

SECTION 1: OFFICE ORGANIZATION AND PERSONNEL POLICIES

1.1 WHO ARE WE AND WHAT DO WE DO

1.1.1 THE SECTION'S MISSION, KEY VALUES, GOALS, AND ORGANIZATION

1.1.1.1 Mission - The Bridge Engineering Section's mission is to provide engineering programs, plans, and related services that will lead to construction and maintenance of safe, economical, fully functional, and aesthetically pleasing structures and facilities.

1.1.1.2 Key Values:

- We are dedicated to serving our customers who include:
 - Field engineering crews and contractors who use the plans and specifications to build the bridges and structures designed by us.
 - The traveling public who expect safe travel on our bridges.
 - Other agencies requiring bridge information by providing professional designs, plans, and specifications, and reports.
- The Bridge Engineering Section values its employees as its most important resource. We value their skills, judgment, and creativity. We promote teamwork and leadership and encourage quality effort from all individuals. We value each person's unique abilities and his or her sense of self-worth.
- We value open communication with all our coworkers while respecting their judgment and input.
- We strive to increase productivity and efficiency while delivering a quality service.

1.1.1.3 Goals:

- Achieve engineering excellence by providing timely, cost-effective, high-quality engineering service, using innovation as required.
- Provide effective management of resources.
- Provide accurate and timely input in the scoping/location phase.
- Promote professional development of personnel.
- Provide comprehensive bridge preservation programs.

1.1.1.3 Goals: - (continued)

- Develop and implement a comprehensive bridge management program in order to more effectively manage programs and data associated with structures, and to document decisions and policies.
- Perform special studies as required.

Before the beginning of each fiscal year, the Bridge Section's "B" Team establishes objectives with accompanying milestones for each of these permanent goals. Refer to your Team Supervisor's copy of the current objectives and their milestones.

1.1.1.4 Bridge Engineering Section Organization

Administration Team – Administration Manager

Bridge Engineering Section – State Bridge Engineer

- Structural Design Teams
 - Design Team 1 – Structural Managing Engineer
 - Design Team 2 – Structural Managing Engineer
 - Design Team 3 – Structural Managing Engineer
 - Design Team 4 – Structural Managing Engineer
- Preservation Engineering Team – Preservation Managing Engineer
- Bridge Operations Team – Bridge Operations Managing Engineer

1.1.2 THE SECTION'S RESPONSIBILITIES

1.1.2.1 Administrative Support Team:

- Types Section's biennial Goals and Objectives.
- Assists in preparation of the Section's biennial/fiscal budget.
- Assists in preparing letters, reports, and other forms of communication.
- Processes mail.
- Prepares and processes monthly payroll.
- Maintains the general filing system of current Section records and drawings as well as provide for the storage of older files.
- Maintains engineering and office supplies, acquires new equipment and arranges for repair of existing equipment.
- Coordinates personnel needs for the Section, and completes appropriate forms.
- Coordinates, assigns and enters data with regard to bridge numbers and drawing numbers.
- Processes the Section's accounts payable and accounts receivable.
- Scans text and image documents into various formats.
- Answer phones and handles walk-ins.

1.1.2.2 Structural Design Teams:

- Provides designs, contract plans, special provisions, and estimates for construction of transportation-related structures including:
 - Vehicular, including light-rail and railway bridges.
 - Pedestrian bridges.
 - Retaining walls.
 - Tunnels and rigid frames.
 - Box culverts, structural plate pipes and structural plate arches.
 - Major sign supports and traffic signal and luminaire poles.
 - Sound walls.
 - Impact attenuators on bridge decks.

1.1.2.2 **Structural Design Teams: - (continued)**

- The PS&E process described in the first bullet also includes incidental items such as providing assistance during project development, design checks, construction schedules, and construction assistance as required by the Construction Project Manager.
 - Monitors project development, design work, PS&E and “As Constructed” drawing preparation by consultants and other governmental agencies.
 - Load-rates existing bridges.
 - Compiles and prepares summaries of the design and construction costs of structures based on contract plans.
 - Assists the Operations Support Section and Regions during the contract period:
 - With structural-related issues, when requested.
 - By reviewing contract working drawings (shop drawings and temporary construction drawings and calculations).
 - Prepares “As Constructed” drawings for contract plans produced by the Bridge Section.
 - Participates in the seismic design and retrofit program.
 - Participates in development and maintenance of structural design computer programs used by the Bridge Section.
 - Develops new and revises existing ODOT design and construction specifications for structural items.
 - Develops new and revises existing bridge standard drawings.
 - Reviews and makes recommendations for proposed revisions of AASHTO structural design and construction specifications.
 - Provides technical support to the Bridge Operations Team including inspection and repair procedures.
 - Provides technical support to other ODOT units and outside governmental agencies.

1.1.2.3 **Preservation Engineering Team:**

- Provides multi-disciplined engineering services to extend the useful life of bridges.
- Manages the Coastal Bridge Program which includes:
 - Evaluating structural deterioration from corrosive environments and developing projects to correct and prevent further damage.
 - Providing designs, design checks, contract plans, special provisions, estimates and construction schedules for rehabilitation and cathodic protection systems.

Provides assistance to the Regions with the operation and maintenance of installed cathodic protection systems.

1.1.2.3 Preservation Engineering Team: - (continued)

- Manages Movable Bridge Program which includes:
 - Evaluating structural, electrical, and mechanical operating systems of movable bridges and developing projects to correct deficiencies and upgrade systems to current safety and operating standards.
 - Providing designs, design checks, contract plans, special provisions, estimates and construction schedules for rehabilitation and replacement of movable bridges.
 - Assisting Regions with operation and maintenance of the structural, electrical, and mechanical operating systems of movable bridges.
- Manages Fracture Control Program which includes:
 - Evaluating steel bridges with fracture critical members under an engineered plan to avoid brittle failure.
 - Evaluating steel bridges with fracture-prone details to correct and avoid fatigue damage deficiencies.
 - Developing inspection plans, nondestructive testing methods and analysis methods for early detection and qualification of fracture and fatigue damage.
 - Specifying and approving weld details and procedures for welded steel structures.
 - Providing designs for fracture repair.
 - Managing engineering services contracts for specialized metallographic, instrumentation, and inspection.
 - Assisting Regions with welding problems, fracture problems, and specialized inspection.
- Manages Thermal Deicing Program which includes:
 - Evaluating existing bridges and developing projects for potential benefits from a thermal deicing system.
 - Providing designs, design checks, contract plans, special provisions, estimates and construction schedules for electrical and hydronic bridge thermal deicing systems.
 - Assists the Regions with the operation and maintenance of thermal deicing systems.

1.1.2.4 Bridge Operations Team:

- Develops and maintains Bridge Management System for Oregon bridges including:
 - Bridge inventory data.
 - Bridge Inspection Reports.
- Establishes and coordinates the statewide bridge inspection program including local agency programs.
- Establishes, coordinates, and participates in statewide underwater inspection and sounding program.
- Establishes and coordinates bridge load rating program for all publicly owned bridges in Oregon.
- Assists ODOT Transportation Permits Unit with overload permit requests.
- Acts as consultant to Regions concerning structural problems, repairs, and maintenance of existing structures.
- Provides bridge inspection training.

1.1.3 THE TEAM CONCEPT

1.1.3.1 The Section's Basic Crews/Teams - For many years, the members of a Bridge Section crew were tied together by common administrative or technical responsibilities. A crew seldom, if ever, met as a group to discuss or make decisions about technical or personnel questions and problems. The crew supervisor made most of the major decisions or interpretations of policy.

However, in 1992 to improve productivity, the ODOT management initiated the three phases of the Shared Leadership concept:

- Working Program.
- Team Development, or Teambuilding.
- Performance Measurement.

Later, another element was added: Pride in Public Service.

The Teambuilding phase "provides skills and a process to empower employee groups to plan, make decisions, and hold themselves accountable". The three basic goals of teambuilding are:

- To build an environment of open communication and mutual trust and to demonstrate the value of cooperative effort by the team.
- To develop the team's ability to solve problems.
- To be able to achieve consensus decisions.

The Bridge Engineering Section crews have gone through the original teambuilding process, usually about 3 days in length and held at a location away from the crew's work area. Team members, including the Team Supervisors, have learned what kind of attitude they are expected to have and what contributions they are expected to make. They become familiar with the formal Team-meeting structure:

- Regular meeting dates.
- Written agendas.
- Rotational assignments as positional leader and recorder.
- Meeting critiques.

Periodically, a team may go through a rebuilding session to revise or improve the original team organization.

1.1.3.2 The Section's Managerial Teams

(1) "B" Team - The membership of the Bridge Section Management Team, or "B" Team, is:

- Bridge Engineer.
- Administrative Support Team Supervisor.
- Structural Design Team Supervisors.
- Preservation Engineering Team Supervisor.
- Operations Team Supervisor.

1.1.3.2 The Section's Managerial Teams – (continued)

The "B" Team's purpose is to improve the management of Oregon's bridge system through:

- Strategic leadership.
- Resource allocation.
- Work processes development.
- Capability development.
- Personnel development.

The interest and authority of this Team covers the following areas:

- Section Goals and Objectives/Milestones.
- Organization structure and staffing levels and personnel allocations.
- Statewide bridge strategy including:
 - Funding.
 - Maintenance.
 - Rehabilitation.
 - Replacement.
 - Bridge management process.
- Customer service policies and procedures.
- Budget and equipment need.
- Workload management including level of consultant activity and project priorities.
- Office administrative policies.
- *Office Practice Manual* update and approval of related issues.
- Criteria and guidelines for hiring team leaders and members.
- Performance standards and measurements.
- Training policy and execution.
- Personnel policies.

Meeting every other month on the even-numbered month, the "B" Team formally addresses written agenda items according to the "team procedures" promoted by teambuilding training.

Every other Monday morning, the "B" Team members meet informally for an informational staff meeting.

1.1.3.2 The Section's Managerial Teams – (continued)

(2) PAS Team - The Project Assignment and Scheduling (PAS) Team of the Bridge Section consists of the four Structural Managing Engineers.

With a meeting every two weeks, the PAS Team:

- Monitors the Project Control System (PCS) Schedule.
- Reviews new projects.
- Makes assignments of new or checking jobs to Design Teams.
- Provides mutual technical support.

1.2 GETTING ACQUAINTED/OFFICE ROUTINE

1.2.1 WHAT'S WHERE

1.2.1.1 Units and Services in the Transportation Building

(1) Basement:

- Contractor Plans & Specifications Unit.
- Facilities Maintenance.
- Mail Center, Support Services Branch.
- Reprographics and Map Distribution Unit, Support Services Branch.
- Service Center, Support Services Branch.
- Department of Administrative Services (DAS) Mail Copy Center.
- Other facilities and services:
 - Commuter Information Board.
 - Postage stamp dispenser.
 - Public cafeteria.
 - Public notices board.
 - Public copy machine.
 - Vending machines.
 - Showers and lockers, men's and women's restrooms.

(2) First Floor:

- General Files and History Center, Support Services branch.
- Human Resources and Organization Development Branch including Personnel Services Section.
- Large Conference Room 122 (also hearing room for Oregon Transportation Commission).
- Office of Director, and Deputy Director, of Transportation.
- Public Transit Unit, Transportation Development Branch.
- *Transcript* office, Communications Branch.
- Other facilities and services:
 - Conference Room 125.
 - Employee lounge.
 - Information window.
 - Public telephones.

1.2.1.1 Units and Services in the Transportation Building – (continued)

(3) Second Floor:

- Bikeway/Pedestrian Program office.
- Engineering Services Section including
 - Landscape Unit.
 - Permits office.
 - Preliminary Design Unit.
 - Project Services Unit.
- Right-of-Way Engineering Section.
- Roadway Engineering Section including:
 - Roadway Design Unit.
- Technical Services Branch office.
- Other facilities:
 - Conference Room 211.

(4) Third Floor:

- Bridge Engineering Section
- Geo/Hydro Section
- Project Support Section including:
 - Construction Program Unit.
 - Cost Estimating Unit.
 - Contracts Unit.
 - Specifications Unit.
- Other facilities:
 - Conference Room 308.
 - Employee lounge.

(5) Fourth Floor:

- Financial Services Branch.
- Right-of-Way Services including Railroad & Utility Engineer office.
- Other facilities and services:
 - Conference Room 406.
 - Vending machines.

(6) Fifth Floor:

- Illustration and Design Unit, Communications Branch.
- Traffic Engineering Section.

1.2.1.2 Bridge Floor Plan

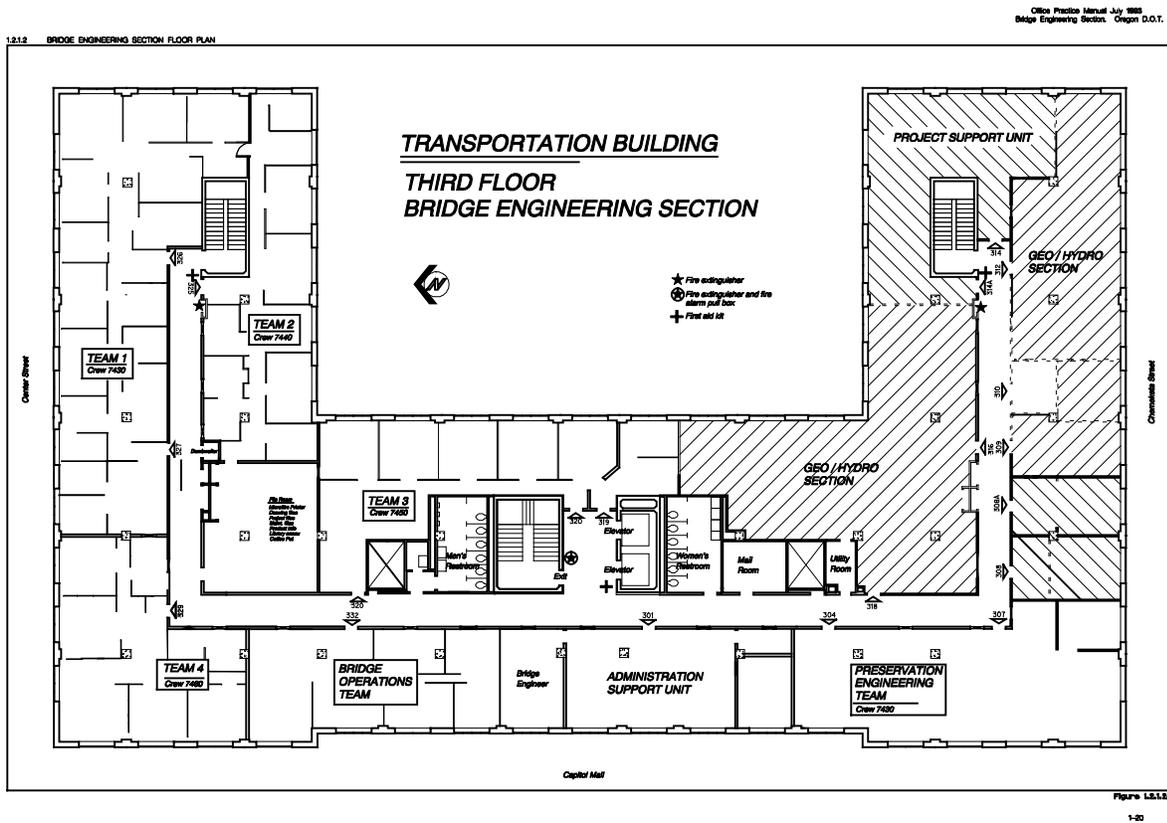
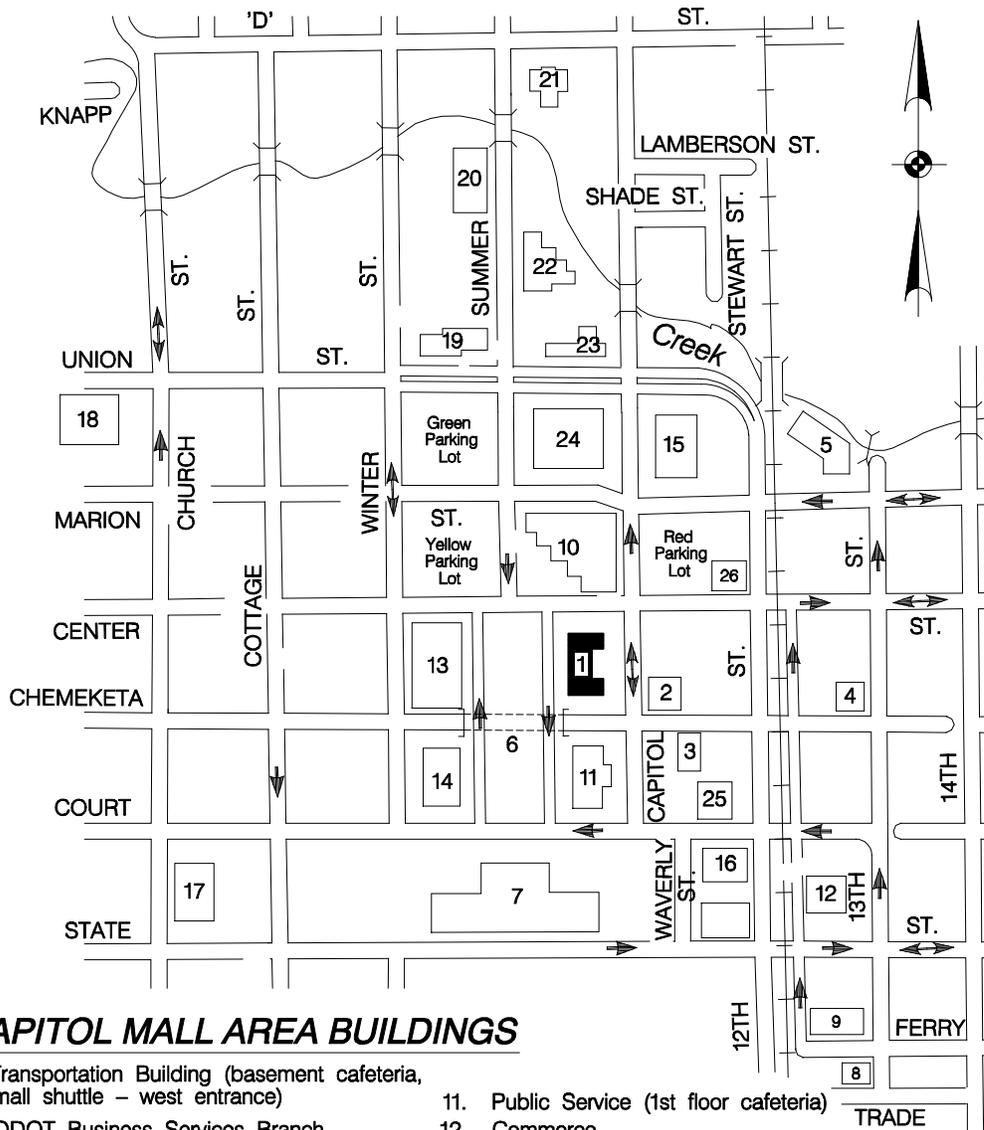


