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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.

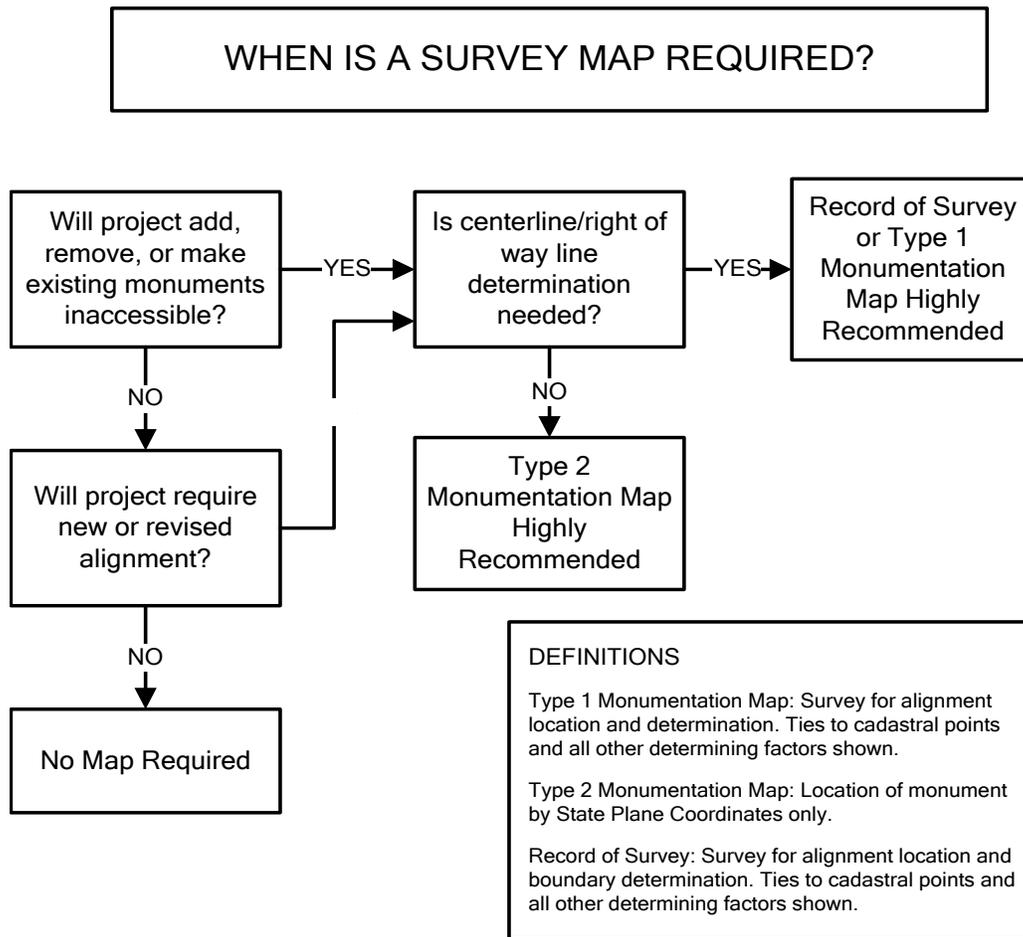
200.02 Record of Survey

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.

Exhibit 2-1 When to Prepare a Survey Document



200.02(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

200.02(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.

200.02(3) English Units Only

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

200.02(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.

200.02(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.

200.02(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.

200.02(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.

200.02(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.

(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.

200.02(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.

200.02(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.

200.02(11) Drawing Standards

All Records of Survey are to be prepared with English units, with Bentley drafting and design applications using the current WSDOT Computer Aided Engineering (CAE) 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.

200.02(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.

200.02(13) Metric Equivalent

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

200.02(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

200.02(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® if required 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 paper copy to the HQ Survey Support Section.

The number of copies submitted for recording are:

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

200.02(16) Headquarters Processing

The original paper copy (with county recording information) will be retained permanently by the HQ Survey Support Section.

