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## Remarks and Instructions

### *What's changed in the Plans Preparation Manual for June 2011?*

For a summary of the 2011 changes, see page 3.

### *General*

- Download the current electronic WSDOT *Plans Preparation Manual*, the latest revision package, or separate chapters at:  [www.wsdot.wa.gov/publications/manuals/m22-31.htm](http://www.wsdot.wa.gov/publications/manuals/m22-31.htm)
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***Remove/Insert instructions for those who maintain a printed manual:***

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***Revision Marks***

- A new date appears on the footer of each page that has changes.
- Revision marks (underlines/sidebars) are used as a convenience to show designers what has changed.
- Deletions will sometimes have a sidebar to let you know something has been removed.
- When a chapter is new or completely rewritten, no revision marks are applied.
- There are numerous punctuation changes throughout the manual that do not have sidebars or underlines.

## **Summary of *Plans Preparation Manual* Changes – June 2011**

(Revisions merit careful study beyond this summary)

### **Division 1 – Right of Way Plans**

The following sections have been revised in Division 1:

- 100.03(1) – Added advice on consulting HQ Right of Way Plans Section.
- 100.03(3)(d) – Showing third-party easements on the plan.
- 100.03(3)(h) – Adding an Inventory Control Number to the plan.
- 100.03(7) – Mitigation facilities on the operating right of way.
- 100.03(9) – Name change from “Stellant” system to “Oracle” system.
- 100.04(1) – Submittal of ownership information.
- 100.05 – Moved Sundry Site Plans to this section from the past Division 2.
- 100.08(2) – Engineer’s Affidavit and Certification signatures.
- 100.09 – Plan revision submittals.
- 100.09 – Inclusion of Army Corps of Engineers note in the plan revision.
- 100.09(1)(f) – E-mail submittals.
- 100.10(3)(k) – When to use a supplemental note to the Pedestrian and Bicycle Trails Note.
- 100.10(3)(n) – Added new note: Dominant/Servient Access Note.
- 100.10(3)(o) – Added new note: Noise Wall Access Note.
- Removed Examples 1-9 and 1-10.
- Added Examples 1-10, 1-11, and 1-12 from the past Division 2.

### **Division 2 – Survey Records**

- This is a new division.

### **Division 3 – Right of Way Plans – Standard Symbols and Conventions**

- Moved the Right of Way Plans – Standard Symbols and Conventions to the *Electronic Engineering Data Standards* (EEDS) manual (M 3028) and posted a notice in Division 3.

### **Division 4 – Contract Plans**

The following sections have been revised in Division 4:

- 400.02(1)(o) – Project Manager’s responsibilities regarding liquidated damages.
- 400.02(1)(x) – Project Manager’s responsibilities regarding requirement for engineer’s stamp on plans.
- 400.03(a)9 – Office name change from the Project Control and Reporting Office to the Capital Program Development and Management Office.
- 400.06(4)(n) – Required identification on existing bridges within the Project Limits on Vicinity Maps.
- 400.06(17) – Plan sheet name change to Contour Grading Plan.
- 400.06(26) – Signing plan requirements.
- 400.06(29) – Traffic control plan content and sign spacing.
- 400.07 – Final plan approval authority.

## **Division 5 – PS&E Plans – Standard Symbols and Conventions**

- Moved the PS&E Plans – Standard Symbols and Conventions to the *Electronic Engineering Data Standards* (EEDS) manual (M 3028) and posted a notice in Division 5.

## **Division 6 – Contract Provisions**

- Revised Introduction, 600.01(5), regarding official boring log sources.

## **Division 7 – Miscellaneous Contract Considerations**

The following sections have been revised in Division 7:

- 700.01(7) – Soil residual herbicide usage when paving with HMA.
- 700.04(3) – Mandatory materials sources and waste sites.
- 700.05(8) – Issues regarding asbestos removal.
- 700.05(9) – Contractor’s risk responsibility.
- 700.05(15)(a)2 – ITS issues and liquidated damages during interim completion of phases (staging).
- 700.05(17) – The appropriate time to include an item a designer “might” need.
- 700.05(23) – Mitigating impacts to the roadside.
- 700.05(27) – When a standard item should be used.
- 700.05(29) – Updated an RCW reference.
- 700.05(30) – Strip map usage.
- 700.05(36) – When to include the Washington State Patrol on a project.
- 700.05(37) – Added reference to Appendix 6.



**Washington State  
Department of Transportation**

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# **Plans Preparation Manual**

M 22-31.03

June 2011

**Environmental and Engineering Programs**  
Design Office

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## **100.01 Introduction**

Right of Way Plans are the official state documents used as the basis to acquire real estate and other property rights. All deeds or other instruments conveying land or interest in land to the state that are to be accepted at the Washington State Department of Transportation (WSDOT) Headquarters (HQ) must conform to the approved Right of Way Plan. The plans are referred to in legal instruments and are permanently filed for public record at the WSDOT Headquarters in Olympia.

It is the responsibility of the region to assemble data and prepare plans for the acquisition of rights of way (R/W), including easements, permits, and any substantiating documentation necessary for completion of the plans. Verification of ownership of existing R/W is also required.

To assemble the data, the region requests Assessor's maps, rolls, and last conveyances for use during early plan preparation. As soon as the parcels from which additional right of way will be acquired are identified, Title Reports with Assessor's land areas are requested for use in completing the Right of Way Plans.

Early plan preparation includes the following:

- The Region Real Estate Services Manager is consulted to determine the degree of property interests to be acquired, such as fee title, easements, and temporary construction easements.
- The Region Right of Way Manager is consulted to determine whether existing plans are adequate for revisions or a new Right of Way Plan should be prepared.
- The Region Utilities Engineer is consulted to determine the extent of utility interests to be addressed.

Complete Right of Way Plans consist of a Vicinity Map and Right of Way Plan sheets. Right of Way Plans are to be prepared in English units only.

## **100.02 Vicinity Map and Total Parcel Details**

The Vicinity Map supplies general information depicting the project in relation to surrounding communities, public and private road networks, traffic movement patterns, and other local features. A total parcel detail and parcel number are included for any ownership too large to be shown on individual plan sheets (see [Example 1-1](#)).

A heavy line is used to indicate the new highway. Lighter lines in varying weights show interchanges, connecting road systems, bodies of water, and so on. Limited access, the existing right of way, and/or the proposed right of way are not shown. Detail and drafting requirements are set forth in [Division 3](#).

### **100.03 Plan Sheets**

#### **(1) Alignment**

The R/W centerline, from which the right of way is to be legally described, is shown as a continuous solid line for the full length of the project, with its alignment data shown. Additional noncontrolling centerlines are shown by a dashed line without alignment data.

It is preferable that the main line R/W centerline not have a letter designation (such as LR Line) unless there is more than one main line centerline. Therefore, the Highway Engineer's station will also not have a letter designation.

The new centerline stationing must have ties, by station and/or bearing equations, to existing centerline stationing at the beginning and/or end of the new plan.

It is recommended that all new plans should replace existing spiral curves on the R/W centerline with a simple circular curve in conformance with current design standards. When new R/W is to be purchased, the R/W alignment will conform to the new simple curve. If no R/W will be purchased, the existing R/W alignment will retain the original spiral curve. The new plan will reference the superseded spiral alignment (see [Examples 1-9a and 1-9b](#)). Prior to plan preparation, consultation with the HQ Right of Way Plans Section is advised.

#### **(2) Control Features**

Plan sheets must show government subdivision corners, platted subdivisions, donation land claims, national park/forest boundaries, and Indian reservations. Show stations where government subdivision lines intersect our highway centerline. Add a cross-reference note to the Monumentation Map or Record of Survey prepared for the project.

#### **(3) Right of Way Details**

- (a) Right of way lines are continuous. These lines are shown crossing city streets, county roads, rivers, and railroads, and they must match adjoining projects. Where a first-time improvement is planned, the existing county road or city street rights of way are enclosed by a right of way line or turnback line and are identified for later conveyance to the appropriate agency.

Data must be supplied to describe the right of way for its entire length from a centerline or, if necessary, from a metes and bounds description. Any existing right of way line retained as an ultimate right of way line for the new project is tied to and described from the new centerline or by a metes and bounds description. Ties to a previous centerline are not acceptable (see [Example 1-2](#)). When the existing right of way line is to be retained as an ultimate right of way line and is offset from an existing spiral alignment, consideration should be given to buying, selling, or exchanging small pieces of land with the adjacent owner to eliminate this offset spiral right of way line.

Right of way widths and centerline stations are shown at the beginning and end of each sheet, except if in a taper, and at all points of change in width of the right of way. No point shall be double-described (that is, by a metes and bounds description and a station and offset) or by stations and offsets from two centerlines. All dimensions and areas must be shown on the final Right of Way Plan.

- (b) A turnback line is shown as that line between right of way needed for highway purposes and right of way that will be relinquished to others (see [Example 1-2](#)). Areas for relinquishment are areas the state acquires for the improvement or construction of roads that will not remain a part of the highway system. The plan must show the areas being relinquished in sufficient detail and accuracy to allow a legal description to be written for the conveyance instrument (for example, stations and offsets or metes and bounds).
- (c) An easement is a permanent or long-term right to enter upon the property of another for a defined purpose. Easements involve perpetual or temporary rights, which are noncancelable by the property owner during the term of the easement. For example, an easement is used when the state is to construct a facility that does not require ownership of fee title (such as slope or drainage), and the acquisition of an easement right will save the department substantial funds in acquisition costs.

The type of easement is defined on the Right of Way Plan (such as drainage easement, slope easement, or temporary construction easement) and is described by stations and offsets or by metes and bounds. Each type of easement and the area for each specific type is included in the ownership block under the Easement column opposite the appropriate parcel number (see [Example 1-2](#)).

Third-party easements, such as utility or ingress/egress easements, that cross a parcel for the benefit of others will be shown on the plan.

- (d) A permit (referred to as a construction permit) is a temporary right to enter upon the property of another for a defined purpose. These rights are issued for a limited time period—usually expiring upon completion of construction. Permits do not encumber the owner’s property, are nontransferable, and are cancelable by the grantor. Construction permits are not shown on the Right of Way Plans.
- (e) An airspace corridor is a three-dimensional corridor of a specific width and length between two elevations. Airspace corridors are acquired in fee, and all rights of ownership apply to them. An airspace corridor is usually used where the highway is on a structure or in a tunnel. The property lying under or above the corridor may be used for other purposes as long as there is no detrimental effect on the highway facility. When the highway is on a structure, the only property acquired in fee would be the area needed to support the footings of the structure.
- (f) Surplus property is property that was acquired as operating right of way but is no longer needed as such. A plan revision mapping the surplus property area is necessary prior to disposal.

Property that was acquired for uses other than operating highway right of way and is no longer needed is also labeled as surplus property on the Right of Way Plan prior to disposal. Some examples of surplus property would be unneeded pit sites, quarry sites, landscape areas, and maintenance sites.

Right of Way Plans cannot be revised to show surplus property until after a Surplus Property Review has been completed by both the region and Headquarters. If federal funds were used for the acquisition of right of way or construction of the facility, Federal Highway Administration (FHWA) approval is required before a plan revision can be approved. Disposal of uneconomic remainders does not need a plan revision.

- (g) Property required for rest areas, historical markers, park & ride lots, truck weighing stations, wetlands mitigation areas, stormwater treatment areas, landscape areas, and aquifer protection areas (see the *Design Manual*) are shown on the applicable plan sheets. If these facilities are situated beyond the reasonable limits of the plan, the sites are shown on a Sundry Site Plan (see [100.05](#)). Material and stockpile sites are not shown on Right of Way Plans unless they are adjacent to the right of way and are fully describable thereon. Otherwise, they are shown on the Right of Way Plan with a note cross-referencing the Sundry Site Plan where they are described.
- (h) An Inventory Control Number (ICN) may be added to the plan to identify long-term leases or easements (typically 20 years or longer) and surplus property. Refer to the Surplus Property Review package to determine whether a plan revision is necessary. If an ICN will be added to the plan, the plan revision will normally identify the parcel or easement limits, the IC number, and the area—usually in square feet.

Most ICN plan revisions will be prepared in the region. However, there may be extenuating circumstances in which the revision will be prepared by the HQ Right of Way Plans Section. These will usually involve time-sensitive projects that the regions will not be able to complete in a timely manner due to ongoing projects. In those instances, the HQ Right of Way Plans Section will coordinate the plan revision with the region.

#### **(4) Access Control**

Hachures define control of access between a highway facility and all other property (see [Example 1-3](#) and the *Design Manual*). On the title block of the plan sheet, the HQ Access and Hearing Section specifies the type of control: full, partial, or modified. If a transition is made from one type to another, the title block on the affected plan sheet includes both types and the plan sheet is labeled at the transition station. Specific considerations are:

- If the route has been designated for access control by the Secretary of Transportation, access control must conform to the *Design Manual* unless advance approval for a deviation is obtained from the Secretary.
- On federal-aid routes, changes in access features from those that have been approved by FHWA require concurrence from FHWA prior to WSDOT approval under Certification Acceptance procedures authorized by FHWA.
- Access hachures are not shown when crossing railroad operating property, grade intersections, crossroads, or interchanges (see [Example 1-3](#)).
- At separation structures where there is no access to the highway lanes, the hachures are continuous, and traffic movement is permitted over or under the structures by note (see [100.10](#)).

- In areas of partial or modified access control, approaches are allowed, but the hachures are never omitted. Each approach is listed in the access approach schedule (see [Example 1-6](#)).
- Existing Limited Access Plans must be reviewed (deeds examined) for previously granted access approaches.
- The limits of access control are shown on all crossroads, frontage roads, and so on.

Nonhighway use of right of way (such as parking, storage, or buildings) requires an airspace agreement (see the [Right of Way Manual](#)). When requested by HQ Real Estate Services, the plan sheets will clearly delineate the limits and character of the multiple-use area.

On new plans, the access control hachures may be moved to a precisely dimensioned invisible line, with the area labeled for the specific use and a turnback line and relinquishment notes provided if necessary.

On existing plans where access rights have been acquired, or on new plans where circumstances dictate retention of departmental control of the multiple-use area, the access hachures are carried on the right of way line and the other usage is shown by an access note.

Access notes concerning routine maintenance of utilities within the highway right of way are added to the plan following approval of the pertinent franchise or permit.

### **(5) Access Approach Schedule**

The access approach schedule and the access control notes supply all the information necessary for the granting of private approaches.

The access approach schedule furnishes, in tabular form:

1. The name of the owner, utility, or agency.
2. The station or station limits left or right of centerline.
3. The type of approach.

Duplication of 1 above can be avoided by adding columns 2 and 3 to the ownership block, thereby showing all data pertinent to one ownership on one line (see [Example 1-6](#)).

Approaches that are granted shall be shown in the access approach schedule only on the sheet on which the approach appears.

### **(6) Railroad Easement Details**

A longitudinal easement is acquired from a railroad company when adjacent highway requirements overlap railroad property. The easement line is labeled and drawn the same weight as the right of way line. At beginning and end of the easement, show the highway station with equivalent railroad station. Offset distances to the easement line are taken perpendicular to each centerline. Under certain conditions, it may be necessary to describe the easement using railroad stationing by a metes and bounds description.

The crossing by a highway over, under, or at the grade of railroad property is by a crossing easement. The highway station with an equivalent railroad station is shown at each corner of the crossing easement and at the intersection of the railroad centerline and the R/W centerline. Access hachures are not to be carried across the

railroad trackage, but are usually shown along the highway-railroad right of way or easement lines. The easement is labeled as a crossing easement. Separate areas for each type of easement are shown in the ownership block (see [Example 1-2](#)).

### **(7) Drawing Standards**

Right of Way Plans are to be prepared with English units only on the CADD System in conformance with the adopted standards. Right of Way Plans are stored in permanent form on standard 22-inch x 34-inch Mylar<sup>®</sup> sheets. Consistent drafting procedures must be observed to attain maximum accuracy and clarity. Line weights and symbols are to conform to the standards shown in [Division 3](#). Right of Way Plans are prepared using ground dimensions. The standard of measurement is the U.S. Survey Foot.

The right of way Vicinity Map and plan sheets should include the following information, as applicable:

- Plans are to be oriented with the Highway Engineers' stations, increasing from left to right on the main line and ramps. It is desirable for mileposts to run in the same direction as stationing. Beginning stations on ramps should start at 10+00. When existing surveys conflict with this procedure, the R/W line should be re-stationed as stated above if new plans are drawn.
- All centerlines that are used to describe right of way should have bearings and be labeled. Note: Do not use station or bearing equations within a new Right of Way Plan. However, station or bearing equations can be used at the beginning and/or end of a new Right of Way Plan.
- Mileposts at the beginning and end of the plan. The total length of the plan is shown only on the first sheet of the Vicinity Map.
- Centerline stationing and destination arrow at beginning and end of each sheet. The destination arrow shall refer to the nearest town, city, highway junction, or other major feature.
- On plan sheets use 5-Station numbers, such as 10+00 and 15+00. On the Vicinity Map, use 10-Station numbers, such as 10+00 and 20+00. Place the numbers parallel to and above the centerline.
- Beginning and end of plan cross-referenced to current contiguous plans.
- On each plan sheet, a note stating the sheet number, name, and approval date of the plan being superseded by the new plan (see [Example 1-2](#)).
- Names of all interchanges, highways, city streets, county roads, railroads, and bodies of water.
- Highway structures shown in their correct location, drawn to scale, and identified as overcrossing or undercrossing in relation to the main line traffic movement.
- Traffic movement pattern indicated by arrows on centerline, with the appropriate numeral added for multiple lanes.
- Townships, Ranges, government subdivisions, and platted subdivisions right-reading with map and a north arrow for orientation purposes.
- Section and quarter-section numbers right-reading with north.
- Corporate limit and county boundaries. The name of the city should be placed on the city side of the corporate limit line (see [Example 1-1](#)).

- Parcel identification numbers and total ownership boundaries (see [100.04](#)). In the ownership block, show the name of the vested owner and the name of any contract purchaser in parentheses behind the vested owner.
- Major utility transmission right of way and tower numbers. Other utilities should not be shown unless replacement right of way is being purchased.
- Turnback lines labeled and areas identified for conveyance (relinquishment, certification, or transfer) to the appropriate agencies.
- Stormwater Treatment Areas, Wetlands Mitigation Sites, and other mitigation facilities are not part of the operating right of way and are considered nonhighway use areas. The boundaries of Stormwater Treatment Areas are shown with a solid line.
- Scale: Vicinity Map, 1 inch to 500 feet; Plan Sheets, 1 inch to 50 feet, unless special approval for a deviation is obtained from the HQ Right of Way Plans Section Manager.
- All public land identified by the agency name (for example, Snoqualmie National Forest) and a parcel number—except that WSDOT land is identified as WSDOT only.
- Grade intersection stations for all county roads. City street intersections are not labeled.
- Basis of bearings should be included on all new Right of Way Plans.
- A cross-reference note to the corresponding Monumentation Map or Record of Survey is included on all new Right of Way Plans.
- On complex Right of Way Plans, a sheet layout diagram should be shown on the Vicinity Map (see [Example 1-1](#)).

Notes, dimensions, subdivision information, and similar data are added after the right of way limits for each sheet are established, to avoid relocation of this data at later stages of plan development. Drawings are not to be extended beyond the border of the sheet.

Existing monuments that are used to tie the R/W centerline shall be identified on the Monumentation Map.

It is recommended that the R/W line not be coincident to a private property line. If the R/W Line or easement line does follow a private property line, it should be stationed to the nearest foot plus or minus (see [Example 1-3](#)).

Topographic information should be kept to a minimum, but should be sufficiently complete to indicate the effects of the proposed right of way on new parcels. No symbols for vegetation are used except for the outline of orchards or similar features directly related to the production of income from a particular property. All improvements, including wells, septic tanks, and drain fields on new parcels 100 feet or less from the proposed right of way line, are labeled and dimensioned to the nearest foot from R/W centerline. Distances to buildings should be dimensioned to the nearest part of the building (normally the roof overhang). Distances shall be placed outside the R/W; distances to fences, sidewalks, and so on are not shown.

An interchange is identified by name.

There shall be no overlap of right of way between plan sheets or adjoining plans.

## **(8) Transmittal Requirements**

After the plans have been reviewed by the Region Right of Way Plans Office, the following are to be included in the transmittal of proposed Right of Way Plans to the HQ Right of Way Plans Section:

- (a) A letter listing all items transmitted, including the Plans, Specifications, and Estimates (PS&E) title.
- (b) Current work order information.
- (c) A numbered Title Report for each parcel.
- (d) One copy of each subdivision plat referred to in Title Reports.
- (e) One copy of each plan sheet (adjoining or underlying plans) requiring revision or superseding as a result of the new plan. Proposed revisions are to be shown in color and submitted in accordance with [100.09](#) (see [Example 1-8](#)).
- (f) If the project is designated for limited access control, the region shall make certain that the entire hearing procedure was carried to completion (see the [Design Manual](#)) and shall include correlative material in the transmittal.
- (g) If a plan shows railroad facilities, federal lands, rest areas, park & ride lots, or sundry sites, acknowledgment of compliance with the following requirements is to be furnished:
  1. Applicable portions of the [Utilities Manual](#).
  2. Sundry Site Plan.
  3. Rest areas: A copy of the approval by the HQ Hydraulics Section (see the [Design Manual](#)).
  4. *Highways Over National Forest Lands*, Memorandum of Understanding, M 22-50: [www.wsdot.wa.gov/publications/manuals/m22-50.htm](http://www.wsdot.wa.gov/publications/manuals/m22-50.htm)

## **(9) Headquarters Processing**

The HQ Right of Way Plans Section will make a final review of the plan, coordinate the review with other offices as required, and send back to the region a Mylar<sup>®</sup> original of each sheet. A print showing substantial changes that were made will also be sent. After review of the changes by Headquarters, and with region concurrence, the responsible Professional Engineer will stamp and sign each sheet. The region has the option to have a Professional Land Surveyor also stamp and sign them. The stamp will be placed above the title block. The originals will then be transmitted to the HQ Right of Way Plans Section where they will be approved and adopted for the applicable phase authority (see the [Design Manual](#)).

Following approval, the plan(s) will be scanned into the [Oracle](#) system for access by the regions, HQ Real Estate Services, and other plan users.

For revisions to original plans, see [100.09](#).

## **100.04 Right of Way Acquisition Details**

Whenever possible, the total boundary of each parcel affected by the highway improvements is included on the plan sheets. Parcels that cannot be shown entirely on the plan sheet are included on the Vicinity Map. The total parcel detail must be clearly shown in relation to the highway facility. Sufficient data must be supplied to ensure each area of take required for the project can be legally described.

The Project Development Office, working with Real Estate Services, can obtain total area for parcels shown on the Right of Way Plan from the County Assessor's Office. The title companies are also requested to include areas from Assessor's records in the Title Reports, and these areas are entered in the "Total Area" boxes on the Right of Way Plans.

A greater degree of precision is required to plot the boundaries of parcels where land values are high (such as urban areas and development tracts). Where land values are high and/or ownerships consist of lots, blocks, or small tracts, the areas are shown to the nearest square foot. Larger areas are generally defined by a Public Lands Survey and may be specified in acres. Right of way takes are calculated to the nearest square foot or hundredth of an acre, except in the case of federal or Indian lands. These lands are calculated to the nearest thousandth of an acre, which is a federal requirement. Copies of computer sheets of calculations initiated by the region are sent, with the plans, to the HQ Right of Way Plans Section to expedite the review process.

### **(1) Final Documentation**

The following ownership information is submitted by the region to the HQ Right of Way Plans Section in Olympia.

- (a) A Title Report is required for each parcel from which WSDOT is acquiring property, easements, and/or access rights. These reports are examined for easements or permits granted to owners of property that does not abut the highway but is affected by the new highway facility.
- (b) Property parcel identification numbers are assigned consecutively for every ownership involved from the beginning to the end of the project. Each number consists of six digits, of which the first shall be the region prefix:
 

1-00000 = Northwest Region	4-00000 = Southwest Region
2-00000 = North Central Region	5-00000 = South Central Region
3-00000 = Olympic Region	6-00000 = Eastern Region

The region assigns the parcel number for use within its jurisdiction and it is used on all Right of Way Plans, preliminary commitments, deeds, easements, or other substantiating data.

The assigned number will identify the property for all future departmental use; however, a division of or additional acquisition from an existing parcel must be assigned a new six-digit parcel number. Letter suffixes to an existing number are prohibited.

The number is used as shown in [Example 1-2](#).

- (c) The areas of total ownership, right of way required for highway use; property remaining right and left of the right of way centerline; easements; and permits are shown in a tabular listing on each plan sheet. In most cases, the total area is obtained from the County Assessor's Office.

When an individual ownership extends to more than one plan sheet, area tabulations will be placed on the first plan sheet that shows that parcel.

## 100.05 Sundry Site Plans

The original intent of the Sundry Site Plan was to provide a source of material for highway construction projects. Today, most projects use contractor-furnished sites, so pit sites are no longer shown on Sundry Site Plans. Current use includes functions such as ferry terminals, wetlands mitigation sites, park & ride lots, and stormwater retention or other reclamation sites.

A Sundry Site Plan is used to map property that cannot be shown on a Right of Way Plan. Sundry Site Plans are to be prepared in English units only. Preferably, sites used by WSDOT are acquired in fee. Some sites may be acquired with an easement or lease.

Pit sites (PS), quarry sites (QS), stockpile sites (SP), and waste sites (WS) are identified by a system that uses two letters, followed by the county letter designation (shown on the following list) and the site number. For example, quarry site number 25 in Thurston County is shown as QS-J-25. Sites such as ferry terminals, wetlands mitigation areas, park & ride lots, and so on, are identified by name rather than a letter designation and site number; for example, Edmonds Ferry Terminal, Snoqualmie Wetlands Mitigation Area, and Marvin Road Park & Ride Lot.

The following list shows the county letter designations:

County	Letter	County	Letter	County	Letter
Adams	AD	Grays Harbor	H	Pierce	B
Asotin	AN	Island	IS	San Juan	SJ
Benton	R	Jefferson	Y	Skagit	M
Chelan	K	King	A	Skamania	SA
Clallam	Q	Kitsap	I	Snohomish	D
Clark	G	Kittitas	S	Spokane	C
Columbia	CO	Klickitat	Z	Stevens	W
Cowlitz	N	Lewis	L	Thurston	J
Douglas	DO	Lincoln	T	Wahkiakum	WA
Ferry	FY	Mason	X	Walla Walla	O
Franklin	FN	Okanogan	U	Whatcom	F
Garfield	GA	Pacific	V	Whitman	P
Grant	GT	Pend Oreille	PO	Yakima	E

### (1) Site Selection

Site selection should be based at least in part on the following:

- (a) Site investigation by the Region Materials Engineer and the Region Landscape Architect.
- (b) Permanency.
- (c) Size and space (sufficient to accommodate all current and/or future operations).