Figure 1.2.1.2A

1.2.1.4 Capitol Mall Area Map

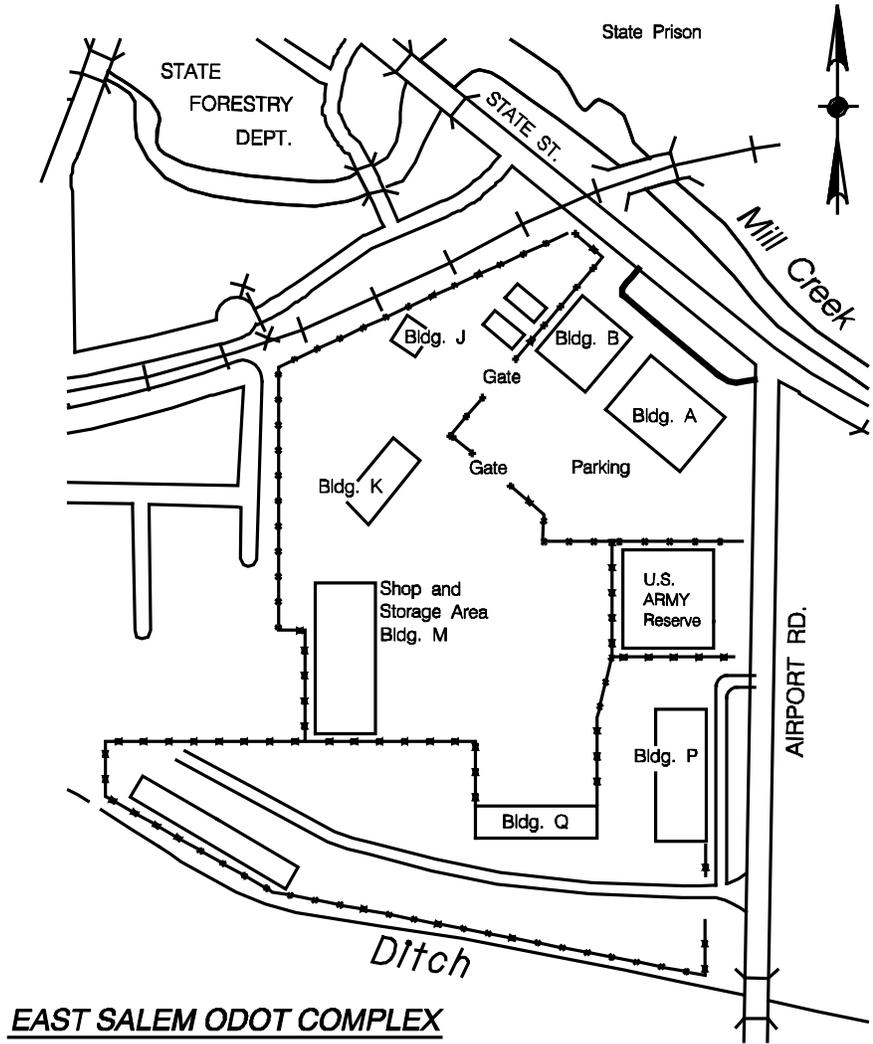


CAPITOL MALL AREA BUILDINGS

- | | |
|---|---|
| 1. Transportation Building (basement cafeteria, mall shuttle – west entrance) | 11. Public Service (1st floor cafeteria) |
| 2. ODOT Business Services Branch | 12. Commerce |
| 3. ODOT Environmental Services | 13. Labor and Industries (1st Floor cafeteria) |
| 4. Executive Building (ODOT Planning Section 5th floor) | 14. State Library |
| 5. ODOT Transportation Development Branch | 15. Public Utility Commission |
| 6. Underground Parking Structure (permit & meter parking) | 16. Justice |
| 7. Capitol (basement cafeteria, Shuttlebug – north entrance) | 17. Dept. of Administrative Services |
| 8. Parking Structure (permit parking) | 18. Energy |
| 9. Dept. of Administrative Services (includes parking & printing offices) | 19. Employment |
| 10. State Revenue (1st floor cafeteria) | 20. Division of State Lands |
| | 21. Archives Division (no Bridge Section files) |
| | 22. Veteran Affairs |
| | 23. Agriculture |
| | 24. Human Resources |
| | 25. Land Conservation and Development |
| | 26. Treasury |

Figure 1.2.1.4A

1.2.1.5 East Highway Complex Area Map



EAST SALEM ODOT COMPLEX

- | | |
|---|----------------------------|
| A. Region 2 Headquarters
Region 2 Project Managers | J. ODOT Museum |
| B. Geotechnical Services, Pavement Unit
Research Unit (1st Floor)
Motor Carrier Services: Weighmasters
& Permits (2nd Floor) | Q. Sign Shop |
| K. Support Services: Purchasing
and Storeroom | P. District 3 Headquarters |

Figure 1.2.1.5A

1.2.1.6 East Highway Materials Area Map

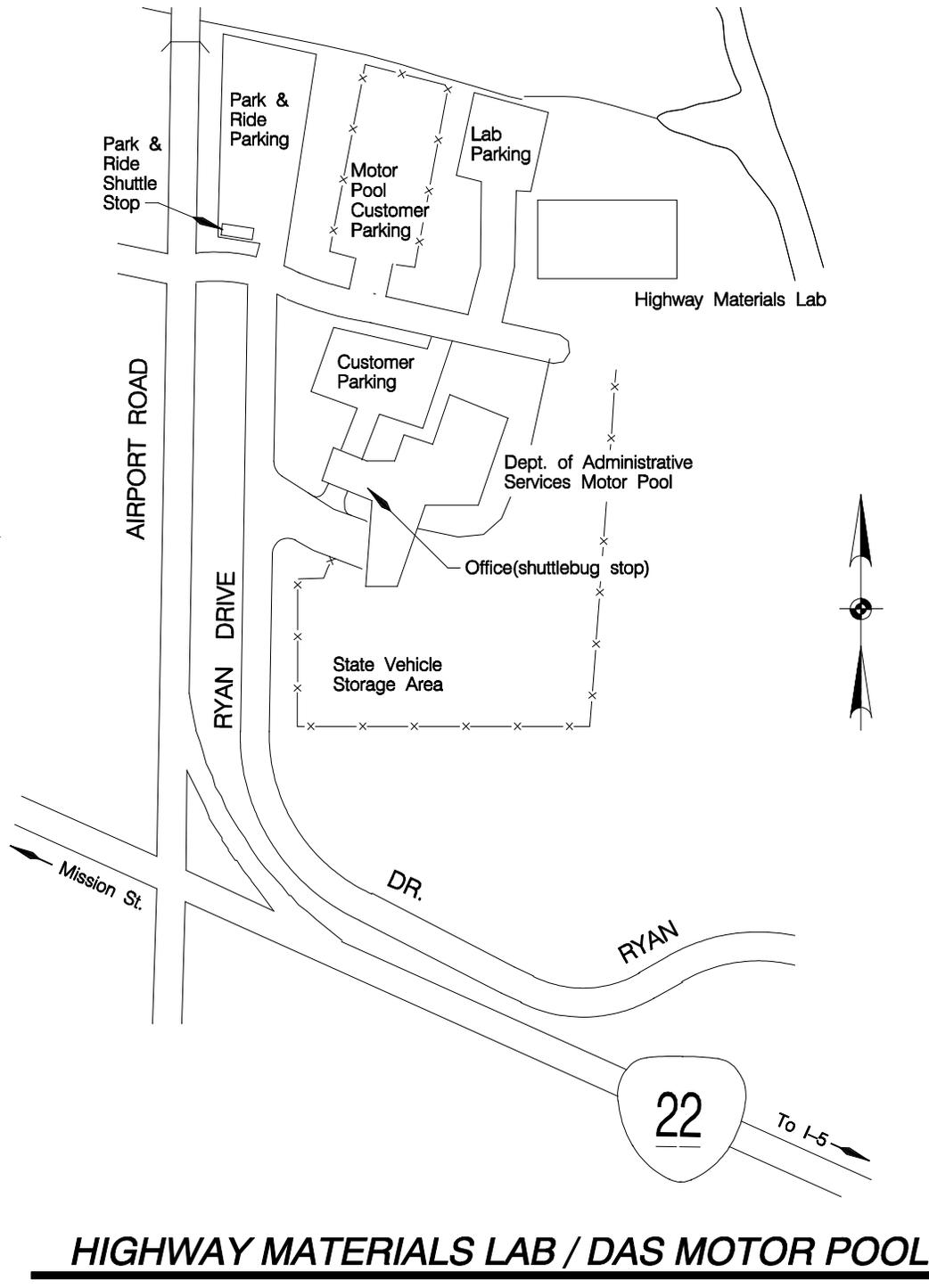


Figure 1.2.1.6A

1.2.1.7 Regions/Districts Map

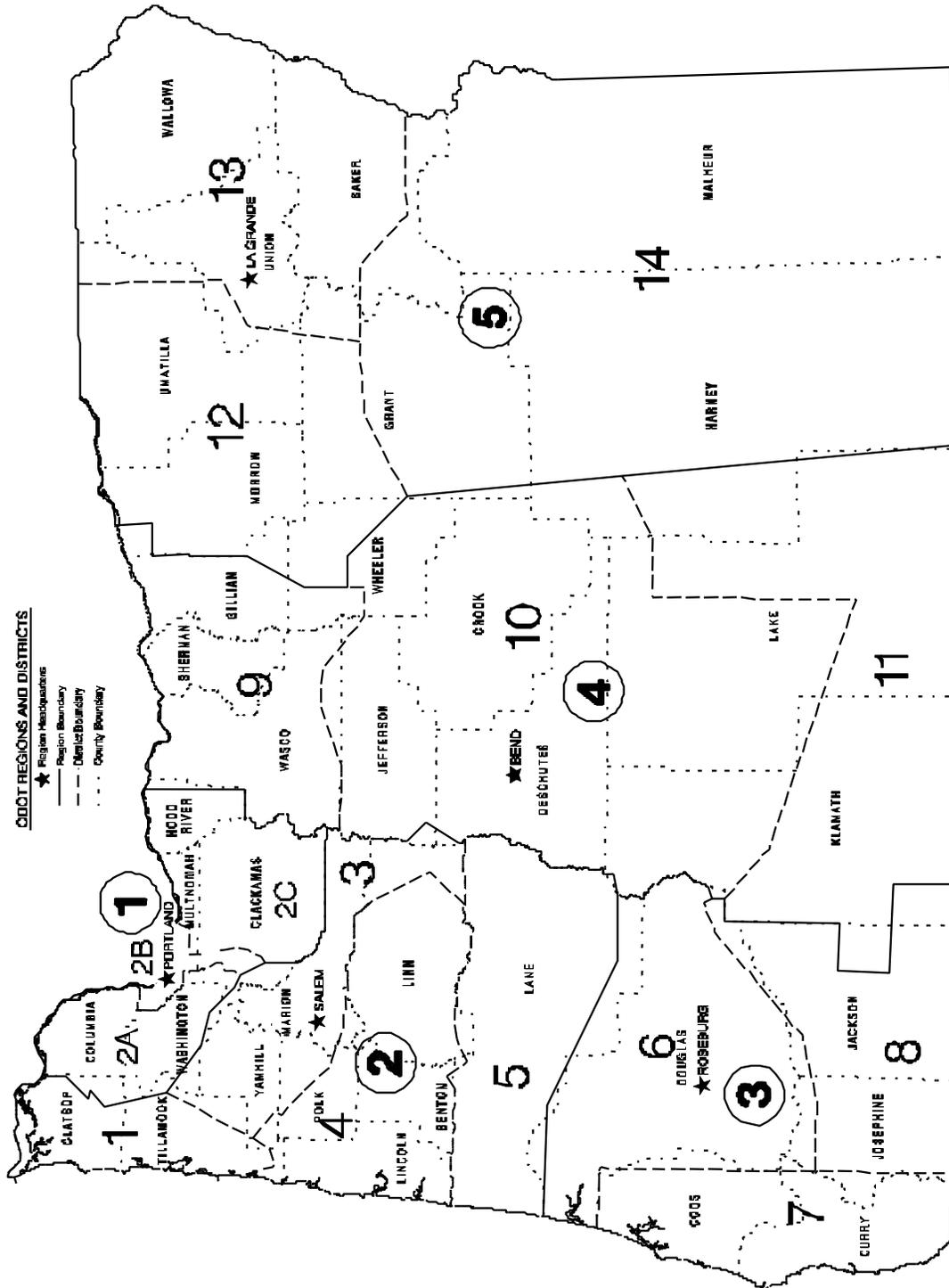


Figure 1.2.1.7A

1.2.2 NEW EMPLOYEE ORIENTATION

1.2.2.1 Who Is Involved? - The Bridge Section Training Coordinator and Training Committee are responsible for developing and maintaining the new employee, or new-hire, orientation program. The new employee's Team Supervisor and a Team member mentor assigned by the Supervisor guide the new-hire through the orientation process.

1.2.2.2 What is Involved? - The new employee, Team Supervisor, and mentor each receive a Training Committee letter of introduction/instructions accompanied by a suggested day-by-day, step-by-step schedule. The Committee has designed a "standard" orientation program for someone who has had no experience with ODOT. However, it can be altered to accommodate any situation such as a college student working during the summer or a permanent employee transferring from another ODOT unit. Well in advance of the new-hire's arrival, the Supervisor and mentor should sit down to adapt the orientation program to fit.

An important step of the orientation program is the new employee's evaluation of the program's effectiveness. The new employee is asked to complete a New-Hire Orientation/Training Program Evaluation form and also the following:

- Approximately one or two weeks into the program, the new employee meets with a Training Committee member to critique what happened.
- After about a month of experience, the employee and Committee member confer about the mentor's participation.

1.2.3 PERSONNEL MATTERS AND WORKING CONDITIONS

1.2.3.1 Personnel Policies - Employment Practices and other working conditions for employees represented by labor organizations are determined by a collective bargaining agreement. See Section 1.2.3.5(1). In addition, the Oregon Department of Administrative Services (DAS) and ODOT issue personnel policy to clarify rules and contract requirements. These can be found in the Front Office's copies of the DAS Human Resources Division *Personnel Rules and Policies Manual* and ODOT *Policy and Procedure Manual*.

Note that seasonal employees, such as students working during the summer, are included under the collective bargaining contracts. However, temporary employees--for example, ODOT retirees returning for 1000-hour periods--are not included under the contracts.

Personnel Services of ODOT's Human Resources and Organization Development Branch handles most employment and personnel matters. A helpful introduction to ODOT employment is the *Employee Orientation Guidelines* received by each new employee.

1.2.3.2 Employee Evaluation - If you have been working for ODOT for less than six months or are newly promoted, you are on trial service. You are evaluated each month during the trial service period. Near the end of the six months, your Team Supervisor will provide a performance evaluation to determine if you will become a permanent employee or permanently promoted. An electronic form "Trial Service Evaluation" is available on each personal computer in the Word/Template directory.

Once you become a permanent employee, you will have an annual performance appraisal. Your Supervisor will receive a summary of any training you have had in the last year. Also, at this time, you and your Supervisor will develop a Training Plan for the coming year. An electronic form "AEE Performance Appraisal" is available on each personal computer in the Word/Template directory.