200.03 Monumentation Map

200.03(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.

200.03(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.

200.03(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.

200.03(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

200.03(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.

200.03(6) English Units Only

Monumentation Maps are to be prepared in English units only.

200.03(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.

200.03(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.

200.03(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.

200.03(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.

200.03(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.

200.03(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.

200.03(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.

200.03(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.

200.03(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.

200.03(16) Metric Equivalent

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

200.03(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

200.03(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® if necessary 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 paper copy to the HQ Survey Support Section.

The number of copies submitted for filing are:

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

200.03(19) Headquarters Processing

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

200.04 State Land Plats

200.04(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.

200.04(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

200.04(3) English Units Only

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

200.04(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.

200.04(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.

200.04(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.

200.04(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.

200.04(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.

200.04(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](#)).

200.04(10) Drawing Standards

All Land Plats are to be prepared with English units, with Bentley [drafting and design applications](#) using the [current](#) WSDOT Computer Aided Engineering (CAE) 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.

200.04(11) Metric Equivalent

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

200.04(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.

200.05(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.

200.05(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.

200.05(3) English Units Only

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

200.05(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.

200.05(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.

200.05(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.

200.05(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.

200.05(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.

200.05(9) Metric Equivalent

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

200.05(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.

200.05(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.

200.06(1) References

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

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

[RCW 58.20](#), Washington coordinate system

200.06(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.

200.06(3) English Units Only

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

200.06(4) Alignment

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

200.06(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.

200.06(6) Coordinates

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

200.06(7) Metric Equivalent

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

200.06(8) Certificates Required

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

200.06(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.

200.06(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.