- (d) Cost.
- (e) Aesthetic values.
- (f) Single ownership, if possible.
- (g) Unimproved low-valued land. Purchase of improved or valuable land should be avoided unless acquisition of the site is cost-effective (the savings in haul compensate for the cost of the site).
- (h) Consideration of all other available sources, including private, commercial, and other WSDOT sites.
- (i) Presence of wetlands, aquifers, farmlands, flood plains, historical or archaeological sites, or other environmentally sensitive lands.

## **(2) Plan Submittal**

Before beginning work on a Sundry Site Plan the region RW Plans Office should meet with Region Real Estate Services and the project office to determine the anticipated use of the site and whether it will be a total or partial acquisition. This information can be used to determine the elements to be located within the site and whether a Record of Survey will be required. Specific information to be included and submitted with a Sundry Site Plan is as follows:

- (a) Site number or name.
- (b) Title Reports and parcel identification numbers.
- (c) Area calculations:
  - Total
  - Take
  - Remainder
- (d) If a survey was completed for this site, provide a cross-reference note to the Record of Survey.
- (e) Except for Sundry Site Plans referenced to a Record of Survey, described by aliquot parts, or defined by platted lot and block, all alignments and parcels shown on the plan will be tied to a minimum of two General Land Office corners or State Plane Coordinate control points.
- (f) Access information if site does not abut public road system
- (g) Location of buildings and other structures, fences, wells, septic systems, and any other features necessary for appraisal purposes.
- (h) All easements shown on parcels acquired for the purpose of structure construction.
- (i) Scale drawing with dimensions of sundry site on a 22-inch x 34-inch reproducible sheet (see Examples [1-10](#), [1-11](#), and [1-12](#)).
- (j) Vicinity Map.

### **(3) Sundry Site Plans That Reference a Record of Survey**

Many Sundry Site Plans now include setting property corners of the acquisition area. However, the final acquisition often differs from the original plan once negotiations are complete. In order to avoid resetting property corners, the following procedure has been established.

- (a) The Sundry Site Plan is prepared and approved based on the anticipated needs of the project.
- (b) Once negotiations are complete and the property has been acquired, the property corners are set.
- (c) The Record of Survey is filed and an Auditor's File Number (AFN) is assigned to the survey.
- (d) The Sundry Site Plan is then revised, adding the Record of Survey AFN to the plan.

### **(4) Processing**

The Sundry Site Plan is submitted to the HQ Right of Way Plans Section.

The HQ Right of Way Plans Section will perform a final review of the plan, coordinate the review with other offices as required, and send the region a Mylar<sup>®</sup> original. A print showing substantial changes made will also be sent. The responsible Project Engineer will sign the Mylar<sup>®</sup>. The original will then be transmitted to the HQ Right of Way Plans Section, where it will be approved and adopted for the applicable phase authority (see the *Design Manual*). Following approval of the plan, the original Mylar<sup>®</sup> will be filed with the HQ Right of Way Plans Section. Scanned images of the plan will be placed in the Oracle system for access by the region, HQ Real Estate Services, and other plan users.

For revisions to original plans, see [100.09](#).

## **100.06 Access Report Plan**

The Access Report Plan (see [Example 1-4](#)) shows the effects of the proposed highway on the street and road system by delineating the points of public access (see the *Design Manual*). The following items are the minimum details to be shown on the plan:

- Highway facilities with standard access control delineated.
- Public road network.
- Proposed frontage roads and county road or city street connections (individual private approaches need not be included, but the report should describe general provisions for access to private properties).
- Location and identity of subdivisions.
- Corporate limits and boundaries.
- Rivers, streams, and major landmarks.
- Pedestrian and bicycle trails or paths.
- Beginning and end of plan.
- Legend and scale bar.
- Publicly owned utilities.

- Title block.
- Areas for relinquishment to county, city, or transfer to others, with Turnback Lines indicated, and Surplus R/W labeled as such.
- Structures, labeled as overcrossings or undercrossings.
- Local names for interchanges shown on plan.
- Points of public access.
- Appropriate traffic movement notes on plan sheets.
- Plan length on first page of Vicinity Map shown as: Total Length of Plan = \_\_ Miles.
- Directional arrows on all roadways and ramps.
- Number of lanes indicated on all roadways.

Matching of stationing and all details, especially on all plan sheets, will be carefully checked to ensure the relationship to adjacent plans.

To prevent confusion concerning the degree of access control intended for each area of a plan, the station where transition is made from one type of control to another is clearly labeled. This applies to any such transition upon the highway proper or where such highway connects or intersects with another limited access facility, be it a state, county, or city roadway. This does not apply at intersections where the transition occurs between access-controlled facilities and facilities with no access control. Modified access control adjacent to interchanges or intersections must be identified on the plan.

The title block on the plan sheet shall designate full, partial, or modified access control. Whenever a transition occurs on a sheet, the title block shall indicate all degrees of access appearing on the sheet.

### **100.07 Access Hearing Plan**

The region prepares an Access Hearing Plan (see [Example 1-5](#)) to be used as an exhibit at the public hearing and forwards it to the HQ Right of Way Plans Section for review. The Access Hearing Plan shall contain the following data in addition to that required for the Access Report Plan:

- Topographical features such as buildings, fences, and private driveways.
- Ownerships, including parcel numbers, names, and areas (for details on assignment of property parcel identification numbers, see [100.04\(1\)\(b\)](#)).
- Access Approach Schedule showing all private approaches within the limits of access control.
- Access control notes in conformance with [100.10](#); right of way dimensions need to be shown.

### **100.08 Special Right of Way Plans**

Special maps and plans required for negotiation with various agencies and organizations are usually prepared by the HQ Right of Way Plans Section. When such plans are the responsibility of the region, they are transmitted to the HQ Right of Way Plans Section with the Right of Way Plans.

## (1) Court Exhibit Maps

Condemnations or taking of rights by judicial action may be accomplished through both state and federal courts. The mapping preparation varies depending upon which court is involved.

### (a) State Court

The actual taking instrument is generally the pertinent portion of the Right of Way Plan. For court exhibits, aerial photography supplemented to depict property lines or other data is preferable. Experience has shown that juries more readily relate to this type of exhibit. If photography is not available or if specific site conditions are such that this cannot be accomplished, a special court exhibit should be prepared.

If required, the special court exhibit map is to be prepared from information shown on the Right of Way Plan. This information may be supplemented by information from the right of way agent's condemnation report, the Title Report, county records, legal descriptions, and/or information obtained from personal examination of the property.

Where supplemental information indicates a difference in dimensions or area from that indicated on the Right of Way Plan, a Right of Way Plan revision should be prepared concurrent with the court exhibit map. This material will be sent to HQ Real Estate Services, where it will be prepared as part of the exhibit and presented to the Attorney General's Office.

The court exhibit map is to be prepared under the supervision of the engineer who will present the map in court.

The map should include the following:

- Ties from proposed R/W centerline to existing corners.
- All buildings and improvements.
- Accurate position of buildings and improvements that lie 100 feet or less from the proposed right of way.
- Distance from improvements to proposed R/W centerline.
- Location of pipelines and other construction, as requested.
- Five-foot contours, drawn in brown pencil.
- Bearing on ownership lines where distances are shown.
- Types and points of access for limited access highways.

If possible, show the entire area to be acquired from a single ownership on a single sheet. Only the portions of an ownership covered by the Title Reports need be shown if those areas alone will be affected by condemnation and severance for right of way. Include the limits of other adjoining parcels of the same ownership if their value may also be affected. More than one parcel involving one or more ownerships may be shown if there is no break in continuity between them and if the scale will be large enough to clearly show the features of each. Do not show fencing that is to be removed or is proposed, and do not color the map.

A Vicinity Map is required, preferably on the exhibit map sheet, showing the entire contiguous ownership of the land being condemned and pertinent topographic features.

Submit the tracing to HQ Real Estate Services with a print on which the total ownership is outlined in red, with a letter giving acreage computation for the total ownership, right of way area, and severed portions. HQ Real Estate Services will assemble all the necessary information and present the package to the Attorney General's Office.

**(b) Federal Court**

Maps prepared for the taking instrument must be consistent with federal regulations at the time of taking. A section of the Right of Way Plan must include metes and bounds description data, and a supplemental photo exhibit map is desirable. The specific details shall be coordinated through HQ Real Estate Services at the time of preparation.

**(2) Right of Way Over Lands Controlled by the Bureau of Indian Affairs**

For right of way over lands controlled by the Bureau of Indian Affairs (BIA), the region prepares the appropriate Right of Way Plans. The Engineer's Affidavit is signed by the Professional Engineer who signed the Right of Way Plan. The Engineer's Affidavit and Certification are signed by the Project Development Engineer or equivalent. Reproducibles and prints, as required, are sent by the Region Right of Way Plans Office to the Region Real Estate Services Office for further action, in accordance with the prescribed policies of WSDOT and the BIA. A copy of the Engineer's Affidavit and the Certification are sent, with the acquisition file, to HQ Real Estate Services.

**(3) National Forest Land**

Right of Way Plans for proposed highways over national forest land and requirements for mapping of forest lands are contained in the Memorandum of Understanding, "[Highways Over National Forest Lands](#)," and amendments thereto.

**(4) Washington State Ferries Facility Site Maps**

Sundry Site Plans or other plans involving property for the Washington State Ferries are prepared by the HQ Right of Way Plans Section.

**(5) Hardship Acquisition Maps**

Region requests for hardship case consideration are submitted to the HQ Right of Way Plans Section, accompanied by one set of half-size reproducibles consisting of the following:

- Before Right of Way Plans are approved, a Vicinity Map and preliminary plans showing hardship parcels to be acquired (ownership and area of take indicated). If preliminary plans are not available, the exhibit map may be substituted (see [Example 1-7](#)).
- After Right of Way Plans have been approved, a Vicinity Map and Right of Way Plan showing hardship parcels to be acquired (ownership and area of take indicated).

For partial take parcels, metes and bounds descriptions of the partial takes or dimensions of take and remainder must be included in the plans.

## 100.09 Revisions to Approved Right of Way Plans

The Region Right of Way Plans Office submits a proposed revision (additions in red and deletions in green) on prints of the latest approved plan (see [Example 1-8](#)). Prints showing the proposed revision must not be modified except as noted. Revisions to an approved Right of Way Plan are placed on the original tracings by the HQ Right of Way Plans Section (see [Example 1-2](#)).

When revising plans developed originally with the CADD System, the revision process is the same as described above and the transmittal requirements are identical to those noted below.

Plan revisions may be submitted by mail or e-mail. E-mail submittals must include all documentation that would normally accompany a mailed revision, including the transmittal letter. It is especially important that e-mail submittals be legible. Plan sheets submitted by e-mail should be CAD drafted rather than handwritten. Handwritten plan revisions submitted by e-mail will be returned to the region if they are not legible.

For projects that include a large number of new parcels, Title Reports may be downloaded to an ftp site or other electronic media. Instructions for retrieval of these documents must be forwarded to the HQ Right of Way Plans Section.

Plan submittals should be to scale to assist in drafting the revision onto the original sheet. If plan revisions are done in CAD, the CAD file should be forwarded to the HQ Right of Way Plans Section.

When revising plans that have both English units and metric units, the proposed revisions from the region shall show only English units.

Extensive changes to the existing Right of Way Plan may require submittal of a new plan in lieu of a revision.

New Right of Way Plans should be developed when the existing plans are obsolete, inaccurate, or difficult to read.

New Right of Way Plans should be considered when any of the following conditions exists:

- The scale of the existing plan is smaller than 1"=100'.
- The existing plan shows unreliable data (for example, assumed bearings, distances, or other important information).
- The proposed revision would require major changes to the current plan (for example, new alignment, the addition of many new parcels, or the addition of access control).
- The current plan shows "Right of Way as acquired, alignment as constructed" in the revision block.
- The existing plan was originally a county or city plan.
- Stations do not increase from left to right.
- The plan is on an old datum (for example, 1929).

When revising "Split Plans" (separate Right of Way and Limited Access Plans), the region must submit appropriate colored revisions for **both** plans.

Total parcel details were not shown on many of the older Right of Way Plans. When an existing Right of Way Plan is being revised to show new parcels, include a total parcel detail. Total parcel details are very important when condemnation of the parcel is a probability. A total parcel detail is not necessary if the total parcel is especially large, such as a national forest.

Whenever a parcel has been dealt with and the transaction has been finalized, and additional right of way and/or other property rights are required, a new parcel number is assigned to the parcel involved. The old number is shown inside the area of original take. Property dots are adjusted to show the current boundary, and new areas are shown in the ownership block.

An approved Right of Way Limited Access Plan cannot be revised until completion of the appeal period following mailing of the Findings and Order. All revisions that the region develops during this time shall be held and submitted as a single package after the appeal period.

For plans that include a Wetlands Mitigation Site, the Army Corps of Engineers note, with the permit number, should be included in the plan revision.

### **(1) Transmittal Requirements**

The following shall be submitted as part of the revision transmittal:

- (a) Completed Schedule of Right of Way Plan Revisions (transmittal letter). All revisions require a justification for the revision. It is very important to explain why the revision is needed. The purpose of the plan revision should be explained in detail on the transmittal letter. Reiterating what is shown on the redlined plans is not a sufficient explanation. The PS&E title should be included.
- (b) Marked prints with engineering and right of way information that includes areas revised if right of way negotiations are not complete. The actual area of the original take and the area for supplemental acquisition, based on ownership at the time of the second acquisition, are included if negotiations are complete. Redlines will include parcel numbers, names, areas, and remainders.
- (c) Title Reports for all new parcels. Supplemental Title Reports are acceptable if the original transaction has been recently completed. A new parcel number will be needed for these parcels.
- (d) Subdivision plats and/or other pertinent data.
- (e) Coincident with (a) above, when original right of way negotiations are incomplete or a revision affects condemnation proceedings, the Region Real Estate Services Manager is advised to take appropriate action pending final revision approval.
- (f) E-mail submittals are acceptable provided a transmittal letter is included and all plan sheets are legible.

### **(2) Headquarters Processing**

The HQ Right of Way Plans Section will conduct a final review of the plan revisions and coordinate the review with other offices and the FHWA, as required.

Subsequent to review, the original plans are revised and the HQ Right of Way Plans Section Manager approves the revisions.

Following approval, the plan(s) will be scanned into the Oracle system for access by the regions, HQ Real Estate Services, and other plan users.

## 100.10 Access Control Notes

### (1) Instructions

Standard access control notes cover all necessary descriptions to be shown in the plans for the granting of approaches. An access approach note plus necessary supplementary notes will be used to identify all like approaches listed.

The access approach schedule on the Right of Way Plan shall list the specific details for each approach. Under the Station on Roadway column, enter the exact station or the stations between whose limits the approach will be granted, the side of centerline (right, left, or both), and any supplementary information required. Under the Type column, indicate the letter and/or applicable supplementary note numbers.

The supplementary notes are used in conjunction with the access approach notes to which they apply. Each supplementary note shall always be listed by the number assigned to it. In this manner, an access approach note letter with a supplementary note number will always indicate the same type of approach throughout all Right of Way Plans.

Type A through Type F approaches are defined in [WAC 468-58-080](#), are shown in the *Design Manual*, and are listed in the Access Approach Notes section below.

Supplemental Note No. 8, Railway Access, will be used to prohibit traffic movement between the railway right of way and the traveled highway lanes.

Supplemental Note No. 21, Utility Within Right of Way Maintained From Outside Right of Way, refers to a utility within the right of way by franchise or permit where all access is to be from the adjacent streets, roads, or property. The supplementary note number only will be listed under the Type column of the access approach schedule.

If it is necessary to add a special stipulation to an approach note, an asterisk may be indicated after the letter and/or number in the Type column of the access approach schedule. The special stipulation indicated by the asterisk shall be explained under the Access Notes column in the same manner as a footnote.

### (2) Access Approach Notes

#### (a) Type A Approach Note

Type A approach is an off and on approach in a legal manner, not to exceed 30 feet in width, for the sole purpose of serving a single-family residence. It may be reserved by an abutting owner for specified use at a point satisfactory to the state at or between designated highway stations.

(This note may be supplemented by a note stating the number of users and/or special use.)

#### (b) Type B Approach Note

Type B approach is an off and on approach in a legal manner, not to exceed 50 feet in width, for use necessary to the normal operation of a farm, but not for retail marketing. It may be reserved by an abutting owner for specified use at a point satisfactory to the state at or between designated highway stations.

(This note may be supplemented by a note stating the number of users.)

**(c) Type C Approach Note**

Type C approach is an off and on approach in a legal manner, for special purpose and width to be agreed upon. It may be specified at a point satisfactory to the state at or between designated highway stations.

(Always supplement by notes stating number of users, special use, and width.)

**(d) Type D Approach Note**

Type D approach is an off and on approach in a legal manner not to exceed 50 feet in width for use necessary to the normal operation of a commercial establishment. It may be specified at a point satisfactory to the state at or between designated highway stations.

**(e) Type E Approach Note**

Type E approach is a separated off and on approach in a legal manner, with each opening not exceeding 30 feet in width, for use necessary to the normal operation of a commercial establishment. It may be specified at a point satisfactory to the state at or between designated highway stations.

(This note is no longer used but is still shown on some existing deeds.)

**(f) Type F Approach Note**

Type F approach is an off and on approach in a legal manner, not to exceed 30 feet in width, for the sole purpose of serving a wireless communication site. It may be specified at a point satisfactory to the state at or between designated highway stations.

**(3) Supplementary Notes****(a) Offset Access Note – No. 1**

This approach is to be used to travel on right of way and enter property as specified.

(In the access approach schedule, list the station of approach on roadway and the station where property is to be entered; for example, 146+00 Rt. to leave R/W 148+50 Rt.)

**(b) Joint Usage Note – No. 2**

This approach is to be used to serve more than one owner and/or utility, for only those ownerships listed on the access approach schedule.

(Use this note for each approach serving more than one owner and/or utility.)

**(c) Modified Access Control Note – No. 3**

No longer used.

**(d) Special Farm Equipment Note – No. 4**

This approach may be increased in width, not to exceed 80 feet, for use by special farm equipment. During the crossing of the highway with farm equipment requiring an approach exceeding 50 feet in width, traffic on the highway shall be protected by flaggers provided by the owner at the owner's expense.

(e) **Utilities Note – No. 5**

This approach is to be used for the operation, maintenance, and repair of the utility specified. The approach shall not exceed 50 feet in width.

(In the access approach schedule, state the station limits on the roadway, the type of utility and, if required, the gating restriction.)

(f) **Grain Hauling Note – No. 6**

This approach is for limited use in hauling grain during the harvest season. The approach shall not exceed 50 feet in width.

(In the access approach schedule, state the station limits on the roadway and, if required, the gating restriction.)

(g) **Tree Farm Note – No. 7**

This approach is to be used for the operation of a tree farm or tree farms, including the removal of raw forest products therefrom, but may not be used for retail marketing. The approach shall not exceed 50 feet in width.

(h) **Railway Access Note – No. 8**

No access is permitted between the railway right of way and the traveled highway lanes.

(In the access approach schedule, state the station on the roadway and name of railway.)

(i) **Gate Restriction Note – No. 9**

This approach shall be gated and locked when not in use.

(j) **Restricted Clearance Note – No. 10**

Only as restricted clearance permits.

(k) **Pedestrian and Bicycle Trails Note – No. 11**

Pedestrian and bicycle traffic will be permitted use of the trail designated on the \_\_\_\_\_ (Rt. or Lt.) between Sta. \_\_\_\_\_ and Sta. \_\_\_\_\_.

Access to the trail will be permitted only at:

Sta. \_\_\_\_\_ (Rt. or Lt.)

Sta. \_\_\_\_\_ (Rt. or Lt.)

(This note may be supplemented by a note stipulating any restrictions or special privilege of direct access to the trail. The note should appear on each plan sheet on which the trail is shown. Station limits of the trail should not extend beyond the individual sheet limits. Access breaks for the trail are noted only on the specific sheet where the break occurs.)

(l) **Trail Access Note – No. 12**

Abutting property owners may be afforded the privilege of direct access to the trail under permits issued by WSDOT.

(m) **Utility Within Right of Way Maintained From Outside Right of Way  
Note – No. 21**

The privilege of access to areas within the right of way is permitted from outside the right of way to the user designated, solely for use authorized by and subject to the conditions of the franchise, permit, or agreement specified. No access will be allowed to the traveled highway lanes or ramps.

(In the access approach schedule, state the name of utility, the type of utility, the station of entry, and the franchise or permit number.)

(n) **Dominant/Servient Access Note – No. 22**

This approach use is for the benefitted parcel per the easement of record. This use is only allowed as long as the easement remains in effect. This approach is to be used to serve both the dominant and servient estate.

(o) **Noise Wall Access Note – No. 23**

This approach is to be used by WSDOT for the maintenance and repair of the noise wall. The approach shall be through noise wall doors located at Stations XXX+XX (must be accompanied by Note No. 9).

**(4) Miscellaneous Note**

(a) **Traffic Movement Note**

Traffic movement will be permitted over/under the highway structures at \_\_\_\_\_ (state the name of the road or the facility and the station limits on the roadway).

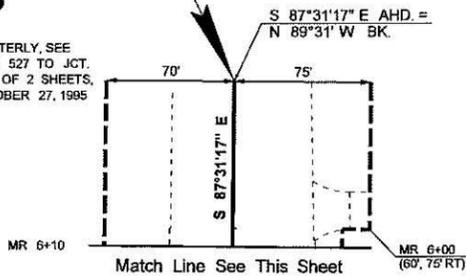


CURVE DATA				
P.I. STATION	DELTA	RADIUS	TANGENT	LENGTH
255+64.49	17°35'35.0" RT	2500'	386.86'	767.64'

**LIMIT OF PLAN**  
 SR 524 STA. MR 5+20 P.O.T. AHD. =  
 SR 524 STA. 4+80 P.O.T. BK.  
 SR 524 MP 12.75

T. 27N. R. 5E. W.M.

FOR RAW WESTERLY, SEE  
 SR 524, JCT. SR 527 TO JCT.  
 SR 9, SHEET 2 OF 2 SHEETS,  
 ADOPTED OCTOBER 27, 1995



NE 1/4 NE 1/4  
 SEC. 27

SE 1/4 SE 1/4  
 SEC. 22

STORMWATER  
 TREATMENT AREA

\* SPIRAL DATA SHOWN  
 REFERENCES RAW  
 CENTERLINE PER SR 9,  
 WOODINVILLE TO SNOHOMISH,  
 APPROVED MAY 24, 1938

FOR RAW SOUTHERLY, SEE  
 SR 9, SR 522 TO CLEARVIEW  
 VIC., SHEET 9 OF 18, APPROVED  
 SEPTEMBER 16, 1994.

TO WOODINVILLE

OVERLAND ROAD  
 (NOT BUILT)

TO SNOHOMISH

**BEGINNING OF PLAN**  
 STA. 244+50  
 MP 1.54

SW 1/4 SW 1/4  
 SEC. 23

THIS PLAN SUPERSEDES SHEETS 9 AND 10  
 OF 18 OF SR 9, SR 522 TO CLEARVIEW VIC.,  
 APPROVED SEPTEMBER 16, 1994.

THE BASIS OF BEARINGS AND DISTANCES ARE  
 DETERMINED FROM WASHINGTON STATE PLANE  
 COORDINATE SYSTEM NORTH ZONE (NAD 83/91).

THE DISTANCES SHOWN ARE GROUND DISTANCES.

FOR SURVEY INFORMATION SEE RECORD OF SURVEY SR 9,  
 SR 524 (MALTBY RD) VIC. TO 164TH ST SE VIC. RECORDED IN  
 SNOHOMISH COUNTY, WASHINGTON, ON JAN. 3, 2007  
 UNDER AFN 200701035253.

**LEGEND**

PROPERTY OWNERSHIP NUMBERS

PROPERTY LINES

0 50 100  
 SCALE IN FEET

OWNERSHIP SHOULD BE VERIFIED.  
 PROPERTY RIGHTS SHOWN MAY NOT  
 HAVE BEEN ACQUIRED BY WSDOT.

FOR RAW EASTERLY, SEE SR 524,  
 JCT. SR 9 TO JCT. SR 522,  
 SHEET 1 OF 1 SHEET,  
 ADOPTED OCTOBER 27, 1995

N 89°43'33" E AHD. =  
 S 89°21'44" E BK.

