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400.01 Introduction

The contents of this manual can be applied to the majority of the projects a designer will encounter. It is understood that no two projects are the same and that it is impossible to provide information for every circumstance that may be encountered. There will be those projects, or portions of projects, that do not fit the standard applications. In these cases, the designer must be able to recognize the need to adjust the standards to best depict the work to be accomplished.

This manual is intended to show representative information and examples the designer can, and should, use as a basis to make decisions on what is required, what is to be included in the Plans, Specifications, and Estimates (PS&E), and how it is to be shown in the plans. The main responsibility of the designer is to assemble a package that contains the precise information required by a contractor to submit a responsible bid and for WSDOT to get an acceptable finished product. Providing too much information can, at times, cause as many problems as not providing enough. The designer must remember that projects requiring contractor surveying will require more detail and information than a project being surveyed by WSDOT.

(1) Contract Plans and Provisions

The Plans, Specifications, and Estimates are some of the documents required for the advertisement of a project.

The Contract Plans and Contract Provisions must set forth the work in a clear and concise manner to avoid misinterpretation.

The Contract Plans shall conform to the geometric design as documented in the Design Approval Package (DAP), the Project Definition (PD) package, and the Project File—specifically, the Design Documentation Package (DDP). (See the [Design Manual](#) for more information.) All plan details and Contract Provisions are to be specifically applicable to the project being developed. It is acceptable to use details and provisions from previous contracts. However, they should be examined closely and modified as required, to ensure they are specifically applicable to the current project.

Deviations from Washington State Department of Transportation (WSDOT) policies and standard practices require approval by the appropriate approving authority, in accordance with the [Design Manual](#), in advance of advertisement of the project.

The designer and the Headquarters (HQ) Bridge and Structures Office will coordinate design schedules when structures are involved to ensure the project will be completed in a timely manner.

The designer is to take every opportunity to reduce the volume of the plans by using logical combinations of plan series to best display the information. Because no two projects are exactly the same, the designer needs to examine the logical combinations

of plan series for each project. Displaying too much information may cause confusion to the contractor bidding the project and could result in higher bid prices. On the other hand, a series of plan sheets with minimal information displayed on each sheet makes it difficult to determine the interrelationship of different items of work, which could also equate to increased prices by bidders estimating the project. A balance resulting in the complete and accurate information on the correct series of plan sheets is what is necessary.

The designer must remember that standards are not developed to stifle their ability to design, but instead to provide consistency across the state. We should be doing the same work the same way, regardless of where the project is located, which means consistency of state standards should be followed. When standard materials are called for, the contractors and the suppliers know exactly what we're looking for and what to expect in the way of testing and approvals. When the same work is specified and represented in the plans the same way, the contractors know exactly what will be required and what will be acceptable. Using standard items and construction methods is almost always more economical. Proprietary and sole source items should be avoided if at all possible.

A tool available to the designer to ensure required items are addressed during the PS&E preparation is the "PS&E Review Checklist," available on the WSDOT Internet/Intranet Home Page under the Design & PS&E Review Section:

☞ www.wsdot.wa.gov/Design/ProjectDev. This checklist contains the type of information that will be examined during the Stewardship Process Review, conducted by Headquarters and the Federal Highway Administration (FHWA) at the end of the project.

400.02 Project Manager's Responsibilities

All projects must have formal approval action in order to be advertised. Refer to the Appendices of the *Advertisement and Award Manual* for a sample letter of the Memorandum "Approval for Advertising – HQ Ad & Award."

(1) General

The Project Manager has the following responsibilities:

- (a) Prepare the PS&E in the format presented in this manual and in accordance with the geometric design documented in the Design Approval Package (DAP), the Project Definition (PD) package, and in the Project File—specifically, the Design Documentation Package (DDP). (See the *Design Manual* for more information.)
- (b) Obtain permits, approvals, clearances, and certifications for which the region is responsible. The PS&E shall reflect the requirements of these documents.
- (c) Provide and maintain accurate bid item quantities, reasonable and current unit prices, and backup data used to determine the estimated cost for lump sum bid items or other bid items that have little or no historical cost data. (See the program "BidTabs Pro" for current bid prices.)
- (d) Maintain the cost of the project within the budgeted amount. Request additional funds if it becomes apparent that the funds initially estimated are not adequate to cover design or construction costs.
- (e) Ensure the aggregate total cost of State Force Work and state-supplied materials are in accordance with RCW 47.28.030 and RCW 47.28.035 (see [Division 7](#)).

- (f) Determine the sources for materials and locations of sundry sites furnished by WSDOT to verify the quality and quantity of material available at the provided sources.
- (g) Verify that required new right of way will be secured prior to need.
- (h) Coordinate the HQ Bridge and Structures Office PS&E preparation with the region PS&E preparation. Provide the HQ Bridge and Structures Office with design and bridge site data in a timely manner.
- (i) Ensure reviews by the region and the appropriate Headquarters offices have been completed. Ensure the title block in the PS&E has the correct full names of the personnel, that the design team has returned a brief written response to all review comments, and that all appropriate changes have been incorporated into the PS&E prior to advertisement.
- (j) Coordinate activities and review for projects on National Forest System land in accordance with “[Highways Over National Forest Lands](#),” a Memorandum of Understanding (NFS 00-MU-11060000-040) between WSDOT and the USDA Forest Service (USFS), Pacific Northwest Region.
- (k) Provide a memorandum, with written justification, to the appropriate Assistant State Design Engineer (ASDE) for the use of all proprietary and or sole source items (see [Division 7](#)).
- (l) Provide a memorandum, with written justification and estimated costs to use state-furnished materials, state labor, a mandatory materials source, and/or a mandatory waste site, to the correct approving authority in accordance with the [Design Manual](#) (see [Division 7](#)).
- (m) Coordinate with the region (Utilities Engineer, Right of Way, and so on) to obtain written construction permits and easements for work to be performed outside WSDOT right of way.
- (n) Coordinate with region permitting offices (Utilities Engineer, Right of Way Engineer, Highways and Local Programs, Environmental, and so on) to obtain all required agreements to perform work under the contract for governmental agencies, private companies, and private individuals. These agreements shall include how the work is to be funded. There shall be substantiation that the benefit derived from the work is equal to or greater than the cost to WSDOT. Ensure all local/state/federal regulations have been addressed for the project.
- (o) Provide justification and obtain approval from the HQ Transportation Data Office (TDO) for liquidated damages, including interim liquidated damages other than those specified in the [Standard Specifications for Road, Bridge, and Municipal Construction \(Standard Specifications\)](#) (see [Division 7](#)).
- (p) Provide justification and obtain approval from the HQ Construction Office for incentive/disincentive pay and liquidated damages that revise Section 1-08.9 of the [Standard Specifications](#).
- (q) Provide justification for stockpiling materials for use on future construction contracts.
- (r) Provide justification for not using all pipe alternates.
- (s) Provide justification for the use of construction engineering percentages different from the percentages specified in [Division 8](#).

- (t) Ensure the project title on all deliverable documents exactly matches the latest official title as agreed to by the Region Program Management Office and Region Plans Office at the time of their delivery. If for some reason the scope of the project has changed so dramatically that the official project title must be changed, the title change must be negotiated with and agreed to by the Region Program Management Office and Region Plans Office.
- (u) Provide justification and obtain approval from the HQ Construction Office or current delegated authority in each region for use of nonstandard time for project completion specifications.
- (v) Provide justification and obtain approval from the HQ Construction Office or the delegated authority in each region for using project-specific specifications that alter the *Standard Specifications* and/or General Special Provisions (GSPs).
- (w) Coordinate in a timely manner with the Region Traffic Office on the preparation of all signal, illumination, ITS, and other design elements needed to be incorporated in the PS&E preparation.
- (x) Ensure the Contract Plans/Contract Provisions are stamped in accordance with WSDOT Executive Order E 1010.00, Certification of Documents by Licensed Professionals: www.wsdot.wa.gov/docs/OperatingRulesProcedures/1010.pdf

(2) Project Specifications

The Headquarters Construction Office desires to maintain consistency, accuracy, and legality with project specifications. For this reason, a project designer should always try to use the specifications listed in the *Standard Specifications*. It is not uncommon for a project to have a method of work or a working window of time that differs from those listed in the *Standard Specifications*. There are also items of work that are region-specific and as such aren't covered in the *Standard Specifications*. In those cases where there is a nonstandard item of work in a project, the designer may write a project-specific Special Provision to describe the work. In the case of a region nonstandard item of work, the region may write Region General Special Provisions (RGSPs) to describe the work. If these project-specific Special Provisions or RGSPs change the content or wording of any specifications in the *Standard Specifications*, approval must be given by the HQ Construction Office or delegated authority. In some cases, the HQ Materials Lab must approve changes to Division 9 before project-specific Special Provisions or some RGSPs may be used in a project.

Once a Region GSP has been approved by the HQ Construction Office, it can then be used on future projects without being submitted to the HQ Construction Office for another approval, unless the Region GSP instructions state that approval is required for each project. However, project-specific Special Provisions, when approved by the HQ Construction Office, are only to be used on the project for which they were written. They cannot be used on another project without reacquiring the HQ Construction Office's approval. When referencing the *Standard Specifications* in the Special Provisions, the headings from the *Standard Specifications* are never to be changed. When a section of the *Standard Specifications* is "Vacant," the designer is **not** to use these sections for their Special Provisions.

It is essential that the Project Manager understands and ensures no alterations to plans or specifications are made by anyone but the person who submitted the plans or specifications under their personal PE stamp and signature. This includes Headquarters Bridge and Structures, Traffic, Architecture, Landscape Architecture, Surveying, or any other branch/unit that certifies design with a professional stamp.

The professional licensee who was directly responsible for the original documents shall certify all revisions to plans and specifications.

Changes regarding quantities, payment estimates, and time lines are not considered technical changes; therefore, they do not require certification by a Professional Engineer (PE). However, all changes in these areas shall be verified and documented by the original designer/submitter of that item of work and shall not be changed by the Project Manager without the specific permission of the original designer/submitter.

400.03 Headquarters Assistance/Review

Various offices of expertise are available for assistance if requested by the region. For examples of transmittal memos to Headquarters or region support offices, the designer should contact their Region Plans Office for assistance.

(a) Many of the key Headquarters offices that are available to assist during PS&E preparation are listed below and can be found, along with other support offices, on the WSDOT internal website: wwwi.wsdot.wa.gov/SiteIndex/offices.htm

1. Real Estate Services Office
2. Design Office
 - Hydraulics
 - Highway Access Control
 - Right of Way Plans
 - Cost Risk Assessment (CRA)
 - Project Development
 - Roadside and Site Development
 - Utilities, Railroad, and Agreements
 - Design Standards (Standard Plans)
 - Computer-Aided Engineering
 - Design Policy
 - Project Management
 - Strategic Analysis Estimating
 - Value Engineering
3. Bridge and Structures Office
4. Construction Office
5. Traffic Operations
6. Materials Laboratory
7. Maintenance and Operations
8. Office of Equal Opportunity (OEO)

One of the two units of the HQ Office of Equal Opportunity (OEO) is the External Civil Rights Office, which provides some of the following services, which are important in PS&E preparation and contract administration:

- Implement the On-the-Job Training (OJT) programs under the Training Special Provisions (TSP) of USDOT-assisted construction

contracts

- Implement the Disadvantaged Business Enterprises (DBE) program on USDOT-assisted contracts and procurements
- Set annual DBE goals
- Establish and monitor a DBE Supportive Services program.
- Implement the Minority and Women Business Enterprise (MWBE) program on state-funded contracts and procurements
- Provide training and technical assistance to WSDOT and its subrecipients, as well as to contractors and consultants
- Develop and revise program implementation plans
- Investigate external civil rights complaints
- Implement the Title VI program, which requires nondiscrimination by recipients of federal financial assistance

Contact the OEO to establish DBE goals, obtain Special Training hours, and determine which WSDOT General Special Provision (GSP) is needed for your project.

9. Project Control and Reporting Office and Systems Analysis & Program Development Office

- The HQ Project Control and Reporting Office (PCRO) establishes and manages project control and management procedures, including the change management process using project control reporting forms (PCRFs) and the execution procedures for authorization of work order expenditures (WOA).
- The HQ Office of Systems Analysis & Program Development (SA&PD) focuses on building and managing WSDOT programs for future biennia. They establish program and subprogram funding levels and the process for federal-aid project authorizations. Designers should work through Region Program Management offices regarding these processes and requests. (See the *Project Control and Reporting Manual* for further guidance.)

(b) The following Headquarters offices can be found on the WSDOT public website:  www.wsdot.wa.gov/

- Bridge and Structures
- Highway Maintenance
- Local Programs
- Traffic Operations
- Construction
- Materials Laboratory
- Design
- Contract Ad and Award

400.04 Drafting Requirements

(1) General

How the plan information is displayed on the plan sheets can have a great impact on the usefulness of the plans. To get the best possible bid and the best possible finished product, the plans must present the information clearly and concisely. Everyone who

examines the plan should be able to determine what work is required and arrive at a single interpretation of the information.

To ensure a clear and singular interpretation, it is imperative that:

- Overcrowding of plan sheets is avoided by displaying only information relevant to the plan series.
- The plan is drawn with appropriate drafting standards as specified in this manual.

The designer will need to determine what information is required for the contractor to bid and construct the project and for WSDOT to administer the project. The requirements of other readers such as FHWA and various Headquarter offices also need to be considered. Many of the requirements in this manual, such as “Begin Federal Aid” and “End Federal Aid” Number and Section Lines shown on the Vicinity Map, may not be required to construct or administer the project but have value to other users of the Contract Plans.

The designer also needs to determine what information does not add value and only serves to clutter the plans and create confusion for the reader. Following are some examples of information that should not be included in plan sheets and how to eliminate excess plan sheets:

- Right of way lines that have no ties add no value. If right of way needs to be shown, it should have ties showing where it is.
- Future alignments that have nothing to do with construction of the project can clutter a plan sheet making it hard to find the needed information.
- Showing existing pavement markings/edge of existing roadway on paving plans or pavement marking plans.
- Showing anything that is slated for removal on a Site Preparation Plan and not anywhere else in the plans.
- Repeating plan sheets just to keep the same number of sheets in each series. Use break lines to eliminate sheets of nonchanging information. If there is no drainage code on a Drainage Plan sheet, the sheet shouldn't be included in the series. Also, for paving plans and pavement marking plans, if nothing changes between intersections or interchanges, use break lines to eliminate sheets.
- Whenever possible, the designer shall avoid the practice of cross-hachuring, or polka-dotting, or shading of large areas to represent areas to be paved, planed, or anything else. The roadway sections will adequately show the areas to be planed and paved. The use of large areas of cross-hachuring only hides or detracts from the rest of the information being displayed on the sheet.
- Profile sheets showing overlay, grinding and inlay, or paving exception areas of the project add no value. Show only the portions of the project that have a change in the vertical alignment of the roadway under construction. In the same way repeating information already shown on roadway sections on Paving Plans without showing dimensions adds no value to the contract.

If it does not provide needed information or add value to the plans—**REMOVE IT!**

(2) Plan Sheets

The designer, early in the design process, needs to give careful consideration to the different series of plan sheets that will be required and the information that will need to be displayed on each series.

The use of different levels of the computer-aided drafting and design (CADD) system

allow the flexibility to provide additional series of plans easily and quickly if it turns out that more information is required than originally anticipated. For this reason, it is important that all CADD work use the prescribed level scheme.

- (a) Most of the drawings created by CADD users in a design office are 11-inch x 17-inch plan sheets for PS&E. Therefore, references will pertain to that size unless otherwise noted. In general, the plotting scale for 11-inch x 17-inch plan sheets is 1 inch equals 100 feet (1"=100'), except as indicated below. Set the plotting scale in MicroStation under the WSDOT pull down menu.

There may be occasions when the scale of a plan sheet needs to be increased to as much as 1"=40' for an 11-inch x 17-inch plan sheet. When this is done, the designer needs to examine the sheet to be sure that required information is easily read. It may be necessary to resize some text or symbols to make them legible.

- (b) Vicinity Maps are to be drawn at a scale appropriate to the size of the project and the detail required to show the appropriate information, as discussed in [400.06, Plan Sequence](#).
- (c) Sheets requiring a larger scale to display a great deal of information in a small area should be drawn to an appropriate scale to allow all information to be easily read and understood.
- (d) Strip maps are to be drawn at a scale appropriate to display the information clearly.
- (e) Use cross-hachuring only for small, isolated areas of work such as pavement repair areas or butt joint planing locations that may get lost if not displayed in this manner. On occasion, with concurrence of the Region Plans Office, color may be used for clarity. Gray-area shading is reserved exclusively for use in an addendum to highlight changes to a plan sheet. (See the Appendices for Addendum Preparation.)
- (f) Plan sheets may be plotted or be hand drafted. If hand drafted, use black ink on full-size Mylar sheets and then reduce at the time of submittal to the region.
- (g) Sheets utilizing a combination of CADD-generated base maps and inked construction features will be considered hand-drafted sheets. No stick-ons are to be used on plan sheets.
- (h) All screened (half-toned) portions of plan sheets shall be dark enough to adequately reproduce.
- (i) Line weight, lettering height, and symbols for Contract Plans shall conform to the standards contained in [Division 5](#). It is important to conform to these standards for consistency and for reproduction.
- (j) Under most circumstances, lettering and dimensioning shall be placed so they may be read from either the bottom of the sheet or the right side of the sheet. Text shall not be placed across roadway centerlines or right of way lines. Text is to be clear of all lines, and should normally be placed outside the drawing itself. Leader lines shall not cross one another or text. The two exceptions to the bottom and right reading text are:
 1. All Section Corner and Township line numbers shall have their tops to the north, and Range Line numbers shall have their tops to the west, regardless of the orientation of north to the sheet.

2. All information identifying a centerline, such as line designation, stationing, tick marks, and bearings, shall be placed on top of the line and read left to right, with both the top of the line and left to right being based on the direction of the stationing.
- (k) When lines are coincidental, the following order of precedence for placing them on the sheet shall be used:
1. Construction Centerline
 2. Right of Way Centerline
 3. Range/Township Line
 4. Section Line
 5. Corporate Limit Line
 6. County Line
- (l) When Corporate Limit lines coincide with other lines, the Corporate Limits will be labeled in an effort to clarify that the line is also the corporate limits.
- (m) Each plan view sheet shall have a north arrow and a scale bar. The north arrow will normally be oriented towards either the top or right side of the sheet.
- (n) All plan view sheets and profile sheets that physically show the Begin Project and End Project headings will identify these points as follows:

STATE-FUNDED PROJECTS:

Begin Project	End Project
SR XX, MP XX.XX	SR XX, MP XX.XX
STA XX+XX.XX	STA XX+XX.XX

FEDERALLY FUNDED PROJECTS:

Begin F.A. No.	End F.A. No.
Begin Project	End Project
SR XX MP XX.XX	SR XX MP XX.XX
STA XX+XX.XX	STA XX+XX.XX

- (o) If the “Begin and/or End Federal Aid” are different than the “Begin and/or End Project,” this information will be displayed similarly to the above on a separate leader line drawn to the appropriate location. Use “Begin Construction” and “End Construction” when work is being done on crossroads adjacent to the main line work or at ramp termini.
- (p) Each series of plan view sheets (such as site preparation, drainage, paving, and others) shall have a legend of features applicable to that series, and the legend will appear on each plan sheet of that series.
- (q) The legend is to contain all items that are shown on any of the individual plan sheets in that series. For example, if your Drainage Plan series consists of 15 plan sheets, and throughout these 15 plan sheets there are 12 items to be identified in the legend, all 15 of the drainage plan sheets in this series will have a legend that will have all 12 items listed and identified.
- (r) If a sheet in the series is too crowded to include a legend, a note shall be added to the sheet to tell the reader on which sheet the legend may be found. The preferred method is to refer the reader to the legend on the preceding sheet.
- (s) WSDOT Contract Plans show the slope of a line in several forms, such as ratio, percentage, and decimal. When a slope is shown in ratio form in WSDOT

plans, it is shown as run over rise, which is opposite of mathematical standards in which a slope is always given as rise over run in ratio and fraction form. In WSDOT plans, a 4:1 slope means that the slope has a 4-foot horizontal run and a 1-foot vertical rise. Some WSDOT manuals further clarify the meaning of a 4:1 slope by adding a post text, such as 4H:1V, to further clarify that there are four units horizontal (run) and one unit vertical (rise). However, WSDOT Contract Plans will not carry such a post text.

- (t) Plan sheets prepared by architects and engineers for building facilities and associated site improvements shall be exempt from the requirements of the drafting standards described in this chapter. Drafting standards for building facilities and associated site improvements shall be determined by the Facilities Administrator.

400.05 Plan Sheet Sizes and Layout Format

- (a) The Advertisement set of plan sheets shall be on 11-inch by 17-inch paper.
- (b) If the Contract Plans have more than 225 sheets or Contract Provisions have more than 225 pages, they will need to be separated into volumes, with no volume having more than 225 sheets or pages.
 - The break for volumes is to be made at a logical point in the package, which may not be at 225 sheets or pages.
 - If a project has 275 plan sheets, and the last 80 are bridge sheets, the logical break would be between the civil sheets and the bridge sheets.
 - If multiple volumes are required for the Contract Provisions, the logical break would be at the end of a main section. For example, break between HOT MIX ASPHALT PAVEMENT and the following main section, CULVERTS.
 - Do not place the break in the middle of a section.
- (c) Stamping: WSDOT plans and specifications shall be stamped with a seal, signature, and the date signed; the expiration date of the license is optional. Licensees are directed to WSDOT Executive Order E 1010.00, RCW 18.43, and WAC 196 (Engineers and Land Surveyors); RCW 18.08 and WAC 308-12 (Architects); and RCW 18.96 and WAC 308-13 (Landscape Architects).
 - The licensee's seal shall be placed on all plan sheets adjacent to the WSDOT logo, except for the Index to the plans, Vicinity Map, Summary of Quantities, and Quantity Tabulations. Bar-Lists are not required to be stamped. This space should be reserved during initial plan sheet layout.
 - The following plan sheets prepared by WSDOT are not required to be stamped: index, Vicinity Map, Summary of Quantities, Quantity Tabulations, Bar-Lists, TESC sheets, and Traffic Control Plans.
 - For plans prepared by consultant/developers, the Licensed Engineer's seal, signature, date signed (expiration date of license is optional), and logo is to be placed on all plan sheets adjacent to the WSDOT logo. The Index to the plans, the Vicinity Map, the Summary of Quantities, Quantity Tabulations, and Bar-Lists are not required to be stamped. This space should be reserved during initial plan sheet layout.
- (d) Construction notes shall be numbered consecutively within each plan sheet series of the project. However, only the construction notes that are applicable to a particular sheet shall be shown on that plan sheet. Once you have created a

construction note 1, it will always be the same for that plan sheet series. Continue sequencing of construction notes consecutively as you add them. **DO NOT** resequence from one plan sheet to the next. Each plan sheet series will have consecutive construction notes.

(1) Title Bar Information

All plan sheets have a title bar on the bottom of the plan. Fill in the information according to the following instructions:

- **PLOTTED BY:** The first and last name of the person who created the plot.
- **DESIGNED BY:** The first and last name of the person who designed the sheet.
- **ENTERED BY:** The first and last name of the CADD operator who electronically entered the plan.
- **CHECKED BY:** The first and last name of the design team leader or person who checked the plan.
- **PROJ. ENGR.:** The first and last name of the design Project Engineer.
- **REGIONAL ADM.:** The first and last name of the Region Administrator.
- **REVISION box:** To be filled out when there is a revision made after the Advertisement Date. This is generally for the purpose of issuing an addendum

In the block labeled REVISION, give a brief description of the revision that was made.

- **DATE:** Enter the date in which the revision was made.
- **BY:** Enter the initials of the person who made the revision.
- **REGION NO.:** This is an FHWA number; 10 is for Washington State.
- **STATE:** This should always be WASH.
- **JOB NUMBER:** Enter the number used for the Estimate Bid Analysis System (EBASE) that is issued by the Region Plans Office.
- **CONTRACT NO.:** This field is left blank. The contract number is entered by hand at Headquarters after the contract has been awarded.
- **FED. AID PROJ. NO.:** Enter the Federal Aid Project Number if there is federal aid in the construction phase of the project. This number can be obtained from the Region Program Management Office.
- **LOCATION NO.:** Enter the preliminary engineering work order number.
- **PE STAMP BOXES:** All plans that are considered final and that will be part of the advertised contract must contain the seal/stamp of the licensee who prepared or directly supervised the work. Preliminary documents—those documents not considered final—shall be stamped by the licensee who prepared or directly supervised the work. For more direction, refer to Executive Order E 1010.00, WAC 196-23-020, and RCW 18.43.
- **PROJECT TITLE BOX:** This is the upper portion of the box that is directly to the right of the WSDOT logo. Enter the exact project name, as determined by the Region Plans Office.
- **SHEET TITLE:** This is the lower portion of the box that is directly to the right of the WSDOT logo. Enter the sheet name as it appears in the Title column of the Index.
- **PLAN REFERENCE:** This is the upper portion of the box farthest right on the title bar. This is an alpha/numeric number. The alpha portion is selected by the design team; it should be logical in nature, containing letters that refer to the type

of plan. The numeric portion is sequential. The plan reference shall match the Plan Reference No. column of the Index. For suggested plan reference abbreviations, see the *Electronic Engineering Data Standards Manual*.

- SHEET NUMBER: This is the lower portion of the box furthest right on the title bar. This field is filled in on the plans that are advertised when the total number of sheets is fixed. Contact the Region Plans Office for instructions on filling in this field for the review of the plans.

400.06 Plan Sequence

(1) Assembling Plans

The following outline is the sequence to follow when assembling plans for a construction project. It is a list of possible plan sheets and is not intended to represent a project.

(a) Plan Sequence

1. Index.
2. Vicinity Map.
3. Summary of Quantities.
4. Borrow, pit, quarry, stockpile, waste sites, and reclamation plans.
5. Roadway sections: main roadway, ramps, frontage roads, detours, others.
6. Grading sections, if applicable.
7. Stage construction plans, if applicable.
8. Alignment or Alignment/Right of Way.
9. Quantity Tabulation sheets (Q-tabs). These sheets will be placed immediately prior to the plan sheets showing the work being tabulated, such as site preparation items, temporary erosion and sediment control (TESC) items, guardrail items, and traffic items.
10. Site Preparation. Existing topography and removal and demolition work may be shown on Alignment Plans; however, if extensive details are required and the plan sheet becomes too crowded, it should be on a separate series.
11. Existing Utilities. This is an extension of the Site Preparation Plan and is only required if the existing utilities are so extensive that they can not be clearly shown on the Site Preparation Plan.
12. Roadway profiles—normally only required when grade is being revised.
13. TESC Plans—may not be required if work is minor and can be combined with Drainage Plans or other plan sheets. Refer to [Division 7](#) for information on when a TESC Plan is required.
14. TESC details.
15. Drainage structure notes—will precede plan series showing drainage features.
16. Drainage Plans—may not be required if work is minor and can be combined with another series of plans.
17. Drainage profiles—will follow plan series showing drainage features.
18. Drainage details.

19. Utility Structure Note sheets—only required if there is work to be done by the contractor on existing utilities.
20. Utility Plans—only required if there is work to be done by the contractor on existing utilities.
21. Utility details—only required if there is work to be done by the contractor on existing utilities.
22. Irrigation Structure Note sheets.
23. Irrigation Plans.
24. Irrigation details.
25. Landscape, wetland, rest areas, and viewpoints.
26. Interchange contours.
27. Paving Plans are required for overlay projects when paving breaks, paving dimensions, intersection paving, taper lengths, dimensions of taper widths, and so on, can't be shown adequately on the roadway sections. In this case, the roadway sections, Paving Plans, and Paving Detail sheets are to be prepared in conjunction with each other to show all the paving work.
28. Paving details.
29. Minor structures such as retaining walls.
30. Illumination Plans—may be shown on Paving Plans if illumination is minor and Paving Plan will not be too crowded.
31. Illumination details—will follow plan series showing illumination layout.
32. Traffic Signal Plans.
33. Traffic signal details.
34. Intelligent Transportation System (ITS) Plans.
35. ITS details.
36. Sign Specification sheets—will precede the plan series showing the signing.
37. Signing Plans—may be shown on Paving Plans if signing is minor and Paving Plans will not be too crowded.
38. Signing details—will follow plan series showing signing.
39. Bridges and other structures.
40. Building plans and details.
41. Traffic Control Plans.
42. Detour routes and detour signing. If the detour is simple and straightforward, this information may be shown on the Vicinity Map, as long as the additional information does not detract from the Vicinity Map.

(2) Plan Sheets

The designer is to determine the actual plan sheets required to best depict the project. Each project will require the designer to verify the order of plan sheets to determine what is or isn't required. A basic P1 paver will normally not require as many sheets as a project that has safety, mobility and paving work. When two or more projects are merged into one project, the plan sheet

sequence will be followed. Even with logical combinations of plan sheet series, the following basic order of sheets shall be maintained:

- (a) **Item information:** Quantity Tabulation/Structure Note/Sign Specification.
- (b) **Plan series:** The series showing the items of work described on the Quantity Tabulation/Structure Note/Sign Specification sheets.
- (c) **Details:** For work associated with items shown on the plan sheets.

(3) **Index**

See Contract Plan [Examples 4-1 and 4-2](#).

An index is required for all projects with 30 plan sheets or more. A project with more than one volume of plan sheets shall have a complete project index in each volume, providing information on all volumes.

List the plan sheet titles exactly as they appear on the plan sheets. Avoid sheet titles such as “Miscellaneous Details.” If a sheet contains guardrail and drainage details, use “Guardrail and Drainage Details” as the sheet title and in the index. Note that not everyone using the plans will be as familiar with them as the designer.

On small projects, and as scale permits, the index can be placed on the Vicinity Map plan sheet. However, DO NOT reduce your Vicinity Map size to allow you to combine the index and Vicinity Map as one plan sheet.

Regardless of the size of the project, it is recommended that Plan Reference Nos. be used on all projects in lieu of plan sheet numbers during the design phase.

Plan sheet numbers are not critical during the design phase of the project. Until the design team leader or region plans reviewer has all the plan sheets for all the separate series (such as paving, drainage, and signing) to be included in the project, the total number of plan sheets to be included in the contract is unknown.