Exhibit 2-2a Monumentation Map

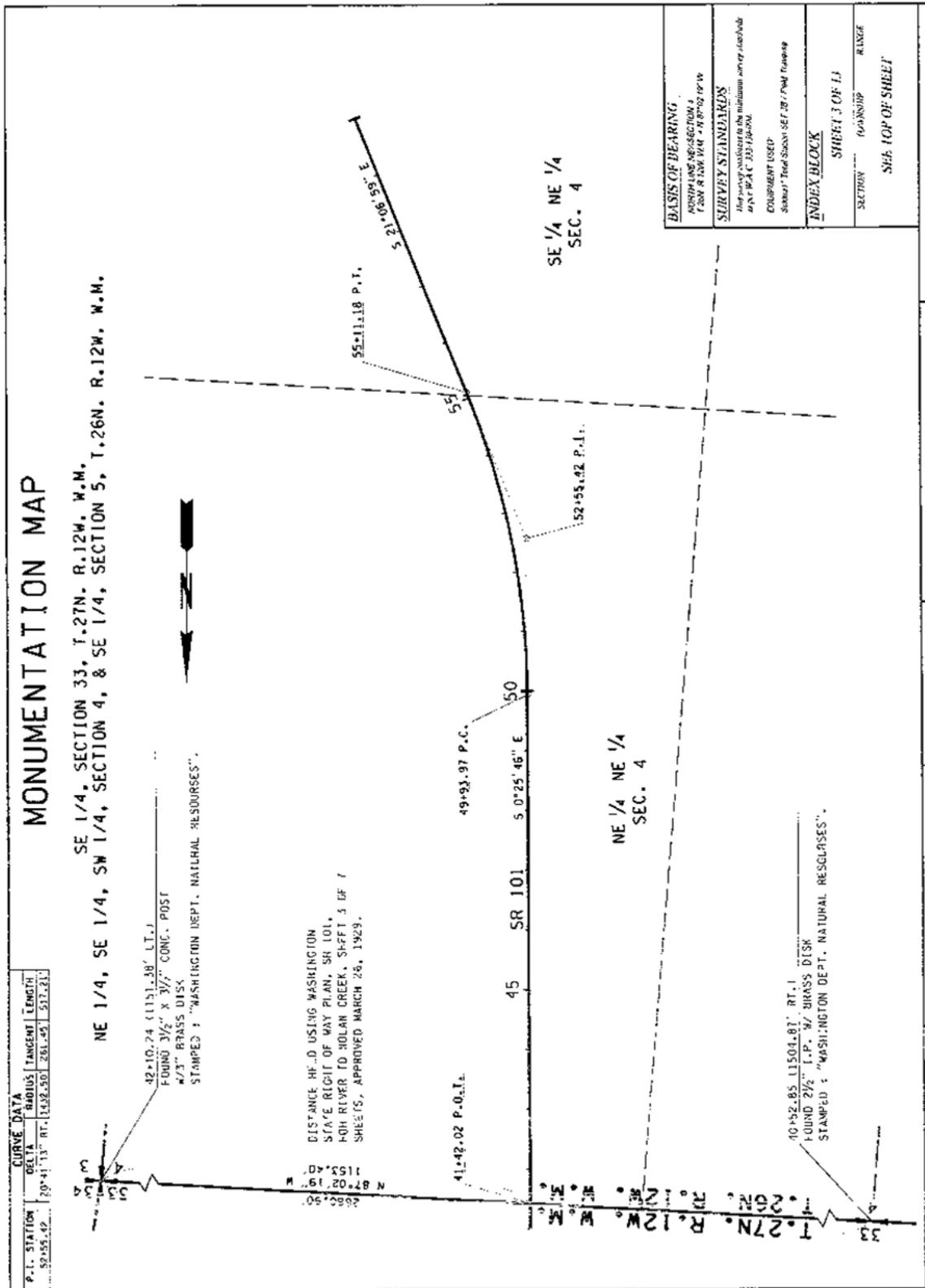