**LIMIT OF PLAN**  
 SR 524 STA. MR 15+15 P.O.T. BK. =  
 SR 524 STA. 76+74.4 P.O.T. AHD.  
 SR 524 MP 12.94

**EXAMPLE 1-9a**

EXISTING BONNEVILLE POWER  
 ADMINISTRATION EASEMENT (300' WIDE)



SR 9

SR 524 TO 197TH ST SE VIC

SNOHOMISH COUNTY

RIGHT OF WAY PLAN

MP 1.54 TO MP 1.81

STATION 244+50 TO STATION 258+50

WASHINGTON STATE DEPARTMENT OF TRANSPORTATION  
 OLYMPIA, WASHINGTON



APPROVED  
 AND ADOPTED

PROJECT ENGINEER

RIGHT OF WAY PLANS MANAGER

CURVE DATA				
P.I. STATION	DELTA	RADIUS	TANGENT	LENGTH
263+94.15	2°17'26" LT	10500.00'	209.92'	419.78'
269+94.57	2°17'36" RT	10500.00'	209.92'	419.78'

T. 27N. R. 5E. W.M.



NE 1/4 SE 1/4  
SEC. 22

SE 1/4 SE 1/4  
SEC. 22

SW 1/4 SW 1/4  
SEC. 23

OVERLAND ROAD  
(NOT BUILT)

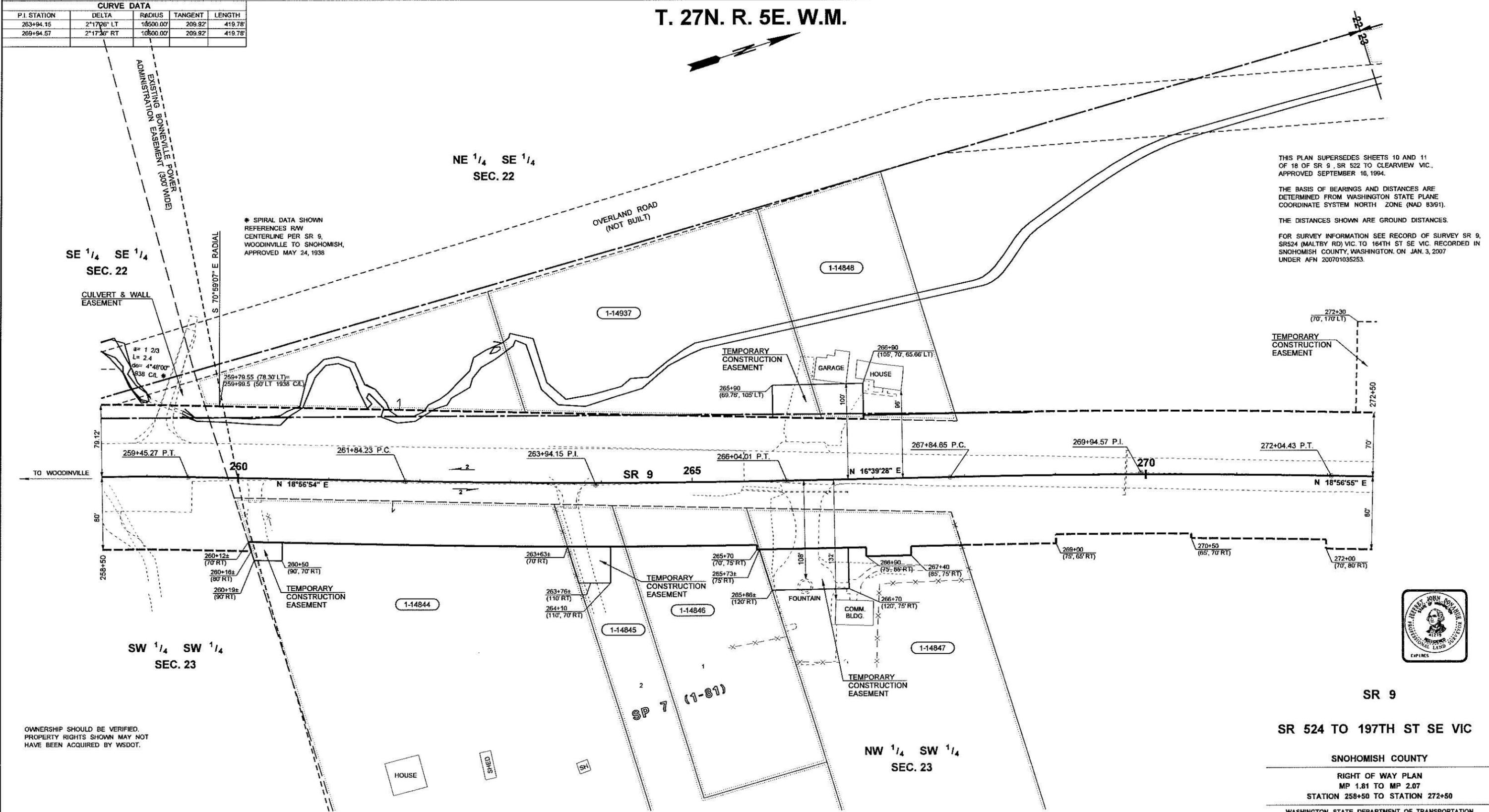
\* SPIRAL DATA SHOWN  
REFERENCES R/W  
CENTERLINE PER SR 9,  
WOODINVILLE TO SNOHOMISH,  
APPROVED MAY 24, 1938

THIS PLAN SUPERSEDES SHEETS 10 AND 11  
OF 18 OF SR 9, SR 522 TO CLEARVIEW VIC.,  
APPROVED SEPTEMBER 16, 1994.

THE BASIS OF BEARINGS AND DISTANCES ARE  
DETERMINED FROM WASHINGTON STATE PLANE  
COORDINATE SYSTEM NORTH ZONE (NAD 83/91).

THE DISTANCES SHOWN ARE GROUND DISTANCES.

FOR SURVEY INFORMATION SEE RECORD OF SURVEY SR 9,  
SR524 (MALTBY RD) VIC. TO 164TH ST SE VIC. RECORDED IN  
SNOHOMISH COUNTY, WASHINGTON, ON JAN. 3, 2007  
UNDER AFN 200701035253.



OWNERSHIP SHOULD BE VERIFIED.  
PROPERTY RIGHTS SHOWN MAY NOT  
HAVE BEEN ACQUIRED BY WSDOT.



SR 9

SR 524 TO 197TH ST SE VIC

SNOHOMISH COUNTY

RIGHT OF WAY PLAN  
MP 1.81 TO MP 2.07  
STATION 258+50 TO STATION 272+50

WASHINGTON STATE DEPARTMENT OF TRANSPORTATION  
OLYMPIA, WASHINGTON



APPROVED  
AND ADOPTED

PROJECT ENGINEER

RIGHT OF WAY PLANS MANAGER

† CALCULATED      ⊕ TEMPORARY CONSTRUCTION EASEMENT

PARCEL NO.	NAME	TOTAL AREA	R/W	LT. REMAINDER RT.	EASMT
1-14937	MENARD	58837			1740
1-14848	KING	37562	658	36904	1984
1-14847	BEGUM, ET. AL.	219400	9710		209690
1-14846	MCAULIFFE	44139	6353		37786
1-14845	MCDANIEL	130439	2891		127548
1-14844	MADLINGER	191408	16834	28367	146207

TOTAL AREA IS FROM ASSESSOR'S  
RECORDS UNLESS OTHERWISE NOTED.

OWNERSHIPS

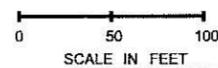
ALL AREAS ARE SHOWN IN SQUARE  
FEET UNLESS OTHERWISE NOTED.

LEGEND

PROPERTY OWNERSHIP NUMBERS



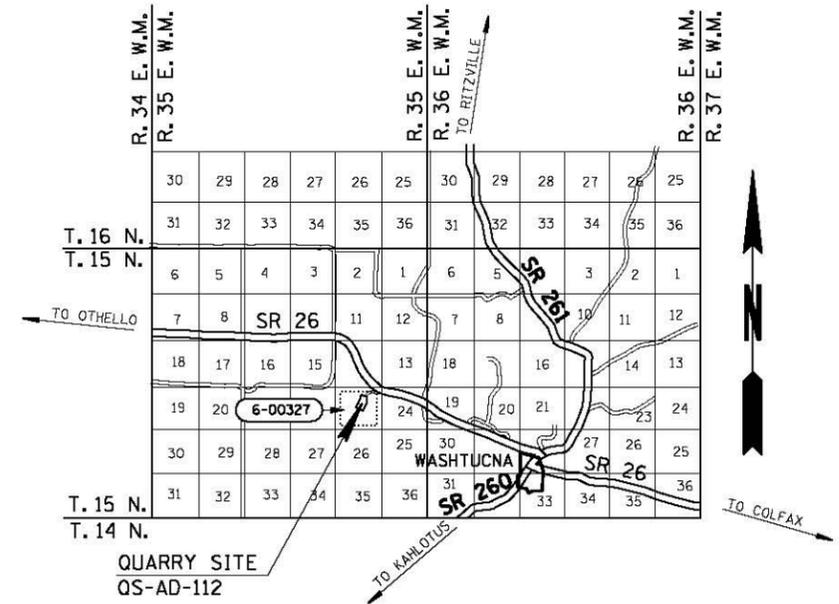
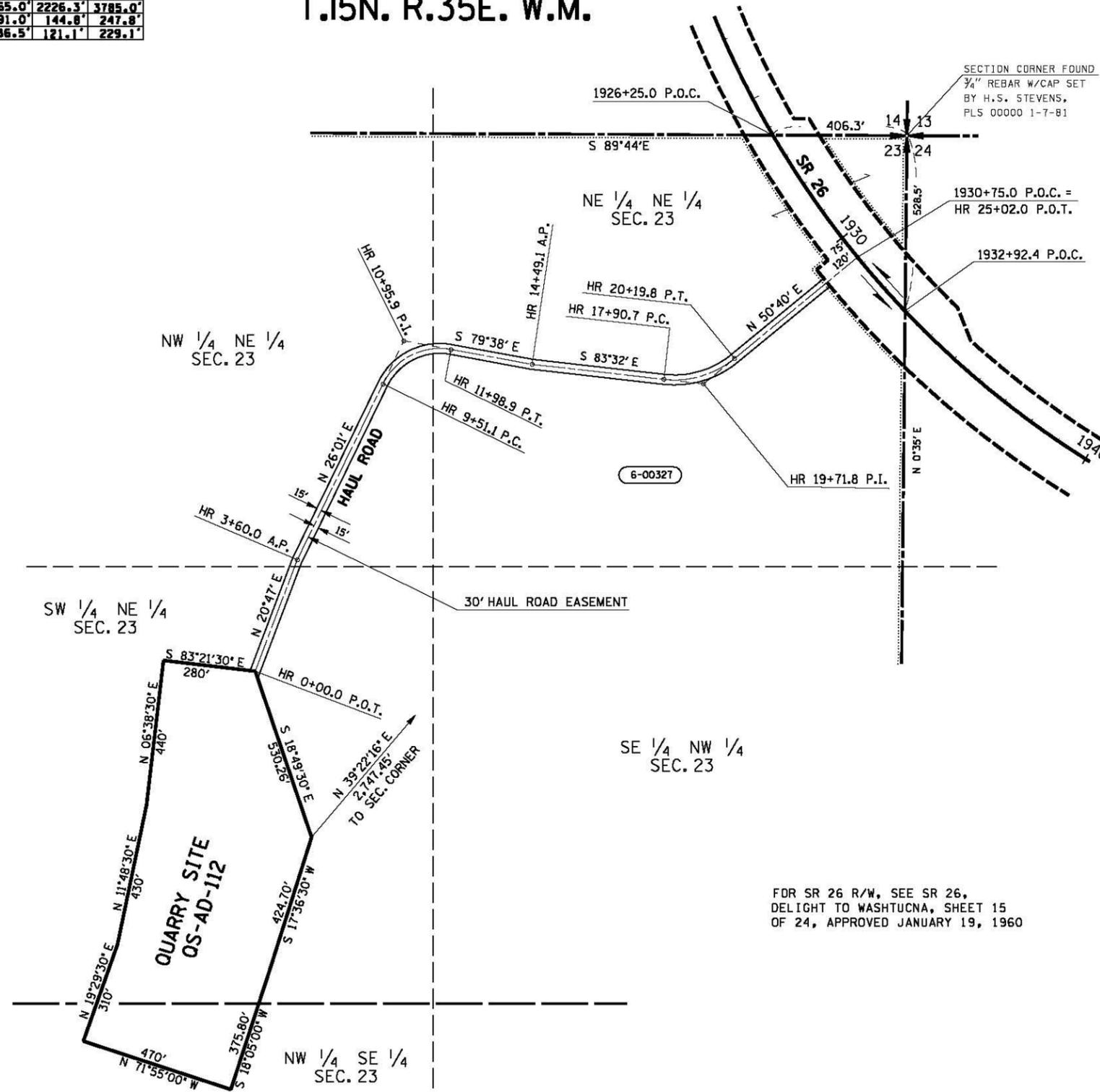
PROPERTY LINES



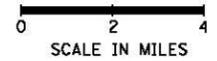
EXAMPLE 1-9b

P.I. STATION	DELTA	RADIUS	TANGENT	LENGTH
1945+11.4	75°42' LT.	2865.0'	2226.3'	3785.0'
HR 10+95.9	74°21' RT.	191.0'	144.8'	247.8'
HR 19+71.8	45°49' LT.	286.5'	121.1'	229.1'

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



VICINITY MAP AND TOTAL PARCEL DETAIL



FOR SR 26 R/W, SEE SR 26, DELIGHT TO WASHTUCNA, SHEET 15 OF 24, APPROVED JANUARY 19, 1960

OWNERSHIP SHOULD BE VERIFIED. PROPERTY RIGHTS SHOWN MAY NOT HAVE BEEN ACQUIRED BY WSDOT.

ADAMS COUNTY SUNDRY SITE PLANS

QUARRY SITE OS-AD-112

WASHINGTON STATE DEPARTMENT OF TRANSPORTATION OLYMPIA, WASHINGTON

EXAMPLE 1-10

APPROVED AND ADOPTED JULY 1, 2004

PROJECT ENGINEER RIGHT OF WAY PLANS ENGINEER

DATE SHEET 2

PARCEL NO.	NAME	TOTAL AREA	TAKE	REMAINDER	EASM'T
6-00327	WALKER, HIRAM	639.20 AC.	6.27 AC.	632.93 AC.	* 1.64 AC.

OWNERSHIPS

LEGEND

PROPERTY OWNERSHIP NUMBERS

PROPERTY LINES

SCALE IN FEET

0 50 100

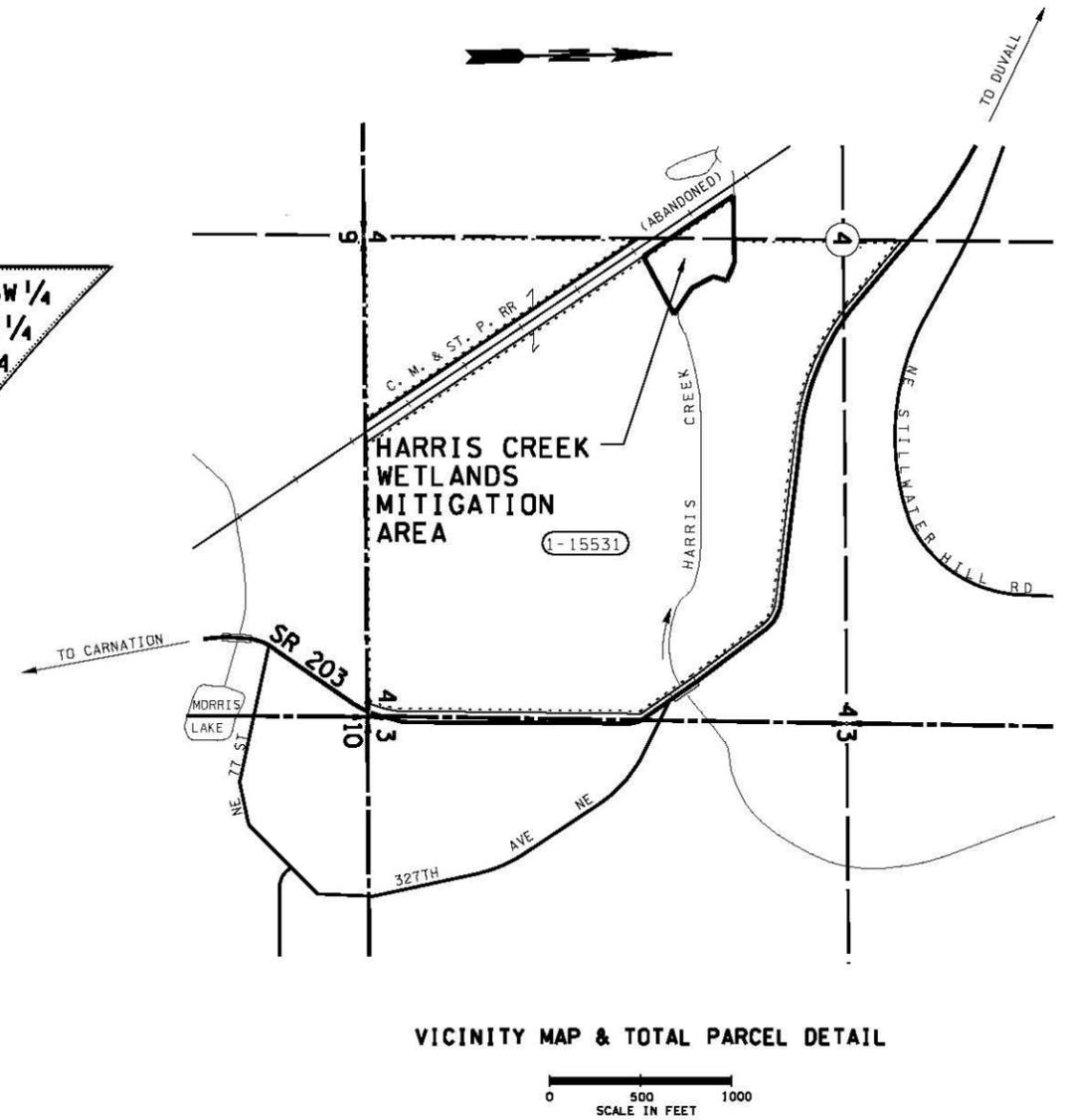
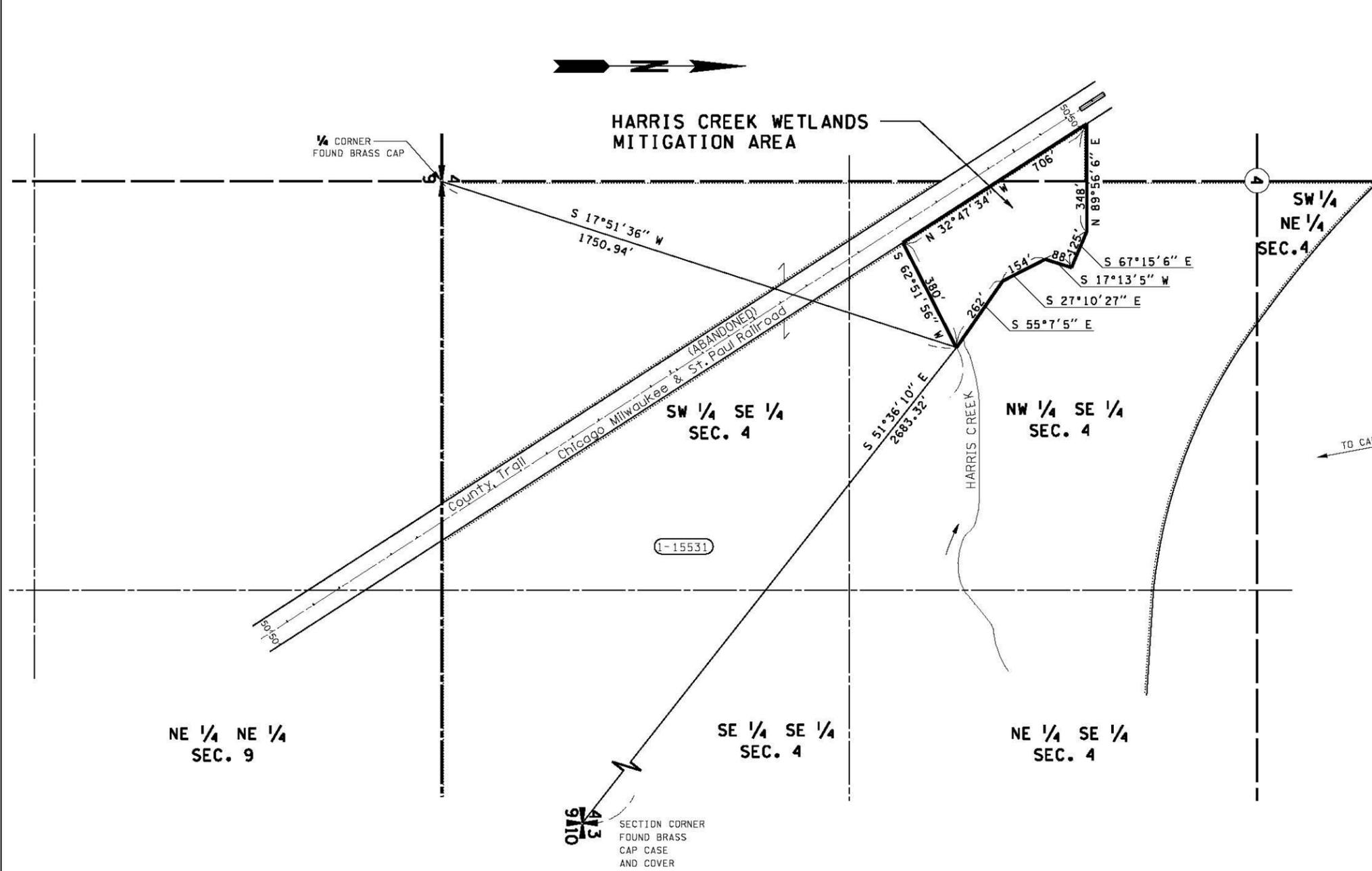
Whenever possible, leave this space empty for revision block.

Reference Approval

Revision Description

By

# T.25N. R.7E. W.M.



OWNERSHIP SHOULD BE VERIFIED. PROPERTY RIGHTS SHOWN MAY NOT HAVE BEEN ACQUIRED BY WSDOT.

**KING COUNTY SUNDRY SITE PLANS**

**HARRIS CREEK WETLANDS MITIGATION AREA**

WASHINGTON STATE DEPARTMENT OF TRANSPORTATION  
OLYMPIA, WASHINGTON

APPROVED AND ADOPTED **JULY 2, 2004**

PROJECT ENGINEER \_\_\_\_\_ RIGHT OF WAY PLANS ENGINEER \_\_\_\_\_

DATE \_\_\_\_\_ SHEET 52

△ FOR AREAS SEE SR 203, VICINITY NE 77TH STREET, SHEET 4 OF 4 SHEETS, APPROVED AUGUST 30, 1996

PARCEL NO.	NAME	TOTAL AREA	TAKE	LT. REMAINDER RT.	EASM'T
1-15531					

**OWNERSHIPS**

**LEGEND**

PROPERTY OWNERSHIP NUMBERS

PROPERTY LINES

SCALE IN FEET: 0, 50, 100

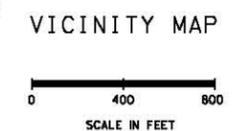
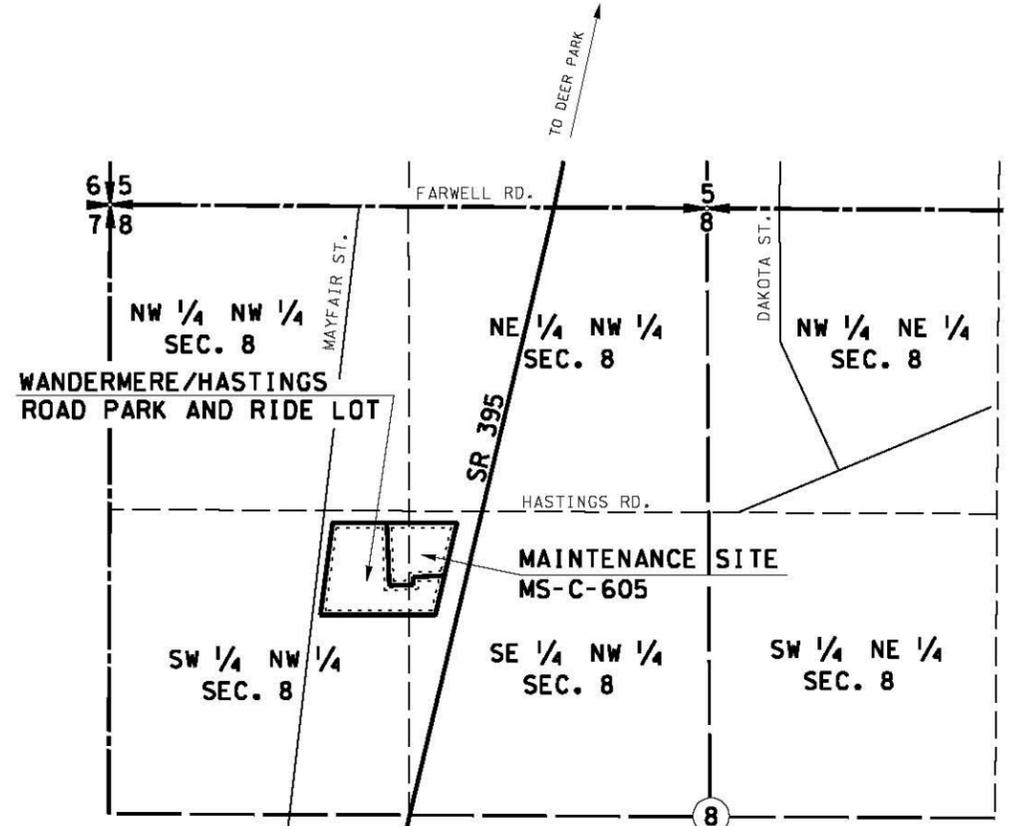
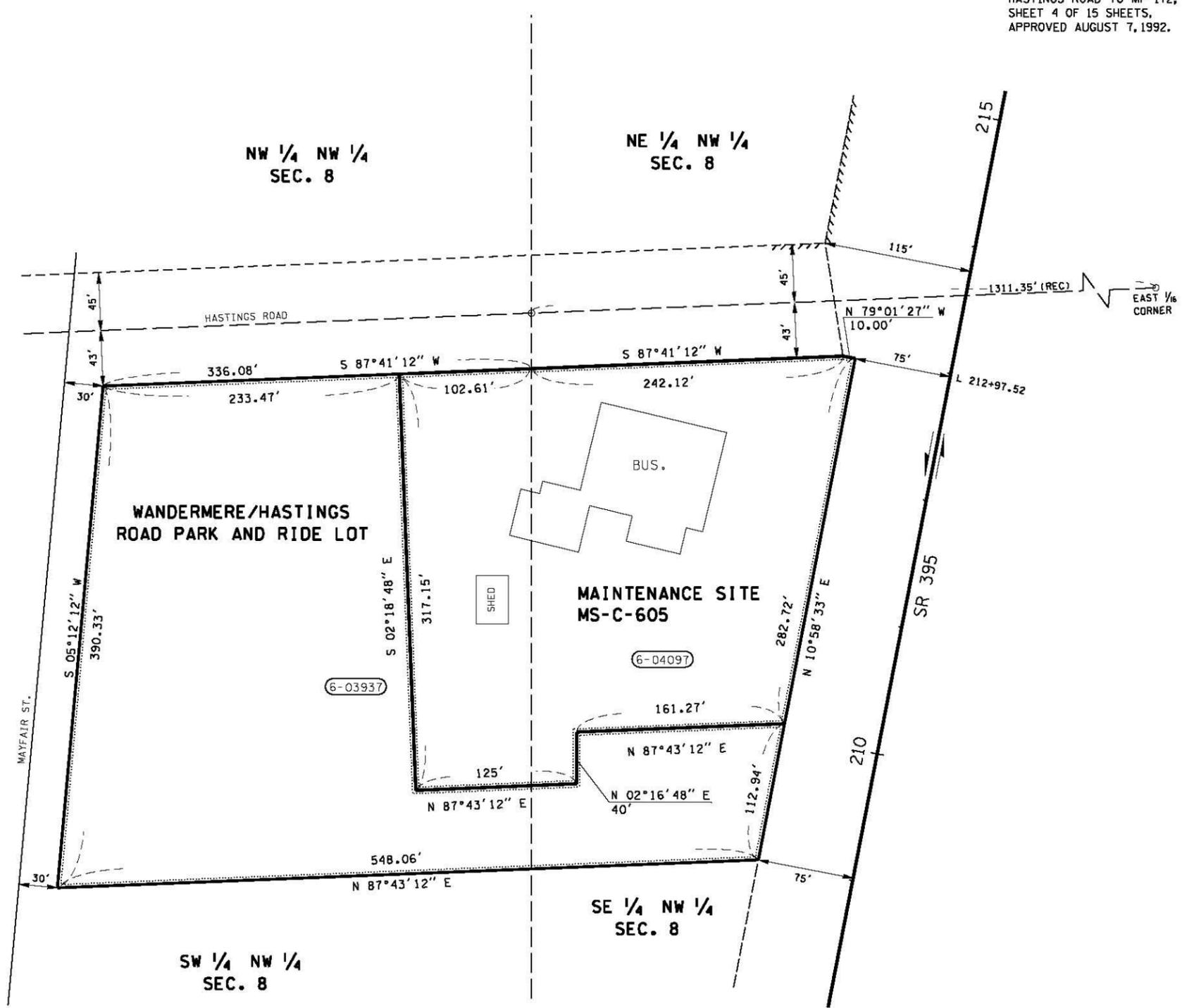
*Whenever possible, leave this space empty for revision block.*

Reference Approval \_\_\_\_\_ Revision Description \_\_\_\_\_ By \_\_\_\_\_

**EXAMPLE 1-11**

# T.26N. R.43E. W.M.

FOR SR 395 R/W, SEE SR 395, HASTINGS ROAD TO MP 172, SHEET 4 OF 15 SHEETS, APPROVED AUGUST 7, 1992.