1.2.3.3 Employee Recognition

(1) Bridge Section Recognition Committee - Composed of a member from each Bridge Section Team, the Recognition Committee meets regularly to develop and promote a local program for recognition of Section personnel. The Committee Chair position is rotated. One member serves on the Technical Services Branch Recognition Committee that administers the ODOT Excellence Award Program for the Branch.

Among other tasks, the Section Recognition Committee:

- Organizes and puts on the annual Bridge Section Recognition Luncheon.
- Distributes the Section's own 5-year service pin (ODOT begins recognition of length of service with a 10-year pin).
- Oversees the Section's Recognition and Appreciation Board which displays introductions of new employees, 'Good Job' comments, and messages of appreciation.

(2) ODOT Excellence Award - The ODOT Excellence Award is a department-wide program that recognizes exceptional individual and team efforts and adherence to ODOT's values. Full-time employees and teams can both nominate and be nominated.

The awards are made in the form of several kinds of prizes: savings bonds, merchandise or recreational activities, gift certificates, or job-related rewards (such as training).

(3) ODOT Service Award Pins - ODOT recognizes long-term commitment and good service with a Service Award pin. The first pin is awarded at your five-year employment anniversary and at five-year intervals thereafter. The Bridge Section Recognition Committee usually presents the pins at the Section's annual Recognition Luncheon.

1.2.3.4 A Question of Ethics - The ODOT Safe Haven telephone line 986-2637 provides a non-threatening way for employees to find answers to their ethics questions and concerns. The ethics representative can help evaluate the situation, identify the problem, and discuss possible solutions. Careful consideration is given to the rights and responsibilities of all concerned parties and to recommended solutions that are fair and reflect the Department's values.

A Safe Haven information pamphlet is available. Each Team also has a *Safe Haven--Lessons Learned* binder for filing quarterly newsletters.

1.2.3.5 Employee Organizations

(1) Labor Organizations - Two collective bargaining organizations have contracts with ODOT:

- Association of Engineering Employees (AEE) representing non-management engineering and allied classifications.
- Oregon Public Employees Union (OPEU) representing all other non-management employees.

Members of AEE and OPEU should receive a copy of the latest *Collective Bargaining Agreement*. The Front Office also has a copy of each *Agreement*.

1.2.3.5 Employee Organizations – (continued)

(2) Public Employees Retirement System - You automatically become a member of the Public Employees Retirement System (PERS) after six full calendar months on the job. You should receive a PERS *Member's Handbook* soon after you become a member. If not, contact the ODOT Personnel and Civil Rights Section. The *Handbook* is revised and reissued periodically.

An annual statement of your account is distributed to you in April.

(3) Professional Organizations - Bridge Section personnel whose membership dues in an approved professional organization are paid by ODOT agree to attend meetings and participate on a regular basis. They are also expected to share pertinent information of benefit to the Section and ODOT. In situations where an organization does not hold local meetings, the Bridge Section "B" Team will decide on a case-by-case basis if ODOT can still benefit from membership through published information.

The "B" Team has approved the payment of dues for various professional organizations. Additional organizations will be considered if requested. Request payment of dues through your Team Supervisor. After reviewing it, your Supervisor will forward an approved request to the Front Office staff for payment or submit it to the "B" Team for further review if there are questions to be resolved.

Approved Professional Organizations include:

- American Academy of Underwater Scientists – AAUS
- American Concrete Institute – ACI
- American Society of Civil Engineers – ASCE
- American Society of Heating, Refrigeration, and Air-Conditioning Engineers – ASHRAE
- American Society of Mechanical Engineers – ASME
- American Welding Society – AWS
- Deep Foundations Institute – DFI
- Heavy Moveable Structures/Moveable Bridges – HMSMB
- Institute of Electrical and Electronic Engineers – IEEE
- Materials Information Society – ASM International
- National Association of Corrosion Engineers – NACE
- Professional Engineers of Oregon – PEO
- Structural Engineers Association of Oregon - SEAO

1.2.3.6 To Your Health

(1) Insurance Programs - A full line of personal insurance from a variety of companies is available for the ODOT employee:

- Medical/Dental.
- Life.
- Short-term and long-term disability.
- Accidental death and dismemberment.

Your personal insurance package is developed by the Public Employees Benefit Board (PEBB) if you are:

- A non-management member of Association of Engineering Employees (AEE).
- A non-management employee not represented by a labor union.
- A member of management.

Of course, for on-the-job injuries, you are insured for time loss, medical care, and permanent injury by the worker's compensation insurance purchased by ODOT from the State Accident Insurance (SAIF) Corporation.

1.2.3.6 To Your Health – (continued)

(1) Insurance Programs – (continued)

When you drive a State car on authorized business, you are covered by State insurance (the State is self-insured) for comprehensive collision, bodily injury, and property damage liability.

(2) Employee Assistance Program - The Department participates in a mental health program called the Employee Assistance Program (EAP). Employees and their family members are offered free evaluation and referral visits annually for assistance with personal problems such as:

- Finances
- Marriage
- Family
- Stress
- Depression
- Anxiety
- Alcohol or drug dependency
- Work concerns

(3) Employee Accommodations - For those who ride bicycles to work or jog at lunchtime, showers and lockers are available in the Transportation Building basement. The shower room entrances are inside the men's and women's restrooms, and the doors have combination locks. Ask one of your fellow workers or the Building Supervisor for the combination.

Also located in the basement of our building for the convenience of employees are:

- A cafeteria. (See Section 1.2.1.4 "Capitol Mall Area Map", Figure 1.2.1.4A for cafeterias in other Mall buildings.)
- A soft drink dispensing machine near Mail Center.
- A blood pressure monitoring machine and weight scales opposite the elevators.

There is a lounge on the third floor furnished for resting or relaxing. A microwave oven is located in the custodial room next to Room 318, and small refrigerators have been purchased by several Teams. See Section 1.2.1.2, "Bridge Engineering Section Floor Plan", Figure 1.2.1.2A.

Smoking is not allowed anywhere in the Transportation Building. Ash urns have been placed at the bottom of the steps to each building entrance.

(4) Medical Emergencies in the Building - In case of a medical emergency:

- Call the emergency rescue number 9-911. The person who calls should stay on the line until released by the 911 operator. Ask someone to go down to the first floor lobby to tell the emergency response personnel where the person needing aid can be found.
- Try to locate one of the designated first-response persons for the third floor.
- Get a first aid kit from either the Front Office or Room 329 and a blanket from the third floor lounge if needed. See Figure 1.2.1.2A.
- A wheelchair is available from the ODOT Information Resource Center in Room 22/24 in the basement.

1.2.4 TIME RECORDS AND OTHER WORK ROUTINES

1.2.4.1 Work Schedule

(1) It's in the Contract - Many regulations, policies, and details affecting your work schedule are found in the *Collective Bargaining Agreement* of the Association of Engineering Employees (AEE) or the Oregon Public Employees Union (OPEU). Take the time to become familiar with these provisions. The following (2) through (6) emphasize or elaborate parts of the *Agreement* as well as cover certain Bridge Section policies about work schedules.

ODOT's *Employee Orientation Guidelines*, which is given to each new employee, also has a good summary of the general workplace situation.

(2) Flexible Work Hours (Flextime) - The standard business week is five 8-hour days from 8 a.m. to 5 p.m. with lunch break noon to 1 p.m. However, to accommodate work requirements and the employee's personal needs for carpooling, commuting, child care, etc., a flexible work schedule is normally allowed:

- 8 hours between 6 a.m. and 6 p.m.
- Lunch break: 1/2 or 1 hour between 11:30 a.m. and 1 p.m.

A weekly schedule of four 10-hour work days is allowed with 10 hours between 6 a.m. and 6 p.m. with a day off on Monday or Friday.

Regardless of the work schedule chosen, new employees are to complete a Work Schedule Request for the Team Supervisor's approval and turn in the original to the Front Office along with other employment paperwork. The Team Supervisor keeps a copy. An electronic form "Work Schedule Request" is available on each personal computer in the Word/Template directory.

Every employee should submit a new Work Schedule Request when there is a need to change an existing schedule so that the Front Office can inform telephone callers or visitors accordingly.

Note that morning and afternoon coffee, or rest, breaks are to be arranged with and approved by your Team Supervisor, but no written request is required.

(3) Overtime - Overtime is approved on an individual and as-needed basis. Typically, overtime required to meet project schedules is approved as needed by a Design Team Supervisor.

The frequency and length of overtime will vary. Working overtime for an extended period usually results in loss of productivity and mental sharpness caused by fatigue. As a general guide, do not exceed 10-hour work days Monday through Friday or more than a total of 8 hours for a weekend period.

The Section management places a high value on the families of the employees. Working overtime is in direct conflict with this value; yet overtime cannot be eliminated from the Section's responsibilities. Therefore, working overtime at home is allowed if the family's time together is enhanced and the work can be performed effectively.

1.2.4.1 Work Schedule – (continued)

Any assigned work can be performed at home as long as you have the equipment and supplies to efficiently perform the work and interaction with other employees is not essential. However, to assure ourselves and the public that this overtime at home is effectively spent on ODOT work, the following guidelines are given:

- Your workload or time constraints are such that overtime work at home is desirable and advantageous to you and the Bridge Section.
- You and your Design Team Supervisor decide upon the work to be performed and the estimated time to complete it. Complete the Overtime Work at Home Form to document the agreement and show that the work was completed and the time effectively spent. An electronic form “Overtime Work at Home” is available on each personal computer in the Word/Template directory.

(4) Compensatory Time - If you are given permission to work overtime, you may request compensatory time, or comp time, instead of being paid for the overtime. However, if you do not use all your comp time accumulated over a period of a year as of April 30, you will be automatically paid for it.

Request the comp time on your Weekly Time Report. When you use comp time, choose the “CTA” work code for “comp time accrued”.

(5) Vacation and Other Leaves - Sometime during January of each year, each employee should let their Team Supervisor know about major vacation plans for the coming year. Complete a Leave Request form as soon as possible. Bridge Section’s informal policy is any leaves of 40 hours or more should be requested in writing. See Appendix Figure A1.2.4.1A. This helps in the scheduling of future work. Except for emergencies, always arrange with your Supervisor in advance for any other times off.

The amount of vacation leave that can be accrued in one year is limited. If you have accumulated more than 250 hours by April 30, you will lose the excess leave unless you request to be paid for it. Your Team Supervisor sends your request to the Bridge Engineer in the form of a memo that includes:

- Name of employee.
- Number of hours requested to be paid.
- Explanation of why. See Section 1.2.4.1(4), “Compensatory Time”, for the request procedure.

Of course, you are encouraged to use as much of your excess vacation hours as possible before April 30 without jeopardizing critical work tasks.

You will receive paid leave for parental, military, and jury duty. However, if, after reporting for jury duty, you are not selected to serve and are excused for the day, you are expected to report back to the office to complete your regular work day.

You can also get time off to donate blood, but the time is accounted for as indirect overhead and not as leave time.

For clarification of scheduled versus unscheduled leave, see Section 1.2.4.2(5), “Work Codes, Work Performed, and Hours”.

1.2.4.1 Work Schedule – (continued)

(6) When It Shakes, Rattles, or Snows in Salem - The Administrator of the Personnel and Labor Relations Division, Executive Department, determines if state government offices in Salem are to be closed according to the following documents:

- ODOT Policy No. PER 3-3-1, "Office Closure During Adverse Environmental Conditions", with effective date of September 28, 1988.
- Executive Department letter, "Inclement Weather Policy" dated December 7, 1992.

The term "adverse environmental conditions" refers to wind storms, snow storms and earthquakes.

The intent is to curtail state government operations or close offices only under the most adverse conditions. So, assume that the Bridge Section office will be open for business, and therefore, make every reasonable effort to come to work unless you are officially notified by one of the following methods:

- By radio or TV announcements (as soon after 5 a.m. as possible) for office closure before the workday begins.
- By phone call to ODOT from the Personnel and Labor Relations Division after the workday has begun.

Generally, as an employee, you will be involved in one of three situations:

- You report for work after an announced office closure.
- You do not report for work because of an announced office closure.
- You report for work late or leave early.

How this affects your salary or what type of leave you may take is spelled out in the AEE or OPEU *Collective Bargaining Agreements*.

Refer to Section 1.6, "Bridge Engineering Section Emergency Plan Procedures", for the Section's responsibilities in supporting the Regions during flood and earthquake incidents.

(7) Tracking Your Daily Whereabouts - Keeping the fellow employee that shares your work area, your Team Supervisor, and the Front Office personnel informed as to your workday whereabouts is everyone's responsibility. Each Team has a daily checkout list for entering your anticipated schedule. The list is taken to the Front Office each morning. Each Team also has a checkout board, usually hanging on the wall near the Supervisor's desk.

When you will be away from the office for such activities as classes or field trips, leave with the Front Office staff the phone number or numbers where you can be reached in case of an emergency.

If you are going to be absent or late for work because of sickness or an emergency, you are expected to call in shortly after your normal arrival time. Arrange for other time off with your Team Supervisor in advance.

Getting this personal schedule information to your Supervisor and the Front Office first thing in the morning and updating it when necessary as the day progresses is absolutely essential to the efficient handling of public business.

1.2.4.2 Time Reports

The time records system is used to record, store, and report time spent on various tasks and projects. There are several parts to the process. Every employee has responsibilities for the system.

(1) Introduction to the Weekly Time Report Activities

Each employee tracks their daily work and enters the time into their personal “BrTime” spreadsheet. Time is tracked separately for each task of each structure on each project. A report is printed weekly and reviewed by the employee's supervisor.

You are responsible to choose the proper structure, project, work code, and pay code when recording your time. If the correct entries do not exist in the “BrTime” records, submit the new “BrTime” record information to the Front Office (Andrea Adams) via e-mail, allowing five days for the entries to be completed. If it is a rush, and five days notice is not possible, print the weekly form with blanks and fill in proper values by hand. Your supervisor will have the data added to the master files. Be very accurate in this work. It is important. Until ODOT has an effective cost reporting system, our time records are the basis for measuring what we do.

Supervisors are responsible to review each weekly time report carefully. Your supervisor will correct missing or incorrect data in the master files. Resolve all problems before processing the monthly reports.

Data Entry Notes

Employee: check every field carefully as you enter data. Work **from left to right** through the columns for both rows of each structure as it is used.

Supervisor: check every field carefully. Work **from right to left** through the columns for both rows of each structure reported. Check:

- total time/overtime totals for day and week for consistency
- Pay Codes for accuracy
- all fields for accuracy

Add missing data to the master files as needed.

Proper Codes and Projects

The system is designed to summarize charges to a specific structure, a total project, or a general type of work. Indirect work and special studies have been defined with their applicable EA's. Information from the Structure and Project data will be distributed periodically. Keep the data available for reference as you are deciding how to charge your work. When in doubt, discuss the questions with your supervisor.

Time Reports – (continued)

(2) Introduction to the Monthly Time Report Activities

Mid-month Time Report

When requested -- usually in the middle of the month -- you will be asked to forecast your month's work for payroll. Fill in any leave you expect to take during the rest of the month, enter productive pay on either anticipated projects or on a dummy "Forecast" project (whichever works best for you), and print a monthly report. Do not process the monthly data at this time. Do not forecast overtime. Include only overtime already worked on this report. This forecast is required for employees who wish to be paid for the first two weeks of overtime at the end of the month in which it was worked. If one doesn't mind the pay time lag, a mid-month time export forecast isn't needed.

End-of-Month Reporting

When time for the last day of the month is entered, the month must be processed before any more time can be entered. Two weekly time sheets are needed whenever a new month begins in an active week. Print a monthly report with the last week's time sheet and have the monthly report reviewed before processing the month's data.

After the time reports have been reviewed, open the "BrTime" spreadsheet and process the monthly summary. The program will print a sheet for payroll data entry. After the monthly data has been processed, it is difficult to alter. Resolve any questions about charges before the end of the month. If errors are found or changes are needed after processing, mark up your printed copy of the weekly time sheet and talk with your supervisor about fixing the data.

(3) Introduction to the Time Report Procedures

To use "BrTime", you must have the system installed on your computer. Your supervisor will help you. The system will create a directory (c:\BrTime) on your computer and will add the supporting files. You must also have access to our network (LAN) files in f:\bridge\BrTime, since the master data files are stored there. A new Windows program group titled "BrTime" will be added to your system.

This description presumes that you are familiar with Windows and Excel, the proper files are in place on your computer, the LAN is available, and you are starting a new month. Any data from the prior month must have been printed and saved to the central files. The current month will have no time entered. You should also have the Office Practice instructions and an accurate record of the work you performed during the week.

As you work with the spreadsheet, use the button controls to do your work. Do not use the standard Excel functions and menus unless absolutely necessary. This is a complex system. The buttons are intended to help confine data to the proper locations and keep the output formatted correctly. If you are unclear how to proceed, ask for help.