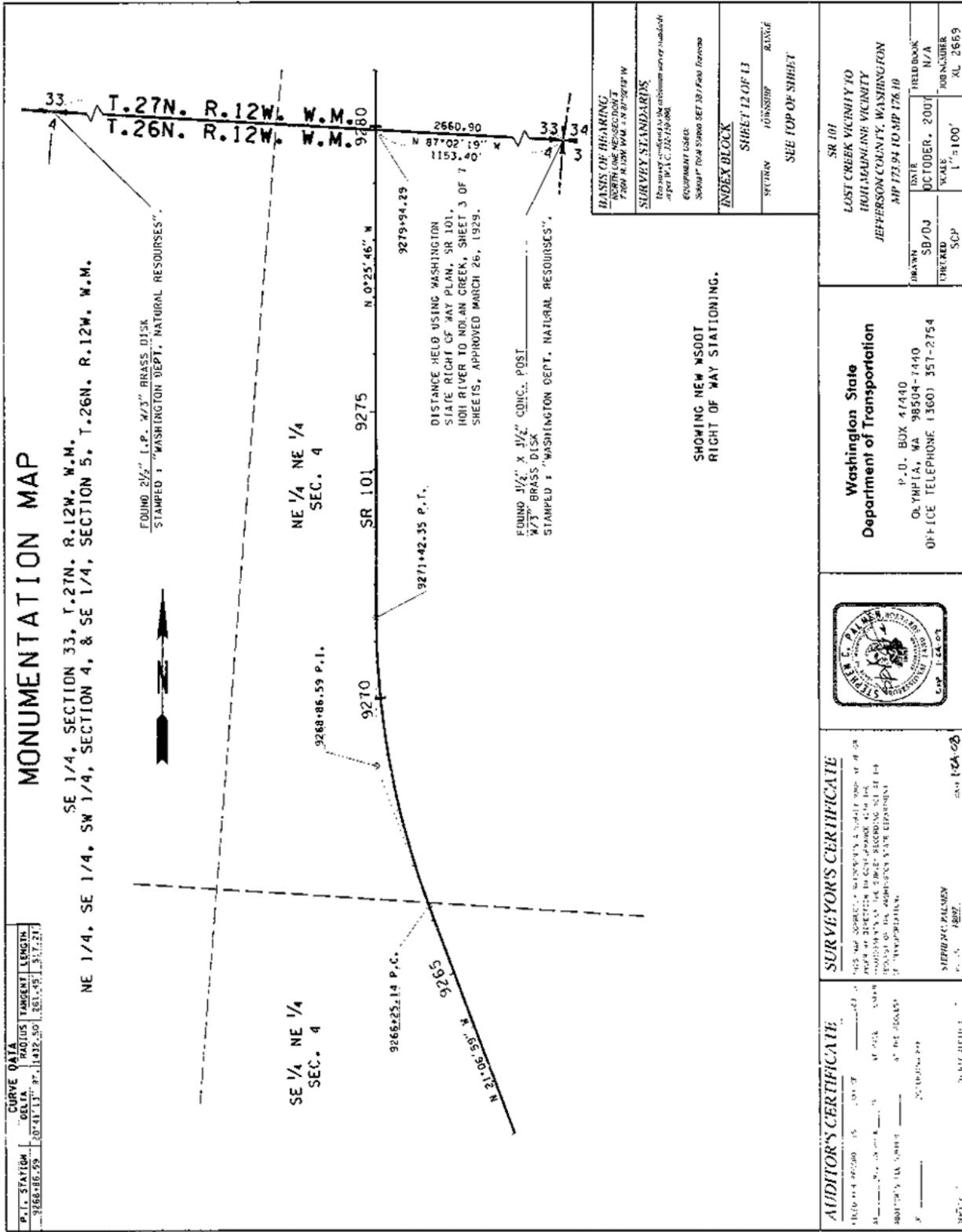