OWNERSHIP SHOULD BE VERIFIED. PROPERTY RIGHTS SHOWN MAY NOT HAVE BEEN ACQUIRED BY WSDOT.

**SPOKANE COUNTY  
SUNDRY SITE PLANS**  
**MAINTENANCE SITE MS-C-605  
WANDERMERE/HASTINGS ROAD  
PARK AND RIDE LOT**  
WASHINGTON STATE DEPARTMENT OF TRANSPORTATION  
OLYMPIA, WASHINGTON

**EXAMPLE 1-12**

PARCEL NO.	NAME	TOTAL AREA	TAKE	LT. REMAINDER RT.	EASM'T
6-04097	VANDER WAL	2.17 AC.	2.17 AC.		
6-03937	MATTSON	2.88 AC.	2.88 AC.		

**OWNERSHIPS**

**LEGEND**

PROPERTY OWNERSHIP NUMBERS

PROPERTY LINES

0 50 100  
SCALE IN FEET

*Whenever possible, leave this space empty for revision block.*

APPROVED AND ADOPTED **JULY 2, 2004**

PROJECT ENGINEER \_\_\_\_\_ RIGHT OF WAY PLANS ENGINEER \_\_\_\_\_



- 200.01 Introduction
- 200.02 Record of Survey
- 200.03 Monumentation Map
- 200.04 State Land Plat
- 200.05 Permit to Remove or Destroy
- 200.06 Legal Descriptions

### 200.01 Introduction

The Washington State Department of Transportation (WSDOT) prepares a variety of survey records as required by state law. Many of the survey records support the locations of state highways, sundry sites, ferry terminals, railroads, airports, and other WSDOT assets.

The documents include Records of Surveys, Monumentation Maps, State Land Plats, Department of Natural Resources (DNR) monument removal permits, and legal descriptions. Note: Land Corner Records, as required by [RCW 58.09.040](#), are excluded from this section at this time.

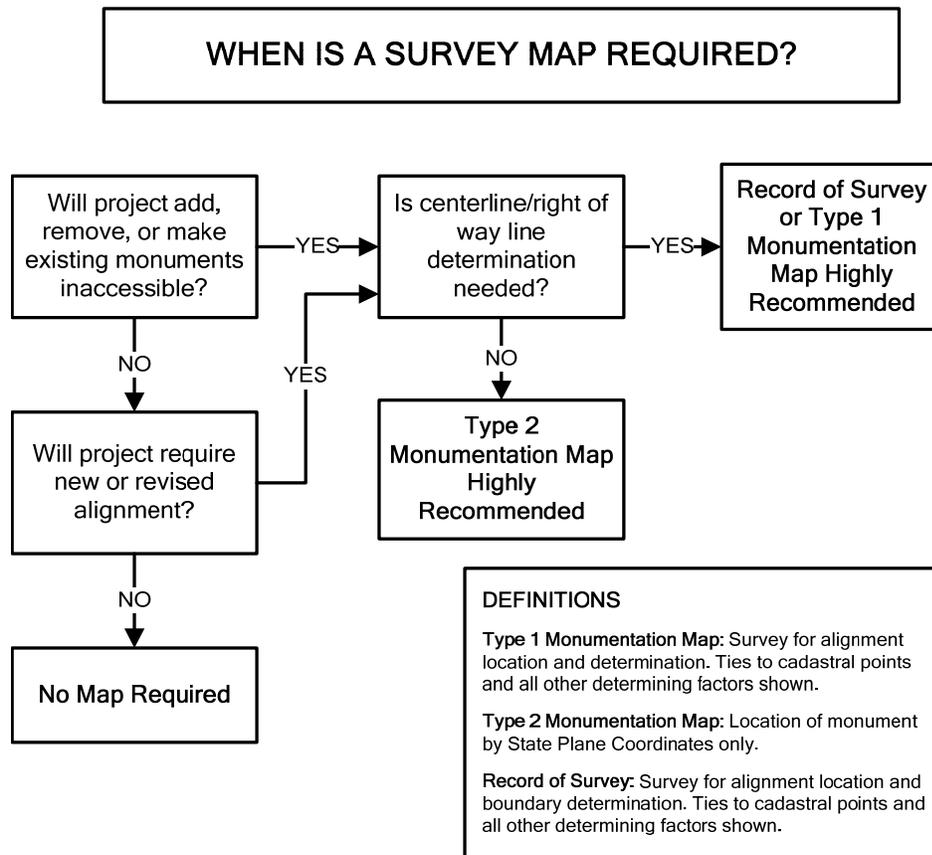
The following sections provide details for the preparation of survey records.

### 200.02 Record of Survey

A Record of Survey (ROS) is the foundation document for state highway right of way alignment and related boundaries. A Record of Survey may also be prepared when locating the boundaries of other state-owned properties for public and state use. These documents will be used as a basis for existing and proposed right of way centerline alignments and other agency capital improvement projects. The Record of Survey maps may be referred to in legal instruments and are permanently recorded at the county auditor's office in the county in which the survey exists. Copies should also be retained at the WSDOT Headquarters (HQ) and DNR in Olympia.

A Record of Survey is not required on all projects. Many safety and surface treatment projects neither revise highway alignments nor require boundary determinations. The Project Manager must consult with the region Cadastral Engineer or region surveyor to determine the impact, if any, to survey monuments within and adjacent to the work zone. WSDOT has a responsibility to protect and preserve existing survey monumentation ([RCW 58.09.130](#)). Refer to [Exhibit 2-1](#) to help determine when a survey document is to be prepared.

The Record of Survey is intended to be a “stand-alone” document. To obtain this “stand-alone” status, follow the guidelines below.



**When to Prepare a Survey Document**  
*Exhibit 2-1*

**(1) References**

[Revised Code of Washington \(RCW\) 58.09](#), Surveys – recording  
[RCW 58.20](#), Washington coordinate system

[Washington Administrative Code \(WAC\) 332-130](#), Minimum standards for land boundary surveys and geodetic control surveys and guidelines for the preparation of land descriptions

**(2) Region Responsibility**

If it has been determined that a survey is necessary, it is the responsibility of the region to assemble data and prepare a Record of Survey for locating and defining the centerline alignment in its mathematical position within the Public Land Survey System. The Record of Survey is prepared to the specifications of [RCW 58.09](#), [WAC 332-130](#), and specific WSDOT and county codes or guidelines.

### **(3) English Units Only**

Records of Survey are to be prepared in English U.S. Survey feet only.

### **(4) Alignment**

The R/W centerline, from which the right of way is to be legally described, is shown as a continuous solid line for the full length of the project, with its alignment data shown. If the R/W centerline is being retraced and the alignment data varies from plan data, both original and retraced alignment data is shown. This will provide a more complete understanding of the differences between the plan and retraced centerline. In those instances where the existing and proposed centerline alignments may be graphically shown, the existing alignment will be shown with a different line type than the proposed centerline (solid line).

In those instances where stationing does not run in the same direction as mileposts, or other right of way oddities are noted that do not conform to the current Right of Way Plan standards and a new Right of Way Plan is to be prepared, additional sheets will be added showing the revised alignment and any changes. The additional sheets will reverse the direction of stationing to have both the stationing and mileposts running congruently and provide a basis to bring the Right of Way Plans into conformance, per [Division 1](#) of the *Plans Preparation Manual* (see Exhibits [2-2a](#) and [2-2b](#)).

The existing stationing shall be tied to the new centerline stationing by station and/or bearing equations. The new Right of Way stationing shall be tied to all section and quarter-section lines where such corners have been found. A computed tie from an existing Record of Survey showing the breakdown of the sections is acceptable. A reference to the survey used shall be noted on the new Record of Survey.

R/W width data should not be shown on the Record of Survey. Caution is advised as right of way limits have dynamic characteristics, whereas the right of way centerline is a more stable entity. For projects proposing to acquire additional rights of way, it is suggested to show the centerline only.

### **(5) Control Features**

Where such features exist, the Record of Survey shall show, but is not limited to: GPS network points, government subdivision corners, platted subdivisions, donation land claims, national park or forest boundaries, Indian reservations, farm units, and property corners. Show a minimum of two bearing and distance ties from the new R/W centerline, with stations noted to an existing and recorded monument of a government subdivision corner, particularly the monuments from which the title reports originate.

### **(6) Survey Report**

A Survey Report is a summary of all the main elements that were used to generate the Record of Survey or other survey documents. The purpose of the Survey Report is to provide documentation of the controlling elements of decisions made throughout the project. A separate file folder should be kept with the project folder summarizing those elements. This Survey Report will become the basis of the Narrative, which may be placed on the Record of Survey or Monumentation Map.

A Survey Report is not required as part of the preparation of a Record of Survey. However, it is highly recommended that such a report be prepared in the event a question ever arises regarding the survey, so that an answer may be determined by the surveyor (or another if the surveyor is not available).

A copy of the Survey Report shall be archived in the Survey/\_SurveyDoc folder of the Standard CAE\_Project folder structure. This will ensure all survey documentation regarding alignment decisions, datums, control monuments, secondary control monuments, and other relevant information is available to current and future users of the plans.

Documentation should include, but not be limited to:

- Horizontal and vertical datums identified.
- Horizontal and vertical control points identified.
- Control network points identified with a sketch.
- Sketches and/or photos of control points.
- State Plane Coordinates (SPC) to Project Datum worksheets.
- List of Records of Survey/Land Corner Records, RR maps, and other reference material.
- List of WSDOT Right of Way Plans.
- List of deeds and other property rights documents.
- Sketches and/or photos of alignment monuments.
- Monuments identified as potential disturbance to project.
- Summary of all General Land Office (GLO) monuments held or rejected, with supporting evidence.
- Sketches of conflicting information supporting decisions.
- Summaries of key determinations critical to resolution of alignments.
- Basis of Bearings monuments identified.
- Basis of Stationing identified.

### **(7) Narrative**

The Narrative is an optional explanation added to the Record of Survey. The purpose of the Narrative is to provide additional explanation of how final determinations were made, which may be difficult to show graphically. Circumstances may dictate whether a Narrative is to be written, but it is recommended that one be prepared for all surveys.

### **(8) Record of Survey Details**

#### **(a) Record of Survey Map Requirements**

A Record of Survey may be signed only by a Professional Land Surveyor. One of the main purposes of a Record of Survey is to define ownership boundaries or baselines from which real property boundaries are defined. According to the definitions given in [RCW 18.43.020](#), this task falls under the practice of land surveying.

The Washington Administrative Code requires that all Records of Survey meet a minimum standard (see [WAC 332-130-050](#) for a complete list of requirements). This standard not only defines the size of the sheet and minimum text heights, it also includes information regarding professional certification and archiving data. All Records of Survey are to be recorded with the county auditor's office. Certain counties may have delegated this action to another office, such as the county surveyor's office, so check with each county to find out where this document is to be recorded. There is a recording fee that accompanies the document. This fee varies from county to county.

A checklist has been prepared (see [Exhibit 2-3](#)) to help preparers ensure they include the minimum requirements for recording this document. It is not an all-inclusive list, as additional notes and information may be added to help with the interpretation and understanding of the survey and its purpose.

When a Record of Survey has been recorded at the county auditor's office, it cannot be revised. If it has been determined that revisions or corrections are needed to the recorded survey, two options are available:

1. Prepare an AMENDED SURVEY. The words AMENDED SURVEY shall be added to the title of the survey, with a statement in the narrative as to what was revised or corrected. The amended survey must be recorded with the county auditor's office.
2. Prepare an AFFIDAVIT OF MINOR CORRECTION. This document will identify any specific correction(s) to the survey and will be recorded at the county auditor's office, accompanied by any recording fees.

**(b) Record of Survey Map Requirements (WSDOT Recommendations)**

Records of Survey prepared for WSDOT have multiple purposes and are used by a variety of departments and offices. It is not uncommon for a Record of Survey to be a very pertinent document several years after its completion. To coordinate the variety of uses and potential time span involved, a few standards have been introduced to define the purpose of the survey, with additional data to provide for a consistent interpretation of the document.

Some of the additional requirements are to help archive and allow easy retrieval of the document. Others are to help with a consistent interpretation after time has elapsed and allow the user to follow or understand differences discovered while performing the survey. This will be especially helpful if the surveyor or the surveyor's records are not available to answer or resolve questions.

**(9) Coordinates: Maps Showing Control Network Scheme Required  
([RCW 58.09.070](#))**

- (a) If a Record of Survey displays Washington State Plane Coordinates (SPCs), it must have a control network schematic identifying the network used to control the survey.

- (b) Use a control network scheme diagram to show how the SPCs were determined from the known base points (see [Exhibit 2-4](#)). A statement such as “the WSRN network was used” is acceptable if it includes the base stations and calibration points used. Base stations vary in reliability, so a statement regarding which base stations were used is necessary for repeatability.
- (c) Datum defined: [RCW 58.20.120](#) states that the Washington Coordinate System of 1983 is the designated coordinate system in Washington.
- [WAC 332-130-060](#) and [WAC 332-130-070](#) defines the use of the datum tag and epoch date to be reported (i.e., NAD83 (CORS) (2002.00))
  - As adjustments by National Geodetic Survey (NGS) to the North American Datum (NAD) of 1983 continue to refine the geoid model, it is important to note which datum is being used. In order to prevent datum crossovers or mixing of datums, the adjustment year must be indicated on the Record of Survey.
- (d) Except in remote locations or on extremely small-scale projects, project datum coordinates will be used to produce the Record of Survey. A table or worksheet showing the calculations converting SPCs to project datum coordinates is provided and kept with the Survey Report file.

#### **(10) Recording Coordinates**

When reference has been made to State Plane Coordinates, the scale, elevation, and combined factors shall be stated for the survey lines used in computing ground distances and areas (see [Exhibit 2-4](#)). These factors should become the basis for coordinating all mapping and data conversion processes for that specific project.

#### **(11) Drawing Standards**

All Records of Survey are to be prepared with English units, with Bentley MicroStation using the WSDOT Computer Aided Engineering (CAE) Expanded Level environment. Consistent drafting procedures must be observed to attain maximum accuracy and clarity. Line weights, symbols, and text fonts and sizes are to conform to the standards shown in the [Electronic Engineering Data Standards](#) (EEDS) manual. No text shall have a line running through it.

#### **(12) Equipment and Procedures Used ([WAC 332-130-100](#))**

- Equipment used
- Procedures used
- GLO history for corners

A statement identifying the type of equipment and procedure used shall be placed on the Record of Survey. This note may be included in the Narrative or be a separate note on the sheet.

All GLO corners shown as found will identify which Record of Survey (ROS) or Land Corner Record (LCR) references the monument found. If a GLO monument is found that is not noted on a previous ROS, then a Land Corner Record shall also be prepared.

**(13) Metric Equivalent**

Conversion to U.S. Survey Foot shall use 1 meter = 39.37 inches exactly.

**(14) Certificates Required (RCW 58.09.080)****(a) PROFESSIONAL LAND SURVEYOR'S CERTIFICATE**

This map correctly represents a survey made by me or under my direction in conformance with the requirements of the Survey Recording Act at the request of \_\_\_\_\_ in \_\_\_\_\_, 20\_\_\_\_\_.

Name of Person \_\_\_\_\_

(Signed and Sealed) \_\_\_\_\_

Certificate No. \_\_\_\_\_

**(b) AUDITOR'S CERTIFICATE**

Filed for record this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, at \_\_\_\_\_ M.  
in book \_\_\_\_\_ of \_\_\_\_\_ at page \_\_\_\_\_ at the request of \_\_\_\_\_

\_\_\_\_\_  
COUNTY AUDITOR

**(15) Submittal**

Prior to submission to the county auditor, the preparer shall submit an electronic file or paper copies of Records of Survey to the Region Cadastral Engineer or Survey Office and the HQ Survey Support Section for review, along with compiled survey notes, calculations, references, and any other information used for alignment, section subdivision, and boundary determination. Headquarters will return review comments to the region for review and further discussion. The region will then return all comments to the Surveyor of Record. Records of Survey shall be certified by a Professional Land Surveyor. The region will provide the county in which the alignment exists with the appropriate Mylar<sup>®</sup> and paper original copies for acceptance. Also included in the county submittal will be a separate copy for the county auditor to place the recording information and signature, which will be retained by the surveyor. Copies may then be made for WSDOT archiving and region filing. Following county acceptance, the region will send one (1) accepted Mylar<sup>®</sup> or paper copy to the HQ Survey Support Section.

The number of copies submitted for recording are:

- One (1) original Mylar<sup>®</sup> or paper copy for the county (see county requirements or submittal requirements).
- One (1) copy of Mylar<sup>®</sup> or paper copy for WSDOT archives.

**(16) Headquarters Processing**

The original Mylar<sup>®</sup> or paper copy (with county recording information) will be retained permanently by the HQ Survey Support Section.

## 200.03 Monumentation Map

### (1) Introduction

The purpose of a Monumentation Map is to show the right of way baseline with ties to General Land Office (GLO) corners for future retracements of said baseline.

A Monumentation Map is intended to be a survey document that focuses on the alignment monuments that have been set during or after construction and their relationship to the project control points, GLO corners, property corners, road intersection points, and so on.

A Monumentation Map may be certified by either a Professional Land Surveyor or a Professional Engineer ([RCW 58.09](#)). Although state law allows a Professional Engineer to certify certain survey documents, the Professional Engineer's authority is limited by practice and staying within the limits of the project. Although the Monumentation Map is typically filed with the county engineer's office, the filing requirements of this document vary from county to county. It is best to contact the county engineer's office, surveyor's office, or auditor's office to determine filing requirements and fees for that specific county.

When a Monumentation Map has been filed at the county engineer's office or recorded at the auditor's office, it cannot be revised. If it has been determined that revisions or corrections are needed, two options are available:

1. Prepare an AMENDED MONUMENTATION MAP. The words AMENDED MONUMENTATION MAP shall be added to the title of the survey, with a statement on the Monumentation Map as to what was revised or corrected, and the survey must be recorded again with the county auditor's office.
2. Prepare an AFFIDAVIT OF MINOR CORRECTION. This document will identify specific correction(s) to the Monumentation Map and be filed at the county engineer's office or recorded at the county auditor's office, accompanied by any recording fees.

### (2) Type 1 Monumentation Map

A Type 1 Monumentation Map includes a full and complete analysis of the R/W alignment control baseline, including, but not limited to, the baseline's relationship to pertinent deeds and cadastral ties to the Public Land Survey System.

The Monumentation Map is intended to be a "stand-alone" document. To obtain this "stand-alone" status, follow the guidelines below.

### (3) Type 2 Monumentation Map

The primary purpose of a Type 2 Monumentation Map is to identify existing monumentation and to coordinate said monumentation with the State Plane Coordinate System (NAD 83/91) or current datum. A copy of the Type 2 Monumentation Map can be used as part of the application to destroy or remove a survey monument.

The Type 2 Monumentation Map is intended to serve as a monument inventory tool. A Type 2 Monumentation Map shall clearly state on the face of the document that no analysis was performed. All geodetic coordinates shall be derived by survey methods, and all plan data will be taken from existing and approved Right of Way Plans.

If monumentation is found to be on a construction alignment and is related to cadastral ties, it must be clearly noted on the face of the Type 2 Monumentation Map that said monumentation may not have a direct correlation to the Right of Way baseline.

For future use and benefit, it would be advantageous for the construction contract number to be identified on the Type 2 Monumentation Map plan showing the monuments identified on the plan sheets.

The Monumentation Map is intended to be a “stand-alone” document. To obtain this “stand-alone” status, follow the guidelines below. Refer to [Exhibit 2-3](#) for a checklist of mapping elements to be included on the Monumentation Map.

Use [Exhibit 2-1](#) as a guide to determine which type of Monumentation Map is needed for your project.

#### **(4) References**

[RCW 58.09](#), Surveys – recording

[RCW 58.20](#), Washington coordinate system

[WAC 332-130](#), Minimum standards for land boundary surveys and geodetic control surveys and guidelines for the preparation of land descriptions

#### **(5) Region Responsibility**

If it has been determined that a monumentation map is necessary, it is the responsibility of the region to assemble data and prepare a Monumentation Map for locating and defining the centerline alignment or geodetic monument location in its mathematical position within the Public Land Survey System.

#### **(6) English Units Only**

Monumentation Maps are to be prepared in English units only.

#### **(7) Alignment**

For a Type 1 Monumentation Map, the R/W centerline, from which the right of way is to be legally described, is shown as a continuous solid line for the full length of the project, with its alignment data shown. The retracement alignment will be shown on the Type 1 Monumentation Map. If the R/W centerline is being retraced and the alignment data varies from plan data, both original and retraced alignment data is shown. If a new Right of Way Plan is to be prepared, additional sheets will be added to the Monumentation Map showing corrections to stationing and other plan anomalies discovered, to conform to Division 1 of the *Plans Preparation Manual* (see Exhibits [2-2a](#) and [2-2b](#)).

The existing stationing must be tied to the new centerline stationing by station and/or bearing equations.

R/W width data will not be shown on the Type 1 Monumentation Map.

For all Monumentation Maps, the R/W centerline is shown as a continuous solid line for the full length of the project. A rotation note or Bearing Equation should be included on the Monumentation Map to provide an angular adjustment from the approved R/W plans to the State Plane Coordinate data used to prepare the Monumentation Map.

No alignment analysis or adjustments are performed on the centerline. Right of way width data will not be shown on the Type 2 Monumentation Map.

### **(8) Control Features**

Where such features exist, the Monumentation Map shall show, but not be limited to: government subdivision corners, platted subdivisions, donation land claims, national park or forest boundaries, Indian reservations, farm units, and property corners. A Type 1 Monumentation Map centerline retracement alignment will show at least two bearing and distance ties from the new R/W centerline, with stations noted, to an existing and recorded monument or government subdivision corner, particularly the monuments from which the title reports originate.

A Type 2 Monumentation Map will make a reference to the existing Right of Way Plan for ties to the GLO corners.

### **(9) Survey Report**

A Survey Report is a summary of all the main elements that were used to generate the Monumentation Map or other survey documents. The purpose of the Survey Report is to provide documentation of the controlling elements of decisions throughout the project. A separate file folder should be kept with the project folder summarizing those elements. This Survey Report will become the basis of the Narrative, which may be placed on the Monumentation Map.

A Survey Report is not required as part of the preparation of a Monumentation Map. However, it is highly recommended that such a report be prepared in the event a question ever arises regarding the survey, so that an answer may be determined by the surveyor (or another if the surveyor is not available).

A copy of the Survey Report shall be archived in the Survey/\_SurveyDoc folder of the Standard CAE\_Project folder structure. This will ensure all survey documentation regarding alignment decisions, datums, control monuments, secondary control monuments, and other relevant information is available to current and future users of the plans.

Documentation should include, but not be limited to:

- Horizontal and vertical datums identified.
- Horizontal and vertical control points identified.
- Control network points identified with a sketch.
- Sketches and/or photos of control points.
- State Plane Coordinates to Project Datum worksheets.
- List of Records of Survey/Land Corner Records, RR maps, and other reference material.
- List of WSDOT Right of Way Plans.
- List of deeds and other property rights documents.
- Sketches and/or photos of alignment monuments.
- Monuments identified as potential disturbances to the project.
- Summary of all GLO monuments held or rejected, with supporting evidence.
- Sketches of conflicting information that supports decisions.
- Summaries of key determinations critical to resolution of alignments.
- Basis of Bearings monuments identified.
- Basis of Stationing identified.

#### **(10) Narrative for Both Type 1 and Type 2 Monumentation Maps**

The Narrative is an optional explanation added to the Monumentation Map. The purpose of the Narrative is to provide a medium in which the surveyor is able to provide additional explanation regarding how final determinations were made, which may be difficult to show graphically. Circumstances may dictate whether a Narrative is to be written, but it is recommended that one be prepared for all Monumentation Maps.

#### **(11) Monumentation Map Details**

[RCW 58.09](#) and [RCW 18.43](#) allow survey maps and documents to be certified by a Professional Land Surveyor or a Professional Engineer.

The Monumentation Map's main focus is the right of way centerline alignment. Right of way limits may vary during negotiations and revisions, but the right of way centerline alignment does not fluctuate as often as the corridor's right of way limits.

Mapping of a Type 1 or Type 2 Monumentation Map will be very similar to a Record of Survey. The Type 2 Monumentation Map will typically show the monuments found and a State Plane Coordinate for that point.