There are several advantages of using Plan Reference Nos. to identify plan sheets for individual series during the design phase:

- The designer doesn’t have to know the total number of plan sheets included in the contract.
- Once Plan Reference Nos. have been assigned to individual plan sheets included in a series, these numbers should not have to be changed. This makes referencing details on other plan sheets easy to do and should help eliminate the habit of forgetting to do this. Once the statement “FOR DETAIL, SEE SHEET D12” is placed on the plan sheet, this reference will almost always be correct unless plan sheet D12 is deleted from the contract.
- Plan sheets can be inserted or deleted within the series with slight modifications to reference number. As an example: a plan sheet that needed to be inserted between D6 and D7, could be called D6a, which would allow it be placed between D6 and D7, without requiring the existing D plan series to have to renumber.

(4) **Vicinity Map**

See Contract Plan [Examples 4-2, 4-3, 4-4, 4-5, and 4-6](#).

Every project will have a Vicinity Map plan sheet that shows and has labeled **all** construction centerlines, detours, and haul routes.

Projects may be broken into sections (see Contract Plan [Examples 4-3](#) and [4-4](#)) when it is required or necessary to split the project into different areas.

This is the logical way of showing the work to be performed, listing quantities, and so on, when all the work involved is not conveniently located in one continuous area with no exceptions or gaps.

If the entire project is on one State Route (SR), but has breaks in the areas where work is to be performed between the Begin Project and End Project, these breaks should be labeled as “exceptions” or “exception areas.” If there are numerous exceptions or exception areas, an alternate method of showing these exceptions is to label as “Sections” the areas where work is to be performed.

If the project has multiple SRs, where the work is definitely spread out, it is highly recommended that the work be broken into **Sections**. When multiple SRs are used in a title, the smallest SR number followed by et al. is used to shorten the title.

AN IMPORTANT REMINDER

If the project is broken into Sections, make sure all references to a Section are exactly the same throughout all plan sheet series (Summary of Quantities, Roadway Sections, Quantity Tabulation sheets, Structure Note sheets, Profile sheets, and so on) in the plan set for that Section. All exception work areas and gaps must be shown identically in all locations and references throughout the Contract Plans and Provisions.

- (a) Project limits are to be referenced to State Route Mileposts (SRMP) based on the State Highway Log (TRIPS System).
- (b) Stationing shall be stated at the Begin Project and End Project on main line and the Begin Construction and End Construction for secondary crossroads.
- (c) The Begin Project and End Project are defined as follows:
 - For projects with one applicable State Route, the beginning and ending of any permanent work on the main line highway is assigned as Begin Project and End Project.
- (d) If the project includes multiple SRs, there is still only one Begin Project and End Project location. Projects with multiple SRs may have a Begin Project on one SR but an End Project on a different SR. Begin Project is assigned to the beginning of permanent work at the most westerly or southerly portion of the project, and the End Project to the most easterly or northerly portion, determined by the general direction of the project activities.
- (e) Begin Construction and End Construction are defined as follows:
 - The limits of permanent work, such as signing, guardrail, striping, drainage, landscaping, and so on, to be performed on city, county, or state roadways not on the project main line, included in the contract.
- (f) The Begin and End of Federal Funding shall be shown and referenced by Federal Aid Number, milepost, and stationing. The federal funding limits will most often be the same as the project limits, but will cover all work.
- (g) All equations and exceptions shall be shown on the Vicinity Map. If the scale of the Vicinity Map is such that equations can be shown with headers and leader lines to the approximate point where the equation is located (by stationing), this is the preferred method to identify the equation. If there is

insufficient room on the Vicinity Map itself (because of scale) to clearly identify the equation and exception areas, they may be shown in tabular form (data box) on the Vicinity Map plan sheet.

- (h) The distance in miles from the beginning of project (Begin Project) to the nearest city or town and in the opposite direction from the other end of the project (End Project) to the nearest city or town shall be shown. Do not use “local” descriptions such as “10 miles to EZ Corners.” If the nearest city or town is shown on the WSDOT highway map, it should be recognizable enough to be used for this purpose. The city or town shall be one that is shown on the WSDOT highway map.
- (i) The Vicinity Map is the only place in the plans where the overall layout of the main line, ramps, frontage roads, and street locations are shown. County roads and city streets shall be shown and labeled if they are important to the project. Do not show county roads and city streets just to “fill up” the sheet. As with all plan series, delete anything that does not add value to the plan sheet or provide detail or information that your reader does not need. **DO NOT LABEL LOCAL BUSINESSES ON THE VICINITY MAP.**
- (j) The scale of the Vicinity Map shall be large enough to easily identify all construction lines and appropriate local and private streets or roadways. A scale bar will be provided on the Vicinity Map. In addition to including the scale bar, the scale of the plan sheet, detail, and so on, will also be shown in text underneath the scale bar.
- (k) Material sites, waste sites, stockpile sites, and haul routes will be shown. Do not reduce the scale of the Vicinity Map so that these sites can be shown to scale. If they are too far removed from the project to be shown at the scale appropriate for the Vicinity Map, they can be shown in a separate box in a corner of the Vicinity Map sheet at a smaller scale. The haul route from the site to the highway shall be shown, and the distance in miles from the site to the nearest point on the project will be shown or noted.
- (l) Features such as railroads, waterways, and streams, as well as overcrossing and underpassing roadways, shall be shown and named. Railroads running parallel to the project and adjacent to the right of way are also to be shown. If the railroad crosses through the project, there is to be a clear indication of whether or not the intersection is at grade.
- (m) Wetland and wetland mitigation sites are to be shown on the Vicinity Map. The designer may have to blow up sections of the Vicinity Map in order to make wetland and wetland mitigation sites visible.
- (n) Bridges within the project (construction) limits shall be identified by bridge number and as being either “INCLUDED IN PROJECT” or “NOT INCLUDED IN PROJECT.” A bridge is “included” in the project if something is being physically done to the structure, such as traffic barrier modifications, deck overlay, widening, earthquake proofing, or expansion joint work. Work that is simply attaching things to the bridge, such as guardrail or conduits, or work that does not affect the bridge, such as striping, would not cause a bridge to be “included in project.”
- (o) Cadastral information (Township, Range, and Section) is to be shown on the Vicinity Map and any plan sheets that show dimensioned right of way and/or limited access.

- (p) Township, Range, and Section information will be shown on the Vicinity Map as follows:
- Township and Range Lines will be shown and identified if they fall within the limits shown on the Vicinity Map.
 - If Township and Range Lines do not fall within the limits shown on the Vicinity Map, Township and Range information will be shown at the top center of the Vicinity Map plan sheet.
 - Section Lines will be shown with associated Section Corners, with Section Numbers. On small projects, or larger scale Vicinity Maps, this may require the use of break lines to bring the corners within the limits shown. If the corners are found, the ties to centerline are to be shown. If there are no Section Corners within the limits shown, a quarter or sixteenth Section Line can be shown and the cadastral information (Township, Range, and Section) given to indicate location.

(5) Summary of Quantities

See Contract Plan [Example 4-7](#).

The Summary of Quantities sheet provides a complete tabulation of all bid items and pay quantities that have been determined by the designer/design team to be required for the project. Bid items and quantities are entered into the project estimate via EBASE. The Summary of Quantities Plan sheet is generated from the estimate database by requesting a Summary of Quantities report. Utilization of the program BidTabs Pro will give the designer access to current bid prices for use on the estimate.

The Summary of Quantities shall be divided into groups and columns within the groups.

(a) Groups

A separate group is required whenever:

- There is a change in program item number (PIN).
- There is a change in program or subprogram (I2, P1, P2, and so on).
- There is a change in funding: any change in funding participants, their individual participation rates, or their source of funding. Funding participants may be the FHWA, a state agency or other public agencies, a county, a city, or private organizations.
- There is a change in control section.

A separate state-funded group (one per project) is required for third-party damages. The bid item “Reimbursement for Third Party Damage” is included in this group; it will be a minimum of \$5.00 (see the *EBASE User’s Manual*).

(b) Columns

Each group is required to have at least one column associated with it. Additional columns within a group are required for the following:

1. Each bridge and structural retaining wall—those covered in Section 6-11 of the *Standard Specifications*—shall have its own column in order to identify materials quantities required to construct this item.
2. Each state-furnished pit site (mandatory or not) shall have its own column.

There are exceptions that will be allowed for item 1 above. For projects with a single wall or a single bridge, or both, the wall and bridge quantities may be entered into a single column or combined with another column. For projects with multiple walls, if the materials quantities required for each wall are clearly tabulated in the plans, these wall quantities may be entered into a single column or combined with another column in the Summary of Quantities.

In addition, when paving across multiple bridges, the paving quantities need not be separated out for each bridge and may be included in main line paving quantities in the Summary of Quantities.

The intent of item 1 above is to be able to identify the quantities of work at each wall or bridge during construction activities.

The designer is advised to use additional columns within groups to show quantity breakouts for individual construction lines. For example, by using separate columns for the main line, a frontage road, and each ramp, it is much easier to track and make quantity revisions during design, and much easier to track quantities for overruns or underruns during construction, than it is if all of the quantities are combined in a single column.

(c) **Quantities**

The quantities for the following types of items will typically appear only in the Summary of Quantities:

- Lump sum items: LS will appear on the Summary of Quantities for these items; the approximate quantity for lump sum items will appear in the Special Provisions
- Force account items
- Water
- Aeration items
- Structure items, such as bridges and structural retaining walls—although separate Quantity Tabulation sheets are desirable for structural retaining walls when there is more than one wall in a project
- Borrow materials—unless the conditions noted in [Division 7](#) apply
- Surfacing materials
- Paving materials
- Sign covering
- Sequential arrow sign
- Contractor piloted traffic control
- Traffic control labor
- Construction Signs Class A
- Traffic Control Supervisor
- Traffic control vehicle
- Spill Prevention Plan
- ESC Lead

Bid items shall be listed in the same order as they appear in the current Standard Item Table.

Bid items not listed in the Standard Item Table shall be intermixed, according to type of work, with the bid items that are listed.

Bid item names for nonstandard bid items shall be singular in form and close to similar nonstandard bid item names used in previous projects. This information can be found in BidTabs Pro. (See [Division 7](#) for additional information on standard items.)

(d) **Standard Item Table**

The Standard Item Table provides useful information to the designer in the last column to the right (Item Use Message). Listed in this column is a statement that will tell the designer what, if anything, needs to be done if this bid item is used in the project. Some of the statements that are listed in this column are as follows, with a definition of the statement:

STANDARD ITEM

Indicates that this bid item is a standard item and is covered in the [Standard Specifications](#). The designer may not need to do anything to revise or supplement the information provided in the [Standard Specifications](#).

However, the designer must decide whether information concerning this bid item, as addressed in the [Standard Specifications](#), is sufficient or whether more “project-specific” information is required.

REQUIRES SPECIAL PROV.

Indicates that the designer needs to do one of the following:

- Revise the appropriate section or sections in the [Standard Specifications](#).
- Supplement the appropriate section or sections in the [Standard Specifications](#).
- Write a “stand-alone” project-specific specification because the [Standard Specifications](#) does not contain information/direction for this item of work.

STD. ITEM, GSP REQUIRED

Indicates this bid item is a standard item, is covered in the [Standard Specifications](#), and there is a General Special Provision (GSP) that needs to be included in the contract Special Provisions when it is used. It is the designer’s responsibility to ensure the GSP is applicable or “project-specific” to the contract.

GSP ITEM

Indicates that a GSP exists and must be included in the contract Special Provisions. It is the designer’s responsibility to ensure this GSP is applicable or “project-specific” to the contract.

AMENDMENT ITEM

Indicates that an Amendment exists and must be included in the contract Special Provisions when this bid item is used.

REQ SPECIAL, HQ APPROVAL

Indicates that when this bid item is used, a project-specific Special Provision must be written and HQ Construction Office approval must be given prior to including this Special Provision in the contract.

HEADQUARTERS USE ONLY

Indicates this bid item will be included in contracts only when directed by the HQ Construction Office.

TECHNICAL SPECIFICATION

Indicates this bid item will require a technical Special Provision to be written. Architects generally write this type of Special Provision. These bid items are

typically used only for architectural-type work (such as building facilities construction at ferry terminals and rest areas).

SUPERSTRUCTURE ITEM

Indicates this bid item is to be used in conjunction with Standard Bid Item 4300 ONLY. The 9000 series bid items are to be used only to provide lump sum breakout data for bid item 4300 “Superstructure – XXXXXX.”

DO NOT use the 9000 series bid items as stand-alone bid items in your contract estimate.

(e) **Quantities**

A quantity shall not be duplicated within the body of the plans. The item totals shown in the Summary of Quantities shall be the sum of the quantities shown for the item throughout the plans. Quantities are typically listed in the Quantity Tabulation, Structure Note, and Profile Plan sheets. When quantities for an item appear in places other than where your reader would expect to find them, or when quantities for an item appear in two or more places throughout the plans, a cross-referencing statement, such as “FOR ADDITIONAL QUANTITIES – SEE SHEETS Qnn and Wnn,” shall be included.

Quantities for work items such as pigmented sealer, whose cost is included in the cost of the associated concrete, are shown in the plans for the sole purpose of aiding the contractor in the bidding process and shall be accompanied by the note, “Informational Only.”

Care must be taken when calculating quantities for surfacing and paving materials to ensure reasonable accuracy. The *Design Manual* contains units and conversion factors for estimating surfacing and paving quantities.

Quantities listed in the Summary of Quantities are intended to be representative of the work to be performed. Rounding will take place each time a quantity is placed on a Quantity Tabulation sheet, a Profile sheet, or another location in the plans. The total of the rounded quantities will be carried forward to the Summary of Quantities.

(f) **Rounding of Quantities**

The following general rules shall apply to the rounding of quantities:

1. Items having an estimated unit price of \$9.99 or less will be shown to the highest multiple of 10; for example, 3,640 (not 3,637) units of haul at \$0.50, and 560 (not 554) tons of ballast at \$1.25.
2. Items with an estimated unit price of \$10.00 to \$99.99 will be shown to the nearest full digit; for example, 61 (not 60.5) cubic yards of concrete at \$43.00.
3. Items with an estimated unit price of \$100.00 or more will be shown to one decimal place; for example, 18.3 (not 18.25) acres of clearing at \$1500.00.
4. Exceptions to numbers 1, 2, and 3 above:
 - Earthwork items, roadway excavation, embankment compaction, and borrow excavations are to be rounded to the nearest multiple of 10 units, regardless of price. The rounding for roadway excavation and embankment compaction will be made for each entry on the Profile sheets. The borrow quantities will be rounded to the nearest

10 units and placed on the Summary of Quantities. On a new construction project with extremely large earthwork quantities, the quantities could even be rounded to the nearest 50 units at each entry on the Profile sheets.

- HMA and crushed surfacing items are to be rounded to the nearest 10 units.
- Pipe items will be rounded to the nearest foot for each pipe run entered on the Structure Note sheets, regardless of price.

(g) **Unit Bid Prices**

Good sources to use for determining the estimated unit bid prices for quantities are BidTabs Pro and Unit Bid Analysis. If these are not available through your Region Intranet Home Page, they can be accessed via the WSDOT Project Development Home Page under the “Engineering Applications” heading:

www.wsdot.wa.gov/Design/ProjectDev/

(6) Contract Reclamation Plans

See **Contract Plan Example 4-8**.

A Contract Reclamation Plan will clearly set forth all reclamation work to be accomplished in the contract.

A Contract Reclamation Plan is required for every WSDOT contract that contains a WSDOT furnished-material source. The Contract Reclamation Plan will be based on the Ultimate Reclamation Plan (ultimate REC plan). A reproducible (reverse-reading Mylar) of the approved ultimate REC plan can be obtained from the Region Materials Laboratory. This plan will be modified to create a Contract Reclamation Plan, which will be included in the Contract Plans.

By RCW 78.44, the approved ultimate REC plan must be followed or WSDOT is subject to fines for each incident. If the contract work requires deviation from the ultimate REC plan, a modification to the ultimate REC plan has to be submitted for Department of Natural Resources (DNR) approval prior to beginning work at the site.

In some cases, Contract Reclamation Plans need to be developed during Contract Plan preparation for sites that do not have ultimate REC plans. Materials sources located on federal land or sites smaller than 3 acres in area usually do not have ultimate REC plans.

(a) **Contract Reclamation Plan Elements**

1. The existing contour lines shown on the Ultimate Reclamation Plan when it was approved will be updated to show the topography as it exists immediately prior to the contract. Only the contours in the portion of the site affected by your project need be shown, not for the entire site.
2. The contractor’s designated work area will be noted.
3. The available raw material will be indicated, or, when appropriate, a note may be added on the plan stating that sufficient raw material is available for the project.
4. A block detailing materials to be produced and reclamation items needed under this contract.
5. The interim and reclaimed slopes shall be no steeper than the slopes on the ultimate REC plan.

6. Specific directions for excavation will be added as a note; for example, “Excavation shall progress to full depth from the existing face of excavation toward the southeast.”
7. Only notes on the ultimate REC plan that are applicable to work being performed under the contract are to be included on the Contract Reclamation Plan.
8. Other notes and information necessary to the specific contract will be added. It is the intent that the Contract Reclamation Plan stand alone for the work (reclamation) to be accomplished under the contract.

(b) **Contract Materials**

It is the designer’s responsibility to verify with the Region Materials Laboratory that the quantity of available material is accurate and that it is possible to produce all the materials listed within WSDOT specifications. If the contractor will be required to perform some special or extra work to manufacture material that meets the specifications, the special or extra work requirements are to be included in the Special Provisions.

Quantities for stripping, clearing, and grubbing, and all other items of work to be performed within a site, shall be tabulated on the plan. For a nonmandatory site, the items of work shall be site-specific (“Clearing and Grubbing – Site QS-A-495”). For a mandatory site, the work will fall under the general contract work item (“Clearing and Grubbing”), but will be shown in a separate column.

Identification numbers for stockpile and waste sites are assigned by the Region Materials Laboratory. Although a Contract Reclamation Plan is not required for stockpile or waste sites, the plans shall indicate any restrictions on the use of such sites.

Access to the sites shall be shown. If an access road is to be built, rebuilt, or widened, indicate the width of right of way, and clearly identify all work to be performed by the contractor on the access roads as a part of the contract. How the contractor will be paid for the access road work will be outlined in the Contract Provisions.

Agreements are required with the owners of all roads that make up the haul route. These agreements will indicate WSDOT’s and the contractor’s responsibilities for returning the roadway to the “before hauling” condition.

(7) Roadway Sections

See Contract Plan [Examples 4-9, 4-10, 4-11, 4-12, 4-13, and 4-14](#).

Roadway sections are to provide complete geometric information on the roadway cross section from the subgrade up and general information left and right of centerline. The information on the roadway sections will tie directly to the Paving Plans and the profiles, if these series of plans are included in the project.

On federal-aid projects, future paving and surfacing depths, required to bring the roadway to the ultimate design cross section, shall be shown in order to qualify for future participation by the FHWA.

Roadway sections are required for every combination of surfacing and paving depths used on the main line, ramps, detours, frontage roads, road approaches, city streets, and so on.

Roadway sections are to represent conditions from the subgrade up for the entire length of the construction line(s) (such as main line, ramps, detours, frontage roads, road approaches, and city streets) included in the project. Start at the beginning station on an alignment and identify all stationing to the end of line without gaps/overlaps.

When drawing roadway sections, it is recommended that proportional scaling be used to indicate lane widths and depths of materials to be placed. A 12-foot lane should be drawn so that it appears slightly larger than a 10-foot shoulder. A 0.15-foot lift of hot mix asphalt (HMA) should be drawn so that it appears approximately one quarter the thickness of a 0.60-foot lift of gravel base course.

Roadway sections should be drawn to reflect how the work is expected to be performed in the field. If HMA is to be placed in multiple lifts, draw the roadway section to reflect this fact by showing the number of lifts with the required depths of each lift. Show each lift with an edge line that would indicate where each lift would end left and right of centerline. **DO NOT** simply draw each lift of HMA to extend out into the shoulder unless this is exactly how the HMA is to be placed.

Variable dimensions (for example, Varies 2' to 10') may be used to represent differences in shoulder or lane widths, or transition areas, only if there is a Paving Plan that clearly shows, by stationing, the actual widths desired. If the project is a pavement overlay project and no Paving Plan is going to be provided, the use of variable horizontal dimensions is discouraged unless construction notes or a table is used to describe, by stationing, where the variable paving widths or transitions begin and end.

A generic roadway section for bridges must be provided to avoid having gaps in stationing. If the bridge is being overlaid, additional detail will be required; be sure the roadway section matches any bridge information in the plans. When a project has a structure on the main line or a secondary line that is not included in the project, a paving exception should be noted on the Roadway Section sheet.

Bridge approach slabs, if required, shall be shown as a separate roadway section.

Station equations, paving exceptions, and project exceptions are to be shown in proximity to the roadway section to which they apply.

(a) **Roadway Section Items**

Each roadway section in the project shall show the following applicable items:

1. Horizontal dimensions of the roadways, as approved in the Design Decision Summary.
2. Project-specific design details and required features such as curbs, sidewalks, or riprap.
3. The depths of surfacing and paving.
4. Station-to-station limits for each line represented by the roadway section.
5. The position of the profile grade, the pivot point for super transition, and the construction centerline.
6. The depth from profile grade to the roadway surface being constructed if the project does not include ultimate design surfacing. This depth shall be labeled "Future."
7. The type, width, and thickness of the existing surface, if the characteristics of the existing surface will affect construction.

8. A general note indicating that all surfacing and paving depths are compacted depths and courses shall not exceed the depths defined in the *Standard Specifications*.
 9. The roadway ditch depth shall meet the design criteria in the *Design Manual*. A slope table should be used when embankment and excavation heights vary enough to require different slope rates. Show sideslopes for embankment sections and inslopes and backslopes for excavation areas.
 10. A section showing shoulder widening for guardrail. If shoulder widening for guardrail is isolated to one or two roadway sections, it can be shown as part of the particular section. If shoulder widening for guardrail applies to several roadway sections, a separate shoulder-widening section can be drawn and referenced from the applicable roadway sections.
 11. A section showing the shoulder design on the outside of a curve (super elevation section) if the project involves constructing subgrade on the outside of curves (a standard CADD detail that need only be shown once).
 12. A surfacing legend is to be shown on each sheet indicating the type of surfacing material, with the exact item name as found on the Summary of Quantities. For HMA, it is necessary to indicate the class of material used but not the performance grade (PG) when only one grade is used for the entire project. However, if there are two or more performance grades used on the project, they must all be detailed on the roadway sections. Each type of material shall be assigned an identifying number enclosed by a hexagon symbol.
 13. Construction notes shall be numbered consecutively, but only the construction notes that are applicable to a particular sheet will be shown on the sheet. Once you have created a construction note 1, it will always be the same for that series. Continue sequencing of construction notes consecutively as you add them. **DO NOT** resequence from one plan sheet to the next. For example:
 - Sheet R1 may have construction notes 1, 2, 3, and 4.
 - Sheet R2 may have construction notes 1, 3, and 5. (Notes 1 and 3 on sheet R2 would be identical to notes 1 and 3 on sheet R1, and note 5 on R2 is a new note, consecutively numbered).
 14. If the total paving depth for a class of HMA exceeds the nominal compacted depth specified in the *Standard Specifications*, one of the following methods of indicating the paving requirements will be used:
 - Multiple lifts shall be drawn on the roadway section, indicating the desired minimum compacted depth of each lift.
 - A construction note shall be provided for the roadway section specifying the number of lifts required and the maximum allowable compacted depth for any lift.
- (b) **Paving Depths**

If you don't show paving depths in your roadway sections (as specified in the two methods above) and the paving depths for your project exceed normal depths (as shown in the *Standard Specifications*), you should take another look at Section 5-04.3(9) of the *Standard Specifications*. In part, it reads:

5-04.3(9) Spreading and Finishing

The mixture shall be laid upon an approved surface, spread, and struck off to the grade and elevation established. HMA pavers complying with Section 5-04.3(3) shall be used to distribute the mixture. **Unless otherwise directed by the Engineer, the nominal compacted depth of any layer of any course shall not exceed the following:**

The bold sentence in the preceding paragraph is where our plans can create problems if they are not in accordance with 14a or 14b above. When roadway sections show paving depths that exceed the allowable depths listed in the *Standard Specifications*, the depths shown in the plans will supersede the depths in the *Standard Specifications* (see Section 1-04.2) in accordance with the order of precedence.

(8) Grading Sections

See Contract Plan [Example 4-15](#).

These plan sheets will show items such as: types of embankment; use of waste in slope flattening; drainage layers; composite sections; relief ditch details; slope tables; unsuitable stripping depth tables; controlled blasting slopes; wetland sections; horizontal drain details; surcharge details; large unsuitable foundation excavation and backfill areas; and soil stabilization details. Most projects will not require grading sections.

(9) Quantity Tabulation Plan Sheets

See Contract Plan [Examples 4-17](#) and [4-17A](#), and the Appendices.

Quantity Tabulation Plan sheets are used to tabulate the locations, quantities, and notes pertaining to specific bid items.

(a) Quantity Tabulation Plan Sheet Items

The following types of items will normally appear on Quantity Tabulation sheets:

1. Removal items—except items paid by lump sum.
2. Asphalt concrete curb and asphalt concrete gutter.
3. Timber and lumber—except bridge items.
4. Cement concrete approach.
5. Cement concrete curbs, and curb and gutter.
6. Guardrail items, including anchors, terminals, and transition items.
7. Concrete barrier items.
8. Impact attenuators.
9. Guideposts.
10. Raised pavement markers, paint lines, and pavement marking items.
11. Conduit pipe—except bridge, illumination, and traffic signal system items.
12. Wildlife reflectors.
13. Steel reinforcing bars and wire mesh—except bridge structural retaining walls and drainage items.

14. Monument cases and covers.
15. Cement concrete sidewalk.
16. Asphalt concrete sidewalk.
17. Concrete slope protection.
18. Fencing items, including gates and end, corner and pull posts.
19. Adjustment items.
20. Delineation lights.
21. Temporary Erosion and Sediment Control Devices

(b) **Quantity Tabulation Plan Sheet Preparation**

Quantity Tabulation Plan sheets are to be prepared on 11-inch by 17-inch paper. The Quantity Tabulation spreadsheet program is available through the Region Plans Offices or the HQ Project Development Unit. For additional information and instructions for the Quantity Tabulation spreadsheet, see the Appendices).

Standard sheets have been prepared with the heading "Quantity Tabulation." A descriptive addition (see types of items above) may be added after the plan sheet heading "QUANTITY TABULATION – XXXXXXXX XXXXXX" to indicate what type of work is included on this plan sheet.

Quantity Tabulation Plan sheets will be placed immediately preceding the plan sheets that contain the tabulated items. This will intersperse them throughout the plans.

For projects involving only a few items, the quantities may be placed in data boxes on appropriate plan sheets or on Profile sheets, eliminating the need for Quantity Tabulation Plan sheets. Data boxes should be laid out in the same manner as the Quantity Tabulation sheets.

Blank columns shall be provided between listed bid items and blank rows shall be provided in station listing (about every fifth entry and a space or two between each reference sheet listed). This procedure allows for the addition of bid items and stationing with ease, even during the addendum phase.

(c) **Bid Items**

The bid items shall be placed from left to right in the same order in which they appear in the Summary of Quantities Estimate.

Bid items shall be identified on the Quantity Tabulation Plan sheets exactly as they appear in the *Standard Specifications* (spelling, punctuation, spacing, and so on) and in the same order as they appear on the Summary of Quantities.

If there are more bid items to be tabulated than will fit across the top of the sheet, with the appropriate blank spaces, additional Quantity Tabulation Plan sheets will be required. The station listing will be identical for the continued sheets. Likewise, if there are more station listings than will fit on a single sheet, with the required blank spaces, additional Quantity Tabulation Plan sheets will be required. The bid items across the top will be identical for the continued sheets.

Each time an item is used in a different location, it will have a separate quantity entry. Related items, however, may be included in a single entry if the station

limits are the same. For example, a single entry could include the type of guardrail, required anchors, and transition types.

Each quantity entered on the Quantity Tabulation Plan sheet is to be rounded appropriately at the time of entry. Do not add up the unrounded quantities and round the total to carry forward to the Estimate/Summary of Quantities. (See the information on rounding in [400.06\(3\), Summary of Quantities](#).)

The bid item totals on the Quantity Tabulation sheets must be consistent with the bid item totals entered in the Summary of Quantities Estimate.

(d) **Plan Reference No.**

The **Code** column shall contain the Quantity Tabulation code number, which is made up of the Plan Reference No. and the number identifying the individual construction feature on the sheet (for example, P1-1, P1-2, ... P1-6, P2-1, P2-2, ... P2-26). The numbers shall be listed in the ascending order of plan sheets.

Bid items, identified by station(s) and quantity or quantities, on individual Quantity Tabulation Plan sheets are tied directly to the plan sheet series they are related to by the number immediately following the Plan Reference No. mentioned above. The related series sheet shall have its own consecutive series of numbers identifying construction features (octagonal enclosed numbers beginning with number 1) beginning in the top left corner of the sheet and progressing across and down the sheet. A light, arrowless line shall be drawn from the octagon to the construction feature. When a construction feature is continued on more than one sheet, the octagon on the continued sheet shall be divided with a horizontal line, and the Plan Reference No. on which the construction feature first appears shall be inserted in the upper half and the first sheet individual identifying number shall be inserted in the lower half. A larger scale octagon may be used if this is done. The octagonal symbol shall not be used for any other purposes.

For items such as pavement markings that are continuous for the entire project, list the station limits and leave the code column blank.

(e) **General Notes**

The General Notes will include information required to complete the data for a particular construction feature, such as:

- Guidepost type and color.
- Guardrail placement case, terminal connection, alternate anchor type, and connection type when connecting transition to stiffer barrier like bridge rail.
- Acceptable impact attenuators for each location.
- References to applicable Special Provisions identify the Special Provision exactly by name.
- References to applicable details in the Contract Plans. Identify the exact plan sheet (using the Plan Reference No.) where the detail is located.
- Reference to applicable Standard Plan(s) and provide the Standard Plan number, which is located in the bottom right corner of the page.
- Type of curbing to be used.

If the quantities for an item appear on other plan sheets in addition to the Quantity Tabulation Plan sheets, cross-references shall be made to the sheets where the additional quantities can be found.

(10) Alignment/Right of Way Plan

See Contract Plan [Examples 4-16 and 4-18](#).

The alignment and right of way (R/W) information will appear on the same series of plan sheets for most projects.

