED BY | XXX | | | | | | |
| PROJ. ENGR. | | | | | | | |
| REGIONAL ADM. | | REVISION | DATE | BY | | | |

SOUNDTRANSIT

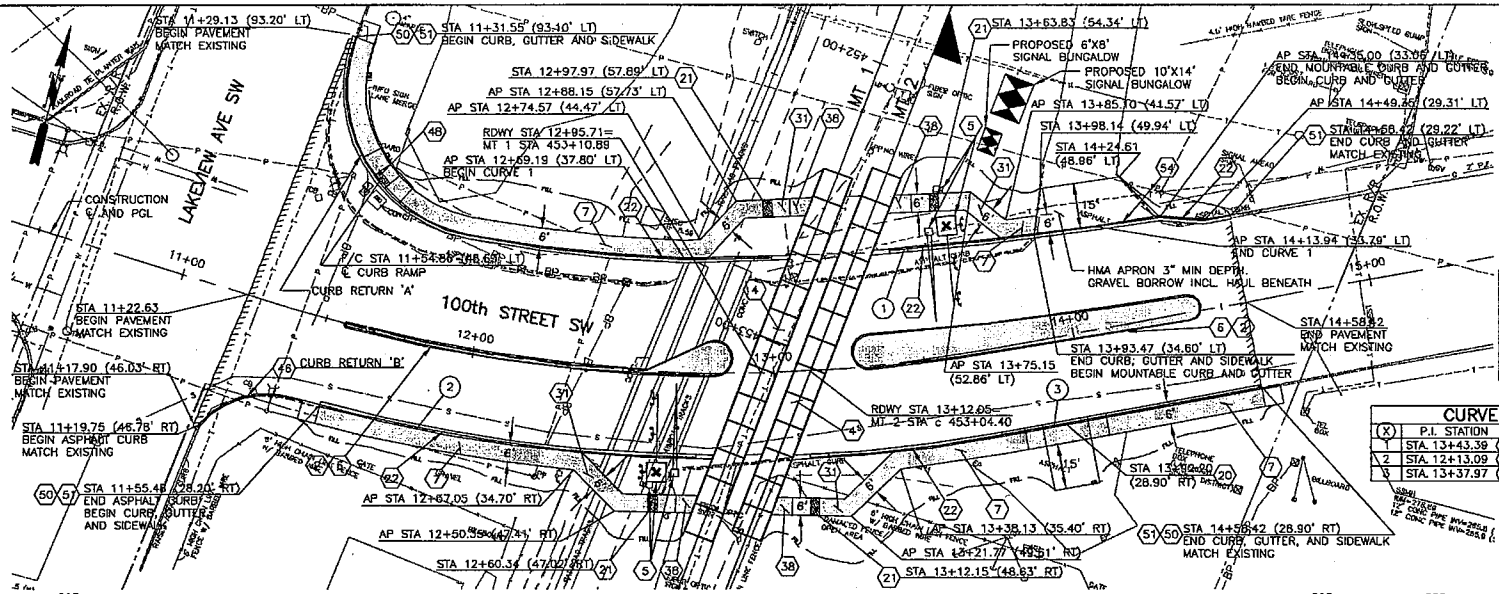
HDR ENGINEERING INC.