Exhibit 2-2b Monumentation Map



215 291

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.)

Exhibit 2-3 Survey Document Checklist: Mapping Elements

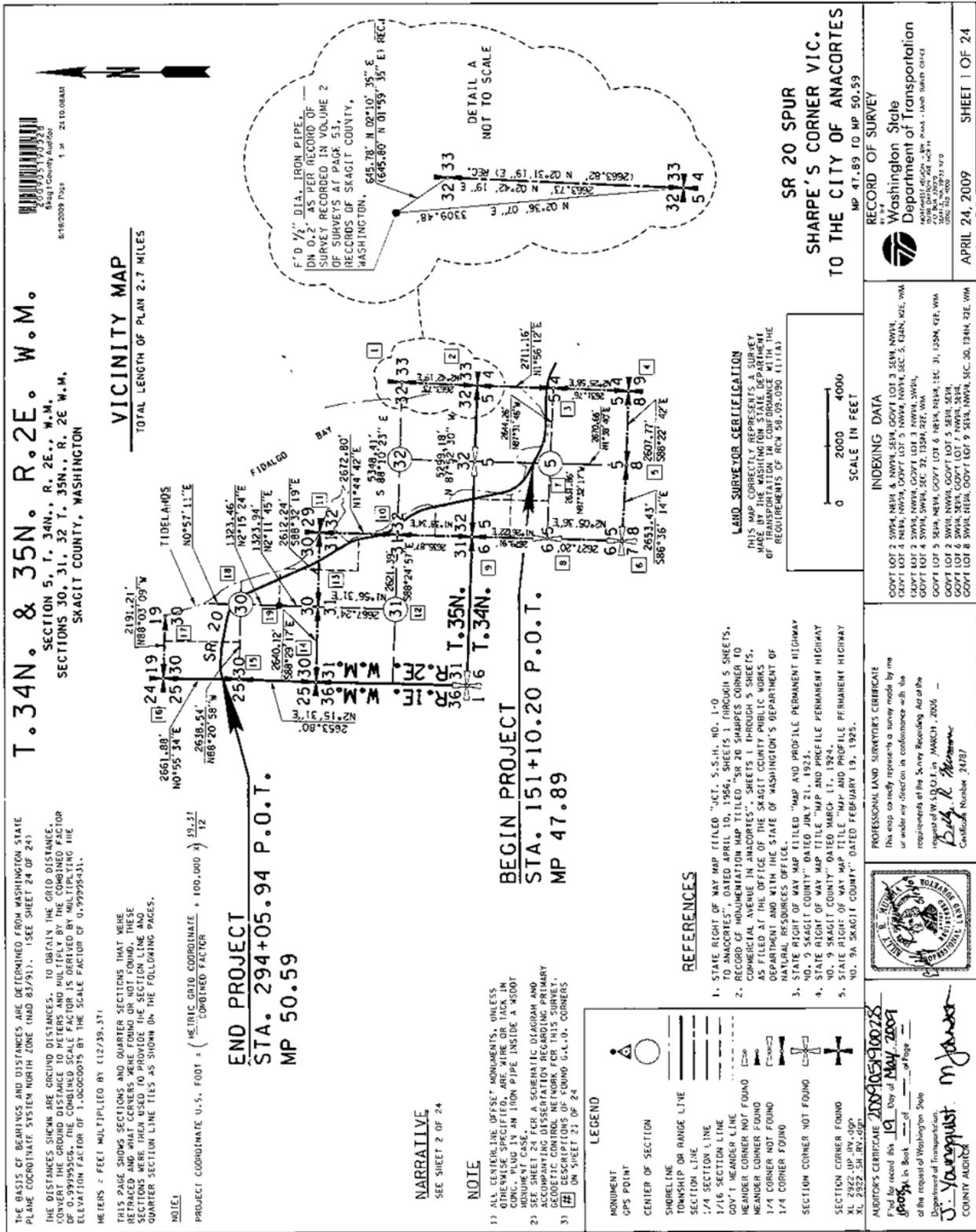
Record of Survey	Monumentation Map Type 1	Monumentation Map Type 2	Not Applicable	MAPPING ELEMENTS (WAC 332-130-050)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Recording officer’s information block must be on the bottom or the right edge of the 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"/>	<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"/>	<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 WAC 332-130-100 .
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Survey Standard Notes per WAC 332-130-080 and WAC 332-130-090 .
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Record of Survey sheet size shall be on 18” X 24” paper, with a 2” left margin & ½” on the other pages.
<input type="checkbox"/>	<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.
				Show bearings in degrees, minutes, and seconds.
				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"/>	<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"/>	<input type="checkbox"/>	Identify any ambiguities, hiatuses, and/or overlapping boundaries.

(Table continued on following page)

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

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"/>	<input type="checkbox"/>	Spiral (delta, rate of change, and length) and curve data (delta, radius, tangent, and length) on both the survey document and the Right of Way Plan.
<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 000). 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"/>	<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"/>	<input type="checkbox"/>	Show computed bearings and distances as bold text.
<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"/>	<input type="checkbox"/>	Station and tie to all found and computed General Land Office corners.
<input type="checkbox"/>	<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"/>	<input type="checkbox"/>	No lines running through text.
<input type="checkbox"/>	<input type="checkbox"/>	<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"/>	<input type="checkbox"/>	Identify Type 1 or 2 Monumentation Map.
Narrative Elements				
<input type="checkbox"/>	<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"/>	<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"/>	<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"/>	<input type="checkbox"/>	<input type="checkbox"/>	Any discrepancies and/or deviations shown and explained.

Exhibit 2-4 Scale Elevation and Combined Factors



T. 34N. & 35N. R. 2E. W.M.
 SECTION 5, T. 34N., R. 2E., W.M.
 SECTIONS 30, 31, 32 T. 35N., R. 2E. W.M.
 SKAGIT COUNTY, WASHINGTON

VICINITY MAP
 TOTAL LENGTH OF PLAN 2.7 MILES

END PROJECT
 STA. 294+05.94 P.O.T.
 MP 50.59

BEGIN PROJECT
 STA. 151+10.20 P.O.T.
 MP 47.89

SR 20 SPUR
SHARPE'S CORNER VIC.
TO THE CITY OF ANACORTES
 MP 47.89 TO MP 50.59

DETAIL A
 NOT TO SCALE

LAND SURVEYOR CERTIFICATION
 THIS MAP CORRECTLY REPRESENTS A SURVEY MADE BY THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION IN CONFORMANCE WITH THE REQUIREMENTS OF RCW 36A.05-030 (11)(A).