Right of way is required to be shown for projects having work outside the existing toe of fills or existing bottom of ditches. If the widening work is sporadic throughout the project, it is permissible to show the R/W only in the areas of the widening. If the areas are closely spaced, it is best to provide the R/W through the entire area, or the whole project, as opposed to showing a section of R/W for 100 feet, then a 100-foot gap, and then another 100-foot section.

If R/W information is not required (such as for a paving project), the alignment information could be shown on another plan series, such as the Site Preparation Plan series or the Paving Plan series, as long as the additional information does not cause overcrowding of the plan sheet.

Site preparation information may appear with the Alignment Plans, but only if there is minimal existing topography and minimal site preparation work to be shown. If there is considerable topography or a great deal of site preparation work to be shown, the information is to be placed on a separate plan series.

(a) Alignment/Right of Way Plan Series

The following information will normally appear on the Alignment/Right of Way Plan series:

1. Construction centerlines for all roadways being constructed.
2. All stationing, bearings, and curve data associated with each construction centerline. For new construction, ramp stationing will always run in the same direction as the main line stationing.
3. Right of way centerline—not always required; see discussion below.
4. Right of way lines. All WSDOT R/W Boundary Lines (proposed and existing), without exception, will always be solid lines on the Contract Plans.
5. Ties of all right of way breaks to either the right of way or construction centerlines—show both station and offset distance.
6. Construction permits with private citizens, and all easements, identified by type and use.
7. Ties of all construction permits and all easements to either the right of way or construction centerline—show both station and offset distance.
8. Township and Range Lines that cross centerline, with appropriate descriptive information (such as bearing and distance to found corners), including centerline stationing at intersection point.
9. Limited access hachures when appropriate. Hachures need to be drawn to the correct stationing, but the stationing of the ends or breaks in limited access does not have to be identified on the construction plans.
10. Found Section Corners and monuments, with station and offset ties to construction centerline.

11. Station and offset ties to railroads and railroad rights of way that intersect the project or are affected by the project.
12. Corporate limit and county lines with station identification where they cross the construction centerline.
13. Names of rivers, streams, bays, and inlets, their direction of flow and meander lines, and the ordinary high tide or high-water lines of navigable waterways.
14. On all projects that include grading, the slope catch lines shall be shown. It may be desirable to show slope catch lines on the Drainage Plan; however, the right of way line must also be shown on the Drainage Plan if this is done.
15. The outline of sand drainage blankets, unsuitable foundation excavation, and toxic waste excavation areas.
16. Show all found property corners along WSDOT R/W lines with a note stating "Per RCW 58.09.130, any monument or corner disturbed by the Contractor's operation shall be replaced at no cost to the Contracting Agency."

(b) **Right of Way Centerline**

When the right of way centerline is coincidental with the construction centerline, an equation shall be provided at the Begin Project and End Project, to show the relationship between the official right of way stationing and the construction centerline stationing. An equation will be provided to show relationship between the construction centerline and the right of way centerline at the location of Right of Way Plan equations. All right of way offsets and associated stationing will then be referenced to the construction centerline.

When the right of way centerline is **not** coincidental with the construction centerline, the same procedure described in the previous paragraph may be used. The offset distance between the right of way and construction centerlines shall be shown at the Begin Project and End Project. In addition to the equations at the Begin Project and End Project, equations shall be shown at all points where the right of way and construction centerlines cross and at the location of Right of Way Plan equations.

(c) **Right of Way Stationing/Alignment**

The official Right of Way Plans may be included in the Contract Plans under the following circumstances:

- The official right of way stationing runs the opposite direction of the construction stationing.
- The right of way alignment is substantially different than the construction alignment and is not easily tied. For example, the right of way alignment has numerous curves that do not exist in the construction centerline and the right of way would have to be described using metes and bounds as opposed to offsets from the construction centerline.

If either of the two circumstances above exists, the designer needs to contact the HQ Right of Way Plans Section and request that they prepare the existing Right of Way Plans to be included in the Contract Plans. The designer will have to provide the HQ Right of Way Plans Section with the equation relating

the Begin Project and End Project construction centerline to the existing R/W stationing. If this option is used, the HQ Right of Way Plans Section needs to be notified early in the design process so that the work can be added to their schedule, to ensure the plans can be prepared within the PS&E schedule.

If the project requires Profile sheets be included in the Contract Plans, the layout of the Alignment Plan sheet must take into account that the station limits on each Profile Plan sheet are to match exactly the station limits of each Alignment Plan sheet. Horizontal alignment and steep grades can each affect the matching of stationing limits between the Alignment and Profile sheets, so they must be examined together. The alignment and profile may be shown on the same plan sheet by showing both the plan and profile on same sheet.

(d) **Vicinity Map**

Township and Range information is to be shown on the Vicinity Map. It does not have to be shown on the Alignment Plans unless one or both of the following cases occur:

- The Township or Range Lines cross the centerline, in which case the line will be shown with the station of the intersection identified.
- Right of way boundary lines are shown WITH dimensions from the roadway alignment.

Section Lines only have to be shown on the Alignment Plans if the Section Corners are found, requiring that the ties to centerline be shown.

The following information will be shown for all horizontal alignments:

1. Line identification, using alpha designation and stationing (M 5+50).
2. Station ticks shown on the top side of the alignment line—top as related to the direction of the stationing.
3. Tangent bearings.
4. Point of intersection (PI), Point of curvature (P.C.), Point of tangency (P.T.), Point on tangent (POT), Point on curve (POC), Point of compound curve (PCC), Point of reverse curve (PRC) and Point on semitangent (POST) for all horizontal alignment where applicable.
5. Angle points (A.P.) in horizontal alignments.
6. Curve data box showing:
 - Station of the point of intersection (P.I.) of bearings for each curve.
 - Delta for each curve: deflection angle between intersecting bearings.
 - Radius of each curve.
 - Tangent length for each: distance from P.C. and P.T. to the P.I.
 - Length of curve for each curve: distance from P.C. to P.T. along the horizontal curve.
 - Full super rate for each horizontal curve.

(e) **Construction Stationing**

Construction stationing shall increase from the beginning of the project to the end, and shall run from south to north on odd-numbered highways, and west to east on even-numbered highways.

The construction centerlines will be shown on the Site Preparation Plans; however, lanes, shoulders, and other features being constructed are not to be shown.

Removal and demolition of existing features, paid as separate items, are to be identified using the General Notes in the Quantity Tabulation sheets.

Items included in the lump sum price for "Removal of Structures and Obstructions," are to be identified with notes located directly on the appropriate plan sheet. For example, removal of wire fence should be identified with a note such as "wire fence to be removed." Items of work (such as removal of guideposts) included in the lump sum price for "Removal of Structures and Obstructions" that cover the entire project do not have to be identified on the plan. Items of work being paid as "Removal of Structures and Obstructions" will not appear on Quantity Tabulation sheets.

If large, complete areas of pavement, sidewalk, or curbs and gutters are being removed, it is best not to use cross-hachuring to identify these areas. Large areas of cross-hachuring actually detract from the plans and often hide important information. It will suffice to show the limits of the removal and identify the area with a General Note in the Quantity Tabulation sheet, or note on the plan sheet "begin pavement removal/end pavement removal." If there are a number of small, isolated areas of pavement removal, cross-hachuring may be used to identify these areas.

(12) Profiles

See Contract Plan [Example 4-20](#).

Roadway profiles are required only when there is a change in the vertical alignment of the roadway under construction. If only a section of the vertical alignment is changed, a profile is required only for that section.

The station-to-station limits shown on each Profile sheet match exactly the station-to-station limits shown on the corresponding Alignment sheet.

(a) Profile Sheets

The following information is required on Profile sheets:

1. The limits of roadway sections will appear with arrows. These are always to be the topmost entry on the Profile sheets.
2. Super elevation diagrams. These should be shown on a separate sheet if they cause crowding of other required information.
3. The finished profile grade line will be shown as CADD weight 5 solid line style.
4. The datum symbol and information shall be shown on all sheets. North American Vertical Datum (NAVD) 88 is the desirable vertical datum. However, National Geodetic Vertical Datum (NGVD) 29 is acceptable in certain situations. If there is a need to use NGVD 29 datum on a project, the HQ Right of Way Plans Section, Land Survey Support, needs to be contacted for concurrence for use.
5. Show all vertical control, including benchmarks that exist in the area of the alignment profiled on the sheet—both temporary and permanent. Be sure to include all pertinent information associated with vertical control points such as location, offset, stationing, elevation, and so on.
6. Beginning station and elevation (BVC) and ending station and elevation (EVC) of each vertical curve will be shown. Elevations and stations

through each vertical curve will be shown on even stations at intervals not shorter than 50 feet but not greater than 200 feet.

7. The station and elevation of the point of intersection of the gradients (VPI) will be shown.
8. Gradients between vertical curves—shown as a percentage, carried out to a sufficient number of places so that the calculation from the elevation at one VPI on the given gradient will give the elevation at the next VPI.
9. Length of each vertical curve.
10. Elevation and station at each break—angle point; AP—in gradient with elevation shown to 0.01 foot.
11. The existing ground line will be shown as a dashed line.
12. Areas of work or quantities will be shown, with arrows, between the station-to-station limits of the work, or at 10 station (1000') totals if the work extends beyond 10 station totals, or at other logical breaks such as bridges or group breaks. If these logical breaks are slightly more or less than 1000 feet apart, it would be appropriate to have a 1300-foot total or a 700-foot total.
13. Quantities to be shown will be, but will not be limited to: roadway excavation, controlled blasting, vertical sand drains, unsuitable foundation excavation, toxic waste excavation, embankment compaction, special backfill, clearing and grubbing, seeding, compost, topsoil, and fertilizing and mulching.
14. The use of the term “embankment” by itself is permitted only when Method A compaction is specified. In this instance, it must be noted that embankment quantities are shown for informational purposes only.
15. Details showing sideslopes for unsuitable foundation excavation and toxic waste excavation shall be shown on the profiles or detailed on separate sheets. The bottom of unsuitable foundation excavation and toxic waste excavation will be shown, but should be shown as a squiggly line to indicate that the actual bottom elevation of the excavation is unknown.

The designer needs to give some thought to the layout of the Profile sheets prior to placing information, because the layout is to be the same on each Profile sheet in the series. All quantity arrows are to be placed in the same position on each sheet to allow quantities to be located easily.

If there is only minor grading on the project, and Profile sheets are not used, 10 station totals, or similar quantity breakdowns, will be shown on a Quantity Tabulation sheet.

(13) Structure Notes

See Contract Plan [Example 4-21](#).

All of the information shown on the Structure Note sheet and the Drainage Plans and Profiles will meet the requirements contained in the *Hydraulics Manual* and the *Standard Plans for Road, Bridge, and Municipal Construction (Standard Plans)*.

- (a) Structure Note sheets are used to tabulate locations, bid items, quantities, and notes pertaining to the drainage items, utilities, water lines, and so on.

- (b) The Structure Note sheets are to be on 11-inch by 17-inch paper. The Structure Note spreadsheet is available through Region Plans offices or the HQ Project Development Unit. For additional information and instructions for this microcomputer spreadsheet, see the Appendices.
- (c) Standard sheets have been prepared with the heading “Structure Notes.” A descriptive addition such as “Utilities” or “Irrigation” shall be added after the heading “STRUCTURE NOTES – XXXXXXXX XXXXXX” to indicate what type of work is included on the plan sheet. Structure Note sheets are to be placed immediately preceding the plan sheets that contain the features being tabulated.
- (d) For those projects involving only a few drainage bid items at a few locations, the information normally provided on Structure Note sheets may be provided on the appropriate plan sheets, in either a tabular form in data boxes, or placed in a convenient location on the sheet, with a leader line used to connect the information with the corresponding drainage feature.
- (e) Blank columns shall be provided between listed bid items and blank rows shall be provided in station listing—about every fifth entry and a space or two between each reference sheet listed. This procedure allows for the addition of bid items and stationing with ease, even during the addendum phase.
- (f) The bid items shall be placed from left to right in the same order in which they appear in the Summary of Quantities Estimate.

Bid items will be identified on the Structure Note Plan sheets exactly (spelling, punctuation, and spacing) as they appear in the WSDOT Standard Item Table.

- (g) If there are more bid items to be tabulated than will fit across the top of the sheet, with the appropriate blank spaces, additional tabulation sheets will be required. The station listing will be identical for the continued sheets. Likewise, if there are more station listings than will fit on a single sheet, with the required blank spaces, additional tabulation sheets will be required. The bid items across the top will be identical for the continued sheets.
- (h) Each time an item is used in a different location, it will have a separate quantity entry. Related items, however, may be included in a single entry if the station limits are the same. For example, a single entry could include a catch basin, pipe, structure excavation, and riprap.
- (i) Each quantity entered on the Structure Note Plan sheet is to be rounded appropriately at the first point of entry. Do not add up the unrounded quantities and then round the total to carry forward to the Summary of Quantities Estimate. (See the information on rounding in [400.06\(3\)](#).)
- (j) The Code column shall contain the structure code number, which is made up of the Plan Reference No. and the number identifying the drainage features on the sheet (for example, D1-1, D1-2, ... D1-6, D2-1, D2-2, ... D2-26). The numbers shall be listed in ascending order of plan sheets.
- (k) Indicate the construction centerline stationing on the Structure Note sheet for cross culverts, and indicate station and offset for each end of longitudinal pipe installations. If a sanitary or storm sewer line stationing is used, the sewer line stationing will be used on the Structure Note sheet, and the plan sheets will indicate the appropriate ties to the construction centerline.

- (l) The bid item for storm sewer pipe will be “Schedule ____ Storm Sewer Pipe ____ In. Diam.” A table indicating the acceptable pipe alternates is included in Section 7-04 of the *Standard Specifications*. There will be times when not all of the pipes shown as acceptable alternates in the table will be acceptable because of conditions on a specific project. When there are pipes not acceptable for a specific project, the designer will include a General Note on the Structure Note sheet identifying the unacceptable pipe type. The *Hydraulics Manual* contains a complete discussion on storm sewer pipes and is to be used for guidance.
- (m) When WSDOT does sanitary sewer pipe work, it is usually to extend or replace a system affected by the highway work. The utility or local agency will normally specify the type of pipe, or specify that the pipe extension or replacement be in kind. The system owner’s request for pipe type is to be placed in the P&SE portion of the Project File to serve as backup justification. The bid item will be the pipe type requested by the owner, and the General Note on the Structure Note Plan sheet will read either “no acceptable alternates” or “replace in kind,” whichever is appropriate.
- (n) The General Notes will include information required to complete the data for a particular drainage feature, such as:
- Acceptable or unacceptable pipe alternates for drain, underdrain, and culvert pipes.
 - Unacceptable alternates for culvert and storm sewer pipes bid on a schedule basis.
 - The appropriate treatment for pipes, except when the treatment is described by the bid item name.
 - The corrugation dimension for corrugated steel pipe when a size other than the standard size corrugation is required.
 - Specific vertical elongation where elliptical-shaped steel or aluminum pipes are required, whether the elliptical pipe is specified in the bid item or as an alternate.
 - Procedures or instructions necessary to complete construction of the drainage feature.
 - Required features, such as beveled end sections, safety bars, and other improvements.
 - References to applicable details in the Contract Plans. Identify the exact plan sheet using the Plan Reference No. where the detail is located.
 - References to applicable Standard Plans, with the full Standard Plan number.
 - References to applicable Special Provisions. Identify the Special Provision exactly by name.
- The bid item totals on the Structure Note sheets must be consistent with the bid item totals entered in the Summary of Quantities Estimate.**
- (o) If the quantities for an item appear on other plan sheets in addition to the Structure Note sheets, cross-references shall be made to the sheets where the additional quantities can be found.

(14) Drainage Plan

See Contract Plan [Example 4-22](#).

Each plan sheet will have its own consecutive series of numbers identifying drainage features—numbers beginning with number 1 enclosed in circles—beginning in the top left corner of the sheet and progressing across and down the sheet. A light, arrowless line will be drawn from the circle to the drainage feature or features. These numbers relate directly back to the Structure Note plan sheets.

When a drainage feature is continued on more than one sheet, the circle will be divided with a horizontal line. The plan sheet reference number on which the drainage feature first appears will be inserted in the upper half and the individual identifying number will be inserted in the lower half. A larger-scale circle may be used if this is done. The circle symbol is reserved for the purpose of identifying drainage features and is not to be used for any other purpose.

If a sanitary or storm sewer line stationing is used, the plan sheets will indicate the appropriate ties to the construction centerline.

Each cross pipe will have a separate code number, which will include any attached drainage structure, and any riprap, quarry spalls, or other end treatment being constructed in conjunction with the pipe.

Each run of pipe in a closed sewer system will have a separate code number, which will include the pipe and the drainage structure on the inlet end of the run of pipe.

If multiple pipes are to be placed in the same trench, they may be combined under a single structure code.

The skew angle for all skewed cross pipes shall be indicated on the plan sheets, unless both ends are controlled by station and offset and the stations and offsets appear on the Structure Note sheet.

A roadway ditch that is shown as part of a roadway section does not need to be shown on the Drainage Plans. This roadway ditch is included in the earthwork for Roadway Excavation Incl. Haul. This roadway ditch shall not be assigned a structure note number. When a ditch is constructed based on a drainage profile in the Drainage Plans, then this ditch shall be assigned a structure note number and the excavation is included in the bid item Ditch Excavation.

(15) Drainage Profiles

See Contract Plan [Example 4-23](#).

The established scale controls the drainage profiles vertically. There is usually no horizontal scale for the drainage profiles, but it is recommended that distances represented be drawn proportionately. Each profile will be drawn in proportion horizontally for the length of the profile (the space representing 10 feet will appear the same for the length of the profile, and it will appear to be approximately two times a space, representing 5 feet).

The profiles can be made visually easier to follow by using an elongated triangle to represent manholes and an elongated rectangle to represent other drainage structures (such as catch basins or inlets). The distance shown between drainage structures is not the length of pipe but the horizontal distance from center of structure to center of structure. If it happens to appear to be the same as the length of pipe shown in the Structure Note Plan sheet, it is merely coincidental.

Pipe diameters are to be drawn with proportionate scale, so a 12-inch-diameter pipe will be drawn half the size of a 24-inch-diameter pipe.

The drainage profiles are to be drawn as a straight line representation of the path the water will take as it flows through the system, without regard for the actual plan view direction the pipes are running. The designer does not have to break the profile because a system that had been running parallel to the centerline has turned ninety degrees at a catch basin and crossed the roadway.

At locations where two or more pipes bring water to a drainage structure and one pipe carries the water away, there will have to be breaks in the profiles. One profile will continue through the common drainage structure and show the water leaving the structure, while the other profiles will stop or start at the common structure. There will be a leader line drawn between the representations of the common drainage structure with the note “same catch basin,” which is the tie between the profiles and completes each without having to draw the exit pipe a number of times. The information for the common structure will only be shown on one profile, usually the one that shows the outlet pipe.

(a) **Drainage Profile Information**

The following information is to appear on the drainage profiles:

1. Inlet and outlet flow line elevations of pipes—shown below the pipe profile. Inlet and Outlet flow line elevations are those elevations derived from pipe slopes carried to the center of drainage structure.
2. Outflow treatments such as riprap, quarry spalls, and, if the ditch is other than a roadway or median ditch, ditch profiles.
3. Debris deflectors, standpipes, and headwalls.
4. The type of drainage structure and station and offset location of the structure—shown above the structure.
5. The rim elevation of manholes, catch basins, inlets, or other drainage structures—shown above the structure.
6. The horizontal distance between adjacent drainage structures from center of structure to center of structure.
7. The size of pipe in each run—you do not have to include the type of pipe.
8. The pipe slope—carried out to sufficient decimal places so that when the calculation is made from the indicated inlet flow line, on the given grade, for the given distance, the result will be the outlet flow line indicated.
9. Finished ground line above the pipe.
10. Original ground line if pipes will be placed prior to embankment construction or if original ground differs from the finished ground line.

(16) Utility Plan

See Contract Plan [Example 4-19](#).

When the contractor is to work on the existing utilities as part of the contract, plan sheets for utility structure notes, plans, and details will be required. These shall follow the same general guidelines as specified for drainage structure notes/plans/details.

RCW 19.122.040 requires WSDOT to identify and locate known underground utilities in our contracts. The designer should make every effort to identify and locate aboveground utilities also.

RCW 19.122.040 “Underground facilities identified in bid or contract – Excavator's duty of reasonable care – Liability for damages – Attorneys' fees,” reads as follows:

(1) Project owners shall indicate in bid or contract documents the existence of underground facilities known by the project owner to be located within the proposed area of excavation. The following shall be deemed changed or differing site conditions:

(a) An underground facility not identified as required by this chapter or other provision of law; and

(b) An underground facility not located, as required by this chapter or other provision of law, by the project owner or excavator if the project owner or excavator is also a utility.

(2) An excavator shall use reasonable care to avoid damaging underground facilities. An excavator shall:

(a) Determine the precise location of underground facilities which have been marked;

(b) Plan the excavation to avoid damage to or minimize interference with underground facilities in and near the excavation area; and

(c) Provide such support for underground facilities in and near the construction area, including during backfill operations, as may be reasonably necessary for the protection of such facilities.

(3) If an underground facility is damaged and such damage is the consequence of the failure to fulfill an obligation under this chapter, the party failing to perform that obligation shall be liable for any damages. Any clause in an excavation contract which attempts to allocate liability, or requires indemnification to shift the economic consequences of liability, different from the provisions of this chapter is against public policy and unenforceable. Nothing in this chapter prevents the parties to an excavation contract from contracting with respect to the allocation of risk for changed or differing site conditions.

(4) In any action brought under this section, the prevailing party is entitled to reasonable attorneys' fees.

[1984 c 144 § 4.]

Identified utilities are to be shown in the bid or contract documents as stated in the RCW. The Site Preparation Plan series is where they would normally be shown (see [400.06\(11\), Site Preparation](#)). If the project is in an area with many utilities, as well as many other topographical features, it may be necessary to separate the utilities on a separate series of plans following the Site Preparation Plan series. The best available information as to the location of underground and overhead utilities is to be used. Contract Plan [Example 4-19](#) shows how utilities are typically shown on a plan sheet.

Do not forget to include WSDOT utilities, such as traffic signal, illumination, and ITS conduits and fixtures.

The required amount of detail related to utility location is directly proportional to the amount of underground work involved in the contract and the proximity to the utility. A simple paver should require less utility detail than a project with excavation at or near a 24-inch natural gas line or a 96-inch sewer line.

(17) Interchange Contour Plan

Interchange Contour Plans provide finished ground contours for interchange areas. These plans require the Region Landscape Architect's stamp (or the HQ Landscape Architect's stamp for regions without a Landscape Architect), regardless of whether they are prepared by the design team or the landscape section. (See the *Design Manual* for more information).

(18) Paving/Pavement Marking Plan

See Contract Plan [Examples 4-24, 4-25, 4-26, 4-27, and 4-28](#).

Paving and pavement marking information will normally be combined on a single series of plans.

If the project requires the paving information to be separate from the pavement marking information, the Paving Plan will show the total roadway and shoulder widths described by the roadway sections, not lane widths. The Pavement Marking Plans will show the lane configuration and widths. The information is not to be repeated on both series of plans.

The Paving/Pavement Marking Plan series is required when the work cannot be shown adequately on the roadway sections. If the roadway sections adequately describe most of the project, only the areas requiring more detailed or specific information need be shown in Paving/Pavement Marking Plans.

Pavement marking will conform to the requirements shown in the *Design Manual* and the pavement marking applications shown in the *Standard Plans*. Pavement marking layout information is not required in the plans if the required pavement markings are as shown in the *Standard Plans*. Pavement marking quantities are to be tabulated on Quantity Tabulation sheets.

When Paving/Pavement Marking Plans are included, they will show all lane and shoulder widths, information on pavement taper lengths and widths, widening for guardrail, and the locations of concrete barrier, guardrail, impact attenuators, and traffic islands. The various areas and types of pavement marking will be identified by General Notes in the Quantity Tabulation sheets, or, if there is only minor pavement marking, the beginning and ending stations could be shown in the plan for each type in the area.

The only existing information that will appear on the Paving/Pavement Marking Plans will be the existing roadways and approaches beyond the point where the new construction begins or ends to show the tie between the new and existing. The "old" roadway and lane lines through the construction area are not to be shown.

If there is only minor drainage, signing, or illumination work on the project, it can be shown on the Paving/Pavement Marking Plans, provided it does not compromise the clarity of the paving and pavement marking information being shown.

Paving or pavement marking details, such as the layout of a traffic island, may be required at a larger scale to provide sufficient information or required dimensioning to clearly show the construction. These details will follow immediately after the Paving/Pavement Marking Plan series.

(19) Wetlands, Mitigation Sites, and Detention/Retention Site Plans**(a) Wetlands**

All wetlands, whether inside the right of way or not, that **could be** impacted by the construction work shall be shown on the construction plans, using standard symbols found in [Division 5](#).

Wetlands may be either delineated or inventoried. Delineated wetlands will, in most cases, have buffer zones associated with them, which must also be shown in the plans. The buffer zone is established by the local jurisdiction and may not always be identified on the permit. For each wetland identified within a project area, the designer will have to check with the Region Environmental Office to get the buffer zone information. Inventoried wetlands have been identified by a visual survey of the area and the required buffer zones are included in the inventoried boundaries.

The wetland and buffer zone shown in the plans is to represent the area, but does not have to be plotted point for point from the delineation information in the permit. The station and offset information required to delineate the site is not to be included in the Contract Plans. When the wetland is being surveyed, the information is to be taken directly from the permit.

The wetlands are to be shown on the Vicinity Map and all other plan sheets, such as those showing cut/fill lines, drainage, or other features that could impact them.

(b) Mitigation Sites

A wetland mitigation site is a wetland area that has been, or is being, created, restored, enhanced, or preserved to compensate for wetlands impacted by construction.

All wetland mitigation sites shall be shown on the construction plans, and identified as either “existing” or “to be constructed.” A mitigation site, whether existing or to be constructed, is always identified as a mitigation site on plan sheets. Mitigation sites do not get reclassified as a wetland at a future time.

If a contractor is allowed to work within an existing wetland, wetland buffer zone, or, in rare circumstances, a mitigation site, the allowable work area shall be delineated by the cut and fill line. The contractor shall possess a permit identifying each wetland in which work is allowed.

(c) Detention/Retention Sites

All facilities related to the detention, retention, and treatment, filtration, or drainage of stormwater or surface water, whether existing or to be constructed, shall be shown on the construction plans and labeled as Stormwater Treatment Areas. It is important to identify stormwater treatment areas so they will not be misconstrued to be wetlands or mitigation areas in the future.

Designer's should contact the HQ Engineering Records and Imaging Office with the Township and Range, Section, State Route (SR) and Mileposts (MP) of their project, to obtain copies of the Sundry Site Plans that show any existing mitigation sites that are on record.

(20) Plan Detail Sheet

Details specific to the project being developed will have to be provided by the designer to ensure the contractor has a clear picture of the work to be performed.

The plan details are to be organized on plan sheets so that they are grouped according to plan series. The detail sheets will then be placed as the last set of plans in the plan series. For example, all of the drainage details will be grouped on the appropriate number of sheets, and will become the last sheets in the Drainage Plan series—normally following the drainage profiles.

It is important that details be complete, meaningful, and necessary. It is also important that details be drawn at a scale that will clearly show the information when reduced and placed on the 11-inch by 17-inch plan sheets.

Plan details are not to be a redrawn Standard Plan. Many times, however, it is necessary to draw details showing a project-specific modification to a Standard Plan. In these instances, sufficient detail is to be provided to indicate the modification, but all of the information on the Standard Plan that is still applicable is not to be redrawn. Instead, a note stating “FOR INFORMATION NOT SHOWN, SEE STANDARD PLAN X-XX” is to be included on the detail.

Details that are not associated with a Standard Plan must be complete, because the contractor is only obligated to provide what is shown on the detail.

Division 5 contains the STATE.CEL library, which is a number of generic or standard details found in the CADD system. Many of these details can be used as is, or may be modified to fit requirements for a specific application. Use of these details can save both the designer and the CADD operator considerable time over developing and inputting details from scratch.

(21) Minor Structures

Projects with quantities for minor structures, such as nonstructural retaining walls (see Section 8-24 of the *Standard Specifications*) or other like items of work, shall have these quantities shown in the plans in one of the following methods:

- Quantities shall be shown on Quantity Tabulation sheet(s).
- Quantities shall be shown in tabular form (in data boxes) on the individual plan sheet(s).

(22) Illumination Plan

See Contract Plan [Example 4-29](#).

The design of the illumination systems will conform to guidelines in the *Design Manual*.

If the illumination work is minor adjustments to an existing system, or the installation of a small system (one or two luminaires) at an intersection, it can often be shown on another series of plans.

(a) Illumination Plan Information

The following information is required for Illumination Plans:

1. The location of light standards: new and existing.
2. The light standard number for new luminaires.
3. The location of the power source: whether new or existing.

4. The layout of the conduit and electrical circuitry.
5. The mounting height for new luminaires: for existing if being relocated.
6. The mast arm length for new luminaires: for existing if being relocated.
7. Base requirements, fixed or slip, for new luminaires: for existing if being relocated.
8. Conduit size and fill for new installation: for existing affected by, or affecting, the project.
9. Service cabinet requirements for new: or modifications to existing.
10. Junction box locations and types for new: for existing affected by, or affecting, the project.
11. Luminaire light source, distribution, and voltage for new luminaires.
12. All other features unique to the specific project.

(b) **Stationing and Offsets**

Stationing and offsets, shown in the foundation schedule for light standard locations, are to be reasonably accurate to ensure the design light levels are achieved.

(23) Traffic Signal Plan

Traffic Signal Plans are normally provided by either the Region Traffic Office or the HQ Traffic Operations Office, and the designer simply incorporates them into the project. The Traffic Signal Plans will follow the guidelines in the *Design Manual*.

(24) Intelligent Transportation System Plan

The Region Traffic Office normally provides Intelligent Transportation Systems (ITS) Plans, and the designer simply incorporates them into the project. The ITS Plans will follow the guidelines in the *Design Manual*.

Even though the designer is not responsible for the design of the Intelligent Transportation System, the designer is responsible for providing the appropriate base maps to the HQ Traffic Operations Office. The base map information provided to the traffic designer will show the locations of all new and existing features, such as utilities, drainage pipes, and structures, so that these features can be taken into account during the initial design. It is also the designers' responsibility to keep the traffic designer aware of all design revisions made to the plans from the time the initial layout was given to the traffic designer.

(25) Sign Specification Sheet

See Contract Plan [Examples 4-30, 4-31, and 4-32](#).