##### **(a) Map Requirements**

The county recording official's information block may vary within each county. Confirm all county filing or recording information before submitting documents for filing. A fee may or may not be required. Check with the county engineer's office or the county auditor's office to determine whether a filing or recording fee must accompany the Monumentation Map.

A checklist has been prepared to help the preparer identify filing and WSDOT standard requirements. (See [Exhibit 2-3](#) for monumentation mapping elements.) Additional elements may be included on the Monumentation Map if it is determined that these elements will assist in clear interpretation of the map.

**(12) Equipment and Procedures Used ([WAC 332-130-100](#))**

- Equipment used
- Procedures used
- GLO history for corners (Type 1 only)

A statement identifying the type of equipment and procedure used shall be placed on the Monumentation Map. This note may be included in the Narrative or be a separate note on the sheet.

All GLO corners shown as found will identify which Record of Survey (ROS) or Land Corner Record (LCR) is being referenced indicating the monument found. If a GLO monument is found that is not noted on a previous ROS, then a Land Corner Record shall also be prepared.

**(13) Coordinates: Control Network Scheme Required ([RCW 58.09.070](#))**

- (a) If a Monumentation Map displays Washington State Plane Coordinates (SPCs), it must have a control network schematic identifying the network used to control the survey.
- (b) Use a control network scheme diagram to show how the SPCs were determined from the known base points (see [Exhibit 2-4](#)). A statement such as “the WSRN network was used” is acceptable if it includes the base stations and calibration points used. Base stations vary in reliability, so a statement regarding which base stations were used is necessary for repeatability.
- (c) Datum defined: [RCW 58.20.120](#) states that the Washington Coordinate System of 1983 is the designated coordinate system in Washington.
  - [WAC 332-130-060](#) and [WAC 332-130-070](#) define the use of the datum tag and epoch date to be reported.
  - As adjustments by NGS to the North American Datum (NAD) of 1983 continue to refine the geoid model, it is important to note which datum is being used. In order to prevent datum crossovers or mixing of datums, the adjustment year must be indicated on the Monumentation Map.
- (d) Except in remote locations or on extremely small-scale projects, project datum coordinates will be used to prepare the Monumentation Map. A table or worksheet showing the calculations converting SPCs to project datum coordinates is provided and kept with the Survey Report file.

**(14) Recording Coordinates**

When reference has been made to State Plane Coordinates, the scale, elevation and combined factors shall be stated for the survey lines used in computing ground distances and areas (see [Exhibit 2-4](#)). These factors should become the basis for coordinating all mapping and data conversion processes for that specific project.

**(15) Drawing Standards**

All Monumentation Maps are to be prepared with English units only on the CADD System in conformance with adopted standards. Consistent drafting procedures must be observed to attain maximum accuracy and clarity. Line weights, symbols, and text fonts and sizes are to conform to the standards shown in the [Electronic Engineering Data Standards](#) (EEDS) manual.

A Type 2 Monumentation Map will be held to the same drafting and signing requirements as a Type 1.

**(16) Metric Equivalent**

Conversion to U.S. Survey Foot shall use 1 meter = (equals) 39.37 inches.

**(17) Certificates Required ([RCW 58.09.090\(1\)\(a\)](#))****(a) Monumentation Map (Type 1 and Type 2)****(b) PROFESSIONAL LAND SURVEYOR'S/ENGINEER'S CERTIFICATE**

This map correctly represents a survey made by the Washington State Department of Transportation in conformance with the requirements of [RCW 58.09.090\(1\)\(a\)](#).

Name of Person

(Signed and Sealed) \_\_\_\_\_

Certificate No. \_\_\_\_\_

**(c) COUNTY ACKNOWLEDGEMENT OF RECEIPT**

Filed for record this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, at \_\_\_\_\_ M.

\_\_\_\_\_  
COUNTY ENGINEER

**(18) Submittal**

Prior to submission to the county auditor or engineer, an electronic file or paper copy of the Monumentation Map is submitted to the Region Cadastral Engineer or Survey Office and HQ Survey Support Section for review, with compiled survey notes, calculations, references, and any other information used for alignment, section subdivision, and boundary determination. Headquarters will return review comments to the region for review and further discussion. The region will then return all comments to the surveyor or engineer of record for certification.

The region will provide the county in which the alignment exists with the appropriate Mylar<sup>®</sup> and paper original copies for acceptance. Also included in the county submittal will be a separate copy for the county auditor to place the recording information and signature, which will be retained by the surveyor. Copies may then be made for WSDOT archiving and region filing. Following county acceptance, the region will send one (1) accepted Mylar<sup>®</sup> or paper copy to the HQ Survey Support Section.

The number of copies submitted for filing are:

- One (1) original Mylar<sup>®</sup> or paper copy for the county (see county requirements or submittal requirements).
- One (1) copy of Mylar<sup>®</sup> or paper copy for the WSDOT archives.

### **(19) Headquarters Processing**

The original Mylar<sup>®</sup> or paper copy (with county filing information) will be retained permanently by the HQ Survey Support Section.

## **200.04 State Land Plats**

### **(1) General**

Land Plats are required when a highway facility crosses state-owned property under the jurisdiction of DNR or when WSDOT must obtain materials from such land. Land Plats are requested by HQ Real Estate Services. They are prepared by the HQ Survey Support Section and processed through HQ Real Estate Services, and they conform to the final Right of Way Plan.

All survey data required to prepare the Land Plat will be provided by the regions: datum, horizontal and vertical control monuments, references, electronic data file, and DGN base map files. Additional survey information may be necessary due to the type of plat required. Additional information regarding water rights is usually needed to determine shorelands and bedlands.

Stations and offset dimensions are required for both right of way lines and the centerline where they enter and leave each section under DNR's jurisdiction. The total area, right of way acquisition, and remainder for each 40-acre tract, as well as Basis of Bearings and any coordinate system used, are also required. Ties to all subdivision corners are required, whether they are calculated or found. The plat must conform to the GLO plats and/or any other recorded surveys. Copies of any recorded surveys or plats can be obtained from the DNR Public Land Survey Office in Olympia.

The Land Plat is intended to be a "stand-alone" document. To obtain this "stand-alone" status, follow the guidelines below.

Note: A Record of Survey may be substituted for a Land Plat.

**(2) References**

RCW 58.09, Surveys – recording

RCW 58.20, Washington coordinate system

WAC 332-130, Minimum standards for land boundary surveys and geodetic control surveys and guidelines for the preparation of land descriptions

**(3) English Units Only**

Land Plats or Records of Survey are to be prepared in English unit only.

**(4) Alignment**

The R/W centerline, from which the right of way is to be legally described, is shown as a continuous solid line for the full length of the project, with its alignment data shown.

R/W width data must be shown on the Land Plat or Record of Survey.

**(5) Control Features**

The Land Plat shall show, but not be limited to: GPS network points, government subdivision corners, platted subdivisions, donation land claims, national park or forest boundaries, Indian reservations, farm units, and property corners. When retracing an alignment with a different Basis of Bearings than the existing alignment, show a minimum of two bearing and distance ties from the new R/W centerline, with stations noted, to an existing and recorded monument of a government subdivision corner, particularly the monuments from which the title reports originate.

If the Land Plat is intended to acquire aquatic rights, additional aquatic data are needed. Contact the HQ Survey Support Section for help in obtaining the necessary data.

**(6) Survey Report**

Although a Survey Report or a survey Narrative is not part of the submittal package for a Land Plat, this report is to be placed in the file as back-up data for questions that may arise later. The Survey Report for the Land Plat should be considered supplemental information to the preparation of the Right of Way Plans.

The Survey Report shall include:

- Purpose of the survey.
- Name of the project.
- Monuments and stationing held to determine existing or new alignments.
- Determination of alignments.
- Monuments held to determine Basis of Bearings.
- How the survey relates to existing boundaries, alignments, and Right of Way Plans.
- Brief description of elements used to determine the retraced alignment.
- Any discrepancies and/or deviations shown and explained.
- Surveyor's statement to aid interpretation and clarification of deeds.

### **(7) Land Plat Survey Details**

A Land or Aquatic Plat being prepared for DNR must meet the requirements listed on its website ([Land or Aquatic Plat requirements](#)). The guidelines DNR provides vary depending on the type of site and type of property right being acquired.

Refer to [Exhibit 2-6](#) for a checklist of the DNR Land Map Requirements.

### **(8) Coordinates: Control Scheme Required (RCW 58.09.070)**

Currently, a control scheme is not required on Land Plats. However, this option would be beneficial for future survey retracement projects.

- (a) Use a control scheme (network diagram) to show how the Washington State Plane Coordinates (SPCs) were determined from the known points (see [Exhibit 2-5](#)). A statement such as “the WSRN network was used” is acceptable if it includes the base stations and calibration points used. Base stations vary in reliability, so a statement regarding which base stations were used is necessary for repeatability.
- (b) Datum defined: [RCW 58.20.120](#) states that the Washington Coordinate System of 1983 is the designated coordinate system in Washington.
  - [WAC 332-130-060](#) and [WAC 332-130-070](#) define the use of the datum tag and epoch date to be reported.
  - As adjustments by NGS to the North American Datum of 1983 model continue to refine the geoid model, it is important to note which datum is actually being used. In order to prevent datum crossovers or mixing of datums, the adjustment year must be shown on the Land Plat.
- (c) If project datum coordinates were used to produce the Land Plat, provide a table or worksheet showing the calculations converting SPCs to project datum and store in the Survey Report file.

### **(9) Recording Coordinates**

When reference has been made to State Plane Coordinates, the scale and elevation factors shall be stated for the survey lines used in computing ground distances and areas (see [Exhibit 2-4](#)).

### **(10) Drawing Standards**

All Land Plats are to be prepared with English units, with Bentley MicroStation using the WSDOT Computer Aided Engineering Expanded Level environment. Consistent drafting procedures must be observed to attain maximum accuracy and clarity. Line weights, symbols, and text fonts and sizes are to conform to the standards shown in the [Electronic Engineering Data Standards](#) manual.

No text shall have a line running through it.

**(11) Metric Equivalent**

Conversion to U.S. Survey Foot shall use 1 meter = 39.37 inches exactly.

**(12) Submittal**

A preliminary electronic file or paper copies of the Land Plat are submitted for review to:

DNR Public Land Survey Office  
PO BOX 47060  
Olympia WA 98504-7060

DNR will return the map with review comments and correction(s). The HQ Survey Support Section will make the necessary corrections and submit to the following participants for final approval:

HQ Real Estate Services, Project Office

Region Right of Way Office

DNR Public Land Survey Office  
PO BOX 47060  
Olympia WA 98504-7060

**200.05 Permit to Remove or Destroy**

The Application to Remove or Destroy a Survey Monument is an official state permit required by Department of Natural Resources (DNR) to remove a survey monument. Guidance in preparing this document is provided by DNR. Any survey monument that is inaccessible (including survey monuments that are covered for a short period of time) is considered destroyed. The permits are permanently filed at DNR in Olympia. A completion report indicating that the survey monument has been replaced or permanently removed is also required.

The Permit to Remove a Survey or Monument is intended to be a “stand-alone” document. To obtain this “stand-alone” status, follow the guidelines below.

**(1) References**

[RCW 58.09](#), Surveys – recording

[RCW 58.20](#), Washington coordinate system

[WAC 332-120](#), Survey Monuments

The current [Application to Remove or Destroy a Survey Monument](#) form may be found on the DNR Public Land Survey website.

**(2) Region Responsibility**

It is the responsibility of the region to assemble data and prepare an Application to Remove or Destroy a Survey Monument. A Survey Map, Record of Survey, or a Type 1 or Type 2 Monumentation Map may be prepared as an exhibit indicating the location, type, and record of each survey monument. Headquarters Survey Support will provide assistance when requested by the region. Permits to remove or destroy a survey monument are not required to be approved by Headquarters.

**(3) English Units Only**

Application sketches and drawings are to be prepared in English U.S. Survey feet only.

**(4) Alignment**

If a survey map is prepared as an exhibit to the application, the right of way centerline and alignment data shall be shown. Station and offsets to all survey monuments shown on the face of the survey map should also be shown. A bearing and distance tie may be shown when appropriate.

**(5) Control Features**

The Application to Remove or Destroy a Survey Monument shall show, but not be limited to: GPS network points, government subdivision corners, platted subdivisions, donation land claims, national park or forest boundaries, Indian reservations, farm units, and property corners. All control features may be detailed on a Record of Survey or on either a Type 1 or Type 2 Monumentation Map.

Another option, a separate diagram for each monument showing the station and offset to the right of way alignment, description of the monument, and reference monuments with distance and angle ties to reference monuments, may be provided. All reference monuments should be outside the established work zone to prevent accidental disturbance of these reference points. A State Plane Coordinate may be counted as one of the reference points.

The number of reference monuments required perpetuating a monument will depend on the purpose of the monument. The Bureau of Land Management (BLM) has varied requirements depending on the corner monument's purpose (for guidelines, see the BLM manual, sections 4-93 to 4-113). DNR follows these requirements for all General Land Office corners. The number of reference monuments set for all other monuments will be determined by the project environment during and after construction, the length of time the monument will be removed, and other factors determined by the surveyor.

Geodetic monuments are maintained by the HQ GeoMetrix Office, which shall:

- Be notified when the work zone has been determined.
- Be notified of all geodetic monuments within the proposed work zone for appropriate action
- Make the decision to destroy or reset these monuments.

**(6) Coordinates: Control Scheme Required (RCW 58.09.070)**

- (a) The application form requests that a State Plane Coordinate (SPC) on all associated monuments be noted on the form. A statement of how the SPCs were derived shall also be on the form.
- (b) Datum defined: [RCW 58.20.120](#) states that the Washington Coordinate System of 1983 is the designated coordinate system in Washington.
- [WAC 332-130-060](#) and [WAC 332-130-070](#) define the use of the datum tag and epoch date to be reported.
  - As adjustments by NGS to the North American Datum of 1983 model continue to refine the geoid model, it is important to note which datum is actually being used. In order to prevent datum crossovers or mixing of datums, the adjustment year must be shown on the Permit to Remove or Destroy a Monument.
- (c) If project datum coordinates were used to produce the Permit to Remove or Destroy a Monument, provide a table or worksheet showing the calculations converting SPCs to project data and store in the Survey Report file.

**(7) Recording Coordinates**

When reference has been made to State Plane Coordinates, the scale, elevation, and combined factors shall be stated for the survey lines used in computing ground distances and areas.

**(8) Drawing Standards**

All Permits to Remove or Destroy a Survey Monument shall be accompanied by a Record of Survey, Monumentation Map, and Construction Alignment sheet, with all monuments identified or individual sketches provided of each monument. Space is provided on the form space is limited as should be reserved for single monument removal applications.

Drafting standards shall meet the requirements of [200.2\(11\)](#). All individual sketches will be neat and concise, and will clearly note all monuments and reference dimensions. Sketches do not have to be drawn to scale.

**(9) Metric Equivalent**

Conversion to U.S. Survey Foot shall use 1 meter = 39.37 inches exactly.

**(10) Certificates Required (RCW 58.09.080)**

Certificates are not required on the Application to Remove or Destroy a Survey Monument. All required signatures are part of the application.

**(11) Submittal**

An electronic file or paper copies of applications are submitted to DNR for processing. All applications will be certified by a Professional Land Surveyor or a Professional Engineer.

## 200.06 Legal Descriptions

Legal descriptions are prepared by Real Estate Services. Real Estate Services may come to a surveyor requesting help for a variety of reasons. These descriptions have a specific method and wording associated with them, to maintain the consistency of acquisition documents. Licensed surveyors may be asked to help prepare a legal description for Real Estate Services, either due to its complexity or for time-saving purposes. All descriptions prepared for Real Estate Services will be in draft form.

### (1) References

[WAC 332-130-040](#), Land description guidelines

[Right of Way Manual](#), M 26-01, WSDOT

[RCW 58.20](#), Washington coordinate system

### (2) Region Responsibility

It is the responsibility of the region to obtain a title report of the parcel in which a portion of or all of the parcels in question are to be acquired. Legal descriptions are prepared in conformity to the [Right of Way Manual](#). All legal descriptions are reviewed and approved by the region Real Estate Services manager.

### (3) English Units Only

Legal descriptions are to be prepared in English U.S. Survey feet only.

### (4) Alignment

References to an alignment in a WSDOT legal description will be denoted as a "Line Survey."

### (5) Control Features

Legal descriptions that deviate from the original parcel description shall include a header, a body, and area statements.

- The header shall include the purpose of the acquisition, reference to the Public Land Survey System, and width of roadway, if needed.
- The body of the description shall describe the boundary of the parcel to be acquired.
- An area statement shall include the area of the parcel described and the basis of bearings note.

### (6) Coordinates

State Plane Coordinates will not be used to describe a parcel to be acquired.

### (7) Metric Equivalent

Conversion to U.S. Survey Foot shall use 1 meter = 39.37 inches exactly.

**(8) Certificates Required**

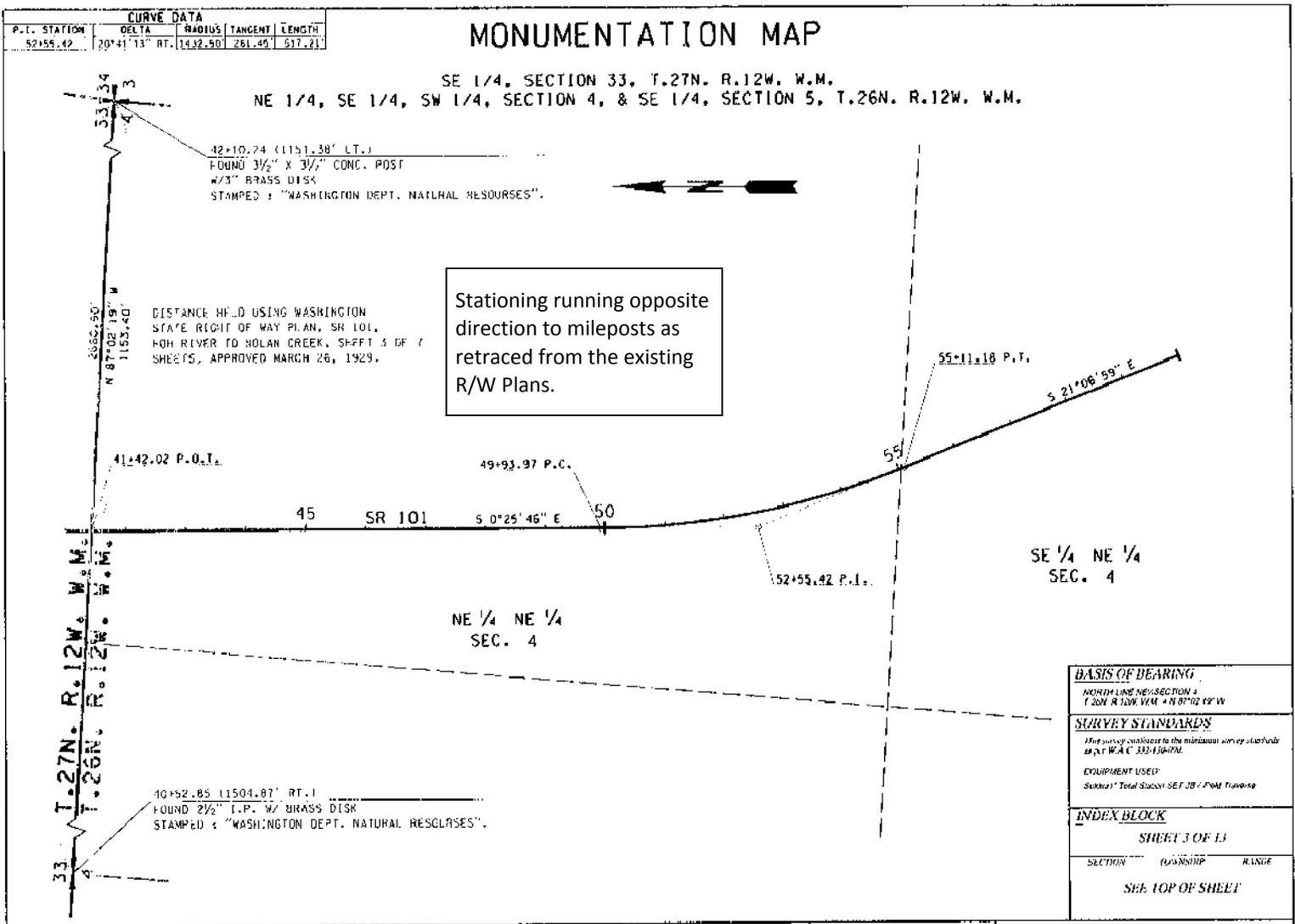
Certificates are not required on legal descriptions unless specifically written for the purpose of acquisition or a court exhibit.

**(9) Submittal**

When requested to prepare a legal description, a draft shall be prepared and submitted to the region Real Estate Services Office for review. Real Estate Services personnel will determine whether the description is adequate or will return for revisions. The final legal description will be reviewed by the preparer to ensure accuracy of the preparer's included elements.

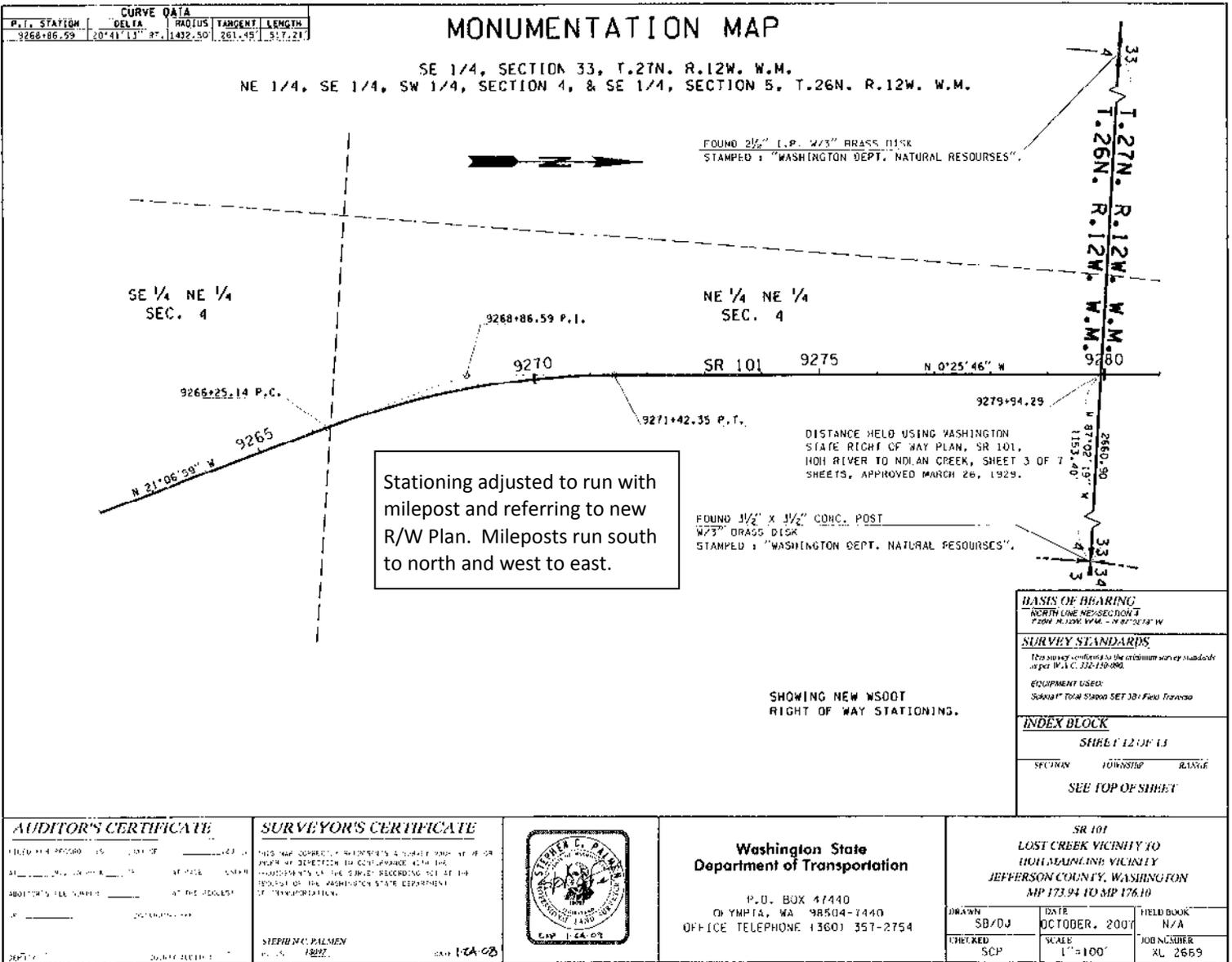
**(10) Headquarters Processing**

Copies of legal descriptions are not sent to the HQ Survey Support Section for review or archiving. All description reviews are handled by region personnel. Headquarters will review a legal description if requested by either the Region Cadastral Engineer or the Real Estate Services Office.



Monumentation Map  
Exhibit 2-2a

R 162511



Monumentation Map  
Exhibit 2-2b

## Survey Document Checklist

The following checklist is provided as a guide for quality control and quality assurance purposes. The checklist requests specific mapping elements to be included on specific survey documents. The mapping elements listed below are separated into three categories: requirements from [WAC 332-130-050](#), WSDOT mapping standards and recommendations, and narrative. The minimum mapping requirements for a Record of Survey include the following. (See [WAC 332-130-050](#) for a complete list of minimum Record of Survey map requirements.)

Record of Survey	Monumentation Map Type 1	Monumentation Map Type 2	Not Applicable	<b>MAPPING ELEMENTS</b> ( <a href="#">WAC 332-130-050</a> )
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Recording officer's information block must be on the bottom or the right edge of the map.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Title block shown on all sheets, including region headquarters addresses and date prepared.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sheet identification number (for example, "sheet 1 of 2").
<input type="checkbox"/>			<input type="checkbox"/>	Auditor's certificate on the first sheet only.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Surveyor's certificate on the first sheet only.
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Surveyor's or Engineer's certificate on the first sheet only.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Section, Township, Range, and Section 1/4-1/4 labeled in Index Block (for county indexing purposes). An optional graphic representation may be used with the quarter-quarter(s) clearly labeled.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	North Arrow.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Basis of Bearings Note, with monuments and bearing held.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Equipment and Procedure Note per <a href="#">WAC 332-130-100</a> .
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Survey Standard Notes per <a href="#">WAC 332-130-080</a> and <a href="#">WAC 332-130-090</a> .
<input type="checkbox"/>			<input type="checkbox"/>	Record of Survey sheet size shall be on 18" X 24" paper, with a 2" left margin & 1/2" on the other pages.
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Monumentation Map sheet size may be 22" X 34" or sheet size required by the county.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Show bearings in degrees, minutes, and seconds.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Distances in feet and decimals of feet (ground-level distances only); stationing is equivalent to feet.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Physical description of all monuments and date visited.
<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Deed references when applicable.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Graphic scale bar (separate scale for details).
<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Identify any ambiguities, hiatuses, and/or overlapping boundaries.