RECORD OF SURVEY
 Washington State Department of Transportation
 APRIL 24, 2009 SHEET 1 OF 24

THE BASIS OF BEARINGS AND DISTANCES ARE DETERMINED FROM WASHINGTON STATE PLANE COORDINATE SYSTEM NORTH ZONE (NAD 83/91). (SEE SHEET 24 OF 24)
 THE DISTANCES SHOWN ARE GROUND DISTANCES. TO OBTAIN THE GRID DISTANCE, CONVERT THE GROUND DISTANCE TO METERS AND MULTIPLY BY THE COMBINED FACTOR OF 0.99999506. THE COMBINED SCALE FACTOR IS DERIVED BY MULTIPLYING THE ELEVATION FACTOR OF 1.000005 BY THE SCALE FACTOR OF 0.99999506.
 METERS = FEET MULTIPLIED BY (127/39.37)

THIS PAGE SHOWS SECTIONS AND QUARTER SECTIONS THAT WERE REFINED AND WHAT CORNERS WERE FOUND OR NOT FOUND. THESE CORNERS ARE SHOWN IN RED. THE CORNERS SHOWN IN BLUE ARE QUARTER SECTION CORNERS. THE DISTANCES SHOWN ON THESE PAGES, PROJECT COORDINATE U.S. FOOT * (METRIC GRID COORDINATE + 100,000) * 12

NARRATIVE
 SEE SHEET 2 OF 24

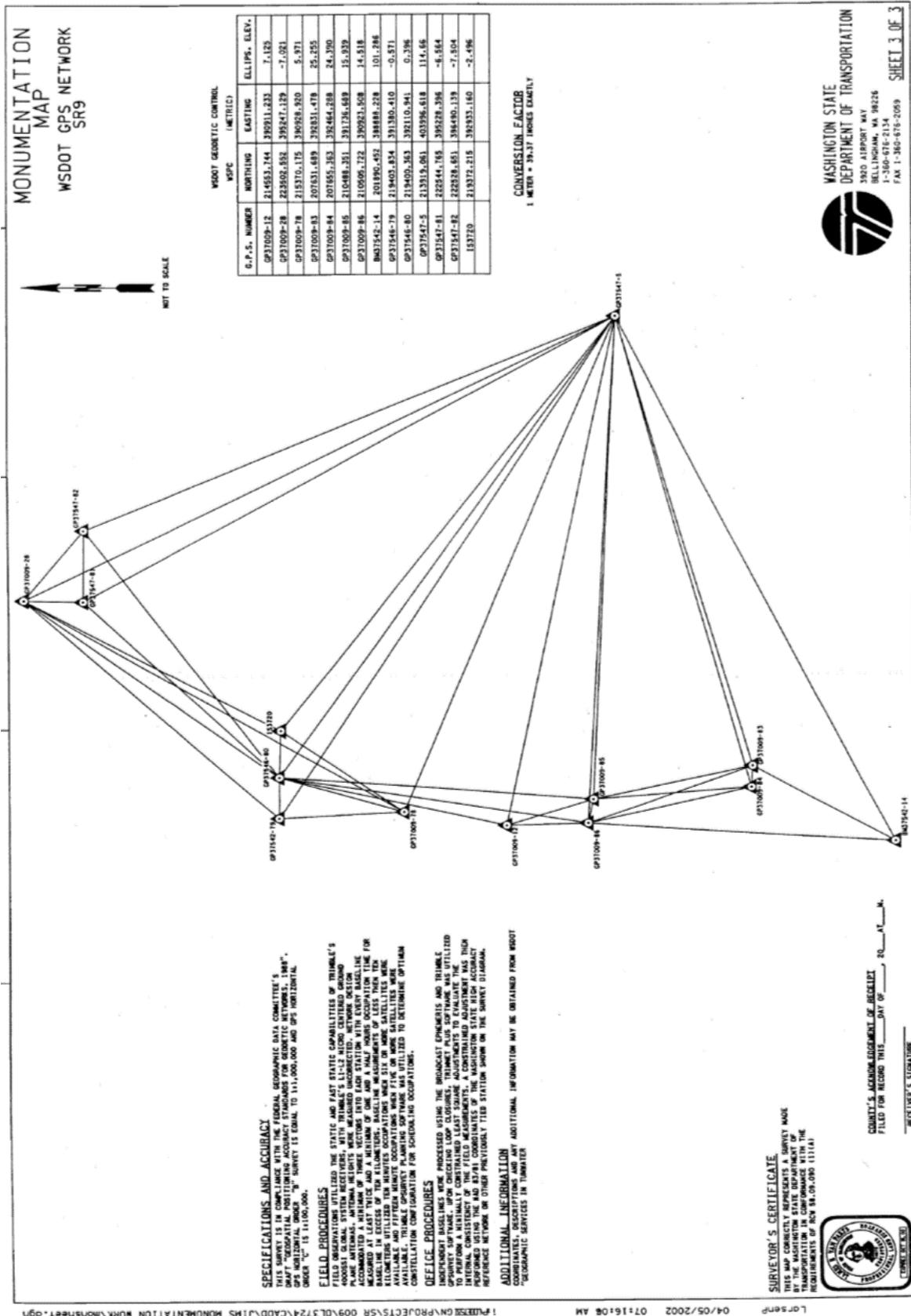
NOTE
 1) ALL CENTERLINE OFFSET MONUMENTS, UNLESS SPECIFICALLY NOTED OTHERWISE, ARE TO BE CONSIDERED AS BEING PLACED IN AN IRON PIPE INSIDE A ROOT MONUMENT CASE.
 2) SEE SHEET 24 FOR A SCHEMATIC DIAGRAM AND ACCOMPANYING DISSEMINATION REGARDING PRIMARY MONUMENTS AND THE LOCATION OF ALL CORNERS.
 3) [Symbol] ON SHEET 21 OF 24