Sign Specification Plan sheets are to be prepared on 11-inch by 17-inch paper sheets plotted from CADD or an Excel program.

A separate Sign Specification Plan sheet will normally be prepared for the installation of new signs, the removal of signs, and the relocation of signs. If the signing work is minor, it is permissible to combine the different types of work on a single sheet, but there should be a distinct, identifiable section of the sheet for each type of work presented.

There will be a separate sign-numbering system for each of the three types of signing work, and each will be continuous from the beginning of the project to the end.

The Sign Specification Plan sheets are to be completely filled out.

Remember that the material stock used for the signs comes in 48-inch by 96-inch sheets, so sign sizes need to be adjusted to make the most efficient use of the stock material. The following guidelines should be used:

- For signs having a horizontal dimension of 48 inches or less, all dimensions shall be specified in inches.
- For signs having a horizontal dimension of greater than 48 inches, all dimensions shall be specified in feet and inches.

Wood posts can be called out as 4 x 4 (the common name for a 3-1/2" x 3-1/2" piece of lumber), 4 x 6, and so on, as long as there is no reference to inches.

When a sign installation requires multiple steel posts, the designer will have to specify which base type to be used (see the *Standard Plans* for each multiple-post installation.)

(26) Signing Plan

See Contract Plan **Examples 4-33 and 4-34**.

The Signing Plans will follow the guidelines in the *Design Manual*.

Signing will always be shown in a plan view; however, the designer needs to assess the need for the Signing Plan series. In many cases, there are not sufficient signs to require a separate series of plans. In these cases the signing information can be combined with another series, such as the Paving/Pavement Marking Plan series, without affecting the clarity of the overall plan.

A great deal of roadway detail is not normally required for a Signing Plan. The centerline and edge of the roadway is normally all that is required for two-lane highways. For multilane highways, additional detail and roadway information may be required.

For region-wide signing projects, where an extensive area is covered, a smaller scale (even a strip map) can be used for directional sign placements. However, even in these instances, larger-scale details may be required to show sign installations at intersections and other areas where there are numerous signs being installed in a small area.

There is never to be a light standard within 50 feet of the front of an overhead sign installation.

Signs will be located in the plans and identified using the plan sign number. For new installations, the plan sign number will be enclosed in an oval. The plan sign number for sign removals will be enclosed in a rectangle and "R-" will precede the number. Sign relocations will show both the original and relocated locations of the sign and the plan sign number will be enclosed in a square. There will be a leader line from the plan sign number to the sign location. Sign relocations will have two leader lines: a dashed line from the plan sign number to the original location and a solid line from the plan sign number to the relocated location.

The Signing Plans will show the following:

- Construction centerlines—all that is required for signing such as destination and speed limit.
- Basic roadway layout in areas where detail is required, such as intersections with considerable signing.

- Sign locations.
- Small-scale layout of directional and special signs, showing required details, such as where upper- and lower-case lettering is to be used, location of directional arrows, and so on. Details may be placed on a separate sheet to avoid overcrowding of the plan.
- Small-scale layout of standard control signs may be shown in the plans. This can be very helpful to both the contractor and the inspector.
- Plan sign number with leader line pointing to sign location.
- WSDOT Sign Fabrication code number adjacent to plan sign number.
- Signs to be installed.
- Signs to be removed.
- Signs to be relocated. Show the sign locations for both the original, using a dashed leader line, and the relocated, using a solid leader line.
- Power source for all illuminated signs. If the source is coincidental to an illumination or traffic signal system and shown on those plans, a construction note referencing the sheet where the source is identified will suffice.

(27) Signing Details

When overhead signs are being installed on a sign bridge or cantilever structure, the Sign Specification and/or Sign Detail needs to show the following information:

- Simple drawing of the new structure and signs
- Distance between signs
- Distance between signs and end supports or posts
- Location of overhead signs in relation to lanes
- Sign light spacing
- Maintenance walkway position
- Other data called for in the plans

(28) Bridge Plan

Bridge Plans are prepared by the HQ Bridge and Structures Office. The designer may be required to provide field information for use by the HQ Bridge and Structures Office during the design. Required data/guidelines are shown in the [Design Manual](#).

Most projects with bridge construction will have items of work required because of the bridge work, but are indicated on the Bridge Plans as “not included in bridge quantities.” The designer is to provide the required PS&E information for these items.

Following are some of the items typically “not included in bridge quantities”:

- Drains
- Gravel backfill for drain
- Gravel backfill for wall
- Underdrain pipe behind or around abutments or walls
- Drain pipe in embankments at bridge ends
- Utility conduits and anchorage
- Slope protection
- Concrete barrier
- Guardrail connections

The bridge designer will provide the designer with a list of items that are not included in the bridge work.

(29) Traffic Control Plan

As required in the Federal-Aid Policy Guide, 23 CFR Part 630.1010(2), every project shall have project-specific Traffic Control Plans. "Traffic Control Plans" is the common name for site-specific work zone Traffic Control Plans. Primary consideration should be given to worker safety within the work zone while providing for the safe and efficient passage of traffic.

It is important for the designer of the Traffic Control Plans to remember that when the contractor uses the traffic control layouts shown in the plans, WSDOT is in a high-liability position should anything go wrong when the traffic control called for is in place. Because of the high liability, this portion of the plan needs to be developed with a great deal of thought, by someone with an understanding of the project as well as an understanding of traffic control requirements.

The size and color of all traffic control signs are to be shown on the plan. Warning (W series) signs are required by WSDOT policy to be a minimum of 48 inches by 48 inches, but this information still has to be on the plan. Traffic control signing is laid out in respect to the distance from the work area. These distances, from the work area and between signs, are to be shown as plus/minus (+/-) distances. For example, if the required spacing between signs is 150 feet, it will appear on the plan sheet as 150'+/-. This does not mean the sign can be put any place the contractor chooses within the 150-foot range; it means the sign is to be placed at 150 feet unless there is an engineering reason to move it slightly. (See "Work Zone Safety and Mobility" in the [Design Manual](#) for additional items to be included in these plans.)

Tables have been developed for sign spacing, taper lengths, pavement marking, device spacing, and buffer zone data that establish criteria for a variety of speeds. It is recommended that these tables be utilized for consistency and to eliminate the possibility of errors in calculations.

The Special Provisions may allow the contractor to develop Traffic Control Plans or revise those furnished; in either case, they cannot be used without the approval of the Engineer.

Traffic Control Plans may contain certain required items, not supplied by WSDOT, for which bid items will be provided in the project. The Traffic Control Plans shall be reviewed to ensure all items required for traffic control and bidding are shown as either separate bid items or included in bid items for a lump sum bid—if approved by the proper delegated authority.

When the Traffic Control Plans are prepared by the Region Traffic Office, the designer must work closely with the Traffic Office to ensure the Traffic Control Plans are compatible with the rest of the project and project staging. The Region Traffic Office, in many cases, is not as familiar with the entire project as the designer, so the designer should review the Traffic Control Plans thoroughly.

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227-243	SN1-SN17	SIGNING PLAN
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269-303	DS1-1 - DS1-35	DETOUR SEQUENCE 1 PAVING PLAN
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320-355	DS3-1 - DS3-36	DETOUR SEQUENCE 3 PAVING PLAN
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	CS4-1 - CS4-16	CONSTRUCTION SIGNING DETOUR SEQUENCE 4
	TC1-TC5	TRAFFIC CONTROL PLANS

NOTE TO DESIGNER:

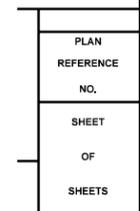
FOR ANY CONTRACT THAT CONSISTS OF 30 OR MORE PLAN SHEETS, AN INDEX IS REQUIRED.

THE FEDERAL AID NUMBER IS REQUIRED ON THE FIRST SHEET OF THE PLANS, WHETHER IT IS THE INDEX OR VICINITY MAP.

THE LIMIT ON THE NUMBER OF PLAN SHEETS PER VOLUME IS 225.

CHOOSE A LOGICAL BREAK POINT BETWEEN PLAN TYPES (ROADWAY SECTIONS, PAVING PLANS, SIGNING PLANS, ETC) FOR VOLUME BREAKS. DO NOT BREAK UP PLAN TYPES BETWEEN VOLUMES UNLESS ABSOLUTELY NECESSARY.

SEE ELECTRONIC ENGINEERING STANDARDS MANUAL, PAGE 4-6 FOR PLAN REFERENCE CODES.



NOTE: ALL SHEET REFERENCES, FIRST NOS. OF STRUCTURE CODE DESIGNATIONS AND MATCH LINE SHEET REFERENCES, ETC., THROUGHOUT THE PLANS, REFER TO THE ENTRY IN THE PLAN REFERENCE NUMBER BOX.

FILE NAME C:\AAWork\PPM\PPM_Div4_July2008_v1.dgn	TIME 2:22:25 PM	DATE 8/4/2008	PLOTTED BY KerrT	DESIGNED BY DESIGNER	ENTERED BY CAD OPERATOR	CHECKED BY TEAM LEADER	PROJ. ENGR. PROJECT ENGINEER	REGIONAL ADM. REGIONAL ADM.	REVISION	DATE	BY	REGION NO. 10	STATE WASH	FED. AID PROJ. NO. NH-0000(000)	LOCATION NO. XL-1234	DATE	P.E. STAMP BOX	DATE	P.E. STAMP BOX	Washington State Department of Transportation	EXAMPLE 4-1	INDEX VOLUME ONE	Plot 1 IN1	SHEET OF SHEETS
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THESE LINES MUST BE FILLED IN ON ALL SHEETS WITH THE NAMES OF THE APPROPRIATE PEOPLE

INDEX

SHEET NO.	PLAN REFERENCE NO.	TITLE
1	VM1	INDEX/VICINITY MAP
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26	AV1	ADVANCED WARNING SIGN PLAN
27-39	TC1-TC13	TRAFFIC CONTROL PLAN

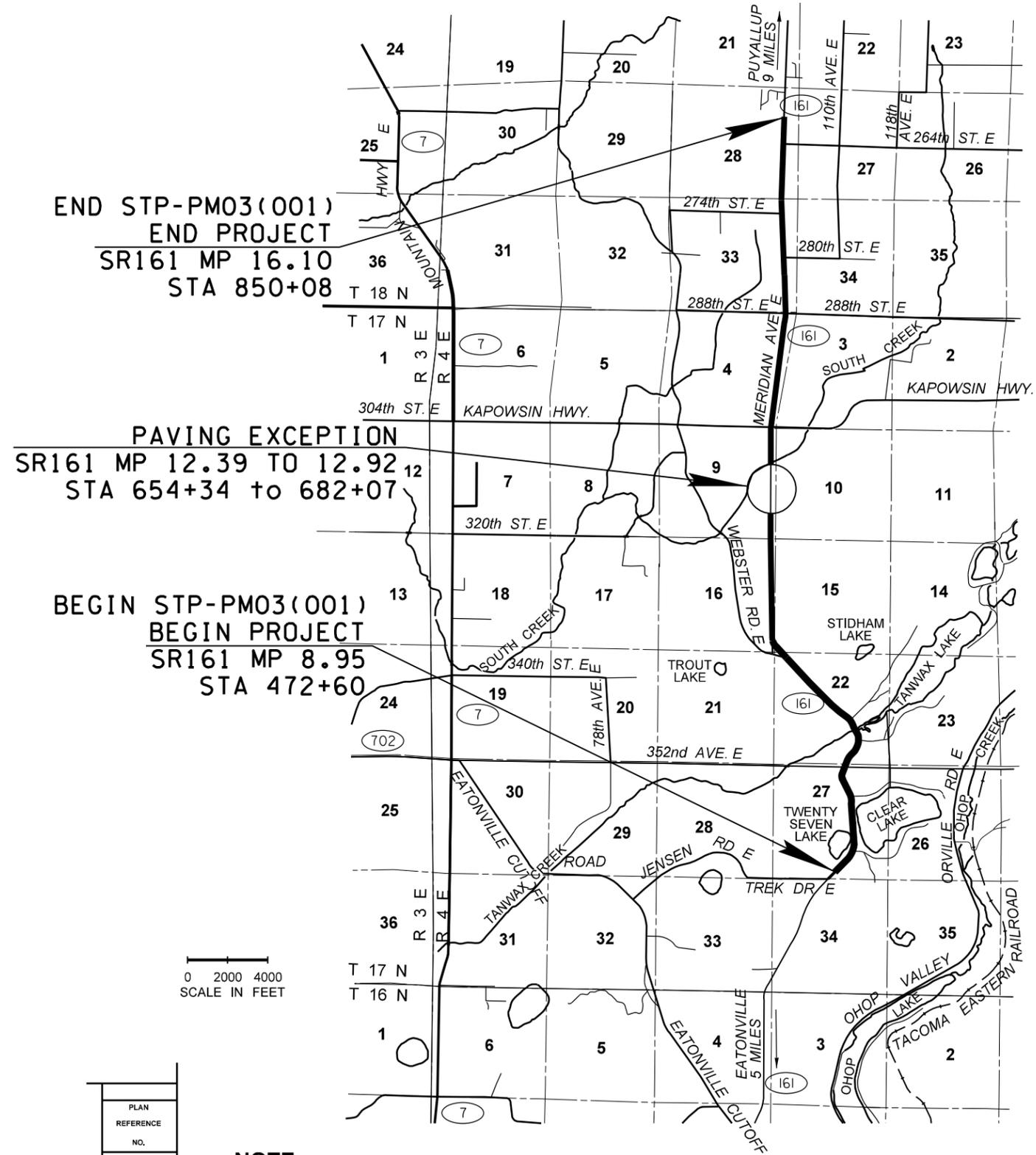
NOTE TO DESIGNER:

THIS IS AN EXAMPLE OF COMBINING THE INDEX AND VICINITY MAP ON A SMALL PROJECT.

FOR ANY CONTRACT THAT CONSISTS OF 30 OR MORE PLAN SHEETS, AN INDEX IS REQUIRED.

THE FEDERAL AID NUMBER IS REQUIRED ON THE FIRST SHEET OF THE PLANS, WHETHER IT IS THE INDEX OR VICINITY MAP.

SEE ELECTRONIC ENGINEERING STANDARDS MANUAL, PAGE 4-6 FOR PLAN REFERENCE CODES.

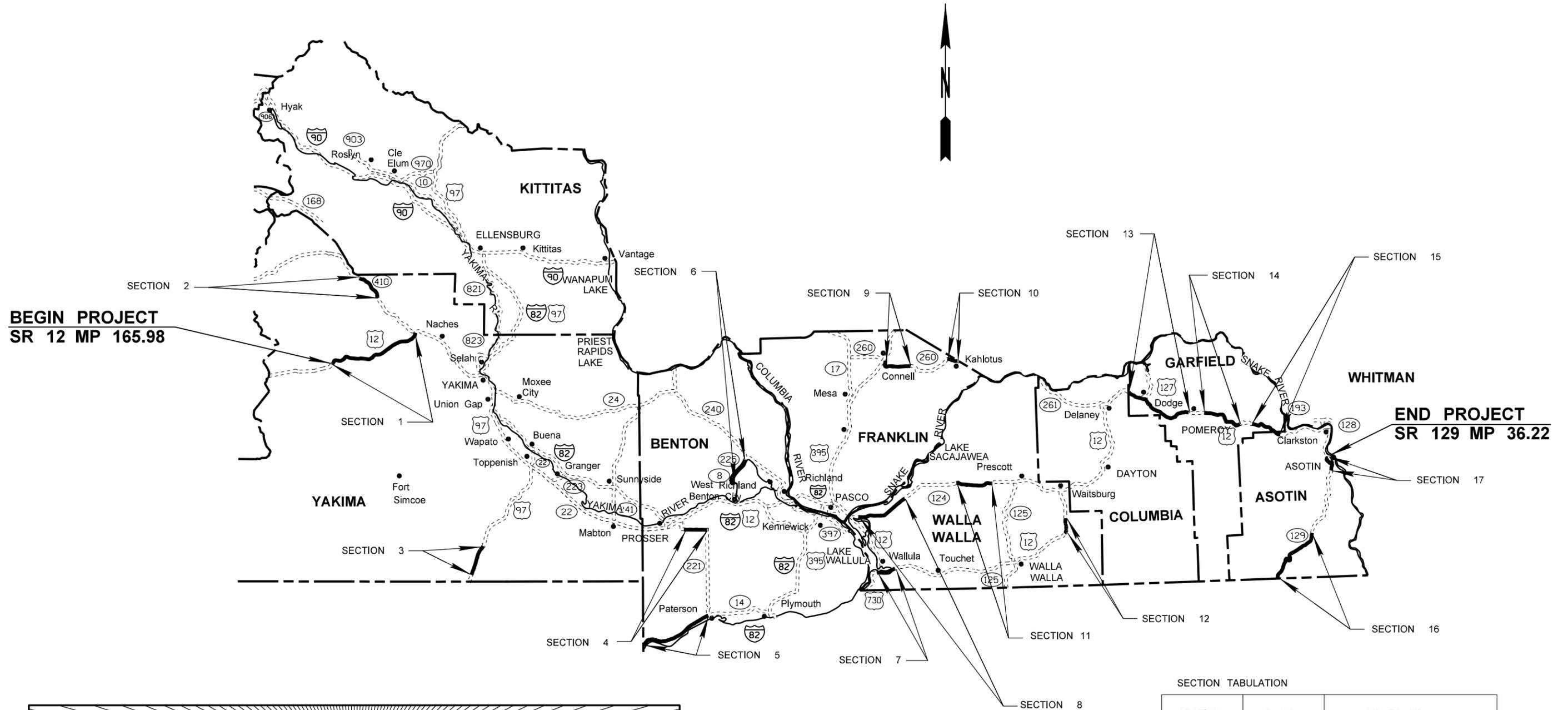


NOTE:
ALL SHEET REFERENCES, FIRST NOS. OF STRUCTURE CODE DESIGNATIONS AND MATCH LINE SHEET REFERENCES, ETC., THROUGHOUT THE PLANS, REFER TO THE ENTRY IN THE PLAN REFERENCE NUMBER BOX.

FILE NAME C:\AAWork\PPM\PPM_Div4_July2008_v1.dgn	TIME 2:23:33 PM	DATE 8/4/2008	PLOTTED BY KerrT	DESIGNED BY DESIGNER	ENTERED BY CAD OPERATOR	CHECKED BY TEAM LEADER	PROJ. ENGR. PROJECT ENGINEER	REGIONAL ADM. REGIONAL ADM.	REVISION	DATE	BY	REGION NO. 10	STATE WASH	FED.AID PROJ.NO. NH-0000(000)	LOCATION NO. XL-1234	DATE	P.E. STAMP BOX	DATE	P.E. STAMP BOX	Plot 2 VM1	SHEET OF SHEETS
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EXAMPLE 4-2
INDEX / VICINITY MAP



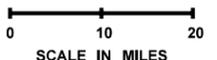
**BEGIN PROJECT
SR 12 MP 165.98**

**END PROJECT
SR 129 MP 36.22**

NOTE TO DESIGNER:

THIS IS AN ALTERNATIVE METHOD OF EXAMPLE 4-3, THE SAME REGION WIDE BST PROJECT. SECTION IDENTIFICATION IS IN TABULAR FORMAT (SEE TABLE).

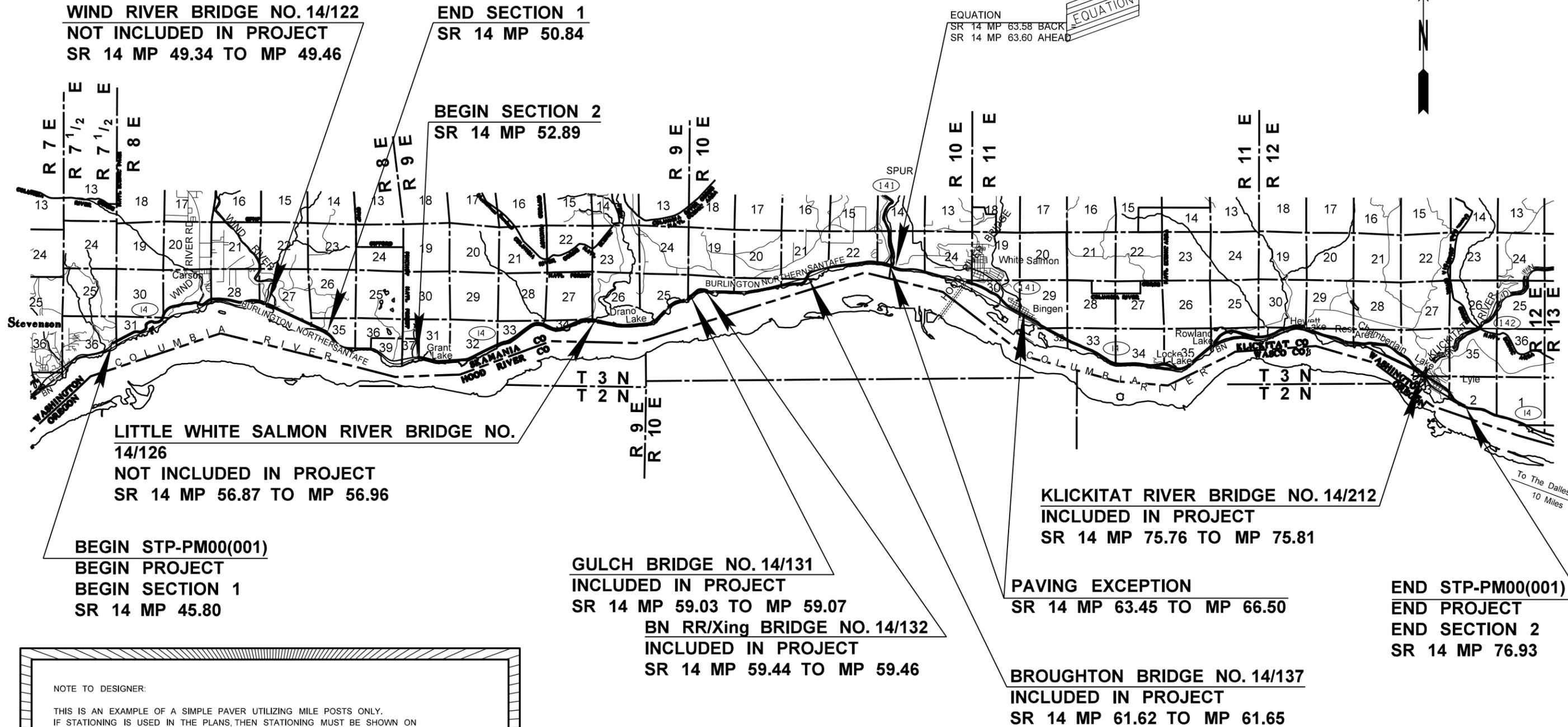
THIS IS AN EXAMPLE OF A STATE FUNDED ONLY PROJECT, THEREFORE NO FED. AID. PROJ. NO. IS SHOWN.



SECTION TABULATION

SECTION	SR NO.	MP TO MP
1	12	169.98 TO 185.05
2	410	100.45 TO 104.56
3	97	35.46 TO 41.27
4	221	19.46 TO 23.22
5	14	152.24 TO 167.25
6	225	2.69 TO 11.32
7	12	307.44 TO 311.28
8	124	1.10 TO 11.19
9	260	7.53 TO 13.87
10	260	22.58 TO 24.73
11	124	22.73 TO 30.88
12	12	348.24 TO 351.15
13	12	388.61 TO 401.92
14	12	405.23 TO 413.41
15	12	416.89 TO 421.84
16	129	0.00 TO 12.00
17	129	32.61 TO 36.22

FILE NAME	C:\AAWork\PPM\PPM_Div4_July2008_v1.dgn	REGION NO.	10	STATE	WASH	FED.AID PROJ.NO.	NH-0000(000)	Washington State Department of Transportation	EXAMPLE 4-4 VICINITY MAP	Plot 4
TIME	2:24:54 PM	JOB NUMBER	00Z000	LOCATION NO.	XL-1234	DATE				VM1
DATE	8/4/2008	CONTRACT NO.				P.E. STAMP BOX	DATE			SHEET
PLOTTED BY	KerrT									OF
DESIGNED BY	DESIGNER									SHEETS
ENTERED BY	CAD OPERATOR									
CHECKED BY	TEAM LEADER									
PROJ. ENGR.	PROJECT ENGINEER									
REGIONAL ADM.	REGIONAL ADM.	REVISION		DATE	BY					



FILE NAME	C:\AAWork\PPM\PPM_Div4_July2008_v1.dgn	REGION NO.	STATE	FED.AID PROJ.NO.	Washington State Department of Transportation	EXAMPLE 4-5 VICINITY MAP	Plot 5
TIME	2:25:57 PM	10	WASH	NH-0000(000)			VM1
DATE	8/4/2008	JOB NUMBER					SHEET
PLOTTED BY	KerrT	CONTRACT NO.					OF
DESIGNED BY	DESIGNER	LOCATION NO.					SHEETS
ENTERED BY	CAD OPERATOR						
CHECKED BY	TEAM LEADER						
PROJ. ENGR.	PROJECT ENGINEER						
REGIONAL ADM.	REGIONAL ADM.	REVISION	DATE	BY	DATE	DATE	

SUMMARY OF QUANTITIES

DOT_RGG900

6/16/2004

ITEM NO	TOTAL QUANTITY	SUB-TOTAL * SECTION I-07.2(1) OF STANDARD SPECS	SUB-TOTAL ** SECTION I-07.2(2) OF STANDARD SPECS	STD. ITEM NO.	UNIT	ITEM	GROUP 1	GROUP 1	GROUP 1	GROUP 1	GROUP 1	GROUP 1	GROUP 1	GROUP 2	GROUP 2	GROUP 2	GROUP 3	GROUP 4	GROUP 5			
							SR77 49+00.00 TO 70+85.00	DB6 LINE 9+00.00 TO 29+85.00	MC-N LINE 10+00.00 TO 17+18.64	MC-S LINE 10+00.00 TO 13+59.65	W-NS LINE 10+00.00 TO 17+74.53	NS-W LINE 9+00.00 TO 18+19.15	BRIDGE NO. 77/10	E-NS LINE 10+00.00 TO 18+83.05	NS-E LINE 9+00.00 TO 22+36.98	SR77 70+85.00 TO 95+00.00	DB6 LINE 7+65.00 TO 9+00.00	DB6 LINE 29+85.00 TO 31+20.00	THIRD PARTY DAMAGES			
PREPARATION																						
1	LUMP SUM		LUMP SUM	0001	L.S.	MOBILIZATION	L.S.	L.S.	L.S.	L.S.	L.S.	L.S.	L.S.	L.S.	L.S.							
2	14.50		14.50	0025	ACRE	CLEARING AND GRUBBING	0.90	4.20	1.00	0.40	1.20	1.00		1.70	2.10	2.00						
3	6.00		6.00	0049	EACH	REMOVING DRAINAGE STRUCTURE	1.00	5.00														
4	25517.00	700.00	24817.00	0120	S.Y.	REMOVING ASPHALT CONC. PAVEMENT	5,679.00	3,057.00	5,219.00	2,238.00	221.00			221.00	8,182.00	700.00						
5	930.00		930.00	0170	L.F.	REMOVING GUARDRAIL			580.00			170.00		180.00								
6	4.00		4.00	0182	EACH	REMOVING GUARDRAIL ANCHOR			2.00			1.00		1.00								
7	LUMP SUM		LUMP SUM	0215	L.S.	REMOVING MISCELLANEOUS TRAFFIC ITEM	L.S.	L.S.	L.S.	L.S.												
8	350.00		350.00	0230	L.F.	REMOVING WIRE FENCE		150.00			200.00											
GRADING																						
9	61810.00	60.00	61750.00	0310	C.Y.	ROADWAY EXCAVATION INCL. HAUL	1,590.00	1,320.00	5,640.00	1,130.00	11,040.00	7,160.00		11,500.00	15,810.00	6,560.00	60.00					
10	1250.00		1250.00	0330	C.Y.	ROADWAY EXCAVATION INCL. HAUL - AREA POND A			1,250.00													
11	1850.00		1850.00	0330	C.Y.	ROADWAY EXCAVATION INCL. HAUL - AREA POND B						1,850.00										
12	7000.00		7000.00	0330	C.Y.	ROADWAY EXCAVATION INCL. HAUL - AREA POND C		7,000.00														
13	109850.00	130.00	109720.00	0408	TON	SELECT BORROW INCL. HAUL	3,150.00	78,980.00	20,470.00	1,970.00	1,000.00	790.00		1,010.00	1,340.00	1,010.00	90.00	40.00				
14	62080.00	70.00	62010.00	0470	C.Y.	EMBANKMENT COMPACTION	1,710.00	42,690.00	11,070.00	1,070.00	950.00	630.00		1,110.00	2,240.00	540.00	50.00	20.00				
DRAINAGE																						
15	1513.00		1513.00	1030	C.Y.	DITCH EXCAVATION INCL. HAUL	784.00	511.00			6.00	212.00										
16	3.00		3.00	1054	EACH	GRATE INLET TYPE 2	1.00	2.00														
17	4100.00		4100.00	1086	TON	QUARRY SPALLS	2.00	30.00	11.00	2.00	617.00	315.00		846.00	2,277.00							
18	228.00		228.00	1161	L.F.	UNDERDRAIN PIPE 8 IN. DIAM.		228.00														
19	660.00		660.00	1182	L.F.	SCHEDULE A CULV. PIPE 18 IN. DIAM.	24.00	161.00	126.00	98.00		89.00		83.00	79.00							
20	61.00		61.00	1272	L.F.	CL. IV REINF. CONC. CULV. PIPE 18 IN. DIAM.					61.00											
STORM SEWER																						
21	4.00		4.00	3090	EACH	CATCH BASIN TYPE 2 - 54 IN. DIAM. WITH FLOW RESTRICTOR	1.00	1.00	1.00			1.00										
22	1.00		1.00	3091	EACH	CATCH BASIN TYPE 1			1.00													
23	505.00		505.00	3151	L.F.	TESTING STORM SEWER PIPE	178.00	188.00	78.00			61.00										
24	230.00		230.00	3541	L.F.	SCHEDULE A STORM SEWER PIPE 12 IN. DIAM.	51.00	40.00	78.00			61.00										
25	127.00		127.00	3582	L.F.	SOLID WALL PVC STORM SEWER PIPE 24 IN. DIAM.	127.00															
26	148.00		148.00	3602	L.F.	CORRUGATED POLYETHYLENE STORM SEWER PIPE 12 IN. DIAM.		148.00														
STRUCTURE																						
27	600.00		600.00	4006	C.Y.	STRUCTURE EXCAVATION CLASS A INCL. HAUL						600.00										
28	LUMP SUM		LUMP SUM	4013	L.S.	SHORING OR EXTRA EXCAVATION CL. A						L.S.										
29	141.00		141.00	4025	C.Y.	GRAVEL BACKFILL FOR WALL						141.00										
30	4.00		4.00	4060	EACH	FURNISHING AND DRIVING CONCRETE TEST PILE						4.00										
31	1900.00		1900.00	4070	L.F.	FURNISHING CONC. PILING 24 INCH DIAM.						1,900.00										
32	50.00		50.00	4080	EACH	DRIVING CONC. PILE 24 INCH DIAM.						50.00										
33	54.00		54.00	8376	EACH	FURNISHING STEEL PILE TIP OR SHOE						54.00										
34	119600.00		119600.00	4149	LB.	ST. REINF. BAR FOR BRIDGE						119,600.00										
35	700.00		700.00	4322	C.Y.	CONC. CLASS 4000 FOR BRIDGE						700.00										
36	1.00		1.00	4219	DOL	DEFICIENT STRENGTH CONC. PRICE ADJUSTMENT						1.00										
37	LUMP SUM		LUMP SUM	4300	L.S.	SUPERSTRUCTURE BRIDGE 8/15						L.S.										
38	1688.00		1688.00	4352	L.F.	CONDUIT PIPE 2 IN. DIAM.						1,688.00										
39	854.00		854.00	4415	L.F.	TRAFFIC BARRIER						854.00										