(Table is continued on the following page.)

### Survey Document Checklist: Mapping Elements Exhibit 2-3

Record of Survey	Monumentation Map Type 1	Monumentation Map Type 2	Not Applicable	MAPPING ELEMENTS (WSDOT Standards)
<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Spiral (delta, rate of change, and length) and curve data (delta, radius, tangent, and length) on <b>both the survey document and the Right of Way Plan.</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Mapping medium of permanent quality as required by county.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	State Route (SR) shown on alignment.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Cross streets graphically shown and identified.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Rotation Note to obtain new alignment Basis of Bearings, if applicable.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Show radial bearing, length, and delta for nontangent curves.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Show physical appurtenances (additional items that pertain to the authority/ location of a survey monument, i.e., topography ties and reference points).
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Text height in body of survey no smaller than 0.10" vertically.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Line widths no less than 0.008" (equivalent to pen tip <b>000</b> ). This does not apply to Seals.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Show Network Diagram if State Plane Coordinates are shown.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Show all GPS points and coordinates used for control. Reference to Report of Survey Mark or similar document and where said document is filed.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Name of project shown in title block.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Begin and End Milepost of survey labeled on sheets or in title block.
<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Show record, deed, and reference bearings and distances in lighter Italicized text and in parentheses.
<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Show computed bearings and distances as <b>bold text.</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Legend showing monument symbols and their equivalents.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	List of references used to prepare plan.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Basis of Stationing Note (see Exhibit 2-7a or 2-7b).
<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Station and tie to all found and computed General Land Office corners.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Alignment/curve box completed/correct. Curve Data Box must match data on sheet.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		No lines running through text.
<input type="checkbox"/>	<input type="checkbox"/>			Surveyor's statements to aid interpretation/clarification of documents used.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Identify Type 1 or 2 Monumentation Map.
<b>Narrative Elements</b>				
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		The purpose of the survey (may be a separate note).
<input type="checkbox"/>	<input type="checkbox"/>			Monuments and stationing held to determine existing or new alignments. May be a separate note on sheets.
<input type="checkbox"/>	<input type="checkbox"/>			Determination of alignments (explain if alignment is different from existing plans; i.e., curve data, GLO corner was reset, measuring errors prompted station equations, etc.)
<input type="checkbox"/>	<input type="checkbox"/>			Any discrepancies and/or deviations shown and explained.

**Survey Document Checklist: Mapping Elements**  
*Exhibit 2-3 (continued)*



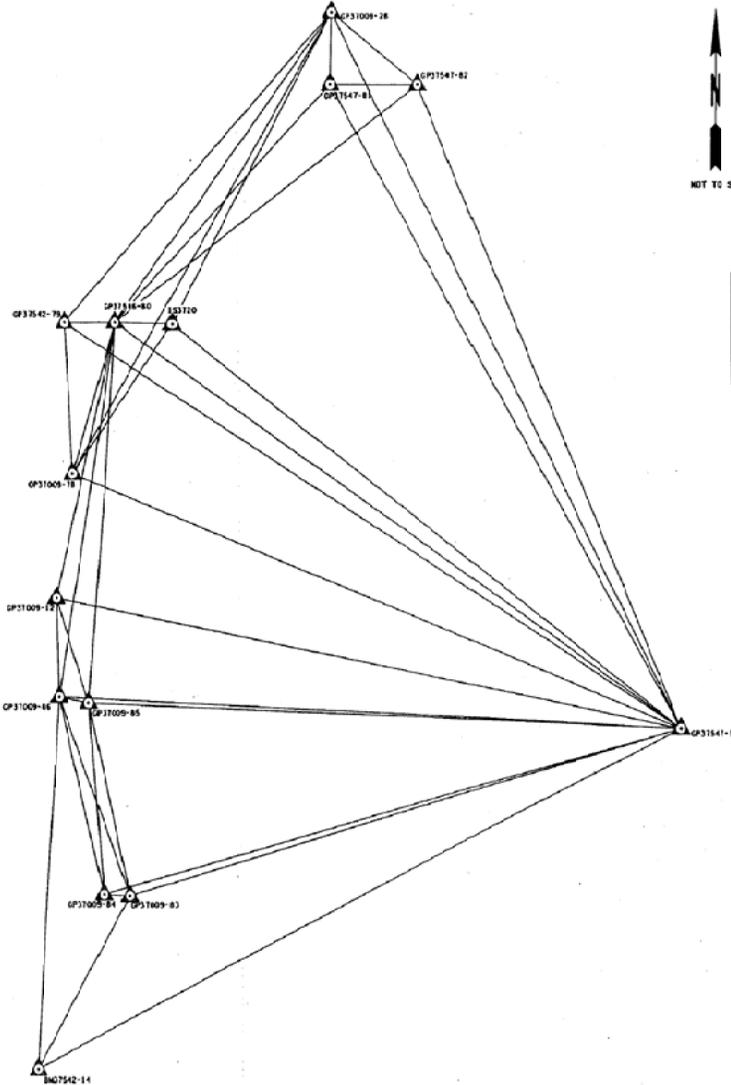
MONUMENTATION  
MAP  
WSDOT GPS NETWORK  
SR9



WSDOT GEODETIC CONTROL  
WSPC (METRIC)

G. P. S. NUMBER	NORTHING	EASTING	ELLIPSO. ELEV.
GP37009-12	214553.744	390911.231	7.125
GP37009-28	222602.552	395247.129	-7.021
GP37009-78	215370.175	390928.923	5.971
GP37009-93	207631.689	392831.473	15.255
GP37009-94	207655.263	392464.283	14.350
GP37009-85	210488.251	391726.549	15.939
GP37009-86	210509.722	390923.508	14.518
BNS7542-14	201890.452	388888.228	101.784
GP37546-79	219403.834	391380.410	-0.511
GP37546-80	219400.363	392110.941	0.336
GP37547-5	213919.001	403996.618	114.66
GP37547-81	222544.765	395828.336	-6.544
GP37547-82	222528.651	396450.139	-7.504
ES3720	235312.215	392935.160	-2.436

CONVERSION FACTOR  
1 METER = 39.37 INCHES EXACTLY



**SPECIFICATIONS AND ACCURACY**

THIS SURVEY IS IN COMPLIANCE WITH THE FEDERAL GEOGRAPHIC DATA COMMITTEE'S DRAFT "GEOSPATIAL POSITIONING ACCURACY STANDARDS FOR GEODETIC NETWORKS, 1989". GPS HORIZONTAL ORDER "B" SURVEY IS EQUAL TO 1:1,000,000 AND GPS HORIZONTAL ORDER "C" IS 1:100,000.

**FIELD PROCEDURES**

FIELD OBSERVATIONS UTILIZED THE STATIC AND FAST STATIC CAPABILITIES OF TRIMBLE'S HOUSTON GLOBAL SYSTEM RECEIVERS. WITH TRIMBLE'S LI-L1 MICRO CENTERED GROUND PLANE ANTENNAS, ANTENNA HEIGHTS WERE MEASURED UNCORRECTED. NETWORK DESIGN ACCOMMODATED A MIXTURE OF THREE VECTORS INTO EACH STATION WITH EVERY BASELINE MEASURED AT LEAST TWICE AND A MINIMUM OF ONE AND A HALF HOURS OCCUPATION TIME FOR BASELINE IN EXCESS OF TEN KILOMETERS. BASELINE MEASUREMENTS OF LESS THAN TEN KILOMETERS UTILIZED TEN MINUTE OCCUPATIONS WHEN SIX OR MORE SATELLITES WERE AVAILABLE AND FIFTEEN MINUTE OCCUPATIONS WHEN FIVE OR MORE SATELLITES WERE AVAILABLE. TRIMBLE GPSURVEY PLANNING SOFTWARE WAS UTILIZED TO DETERMINE OPTIMUM CONSTELLATION CONFIGURATION FOR SCHEDULING OCCUPATIONS.

**OFFICE PROCEDURES**

INDEPENDENT BASELINES WERE PROCESSED USING THE BROADCAST EPHIMERIS AND TRIMBLE GPSURVEY SOFTWARE. UPON CHECKING LOOP CLOSURES, TRIMBLE PLUS SOFTWARE WAS UTILIZED TO PERFORM A HERMINALLY CONSTRAINED LEAST SQUARE ADJUSTMENTS TO EVALUATE THE INTERNAL CONSISTENCY OF THE FIELD MEASUREMENTS. A CONSTRAINED ADJUSTMENT WAS THEN PERFORMED USING THE IAD EX701 COORDINATES OF THE WASHINGTON STATE HIGH ACCURACY REFERENCE NETWORK OR OTHER PREVIOUSLY TIED STATION SHOWN ON THE SURVEY DIAGRAM.

**ADDITIONAL INFORMATION**

COORDINATES, DESCRIPTIONS AND ANY ADDITIONAL INFORMATION MAY BE OBTAINED FROM WSDOT "GEOGRAPHIC SERVICES IN TUNNAGE".

**SURVEYOR'S CERTIFICATE**

THIS MAP CORRECTLY REPRESENTS A SURVEY MADE BY THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION IN CONFORMANCE WITH THE REQUIREMENTS OF RCW 54.08.090 (1)(1)(A)



COUNTY'S ACKNOWLEDGEMENT OF RECEIPT  
FILED FOR RECORD THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_ AT \_\_\_\_\_.

RECEIVER'S SIGNATURE \_\_\_\_\_

WSPC (METRIC) MONUMENTATION MAP SR9 2006/07/04 11:11 AM WSPC (METRIC) MONUMENTATION MAP SR9 2006/07/04 11:11 AM WSPC (METRIC) MONUMENTATION MAP SR9 2006/07/04 11:11 AM

Control Scheme (Network Diagram)  
Exhibit 2-5

## State Plat Checklist

For quality control and quality assurance purposes, the following checklist is provided as a guide. It requests specific mapping elements to be included on State Land and Aquatic Plats prepared for acquisition of state property rights from the Department of Natural Resources.

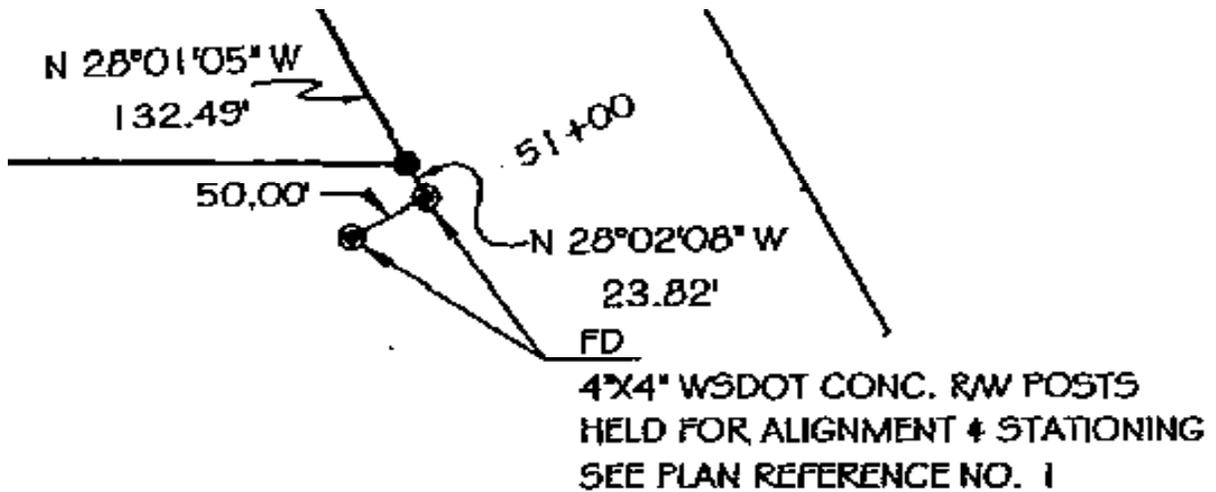
<b>A. General WSDOT Land Plat Drafting Requirements for Uplands</b>	
<input type="checkbox"/>	Date prepared.
<input type="checkbox"/>	Sheet identification number (for example, "sheet 1 of 2").
<input type="checkbox"/>	Title of survey.
<input type="checkbox"/>	State Route (SR) shown on alignment.
<input type="checkbox"/>	Cross streets graphically shown and identified on Land Plat.
<input type="checkbox"/>	Equipment and Procedure Note per <a href="#">WAC 332-130-100</a> .
<input type="checkbox"/>	Survey Standard per <a href="#">WAC 332-130-080</a> and <a href="#">WAC 332-130-090</a> .
<input type="checkbox"/>	Sheet size shall be on 18" X 24" paper.
<input type="checkbox"/>	North Arrow.
<input type="checkbox"/>	Basis of Bearings Note: To include monuments held, bearing between them, and a State Plane Coordinate Reduction Note. Add Rotation Note to obtain new alignment Basis of Bearings.
<input type="checkbox"/>	Show bearings in degrees, minutes, and seconds.
<input type="checkbox"/>	Distances in feet and decimals of feet (ground-level distances); stationing is equivalent to feet.
<input type="checkbox"/>	Spiral and curve data showing controlling elements.
<input type="checkbox"/>	Show radial bearing, length, and delta for nontangent curves.
<input type="checkbox"/>	Physical description of all monuments and date visited.
<input type="checkbox"/>	Deed references when applicable.
<input type="checkbox"/>	Show physical appurtenances.
<input type="checkbox"/>	Graphic scale bar (separate scale for details).
<input type="checkbox"/>	Text height in body of survey no smaller than 0.10" vertically.
<input type="checkbox"/>	Line widths no less than 0.008" (equivalent to pen tip <b>000</b> ). This does not apply to Seals.
<input type="checkbox"/>	Show Network Diagram.
<input type="checkbox"/>	Show all GPS points and the coordinates used for control.
<input type="checkbox"/>	Name of project.
<input type="checkbox"/>	Begin and End Milepost of survey labeled.

(Table is continued on the following page.)

### State Plat Checklist Exhibit 2-6

<input type="checkbox"/>	Show computed bearings and distances as <b>bold text</b> .
<input type="checkbox"/>	Station and tie to all found and computed General Land Office corners.
<input type="checkbox"/>	Legend showing monument symbols and their equivalents.
<input type="checkbox"/>	List of references used to prepare plan.
<input type="checkbox"/>	Basis of Stationing Note (see Exhibit 2-7a or 2-7b).
<input type="checkbox"/>	Use permanent black ink for all signatures and narration.
<input type="checkbox"/>	Map of permanent quality on county-required medium.
<input type="checkbox"/>	Show total areas for 40-acre and/or government lot parcels.
<input type="checkbox"/>	Show right of way acquisition areas.
<input type="checkbox"/>	Show existing easements granted by DNR adjacent to or conflicting with proposed acquisitions.
<input type="checkbox"/>	Show 40-acre and/or government lot remainder areas.
<b>B. Riparian Land Plat Drafting Requirements (in addition to General Land Plat Requirements)</b>	
<input type="checkbox"/>	For parcels with a River or Lake as part of the boundary, show the Ordinary High Water Line (OHWL), Ordinary Low Water Line (OLWL), and Meander Lines.
<input type="checkbox"/>	Show the areas of existing and proposed Shorelands.
<input type="checkbox"/>	Show the areas of existing and proposed Bedlands.
<input type="checkbox"/>	Show the areas of existing and proposed Uplands.
<input type="checkbox"/>	Vertical Benchmark Required.
<b>C. Littoral Land Plat Drafting Requirements (in addition to General Land Plat Requirements)</b>	
<input type="checkbox"/>	For parcels with tidal influence as part of the boundary, show the Ordinary (Mean) High Water line (OHWL), Mean Lower Low Water (MLLW), and Meander Lines.
<input type="checkbox"/>	Show limits of First-Class and Second-Class Tidelands.
<input type="checkbox"/>	Show limits of First-Class and Second-Class Shorelands.
<input type="checkbox"/>	Show Harbor Area (inner and outer Harbor Lines).
<input type="checkbox"/>	Show Navigational Channel.
<input type="checkbox"/>	Show existing and proposed DNR leases.
<input type="checkbox"/>	Show existing and proposed Public Places.
<input type="checkbox"/>	Show submerged lands.
<input type="checkbox"/>	Tidal Benchmark Required.

**State Plat Checklist**  
*Exhibit 2-6 (continued)*



**Basis of Stationing**  
*Exhibit 2-7a*

OR

STATIONING FOR THE SR 5 CENTERLINE AS ESTABLISHED ABOVE WAS ORIGINALLY DETERMINED BY HOLDING THE PLAN STATION AT 503+00 P.I. THIS RESULTED IN AN APPROXIMATE 3' SHIFT IN STATIONING FOR EXISTING MONUMENTATION WITHIN THE MAYTOWN INTERCHANGE.

**Basis of Stationing**  
*Exhibit 2-7b*

## ***Division 3***

# ***Right of Way Plans – Standard Symbols and Conventions***

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The **Right of Way Plans – Standard Symbols and Conventions** are now located in the *Electronic Engineering Data Standards* (EEDS) manual (M 3028):

🔗 [www.wsdot.wa.gov/publications/manuals/fulltext/m3028/electronicengdatastandards.pdf](http://www.wsdot.wa.gov/publications/manuals/fulltext/m3028/electronicengdatastandards.pdf)



- (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. Address budget issues through the appropriate authorities as warranted.
- (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 the need to occupy the property.
- (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 the 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, the design team has returned a brief written response to all review comments, and 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 approval and use of all proprietary 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 Statewide Travel and Collision Data Office (formerly known as the HQ Transportation Data Office) 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 the 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 the 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 1010.01, Certification of Documents by Licensed Professionals: <http://www.wsdot.wa.gov/publications/policies/fulltext/1010.pdf>

## **(2) Project Specifications**

The HQ 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 HQ 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, designers 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: [www.wsdot.wa.gov/SiteIndex/offices.htm](http://www.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. Capital Program Development and Management Office (CPDM) and Systems Analysis & Program Development Office
  - The HQ Capital Program Development and Management Office 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.

- (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 that provides 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 enlarge sections of the Vicinity Map in order to make wetland and wetland mitigation sites visible.

- (n) Identify each bridge found within the Project Limits on Vicinity Map as follows:
- For existing bridges, identify the bridge by bridge number and the type of bridge work. Examples of the most common types of work are: WIDENING, BRIDGE REMOVAL, BRIDGE WIDENING, RAIL RETROFIT, MILL/FILL, CONCRETE OVERLAY, HMA OVERLAY, BST (Bituminous Surface Treatment), NEW APPROACH SLAB, SEISMIC RETROFIT, BRIDGE REPAIR, UTILITY ATTACHMENT, and SIGN BRACKET.
  - When there is no contract work on an existing bridge and the contract work does not affect a bridge, or the work is beyond the end of the bridge (such as guardrail transitions attached to the bridge barrier), then identify the bridge number and include “NOT INCLUDED IN PROJECT” as the type of work.
  - For new bridges, a bridge number is not available at the time of PS&E preparation. Show the project stationing at the beginning of the bridge, and include “NEW BRIDGE” as the type of work.
- (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 Examples [4-7](#), [4-8](#), and [4-9](#).

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, 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, it 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/](http://www.wsdot.wa.gov/Design/ProjectDev/)

**(6) Contract Reclamation Plans**

**See Contract Plan Example 4-10.**

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 4-11, 4-12, 4-13, 4-14, 4-15, and 4-16.**

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.

Consider the use of tables with a section example in order to reduce the number of unnecessary plan sheets.

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 the 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 14 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 4-17**.

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.

### **(17) Contour Grading Plan**

Contour Grading Plans provide finished ground contours. 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 4-27, 4-30, 4-31, and 4-33.

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 may be necessary 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 if not accurately shown elsewhere.

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; 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.

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 is to be used (see the *Standard Plans* for each multiple-post installation).

## **(26) Signing Plan**

**See Contract Plan Examples 4-40 and 4-41.**

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.

Signing Plans do not normally require a great deal of roadway detail. 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 [highway administration rules and regulations \(23 CFR 630 Subpart J\)](#), every project shall have a [Temporary Traffic Control Plan \(TTC\)](#). “Traffic Control Plans” is the common name for [typical, site-specific, or project-specific TTC Plans](#). Primary consideration should be given to [public safety, worker safety, and maintaining mobility through a work zone](#).

The designer may consider [typical Traffic Control Plans found in the \*Standard Plans, Work Zone Traffic Control Guidelines\*, or the MUTCD, Part 6](#), as a starting point for developing contract Traffic Control Plans. [The Plan Sheet Library on the public design website includes many typical Traffic Control Plans](#). On smaller projects, such as a two-lane paver, the designer may consider the use of an item for contractor-prepared Traffic Control Plans in lieu of providing plans in the contract.

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 1,500 feet, it will appear on the plan sheet as 1,500' +/- . This does not mean the sign can be put any place the contractor chooses within the 1,500-foot range; it means the sign is to be placed at 1,500 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 guidance in the *Standard Specifications* allows the contractor to develop Traffic Control Plans or revise those furnished in the contract (see “Traffic Control Plans” in the *Standard Specifications*).

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 Traffic Control Plans are prepared by someone other than the primary project designer, ensure they are familiar with all the project elements so they will produce compatible plans. The primary designer should keep the Traffic Control Plan designer aware of any design changes and thoroughly review the Traffic Control Plans to make sure they address all the project’s work zone impacts.

## 400.07 Plan Examples

In order to help illustrate the intent of WSDOT contract plan sheets, examples of typical plan sheets and electronic data files is available. These examples are strictly for informational purposes. Final approval of plan sheets will be in accordance with this manual and the Region Plans Review Office.

### (1) Example Plan Sheets

This section provides examples of typical PS&E plan sheets showing general plan requirements.

### (2) Example Projects

Additional plan examples may be viewed from the following public WSDOT Computer Aided Engineering (CAE) website under “Consultant Resources”:

☞ <http://www.wsdot.wa.gov/design/cae>

These plans represent an information-only example of a complete project plan set. This project shows the relationship between “Base” information, plan view sheets, section view sheets, profile view sheets, and other spreadsheet-based sheets per the *Plans Preparation Manual* and the *Electronic Engineering Data Standards* (EEDS) manual.

Plans may be viewed in PDF format from the website, or downloaded in native MicroStation (dgn) and Microsoft Excel (xls) file format compressed by WinZIP (zip).

# **Division 5** **PS&E Plans – Standard Symbols and Conventions**

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The **PS&E Plans – Standard Symbols and Conventions** are now located in the *Electronic Engineering Data Standards* (EEDS) manual (M 3028):

🔗 [www.wsdot.wa.gov/publications/manuals/fulltext/M3028/ElectronicEngDataStandards.pdf](http://www.wsdot.wa.gov/publications/manuals/fulltext/M3028/ElectronicEngDataStandards.pdf)



- 600.01 Introduction
- 600.02 Amendments
- 600.03 Special Provisions
- 600.04 Format

### 600.01 Introduction

Contract Provisions are legally enforceable specifications to contracts formed between the Washington State Department of Transportation (WSDOT) and contractors.

#### (1) General

Contract Provisions consist of the following:

1. Notice to Planholders
  - Project Engineer's name, address, and phone number
2. Table of Contents
3. Amendments
  - Revisions to the *Standard Specifications for Road, Bridge, and Municipal Construction (Standard Specifications)*
4. Special Provisions
  - A combination of the General Special Provisions (GSPs) and project-specific provisions
5. Boring Logs
  - All final boring logs provided by the WSDOT Geotechnical Division, Region Materials Engineers, and/or consultants
6. Federal-Aid Provisions
  - For federal-aid projects
7. Prevailing Minimum Hourly Wage Rates
  - State, federal, or both, depending on project funding
8. Proposal (informational copy)
  - Subcontractor List
  - Signature Page
  - Declaration of Non-Collusion
  - Certification for Federal-Aid Contractors
9. Appendices to the Special Provisions

10. Forest Service Provisions (if applicable)
11. Railroad Insurance Forms (if applicable)
12. Other Documents

This section will discuss the Amendments, GSPs, and project-specific provisions.

The Amendment and Special Provisions sections of the Contract Provisions are created using the WSDOT “PS&E Word Program” (see the Appendices for a User’s Guide). Each Amendment and GSP is given a unique file name. That file name is a number that corresponds to the section of the *Standard Specifications* being supplemented or revised by the document. Project-specific provisions are assigned a unique file name by the writer of the document.

The designer makes a list, called the run-list, of the applicable file names, and the computer system compiles the actual documents in the order requested on the run-list.

The PS&E Word Program allows the designer to access the Amendments and GSPs through the region’s computer network system and enables designers to:

- Read the documents.
- Compile the run-list.
- Write the project-specific information.
- Insert the information in the run-list.
- Compile the completed Contract Provisions.
- Create the Table of Contents.

WSDOT offices, consultants, and local agencies not connected to the WSDOT computer network system can download the PS&E Word program, Amendments, and GSPs from the Internet. Access this information on the WSDOT Project Development – Specifications, Amendments, and GSPS website at:

☞ [www.wsdot.wa.gov/Design/ProjectDev/Specifications.htm](http://www.wsdot.wa.gov/Design/ProjectDev/Specifications.htm)

For program compatibility issues, contact the WSDOT HQ Strategic Analysis Estimating Office (SAEO) for help.