1.2.4.2 Time Reports – (continued)

Data Entry

1. Open the “BrTime” spreadsheet by selecting your “BrTime” icon from the “BrTime” program group in the Windows Program Manager. This will open the proper files and initialize the program.
2. Select the Weekly Time Sheet by clicking on the Time Sheet tab at the bottom of your screen.
3. Use the “up” or “down” buttons at the top right of the sheet to select the active week.
4. Every unique combination of structure, project, and work code must have a separate pair of entry lines. You may keep entries in the sheet for later use. Only lines with hours entered will be printed on the weekly or monthly reports.
5. To add a new structure, select a blank structure cell and click the Structure button at the top of the screen. You may pick an existing structure name from the drop-down list or type in the ID directly.

If the structure and project information are already in the master files, the program will fill in the structure ID, project ID, EA, SJ, and structure name. Check the information carefully. A given structure may be in the files under more than one project.

If the information is not yet in the files, the program will use “?”. Fill in the data by hand on the printed weekly time sheet. Your supervisor will update the master information, and you will update the entry later. All missing information should be resolved prior to processing the monthly reports.

6. Set or correct the project ID information in the same way--select the proper cell and click the Project button.
7. Set the work code by selecting the cell and clicking on the Work Code button. Select the proper code from the stored list. If none of these fit, see your supervisor. Consistent codes are needed to make meaningful reports.
8. In a similar manner, set the work code Mod entry if needed as well as the Activity Code. You may need to set different Pay Codes, too. You must be familiar with our pay code meanings.
9. Enter the proper hours for each line on each day. As you proceed, the daily, weekly, and monthly totals are displayed for information.
10. If you need more lines for projects, select a structure ID cell in the Productive Pay area and click on the INSERT button. A blank pair of lines will be added to the bottom of the list. To eliminate a line for a project you no longer need, select the structure ID and click on the DELETE button.

Once you have started entering data, do not delete any lines or change entries until the data have been processed at the end of the month (incorrect data, of course, should be corrected). The Description fields are informational and may be changed as desired.

11. For a normal exit, select the tab for the Cover sheet and click on the Exit button. The data will be saved and the files closed.

If things have gone wrong and you want to start over, select the “Quit-No Save” button. This will close the session without saving the files. You will lose any work you did during the session, but you won't affect the original data. This works only if you have not processed the month's files. If you have processed the month, ask for help.

1.2.4.3 Payroll Time Sheets and Pay Day – The monthly Time Report is completed and signed by the employee. The Supervisor checks the report for correctness, then signs & forwards the monthly Time Report to the Front Office Payroll Specialist. The Payroll Specialist then completes the Standard Labor Distribution & Payroll Time Sheet for the Financial Services Branch. Corrections agreed to by the employee, Supervisor & Payroll Specialist are marked & initialed by the employee on the original signed Payroll Time Sheet. A yellow copy is returned to each employee.

Early on pay day morning, your check will be delivered to you personally by the Bridge Section Payroll Clerk, unless you have submitted the form requesting that your pay be directly deposited to your bank account. If you are not at your work area when the checks are delivered, your check will be locked up in the Front Office for you to pick up at a later time. You can arrange in advance to have your check mailed to you if you will be gone for an extended period of time.

1.2.4.4 Private Mail and Phone Calls - Do not have personal mail sent to you at the Bridge Section or send your personal mail through the State mail system. A public mailbox is located outside of the building on the east side. A postage stamp dispenser is located in the basement near the elevators.

The use of office telephones for personal calls is strongly discouraged. If you must make a personal long-distance call, always charge it to your home telephone number. Two public pay phones are located on the first floor of our building north of the visitor information window. In the basement, the ODOT Library has a collection of telephone directories for Oregon cities and some cities in Washington and California.

1.2.4.5 Building Security and the Evacuation Plan - The outside entrances to our building are normally unlocked from 6:30 a.m. to 5:15 p.m. The locking and unlocking of the Front Office and Team rooms is done by the occupants or the custodians, but most interior doors are usually open 7 a.m. until 5 p.m.

The Administration Manager of the Bridge Section issues an office door key to each permanent employee. It can be used for all Bridge Section doors. A key card to be used for entering the building when it is locked is issued with the door key. Temporary employees may request a door key and key card.

Third-floor windows are usually closed and latched at the end of the day to protect against rain or wind, but may be left open when weather is especially warm.

Each Bridge Section employee has an orange folder at his or her work area that contains:

- *ODOT Emergency Evacuation Plan* for the Transportation Building.
- "Duties of Emergency Coordinators".
- "Duties of Floor Monitors".

The *Emergency Evacuation Plan* explains procedures for fire, bomb threat, earthquake, and hazardous material incidents. It also includes exit plans for each floor as well as lists of floor monitors and persons trained for first-response cardiopulmonary resuscitation (CPR). Each Bridge Section Team has both these lists posted in its area.

See Section 1.2.1.2, "Bridge Engineering Section Floor Plan", Figure 1.2.1.2A, for fire alarm and fire extinguisher locations.

1.2.4.6 Parking - Free on-street parking is all but nonexistent unless you are willing to walk great distances or have a handicap permit. Most residential areas are restricted to resident use. Available parking comes in the following forms:

- Metered on-street spaces (City of Salem. "Feeding" meters may result in a ticket or towing.).
- On-street parking reserved for carpools (City of Salem).
- Reserved State lots (Red, Green, and Yellow Lots). See Section 1.2.1.4, "Capitol Mall Area Map", Figure 1.2.1.4A.
- Department of Administrative Services (DAS) parking facilities (see Figure 1.2.1.4A):
 - Capitol Mall Underground Parking Structure, metered and reserved spaces.
 - Parking garage on 13th Street SE between Ferry and Trade Streets, reserved spaces.
- State park-and-ride facility adjacent to the State Motor Pool on Airport Road in East Salem, Section 1.2.1.6, Highway Materials Lab/DAS Motor Pool, Figure 1.2.1.6A. A shuttle to the Capitol Mall makes frequent runs. See Section 1.2.7.2(1).
- Private lots. A list of locations and rates are available from the DAS Parking Services.

DAS Parking Services provides information and forms at its:

- Main Office, 1225 Ferry Street. Refer to Section 1.2.1.4, "Capitol Mall Area Map", Figure 1.2.1.4A.
- Satellite Office, upper level of the Capitol Mall Underground Parking Structure directly west off the tunnel between the Transportation and Public Services Buildings. Hours are 7:30 to 9 a.m. and 11:30 a.m. to 1 p.m. See Figure 1.2.1.4A.

Some parking forms are available in the Front Office.

The Satellite Office sells one-day parking permits for the Parking Structure, and the Main Office sells them for the Red, Green, and Yellow Lots. The monthly rate for reserved parking varies depending upon whether you are in a carpool or not and the number of carpool riders.

The Capitol Mall Parking Structure is open from 5:45 a.m. until 7 p.m., Monday through Friday. If you are able to access the Parking Structure after 7 p.m. by way of the Transportation - Public Service Building Tunnel, the overhead security doors will automatically open as your vehicle approaches.

During weekends and holidays, the parking Structure is closed, but you can park your car in any of the reserved State lots. You may also be able to park for free at a meter, but be careful: some designated State holidays are not City meter holidays. Check the list of holidays on the meter!

1.2.4.7 The Commute to Work by Carpool, Bus, and Bike - State employee carpools get reduced parking rates and, in some cases, preference for reserved parking spaces or areas. Riders can be State or non-State employees.

Usually, Bridge Section personnel organize their own carpools for Salem/Keizer and Portland as well as other Willamette Valley areas. However, the City of Salem Rideshare Program provides a free carpool referral service within the Willamette Valley. Call the Rideshare 24-hour hotline 503-371-7665, or in Portland, contact Tri-Met.

Most vanpools operating from Willamette Valley and Portland points to Salem are privately owned and operated and do not require shared driving. For anyone interested in riding or operating a vanpool, call Salem Rideshare, 503-371-7665.

The Salem Area Mass Transit District operates the Cherriot buses in the Salem/Keizer area. Many of the bus routes serve the Capitol Mall directly or detour through this area during morning and evening rush hours. Cherriot route schedules are available in the ODOT Public Transit Division Office, first floor of our building. The Salem Transit District provides park-and-ride lots at various locations. For more Cherriot bus information, call 503-588-BUSS.

For bicycle commuters, relatively secure bicycle parking is available in the Capitol Mall Underground Parking Structure (see Section 1.2.1.4, "Capitol Mall Area Map", Figure 1.2.1.4A). Bike racks are also located in the Transportation Building courtyard, Capitol Street main entrance, but locked bicycles are frequently stolen from these racks. Refer to Section 1.2.3.6(3), "Employee Accommodation", for information about Transportation Building showers and lockers.

There is a Commuter Information Board near the elevator in the Transportation Building basement.

1.2.5 MAKING COPIES AND PRINTS

1.2.5.1 Office Copy Machine - For up to five letter/legal-size copies or 11"x17" prints, the Bridge Section has one copy machine in the Front Office, room 301, and one in the File Room, room 321. For more than five copies or prints, refer to:

- Section 1.2.5.2, "Department of Administrative Services Mall Copy Center".
- Section 1.2.5.3, "ODOT Reprographics and Design Services Unit".

Please plan ahead and try to observe the five-copy limit in consideration of your fellow workers.

Ask Front Office personnel for help if the Section's copy machine is:

- Out of paper,
- In need of toner,
- Jammed or malfunctioning, or
- Producing unacceptable copies.

Unless you have previous troubleshooting experience, do not try to "fix" the machine without asking for Front Office help or someone to show you how to solve the problem.

1.2.5.2 Department of Administrative Services Mall Copy Center - The Printing Plant of the Department of Administrative Services (DAS) operates the Mall Copy Center in the basement of the Transportation Building. Fill out the Copy Center Work Order form shown in Appendix Figure A1.2.5.2A as follows:

- Use the ODOT/Bridge Section charge number 730062 in the "Agency No." blank.
- Enter the expenditure account number (EA) in the space for "Account or Distribution Number".
- Put "ODOT" in the "Agency Name" blank.

The Front Office and each Design Team has blank forms.

Keep the green copy of the Work Order for your reference when you take your work to the Copy Center. **When your order is delivered, take the yellow copy that is returned with the order to the Front Office for their records.**

If you have a problem with your order that you cannot resolve with the Copy Center or you are involved with publishing a booklet or brochure, talk to the ODOT representative in the Records Management and Forms Unit, ODOT Support Services, who is assigned to deal with the Printing Plant.

1.2.5.3 ODOT Reprographics and Design Services - Once known as Photocopy, the Reprographics and Design Services Unit of ODOT Business Services provides photocopy, printing, photo enlarging, electronic image-setting, and map distribution services for ODOT statewide. It is located in the basement of the Transportation Building east of the elevators and is open from 7:30 a.m. to 5:00 p.m.

Among others, the following types of reproductions can be made:

- OZ = Ozalid paper print. This is the ordinary black-line print. Time to process depends on the quantity of prints needed.
- XF = Xerox film. Generally used for permanent half-size (11"x17") reductions. Usually takes several days.
- OP, OMP = Offset print and offset metal plate. The OP is generally used when 20 or more half-size or letter-size copies are needed. The OMP is used for standard drawings which will be run many times.
- XV = Xerox vellum. Normally used to make temporary half-size originals to produce OZ or XB prints of such drawings as TS&L and Advance Plans. Usually same-day service.
- MP = Microfilm prints. Paper prints made from Bridge Section's microfilm file of drawings. May be ordered by phone or using Reprographics Requisition form. One to two-day service depending on size of order. However, Bridge Section now has its own microfilm reader/printer located in the Main Files/Supply Room 321.
- XB = Xerox bond. Black-line paper print made from XV or mylars.
- FBPM = Film base positive. A photographic reproduction on mylar base with a "matte" finish. Corrections can be made with a two-bottle eradicator, moistening and erasing, or moistening and scraping.
- PMT = Camera-direct paper print that makes positive prints without negative.
- PMT-AB = A PMT with adhesive backing.

Reprographics distributes an Oregon map showing ODOT Regions and Districts as well as the Interstate, State Primary, and State Secondary Highways. Each Bridge Section employee should have one at his or her work area.

The Official Highway Map is available at the visitor information window on the first floor of the Transportation Building.

Fill out the Reprographic-Photo-Video & Design Work Order shown in Appendix Figure A1.2.5.3A. Blank forms can be obtained from the Reprographics and Design Services Unit.

You can personally deliver your order to the Reprographics counter or send it down on the dumbwaiter (small elevator) located in the hall opposite Room 327, but the Reprographics Unit prefers that the dumbwaiter not be used.

1.2.6 OFFICE/FIELD EQUIPMENT AND SUPPLIES

1.2.6.1 Who Provides What - The Bridge Engineering Section and ODOT will provide the equipment and supplies required to do your job. If you are a new employee, your Bridge Section mentor will help you assemble what you need.

Typically, the Designer or Drafter will be working in a cubicle furnished with a:

- Personal computer or computer-aided drafting (CAD) machine.
- Telephone.
- Desk/table combination with chair.
- Desk lamp (optional).
- Portable electric fan (optional).
- Bookcase.
- Stapler and other miscellaneous supplies.

Each Design Team has one laser printer. Most Design Teams have a designated area where the following communal items may be found:

- Regular staplers, heavy-duty staplers, and boxes of staples of various size.
- 3-hole punch.
- Manual pencil sharpener.
- Approval/review stamps and ink.
- Cameras

Some basic tools such as hammer, screw drivers, and pliers as well as cleaning supplies are stored in the Supply Room across the hall from the Front Office.

For field trips to construction sites, the Bridge Section furnishes hard hats, ball cap style hats, safety vests, overalls, safety harnesses, and life jackets. Some hard hats and vests are stored in Team areas. Extra safety vests, overalls, safety harnesses, and life jackets are stored in a metal cabinet in the Main Files/Supply Room 321 (see Section 1.2.6.2). Clipboards are also available. Depending on your situation, you may request that any of these articles, except the life jackets, be individually issued to you. Refer to Section 1.2.7.1, "Traveling for ODOT", for personal clothing you will be required to wear such as work boots.

If you need something that is not available and not considered a minor item of office supply, talk to your Team Supervisor, who will either have it purchased or send your request up the line. Remember, however, if you add an electrical appliance or piece of equipment to your work area, you may overload the circuits. Check with the Front Office staff and Building Supervisor first.

Notify the Front Office if an office supply item is out of stock. It would be very helpful if you notify the Front Office Staff when you notice the supply is getting low.

1.2.6.2 Supply Cabinets and Equipment Lockers – Office supplies are located in the Copy/Mail/Supply Room across the hall from the Front Office. Field equipment is located in room 321. Two steel equipment lockers along the east wall contain the following items:

- First locker on the left, unlocked: Safety vests, safety harnesses, life jackets, hard hats, overalls, removable roto-beam, and cans of spray paint.
- Next locker to the right, locked: Slide projector and slides, movie reels, and video cassettes from Bridge Section Library.

A projection screen is usually standing against the wall adjacent to the lockers.

Many small items of stationery and drafting supply are stored in the wooden cabinet with the sliding doors (watch out for your fingers!) located by the west wall next to the Room 321 hall entrance. Some standard forms are also kept in this cabinet; see the following Section 1.2.6.3, "Forms".

Other steel supply cabinets are found in the Mail/Copy/Supply Room across the hall from the Front Office. The contents of these cabinets are listed on the front.

Keys for the locked locker are kept by the Front Office staff.

1.2.6.3 Forms - We use forms of various types, sizes, and colors distributed by ODOT and the Bridge Section or purchased commercially. The most commonly used forms are stored in two cabinets against the east wall of the Mail/Copy/Supply Room. The file cabinets contain personnel, Mail Center Request and insurance forms. Electronic templates of forms created by the Bridge Engineering Section are updated and stored on each designer's computer.

Each Structural Design Team stockpiles some of the ODOT, Bridge Section, and commercial forms. The Team members are responsible for keeping their supply of forms well stocked by sending the original from the Front Office down to Reprographics to be reprinted.

The wooden supply cabinet in the Main Files/Supply Room 321 has pads of the following blank forms:

- Bridge Section calculation sheets.(letter size)
- Tabulation sheets (letter size and half size).

The Front Office has supplies of ODOT and commercial letter and memo stock.

1.2.6.4 Equipment Loaned by the Information Resource Center – This office in Room 22/24 in the basement has the following equipment for loan:

- Overhead projector
- Portable Overhead Projector
- Slide Projector
- TV/VCR on a cart
- On-screen projector
- Dry erase board with flip chart
- Portable flip chart
- Tape recorder & table microphone
- Wooden Tripod
- Display Unit
- PC Projector (Infocus)
- Wheelchair
- Crutches

The Technical Services Branch has a car, so for local trips you can borrow a car. See Section 1.2.7.3(2), “Local Car Trips”, for details.

Always plan ahead and reserve in advance.

1.2.6.5 Surplus Property Store - Located in the East Salem ODOT Complex, the Surplus Property Unit, Support Services Section, provides good used equipment, tools, office furniture, and other surplus property to organizations within ODOT. If you have a need, you can be included on the “want List” and you will be contacted on first-come, first-serve basis should your item become available. The Bridge Section can also receive help disposing of unwanted property. In addition, our Front Office receives the Surplus Property Unit’s *ODOT Shopper* monthly by electronic mail.