LEGEND
 MONUMENT
 OPS POINT
 CENTER OF SECTION
 TOWNSHIP OR RANGE LINE
 SECTION LINE
 1/4 SECTION LINE
 1/16 SECTION LINE
 GOVT MEANDER LINE
 MEANDER CORNER NOT FOUND
 MEANDER CORNER FOUND
 1/4 CORNER NOT FOUND
 1/4 CORNER FOUND
 SECTION CORNER NOT FOUND
 SECTION CORNER FOUND
 XL 2922-UP, RV, 09P
 XL 2922-SH, RV, 09P

REFERENCES
 1. STATE RIGHT OF WAY MAP TITLED "U.S.S.H. NO. 1-0 TO ANACORTES", DATED APRIL 10, 1966, SHEETS 1 THROUGH 5, SHEETS, RECORD OF MONUMENTATION MAP TITLED "SR 20 SHARPE'S CORNER TO COMMERCIAL AVENUE IN ANACORTES", SHEETS 1 THROUGH 5 SHEETS, AS FILED AT THE OFFICE OF THE SKAGIT COUNTY PUBLIC WORKS DEPARTMENT AND WITH THE STATE OF WASHINGTON'S DEPARTMENT OF NATURAL RESOURCES OFFICE.
 2. STATE RIGHT OF WAY MAP TITLED "MAP AND PROFILE PERMANENT HIGHWAY NO. 9 SKAGIT COUNTY" DATED JULY 21, 1923.
 3. STATE RIGHT OF WAY MAP TITLED "MAP AND PROFILE PERMANENT HIGHWAY NO. 9 SKAGIT COUNTY" DATED JULY 21, 1923.
 4. STATE RIGHT OF WAY MAP TITLED "MAP AND PROFILE PERMANENT HIGHWAY NO. 9 SKAGIT COUNTY" DATED JULY 21, 1923.
 5. NO. 9A SKAGIT COUNTY" DATED FEBRUARY 19, 1925.