POINT DEFIANCE BYPASS PROJECT
100% PS&E SUBMITTAL
ROADWAY CONSTSTRUCTION NOTES

ROADWAY CONSTRUCTION NOTES

RDCNA

SHEET X OF X SHEETS




## GENERAL NOTES:

1. SEE DRAWING RDCNA FOR CONSTRUCTION NOTES AND ADDITIONAL GENERAL NOTES.

### CURB RETURN 'B'

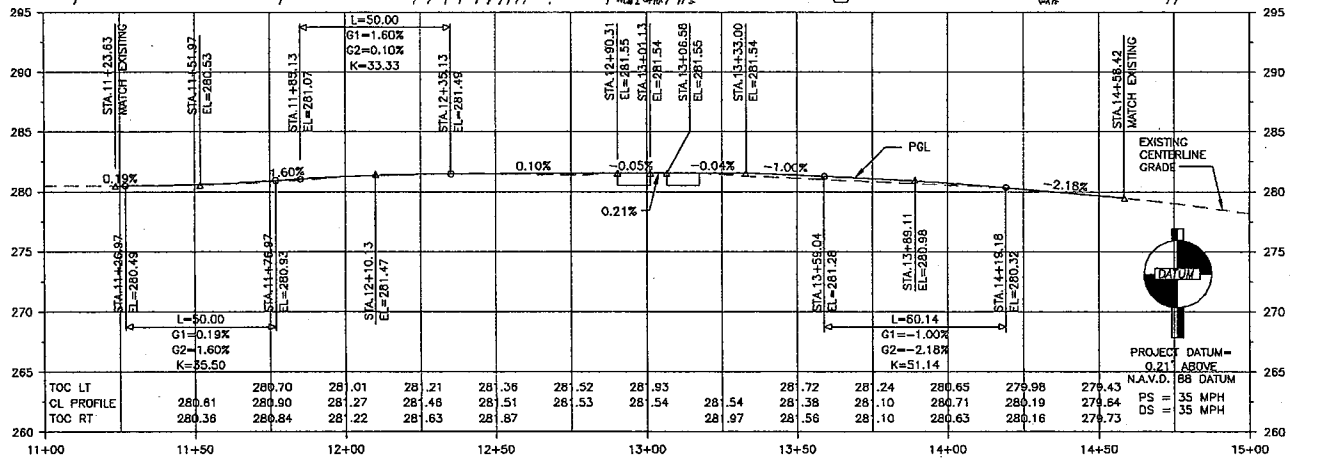
| CURB RETURN ELEVATIONS | | | |
|---|---|---|---|
| BEG. | STA. 11+19.75 (46.78'RT) | 279.89 | |
| 1/4 | | 279.98 | Δ= 66°45'47.04" |
| 1/2 | | 280.07 | R= 30.00' |
| 3/4 | | 280.15 | T= 19.77' |
| END | STA. 11+46.47 (28.20'RT) | 280.24 | L= 34.96' |

### CURB RETURN 'A'

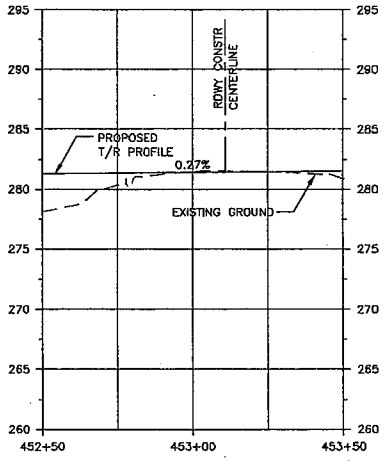
| CURB RETURN ELEVATIONS | | | |
|---|---|---|---|
| BEG. | STA. 11+31.35 (93.10'LT) | 280.68 | |
| 1/4 | | 280.63 | Δ= 99°40'00.52" |
| 1/2 | | 280.58 | R= 50.00' |
| LOW | STA. 11+64.00 (43.61'LT) | 280.53 | T= 59.24' |
| 3/4 | | 280.59 | L= 86.98' |
| END | STA. 11+91.14 (37.80'LT) | 280.94 | |

### CURVE DATA TABLE 'FACE OF CURB'

| (X) | P.I. STATION | DELTA | RADIUS | TANGENT | LENGTH |
|---|---|---|---|---|---|
| 1 | STA. 13+43.39 (34.99' LT) | 08°26'67.87" | 928.07' | 68.56' | 136.86' |
| 2 | STA. 12+13.09 (33.13' RT) | 15°54'19" | 508.20' | 70.99' | 141.08' |
| 3 | STA. 13+37.97 (30.11' RT) | 07°53'38" | 508.90' | 35.11' | 70.11' |




100th STREET SW
SCALE (FULL SIZE): 1" = 20' HORIZ. 1" = 5' VERT.




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

| | |
|---|---|
| FILE NAME | PD_RD123A.dwg |
| TIME | 9:08pm |
| DATE | May 08, 2008 |
| PLOTTED BY | cwilcox |
| DESIGNED BY | CLG |
| ENTERED BY | CLG |
| CHECKED BY | CR |
| PROJ. ENGR. | BB |
| REGIONAL ADM. | |

| REVISION | DATE | BY |
|---|---|---|
| | | |

REGION NO. 10 | STATE WASH
JOB NUMBER 43686
CONTRACT NO. CD#010776

SOUNDTRANSIT

EXPIRES 11/08

HDR ENGINEERING INC.

POINT DEFIANCE BYPASS PROJECT
100% PS&E SUBMITTAL
100th STREET SW

ROADWAY PLAN AND PROFILE

RD123A

SHEET OF X SHEETS