1.2.7 FIELD TRIPS AND TRAVELING

1.2.7.1 Traveling for ODOT

(1) Let Someone Know - Whether you will be gone for three or four hours, all day, or all week, leave enough information with your Team Supervisor and the Front Office staff so that you can be contacted in case of an emergency. Depending on the situation, give them an itinerary with:

- Intermediate and final destinations.
- Times of arrival and departure.
- Motels or places where you intend to stay.
- Phone numbers where you can be reached.

The more details you provide, the faster you can be reached about an emergency at home.

(2) Coordinating Trips - Always contact the Project Manager in advance if you are organizing a visit to a site. Refer to Sections 2.3.1.4, "TS&L Design Field Trips", and 3.1.3, "Construction Phase Field Trips", for additional comments.

If other Bridge Section personnel or people from another ODOT unit are also heading for your destination or vicinity, check to see if you can catch a ride or if they would like to go with you.

Reserve your State car in advance as well as make your lodging arrangements ahead of time.

(3) What to Wear and Take - Before embarking on the typical trip to a construction site or fabrication plant, be aware of the following comments about protective equipment and clothing, provided by the Bridge Section unless noted otherwise:

- Wear a hard hat if heavy equipment is present, where falling or flying objects are a danger or where electric shock and burns are a danger. The best rule: Carry a hard hat in your vehicle and if in doubt, wear it.
- You may wear a Department-issued or -approved soft cap (ball cap style) with your vest if the situation doesn't require a hard hat.
- Wear a reflectorized vest when on or adjacent to roadways or near moving equipment.
- Include a life jacket if you will be near or over water.
- Wear clothing that completely covers your body except the neck and arms. You may want to wear long sleeves to protect against sunburn, rough rebar surfaces, etc. Overalls are available from the Bridge Section.
- Do not wear tennis or running shoes to construction or fabrication sites. Shoes or boots (not furnished by ODOT) should have:
 - A minimum ½" heel.
 - Leather uppers.
 - Ankle support.
 - Substantial soles.

1.2.7.1 Traveling for ODOT – (continued)

ODOT Directive “Personal Protective Equipment” gives the full details. If you do not wear the proper protective items, you may be told you cannot come on the site. Consult with the Project Manager about the safety equipment required.

You may also want to take a camera with you, and a clipboard is handy for taking notes.

Read Sections 1.2.6.1, “Who Provides What”, and 1.2.6.2, “Supply Cabinets and Equipment Lockers”, to find out where the ODOT-issued items you need are located.

(4) A Handy Travel Expense Reference - Want a quick reference about travel expense regulations? Find your AEE or OPEU *Collective Bargaining Agreement* for such subjects as:

- Limits for lodging and meal reimbursements.
- List of reimbursable travel expenses.
- Rules about calling home at State expense on overnight trips.

Typically people pay travel costs for lodging, meals, etc. out of their own pocket and then file for reimbursement. (See Section 1.2.7.5.(6), “Travel Expense Reimbursement”. However, you can request an advance payment (Section 1.2.7.5(2), “Request for Advance Travel Expenses”).

(5) Choice of Motels - Periodically, as a convenience for personnel traveling within Oregon or to Vancouver, Bellevue, or Seattle, Washington, the Accounting Division of the Department of Administrative Services (DAS) publishes the booklet *Lodging Rates for State of Oregon Employees*. A copy and the name of the person to contact for additional copies are kept in the Front Office.

The listed rates are not guaranteed and are subject to change without notice. Establishments that honor the State rate limit, on a space-available basis, are indicated. You must get advance approval from the Bridge Engineer for reimbursement that exceeds the limit.

The booklet also notes which facilities may require state employment identification.

For best results, call in advance for reservations and to confirm rates.

(6) Taking A Family Member Along - The Department of Administrative Services (DAS) policy* concerning family members traveling in a State car is as follows: Subject to written agency authorization, an authorized driver may be accompanied in a State vehicle by an immediate family member over the age of 18.

It is assumed the request for authorization would be submitted through the Bridge Engineer.

*DAS *Policy Manual*, Statement Number 125-4-601: “State Vehicle Usage Standards”.

(7) Fly and Save! - According to the May 9, 1994 memo from the ODOT Director entitled, “Travel to and from Eastern Oregon”, ODOT employees traveling between Salem and Eastern Oregon can take advantage of the State contract with air carriers flying between Portland and Boise, Idaho. Cost savings in long travel time and overnight stays are substantial, especially when lost time and productivity are factored in.

Refer to the Director’s memo for more details. Your Team Supervisor or the Front Office should have a copy.

1.2.7.2 State Shuttle Services

(1) Capitol Mall Park-and-Ride - The Capitol Mall Park-and-Ride shuttle operates weekdays from early morning to early evening. A schedule is available in the Front Office or from the Department of Administrative Services (DAS) Parking Services (see Section 1.2.4.6, "Parking"). Schedules are posted on some Transportation Building hallway bulletin boards. The shuttle services:

- State buildings in the Mall area.
- DAS office on Ferry Street.
- Park-and-Ride lot, and the DAS Motor Pool on Airport Road SE in East Salem.

(2) Salem-Portland Shuttle - The Department of Administrative Services (DAS) also operates a shuttle for official business between Salem and Portland. The Shuttlebug, as it is called, leaves from the DAS Motor Pool on Airport Road, stops at the Capitol Building (Court Street entrance), and then heads for the old State Office Building at 5th Avenue and Clay Street in Portland. The final stop is the new Portland State Office Building on NE Oregon Street in Portland. One daily run stops at Woodburn and Wilsonville for mail.

Reservations are required from the DAS Motor Pool. The Front Office has a schedule.

1.2.7.3 Driving a State Vehicle

(1) Using Good Judgment - When you drive a State-owned vehicle, the public is watching your every move--how fast you drive and where you drive. In general, drive at or below the speed limit and avoid any situations that give the appearance of inappropriate use.

The Department of Administrative Services (DAS) has set down general guidelines in its *Policy Manual*. The guidelines cover two situations: day-use and overnight travel.

If you are using a State car for just the day, you may use it "to obtain food or nourishment when the necessary travel period encompasses lunch or break periods".

If you will be traveling overnight, you are allowed "negligible, reasonable, prudent, and necessary use of State-owned vehicles for transportation to:

- Conduct official State business;
- Eating and shopping establishments;
- Laundry, grooming and fitness facilities;
- Engage in recreational activities (such as movie theaters), attend meetings, or to visit friends or relatives. These uses are allowed only when the destination is within the local vicinity of the employee's overnight travel assignment. (For example, the distance between Mt. Bachelor and Bend would *not* be considered the local vicinity.)"

It would be wise for every Bridge Section employee who intends to drive a State car to carefully read Statement Number 125-4-606, "Public Versus Private Use of State Vehicles", DAS *Policy Manual*. The Front Office has a copy of it.

1.2.7.3 Driving a State Vehicle – (continued)

(2) Local Car Trips - When traveling in the Salem/Keizer area on official business, you have three possible options as far as auto transportation:

- An ODOT car is assigned to the Technical Services Branch. The Roadway Engineering Administrative Unit in Room 200 is responsible for this vehicle, and any of the staff in Room 200 can be contacted.
- Department of Administrative Services (DAS) car from the Motor Pool on Airport Road SE in East Salem (see map Section 1.2.1.3 Figure 1.2.1.3A) for business taking longer than a few hours. Refer also to Section 1.2.7.3(3), “Out-of-Salem Car Trips” for car checkout procedures.
- Your personal vehicle. Read Section 1.2.7.4 before using your vehicle.

If you use the ODOT car assigned to Technical Services, always call in advance, if possible, to reserve it. Have the ODOT/Bridge Section charge number 730062 ready when you call. Although there is a two-hour limit, you may be able to negotiate for more time if no one else has reserved the car. However, in consideration of others, try to return the vehicle on time.

Before you leave, read the instructions about operating the car, especially when to fill the gasoline tank and who to call if you run out of gas or if you have a flat tire or mechanical problems. The car has a State credit card for retail gasoline, but use the Department of Administrative Services Motor Pool pumps on Airport Road, if at all possible.

The Technical Services vehicle is parked on the upper level of the underground Parking Structure north of Transportation Building stairs/elevator and headed in toward the north wall.

(3) Out-of-Salem Car Trips - For most travel beyond the Salem/Keizer area, you will be driving a Department of Administrative Services (DAS) automobile from the Motor Pool on Airport Road SE in East Salem. (See map Section 1.2.1.3 Figure 1.2.1.3A.) Motor Pool hours are 7 a.m. to 6 p.m.

DAS motor pool checkout card (looks like a credit card) are issued to each Bridge Section Employee. The card has the ODOT/Bridge Section charge number 730062 on it as well as the expenditure account number (EA) IN74XX/000-010 used to bill automobile charges to the crew. Always call for advance reservations.

You can either take the Capitol Mall Park-and-Ride shuttle (see Section 1.2.7.2(1)) to the Motor Pool or park your personal car there. Present your motor pool checkout card and driver’s license at the checkout counter. You will receive your keys and a packet that includes various instructions and a green locator card for recording mileage. The keys will have a tag with the State “E” license plate number to identify the car you are assigned.

Need gasoline during your trip? Each DAS car has a State credit card attached to the ignition key.

Of course, if you are in the vicinity of a DAS Motor Pool, you should fill up the tank there:

- Salem Motor Pool - 1100 Airport Road SE
- Portland Motor Pool - 6400 Cutter Circle
- Eugene Motor Pool - 445 Pearl Street
- Jackson County Motor Pool (DAS agreement) – Medford

1.2.7.3 Driving a State Vehicle – (continued)

You can use the State credit card after hours at the card lock pumps of the Salem and Portland DAS Motor Pools. Since Bridge Section personnel no longer use ODOT motor pool cars for out-of-Salem trips, we normally should not get gasoline from the Region or District yards that still have pumps. If, in an emergency, you need to use these pumps, be sure that the charges are billed to the DAS.

In an emergency repair situation, call the nearest DAS Motor Pool for instructions if possible. Otherwise, use the State retail credit card.

If you should have to use your personal credit card or pay cash for gasoline or emergency repairs, be sure the receipts include the State vehicle license number and your signature. To be reimbursed, you will need to fill out a DAS form at the Motor Pool office and leave it and your receipt there. Do not try to claim reimbursement by including the charges on the Expense Per Diem Statement filed for your other travel expenses.

When you return the car to the Motor Pool, enter the ending odometer reading on the green locator card and sign it. Leave the rest of the packet and the keys in the unlocked car and take the green card to the Motor Pool checkout counter. If the Motor Pool is closed, park the car in the customer parking area with the security fence around it, lock it, and put the keys in the night-deposit box by the front of the Motor Pool Office.

1.2.7.4 Use of Private Vehicle for Public Business - If the shuttle does not fit your schedule or the Technical Services car is tied up, read the disclaimer on the Request for Approval to Use Own Car on State Business form, before you drive off in your own vehicle. An electronic form "Personal Car Use" is available on each personal computer in the Word/Template directory.

You are eligible to receive reimbursement at the rate per mile given in the AEE or OPEU *Collective Bargaining Agreement* if you get approval to use your own vehicle.

1.2.7.5 Field Trip Paperwork

(1) Request for Out-of-State Travel - Before you take a trip beyond Oregon's border, you must complete an Out-of-State Travel Authorization form. An electronic form "Out of State Travel" is available on each personal computer in the Word/Template directory.

(2) Request for Advance Travel Expenses - Use the form needed to request an advance for travel expense funds before you begin your trip. An electronic form "Advance Travel Expense" is available on each personal computer in the Word/Template directory.

(3) Accident Reports - What to do and which forms to fill out in case of an accident during your trip are fully covered by the following booklets published by the ODOT Safety and Employee Services Section:

- *Vehicle Accident Reporting Instructions.*
- *Personal Injury Reporting Instructions.*

The Front Office has a copy of each.

1.2.7.5 Field Trip Paperwork – (continued)

(4) Weekly Time Report Entries - For a field trip taken during the design phase of a project, enter on your Weekly Time Report the design expenditure account number (EA) CXXXXXXXX/000-J13 and FD work code.

If you take a trip during the construction phase of a project, at the Construction Project Manager's request, to discuss a field situation or problem, use the construction EA CONXXXXX/000-J46 with CA work code.

However, if you take a field trip during the construction phase because you want to observe the installation of a particular product, learn about a construction technique, or make a final project walk-through (see Section 3.1.3.3)--in other words, an informational trip--then charge to your crew's technical training EA IN74XX/XXX-020 and TR work code.

Should your travels not fall under any of the previous examples, ask your Team Supervisor.

(5) Memos to the File - Put in writing what you see, learn, or decide during a field trip if it is important to the design or construction of a project, Bridge Section office practice, or your fellow worker. And do it within a few days of returning to the office.

Usually in some form of a memo, your narrative should include as a minimum:

- Who was involved,
- What was the problem and solution, or
- What was observed.

The following sections include further comments about field trip memos:

- Section 2.1.3.3, "Informal Memos".
- Section 3.1.2.2, "Project Discussion Memos".

(6) Travel Expense Reimbursement - To receive reimbursement for travel expenses you have paid for, complete an ODOT Expense Per Diem Statement. An electronic form "Expense Statement" is available on each personal computer in the Word/Template directory.

One thing to remember when filling out the form is to separate out the sales tax from the total lodging charges and enter it under Line 19, "Fares, Private Car Mileage, Other Expenses". Also see the comments in Section 1.2.7.3(3), "Out-of-Salem Car Trips", about not including on this form any gasoline or repair bills that you paid for with your personal credit card or cash.

Submit your completed Expense Per Diem Statement and the original of your expense receipts to your Team Supervisor.

1.3 SOURCES OF INFORMATION

1.3.1 Bridge Engineering Section Files

1.3.1.1 Use-of-Files Etiquette - Help eliminate frustration and time spent looking for lost drawings or incorrectly filed letters. Consider carefully the following rules for using the Bridge Section's filing system.

Always put an Out Card in place of material removed
from a file.

Even though the Out Card only asks for initials, your last name would be much more helpful. And when removing working drawings--that is, shop drawings or temporary construction drawings, use the date of the transmittal letter as part of the description of the material removed. One exception: There are no Out Cards for the microfilm files; so, in this case, put the microfilm negatives in the "Refile" box next to the microfilm viewer.

When you are finished with file material, **do not refile it**. Place file folder or individual pieces of paperwork in the marked "Refile" box at the file location or in your Team Supervisor's "Out/File" basket. Microfilms have their own refile holders. Put full-size mylar drawings in the "Refile" drawing drawer. Material retrieved from the State Archives and State Records Center are handled according to Section 1.3.1.7.

Another point to remember: **Do not keep original documents at your work area or in your Job Record Folder**. (An "original" is paperwork noted with the Bridge Section's red RECEIVED/date stamp.) If it is necessary to keep something for further reference, make a copy.

Also, be cautious about writing notes on original letters or papers, especially those from contractors or suppliers. Such notations could be detrimental in case of litigation. Here again, if you need to add a notation, make a copy for that purpose.

When preparing prints of drawings to be filed, fold to approximately 8.5" x11", or letter-size.

Refer to Section 1.2.1.2, Figure 1.2.1.2A, "Bridge Engineering Section Floor Plan", to locate files mentioned in the following text.

1.3.1.2 General Files (Main Files/Supply Room 321 except as noted)

(1) Housekeeping Files - The Housekeeping Files are divided into broad categories filed alphabetically by a 3-letter code. Each category is subdivided into specific subjects arranged alphabetically, and the material for each subject is filed by year. Here are the broad categories:

- ACC = Finances and Accounting including Bridge Section bills such as telephone charges.
- ADM = Administrative Services.
- BUD = Budget.
- COM = Transportation Commission.
- LEG = Legislative/Legal Affairs.
- ORG = Organization/Management including AASHTO and WASHTO correspondence and committee work.

1.3.1.2 General Files – (continued)

- PRO = Project Authorizations.
- PUB = Public Relations including Bridge Section designs entered in competitions and awards received.
- SUP = Supplies and Equipment.

Some miscellaneous material is filed in the bottom drawers of the Program Records file cabinets:

- “Overlays by County” - Correspondence concerning recommendations for waterproofing and overlaying bridge decks within a roadway overlay project.
- “Standard Specifications and Design Specifications” - Vintage Bridge Section/AASHTO bridge design specifications for 1957 through 1978.
- “Plans From Other States and Countries”.

The file cabinets are located in Room 321.

(2) Program Records - Located next to and organized similarly to the Housekeeping Files; refer to the previous Section 1.3.1.2(1). Some of the major categories are:

- AGR = Agreements.
- CON = Construction including some miscellaneous shop drawings that could not find a home in the Project Contract Files.
- DES = Design.
- INT = Intergovernmental Relations including FHWA correspondence and decrees and Coast Guard interaction.
- MAI = Maintenance including some bridge inspection material.
- PLA = Planning.
- PMT = Permits.
- PRO = Programs.
- RES = Research.

(3) County General Correspondence Files (Bridge Section Storage Room 328) - These files became inactive in the late 1980s. However, some of the historical material may be of use in background investigations.

(4) Blank Forms Files - In the file cabinets in the Mail/Supply/Photocopy Room across the hall from the Front Office, you can find commonly used blank forms, including various personnel forms including medical cost reimbursement forms.