GROUP NUMBER	SR	CONTROL SECTION	TAX SCHEDULE	FUND PARTICIPANTS
1	77	140801	**	STATE, FEDERAL AID
2	77	140800	**	STATE, FEDERAL AID
3	77	1400CT	*	STATE, FEDERAL AID
4	77	1400CY	*	STATE, FEDERAL AID
5	77	140800	**	STATE

		REGION	STATE	FEDERAL AID PROJECT. NO.		
		10	WA	NH-0077(000)		
		JOB NUMBER			Washington State Department of Transportation	SR 77 EXAMPLE 4-7
		04H321/1				
		CONTRACT NO				SUMMARY OF QUANTITIES
		000000				
DATE		REVISION		BY		SQ1
						SHEET 3 OF 117 SHEETS

SUMMARY OF QUANTITIES

DOT_RGG900

6/16/2004

ITEM NO	TOTAL QUANTITY	SUB-TOTAL * SECTION 1-07.2(1) OF STANDARD SPECS	SUB-TOTAL ** SECTION 1-07.2(2) OF STANDARD SPECS	STD. ITEM NO.	UNIT	ITEM	GROUP 1	GROUP 1	GROUP 1	GROUP 1	GROUP 1	GROUP 1	GROUP 1	GROUP 2	GROUP 2	GROUP 2	GROUP 3	GROUP 4	GROUP 5
							SR77 49+00.00 TO 70+85.00	DB6 LINE 9+00.00 TO 29+85.00	MC-N LINE 10+00.00 TO 17+18.64	MC-S LINE 10+00.00 TO 13+59.65	W-NS LINE 10+00.00 TO 17+74.53	NS-W LINE 9+00.00 TO 18+19.15	BRIDGE NO. 77/10	E-NS LINE 10+00.00 TO 17+83.05	NS-E LINE 9+00.00 TO 22+36.98	SR77 70+85.00 TO 95+00.00	DB6 LINE 7+65.00 TO 9+00.00	DB6 LINE 29+85.00 TO 31+20.00	THIRD PARTY DAMAGES
SURFACING																			
40	20634.00	375.00	20259.00	5100	TON	CRUSHED SURFACING BASE COURSE	2,676.00	4,515.00	1,910.00	900.00	1,680.00	1,570.00		1,780.00	2,600.00	2,628.00	375.00		
LIQUID ASPHALT																			
41	10028.00	206.00	9822.00	5334	DOL	ANTI-STRIPPING ADDITIVE	1,333.00	2,313.00	923.00	425.00	760.00	690.00		765.00	1,020.00	1,593.00	178.00	28.00	
ASPHALT CONCRETE PAVEMENT																			
42	180.00	180.00		5711	S.Y.	PLANING BITUMINOUS PAVEMENT												180.00	
43	20045.00	410.00	19635.00	5767	TON	HMA CL. 1/2 IN. PG 58-22	2,665.00	4,625.00	1,845.00	850.00	1,520.00	1,380.00		1,530.00	2,035.00	3,185.00	355.00	55.00	
44	21046.00	431.00	20615.00	5830	DOL	JOB MIX COMPLIANCE PRICE ADJUSTMENT	2,798.00	4,856.00	1,937.00	893.00	1,596.00	1,450.00		1,606.00	2,135.00	3,344.00	373.00	58.00	
45	9962.00	204.00	9758.00	5835	DOL	COMPACTION PRICE ADJUSTMENT	1,325.00	2,299.00	917.00	422.00	755.00	686.00		760.00	1,011.00	1,583.00	176.00	28.00	
EROSION CONTROL AND PLANTING																			
46	36.00		36.00	6403	DAY	ESC LEAD	36.00												
47	2.80		2.80	6414	ACRE	SEEDING, FERTILIZING, AND MULCHING	1.60	0.33		0.28	0.21	0.13			0.25				
48	4279.00	31.00	4248.00	6438	C.Y.	COMPOST	662.00	870.00	551.00	127.00	742.00	640.00		175.00	481.00		31.00		
49	252.00		252.00	6468	S.Y.	STABILIZED CONSTRUCTION ENTRANCE					252.00								
50	3790.00		3790.00	6373	L.F.	SILT FENCE	1,295.00	1,480.00	625.00			390.00							
51	20000.00		20000.00	6490	DOL	EROSION/WATER POLLUTION CONTROL	20,000.00												
52	3740.00		3740.00	6410	C.Y.	TOPSOIL TYPE B		1,400.00			2,340.00								
TRAFFIC																			
53	1530.00		1530.00	6727	L.F.	EXTRUDED CURB		1,130.00	215.00			185.00							
54	522.00		522.00	6748	L.F.	BEAM GUARDRAIL TYPE 1 - 8 FT. LONG POST	522.00												
55	1894.00		1894.00	6751	L.F.	BEAM GUARDRAIL TYPE 1	930.00	964.00											
56	4.00		4.00	6760	EACH	BEAM GUARDRAIL TRANSITION SECTION TYPE D		4.00											
57	4.00		4.00	6716	EACH	BEAM GUARDRAIL FLARED TERMINAL	2.00	2.00											
58	4.00		4.00	6774	EACH	BEAM GUARDRAIL ANCHOR TYPE 4	2.00	2.00											
59	1600.00		1600.00	6781	L.F.	TEMPORARY CONC. BARRIER	1,600.00												
60	4.00		4.00	7440	EACH	TEMPORARY IMPACT ATTENUATOR	4.00												
61	7400.00		7400.00	7444	DOL	REPAIR IMPACT ATTENUATOR	7,400.00												
62	1.00		1.00	7447	EACH	TRUCK MOUNTED IMPACT ATTENUATOR		1.00											
63	60.00		60.00	7449	HOUR	OPERATION OF TRUCK MOUNTED IMPACT ATTENUATOR	60.00												
64	166.00		166.00	6832	EACH	FLEXIBLE GUIDE POST	44.00	14.00	23.00	14.00	17.00	18.00		14.00	22.00				
65	24320.00	910.00	23410.00	6806	L.F.	PAINT LINE	3,590.00	5,890.00	1,500.00	780.00	1,280.00	1,180.00		1,420.00	2,270.00	5,500.00	510.00	400.00	
66	210.00		210.00	6807	L.F.	PLASTIC LINE	210.00												
67	3070.00		3070.00	6818	L.F.	PLASTIC WIDE LINE	830.00				250.00	360.00		200.00	270.00	1,160.00			
68	2580.00		2580.00	6854	L.F.	PAINTED BARRIER LINE			1,340.00	620.00	160.00	150.00		150.00	160.00				
69	100.00		100.00	6859	L.F.	PLASTIC STOP LINE		40.00	30.00	30.00									
70	6.00		6.00	6833	EACH	PLASTIC TRAFFIC ARROW			2.00	2.00	1.00			1.00					
71	27.00		27.00	6881	EACH	PLASTIC DRAINAGE MARKING	6.00	9.00	2.00	2.00	2.00	2.00		2.00	2.00				
72	54.00		54.00		EACH	PLASTIC JUNCTION BOX MARKING	10.00	2.00	5.00	4.00	5.00	5.00		5.00	7.00	11.00			
73	4.00		4.00	6882	HUND	RAISED PAVEMENT MARKER TYPE 1	2.00									2.00			
74	3.25		3.25	6884	HUND	RAISED PAVEMENT MARKER TYPE 2	1.43	0.28	0.18	0.08	0.28	0.31		0.28	0.41				
75	11000.00		11000.00	6888	L.F.	TEMPORARY PAVEMENT MARKING	2,400.00		4,550.00	2,400.00						1,650.00			
76	LUMP SUM		LUMP SUM	6890	L.S.	PERMANENT SIGNING	L.S.												
77	LUMP SUM		LUMP SUM	6904	L.S.	ILLUMINATION SYSTEM SCD 2641	L.S.	L.S.				L.S.				L.S.			

GROUP NUMBER	SR	CONTROL SECTION	TAX SCHEDULE	FUND PARTICIPANTS
1	77	140801	**	STATE, FEDERAL AID
2	77	140800	**	STATE, FEDERAL AID
3	77	1400CT	*	STATE, FEDERAL AID
4	77	1400CY	*	STATE, FEDERAL AID
5	77	140800	**	STATE

		REGION	STATE	FEDERAL AID PROJECT. NO.		
		10	WA	NH-0077(000)		
				JOB NUMBER		
				04H321/1		
				CONTRACT NO		
				000000		
DATE		REVISION	BY			

Washington State
Department of Transportation

SR 77
EXAMPLE 4-7

SUMMARY OF QUANTITIES

SQ2

SHEET
4
OF
117
SHEETS

SUMMARY OF QUANTITIES

DOT_RGG900

6/16/2004

ITEM NO	TOTAL QUANTITY	SUB-TOTAL * SECTION 1-07.2(1) OF STANDARD SPECS	SUB-TOTAL ** SECTION 1-07.2(2) OF STANDARD SPECS	STD. ITEM NO.	UNIT	ITEM	GROUP 1	GROUP 1	GROUP 1	GROUP 1	GROUP 1	GROUP 1	GROUP 1	GROUP 2	GROUP 2	GROUP 2	GROUP 3	GROUP 4	GROUP 5				
							SR77 49+00.00 TO 70+85.00	DB6 LINE 9+00.00 TO 29+85.00	MC-N LINE 10+00.00 TO 17+18.64	MC-S LINE 10+00.00 TO 13+59.65	W-NS LINE 10+00.00 TO 17+74.53	NS-W LINE 9+00.00 TO 18+19.15	BRIDGE NO. 77/10	E-NS LINE 10+00.00 TO 18+83.05	NS-E LINE 9+00.00 TO 22+36.98	SR77 70+85.00 TO 95+00.00	DB6 LINE 7+65.00 TO 9+00.00	DB6 LINE 29+85.00 TO 31+20.00	THIRD PARTY DAMAGES				
78	LUMP SUM		LUMP SUM	6904	L.S.	ILLUMINATION SYSTEM SCD 2642	L.S.	L.S.			L.S.					L.S.							
79	LUMP SUM		LUMP SUM	6904	L.S.	ILLUMINATION SYSTEM SCX 2643	L.S.																
80	LUMP SUM		LUMP SUM	9380	L.S.	TEMPORARY TRAFFIC CONTROL DEVICES	L.S.																
81	2.00		2.00		EACH	TEMPORARY PAINTED TRAFFIC ARROW	2.00																
82	900.00		900.00	6979	HOUR	TRAFFIC CONTROL LABOR	900.00																
83	1000.00		1000.00	6972	HOUR	TRAFFIC CONTROL SUPERVISOR	1,000.00																
84	1085.00		1085.00	6982	S.F.	CONSTRUCTION SIGNS CLASS A	1,085.00																
OTHER ITEMS																							
85	1740.00		1740.00	7006	C.Y.	STRUCTURE EXCAVATION CLASS B INCL. HAUL	580.00	390.00	320.00	110.00	40.00	150.00		80.00	70.00								
86	6550.00		6550.00	7008	S.F.	SHORING OR EXTRA EXCAVATION CLASS B	750.00	1,140.00	1,670.00	670.00	270.00	1,040.00		530.00	480.00								
87	12.00		12.00	7014	C.Y.	GRAVEL BACKFILL FOR DRAIN		12.00															
88	700.00		700.00	7018	mGAL	WATER	120.00	290.00	90.00	20.00	40.00	40.00		40.00	60.00								
89	1.00		1.00	7029	EACH	PLUGGING EXISTING PIPE			1.00														
90	LUMP SUM		LUMP SUM	7037	L.S.	STRUCTURE SURVEYING							L.S.										
91	5.00		5.00	7045	EACH	MONUMENT CASE AND COVER		2.00		1.00				1.00	1.00								
92	593.00		593.00	7065	S.Y.	CONC. SLOPE PROTECTION	593.00																
93	320.00		320.00	7110	L.F.	WIRE FENCE TYPE 1		320.00															
94	LUMP SUM		LUMP SUM	7350	L.S.	CLEANING EXISTING DRAINAGE STRUCTURE	L.S.																
95	1200.00		1200.00	7400	HOUR	TRAINING	1,200.00																
96	2000.00		2000.00	7480	DOL	ROADSIDE CLEANUP	2,000.00																
97	LUMP SUM		LUMP SUM	7490	L.S.	TRIMMING AND CLEANUP	L.S.	L.S.	L.S.	L.S.	L.S.	L.S.		L.S.	L.S.								
98	5.00		5.00	7725	DOL	REIMBURSEMENT FOR THIRD PARTY DAMAGE															5.00		
99	-1.00		-1.00	7728	DOL	MINOR CHANGE	-1.00																
100	LUMP SUM		LUMP SUM	7736	L.S.	SPCC PLAN	L.S.																
101	LUMP SUM		LUMP SUM	7500	L.S.	FIELD OFFICE BUILDING		L.S.															
102	120.00		120.00	7550	S.Y.	CONSTRUCTION GEOTEXTILE FOR UNDERGROUND DRAINAGE		80.00	20.00			20.00											
103	4220.00		4220.00	7552	S.Y.	CONSTRUCTION GEOTEXTILE FOR SOIL STABILIZATION					650.00	330.00		880.00	2,360.00								
104	1.00		1.00	7562	EACH	MAILBOX SUPPORT TYPE 1		1.00															

GROUP LEGEND :

GROUP NUMBER	SR	CONTROL SECTION	TAX SCHEDULE	FUND PARTICIPANTS
1	77	140801	**	STATE, FEDERAL AID
2	77	140800	**	STATE, FEDERAL AID
3	77	1400CT	*	STATE, FEDERAL AID
4	77	1400CY	*	STATE, FEDERAL AID
5	77	140800	**	STATE

		REGION	STATE	FEDERAL AID PROJECT. NO.			
		10	WA	NH-0077(000)			
		JOB NUMBER					
		04H321/1					
		CONTRACT NO					
		000000					
DATE		REVISION	BY				

Washington State
Department of Transportation

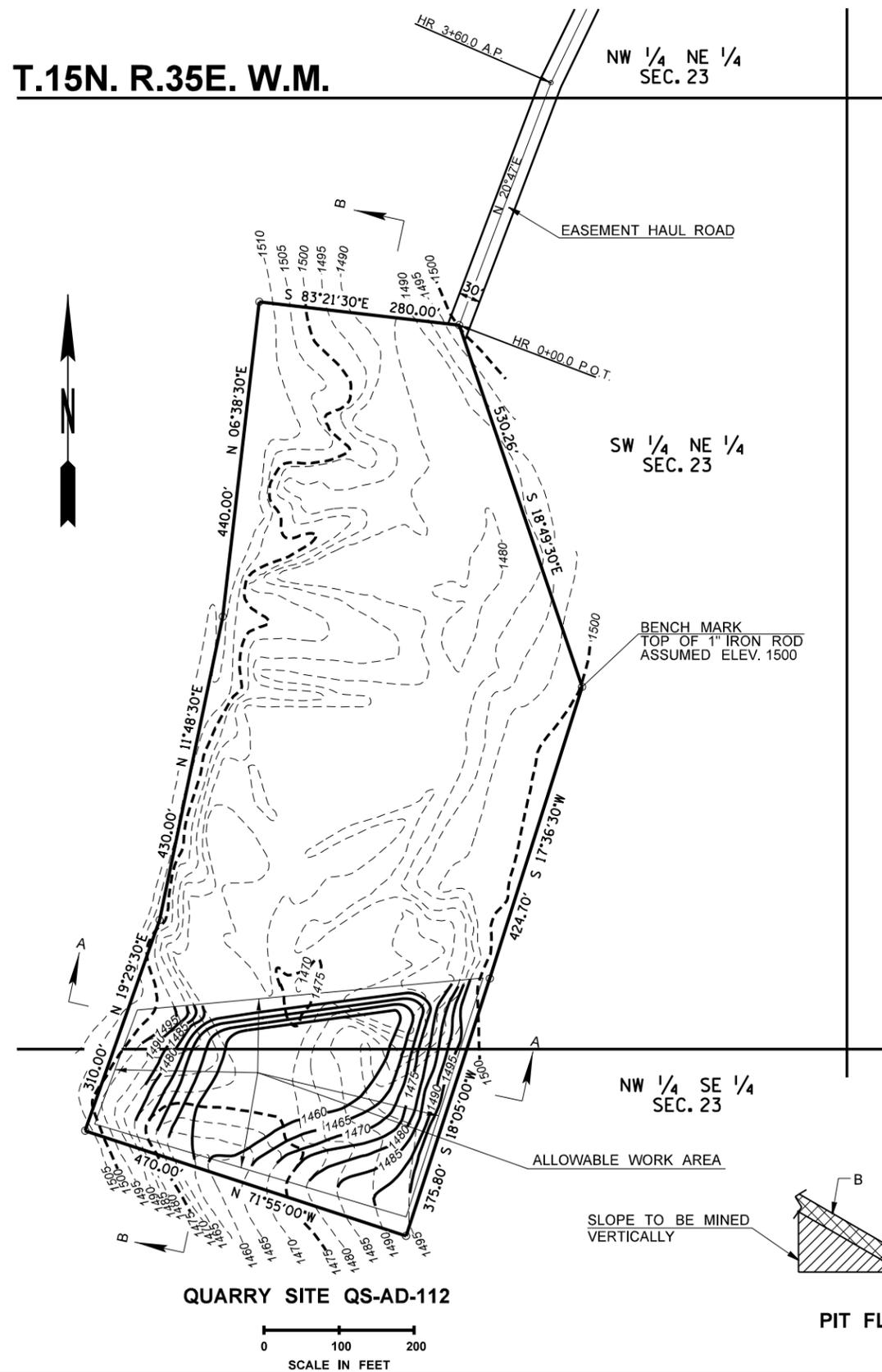
SR 77
EXAMPLE 4-7

SUMMARY OF QUANTITIES

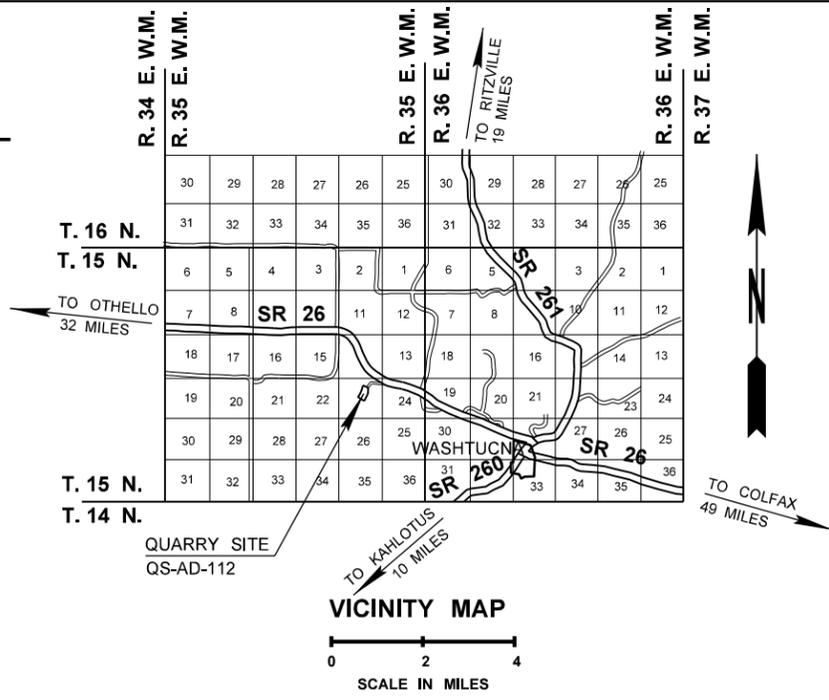
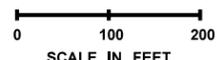
SQ3

SHEET
5
OF
117
SHEETS

T.15N. R.35E. W.M.



QUARRY SITE QS-AD-112



VICINITY MAP
SCALE IN MILES

QUARRY SITE QS-AD-112
There is sufficient material in this quarry for this project

SOURCE OF MATERIAL FOR PRODUCTION OF:

- BALLAST
- CRUSHED SURFACING TOP COURSE
- CRUSHED SCREENING 1/2 INCH TO 3/4 INCH
- CRUSHED SCREENING 3/4 INCH TO 0
- PRIME COAT AGGREGATE
- MINERAL AGGREGATE FOR ASPHALT CONCRETE PAVEMENT CLASS B

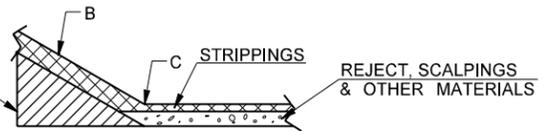
STRIPPING INCLUDING HAUL SITE QS-AD-112

LEGEND

A	Natural Area 10' Minimum
B	2:1 Slope Maximum
C	Rounding For Natural Appearance
D	Vertical Slope 30' Maximum
E	Bench 30' Minimum

	Existing Contours
	Ultimate Contours
	Area For Additional Borrow Material
	Contract Work Area

Contour Interval 5'



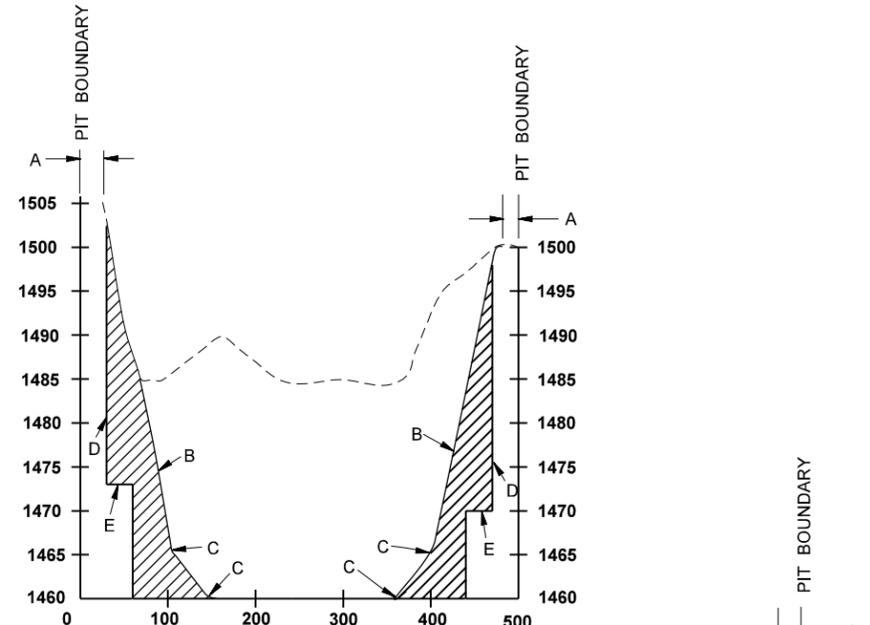
PIT FLOOR DETAIL

NOTES:

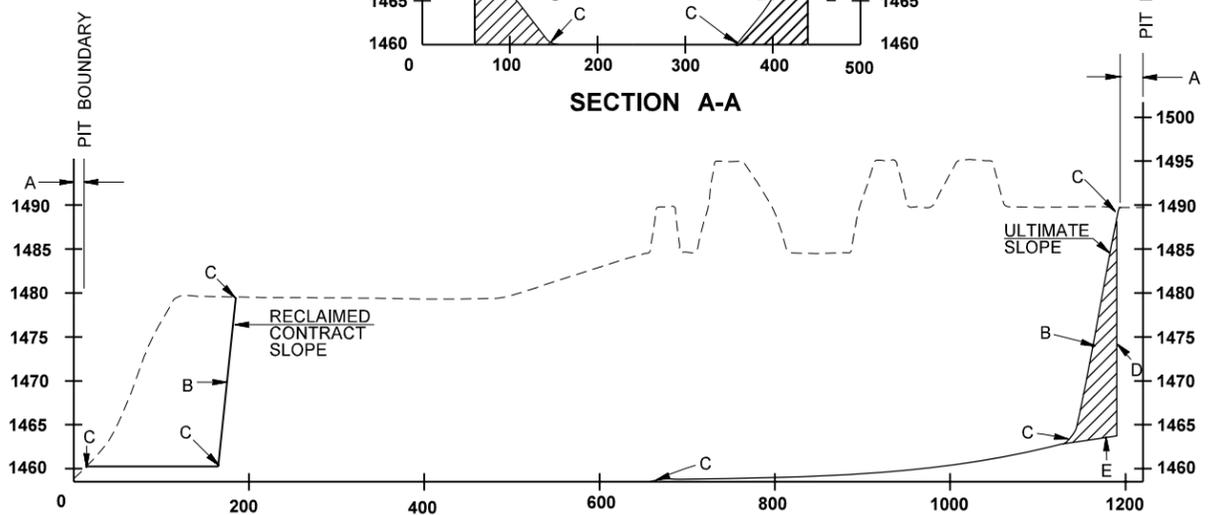
- Quarry QS-AD-112 is owned by the Washington State Department of Transportation.
- All slope intersections shall be rounded for natural appearance.
- No contaminates are anticipated.
- When all mining is completed in this quarry site, all disturbed areas shall be seeded, fertilized, and mulched with special erosion control mix.
- Drainage shall be towards the south end of the site.
- Scalplings shall be used on the quarry floor and on the sides to obtain the side slope. It may be necessary to haul additional borrow material into site to construct the side slopes for ultimate reclamation.
- All pit boundaries shall be fenced with Type 2 wire fencing including a 20 foot wide gate at the haul road as first order of work.

NOTE TO DESIGNER:
MAKE SURE THAT ALL NOTES ARE PROJECT SPECIFIC.

THE CONTRACT RECLAMATION PLAN IS DEVELOPED FROM THE ULTIMATE RECLAMATION PLAN ON FILE WITH THE REGIONAL MATERIALS LABORATORY.

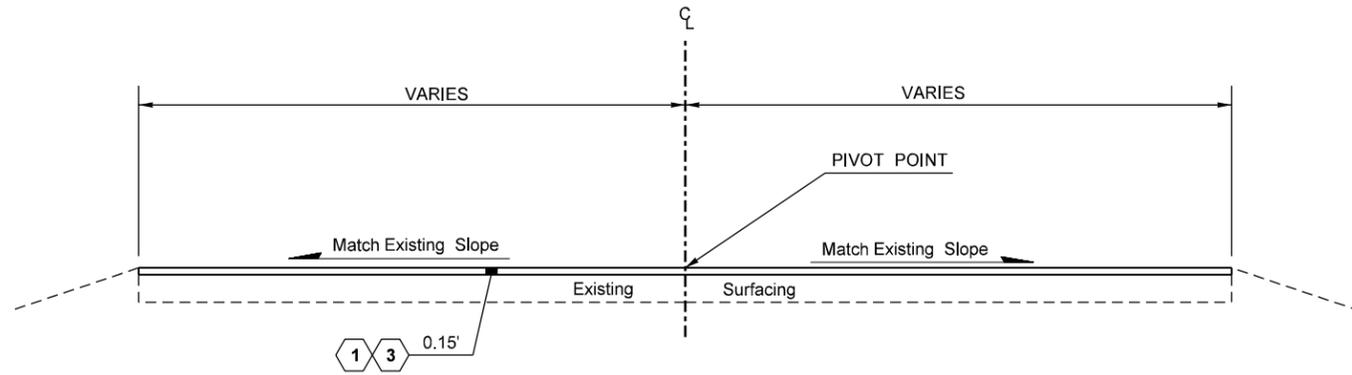


SECTION A-A



SECTION B-B

FILE NAME	C:\AAWork\PPM\PPM_Div4_July2008_v1.dgn	REGION NO.	STATE	FED.AID PROJ.NO.	Washington State Department of Transportation	EXAMPLE 4-8	Plot 8
TIME	2:27:17 PM	10	WASH	NH-0000(000)			RC1
DATE	8/4/2008	JOB NUMBER					SHEET
PLOTTED BY	KerrT	CONTRACT NO.					OF
DESIGNED BY	DESIGNER	LOCATION NO.					SHEETS
ENTERED BY	CAD OPERATOR						
CHECKED BY	TEAM LEADER						
PROJ. ENGR.	PROJECT ENGINEER						
REGIONAL ADM.	REGIONAL ADM.	REVISION	DATE	BY			
					P.E. STAMP BOX		



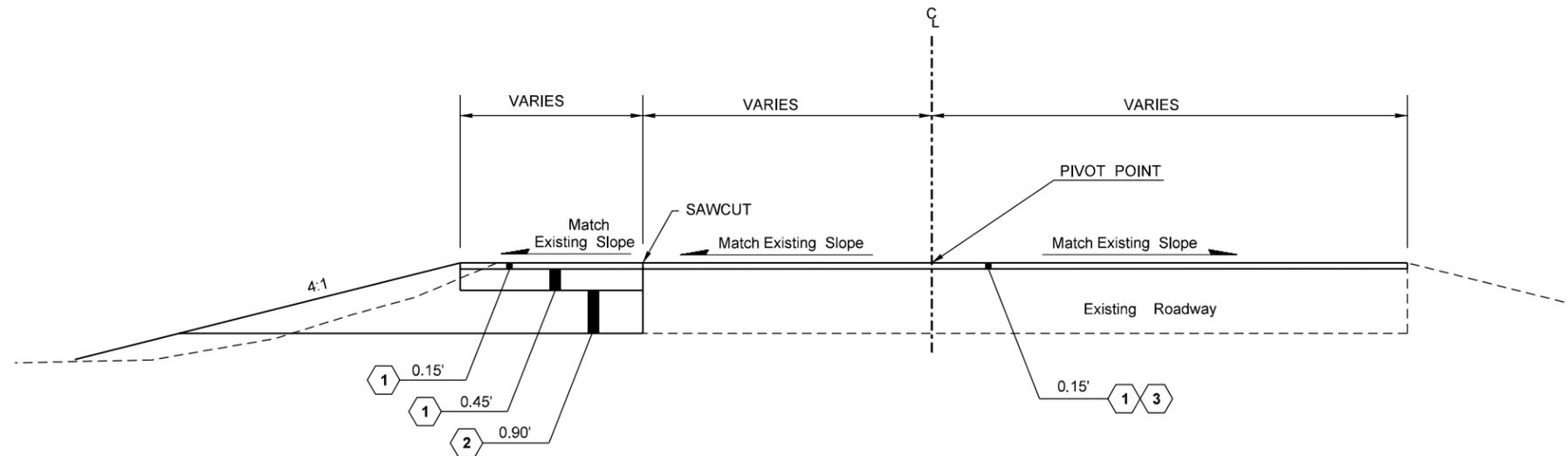
ROADWAY SECTION A

STA. L 461+50.00 TO STA. L 465+36.00
 BRIDGE 241/10 & APPROACH SLABS STA. L 465+36.00 TO STA. L 468+18.00 NOT INCLUDED IN PROJECT
 STA. L 468+18.00 TO STA. L 471+61.00

NOTES:

SEE PAVING PLANS FOR WIDTHS
 NOT SHOWN.