The Internet information is updated on the same schedule as the WSDOT system, so the information is always current. It is the user’s responsibility to regularly check for program, Amendment, and GSP updates at the Project Development Specifications website (see above) or by signing up for e-mail alerts at:

☞ [http://service.govdelivery.com/service/subscribe.html?code=WADOT\\_75](http://service.govdelivery.com/service/subscribe.html?code=WADOT_75)

Assistance with the PS&E Word Program and the Amendment and GSP information is available through the HQ Strategic Analysis Estimating Office (SAEO) at:

☞ [www.wsdot.wa.gov/Design/ProjectDev/Specifications.htm](http://www.wsdot.wa.gov/Design/ProjectDev/Specifications.htm)

For complete instructions on how to use the PS&E Word Program, access the User’s Guide for PS&E Support Contract Provisions at:

☞ [www.wsdot.wa.gov/publications/fulltext/projectdev/manuals/PS&EManual.pdf](http://www.wsdot.wa.gov/publications/fulltext/projectdev/manuals/PS&EManual.pdf)

TWTEC = \$7,288.89

HMA CL ½ IN. PG\_:

Length: 300'

Width: 2 lanes @ 12' and 2 shoulders @ 4'

Depth: 1 lift @ 0.15' depth

Unit Price: \$42/ton

TWTEC = (300')(24')(0.15')(2.05t/cy)(\$42/ton)  
(27ft<sup>3</sup>/cy)

TWTEC = \$3,444.00

Travel Way Total Est. Cost

(TWTEC) = \$10,732.89

CPA = (0.02)(\$10,732.89) = \$214.66

Use \$220 for “Compaction Price Adjustment”

### **(5) HMA Price Adjustment**

Check with the Construction Office to verify whether this item is required for the project.

### **(6) Asphalt for Fog Seal**

The item “Asphalt for Fog Seal” is normally associated with bituminous surface treatment (BST) projects and the shoulders of paving projects that place only HMA in the traffic lanes, and it is required on all open-graded HMA projects as well.

### **(7) Soil Residual Herbicide**

The item “Soil Residual Herbicide” should be used in conjunction with HMA, asphalt concrete sidewalks and paths, or parking lots only when very aggressive weeds that are capable of breaking through pavement are in the vicinity. Those weeds include equisetum and knotweeds. The designer is to check with the Maintenance Supervisor responsible for the area for a recommendation on whether soil residual herbicide is required.

## **700.02 Earthwork**

### **(1) Aeration**

If it is found necessary or desirable to include the bid item “Aeration” in a project, approval by the Headquarters (HQ) Construction Office is required. A copy of this written approval is to be included in the Plans, Specifications, and Estimates (PS&E) portion of the Project File.

### **(2) Borrow Material**

Because WSDOT is committed to conserving valuable mineral resources, it is imperative that careful consideration be given to the earthwork portion of every project, to ensure the most efficient and cost-effective use of the material from the roadway excavations.

If there is insufficient roadway excavation material due to a shortage of on-site material or because all, or a portion of, the on-site material is known to be unacceptable for constructing embankments, material will have to be imported, and a borrow item will be included in the project.

If the borrow is required because the roadway excavation material is not acceptable for embankment construction, the Special Provisions shall identify the locations of the unacceptable roadway excavation material. Consult with the Region Plans Office on how this information is to be presented.

If a single type of borrow material is required to supplement the quantity of roadway excavation material, it will be the contractor's responsibility to determine the most efficient and cost-effective means and operations of using the on-site material and the borrow to construct the embankments. In this situation, the borrow material quantities will appear only on the Summary of Quantities, and they will not be shown as a quantity on the roadway profile sheets.

If the borrow material is being used only at specific, well-defined locations on the project (bridge end embankments, for example), the exact locations are to be identified on the roadway profile by showing the quantity arrow, indicating the station-to-station limits and quantity of borrow material needed for the embankment construction. If profiles are not included in the project, the Special Provisions are to contain a statement such as, "Gravel borrow shall be used to construct the bridge end embankments, L X+XX to L X+XX."

If two or more types of borrow material are required, the specific locations for all but one of the types of borrow shall be identified on the profiles, or in the Special Provisions, as described above. For example:

- If gravel borrow is required for the construction of bridge end embankments, and common borrow is required to supplement the roadway excavation material to construct other embankments, the station-to-station limits of the gravel borrow material are to be shown on the profiles, or in the Special Provisions. It will remain the contractor's responsibility to determine the most efficient and cost-effective way to use the common borrow and the roadway excavation material to construct the remaining embankments. Therefore, show the common borrow quantity only in the Summary of Quantities.

In all cases, the quantities for roadway excavation and embankment shall appear on the Summary of Quantities and on the Profile sheets or, on smaller projects, tabulated on Quantity Tabulation sheets.

### **(3) Clearing and Grubbing**

For estimating purposes, clearing is to be calculated as being performed 10 feet, and grubbing 7 feet, beyond the toe of slope for embankments and the upper limit of slope treatment in cuts. Coordinate with the region Landscape and Environmental office on the proposed limits and show these limits on the proper plan sheets..

If clearing requires the cutting of merchantable timber amounting to at least one log truck load (approximately 5,000 board feet) from within the right of way, the General Special Provision (GSP) for Timber Export Restrictions is to be included in the contract provisions. This GSP notifies the contractor that they will be required to pay to the Department of Revenue the forest excise tax on the harvested lumber.

## **(2) Training Goals**

The bid item for “Training” is to be provided on most federal-aid projects. For projects with federal-aid dollars, [23 CFR Part 230.111](#) requires all state highway agencies to review projects to determine their ability to support the inclusion of “Training Special Provisions” hours. The training goals, in terms of the total number of training hours required, are established by the HQ External Civil Rights Office. The amounts of training hours, if assigned to a project, are based on the following:

- Total estimated project labor hours
- Availability of minorities, women, and other disadvantaged individuals
- Potential for effective training
- Duration of the contract
- Dollar value of the contract
- Anticipated workforce size
- Project location
- Scopes of work

The region may submit a training recommendation for consideration by the HQ External Civil Rights Office. If the region is submitting a training recommendation, it needs to provide an estimation of total projected project labor hours.

**Note: If you have any questions regarding either of the two programs referred to above, please contact the WSDOT Office of Equal Opportunity at 360-705-7090.**

## **700.04 Materials Sources**

### **(1) Aggregate Stockpiles**

Under the construction contract, the regions are authorized to spend M5 funds for acquisition of aggregates, provided the region’s biennial M5 allocation is not exceeded.

The following Headquarters offices need to be advised by the region of all M5 aggregate stockpile acquisitions made under a construction contract:

- Administrative Services Office, Purchasing and Inventory Branch
- Comptroller’s Office, Budget Management Branch
- Program Management Office, Program Manager
- Pre-Contract Administration Office

### **(2) Amortization of Materials and Stockpile Sites**

If a state source of materials is provided, the project report form is to include the dollar amount to be amortized, providing the region intends that amortization be included in the project.

The estimate will include the dollar amount so that federal-aid participation can be obtained on federal-aid projects, or so that proper accounting procedures can be followed when only state funds are involved.

### **(3) Materials Sources and Waste Sites**

Materials sources provided by the contracting agency can be either mandatory or nonmandatory sites. For mandatory sites, verify with the region ASDE on the appropriate documentation needed, and refer to *Design Manual* Chapter 300 for approval authority of mandatory sites.

When mandatory materials sources or waste sites are specified, the region shall provide a memorandum of justification. For mandatory materials sources, justification shall be made in accordance with 23 CFR 635.407, showing a definite finding that it is in the public's best interest to require the use of the mandatory sites furnished or designated by the contracting agency. The use of mandatory sites can also be designated based on environmental considerations, provided the environment would be substantially enhanced without excessive cost. The memorandum of justification is to be placed in the Project File.

When nonmandatory sites are specified, the contracting agency makes the site available to the contractor, but the contractor has the option to use or not use the site.

For any mandatory source or waste site to be used, coordinate with the Region Plans, Materials, and Environmental offices.

Bid items for work to be performed within a nonmandatory site are to be site-specific; for example, "Wire Fence Type 1 – QS-X-XX." (See the GSP for State Furnished Material Sources for more information.) This allows the contractor the opportunity to bid zero for these site-specific items if they do not intend to use the site. If the contractor decides later to use the site, the work specified by the site-specific items will be performed, and the contractor will be paid at the bid amount of \$0.00.

Site-specific items are not required for work to be performed on mandatory sites.

A separate column, under the appropriate group, is to be set up for each material source or waste site provided by the contracting agency. This allows the contractor to easily identify the work to be performed within a site and also allows for easy accounting of the work by WSDOT.

The region shall prepare a Haul Road Agreement if the haul route to or from the site is other than a state highway.

## **700.05 Other Contract Considerations**

### **(1) Fuel Cost Adjustments**

Check with the Construction Office to verify whether or not this item is required for the project.

### **(2) Steel Price Adjustment**

Check with the Construction Office to verify whether or not this item is required for the project.

### **(3) Buy America**

Check with the Construction Office to verify whether or not this item is required for the project.

#### (4) Other Price Adjustments

Check with the Construction Office to verify whether or not any other price adjustments are required for the project.

#### (5) Addenda

Addenda are revisions to the plans and contract provisions that are made **during** the advertising period. Addenda are to be issued only when the revision will affect the contractor's ability to provide a responsible bid. Consult with the Region Plans Office to coordinate preparation and notification to plan holders.

Items to be considered for preparing addenda, which would affect the scope of work and the contractor's ability to accurately bid the project, might include:

- Material specification changes.
- New bid item(s).
- A substantial quantity revision (generally, a 25% or greater increase or decrease) for an item in the bid documents.
- A revision to a legal requirement in the contract.
- A new supplement or a revision to the Special Provisions.

Small adjustments to quantities, spelling, and punctuation, and design changes that do not affect quantity and relocation of items of work within the project will not normally require an addendum because they will not affect the way the contractor bids the project. These items are not to be ignored, but the information, in the form of revised plan sheets, need only be passed along to the office of the construction project engineer, so they can be incorporated into the project and given to the contractor that is awarded the project. For example:

- **Not required for addenda:** The advertised project has 23 catch basins to be installed, and it is discovered that an additional catch basin, not shown on the plans, will be required. This would not warrant an addendum if this were the **only change** being made. The small change in quantity will not impact the contractor's bid. This can be handled under construction as any other increase in quantity.
- **Addenda Required:** The addition of the one catch basin causes the 18-inch-diameter pipe item to increase from 985 feet to 1,250 feet. This increase in pipe length is greater than 125% of the original, which could cause this item to be renegotiated under the contract, so the addendum would be justified. Since the addendum is required for the pipe, the additional catch basin would also be included in the addendum.

For instructions and procedures on preparing addenda, see the [Appendices](#).

#### (6) Agreements

All agreements necessary for the project should be complete and signed prior to the project going to Ad. If this cannot be accomplished, it is the responsibility of the region to determine the risk involved in going to Ad without the completed agreement, in accordance with the [Advertisement and Award Manual](#). Particular attention is to be paid to the following:

- The quantities, bid item names, units of measurement, and prices in the agreement should be the same as those in the PS&E.

- Another party may be financially responsible for some of the work in WSDOT's contract, such as the construction of sidewalks, utility installations, signal systems, pavement markings, intersection improvements, and so on.
- Though not common, some participating agreements will contain an "out clause," which allows the outside agency to withdraw the work if the bid prices are not favorable. When an out clause is included in the agreement, the GSP titled "Award of Contract" needs to be included in the contract provisions.

For agreements with an out clause, each bid item needs to be set up with a separate bid item name and placed in a separate group in the Summary of Quantities. A Special Provision needs to address each bid item.

When preparing the estimate of cost for an agreement for work under the contract that is the financial responsibility of an outside agency, mobilization, engineering, and contingencies are to be included.

Additionally, agreements that include work that WSDOT's contractor will perform, or work performed by others that WSDOT will reimburse a third party for, should be clearly stated in the project Special Provisions.

For more information on agreements, see the [Agreements Manual](#) or contact the HQ Utilities, Railroad, and Agreements Section.

## **(7) Alternate/Cumulative Bids**

### **(a) Alternate Bids**

It is, at times, desirable to solicit bids using alternates for specific bid items for work to be performed under the contract. The contract Estimate, Proposal, and Summary of Quantities will be divided into sections. One section will contain the base information, and there will be a section for each of the alternates. This requires the contractor to bid the base portion of the project and to bid the alternates as required by the Special Provisions. By comparing the base bid plus the alternate bids, WSDOT is able to determine the most economical combination.

One of the conditions of setting up a project in this manner is that WSDOT has to treat each of the alternates as equal, and make the decision regarding which is the best bid based on the lowest cost Alternate Plus Base Bid.

This is different than allowing the contractor the latitude to choose between different material options available for a contract item.

For additional information concerning alternates, refer to the [EBASE Users Guide](#).

### **(b) Cumulative Alternative Bids**

Use in contracts when the award process is modified to include Cumulative Alternates. The region shall determine and notify the Ad and Award Office of the Funds Available. The bid items shall be segregated into a Base Bid and Alternates, as appropriate. Fill-ins consist of a brief description of the portion of the project or of the work that is included in the noted Alternates. The specification language may be adjusted to suit the number of Alternates.

For further information on how this is to be used in a project, see Division 1-02.6, General Special Provisions.

### **(8) Asbestos Removal**

When the removal of asbestos or items containing asbestos is required, or when asbestos is suspected, the specifications shall include sufficient information and detail to inform the contractor of the nature and location of the asbestos. There are GSPs that are to be included in the contract provisions. The WSDOT *Asbestos Abatement Manual* is to be used to determine whether there are special conditions or requirements that should be included in the contract provisions. (You can access a copy of the *Asbestos Abatement Manual* through the WSDOT Library at: [www.wsdot.wa.gov/library](http://www.wsdot.wa.gov/library), or send them an e-mail at: [library@wsdot.wa.gov](mailto:library@wsdot.wa.gov).)

### **(9) Assigning the Risk**

It is important that the contractor be able to determine whether the risks on the project will be the contractor's responsibility or will be borne by WSDOT. In most cases, it is best to assign the risk to WSDOT. This keeps the contractor from having to inflate bid prices to offset the possible risks of doing the work. These inflated prices cost WSDOT extra dollars when the problem does not materialize.

- For example, do not say, “The contractor may encounter obstructions during the excavation.” The contractor has to assume that obstructions will be encountered and that they will be the contractor’s problem when they are. The unit price for the excavation will include the cost of obstruction removal, and WSDOT will pay for the removal even if there are no obstructions encountered.
- It would be much better to say, “If obstructions are encountered during excavation, the Engineer will pay for the removal of the obstruction in accordance with Section 1-09.4 of the *Standard Specifications*.” Now the contractor can bid the actual cost of doing the excavation work and be confident that if something out of the ordinary is encountered, the cost of removal will be dealt with fairly, and if there are no obstructions encountered, there is no cost to WSDOT.

### **(10) Combining Bid Items**

In an effort to streamline projects to make them easier for WSDOT to manage, as well as easier for the contractors to bid, some thought should be given on each project to doing similar, or associated, work under a single bid item instead of having two or more items under which to work.

The lump sum item “Removal of Structure and Obstruction” has always been made up of a combination of various removal items, and this will not change. This item is not governed by an estimated cost limit for work that can be included. As long as each different removal item is precisely described as to the actual work to be performed, the locations of the work, and the estimated quantity of work, there are no limits to the removal work that can be combined in the single “Removal of Structure and Obstruction” item. (See [700.05\(12\)](#) for additional discussion on lump sum items.)

Work that is measurable—estimated cost of \$5,000 or greater—will be a separate bid item. However, if the work is minor—estimated cost of less than \$5,000—and there is a logical item of work with which to associate the minor work, the items may be combined and the cost of the minor work included in the cost of the associated work. A nonstandard bid item is created to capture all of the work involved when combining bid items.

The designer must remember that if items of work are combined, additional information will be required to describe the work involved, to clearly identify what items are being combined, and that the quantities provided for the combined items need be more accurately calculated.

For example, do not combine the cost of structure excavation with the cost of the pipe without giving a reasonably accurate estimated quantity for the structure excavation required for each pipe. Giving the **total** estimated quantity for the structure excavation does not provide the contractor a clear enough picture of the work required to make a responsible bid.

Accuracy of estimating quantities is also important because it can be difficult to address overruns, underruns, or added work when only one portion of the item combination is involved in the overrun or underrun, or work is added to only one of the items of work.

Care must be taken to ensure that by combining the items of work, additional problems will not be encountered during construction because of changes in conditions or work methods.

**Items being combined shall relate to each other well and the quantities shall be dependent on each other, so if one changes in the field, the associated quantities would be affected uniformly.**

**(a) Example of a Good Combination**

If the project had a few locations where culverts were to be installed, it would be acceptable to include the cost of structure excavation in with the per-foot price for the size and type of culvert pipes. This is a good combination because the items are closely associated and the quantities are dependent on one another. The quantity for structure excavation is dependent on the amount of pipe installed and will increase or decrease as the length of pipe actually installed increases or decreases.

- Even though this combination of items is logical, it is imperative that the quantities for the structure excavation be calculated to a higher degree of accuracy than if the two items were separate.
- This higher accuracy of the structure excavation quantity is necessary because once the quantity is calculated for the planned length of pipe, that relationship of cubic foot of structure excavation per foot of pipe never changes. If the calculated structure excavation quantity is too high, the contracting agency is overpaying for the work actually performed. If the calculated structure excavation quantity is too low, the contractor is not being fairly compensated for the work performed. In either case, there is no way to make adjustments to the structure excavation.
- If there was a separate pay item for the structure excavation, and the quantity for the item was miscalculated, the contractor will be paid for the actual work performed, so the estimated quantity is a basis for the contractor's bid only.
- The structure excavation quantity will appear on the Structure Note sheet as "informational only" for each associated structure code.

## (15) Liquidated Damages

### (a) HQ Construction Office Approval Required

Liquidated damages are monies assessed or withheld from the contractor's payment for failure to complete the project within a specified period of time. Liquidated damages are not to be considered a penalty, but reimbursement for the costs to the contracting agency for the contractor's failure to perform within the time frame of the project.

There are two types of liquidated damages to be considered for a project:

#### 1. Contract Time-Related Liquidated Damages

Liquidated damages for Physical Completion are calculated in accordance with the formula in Section 1-08.9 of the *Standard Specifications*. This formula actually calculates the estimated cost to WSDOT to continue engineering the project beyond the allotted contract time, but is presented in the contract as compensation for any and all damage resulting from an unexcused extended duration. The designer must avoid double charging through both the Standard Specification and a separate Special Provision for the same extended days. This situation may arise when an interim completion milestone is violated after all contract time has expired. Only the contract time-related liquidated damages may be assessed.

The designer must be able to identify and document the cost(s) associated with the damage. All liquidated damages that are different from the Standard Specification require the approval of the HQ Construction Office or the delegated region official. Submit the proposed provision and the calculations supporting the damage amount to the HQ Construction Office.

#### 2. Interim Completion of Phases (Staging)

Interim liquidated damages are monies assessed or withheld from the contractor's payment for failure to complete a part (phase or stage) of the project within a specific period of time identified in the Special Provisions.

Large or complex projects often have interim completion times, with liquidated damages for such things as failure to open a closed lane(s), ramp(s), or detour(s) to all traffic by a specified time, or for completion of all work identified for a specific stage or phase of a project as defined in the Special Provisions. These types of liquidated damages can be assessed in time increments that range from 15-minute to full-day segments. Liquidated damages assessed for failure to have a lane, ramp, or roadway open to traffic, or to have an Intelligent Transportation System (ITS) operational at the specified time, are an estimate of the actual cost to the contracting agency and the traveling public for not having that portion of the road or ITS available. The Statewide Travel and Collision Data Office (STCDO) (formerly the HQ Transportation Data Office (TDO)) has standardized methodology for calculating the cost, based on traffic counts. This is the only acceptable way of calculating these costs (see [http://wwwi.wsdot.wa.gov/ppsc/TDO/liquidated\\_intro.htm](http://wwwi.wsdot.wa.gov/ppsc/TDO/liquidated_intro.htm)).

Once the designer has received these calculated costs from the STCDO, the region must make the determination whether or not the damages represent a sufficient benefit to the state to put them in the contract.

Interim liquidated damages for two or more separate reasons can be additive for the same time period.

A copy of the data used to justify liquidated damages and a copy of the STCDO information is to be placed in the PS&E portion of the Project File.

### **(16) Lump Sum Bid Items**

A lump sum bid item may include several items of work or the same item of work at different locations. The Special Provisions must cover the complete item of work, including the description of work, materials, construction requirements (which includes the approximate quantities for bidding purposes), and payment statements. The quantities listed should be double-checked to avoid contractor claims.

Only work that can be easily defined by quantity, amount of effort, and equipment and labor requirements is to be included in lump sum items. If any of these items are unknown/uncertain, payment at unit prices or by force account would be more appropriate.

The backup data used to determine the estimated cost for lump sum bid items is to be placed in the PS&E portion of the Project File.

The designer must decide whether each lump sum bid item is to be prorated or whether individual Summary of Quantities column costs are to be assigned for each lump sum bid item.

### **(17) Items a Designer "Might" Need**

The designer is advised to avoid including items in the project they think "might" be needed. This is particularly important for items such as borrow or excavation below grade, because the contractor bids, at a high price, the small quantity shown, and then finds a way to use a considerable quantity of the item on the project.

If it is unknown whether or not the item is required, it is best to leave it out of the project and let the Construction Office add the item by change order if necessary. History shows that this is the easiest, most cost-effective way of handling these items.

There may be times when it will be appropriate to include an item that might be needed. In these rare cases, it should be included as a force account item, so the Engineer has complete control of the work.

### **(18) Paths and Trails**

WSDOT tracks expenditures for pedestrian and bicycle facility improvements so this information can be reported to the Legislature and the public, per [RCW 47.30](#). The information is also used to measure the performance of WSDOT's transportation system.

Features that are specifically for pedestrian and/or bicycle facilities need to be included in the paths and trails calculations. Overlaying an existing shoulder with HMA or bituminous surface treatment (BST) does not constitute the need for paths and trails calculations. Widening of a shoulder(s) that is part of a larger roadway-widening project is not to be included in the paths and trails calculations.

The following are example types of work that are to be included in the paths and trails calculations. (See the [Design Manual](#) for definitions of terminology and additional information.)

## **(21) Removal of Pavement, Sidewalks, or Curbs**

When looking at work requiring removal of pavement, sidewalk, or curb, the method of measuring and paying for the work is determined on where work is occurring: within or outside the limits of an excavation area.

### **(a) Outside**

When pavement, sidewalk, or curb removal is required **outside the limits** of an excavation area, it can be included in the lump sum price for “Removal of Structures and Obstructions,” or separate bid items may be established for the work.

If the work is included as part of the lump sum item, the Special Provisions will indicate the approximate locations and quantities. If separate bid items for removal are established, the individual items will appear on the Quantity Tabulation sheets, where the approximate locations and quantities will be indicated. In either case, the locations of the removal items will be indicated on the plans as well.

### **(b) Within**

When pavement, sidewalk, or curb removal is required **within the limits** of an excavation area, nothing is required on the plans or in the Special Provisions. All costs for the removal of the pavement, sidewalk, or curb are included in the excavation work, and no additional compensation is made to the contractor.

The other possibility is that, for some reason, the designer wants the contractor to remove the pavement, sidewalk, or curb that lies within an excavation area prior to performing the excavation. In this case, the work would be handled as described above for removal outside an excavation area.

## **(22) Retaining Walls**

When a project contains standard retaining walls, as detailed in the *Standard Plans for Road, Bridge, and Municipal Construction (Standard Plans)*, the Contract Plans shall include:

- A plan and profile of the wall, with original and proposed ground profiles at the front and back faces of the wall.
- All existing utilities in the vicinity of the wall.
- Wall geometry.
- Right of way limits.
- Construction sequence and stage construction sequence requirements.
- Highest permissible elevation for foundation construction.
- Location, depth, and extent of unsuitable material.
- Quantities for the wall and backfill materials.
- Details of wall appurtenances such as traffic barriers; coping; wall face treatment and limits of treatment; drain outlets; and location of signs and lighting, including conduit locations.

In general, a site that will support a standard cantilever retaining wall will also support a proprietary retaining wall. If the region decides to provide preapproved proprietary retaining wall systems as an alternate, the HQ Materials Laboratory Foundation Engineer and the HQ Bridge and Structures Office Bridge Project Engineer need to be consulted on the selection of suitable wall systems for the conditions. In order to evaluate aesthetic considerations, a rough site plan shall be submitted to the HQ Bridge Project Engineer for review.

The region will be required to contact the suppliers of the selected retaining wall systems to confirm the adequacy of the systems for the given situation. The HQ Materials Laboratory Foundation Engineer is to be contacted to provide assistance in evaluating the systems for overall stability and to provide soil criteria for design.

The HQ Bridge and Structures Office will prepare the Special Provisions for preapproved proprietary retaining walls, including design criteria. The HQ Foundation Engineer will be consulted for establishing the criteria for design. The Special Provisions will require the proprietary wall manufacturer selected by the contractor to submit shop plans, design criteria, and calculations to the HQ Foundation Engineer for approval. The HQ Bridge and Structures Office will then review the design submitted by the preapproved proprietary wall manufacturer.

In addition, keep in mind that these retaining wall alternates may be selected by the contractor and that all of these alternates are proprietary. On all federal-aid projects, two alternates must be selected, or reasons for using fewer alternates must be submitted for approval to the Assistant State Design Engineer assigned to the region. Proprietary retaining wall systems are preapproved for certain heights. Walls that exceed the preapproved height will be considered special designs and each must be submitted to the HQ Bridge and Structures Office for review and approval.

### **(23) Roadside Considerations**

The roadside blends the highway facility into the natural and built environment and provides operational, visual, and environmental functions. For all projects requiring work outside the shoulders, it is important that the designer consider the various functions and how the elements that meet these functions relate to each other. Contact the Region Landscape Architect or HQ Landscape Architect (for regions without one) to assist in meeting the functions and to determine ways to minimize and mitigate impacts to the roadside.

Earthwork can spread noxious and invasive species of weeds if these exist in the project vicinity. Long-term weed control issues within the roadside should be discussed with the area maintenance staff. If there are areas of noxious weed stands within the project limits, the designer should arrange to have WSDOT maintenance forces treat them prior to earth-moving activities, or the project should include weed control prior to this work. For projects that last through multiple seasons, weed control during the duration of the project should be considered for all areas within the right of way. If the project needs weed control (outside of planting areas), the separate weed control standard pay item must be included.

It is important to preserve existing desirable vegetation and to minimize disturbance and compaction of existing soils as much as possible. This will minimize water runoff, reduce erosion during the project, and reduce impacts that require restoration and mitigation.

The *Roadside Classification Plan* outlines requirements, based on project type, for revegetation, permanent erosion control, irrigation, and landscape planting. The Landscape Architect can assist the designer in fulfilling these requirements. The Roadside Restoration Worksheet should be referenced to determine the impacts and restoration needs that were determined for the project during the scoping process.