1.3.1.3 Project Files

(1) Project Precontract Files (Main Files/Supply Room 321) - With the verification of an existing bridge number or the assignment of a new bridge number during the latter part of the job setup, the Front Office sets up a Project Precontract File. See Section 2.2.3.7, "Request for Bridge Number". The Project Precontract Files are located across from the Project Contract Files in Room 321.

Material is filed by bridge number. If more than one structure is included in a project, the number of the major structure or the first structure number of a series of structures is used for a file number. Each Project Precontract File contains:

- "Correspondence and Miscellaneous" folder. Beside the usual letters and transmittals, you can find copies of the Bridge Project Prospectus Estimate, *Hydraulics Report*, Bridge Project Discussion Memos, agreements, etc.
- Original Job Record Sheet and approved TS&L submittal package. See Section 2.3.9.1, "Submittal for Approval".
- Foundation Folder, which includes the original Foundation Report. The Folder may or may not be there depending on the status of the *Report*. Check with the project Foundation Designer.

Much of the Project Precontract File material is transferred to the Project Contract Files (see Section 1.3.1.3(2)) after the contract is awarded.

(2) Project Contract Files (Main Files/Supply Room 321) - A Project Contract File is setup by the Front Office after the contract for a project has been awarded. Filed by contract number, each Project Contract File covers all the structures in the project and generally includes the following material, some of which has been transferred from the Project Precontract File:

- Contract booklet.
- "Correspondence and Miscellaneous" folder or folders which can include, among the letters and transmittals, such things as copies of the Bridge Project Prospectus Estimate, *Hydraulics Report*, Bridge Project Discussion Memos, agreements, etc.
- Copies of working drawings (shop drawings and temporary construction drawings and calculations).
- "Work Folder Prior to Contract" which has everything transferred from the Job Record Folder according to Section 3.1.6.1, "Disposition of the Job Record Folder, General". The original checked Final Estimate is filed here.
- Foundation Folder that includes the original *Foundation Report*. If the Folder is missing, check with the Foundation Designer for the project.
- Original Job Record Sheet and approved TS&L submittal package. See Section 2.3.9.1, "Submittal for Bridge Engineer's Approval".
- Set of bidding documents--reduced plans and special provision booklet. (Do not remove them from the file.)

After the contract is completed and the project accepted, the Project Contract File is purged of unimportant paperwork, boxed, and sent to the State Archives and Records Center (see Section 1.3.1.7).

1.3.1.3 Project Files – (continued)

Early structure precontract and contract records have been microfilmed and filed by Bridge Numbers 1 through 15724 in Room 321. The file is located under the microfilm viewer to the right of the drawing file cabinets. Warning: Many items are difficult to read!

Although they are in the process of being computerized, two card files in the Front Office may provide basic project information about existing bridges:

- Consecutive File Number Record; cards filed by bridge number.
- Job Record, cards filed by county and then bridge number.

On the Consecutive File Number Record card, "File No." is the bridge number. If there is a penciled notation "CF" plus a number, disregard it. At one time "CF" stood for Construction File, but the meaning of this file number has been lost in the evolution of our file system.

Again, "File No." on the Job Record card is the bridge number. If a project contract has been boxed, the box number is noted on the card.

1.3.1.4 Drawing Files

(1) Sizes and Types of Drawings - To avoid wasting time when using the Drawing Files, you need to become familiar with the Bridge Section's sizes and types of drawings. In general, they are:

- 22" x 34", or full-size, sheets of mylar, vellum, or linen* used for:
 - Final Plan and Elevation, Foundation Data, and detail drawing.
 - Standard drawings.
 - Special drawings such as those for permit submittals.
- 11" x 17", or half-size sheets used for:
 - "S" or Small, Drawings (S-1, S-100, etc.) on linen or vellum produced years ago to show standard details or details specific to a project.
 - "B" Drawings (B-201, B-560, etc.) on vellum or mylar normally for details specific to a construction or maintenance project.
- 8.5" x 11", or letter-size sheets used for:
 - "S", or Small, Drawings; see previous comments about half-size sheets.
 - "A" Drawings (A-352, A-495, etc.) on vellum or mylar normally for details specific to a construction or maintenance project.

*Historical Note: Impregnated linen or cloth sheets were once used for hand-drawn ink, and later pencil, drawings until the early 1960s. Also, full-size original drawings were, and are still sometimes, referred to as "tracings"--even though we haven't traced details onto our sheets for many years.

Drawing Files – (continued)

(2) Location of Drawing Files - Except for the Bridge Section's standard drawings, mylar originals of full size drawings produced over approximately the last five years are stored in cabinets in the Main Files/Supply Room 321.

The current standard drawing originals are located in the Bridge Section Office Practice Coordinator's work area (see Section 2.6.3). Most of the voided standard drawing originals are stored at the State Archives and Records Center.

A microfilm file for full size drawings is located in Room 321. Beginning with Drawing No. 00001, the cards include all drawings except:

- Drawing No. 2001 through 3000 reserved for Roadway Engineering Section standard drawings.
- A block of the most recent drawings that have not been microfilmed.

State bridges located on National Forest Highways may be listed in the drawing card files, but drawing numbers will probably not be shown. Reduced prints may only be available from the Roadway Engineering Section drawing files.

The following are warehoused at the State Archives and Records Center (see Section 1.3.1.7):

- Older full size original drawings beginning with Drawing No. 1.
- "A" Drawings, original letter size.
- "B" Drawings, original half size.
- "S" Drawings, original letter size and half size.
- Roll File Drawings. These drawings are a miscellaneous mix of rolled up, full-size prints and some originals of building plans, plans of bridges once owned by another agency but now the responsibility of the State, vicinity maps, records of soundings, etc.

1.3.1.4 Drawing Files – (continued)

(3) Using Drawing Files - Pullout card files with cross-references sit on top of the drawing file cabinets in Room 321:

- Drawing Number Card File - Includes entries for Drawings 1 through 47892, “A” Drawings, “B” Drawings, “S” Drawings, and Roll File Drawings. Each entry lists:
 - Drawing number.
 - Project name.
 - County.
 - Drawing description.
 - Bridge number.
- Miscellaneous and Standard Drawings Card File - Each entry lists drawing number and structure or drawing description.
- County Card File - Each entry lists:
 - County.
 - Bridge number.
 - Project name or description.
 - Drawing numbers.
- Bridge Number Card File - Includes entries for Bridge No. 1 through 17352.

Keep in mind that the card files are being phased out in favor of computer listings. Also the Bridge Section is revising its bridge and drawing numbering systems. Therefore, the card files do not include references to the latest drawings. See also Section 1.3.1.5(1), “A Word About Bridge Numbers”, for some helpful comments.

Once again: **Please, put an Out Card in place of any drawing you take.** As soon as you are done with them, return drawings to the REFILE drawer and microfilm cards to the REFILE box.

For ordering prints of original drawings, see Section 1.2.5.4, “ODOT Reprographics and Map Distribution”. In Room 321, we have a microfilm reader/printer for prints from microfilm.

If you need to retrieve a drawing from the State Archives and Records Center, see Section 1.3.1.7.

1.3.1.4 Drawing Files – (continued)

(4) Roadway Engineering Section Drawing Files - Since Bridge Section personnel are continually working with and occasionally researching roadway plans (sometimes referred to as grading plans), we need to know a few basics about the Roadway Engineering Section's drawing file system.

Roadway Section project drawings are first in a set of ODOT contract plans. In the upper right-hand margin of each roadway drawing is a project identification number:

25V - 343

The first group of numbers is a sequential number for this project within the group of projects designated 25V. The second group of numbers is a sequential grouping of projects, not necessarily by year, designated by a V-number.

Roadway project drawings do not have 5-digit drawing numbers; they are identified by sheet numbers in the title block. Sheet numbers can also have a letter suffix, for example: Sheet 2A, Sheet 4B-5, etc. However, roadway standard drawings included toward the back of the contract plans do have 4-digit numbers or 4-digit numbers with a letter suffix.

In the Roadway Section's Maps and Plans area to the right of the entrance to Roadway Design Room 222, you will find half size photocopy film prints of all roadway project drawings filed in large manila project envelopes and stored vertically on open shelves. Two reference atlases of straight-line charge/V-project identification numbers are available--one for State Primary Highways and one for State Secondary Highways. There are also other card and computer reference files. If you do not find what you need, the Maps and Plans Coordinator can help you.

Of special interest is the separate file of historic National Forest Highway project plans on half size prints, most of them blueprints. The Bureau of Public Roads (BPR), now FHWA, was responsible for the design and construction of the projects including bridges. These bridge drawings were never included in the Bridge Section drawing inventory even though the bridges were later assigned an ODOT number when the State took control of them. So, if you find a bridge number in our card files but no drawing number, you may find a set of bridge prints here. Ask the Roadway Section Maps and Plans Coordinator for assistance.

1.3.1.5 Bridge Management and Maintenance Files

(1) A Word About Bridge Numbers - Since most bridge management and maintenance files are organized by bridge number, some explanation of the number variations is needed to avoid confusion when looking through the files.

The basic number for structures on the State Primary and Secondary Highway generally has five digits with the following variations:

- Some structures have, in the past, been given a letter suffix to denote a modification or renovation to the original structure. Examples: 1878A or 2100C.
- Some older bridges have been given a letter suffix to identify them as one of several bridges in an interchange such as 1990A, 1990B, 1990C, etc.

1.3.1.5 Bridge Management and Maintenance Files – (continued)

It should be noted that, to facilitate computerized databases and the sharing of data between them, the Bridge Section has frozen the number of all State-owned structures into a 5-numeric-plus-optional-single-alpha, or iiiia, format. Leading zeros are necessary for bridge numbers below 10000. Use this format for all calculations, computer files, and documents wherever a bridge number is required. Some examples would be:

- 08321A
- 16225

A couple of other variations peculiar to the bridge management and maintenance files are:

- An agency Bridge* can have a numeric or alphanumeric identification. In some cases, the agency adopts the bridge number assigned by the Bridge Section. In other situations, the agency uses its own number, possibly alphanumeric such as 25C250.
- A bridge number with two-letter prefix OM or OP identifies a sign bridge or large concrete pipe: OM785, OP295. However, there is also a bridge numbered 785 and one numbered 295! The order of filing is:
 - All OM numbers.
 - All OP numbers.
 - All 5-digit numbers.

*An agency bridge is owned by a city or county or by the State Parks and Recreation Department, U.S. Forest Service, Bureau of Indian Affairs, or Bureau of Land Management.

- When a bridge number is assigned to the structure by the Front Office Staff, the number will be preceded by a field of data called the structure code. The structure code will appear as "BR" or "OT". "BR" indicates the structure is tracked by the Bridge Section Project Tracking System, and "OT" indicates it is not.

Managed Structures:

Bridge	Cantilever Sign	Culvert > 6'
Ped. Structure	Sign Bridge	Tunnel

Non Managed Structures:

Culvert < 6'	Building	Guardrail
Illumination	Retaining wall	Signal
Signing	Sound Wall	

1.3.1.5 Bridge Management and Maintenance Files – (continued)

(2) Bridge Maintenance Files (Room 332) - At one time, you would go to the Bridge Maintenance Files with State bridge number in hand to research the history and condition of a bridge. The file folder might include:

- Correspondence.
- Set of reduced plans.
- Bridge Inspection Reports.
- Scour data.
- A history of maintenance and repairs.

Now, however, certain items such as the more recent Bridge Inspection Reports, Load Rating Summary Reports, and scour data are found in other files in other areas. See the following Sections 1.3.1.5(3) through (7).

The Bridge Maintenance Files are located in Room 332.

(3) Bridge Inspection Report Files, State Bridges (Operations Team Room 332) - The more recent Bridge Inspection Reports, generally 1980s and later, for bridges on the State Highway System are filed by bridge number.

(4) Structure Inventory and Appraisal Files, State Bridges (Operations Team Room 332) - The Structure Inventory and Appraisal (SI&A) printouts, which include the Sufficiency Rating, are filed by bridge number.

(5) Load Rating Files, State Bridges (Operations Team Room 332) - The Load Rating Summary Report plus supporting calculations and data for bridges on the State Highway System is filed by bridge numbers in the Load Rating Coordinator's work area.

(6) Scour Files, State Bridges (Hydraulics Unit Room 312) - Folders with scour study data for bridges on the State Highway System are filed by bridge number in the Scour Study Coordinator's work area.

(7) Agency Bridge Management and Maintenance Files (Operations Team Room 332) - These files of management and maintenance data for agency bridges (see Section 1.3.1.5(1)) include:

- Bridge plans.
- Bridge Inspection Reports.
- Structure Inventory and Appraisal.
- Load Ratings.
- Scour data.

The files are organized by county or city and then by bridge number within each county or city and are located in the vicinity of the Local Agency Coordinator.

1.3.1.5 Bridge Management and Maintenance Files – (continued)

(8) Bridge Log (Team Libraries) - Although technically not a file, the *Bridge Log* is an important and handy source of descriptive data about a structure on the State Primary and Secondary Highways. The *Bridge Log* includes vehicular and pedestrian bridges, sign bridges, box culverts, and pipe culverts 6 feet in height and over. The structures are listed by State Highway Number and then by mile-point. A State map in the front of the *Bridge Log* shows the Primary and Secondary Highway System.

(9) FAS Log and County Bridge Log Files (Room 332) - The Federal-Aid Secondary (FAS) Bridge Logs and County Bridge Logs were put together in the late 1950s and early 1960s. Even though the material is quite ancient, you may still find, with a little patience and ingenuity, some useful information about remote FAS and county bridges.

Both files are organized using the same format. The log books, one to two per county, are filed by county, and within each county, by FAS highway number or county road number. Each log book has a:

- County map showing each FAS highway or county road included in the logbook.
- Log for each FAS highway or county road listing crossroads, bridges, and some other roadway features by mile-point. The Log is followed by:
- Bridge Inventory Inspection Reports.
- Sketches or prints of bridge plan and elevations.

(10) Miscellaneous Maintenance Data by Highway Files (File Room 332) - Organized by State Primary and Secondary Highways, these inactive files include:

- Quarterly Inspection Reports.
- Some prints of bridge plans
- Correspondence.

1.3.1.6 Product Information File (Main Files/Supply Room 321) - As the name implies, the Product Information File, once referred to as the Tech File, is a collection of catalogs, pamphlets, reports, and articles containing construction and maintenance product information: manufacturer's specifications, installation procedures, sales, research, etc. Most of the material is furnished by manufacturers and distributors, but governmental and industrial organizations have also contributed information. Each file drawer has a table of contents in the front listing what the drawer contains.

Some product information is kept in the various Team or Unit libraries, but it may be outdated. If you receive new or updated material from a manufacturer or distributor representative, contact the Office Practice Coordinator to see that copies get into the Product Information file.

1.3.1.7 State Archives and Records Center - The Bridge Section stores its inactive records and documents at the Support Services Building (Building Number 11) in the East Salem ODOT Complex. (See map, Section 1.2.1.3, Figure 1.2.1.3A and Figure 1.2.1.5A. This location is not to be confused with the Archives Division's main building at the north end of the Capitol Mall area.)

What does the Bridge Section store in the ODOT records area?

- Boxes of project contract files stored on open shelving. Box numbers are referenced in the Job Record Card File in the Bridge Section Front Office. Early contract material has been microfilmed. See Section 1.3.1.3(2), "Project Contract Files".
- All drawing originals, including roll file drawings and excluding a recent block (about five years), for full-size mylars and current bridge standard drawings, stored in drawing file cabinets. Read Section 1.3.1.4, "Drawing Files", before you go to the Records Center.
- Calculation books stored on open shelving.

No Archives Division employees are available to help you in the ODOT storage area.

An ODOT car assigned to the Technical Services Branch is available for Records Center trips of up to two hours (see Section 1.2.7.3(2), "Local Car Trips"), but read on before you go to the trouble of reserving a car. The State Shuttle Services, Capitol Mall Park and Ride can also be used, see Section 1.2.7.2.

Scheduled weekly trips to the Records Center are made for requested material. However, you may request a special trip if the circumstances warrant it.

Complete an Archives Retrieval Requisition, Appendix Figure A1.3.1.7A, and put it in the Archives Pickup Box in Main Files/Supply Room 321. Return the material to the box for delivery to the Records Center. If you return items yourself, be sure you take the time to properly refile them.

1.3.2 BRIDGE ENGINEERING SECTION COMMITTEES AND SPECIALISTS

1.3.2.1 Technical and Personnel Committees - The following standing committees serve as the eyes and ears of the Bridge Section concerning certain technical and personnel-related areas:

- Computer Committee - See Section 2.1.4, "Design Computer System and Software". The Committee periodically publishes a newsletter.
- Retaining Structures Committee - The Retaining Wall Coordinator maintains the ODOT Retaining Structures Program and acts as a liaison between design crews and the committee (see Section 1.3.2.2).
- Seismic Committee.
- Cost Data Committee - Chaired by The Bridge Section Cost Data Coordinator (see Section 1.3.2.2). Membership includes a Team Cost Data Coordinator from each of the Structural Design Teams.
- Training Committee - Chaired by the Training Coordinator (see Section 1.3.2.2 and Section 1.5.1.2).
- Employee Recognition Committee - See Section 1.2.3.3(1).