INDEXING DATA
 GOVT LOT 3 SW/4 NE/4 NW/4 SE/4 GOVT LOT 3 SW/4 NW/4 SEC. 5, T34N, R2E, W4M
 GOVT LOT 4 SW/4 NW/4 GOVT LOT 3 NW/4 SW/4, SEC. 5, T34N, R2E, W4M
 GOVT LOT 5 SW/4 NW/4, SEC. 32, T35N, R2E, W4M
 GOVT LOT 6 SW/4 NW/4, GOVT LOT 6 NE/4, NE/4, SEC. 31, T35N, R2E, W4M
 GOVT LOT 7 SW/4 NW/4, GOVT LOT 7 SE/4, SE/4, SEC. 31, T35N, R2E, W4M
 GOVT LOT 8 SW/4 NW/4, GOVT LOT 8 SE/4, SE/4, SEC. 30, T34N, R2E, W4M

Exhibit 2-5 Control Scheme (Network Diagram)



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.

Exhibit 2-6 State Plat Checklist

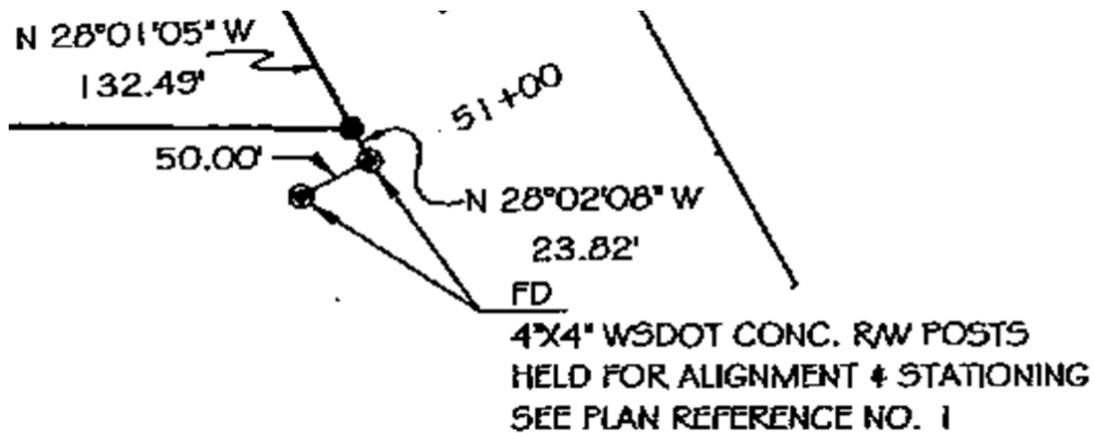
A. General WSDOT Land Plat Drafting Requirements for Uplands	
<input type="checkbox"/>	Date prepared.
<input type="checkbox"/>	Sheet identification number (for example, "sheet 1 of 2").
<input type="checkbox"/>	Title of survey.
<input type="checkbox"/>	State Route (SR) shown on alignment.
<input type="checkbox"/>	Cross streets graphically shown and identified on Land Plat.
<input type="checkbox"/>	Equipment and Procedure Note per WAC 332-130-100 .
<input type="checkbox"/>	Survey Standard per WAC 332-130-080 and WAC 332-130-090 .
<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 000). 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.
<input type="checkbox"/>	Show computed bearings and distances as bold text .
<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.

(Table continued on the following page)

Exhibit 2-6 (continued) State Plat Checklist

<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. Riparian Land Plat Drafting Requirements (in addition to General Land Plat Requirements)	
<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.
C. Littoral Land Plat Drafting Requirements (in addition to General Land Plat Requirements)	
<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.

Exhibit 2-7a Basis of Stationing



OR

Exhibit 2-7b Basis of Stationing

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.