Consider the various elements of the project that are viewed by the highway user and from adjacent areas. Elements such as lighting standards, sign bridge types, traffic barriers, bridge and wall design, textures and colors, contour grading, stormwater treatment and storage facilities, and vegetation blend the project into the context of the environment and provide a unified visual experience through the corridor. The Landscape Architect can provide expertise to identify and blend visual elements.

Pedestrian facilities must be designed to be accessible by incorporating Americans with Disabilities Act of 1990 (ADA) standards.

#### **(24) Royalties on Materials Sites**

If the contracting agency furnishes a materials site owned by others, and the owner requires that a royalty be paid for materials removed from the site, the dollar amount of the royalty, and who will be responsible to pay the royalty, will be specified in the Special Provisions. FHWA has authorized federal-aid participation in royalty payments.

#### **(25) Shoring or Extra Excavation**

All excavations of 4 feet or more in depth shall be shored, protected by cofferdams, or shall meet the open-pit requirements specified in the *Standard Specifications*.

**RCW 39.04.180 requires that a separate bid item for shoring or extra excavation be included in the estimate and proposal. In no case shall the costs for shoring or extra excavation be included in other bid items.**

#### **(26) Specializing Out Right of Way Parcels**

It may be necessary to identify right of way parcels that are unavailable to the contractor for construction at the time the contract is awarded.

The Special Provisions shall be specific regarding the location of these parcels and the estimated dates of availability to the contractor. Region Real Estate Services can provide a reasonable availability date to go in the Special Provisions. There is no problem if the property becomes available early, but there can be major problems if the property is not available by the date promised.

Right of way parcels that are “specialized out” must also be indicated on the Right of Way or Alignment/Right of Way Plans by drawing in the appropriate property lines and by cross-hachuring the parcels. The plans shall indicate that the cross-hachured parcels are unavailable and there will be a note referencing the Special Provisions.

When right of way is being specialized out, the order of work has to be examined to ensure the project sequencing is not adversely affected because portions of the right of way are not available for immediate use.

### **(27) Standard Items**

When a standard item exists, it should be used. The Standard Bid Item Table is not a complete listing of standard items. It is a list of the bid items being tracked in the Unit Bid Analysis (UBA) system. Code numbers, which are referred to as Standard Item Numbers, track them.

Standard items are those items that appear in the payment statements in the *Standard Specifications*. Many of these payment statements, like the following, are written with blanks:

- “HMA for Preleveling Cl. \_\_\_\_ PG \_\_\_\_,” per ton.
- “Catch Basin Type \_\_\_\_,” per each.
- “Manhole Additional Height \_\_\_\_ In. Diam. Type \_\_\_\_,” per foot.

If the blanks are filled in with the expected information and the information in the *Standard Specifications* applies, they are standard items even though they may be a size, type, or class not shown in the Standard Bid Item Table.

Minor revisions that have little or no impact on the cost can be made to the material or construction requirements in the *Standard Specifications*, and they can remain standard items. Care must be taken, however, not to mislead the contractor by making major revisions that could substantially affect the cost of the item and calling it the standard item. In these cases, it is best to develop a nonstandard item.

### **(28) Standard Plans**

WSDOT’s *Standard Plans* are made a part of contracts by reference in the Special Provisions. Plan details that duplicate details in the *Standard Plans* are not to be drawn, and the designer is not to redesign a Standard Plan by detail in the project. It is important that standard work be done the standard way, and that standard materials be used whenever possible; in almost all cases, standard materials cost less.

### **(29) State Force Work or State Furnished Materials**

**The State Force Work referenced is any and all state force labor, state-supplied materials, and/or state-supplied equipment to be paid utilizing construction dollars, unless specifically excluded as mentioned below (see [Figure 700-1](#)).**

The designer shall provide written justification for all state-furnished materials and all State Force Work to be performed on all projects, in accordance with [RCW 47.28.030](#) and [RCW 47.28.035](#).

#### **(a) [RCW 47.28.030](#)**

The complete RCW reads as follows:

Contracts – State forces – Monetary limits – Small businesses, minority, and women contractors – Rules.

A state highway shall be constructed, altered, repaired, or improved, and improvements located on property acquired for right of way purposes may be repaired or renovated pending the use of such right of way for highway purposes, by contract or state forces.

The work or portions thereof may be done by state forces when the estimated costs thereof is [are] less than fifty thousand dollars and effective July 1, 2005, sixty thousand dollars: PROVIDED, That when delay of performance of such work would jeopardize a state highway or constitute a danger to the traveling public, the work may be done by state forces when the estimated cost thereof

is less than eighty thousand dollars and effective July 1, 2005, one hundred thousand dollars.

When the department of transportation determines to do the work by state forces, it shall enter a statement upon its records to that effect, stating the reasons therefore.

To enable a larger number of small businesses, and minority, and women contractors to effectively compete for department of transportation contracts, the department may adopt rules providing for bids and award of contracts for the performance of work, or furnishing equipment, materials, supplies, or operating services whenever any work is to be performed and the engineer's estimate indicates the cost of the work would not exceed eighty thousand dollars and effective July 1, 2005, one hundred thousand dollars.

The rules adopted under this section:

- (1) Shall provide for competitive bids to the extent that competitive sources are available except when delay of performance would jeopardize life or property or inconvenience the traveling public; and
- (2) Need not require the furnishing of a bid deposit nor a performance bond, but if a performance bond is not required then progress payments to the contractor may be required to be made based on submittal of paid invoices to substantiate proof that disbursements have been made to laborers, material men, mechanics, and subcontractors from the previous partial payment; and
- (3) May establish prequalification standards and procedures as an alternative to those set forth in RCW 47.28.070, but the prequalification standards and procedures under RCW 47.28.070 shall always be sufficient.

The department of transportation shall comply with such goals and rules as may be adopted by the office of minority and women's business enterprises to implement RCW 39.19 with respect to contracts entered into under this chapter.

The department may adopt such rules as may be necessary to comply with the rules adopted by the office of minority and women's business enterprises under RCW 39.19.

[1999 c 15 § 1; 1984 c 194 § 1; 1983 c 120 § 15; 1977 ex.s. c 225 § 3; 1973 c 116 § 1; 1971 ex.s. c 78 § 1; 1969 ex.s. c 180 § 2; 1967 ex.s. c 145 § 40; 1961 c 233 § 1; 1961 c 13 § 47.28.030.

Prior: 1953 c 29 § 1; 1949 c 70 § 1, part; 1943 c 132 § 1, part; 1937 c 53 § 41, part; Rem. Supp. 1949 § 6400-41, part.]

(b) **RCW 47.28.035**

The complete RCW reads as follows:

Cost of project, defined.

The cost of any project for the purposes of [RCW 47.28.030](#) shall be the aggregate of all amounts to be paid for labor, material, and equipment on one continuous or interrelated project where work is to be performed simultaneously. The department shall not permit the construction of any project by state forces by dividing a project into units of work or classes of work to give the appearance of compliance with [RCW 47.28.030](#).

[1984 c 194 § 2.]

**(c) Justifications**

If the project is new/reconstruction on the Interstate, the justification for state-furnished materials and for State Force Work requires FHWA approval.

[RCW 47.28.030](#) requires that WSDOT have documentation on file for all State Force Work/Supplied Materials. The justification and estimate for work to be done by state forces and state-furnished materials is to be processed per region policy in sufficient time to allow for review and approval prior to advertising of the project. When FHWA approval is required, the justification must also include a request for federal funding participation.

The justification for both state-furnished materials and State Force Work must show that it is economically cost-effective to provide the materials or to perform the work with state forces. It does not matter how or when the state-supplied material was purchased or whether it was purchased through competitive bidding or not, the cost of the state-supplied material is to be incorporated into the State Force Work/Supplied Materials total costs, and the limitations per [RCW 47.28.030](#) apply. Once an item is purchased and supplied to another contract, that item becomes state-supplied material. Refer to [Figure 700-1](#) and the [EBASE Users Guide](#) for guidelines when engineering and contingencies are used (when other state agencies do the State Force Work) or when engineering and contingencies are not used (when WSDOT state forces do the work) in regard to State Force Work and for state-furnished materials.

As of July 1, 2005, the maximum total dollar value of work done by state forces per construction project, including labor, materials, and equipment, is \$60,000 or up to \$100,000 if it is an emergency, as stated in [RCW 47.28.030](#). An increase in the dollar amounts in the RCW must go before the Legislature; currently, there are no additional increases built into the law.

**(d) Blanket Approval Items**

There are a few items of work that have received a blanket approval to be performed by state forces and receive FHWA funding participation. They are: striping, pavement marking, second-stage fertilizing, and one-way piloted traffic control. With blanket approval items, WSDOT must still have documentation on file, and the dollar limitations also apply to this work.

**(e) Exceptions**

When the state provides materials and/or equipment and there is NO state labor performed by state forces on the project, the dollar limitation per [RCW 47.28.030](#) does not apply. For example, if WSDOT provides a \$90,000 sign bridge, as long as there is **no** state force labor, this dollar amount can be approved. If there is **any** state force labor (even for unrelated work such as removal of silt fence) on the project that is going to be a below-the-line item, then the aggregate total of materials and labor would exceed the \$60,000 per [RCW 47.28.030](#) and therefore cannot be approved.

Work performed off the state roadway right of way **may not** be subject to [RCW 47.28.030](#); therefore, no limit on state-supplied materials or state force labor would apply. If work is done outside the WSDOT transportation corridor (state right of way, fence line to fence line), and state force thresholds in

RCW 47.28 do not apply (wetland mitigation sites, sundry sites, and other capital facilities), then RCW 39.04 applies. This applies only to those areas outside of and unattached to existing state highway right of way.

Work that is **not** to be considered State Force Work includes inspection of any type, material testing, surveying, monitoring, public relations work, or any kind of investigation or research. If state forces do these types of work, they are to be included in the engineering and contingencies. If the cost of this work is substantial, it can be used as justification to increase the engineering and contingency percentage to offset the costs.

Inspection is defined as work performed to ensure that material or contractor installation meets the specifications outlined in the contract **after** the contract has been awarded. Inspection **does not** include work performed to correct the deficiency or failure to meet specifications.

Surveying is part of the inspection requirements. It shall be considered as construction engineering and is not subject to state force thresholds.

Material testing is defined as work performed prior to contract award or prior to the material being delivered to the contractor for ensuring the material meets the specifications outlined in the contract. Material testing includes diagnostic testing and/or modifications to the material or equipment to ensure compatibility and interoperability with the existing infrastructure. For example, when electronic equipment is procured, material testing would include assembling the equipment into a system and modifying software or hardware components as necessary to ensure the system operates as specified and is compatible with existing electronic equipment and/or software (see [Figure 700-1](#), State Force Work/Materials).

(f) **Questions Asked by WSDOT and Answered by the Attorney General's Office (AGO)**

1. **WSDOT:** If work is not related, but on the same project, does the RCW limit apply to each unrelated item of State Force Work or is all the unrelated State Force Work added together for the aggregate total for the project?

**AGO:** All State Force Work activities (labor, equipment, and materials), related or not, are included in the aggregate total and are subject to state force thresholds.

2. **WSDOT:** Has the Legislature looked at the excessive increase in costs and considered raising the dollar limitation in the RCW accordingly?

**AGO:** In 1999 the Legislature was approached about raising the limit for State Force Work to \$250,000. Under this request, the limit was raised by \$10,000 only, with a few step raises in the RCW in later years. The state Legislature would prefer work to be contracted out and the dollar limit on State Force Work kept low.

3. **WSDOT:** How does the RCW apply to contractually purchased materials used by state maintenance labor and equipment—for example, on BST projects where the aggregate is purchased through contract and stockpiled, State Force Work is requested for the labor and equipment to place the BST, and the labor and equipment is less than the dollar limitation?

**AGO:** If Maintenance purchases materials (such as crushed rock), regardless of whether this material is purchase through a competitive bidding process or not, it is considered to be from a supplier and is not considered a WSDOT construction contract. Therefore, the material is included in the aggregate total of labor, equipment, and materials and is subject to state force cost thresholds.

4. **WSDOT:** What determines a contractor versus a supplier? If we have a competitively bid contract for rock chips for chip seal jobs that we can use whenever we need to in a one-year or two-year period, is this a contractor or a supplier?

**AGO:** A supplier.

5. **WSDOT:** If there is no state labor, does the RCW dollar limit apply?

**AGO:** If there is no state labor in the project and only state-supplied materials are being purchased, the dollar limitation per [RCW 47.28.030](#) does not apply. If there is any State Force Work labor on the project, whether or not it is relevant to the materials acquisition, then the [RCW 47.28.030](#) dollar limitations apply to the aggregate total.

6. **WSDOT:** If there are overruns during State Force Work on labor, material, or equipment costs that are covered under the State Force Work request and that exceed the RCW dollar limitation, is this a violation of the law? Should this be documented and, if so, how?

**AGO:** A good faith effort is required to justify and document the state force request during the project development phase. If, during construction, the actual costs exceed the estimated costs, this is considered an incremental increase. If this happens on a consistent basis, the original estimate will not be considered a good faith effort and the law has not been followed.

7. **WSDOT:** Who has the authority to authorize State Force Work in excess of the monetary limit set in [RCW 47.28](#)?

**AGO:** No one outside the Legislature has the authority to approve State Force Work in excess of the monetary limit set in [RCW 47.28.030](#). Exceeding the RCW is a violation of the law. **The law would have to be changed by the Legislature to increase the monetary limit in [RCW 47.28](#).**

8. **WSDOT:** When does State Force Work have to be documented and kept on file?

**AGO:** Per the law, all State Force Work must have documentation on file justifying the work. [RCW 47.28.030](#) states, “When the department of transportation determines to do the work by state forces, it shall enter a statement upon its records to that effect, stating the reasons therefore” (see [Figure 700-1](#), State Force Work/Materials).

### **(30) Strip Maps**

Strip maps may be used on projects such as overlays, fog seal, BST, stockpiling, signing, safety, and similar projects when a great deal of detail is not required.

Many times a strip map can be used for a series of plans within a set of plans, such as for the signing series, if the signing is simple destination-type signing and requires no real detail. In most cases, by simply showing the construction centerline with

stationing and the required signing information, it is possible to stack the information on the sheet such that twice the information can be displayed on each sheet. Keep in mind that most of the information shown on strip maps is not really alignment-dependent; that is, a curve in the highway is not going to affect the showing of a sign at the correct station, so the centerline can appear as a straight line on the strip map.

The use of strip maps when feasible is not only an option, but is also a recommended procedure to help reduce the total number of plan sheets in the project.

The use of photographic strip maps is allowed if the work can be shown adequately and if a clear copy can be ensured.

### **(31) Temporary Erosion and Sediment Control Plans**

The *Highway Runoff Manual* provides detailed information on Temporary Erosion and Sediment Control (TESC) planning. The goal of a TESC Plan is to prevent erosion damage to projects and sediment-laden runoff that can harm the environment and waters of the state. A TESC Plan shall describe the erosion risks associated with the project and list the best management practices (BMPs) selected to reduce or eliminate the identified risks. A BMP is a design, procedural, or physical practice that prevents erosion or traps sediment.

A TESC Plan must be prepared if a construction project adds or replaces (removal of existing road surface down to base course) 2,000 square feet or more of impervious surface or disturbs 7,000 square feet or more of soil. Projects that don't meet these thresholds must address erosion control, but a stand-alone TESC Plan is optional.

To be effective, the TESC Plan must be contractually enforceable. The tools available are Division 8-01 of the *Standard Specifications*, the *Standard Plans*, General Special Provisions (GSP), and Special Provisions. In addition to the plan sheets, the selected specifications must be included in the contract. The contractually enforceable tools contained in the plan shall address the direct details the contractor will be responsible for, such as items of work; types of materials; duration; maintenance and removal of items; and measurement and payment of nonstandard items, as applicable to the specific contract. The plan sheets or Special Provisions shall show or list the locations of the BMPs.

WSDOT staff are required to attend the Construction Site Erosion & Sediment Control Course before they prepare a TESC Plan. Multiple resources for plan preparation exist, including the *Highway Runoff Manual*, *Design Manual*, *Roadside Manual*, *Hydraulics Manual*, *Construction Site Erosion and Sediment Control Course Manual*, the *Standard Specifications* (Section 8-01), and the *Standard Plans*.

WSDOT has a TESC Planning Tool that helps designers create thorough and contractually enforceable TESC Plans. The designer reviews requirements, selects BMPs, and identifies contractual tools to ensure enforcement of TESC Plans. The TESC Planning Tool helps ensure consistency in plan format as it automatically organizes and writes the TESC Plan narrative. It also greatly accelerates the process for TESC Plan review. A brief training is recommended prior to use and is available through ATMS (course code CAY).

A TESC template is available for consultant use and those who don't have access to the TESC Planning Tool. The template provides step-by-step guidance on preparing the narrative and is available online under the Guidance Materials heading at:

🔗 [www.wsdot.wa.gov/environment/waterquality/erosioncontrol.htm](http://www.wsdot.wa.gov/environment/waterquality/erosioncontrol.htm).

Other resources include Region Water Quality/Hydraulics Office staff, Environmental Office staff, and the Statewide Erosion Control Coordinator.

Some regions require that TESC Plans prepared by the project office be routed through the Region Water Quality/Hydraulics Office or Environmental Office for review. Once complete, the TESC Plan is incorporated into the contract documents.

### **(32) Truck Weigh Stations**

The components of a truck weigh station for which federal funds can be used are:

- Additional right of way.
- The construction of access lanes and vehicle standing and storage areas.
- The illumination of access lanes and vehicle standing and storage areas.

The construction of the scale house and its service facilities, scale pit, and scale are not eligible for federal-aid participation.

For additional information on truck weigh stations, see the *Design Manual*.

### **(33) Vehicle Weight Limitations Within Project Boundaries**

The designer is to review each individual project to determine whether the vehicles employed in the construction that exceed the gross weight limitations, per [RCW 46.44](#), can be tolerated.

When existing bridges or major drainage structures are involved, overweight clearance is obtained from the HQ Bridge and Structures Office. The clearance information provided by the HQ Bridge and Structures Office is to be included in the PS&E portion of the Project File.

The designer is to use the information in the *Standard Specifications*, or include the appropriate GSP in the contract provisions, to inform the contractor of the load limit restrictions for the project.

### **(34) Warranties and Guarantees**

WSDOT may choose to include warranty clauses in federal-aid highway construction contracts as specified in Code of Federal Regulations (CFR), Title 23, Volume 1 (revised April 1, 2001), Part 635, under Subpart D – General Material Requirements Section 635.413, Guaranty and warranty clauses. An excerpt from the CFR text reads as follows:

The STD may include warranty provisions in National Highway System (NHS) construction contracts in accordance with the following:

- (a) Warranty provisions shall be for a specific construction product or feature. Items of maintenance not eligible for Federal participation shall not be covered.
- (b) All warranty requirements and subsequent revisions shall be submitted to the Division Administrator for advance approval.
- (c) No warranty requirement shall be approved which, in the judgment of the Division Administrator, may place an undue obligation on the contractor for items over which the contractor has no control.
- (d) A STD may follow its own procedures regarding the inclusion of warranty provisions in non-NHS Federal-aid contracts.

There may be occasions when the regions have the need to include warranty and/or guarantee clauses in state-funded contracts. The region will notify the Construction Materials Engineer at the HQ Materials Laboratory and request concurrence with the specification prior to including the Special Provision in the contract documents.

The contractor is required to pass along to WSDOT all manufacturers' normal guarantees and warranties for products and equipment installed on the project.

### **(35) Washington State Laws**

Following is a partial listing of laws that are frequently used in the administration of WSDOT contracts:

1. [RCW 4.24.360](#): Any clause in a construction contract that disallows a contractor, subcontractor, or supplier any damages due to unreasonable delays in performance caused by WSDOT is void and unenforceable.
2. [RCW 18.27.090](#): Contractors are exempt from contractor registration laws provided they are prequalified by WSDOT.
3. [RCW 18.104.048](#): Prior notice of well construction, reconstruction, or decommissioning of wells is required (see [700.05\(7\)\(a\)](#)).
4. [RCW 19.122.040](#): Existing utility locations (see [400.06](#) for the contents of this RCW).
5. [RCW 39.12](#): Wages (see Section 1-07.9 of the *Standard Specifications*).
6. [RCW 39.19](#): See the GSP concerning minority and women's businesses.
7. [RCW 46.44](#): Vehicle weight limitations within project boundaries.
8. [RCW 47.28.030](#): State Force Work and materials (see [700.05\(25\)](#)).
9. [RCW 47.28.035](#): Related to RCW 47.28.030, State Force Work and materials (see [700.05\(25\)](#)).
10. [RCW 47.28.070](#): Prequalification of contractors (see Section 1-02.1 of the *Standard Specifications*).
11. [RCW 47.28.100](#): Contractors are allowed 20 days after award to execute a contract. WSDOT may extend this time no more than an additional 20 days (see Sections 1-03.3 and 1-03.5 of the *Standard Specifications*).
12. [RCW 47.28.120](#): Contractors must file their claims within 180 days after acceptance (see Section 1-09.9 of the *Standard Specifications*).
13. [RCW 47.30](#): Requirements for paths and trails.
14. [RCW 49.28](#): Wages – overtime.
15. [RCW 60.28.011](#): WSDOT must hold 5% of the contract amount in reserve for material and worker claims. Contractors can post a bond in lieu of the reserve fund (see Section 1-09.9 of the *Standard Specifications*).
16. [RCW 78.44](#): A Contract Reclamation Plan is required for every WSDOT contract that contains a WSDOT-furnished materials source (see [400.06](#)).

Some of the laws are referenced in the *Standard Specifications* or the GSPs; some are not. In either case, these laws are not to be altered. All Special Provisions that appear to be altered should be questioned.

**(36) Washington State Patrol Work Zone Enforcement and Assistance**

If Washington State Patrol (WSP) use is warranted on a project, an estimated dollar amount shall be included in the project estimate as a below-the-line item. WSP enforcement duties will not be identified in the contract. If WSP assistance is to be used as a required element of the traffic control plans, it should be identified on the plans and provided as a resource to the contractor with a General Special Provision.

Refer to the [Traffic Manual](#), Appendix 5.A, for more information on when and how to include WSP in a project.

**(37) Working Days**

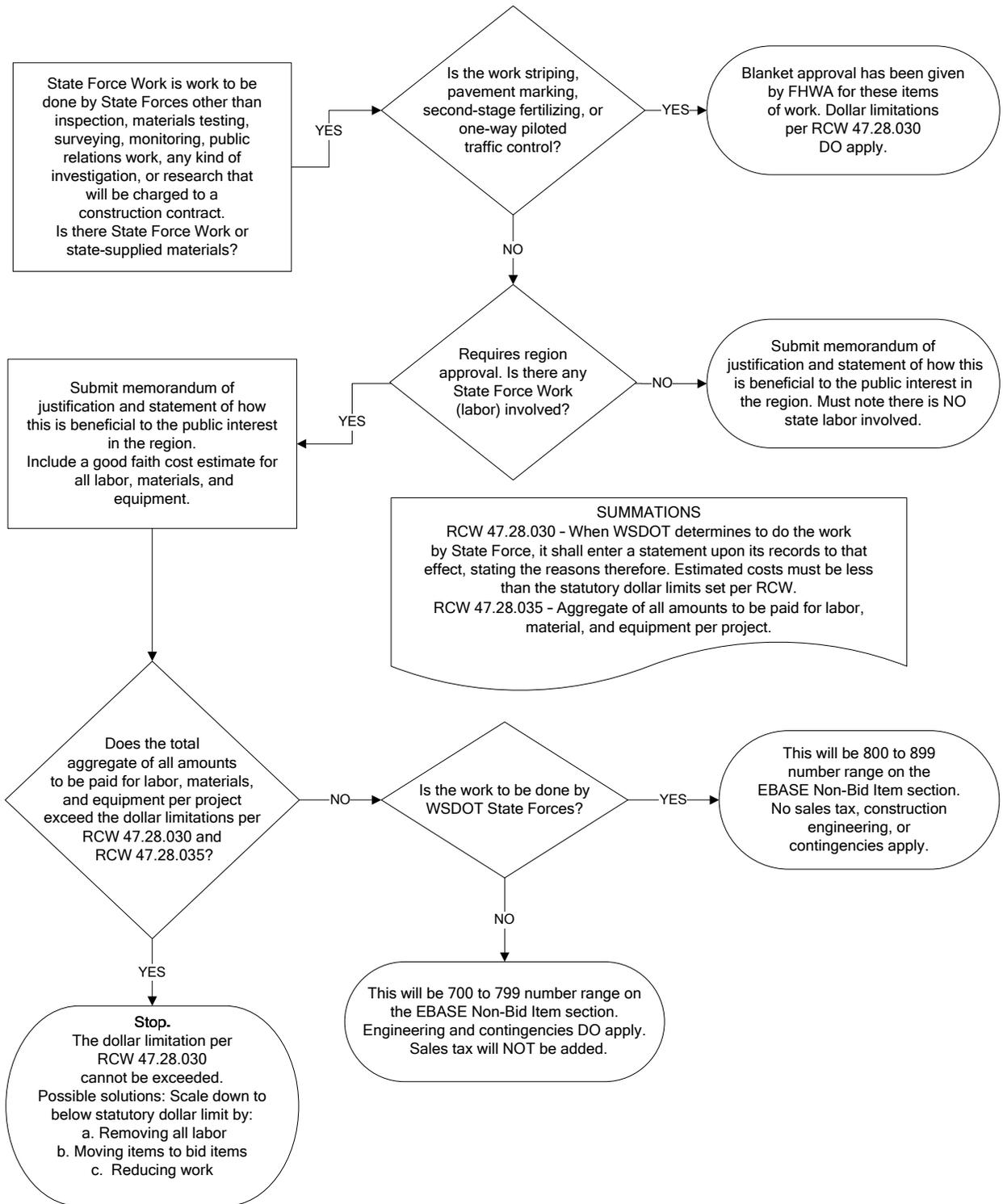
The designer needs to give careful consideration to the number of working days allowed for a project. Too many working days can cause as many problems as not enough working days.

The determination of working days for the different work items is to be based on production rates and other considerations (see the [Appendices](#)). Using the time required for the individual work items, the Critical Path Method (CPM) (see [Appendix 6](#)) is then used to determine how the project work will fit together, and the total number of working days will be determined.

The working days required for bridge construction are to be coordinated with the working days required for the other construction.

The CPM will be placed in the PS&E portion of the Project File.

# STATE FORCE WORK/MATERIALS



State Force Work/Materials  
 Figure 700-1