Usually, the membership of these committees is composed of volunteer representatives from each Bridge Section Team, depending on the committee's area of responsibilities and duties. A committee member's length of service varies.

1.3.2.2 Special Assignments - Some Bridge Section personnel are assigned special responsibilities in addition to their regular duties. In some cases, the special assignments are rotational and others, may be permanent:

- Bridge Section Cost Data Coordinator - Chairs Cost Data Committee and is responsible for publishing the Bridge Section's annual *Structure Cost Data Book* and periodically distributes tables and charts of design costs and unit prices for structure items.
- Metric Coordinator - Represents the Bridge Section in the ODOT former metrication program.
- Office Practice Coordinator - In charge of the orderly development and revision of the *Office Practice Manual* (see "Revising the Manual" of the Introduction Section). Also oversees the Bridge Section's standard drawing program. See Section 2.6.1, "Who is Responsible for Standard Drawings".
- Product Evaluation Committee Representatives - One Representative from the Bridge Operations Team to process proposed maintenance products and one Representative assigned from a Structural Design Team or the Preliminary Design Team to handle proposed construction products.
- Retaining Wall Coordinator - Technical coordinator for the Retaining Structures Program.
- Seismic Retrofit Coordinator - Coordinates the seismic retrofit prioritization program for State bridges including contact with the consultants hired by ODOT.

1.3.2.2 Special Assignments – (continued)

- Shop Drawing Coordinator - Logs in and out all working drawings for the Bridge Section. See Section 3.1.8.2, "Processing Working Drawings".
- Team Cost Data Coordinator - Assigned from each Structural Design Team to serve on the Cost Data Committee and to compile and input design and structure costs data for Team projects.
- Training Coordinator - Chairs the Training Committee and normally serves two to four years. See also Section 1.5.1.3.

1.3.2.3 Design, Computer, and Product Specialties

- Bridge Section Design Specialty List – see the Bridge Website
- Computer Application Specialties – contact the room Computer Committee Member

The Bridge Section Product Design Specialty List is used to assign reviewers for new product proposals.

1.3.2.4 ATE Drafter Specialties

(1) ATE Drafter Specialty Areas - The following specialty areas were created for Associate Transportation Engineer (ATE) Drafters to provide, within the Bridge Section, a consistent means of sharing Computer-aided Drafting (CAD) information, maintaining computer files, and improving user communication and efficiency:

- Cell Library – Responsible for maintaining and updating cell library on a regular basis. Submits proposed cells to the CAD group. Troubleshoots problems with Cell Libraries for the Section. Documents all Cells in the Section and submits documentation.
- Menus – Responsible for creating and helping users create their menus for more efficient CAD use.
- File Management – Responsible for maintaining Section CAD computers so that all available Section files are current.
- User commands – Responsible for maintaining existing user commands.
- Office Practice – Responsible for maintaining the Drafting Section of the Office Practice Manual.
- Spell Check Library (for Windows NT when we receive it from ISB) – Responsible for creating and maintaining dictionaries for the microstation spell checkers. Keeps the dictionary current.
- User commands – Responsible for maintaining existing user commands.

1.3.3 LIBRARIES AND OTHER INFORMATION CENTERS

1.3.3.1 Team and Unit Libraries - Each Bridge Section Team and Unit has set aside one or two bookcases to house a small library of useful technical references. Appendix Section A2.1.2.2(1) lists the more important titles that each of the Structural Design Team should have. The other Team and Unit libraries have texts and manuals specific to their specialties and duties.

Four very useful reference tools published by ODOT are described in Appendix Section A2.1.2.2(1), "Design Team Libraries":

- *Bridge Log*
- *Oregon County Maps Atlas.*
- *Oregon City Maps Atlas.*
- *Oregon Highway Straightline Charts*

If you take a publication to your desk, remember to leave a completed "Out" card.

1.3.3.2 Bridge Engineering Section Library - The Bridge Section Library's main collection of technical design references is found in File Room 321. (See Figure 1.2.1.2A.) At present, there is no catalog system, but the publications are generally organized by construction material or type of construction:

Titles include:

- Selected volumes of the *Annual Books of ASTM Standards.*
- *AASHTO Material Specifications.*
- *AREA Manual for Railway Engineering.*
- Bridge design practice manuals and standard highway construction specifications of other states.
- Seismic design manuals.
- Manuals of other ODOT units.
- Video cassettes.
- Historical material:
 - Oregon highway and bridge specifications.
 - AASHTO specifications.
 - Photo albums of early Oregon concrete and steel bridge construction are located in the Bridge Engineer's Office. (Some negatives are filed by bridge number in the microfilmed Project Contract File.)

1.3.3.3 ODOT Library - If you need to do some serious research, the librarian at the ODOT Library can put you on the 'Information Superhighway'. ODOT employees, statewide, as well as other governmental agencies, other libraries, and the general public can take advantage of the Library's services, which include:

- Online computer reference and research.
- Interlibrary loans (State Library, Salem City Library, Chemeketa Community College Library, Oregon State University, Portland State University, etc.).
- Access to the national library system.
- Computer-generated bibliographies.
- Mail-routing of publications.

With over 13,000 book, magazine, journal, report, audio tape, and video tape titles, the ODOT Library's primary focus is transportation research. Topics of the technical and professional holdings include:

- Civil Engineering.
- Computer Technology.
- Management.
- Oregon Laws, Oregon Revised Statutes (ORS), and Oregon Administrative Rules (OAR).
- Oregon history.

Books have a four-week loan period. Journals and tapes can be checked out a week at a time. You can have the latest periodicals, such as *Engineering News-Record* and *ASCE Civil Engineering* magazines or *ACI Structural Journal* and *ASCE Journal of Geotechnical Engineering*, routed to your desk. The list of available periodicals is extensive.

1.3.3.4 ODOT General Files and History Center - Located on the first floor of our building, the General Files and History Center serves as a permanent legal repository for all documents received or sent by the Director of Transportation's office.

For Department and public access, the Center collects and stores ODOT historical records which include correspondence, publications, and photographs. Non-paper artifacts are kept at the ODOT Museum in the East Salem ODOT Complex. See Figure 1.2.1.5A, for location.

1.3.3.5 Oregon Technology Transfer Center - For local transportation agencies, the Oregon Technology Transfer (T2) Center is a clearinghouse for information and training relating to roads, bridges, and public transportation. The Center is jointly sponsored by the Federal Highway Administration (FHWA), ODOT, and the counties and cities of Oregon.

The Center provides the following services:

- Publishes the quarterly newsletter *Oregon Roads*.
- Makes general announcements by mailings or in the *Oregon Roads*.
- Provides low-cost seminars and workshops.
- Answers phone and mail inquiries about transportation-related subjects.

Since the ODOT Research Engineer serves as the T2 Center Director, the Center's office is part of the Research Section in the East Salem ODOT Complex. See Figure 1.2.1.5A.

1.3.2.6 State Library - Although your primary research connection would be the ODOT Library, the open stacks of the Oregon State Library Reference Room are a short stroll across the Capitol Mall (Building 14, Section 1.2.1.4, Figure 1.2.1.4A). The Reference Room is open weekdays 10 a.m. to 5 p.m.

1.4 COMMUNICATIONS

1.4.1 CORRESPONDENCE

1.4.1.1 Correspondence Overview

(1) Types of Correspondence - Generally, the Bridge Section produces three types of correspondence:

- Letters.
- Memorandums.
- Reports (which are sometimes in the form of a memorandum).

Letters account for approximately one-third of the outgoing correspondence; memos and reports make up a majority of the rest.

(2) Correspondence Copies - A blue copy is made for every letter or memo processed by the Front Office staff and filed by month/year in the Front Office. Pink copies of the ODOT/Bridge Section Transmittal Letter form are also filed with the blue copies.

The Bridge Section file copy is yellow.

Sometimes, a blind copy (bc) is made. A blind copy goes internally to a Bridge Section person or persons, which is indicated on the yellow file copy, but not on the original correspondence or other carbon copies (cc).

Originators or authors of correspondence are responsible to see the appropriate number of accompanying prints or other enclosures are delivered to the Front Office for mailing.

If a "/w/set" is shown following a name or organization in the carbon or blind copy distribution list, include prints of all drawings mentioned in the text of the letter. Copies of such items as the Hydraulics Report, TS&L Narrative, etc., are not considered as part of the set of prints and will be separately called out if required.

(3) Use the PCS Key Number - Always put the Project Control System (PCS) key identification number as the last line of the subject heading for a project's correspondence sent before the award of contract. (The contract number replaces the PCS key number after the award.) The PCS key number can be found on several documents:

- PCS Project Scheduling Reports.
- PCS Region Project Scheduling Reports.
- Project Prospectus.
- Bridge Project Prospectus Estimate
- Job Record Sheet.
- Bridge Section Project Tracking System forms for structure and project data. See Section 2.2.3.7, "Request for Bridge Number".

1.4.1.1 Correspondence Overview – (continued)

(4) Transmitting Review Plans to Regions - For most structural projects three plan submittals are made to the Region for review before final plans are made:

- Concept Plans - Type, Size, and Location (TS&L) Plan and Elevation Drawing (see Section 2.3.8.1).
- Preliminary Plans (see Section 2.4.8)
- Advance Plans (see Section 2.4.10).

Plan reviews will line up with Roadway Design's Plan Distributions. The Bridge Designer will not need to make a separate distribution of Bridge Plans only, but will normally deliver the Bridge distribution list and required attachments to Roadway Design using a standard transmittal letter. The distribution list will vary depending on the type and size of the project. The distribution list should be developed completely after discussions with your Project Team Leader and your Supervisor.

Periodically the Bridge Engineering Section receives plans from a consultant that were prepared under a contract directly with the Local agency. In this case, the reviewer in Bridge should assume there is Federal funding involved unless informed otherwise, and review the plans for economy, constructability, safety and compliance with AASHTO standards. Further internal distribution for review will be dependant on the type of project and ODOT personnel that have received the plans to date. Typically, other units involved might be the Final Design Unit, the Environmental Unit, and the GeoHydro Unit.

(5) Submitting Plans to FHWA - Federal-Aid projects can be divided into two categories of FHWA review:

- Those project plans exempt from formal FHWA review and approval (normally all NHS projects costing less than one million dollars). However, plans are still sent to FHWA for information only.
- Those project plans that are formally reviewed and approved by FHWA (normally all Interstate projects and all NHS projects costing greater than one million dollars).

FHWA does not review local agency projects for the most part, unless they are very large or unique. The review responsibility has been picked up by ODOT. The plans for local agency projects are not sent to FHWA "for information only".

Generally, Federal-aid projects plans are transmitted to the Oregon Division Bridge Engineer of the FHWA in Salem using the normal Roadway distribution. If plans for projects exempt from formal FHWA approval are sent for information only, the following notation is made after the FHWA cc entry for both TS&L and Preliminary Plans: "For your information". If plans are to be formally reviewed and approved, the following notations, in bold, are made:

- "Request your approval" for TS&L distribution.
- "For your review" for Preliminary Plans.

1.4.1.2 Letters - Letters are used to correspond with addressees inside and outside of ODOT. Refer to the flowchart for producing letters, Appendix Figure A1.4.1.2A. With review by the Team Supervisor, a Team member signs informational letters to other ODOT offices and to consultants.

The Team Supervisor signs the following:

- Letters to consultants giving instructions or approval, unless the Supervisor delegates this to a Team member.
- Transmittal letters for Advance Plans sent to mechanically stabilized earth (MSE) retaining wall companies.

The Bridge Engineer signs the following types of letters:

- Responses to letters addressed to the Bridge Engineer.
- Letters making or declining commitment of major resources of the Section.
- Letters providing:
 - Statements of change in current policy and practice.
 - Interpretations of policy and practice.
- Letters responding to legal matters.
- Letters to the FHWA including transmittal letters for TS&L submittals.
- Letters covering situations where protocol requires the Bridge Engineer's signature.

1.4.1.3 Memorandums - The Bridge Section uses the Interoffice Memo to correspond with Bridge Section personnel and other ODOT offices. Several other forms of memos are also used:

- Bridge Project Discussion Memo. See Section 3.1.2.2.
- Memo to File.
- Informal memos. See Section 2.1.3.3.

Interoffice Memos are processed the same way letters are. See the Letter Process flowchart, Appendix Figure A1.4.1.2A.

A Team member signs shop drawing review forms and transmittal forms. See Section 3.1.8.2(4).

1.4.1.3 Memorandums – (continued)

With review by the Team Supervisor, a Team member signs the following types of memos:

- Bridge Project Discussion Memo. See Section 3.1.2.2 and Merge/template file.
- Memo to File.
- Memos for reviews of temporary works (falsework, shoring, detour structures).

The Team Supervisor signs the following types of Interoffice Memos:

- Project-related memos involving
 - Changes in scope.
 - Requests for work by other ODOT offices.
 - Decisions regarding schedules.
- Memo to transmit TS&L or Advance Plans to the Regions. Refer to Section 1.4.1.1(4), "Transmitting Review Plans to Regions".
- Memo to transmit Advance Plans to FHWA for information or review. See Section 1.4.1.1(5)
- Memo to transmit information and drawings to the Permit Liaison. Refer to the Bridge Section *Permits Manual* for example. Merge/template file is available electronically.
- Bikeway/Pedestrian quantities memo to Bikeway /Pedestrian Program Manager. See Section 2.4.4.1.
- Memo to Roadway Engineering Section concerning drawing numbers added to the Project Title Sheet during the advertising period or after the contract is awarded. See Section 3.1.2.3.
- Transmittal memo for revised or added drawings sent to Region after contract award. See Section 3.1.2.3.
- Transmittal memo for As Constructed prints sent to Region. See Section 3.1.10.

1.4.1.4 Reports - Technical reports written by Designers are to be:

- Signed by the Designer and, if appropriate, stamped with his or her professional engineer seal.
- Signed by the Team Supervisor.

If the Designer is licensed but not required to use his or her P.E. seal or is not licensed, the Supervisor stamps the report.

1.4.2 FACSIMILE COMMUNICATION (FAX)

The Bridge Section has a fax machine (503-986-3407). The fax machine is located in the front office (Room 301) on the north side of the receptionist area. If, for some reason, the Bridge Section fax machine is not available, the ODOT Service Center in the Transportation Building basement also provides faxing services. Complete a FAX Data Sheet from the Service Center counter.

1.4.3 TELEPHONE

Bridge Section employees have telephones with electronic voice messaging, or voice mail. Near each phone should be two fact sheets summarizing how to use your phone and voice mail. A detailed voice mail *User Guide* should also be with the fact sheets. The Department has issued guidelines in the policy directive ADM 5-02, "Voice Mail". If a Team copy is not available, ask to look at the Front Office's copy in its ODOT *Policy and Procedure Manual*.

Long-distance calls made from our phones are automatically logged; no forms need to be filled out. Phone messages received by Front Office personnel are written on standard While You Were Out forms and left in the message carousel on the Front Office counter under the Team Supervisor's name. Team members visiting the Front Office are asked to deliver their Team messages. A pad of message forms is usually by each phone. If not, the Front Office has a supply of them.

Telephone directories are at the following locations:

- Individual phones:
 - Letter size "Bridge Section Directory".
 - Letter size "State of Oregon Telephone Directory".

Telephone directories are at the following locations: - (continued)

- Team area, usually in the vicinity of the Team Supervisor's desk:
 - *ODOT Directory* - includes Transportation Building, Salem Area, and some Region/District personnel.
 - *State of Oregon Telephone Directory* - includes an alphabetical name list of almost every State worker.
 - US West *Salem-Keizer* directory.
 - US West *Portland, Multnomah, Washington, and Clackamas Counties* directory.
- Information Resource Center, Transportation Building basement. Has most Oregon cities and areas plus a few major cities of Washington and California.

Refer to Section 1.2.4.4 for guidelines and information about making private phone calls.

1.4.4 MAIL

Located next to the ODOT Service Center in the Transportation Building basement, the DAS Mall Copy Center provides full mail service including:

- U.S. Postal Service including Express Mail.
- Bulk mailing.
- Mass mailing folding, inserting, distribution, etc.
- Building and interagency shuttle pickup and delivery.
- United Parcel Service and Federal Express.

The Bridge Section receives two mail deliveries each workday. Supervisors and Front Office staff have mailboxes in the Front Office. Team Supervisors have interoffice mail/file pickup boxes at their desks.

Use the standard ODOT Routing Slip, or buckslip, to send shuttle mail to ODOT people outside the Bridge Section and the several other agencies listed. If a State agency is not listed, use a special interagency manila envelope available from the Front Office, or you can address a sealed envelope with the person's name, agency, and address and place a red check mark or write the work "shuttle" in the upper right-hand corner.

If you need to send something to another Bridge Section employee, you can walk it over personally, or fill out the interoffice buck-slip and put it in your Team Supervisor's "out" basket, or take it to the Front Office and put it in the interoffice mailbox.