ALL SURFACING AND PAVING DEPTHS ARE
 COMPACTED DEPTHS. COURSES SHALL NOT
 EXCEED DEPTHS DEFINED IN THE STANDARD
 SPECIFICATIONS.



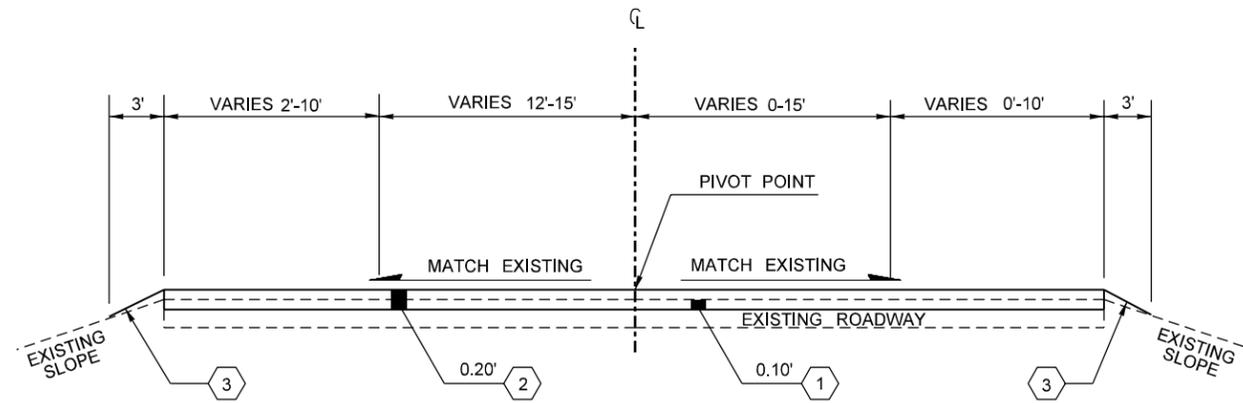
ROADWAY SECTION B

STA. L 471+61.00 TO STA. L 473+00.00

LEGEND

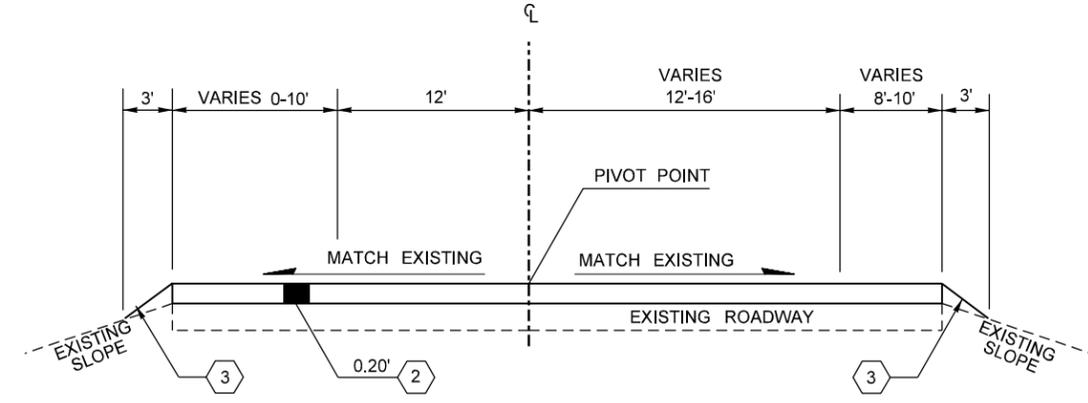
- 1 ASPHALT CONCRETE PAVEMENT CLASS A PG. 64-28
- 2 CRUSHED SURFACING BASE COURSE
- 3 PLANING BITUMINOUS PAVEMENT

FILE NAME	C:\AAWork\PPM\PPM_Div4_July2008_v1.dgn	REGION NO.	STATE	FED.AID PROJ.NO.	Washington State Department of Transportation	EXAMPLE 4-10	Plot 10
TIME	2:28:10 PM	10	WASH	NH-0000(000)			RS2
DATE	8/4/2008	JOB NUMBER					SHEET
PLOTTED BY	KerrT	CONTRACT NO.					OF
DESIGNED BY	DESIGNER	LOCATION NO.					SHEETS
ENTERED BY	CAD OPERATOR						
CHECKED BY	TEAM LEADER						
PROJ. ENGR.	PROJECT ENGINEER						
REGIONAL ADM.	REGIONAL ADM.	REVISION	DATE	BY	DATE	ROADWAY SECTION	



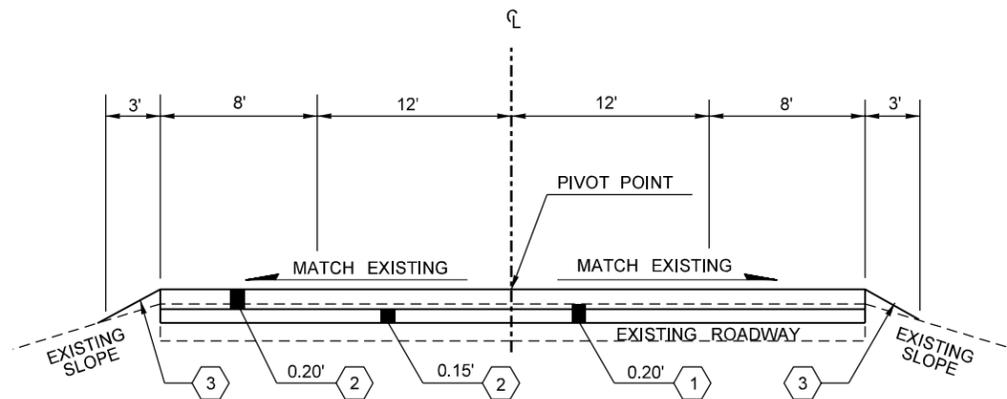
ROADWAY SECTION A

BRIDGE	12/612	STATION	TO	STATION	NOT INCLUDED IN PROJECT
L	10+00.00	L	31+11.37	L	31+11.37
L	31+11.37	L	34+74.70	L	34+74.70
L	34+74.70	L	46+96.00	L	46+96.00
C	318+92.80	C	327+22.80	C	327+22.80



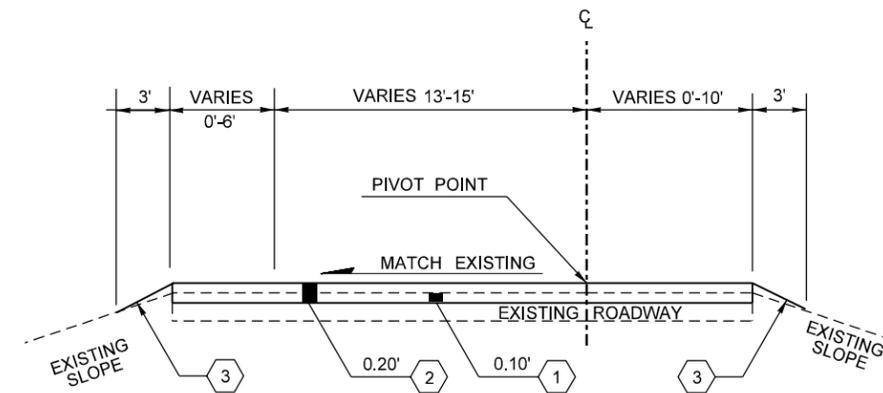
ROADWAY SECTION B

STATION	TO	STATION
L 46+96.00	L 64+38.40	L 64+38.40
L 77+58.40	L 239+15.20	L 239+15.20
L 241+79.20	L 242+84.80	L 242+84.80
CEW 13+00.00	CEW 30+06.93	CEW 30+06.93



ROADWAY SECTION C

STATION	TO	STATION
L 64+38.40	L 77+58.40	L 77+58.40
L 239+15.20	L 241+79.20	L 241+79.20



ROADWAY SECTION D

STATION	TO	STATION
CEW 10+00.00	CEW 13+00.00	CEW 13+00.00

LEGEND

- ① PLANING BITUMINOUS PAVEMENT
- ② HMA CL. 1/2 IN. PG
- ③ SHOULDER FINISHING

NOTES:

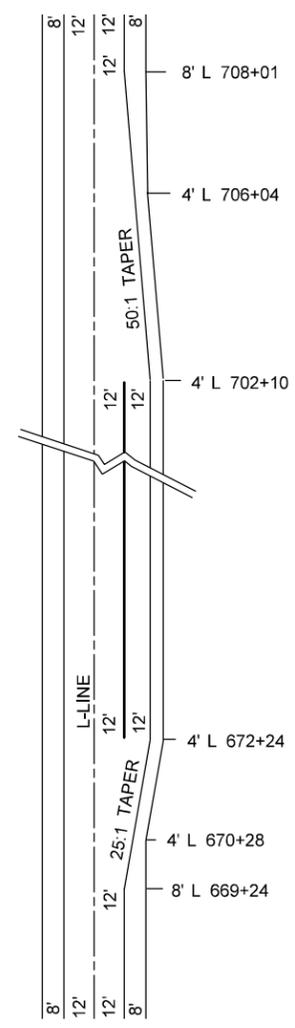
ALL SURFACING AND PAVING DEPTHS ARE COMPACTED DEPTHS. COURSES SHALL NOT EXCEED DEPTHS DEFINED IN THE STANDARD SPECIFICATIONS.

SEE PAVING PLAN FOR VARIABLE WIDTHS

NOT TO SCALE

FILE NAME	C:\AAWork\PPM\PPM_Div4_July2008_v1.dgn	REGION NO.	10	STATE	WASH	FED.AID PROJ.NO.	NH-0000(000)	LOCATION NO.	XL-1234	DATE		DATE		Plot 11
TIME	2:28:43 PM	JOB NUMBER	00Z000							P.E. STAMP BOX		P.E. STAMP BOX		RS3
DATE	8/4/2008	CONTRACT NO.												SHEET
PLOTTED BY	KerrT													OF
DESIGNED BY	DESIGNER													SHEETS
ENTERED BY	CAD OPERATOR													
CHECKED BY	TEAM LEADER													
PROJ. ENGR.	PROJECT ENGINEER													
REGIONAL ADM.	REGIONAL ADM.	REVISION		DATE										
														EXAMPLE 4-11 ROADWAY SECTION

NOTE TO DESIGNER:
THIS SHEET SHOWS TWO WAYS OF USING ROADWAY SECTIONS TO DESCRIBE THE SITUATION BELOW.



AUXILIARY PASSING LANE

THE AUXILIARY PASSING LANE DETAIL IS SHOWN HERE FOR YOUR USE IN SEEING WHAT ROADWAY SECTION C IS ACCOMPLISHING WITHOUT THE USE OF A PAVING OR CHANNELIZATION PLAN ON A SIMPLE PAVING PROJECT.

THE TWO ROADWAY SECTION C's ARE DISPLAYED AS AN EXAMPLE OF DIFFERENT WAYS OF SHOWING THE SAME THING.

EVEN THOUGH THE SHOULDER DOESN'T SPECIFY TAPERING EXACTLY AS SHOWN IN THE PLAN DETAIL IT IS SUFFICIENT FOR AN OVERLAY PROJECT WHERE THE PAVING IN THE FIELD WILL BE DONE TO THE EXISTING CONDITION AND THE CONTRACTOR CAN STILL OBTAIN A REASONABLE QUANTITY TAKE-OFF FROM IT.

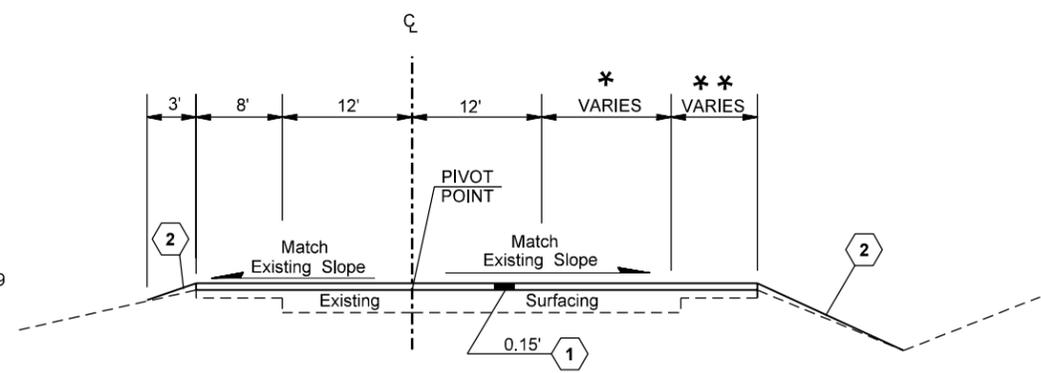
NOTES:

- * AUXILIARY PASSING LANE
LANE VARIES FROM 0' AT L 669+29 TO 12' AT L 672+24, AND FROM 12' AT L 702+10 TO 0' AT L 708+01
- ** RIGHT SHOULDER
SHOULDER VARIES FROM 8' AT L 699+29 TO 4' AT L 670+28, AND FROM 4' AT L 706+04 TO 8' AT L 708+01

LEGEND

- ① HMA CL. 1/2 IN. PG 64
- ② CRUSHED SURFACING TOP COURSE

L-LINE



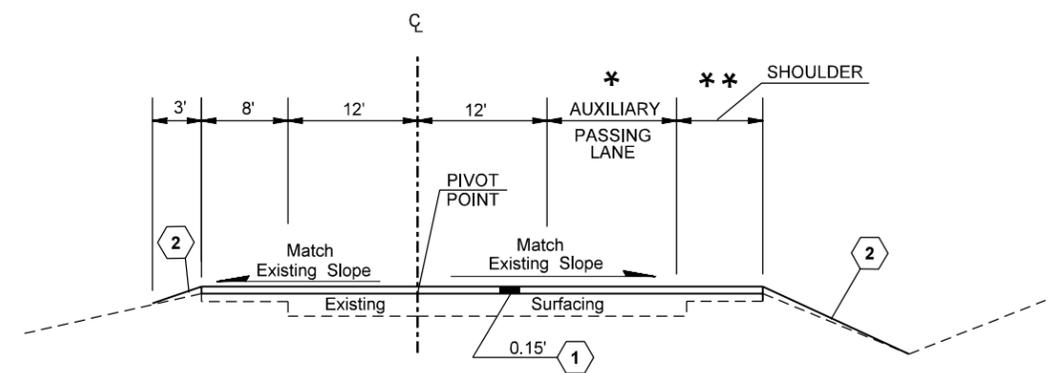
ROADWAY SECTION C

L 505+25 TO L 997+38

NOTES:

ALL SURFACING AND PAVING DEPTHS ARE COMPACTED DEPTHS. COURSES SHALL NOT EXCEED DEPTHS DEFINED IN THE STANDARD SPECIFICATIONS.

L-LINE

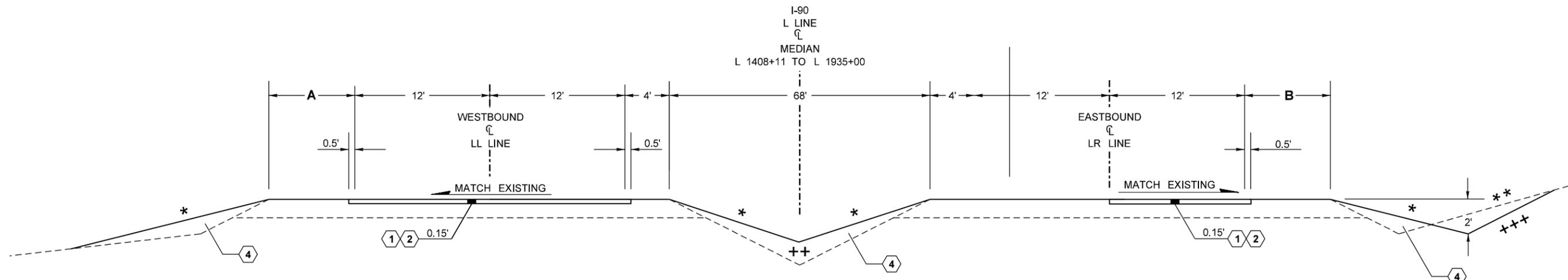


ROADWAY SECTION C

L 505+25 TO L 997+38

STATION	*	STATION	**
L 505+25	0'	L 505+25	8'
L 669+24	0'	L 669+24	8'
L 672+24	12'	L 670+28	4'
L 702+10	12'	L 702+10	4'
L 708+01	0'	L 706+04	4'
L 997+38	0'	L 708+01	8'
		L 997+38	8'

FILE NAME	C:\AAWork\PPM\PPM_Div4_July2008_v1.dgn			REGION NO.	STATE	FED.AID PROJ.NO.	Washington State Department of Transportation	EXAMPLE 4-12	Plot 12
TIME	2:29:02 PM			10	WASH	NH-0000(000)			RS4
DATE	8/4/2008			JOB NUMBER	CONTRACT NO.	LOCATION NO.			SHEET
PLOTTED BY	KerrT			00Z000		XL-1234	Department of Transportation	ROADWAY SECTION	OF
DESIGNED BY	DESIGNER								SHEETS
ENTERED BY	CAD OPERATOR								
CHECKED BY	TEAM LEADER								
PROJ. ENGR.	PROJECT ENGINEER								
REGIONAL ADM.	REGIONAL ADM.	REVISION	DATE	BY					



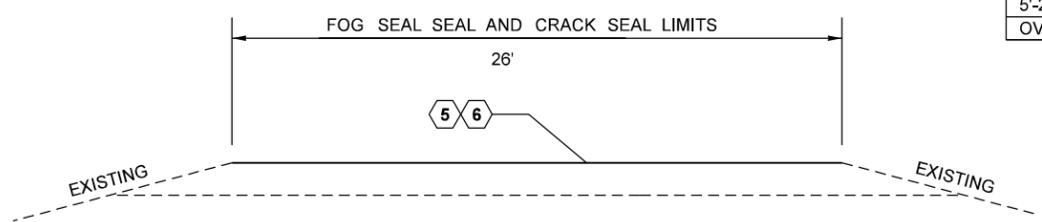
LL LINE	A
LL 1408+11 TO LL 1415+50	38'
LL 1415+50 TO LL 1418+50	38'-10'
LL 1418+50 TO LL 1603+37	10'
SEE ROADWAY SECTION C	
LL 1606+65 TO LL 1740+00	10'
SEE ROADWAY SECTION E	
LL 1877+00 TO LL 1880+10	10'-38'
LL 1880+10 TO LL 1883+30	38'-10'
LL 1883+30 TO LL 1935+00	10'

ROADWAY SECTION F

* & ** SEE SLOPE SELECTION TABLE.
 ++ SEE MEDIAN CUT DETAIL SHEET R6.
 +++ SEE ROCK DETAIL SHEET R6.

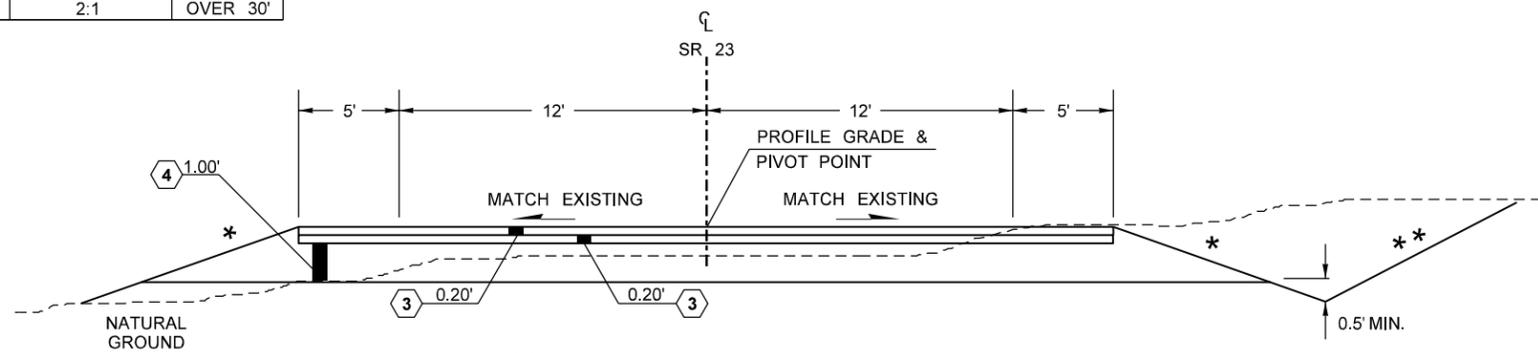
SLOPE SELECTION TABLE		
* HEIGHT OF CUT	SLOPE NOT STEEPER THAN	** HEIGHT OF FILL
0'-5'	6:1	0'-10'
	4:1	10'-20'
5'-20'	3:1	20'-30'
OVER 20'	2:1	OVER 30'

LR LINE	B
LR 1407+63 TO LR 1418+00	10'
LR 1418+00 TO LR 1421+25	10'-20'
LR 1421+25 TO LR 1426+75	20'
LR 1426+75 TO LR 1431+75	20'-10'
LR 1431+75 TO LR 1603+37	10'
SEE ROADWAY SECTION C	
LR 1606+65 TO LR 1853+00	10'
LR 1853+00 TO LR 1856+00	10'-38'
LR 1856+00 TO LR 1882+00	38'-33'
LR 1882+00 TO LR 1885+25	33'-20'
LR 1885+25 TO LR 1887+60	20'
LR 1887+60 TO LR 1892+60	20'-10'
LR 1892+60 TO LR 1935+00	10'



ROADWAY SECTION G

SD 95+94 TO 109+85	FA 56+00 TO 68+75
SA 97+92 TO 105+60	FD 55+00 TO 68+46
SC 8+20 TO 15+50	FC 67+96 TO 80+10
SB 4+20 TO 18+00	FB 67+34 TO 82+00



ROADWAY SECTION H

SH 51+30 TO SH 62+50

LEGEND	
1	PLANING BITUMINOUS PAVEMENT
2	HMA CL. 1/2 IN. PG
3	HMA CL. 3/4 IN. PG
4	CRUSHED SURFACING BASE COURSE
5	CRACK SEALING
6	ASPHALT FOR FOG SEAL

EQUATIONS	
STA. L 1477+54.39 BK. =	STA. L 1477+59.90 AHD.
STA. L 1721+65.53 P.C. BK. =	STA. L 1721+63.85 P.C. AHD.
STA. L 1862+10.50 BK. =	STA. LL 1862+24.79 P.C. AHD. STA. LR 1861+96.03 P.O.T. AHD.

NOT TO SCALE

NOTE:
 ALL SURFACING AND PAVING DEPTHS ARE COMPACTED DEPTHS. COURSES SHALL NOT EXCEED DEPTHS DEFINED IN THE STANDARD SPECIFICATIONS.

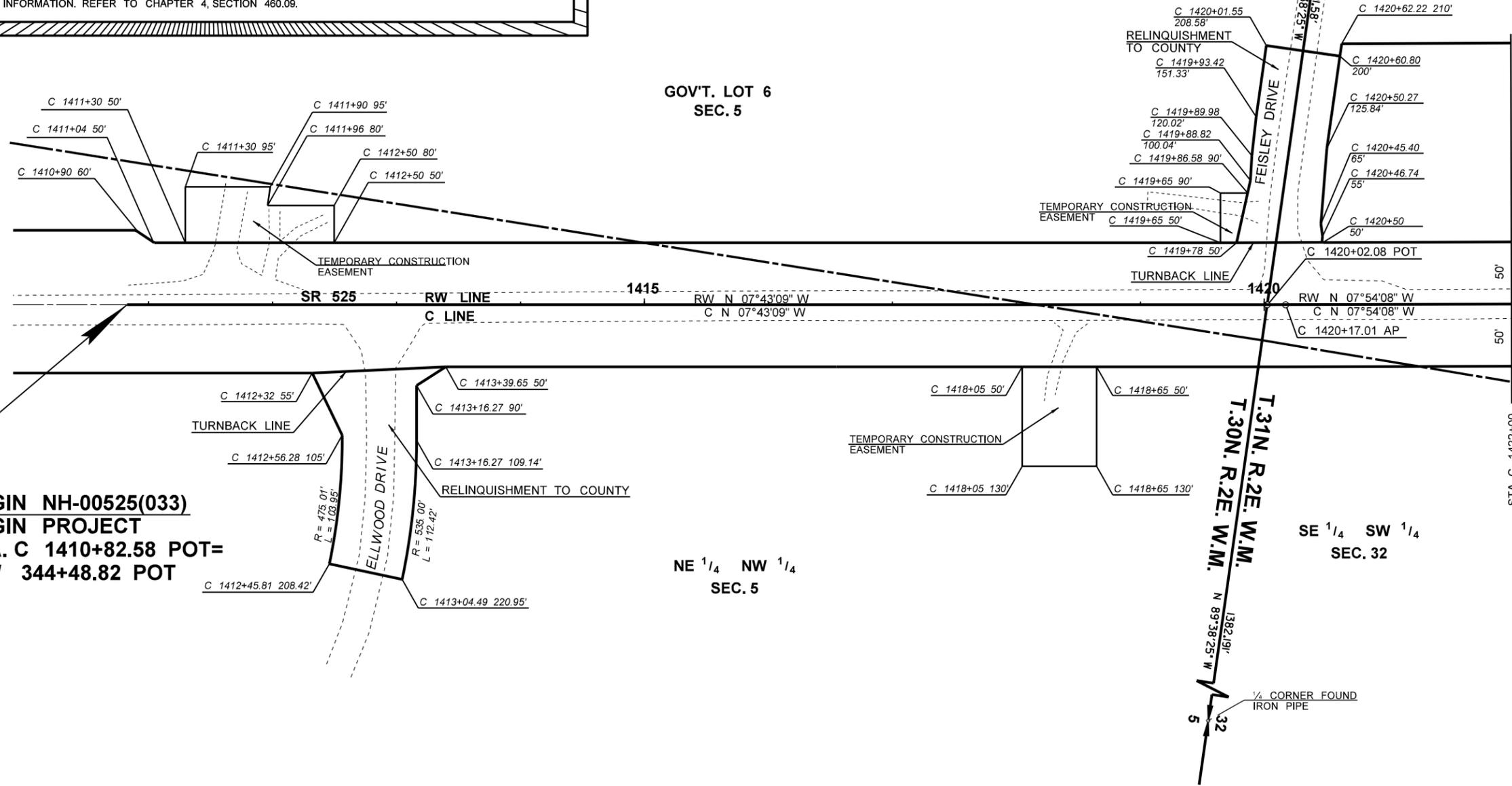
FILE NAME	C:\AAWork\PPM\PPM_Div4_July2008_v1.dgn	REGION NO.	STATE	FED.AID PROJ.NO.	Washington State Department of Transportation	EXAMPLE 4-13	Plot 13
TIME	2:29:28 PM	10	WASH	NH-0000(000)			RS5
DATE	8/4/2008	JOB NUMBER	CONTRACT NO.	LOCATION NO.			SHEET OF SHEETS
DESIGNED BY	KerrT	00Z000		XL-1234	ROADWAY SECTION		
ENTERED BY	DESIGNER						
CHECKED BY	CAD OPERATOR						
PROJ. ENGR.	TEAM LEADER						
REGIONAL ADM.	PROJECT ENGINEER						
REGIONAL ADM.	REGIONAL ADM.	REVISION	DATE	BY	P.E. STAMP BOX	DATE	P.E. STAMP BOX

NOTE TO DESIGNER:

THE NEED FOR THIS PLAN IS TO SHOW RIGHT OF WAY BOUNDARIES AND PROVIDE DATA FOR SURVEYING IN RIGHT OF WAY

THIS EXAMPLE SHOWS RIGHT OF WAY PLANS SEPARATELY. THIS WAS DONE BECAUSE COMBINING RIGHT OF WAY INFORMATION WITH OTHER PLAN INFORMATION SUCH AS ALIGNMENT WOULD HAVE PUT TOO MUCH INFORMATION ON ONE PLAN. IF YOUR PROJECT'S RIGHT OF WAY CAN BE SHOWN WITH ALIGNMENT INFORMATION WITHOUT CREATING PLAN CONFUSION THEN DO SO. REFER TO CHAPTER 4, SECTION 460.09 FOR INFORMATION ON WHAT A RIGHT OF WAY PLAN SHOULD SHOW.

IN THIS EXAMPLE THE RIGHT OF WAY ALIGNMENT IS THE SAME AS THE CONSTRUCTION ALIGNMENT. WHEN THE RIGHT OF WAY ALIGNMENT IS COINCIDENTAL WITH THE CONSTRUCTION CENTERLINE THEN AN EQUATION IS PROVIDED AT THE BEGIN OF PROJECT TO TIE RIGHT OF WAY AND CONSTRUCTION STATIONING TOGETHER. CONSTRUCTION STATIONING IS THEN USED TO SHOW OFFSET DISTANCES TO RIGHT OF WAY AND OTHER CONTRACT INFORMATION. REFER TO CHAPTER 4, SECTION 460.09.



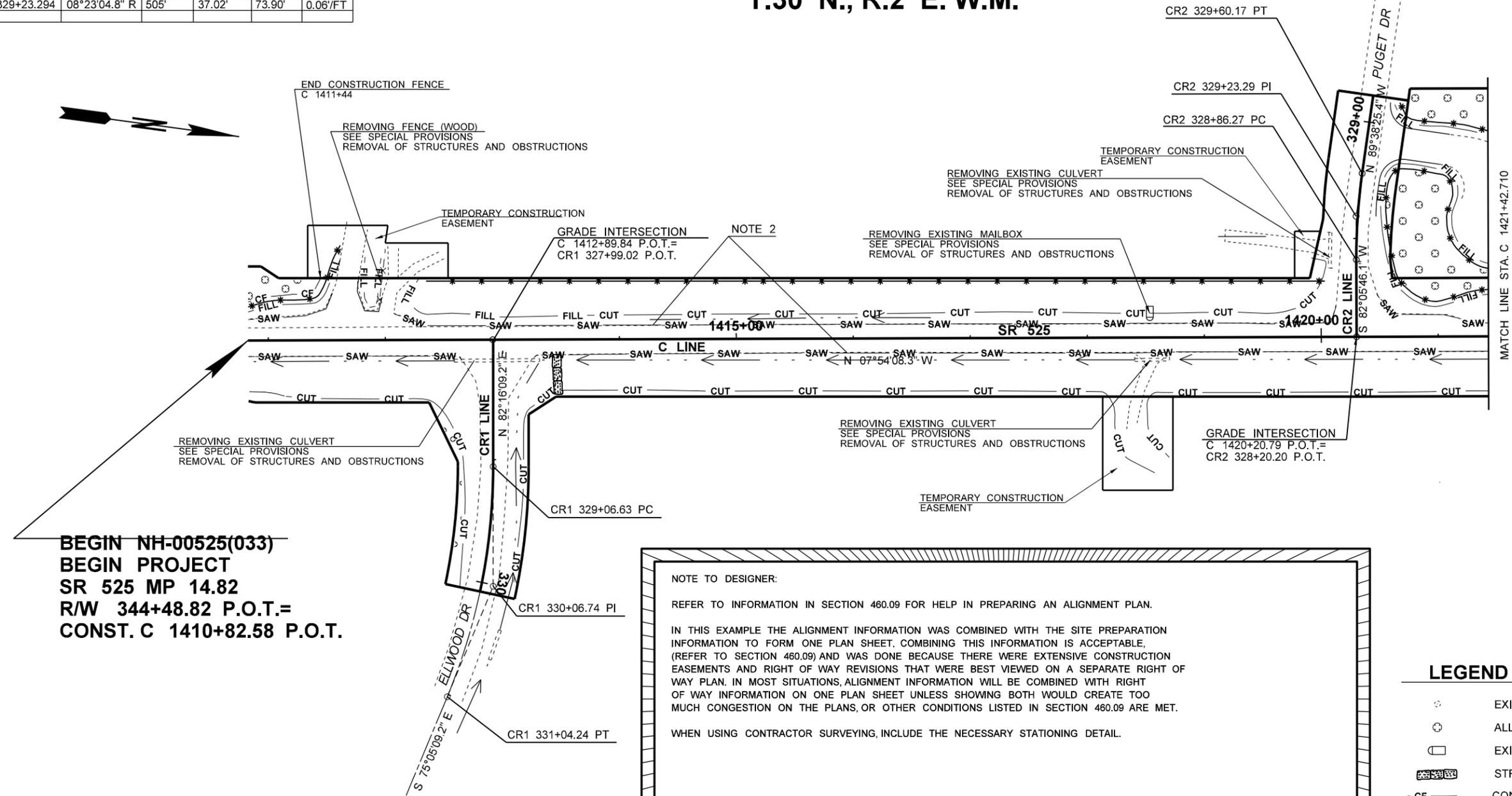
BEGIN NH-00525(033)
BEGIN PROJECT
STA. C 1410+82.58 POT=
R/W 344+48.82 POT

0 50 100
 SCALE IN FEET

FILE NAME	C:\AAWork\PPM\PPM_Div4_July2008_v1.dgn	REGION NO.	STATE	FED.AID PROJ.NO.	Washington State Department of Transportation	EXAMPLE 4-16	Plot 16
TIME	2:30:31 PM	10	WASH	NH-0000(000)			RW1
DATE	8/4/2008	JOB NUMBER					SHEET
PLOTTED BY	KerrT	CONTRACT NO.					OF
DESIGNED BY	DESIGNER	LOCATION NO.					SHEETS
ENTERED BY	CAD OPERATOR						
CHECKED BY	TEAM LEADER						
PROJ. ENGR.	PROJECT ENGINEER						
REGIONAL ADM.	REGIONAL ADM.	REVISION	DATE	BY	DATE	RIGHT OF WAY	

CURVE DATA					
P.I. STATION	DELTA	RADIUS	TANGENT	LENGTH	S
CR1 330+06.744	22°38'41.6" R	500'	101.11'	197.61'	0.06'/FT
CR2 329+23.294	08°23'04.8" R	505'	37.02'	73.90'	0.06'/FT

T.30 N., R.2 E. W.M.



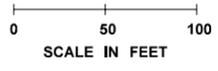
**BEGIN NH-00525(033)
 BEGIN PROJECT
 SR 525 MP 14.82
 R/W 344+48.82 P.O.T.=
 CONST. C 1410+82.58 P.O.T.**

NOTE TO DESIGNER:
 REFER TO INFORMATION IN SECTION 460.09 FOR HELP IN PREPARING AN ALIGNMENT PLAN.
 IN THIS EXAMPLE THE ALIGNMENT INFORMATION WAS COMBINED WITH THE SITE PREPARATION INFORMATION TO FORM ONE PLAN SHEET. COMBINING THIS INFORMATION IS ACCEPTABLE, (REFER TO SECTION 460.09) AND WAS DONE BECAUSE THERE WERE EXTENSIVE CONSTRUCTION EASEMENTS AND RIGHT OF WAY REVISIONS THAT WERE BEST VIEWED ON A SEPARATE RIGHT OF WAY PLAN. IN MOST SITUATIONS, ALIGNMENT INFORMATION WILL BE COMBINED WITH RIGHT OF WAY INFORMATION ON ONE PLAN SHEET UNLESS SHOWING BOTH WOULD CREATE TOO MUCH CONGESTION ON THE PLANS, OR OTHER CONDITIONS LISTED IN SECTION 460.09 ARE MET.
 WHEN USING CONTRACTOR SURVEYING, INCLUDE THE NECESSARY STATIONING DETAIL.

LEGEND

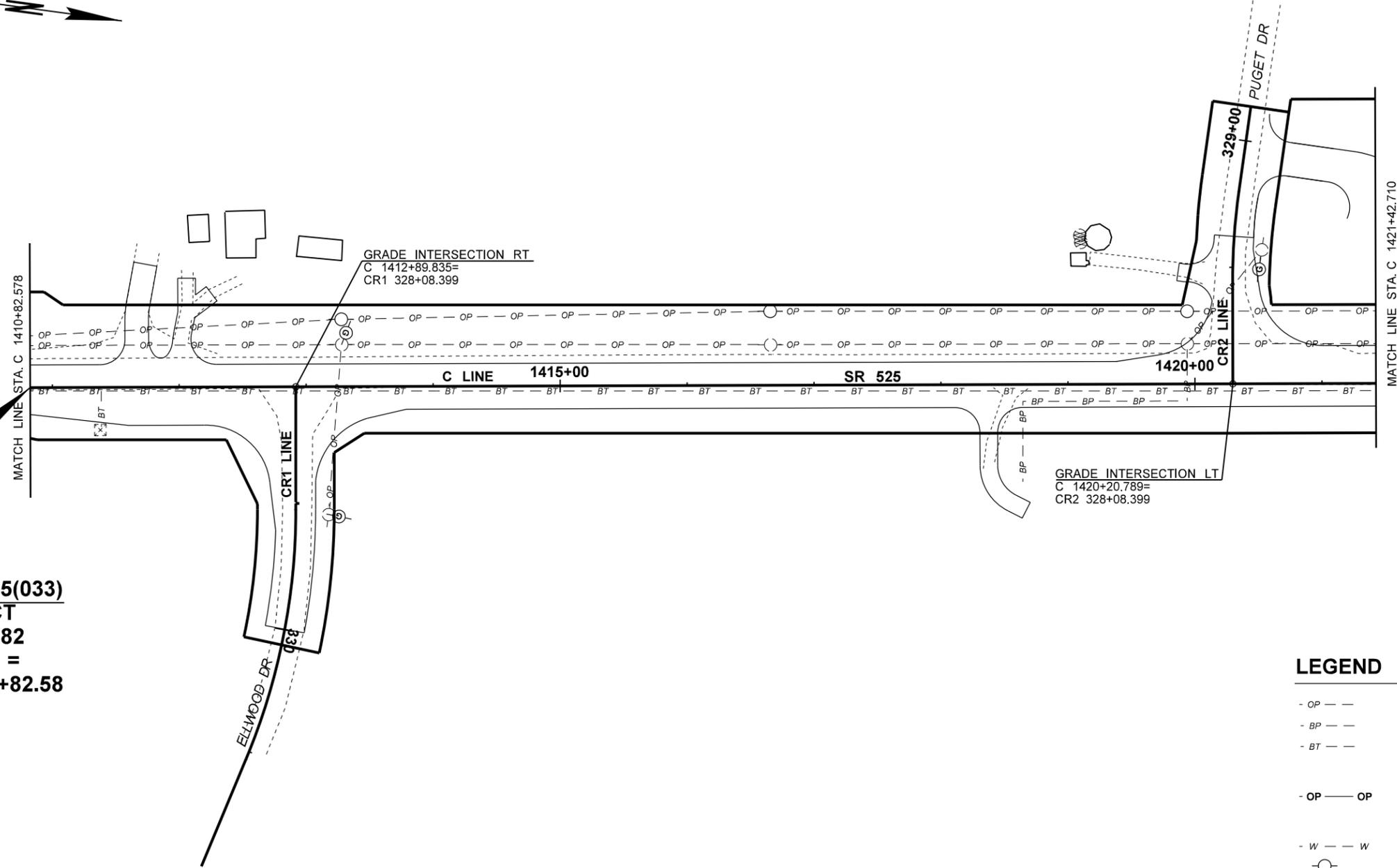
- EXISTING MONUMENT
- ⊕ ALL VEGETATION TO REMAIN
- EXISTING MAILBOX
- ▨ STRAW BALE BARRIER
- CF - CONSTRUCTION FENCE
- SAW - SAWCUT ASPHALT CONC. PAVEMENT
- * - GEOTEXTILE SILT FENCE CONSTRUCTION
- - - EXISTING FENCE
- CUT - CUT LINE
- FILL - FILL LINE
- - - EXISTING DITCH
- - - - - EXISTING CULVERT

- NOTES:**
- SEE RIGHT OF WAY PLANS FOR STATIONS AND OFFSET DISTANCES TO RIGHT OF WAY BOUNDRIES.
 - SAWCUT MADE AT EXISTING EDGE LINE STRIPING AND AT PAVING LIMITS - SEE PAVING PLANS AND ROAD APPROACH DETAILS FOR LIMITS.

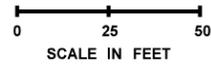


FILE NAME	C:\AAWork\PPM\PPM_Div4_July2008_v1.dgn	REGION NO.	STATE	FED.AID PROJ.NO.	Washington State Department of Transportation	EXAMPLE 4-18	Plot 18
TIME	2:30:50 PM	10	WASH	NH-0000(000)			AS1
DATE	8/4/2008	JOB NUMBER					SHEET
PLOTTED BY	KerrT	CONTRACT NO.					OF
DESIGNED BY	DESIGNER	LOCATION NO.					SHEETS
ENTERED BY	CAD OPERATOR						
CHECKED BY	TEAM LEADER						
PROJ. ENGR.	PROJECT ENGINEER						
REGIONAL ADM.	REGIONAL ADM.	REVISION	DATE	BY	DATE	DATE	
					P.E. STAMP BOX	P.E. STAMP BOX	

T. 30 N., R. 2 E. W.M.



BEGIN NH-00525(033)
BEGIN PROJECT
SR 525 MP 14.82
R/W 344+48.82 =
CONST. C 1410+82.58

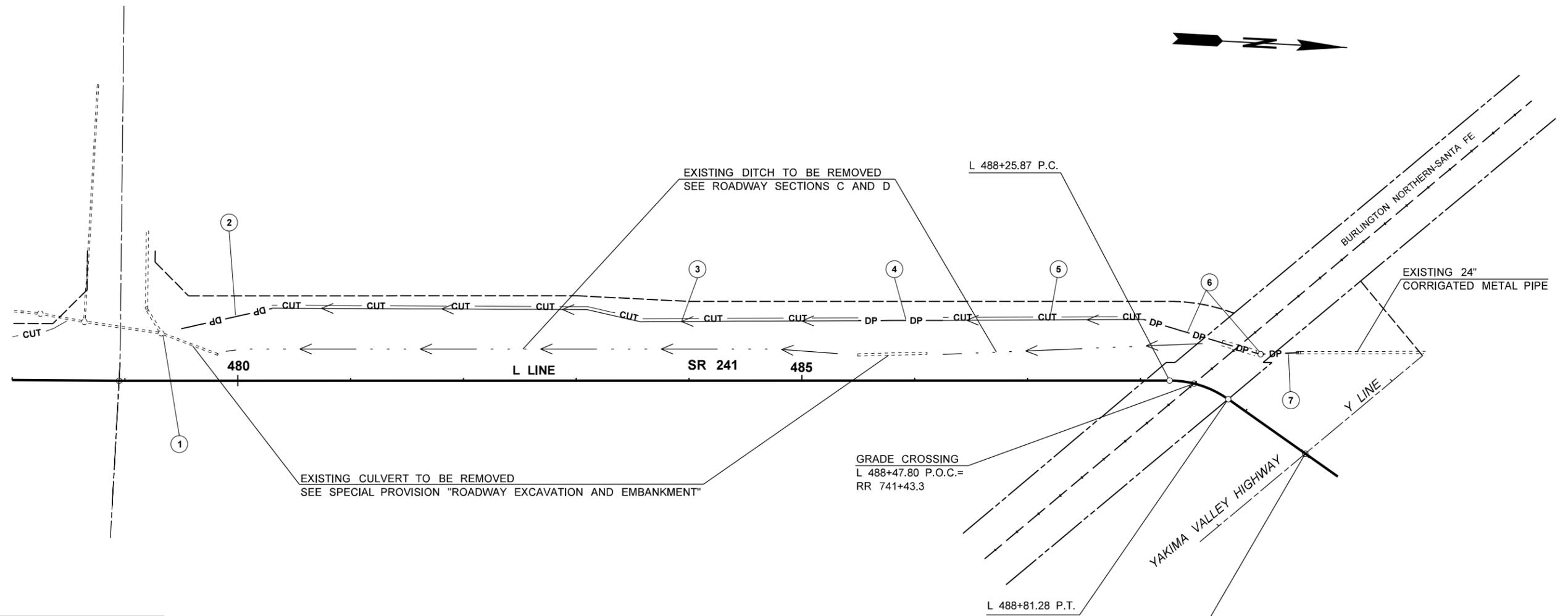


LEGEND

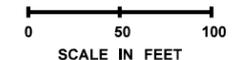
- OP - - - - EXISTING OVERHEAD POWER
- BP - - - - EXISTING BURIED POWER
- BT - - - - EXISTING BURIED TELEPHONE

- OP - - - - OVERHEAD POWER
- W - - - - EXISTING WATERLINE
- - - - - EXISTING OVERHEAD FIBER OPTIC
- - - - - POWER POLE
- - - - - EXISTING POWER POLE
- ⊙ - - - - EXISTING ANCHOR
- ⊞ - - - - EXISTING BSW PEDESTAL
- ⊞ - - - - EXISTING 3' X 5' PULL BOX

FILE NAME	C:\AAWork\PPM\PPM_Div4_July2008_v1.dgn			REGION NO.	STATE	FED.AID PROJ.NO.	Washington State Department of Transportation	EXAMPLE 4-19	Plot 19
TIME	2:31:16 PM			10	WASH	NH-0000(000)			UT1
DATE	8/4/2008			JOB NUMBER					SHEET
PLOTTED BY	KerrT			CONTRACT NO.					OF
DESIGNED BY	DESIGNER			LOCATION NO.					SHEETS
ENTERED BY	CAD OPERATOR								
CHECKED BY	TEAM LEADER								
PROJ. ENGR.	PROJECT ENGINEER								
REGIONAL ADM.	REGIONAL ADM.			REVISION	DATE	BY	P.E. STAMP BOX	UTILITY PLAN	



LEGEND	
⊙	DRAINAGE STRUCTURE NOTE
- DP -	NEW PIPE/CULVERT
-----	EXISTING PIPE/CULVERT
○	NEW MANHOLE
◊	EXISTING MANHOLE
—	NEW DITCH
- - - - -	EXISTING DITCH
---	R/W LINE



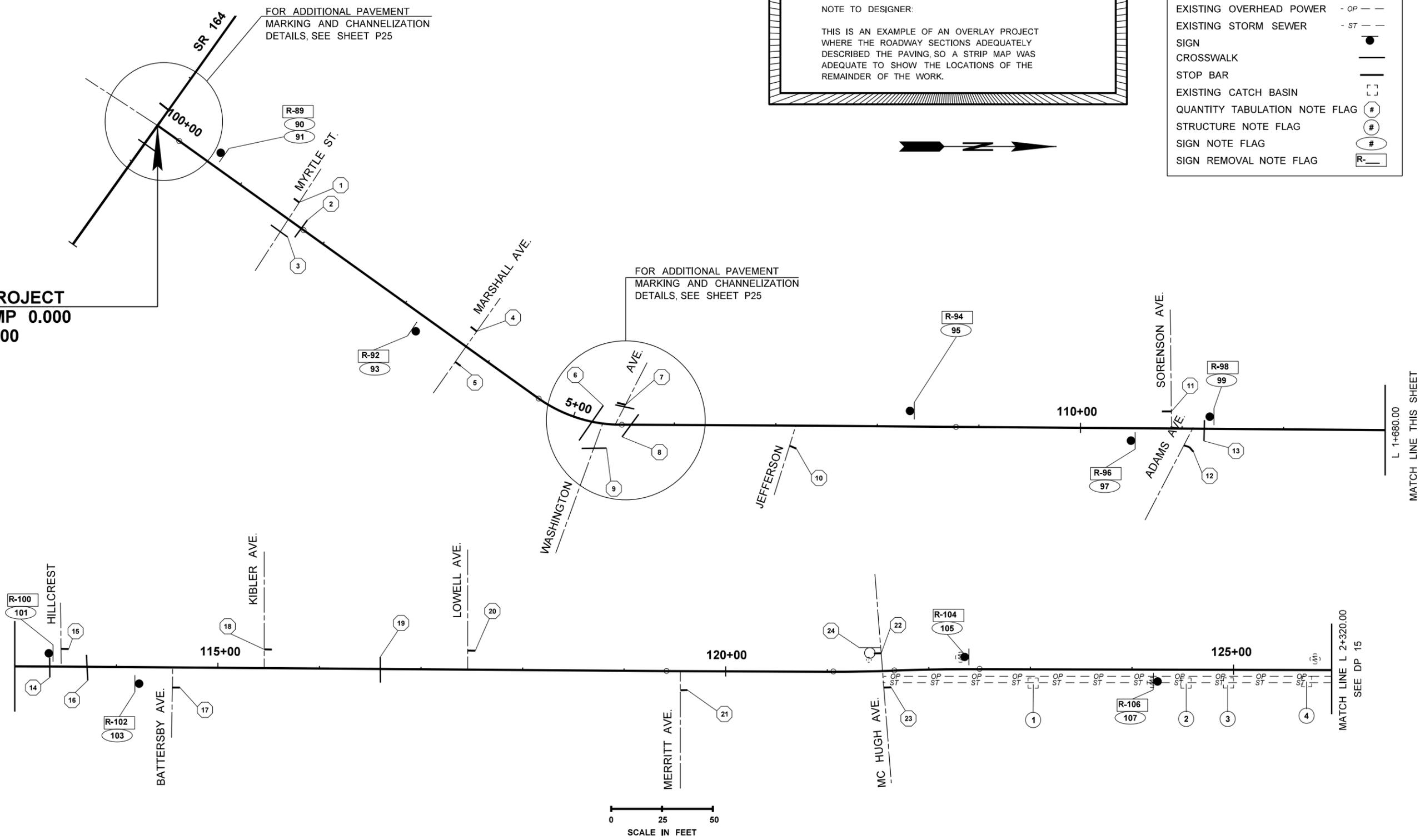
FILE NAME	C:\AAWork\PPM\PPM_Div4_July2008_v1.dgn	REGION NO.	10	STATE	WASH	FED.AID PROJ.NO.	NH-0000(000)	Washington State Department of Transportation	EXAMPLE 4-22	Plot 22
TIME	2:32:11 PM	JOB NUMBER	00Z000	CONTRACT NO.		LOCATION NO.	XL-1234			DR1
DATE	8/4/2008							SHEET OF SHEETS		
PLOTTED BY	KerrT	REVISION		DATE		BY			DRAINAGE PLAN	
DESIGNED BY	DESIGNER									
ENTERED BY	CAD OPERATOR									
CHECKED BY	TEAM LEADER									
PROJ. ENGR.	PROJECT ENGINEER									
REGIONAL ADM.	REGIONAL ADM.									

LEGEND	
EXISTING MONUMENT	⊙
EXISTING OVERHEAD POWER	- OP - -
EXISTING STORM SEWER	- ST - -
SIGN	●
CROSSWALK	—
STOP BAR	—
EXISTING CATCH BASIN	□
QUANTITY TABULATION NOTE FLAG	#
STRUCTURE NOTE FLAG	#
SIGN NOTE FLAG	#
SIGN REMOVAL NOTE FLAG	R-#

NOTE TO DESIGNER:
 THIS IS AN EXAMPLE OF AN OVERLAY PROJECT WHERE THE ROADWAY SECTIONS ADEQUATELY DESCRIBED THE PAVING, SO A STRIP MAP WAS ADEQUATE TO SHOW THE LOCATIONS OF THE REMAINDER OF THE WORK.



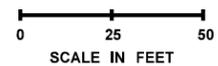
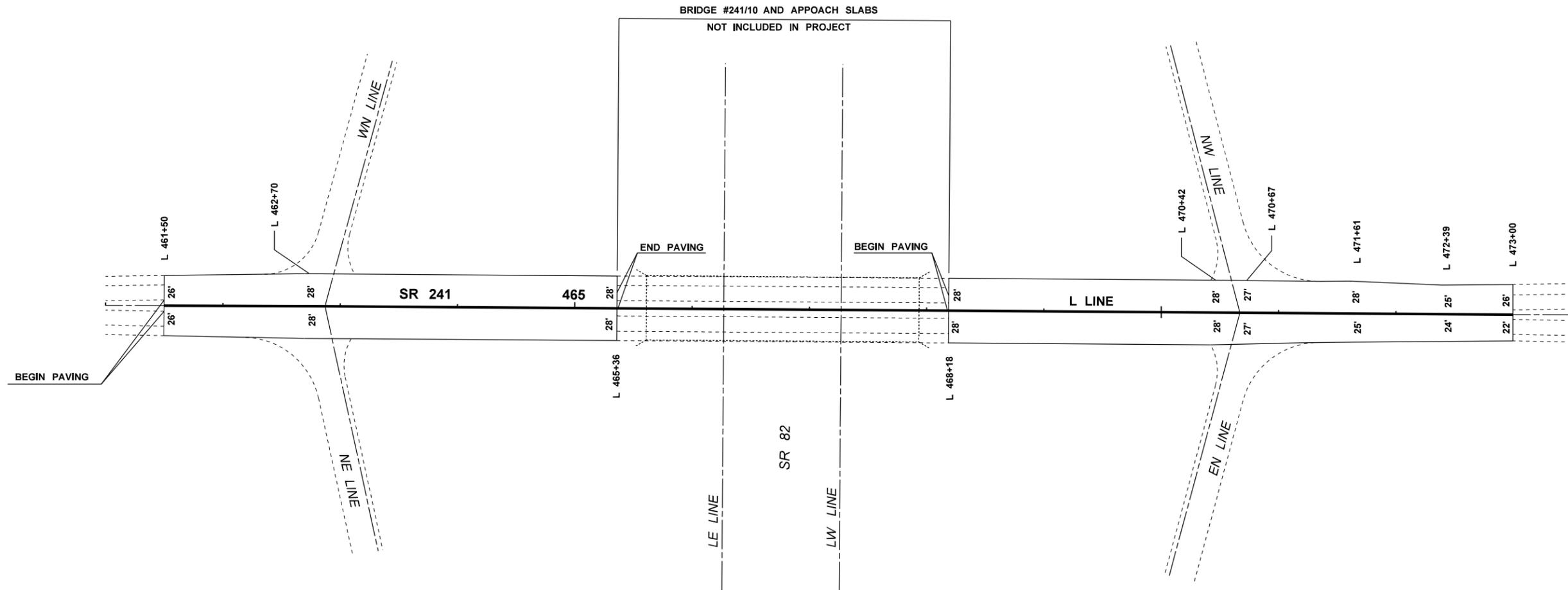
BEGIN PROJECT
 SR 179 MP 0.000
 L 100+00.00



FILE NAME	C:\AAWork\PPM\PPM_Div4_July2008_v1.dgn	REGION NO.	10	STATE	WASH	FED.AID PROJ.NO.	NH-0000(000)	Washington State Department of Transportation	EXAMPLE 4-24	Plot 24
TIME	2:33:16 PM	JOB NUMBER	00Z000	LOCATION NO.	XL-1234					DP1
DATE	8/4/2008	CONTRACT NO.						DRAINAGE/SIGNING/PAVEMENT MARKING	SHEET OF SHEETS	
PLOTTED BY	KerrT									
DESIGNED BY	DESIGNER									
ENTERED BY	CAD OPERATOR									
CHECKED BY	TEAM LEADER									
PROJ. ENGR.	PROJECT ENGINEER									
REGIONAL ADM.	REGIONAL ADM.	REVISION		DATE	BY					

T.10N. R.23E. W.M.

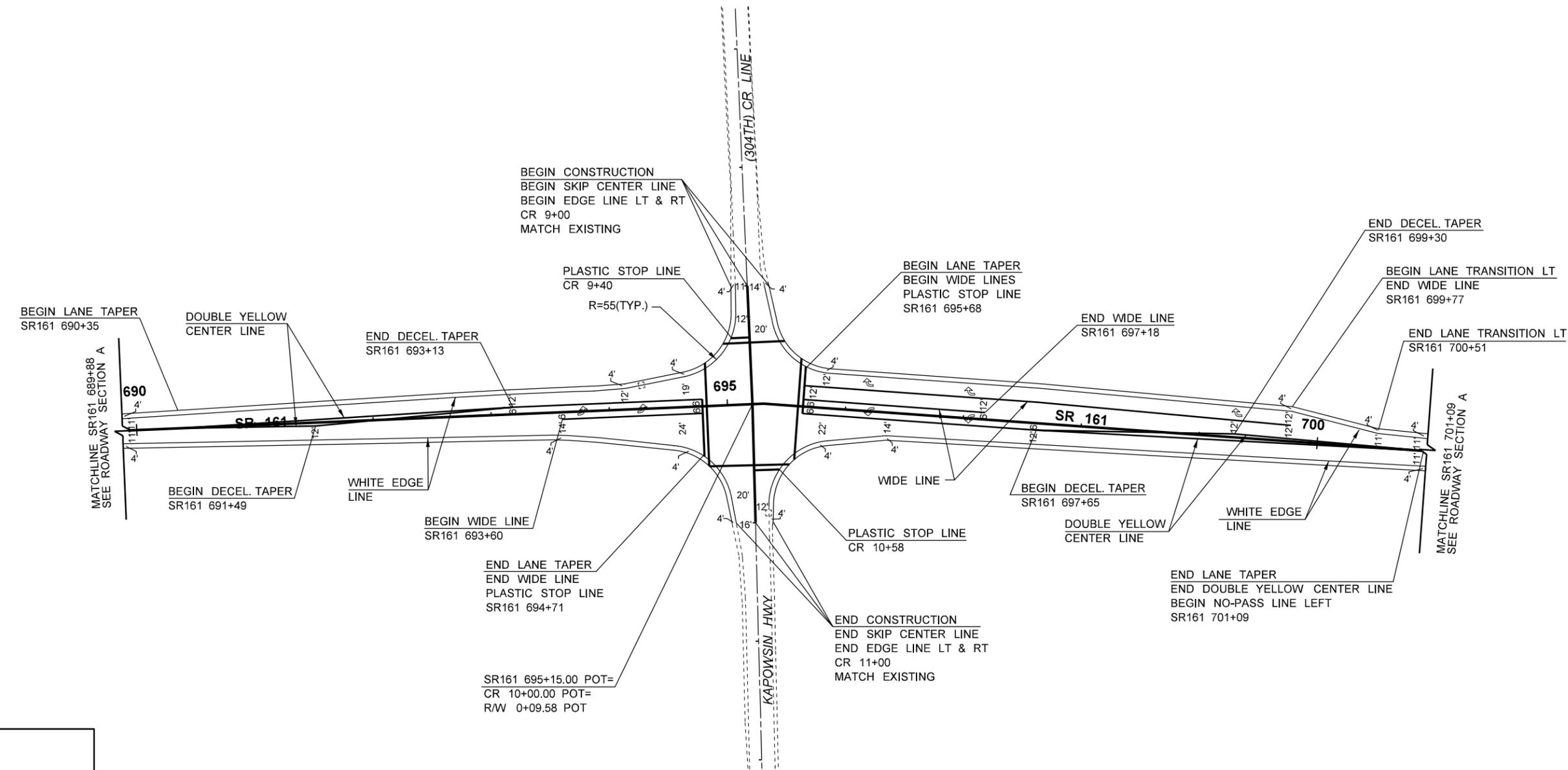
NOTE TO DESIGNER:
 THIS PAVING PLAN ALONG WITH ROADWAY SECTION EXAMPLE 4-10, SHOWS HOW A PAVING PLAN AND A ROADWAY SECTION ARE USED IN CONJUNCTION WITH EACH OTHER TO SHOW ENTIRE PAVING. EACH PLAN REFERENCES THE OTHER TO SHOW ALL ASPECTS OF THE PAVING.



NOTES:

SEE ROADWAY SECTION FOR LANE AND SHOULDER WIDTHS, FOR SLOPE AND PAVING DEPTHS

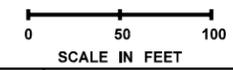
FILE NAME	C:\AAWork\PPM\PPM_Div4_July2008_v1.dgn	REGION NO.	STATE	FED.AID PROJ.NO.	Washington State Department of Transportation	EXAMPLE 4-25	Plot 25
TIME	2:33:38 PM	10	WASH	NH-0000(000)			PP1
DATE	8/4/2008	JOB NUMBER		XL-1234			SHEET
PLOTTED BY	KerrT	CONTRACT NO.					OF
DESIGNED BY	DESIGNER						SHEETS
ENTERED BY	CAD OPERATOR						
CHECKED BY	TEAM LEADER						
PROJ. ENGR.	PROJECT ENGINEER						
REGIONAL ADM.	REGIONAL ADM.	REVISION	DATE	BY	P.E. STAMP BOX	PAVING PLAN	



SR161 695+15.00 POT=
CR 10+00.00 POT=
R/W 0+09.58 POT

LEGEND	
	PLASTIC TRAFFIC MARKING
	PLASTIC STOP LINE
	PLASTIC CROSSWALK LINE
	EXISTING CATCH BASIN

NOTE:
1. FOR TRAFFIC ARROW AND CROSSWALK LOCATIONS SEE SHEETS QT1-QT6.
2. FOR PAVEMENT DETAILS SEE STANDARD PLANS.



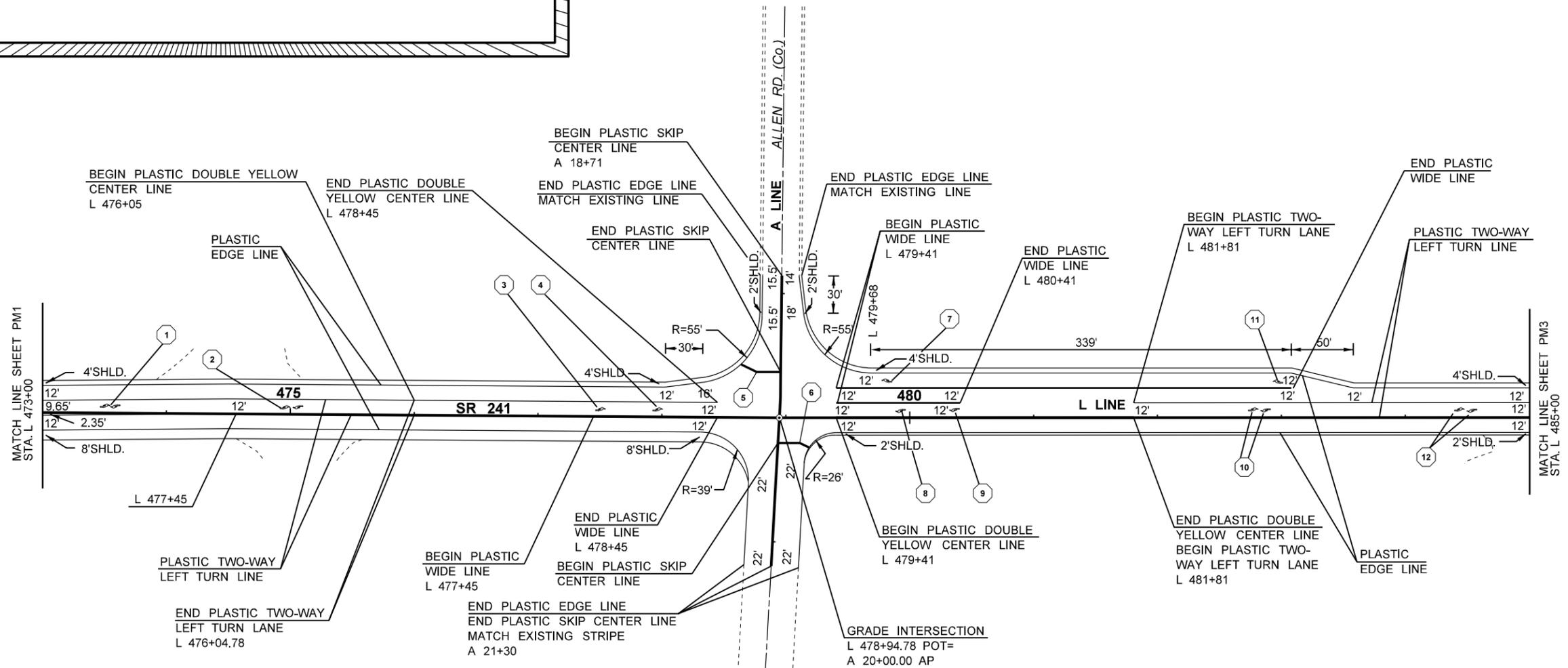
FILE NAME	C:\AAWork\PPM\PPM_Div4_July2008_v1.dgn	REGION NO.	10	STATE	WASH	FED.AID PROJ.NO.	NH-0000(000)	Washington State Department of Transportation	EXAMPLE 4-26	Plot 26
TIME	2:34:00 PM	JOB NUMBER	00Z000	CONTRACT NO.		LOCATION NO.	XL-1234			PP1
DATE	8/4/2008									SHEET
PLOTTED BY	KerrT									OF
DESIGNED BY	DESIGNER									SHEETS
ENTERED BY	CAD OPERATOR									
CHECKED BY	TEAM LEADER									
PROJ. ENGR.	PROJECT ENGINEER									
REGIONAL ADM.	REGIONAL ADM.	REVISION		DATE	BY					

NOTE TO DESIGNER:

WHEN STANDARD PLANS CAN BE USED TO SHOW FURTHER DETAIL, MAKE A NOTE ON PLAN DIRECTING THE READER TO THEM.

USE YOUR PLANS AND QUANTITY TABULATIONS IN CONJUNCTION WITH EACH OTHER TO ASSIST THE PLAN READER IN LAYING OUT WORK.

IN THIS EXAMPLE THE QUANTITY TABS ALONG WITH STANDARD PLANS ARE USED TO PROVIDE OTHER PERTINENT INFORMATION WHICH REDUCES THE NEED TO DUPLICATE THE INFORMATION ON THE PLAN SHEET.

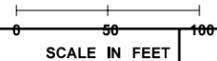


CONSTRUCTION NOTES

1. SEE STANDARD PLAN H-3 AND H-3a FOR FURTHER DETAILS.

LEGEND

- SEE QUANTITY TABULATION SHEET
- STOP LINE



FILE NAME C:\AAWork\PPM\PPM_Div4_July2008_v1.dgn		REGION NO.		STATE	FED.AID PROJ.NO.		SCALE IN FEET				TRAFFIC ARROWS SHEET OF SHEETS	
TIME 2:35:04 PM	DATE 8/4/2008	10	WASH									
PLOTTED BY KerrT	DESIGNED BY	JOB NUMBER		LOCATION NO.		NH-0000(000)		DATE		EXAMPLE 4-28		
ENTERED BY	CHECKED BY	CONTRACT NO.		DATE		DATE						
PROJ. ENGR.	REGIONAL ADM.	DESIGNER	REVISION	DATE	BY	P.E. STAMP BOX	P.E. STAMP BOX					

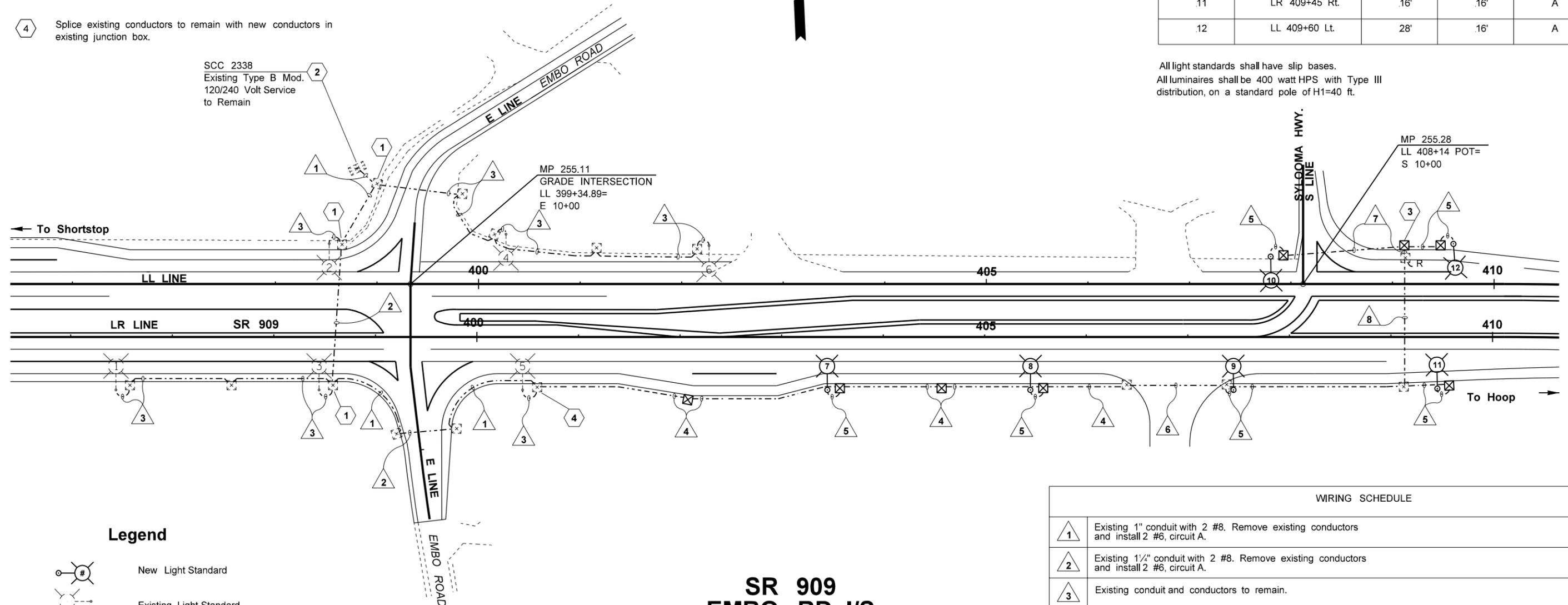
T.30N. R.5W. W.M.

Construction Notes

- 1 Cut existing conductors to remain, adjacent to existing splice and splice connect to new conductors to complete the circuit.
- 2 Replace existing 20 Amp Branch Breaker with a new 30 Amp Breaker circuit A.
- 3 Intercept existing 1/4" conduit and extend to new junction box.
- 4 Splice existing conductors to remain with new conductors in existing junction box.

Lighting Schedule				
Light Std. No.	Location	Edge of Thru Lane	Mast Arm Length	Circuit
7	LR 403+45 Rt.	.16'	.16'	A
8	LR 405+45 Rt.	.16'	.16'	A
9	LR 407+45 Rt.	.16'	.16'	A
10	LL 407+80 Lt.	.16'	.16'	A
11	LR 409+45 Rt.	.16'	.16'	A
12	LL 409+60 Lt.	.28'	.16'	A

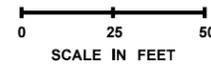
All light standards shall have slip bases.
All luminaires shall be 400 watt HPS with Type III distribution, on a standard pole of H1=40 ft.



Legend

- New Light Standard
- Existing Light Standard to Remain
- New Conduit and Conductors
- Existing Conduit and Conductors
- New Type 1 Junction Box
- Existing Junction Box
- Existing Junction Box to be Removed

SR 909 EMBO RD. I/S SYLOOMA HWY.



WIRING SCHEDULE	
1	Existing 1" conduit with 2 #8. Remove existing conductors and install 2 #6, circuit A.
2	Existing 1/4" conduit with 2 #8. Remove existing conductors and install 2 #6, circuit A.
3	Existing conduit and conductors to remain.
4	Install 1" conduit with 2 #6 circuit A.
5	Install 1" conduit with 2 #8 circuit A.
6	Existing 1/4" conduit. Install 2 #6 circuit A.
7	Install 1/4" conduit with 2 #8 circuit A.
8	Existing 1/4" conduit. Install 2 #8 circuit A.

FILE NAME	C:\AAWork\PPM\PPM_Div4_July2008_v1.dgn	REGION NO.	STATE	FED.AID PROJ.NO.	Washington State Department of Transportation	EXAMPLE 4-29	Plot 29
TIME	2:35:25 PM	10	WASH	NH-0000(000)			IL1
DATE	8/4/2008	JOB NUMBER					SHEET
PLOTTED BY	KerrT	CONTRACT NO.					OF
DESIGNED BY	DESIGNER	LOCATION NO.					SHEETS
ENTERED BY	CAD OPERATOR						
CHECKED BY	TEAM LEADER						
PROJ. ENGR.	PROJECT ENGINEER						
REGIONAL ADM.	REGIONAL ADM.	REVISION	DATE	BY		ILLUMINATION PLAN	

SIGN REMOVAL SPECIFICATIONS

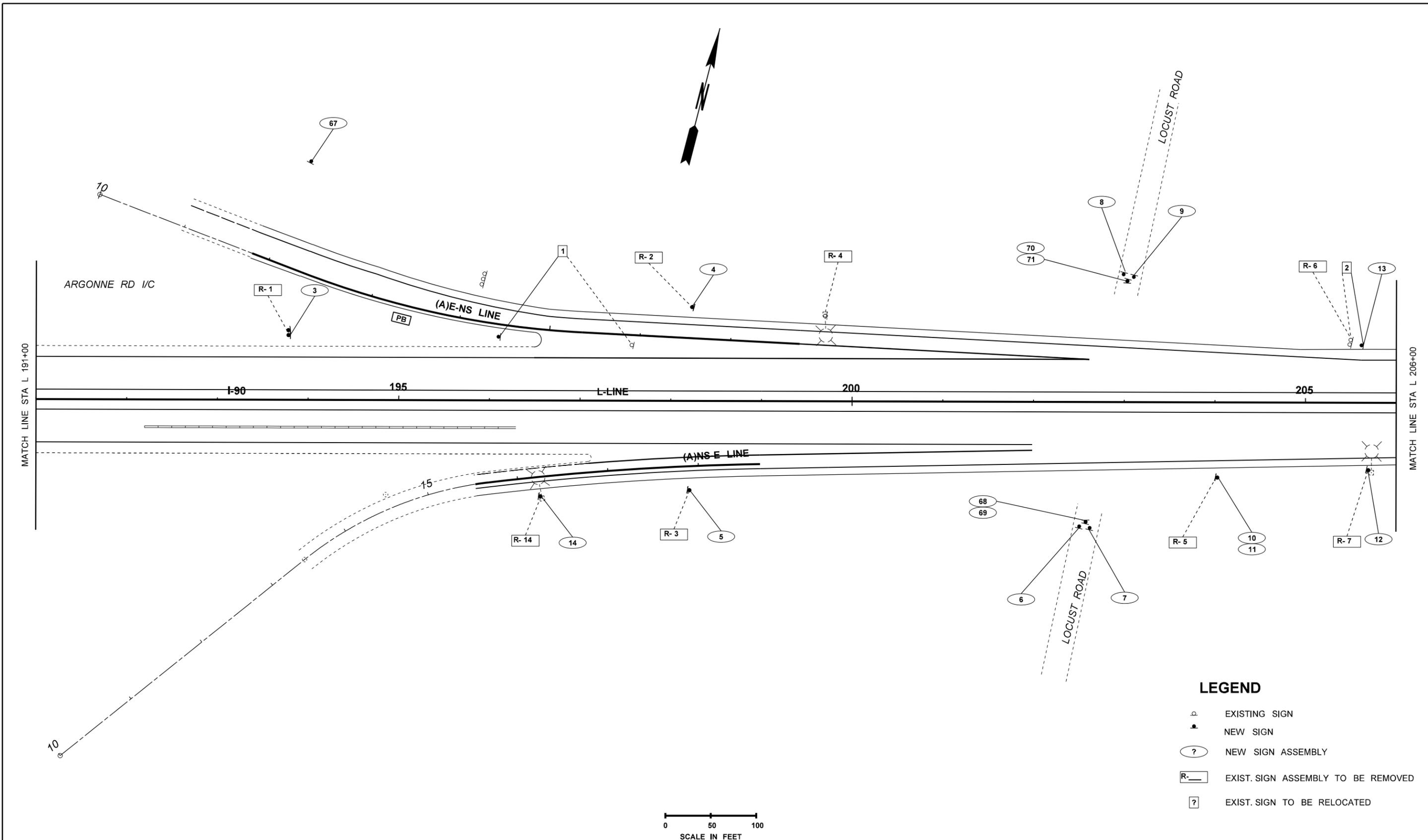
SIGN NO.	SIGN CODE (DESCRIPTION)	LOCATION	SIGN SIZE		POST MATERIAL	POST SIZE	REMARKS	SIGN NO.	SIGN CODE (DESCRIPTION)	LOCATION	SIGN SIZE		POST MATERIAL	POST SIZE	REMARKS
			X	Y							X	Y			
R-1	R1-1 STOP	MP 9.03 RT	36"	36"	WOOD	4"x4"		R-36	D10-201(11) MILE	MP 11.00 RT	14"	27"	---	---	SIGN ONLY
R-2	D3-101 STREET NAME	---	30"	6"	---	---	ABOVE R-1	R-37	W2-3(225 DEG.) SIDE RD	MP 11.15 RT	30"	30"	WOOD	4"x4"	
R-3	D3-101 STREET NAME	---	30"	6"	---	---	BEHIND R-2	R-38	W2-3(135 DEG.) SIDE RD	MP 11.15 LT	30"	30"	WOOD	4"x4"	
R-4	W2-2L SIDE ROAD SYMBOL	MP 9.13 LT	30"	30"	WOOD	4"x4"		R-39	R1-1 STOP	MP 11.30 LT	36"	36"	WOOD	4"x4"	
R-5	D3-201 SIDE ROAD NAME	---	36"	12"	---	---	BELOW R-4	R-40	W1-8L CHEVRON	---	24"	30"	---	---	BEHIND R-39
R-6	R1-1 STOP	MP 9.29 RT	36"	36"	WOOD	4"x4"		R-41	W-SPEC. CURVE LEFT	MP 11.35 LT	36"	36"	WOOD	4"x4"	
R-7	D3-101 STREET NAME	---	30"	6"	---	---	ABOVE R-6	R-42	D3-201 SIDE ROAD NAME	---	60"	9"	---	---	BELOW R-41
R-8	D3-101 STREET NAME	---	30"	6"	---	---	BEHIND R-7	R-43	W1-2L CURVE LEFT	MP 11.45 LT	30"	30"	WOOD	4"x4"	
R-9	W11-2 ADVANCE PED XING	MP 9.53 LT	36"	36"	---	---	SIGN ONLY	R-44	W8-6 TRUCK CROSSING	MP 12.39 RT	36"	36"	WOOD	4"x4"	
R-10	W-SPEC. CURVE RIGHT	MP 9.61 LT	36"	36"	WOOD	4"x4"		R-45	D7-7701 RECREATION	MP 12.74 RT	96"	60"	WOOD	6"x6"	2 POSTS
R-11	W1-2R CURVE RIGHT	MP 9.62 RT	36"	36"	WOOD	4"x4"		R-46	E7-1 MILEAGE	MP 12.92 LT	144"	48"	WOOD	4"x6"	2 POSTS
R-12	W13-1(45) MPH	---	24"	24"	---	---	BELOW R-11	R-47	D10-201(13) MILE	MP 13.00 RT	10"	27"	METAL	2"x2"	
R-13	W2-2L SIDE ROAD SYMBOL	MP 9.66 RT	30"	30"	WOOD	4"x4"		R-48	D7-7701 RECREATION	MP 13.38 LT	96"	60"	WOOD	4"x6"	2 POSTS
R-14	D3-201 SIDE ROAD NAME	---	48"	9"	---	---	BELOW R-13	R-49	E7-1 MILEAGE	MP 13.44 RT	84"	36"	WOOD	4"x6"	
R-15	R1-1 STOP	MP 9.80 LT	30"	30"	WOOD	4"x4"		R-50	W2-1 CROSSROAD SYMBOL	MP 14.09 RT	36"	36"	WOOD	4"x4"	
R-16	D3-103 STREET NAME	---	24"	6"	---	---	ABOVE R-15	R-51	D3-201 CROSSROAD NAME	---	36"	9"	---	---	BELOW R-50
R-17	D1-201 DESTINATION	MP 9.80 RT	60"	48"	WOOD	6"x6"		R-52	R1-1 STOP	MP 14.19 LT	36"	36"	WOOD	4"x4"	
R-18	W1-2L CURVE LEFT	MP 9.81 LT	30"	30"	WOOD	4"x4"		R-53	R1-1 STOP	MP 14.19 RT	36"	36"	WOOD	4"x4"	
R-19	W13-1(40) MPH	---	18"	18"	---	---	BELOW R-18	R-54	W2-1 CROSSROAD SYMBOL	MP 14.28 LT	36"	36"	WOOD	4"x4"	
R-20	W1-2R CURVE RIGHT	MP 9.83 Rt	30"	30"	WOOD	4"x4"		R-55	D3-201 CROSSROAD NAME	---	36"	9"	---	---	BELOW R-54
R-21	W13-1(45) MPH	---	18"	18"	---	---	BELOW R-20	R-56	W14-3 DO NOT PASS	MP 14.39 RT	48"	36"	WOOD	4"x4"	
R-22	W1-2L CURVE LEFT	MP 9.95 LT	30"	30"	WOOD	4"x4"		R-57	W2-2L SIDE ROAD SYMBOL	MP 14.82 LT	30"	30"	WOOD	4"x4"	
R-23	W13-1(45) MPH	---	18"	18"	---	---	BELOW R-22	R-58	D3-201 SIDE ROAD NAME	---	36"	9"	---	---	BELOW R-57
R-24	D10-2(10) MILE	MP 10.00 RT	10"	27"	WOOD	4"x4"		R-59	D3-302 CROSSROAD W/CHEVRON	MP 15.00 RT	60"	12"	WOOD	4"x4"	
R-25	D10-2(10) MILE	---	10"	27"	---	---	BEHIND R-24	R-60	D10-2(15) MILE	---	10"	27"	---	---	BELOW R-59
R-26	R1-1 STOP	MP 10.09 RT	30"	30"	WOOD	4"x4"		R-61	D10-2(15) MILE	---	10"	27"	---	---	BEHIND R-60
R-27	W2-2L SIDE ROAD SYMBOL	MP 10.16 LT	30"	30"	WOOD	4"x4"		R-62	R1-1 STOP	MP 15.09 LT	30"	30"	WOOD	4"x4"	
R-28	W2-2R SIDE ROAD SYMBOL	MP 10.20 RT	30"	30"	WOOD	4"x4"		R-63	W2-2R SIDE ROAD SYMBOL	MP 15.20 LT	30"	30"	WOOD	4"x4"	
R-29	D3-201 SIDE ROAD NAME	---	42"	9"	---	---	BELOW R-28	R-64	D3-201 SIDE ROAD NAME	---	30"	6"	---	---	BELOW R-63
R-30	R1-1 STOP	MP 10.27 RT	30"	30"	WOOD	4"x4"		R-65	W2-2R SIDE ROAD SYMBOL	MP 15.60 RT	36"	36"	WOOD	4"x4"	
R-31	D3-103 STREET NAME	---	24"	6"	---	---	ABOVE R-30	R-66	D3-201 SIDE ROAD NAME	---	36"	9"	---	---	BELOW R-65
R-32	W2-3(315 DEG.) SIDE RD	MP 10.95 RT	36"	36"	WOOD	4"x4"		R-67	R1-1 STOP	MP 15.70 RT	36"	36"	WOOD	4"x4"	
R-33	D3-201 SIDE ROAD NAME	---	40"	9"	---	---	BELOW R-32	R-68	D3-101 STREET NAME	---	24"	6"	---	---	ABOVE R-67
R-34	M1-601(161) ROUTE MARKER	MP 10.95 LT	24"	24"	WOOD	4"x4"		R-69	D3-101 STREET NAME	---	24"	6"	---	---	BEHIND R-68
R-35	M3-3 SOUTH	---	24"	12"	---	---	ABOVE R-34								

NOTES:

STATION LOCATIONS AND POST SIZES SHOWN ARE APPROXIMATE ONLY.

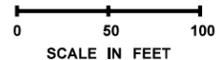
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																								10 WASH		NH-0000(000)		00Z000		XL-1234								EXAMPLE 4-30					
																																						SIGN SPECIFICATIONS		SHEET OF SHEETS			



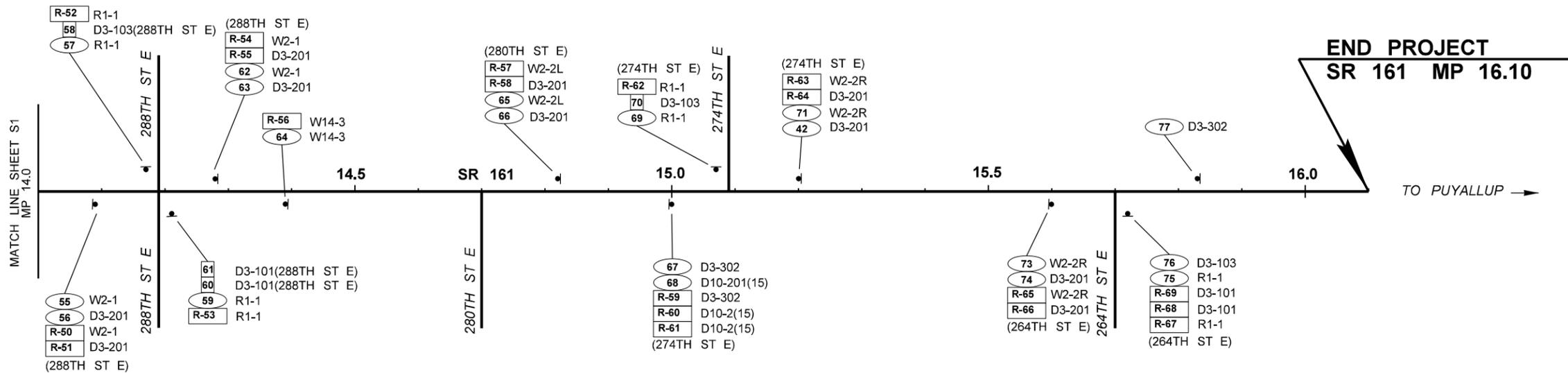


LEGEND

- EXISTING SIGN
- NEW SIGN
- NEW SIGN ASSEMBLY
- EXIST. SIGN ASSEMBLY TO BE REMOVED
- EXIST. SIGN TO BE RELOCATED



FILE NAME C:\AAWork\PPM\PPM_Div4_July2008_v1.dgn		REGION NO. 10		STATE WASH		FED.AID PROJ.NO. NH-0000(000)		DATE		DATE		Plot 33	
TIME 2:37:07 PM		JOB NUMBER 00Z000		CONTRACT NO.		LOCATION NO. XL-1234		P.E. STAMP BOX		P.E. STAMP BOX		SP1	
DATE 8/4/2008		DESIGNED BY DESIGNER		ENTERED BY CAD OPERATOR		CHECKED BY TEAM LEADER		PROJ. ENGR. PROJECT ENGINEER		REGIONAL ADM. REGIONAL ADM.		SHEET OF SHEETS	
PLOTTED BY KerrT		REVISION		DATE		BY		Washington State Department of Transportation		EXAMPLE 4-33		SIGNING PLAN	
REVISION		DATE		BY									



END PROJECT
SR 161 MP 16.10

SIGN NO. 2
 CLEAR LAKE RD S

SIGN NO. 4
 CLEAR LAKE RD S
 BLACK ON
 YELLOW

SIGN NO. 6
 W CLEAR LK RD E

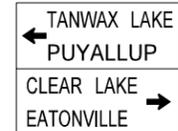
SIGN NO. 9
 CLEAR LAKE RD N
 BLACK ON
 YELLOW

SIGN NO. 8

 BLACK ON YELLOW

SIGN NO. 13, 22
 352ND ST E
 BLACK ON
 YELLOW

SIGN NO. 15
 352ND ST E

SIGN NO. 16

 6"X9" ARROWS

SIGN NO. 29
 THOMAS RD E
 BLACK ON
 YELLOW

SIGN NO. 31
 TANWAX DR E
 BLACK ON
 YELLOW

SIGN NO. 33
 TANWAX DR E

SIGN NO. 35
 BENSTON RD
 BLACK ON
 YELLOW

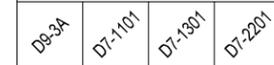
SIGN NO. 43

 BLACK ON YELLOW

SIGN NO. 44
 BARNEY LARSON RD
 BLACK ON
 YELLOW

SIGN NO. 48
 BENBOW REC
 FACILITIES
 NEXT RIGHT


SIGN NO. 49
 NW Trek 4
 Eatonville 10
 Mt Rainier 38

SIGN NO. 53
 BENBOW REC
 FACILITIES
 NEXT LEFT


SIGN NO. 54
 Graham 5
 Puyallup 16

SIGN NO. 56, 63
 288TH ST E
 BLACK ON
 YELLOW

SIGN NO. 66
 280TH ST E
 BLACK ON
 YELLOW

SIGN NO. 67
 274TH ST E

SIGN NO. 72
 274TH ST E
 BLACK ON
 YELLOW

SIGN NO. 74
 264TH ST E
 BLACK ON
 YELLOW

SIGN NO. 76
 264TH ST E

Sign No. 77
 264TH ST E

LEGEND

-  NEW SIGN ASSEMBLY
-  EXIST. SIGN ASSEMBLY TO BE REMOVED
-  EXIST. SIGN TO BE RELOCATED

NOT TO SCALE

FILE NAME C:\AAWork\PPM\PPM_Div4_July2008_v1.dgn		REGION NO. 10		STATE WASH	FED.AID PROJ.NO. NH-0000(000)	DATE			EXAMPLE 4-34 SIGN PLANS	Plot 34
TIME 2:37:31 PM	DATE 8/4/2008	JOB NUMBER 00Z000		CONTRACT NO.	LOCATION NO. XL-1234	P.E. STAMP BOX	P.E. STAMP BOX			SHEET OF SHEETS
DESIGNED BY DESIGNER	ENTERED BY CAD OPERATOR	CHECKED BY TEAM LEADER	PROJ. ENGR. PROJECT ENGINEER	REGIONAL ADM. REGIONAL ADM.	REVISION	DATE	BY			SP2