ODOT has statewide office-to-office electronic communications through e-mail. All employees with a networked PC can receive and send it. Bridge Section PC's are on line with the internet, so communication and information retrieval outside the ODOT organization is also possible. Dated September 19, 1994 and entitled "Electronic Mail and Electronic Bulletin Boards", ODOT Policy Number ADM 5-1 identifies appropriate and inappropriate uses of e-mail.

1.4.5 CREW MEETINGS

"To get the word out", the Team Supervisor may periodically conduct a crew meeting. In contrast to the more formal team meeting, the crew meeting is held in an informal atmosphere to pass along a variety of information, both technical and personnel-related. Remember the crew meeting time charges are miscellaneous indirect overhead.

1.4.6 BULLETIN BOARDS AND PASS-AROUND INFORMATION

Bulletin boards are found at the following locations in the Transportation Building:

- Each Bridge Section Team area.
- Bridge Section general ODOT information board located to the left of the dumbwaiter.
- Bridge Section Recognition and Appreciation Board located to the left of Room 332. See Section 1.2.3.3(1), "Bridge Section Recognition Committee".
- Floors 1 through 5 ODOT and labor bargaining unit information boards generally located across from or near the elevators.
- Basement board with ODOT and labor bargaining unit information located across from the elevators. Part of the board area is devoted to unofficial information such as public announcements, business and personal sales advertisements, etc.
- Basement Commuter Information Board.

Periodically, each Team circulates among Team members current information of all kinds:

- E-Mail communications.
- Training course announcements.
- Technical bulletins and magazine articles.
- Announcement of Section activities.

1.4.7 NEWSLETTERS

1.4.7.1 ODOT TranScript - The official newsletter of the Department is called the *TranScript*. It is published monthly and delivered to each employee.

1.5 EMPLOYEE TRAINING AND CAREER DEVELOPMENT

1.5.1 TRAINING RESPONSIBILITIES

1.5.1.1 You and Your Supervisor - You and your Supervisor share the ultimate responsibility for your training and development. You have the responsibility to:

- Work with your Supervisor to prepare your Employee Development Plan (see Section 1.5.4). Assess your own strengths and weaknesses, and request the training and education you think you need to:
- Increase your value to the Department.
 - Further your personal development.
 - Accomplish your career goals.
- Complete and submit course registrations and other required paperwork.
- Notify the Front Office about when and where you will be taking your training including a phone number where you can be reached in case of an emergency.
- Complete the Employee Development Report (Section 1.5.6.2) immediately after completing your course.

Your Supervisor has the responsibility to:

- Know what kind of training you require to effectively and efficiently perform your current assignments and to meet your long-term career goals.
- Encourage and help you to obtain the necessary training and education you need.
- Provide opportunities and support you in applying your training to your job.
- Manage your Team's training and education budget and be knowledgeable about the current status of available funds.

1.5.1.2 Training Committee - The Bridge Section Training Committee oversees the Section's Training and Education Budget and activities. The Committee's membership consists of:

- The Section's Training coordinator.
- A member representing each Bridge Section Team.

1.5.1.2 Training Committee – (continued)

The Training Committee is responsible for:

- Developing the Section's training goals and objectives.
- Maintaining liaison between the Bridge Section and the Human Resource Development Unit (see Section 1.5.1.4) and assisting in evaluation and implementation of ODOT's training policies and programs.
- Preparing and administering the Bridge Section's Training Budget according to ODOT policy and based on training requests and other data gathered from the Teams and employees.
- Monitoring training expenditures and issuing periodic reports to the Teams giving training funds expended by the individual Team members.
- Keeping Section personnel informed of current training opportunities and soliciting input for future training needs.
- Developing and organizing courses that have been requested, but are not offered or available within or outside of the Department's training program.
- Maintaining and administering the Bridge Section's orientation program for new employees. See Section 1.2.2.

Besides their other duties, Training Committee members perform the very important function of working closely with their respective Team Supervisors to keep them informed about the Section's training situation.

1.5.1.3 Training Coordinator - The Bridge Section Training Coordinator normally serves for one or two State fiscal bienniums--that is, two to four years. It is a voluntary position whose duties are performed in addition to regular Team assignments. Specifically, the Training Coordinator chairs the Training Committee and:

- Processes course registrations, Employee Training Plans (Section 1.5.4), and Employee Training Reports (Section 1.5.6.2) and maintains employee training files.
- Retrieves employee training data from the Human Resource Development System.
- Enters employee training data into the Human Resource Development System. See Section 1.5.2.2.
- Provides the necessary training program forms.

1.5.1.4 Human Resource Development Unit - ODOT's Human Resource Development Unit acts as a clearinghouse in meeting specific training needs and serves as a resource for the Bridge Section Training Committee. It also offers a variety of professional skill development and managerial/supervisory training on a first-come, first-serve basis.

The offices, training center, and audiovisual lending library of the Human Resource Development Unit are located in southeast Salem. See Salem Area Map, Section 1.2.1.3, Figure 1.2.1.3A, for the location.

1.5.2 TRAINING INFORMATION

1.5.2.1 Training Catalogs and Announcements - Normally issued every two years by the Human Resource Development Unit, the ODOT *Training Catalog* is an informative and useful manual for answering training-related questions. It includes training policies, procedures, and description of courses available through the Department. The Training Coordinator has a copy and so does each Team representative on the Training Committee.

Both the Human Resource Development Unit and the Bridge Section Training Coordinator circulate course announcements and listings for both in-house and external classes.

Another Human Resource Development Unit publication *Audio/Visual Catalog* lists audio cassettes and VHS videos available for loan to ODOT employees on a one-week basis. The Training Coordinator keeps the Bridge Section's copy of the *Audio/Visual Catalog*. You are encouraged to use it.

1.5.2.2 Human Resource Development System and Your Training Record - ODOT's Human Resource Development System keeps a computerized record of the courses you have taken, including class hours and tuition costs.

The Bridge Section Training Coordinator maintains access to the Human Resource Development System and enters information about your training activities taken from each Employee Development Report that you submit after completing a course. (See Section 1.5.6.2, "Employee Development Report".) This data becomes a permanent part of your Personnel File.

You can ask for a printout of your existing training record accomplished to date from the Training Coordinator at any time.

1.5.3 BASICS OF THE TRAINING PROGRAM

1.5.3.1 Types of Training - Training can be defined or identified by one or a combination of three situations:

- Who gives the course?
- Is attendance required-by-ODOT/requested-by-your-Section or is it voluntary?
- Is the training to be completed "on-the-job" or in a classroom?

Refer to the ODOT *Training Catalog* for terminology used to describe the types of training.

1.5.3.2 Section's Training Budget - The Bridge Section Training and Education Budget is submitted for each State fiscal biennium. Budgeted dollars for each crew are generally based on an assumed average number of hours of development that each employee is anticipated to require over the biennium. Through each Team representative on the Committee, the Committee keeps the Team Supervisors and employees informed of the current training situation by printing on request to-date expenditures of each individual.

1.5.3.3 Training Eligibility - All personnel permanently assigned to the Bridge Section are eligible for training. However, some employment situations are not, as yet, covered by any written Department training policy. The Human Resource Development Unit has advised the Bridge Section as follows:

- Employees on trial service - If the employee requires specific training to do the job or pass trial service, of course, the training will be provided. Otherwise, any training should be delayed until the trial service of six months is completed.
- Employees in the Graduate Engineer Program (See Section 1.5.7.1) - The Bridge Section pays for ODOT-required training taken by a graduate during temporary assignment to the Section. The Section will also pay for training requested during the graduate's stay provided the Team Supervisor and Section Training Coordinator approve the request. Moreover, the Section will handle associated expenses even though the graduate takes the training after rotating into another unit.
- Employees in the Developmental Assignment Program (see Section 1.5.7.2) - As with the Graduate Engineer Program, the Bridge Section will handle associated expenses for any elective training requested by rotational employees during their Bridge Section stay and approved by their Team Supervisor, even if the employee takes the training after rotating back to his or her permanent assignment. However, the employee's permanent unit handles associated expenses for any ODOT-required training taken while with the Bridge Section or any elective training requested and approved while permanently assigned.

Temporary employees, such as summer workers, are not normally provided formal training beyond that required to perform their specific assignments.

1.5.3.4 Training Reimbursement Guidelines - Before you can file for reimbursement of training expenses you have paid for, you must have satisfied certain criteria. Refer to the ODOT *Training Catalog* or talk to your Supervisor or the Section Training Coordinator. Expenses eligible for reimbursement usually include tuition, workbooks used during classes, and travel expenses. Textbooks, tools, equipment, etc., kept by you for personal use at the end of the training are not eligible for reimbursement. ODOT will reimburse you for eligible training and education expenses that you have paid for according to the general guidelines listed in the *Training Catalog*. Present ODOT policy is to reimburse employees for 100 percent of Supervisor approved training expenditures. There are some limited exceptions outlined in the ODOT Training Catalog. If you are planning to pursue a degree, fellowship, grant, etc., or to request educational leave, refer to the ODOT *Training Catalog* for the details.

1.5.4 EMPLOYEE DEVELOPMENT PLAN

The Employee Development Plan is the present means used to register for ODOT sponsored classes that are outlined in the ODOT Training Catalog. A more comprehensive Development Plan that outlines career goals and helps guide an individual's developmental needs is presently in the conceptual stages.

A Development Plan is normally completed at the time of the employee's annual performance appraisal. But a Development Plan may be filed at any time training requirements change and an employee wishes to register for an internal ODOT course. A new plan should be filed in the case of a transfer or promotion. An electronic form "Development Plan" is available on each personal computer in the Word/Template directory.

The completed and signed Development Plan original is sent to the Bridge Section Training Coordinator for inputting into the Human Resource Development System. After it is input the employee is automatically registered in the requested class and will be notified by the Human Resource Development Section when and where the class is to be held (See Section 1.5.5.1). The Training Coordinator keeps a copy on file until a new Development Plan is completed and submitted.

1.5.5 APPLYING FOR COURSES

1.5.5.1 In-House Training Applications - The procedure for applying for in-house training is as follows:

- List the course requested on your Development Plan and submit it for your Supervisor's signature.
- Any time new courses are requested, a new Development Plan should be completed and submitted to the Training Coordinator through your supervisor.
- The Training Coordinator is responsible for inputting the updated Development Plan into the Human Resource Development System, at which time you are automatically enrolled in the course. A copy of the Development Plan is kept in the Training Coordinator's file.
- The Human Resource Development Unit normally schedules a course when enough applicants to fill a class have applied. After which you will be informed where and when the class is scheduled.

1.5.5.2 External Training Applications - For external, or outside of ODOT, training given in Oregon, the application steps are as follows:

Complete an ODOT Educational Assistance Application and submit it to your supervisor. An electronic form "Educational Assistance" is available on each personal computer in the Word/Template directory.

- Your Supervisor sends the approved Application to the Section Training Coordinator for further review and approval. If approved, the signed original will be returned to you, one copy will be filed with the Training Coordinator, and one copy will be forwarded to the Financial Services Branch.
- After receiving your Supervisor's and the Training Coordinator's approval, you may enroll by filling out the registration form provided by the organization giving the course and paying the required fees.

1.5.5.3 Out-of-State Training Applications - The following is the procedure for out-of-state training applications:

- Complete an ODOT Out-of-State Travel Authorization, (see the Word template "Out of State Trav Auth Frm.dot") for the approval of your Supervisor, the Bridge Section Training Coordinator, and the Bridge Engineer. The employee should keep a copy for his/her records.
- Next, complete an ODOT Training Expense or Tuition Application, (see template "Expense Statement" and Section 2.1.3.4), for your Supervisor's. One copy of the approved Application will be returned to you and one copy forwarded to the Financial Services Branch.
- Finally, enroll in the course by filling out the necessary registration forms and paying the fees. If necessary, fill out an ODOT Request for Advance Expenses form for your Supervisor's and the Bridge Engineer's signatures. A copy of the approved Request will be returned to you. The Training Coordinator will keep another copy. The original will be sent to the Financial Services Branch.

1.5.5.4 Modified Application Procedure - In some situations, the training application procedure is modified. For example, if the class size of a course is limited, Team Supervisors may be asked to nominate and select those to attend. On the other hand, if class attendance is unlimited, a sign-up list may be circulated for everyone to consider.

1.5.6 AFTER COMPLETING A COURSE

1.5.6.1 Training Entries for Time Reports

You may want to review Section 1.2.4.2, "Time Reports", before reading the following material.

As you can see from the examples, you use the TRAINING identifier and TR work code for reporting all training and educational activities on your Weekly Time Report. The expenditure account number (EA) entered will signify a team indirect overhead charge as represented by IN74XX, and the activity code will be 020 for Training Competency or Work Environment, or 023 for Training Delivery. Selecting the proper sub-job number to complete the EA is a bit more complex.

1.5.6.2 Employee Development Report - Immediately after completing a class or seminar, complete an Employee Development Report (Microsoft Word template, TREPORT.DOT). Instructions on the proper use of this template are provided below. Please take the time to familiarize yourself with these directions prior to filling out the template for the first time. If you have any problems or are confused about any aspects of this procedure please contact the Section Training Coordinator. Your Supervisor is to sign a hard copy of the Report and submit it to the Bridge Section Training Coordinator for entry into the Human Resource Development System (see Section 1.5.2.2). An electronic copy of the file should be forwarded to the Section Training Coordinator for processing. The signed original hard copy of the Report will be returned to you for your records. Team Supervisors may send their own Employee Development Reports to the training Coordinator without the Bridge Engineer's Signature.

A point to remember: If you want your training record in the Human Resource Development System to be accurate and up-to-date, get those Employee Development Reports to the Training Coordinator in a timely manner! Your Report is also used by the Human Resource Development Unit to prepare summaries of training taken department-wide.

The following instructions are intended to help Bridge Section personnel complete the proper procedures for filling out and recording the TREPORT Template.

Justification:

In the past, Bridge Section personnel completed and submitted hand written Training Report Forms. One or more persons were trained in the proper procedures for inputting this information into the ODOT main-frame database. With the acquisition of PC's for Bridge Section personnel, a system was developed so that the information could be typed once by the designer and input directly into a buffer. At various intervals this buffer is uploaded into the mainframe using cut and paste utilities. The advantages are much quicker turn around on information input, elimination of errors, and significantly less information for individual designers to remember. Below are instructions for proper usage of the TREPORT system. Careful adherence to these guidelines will eliminate rework and make the completion of Training reports quick and convenient.

Directions for Use:

Select the TREPORT Template by Opening MS Word. In the upper left corner of the window is the File menu. Select the New command from the menu. **DO NOT select Open**, as this will result in an unusable file for information extraction. A dialog window will open with a list of available templates in alphabetical order. Scroll down this list until you find the "treport" template. If it is not there seek help to load the template onto your PC hard drive from the network. Do not access the template directly from the network drive. Highlight the treport template and select the "OK" button. The template should appear on the screen with the label "Document#".

Modifying the template to contain personal information:

Within your Toolbars there will also appear a new button labeled "Modify treport default settings". This button starts a macro that allows you to input information that should remain consistent for all individuals, such as your name, social security number, and crew number. To start this macro select the button and follow the on-screen directions carefully. Two reminders, 1) Do not input dashes into your social security number field and 2) be sure to select the "done" function to quit and save changes. More detailed instructions for this feature are included at the end of the write-up.

Data Input:

Select the desired field. The template should start in the "Add/Delete/Change" field. Fields may be selected using the up and down arrows on your keyboard or using the mouse cursor. Fill in all fields with the required information. A field-by-field description is included at the end of this section. Remember to fill out a course critique in the provided area.

1.5.6.2 Employee Development Report – (continued)

Saving and printing your file:

It is recommended (but not required) that you save your files on your system for future reference. Sometimes they do get lost. To save your file after all fields have been filled, select “Save As” under the “File” menu. Give the file a unique name that includes your initials and place it in the directory of your choice. After you have saved the file, select Print from the File menu and route this hard copy to the Section Training Coordinator through your supervisor.

Sending your file via MS Mail:

There are two options for sending your file through MS Mail to the Training Coordinator.

- 1) Under the File menu in MS Word select Send. A dialog box with all personnel will appear on the screen. Select the person you wish to send this report to and click on the “OK” button.
- 2) Exit MS Word and open MS Mail. Compose a message and select the attach utility. Find the report file and attach it to the message, select Send.

Sending your file via the Network:

After saving your file onto your hard drive, copy it to F:\Bridge\Transfer. Make sure you indicate on the file that this is a network transfer in the appropriate field.

Sending your file via diskette:

After saving your file onto your local drive, save a copy to a floppy disk inserted into your A: drive, clip it to a hard copy of your report, and route it to the training Coordinator.

After completing these steps you are finished.

After the Hard copy of the report has been routed it should be returned with the Coordinator’s mark.

Instructions for Use of the TREPORT Modification Macro:

The intent of this macro is to modify the template resident on the user’s hard drive. These modifications will enable the user to avoid the input of his/her name, social security number, and crew number. It also will set the default for the “File Name” field.

Starting the Macro:

Select the TREPORT Modification button in the toolbars at the top of the screen. If this toolbar button does not appear after the template has been activated, you are most likely in possession of an outdated copy of the template. Please seek help in loading the template from the network.

Changing Fields defaults:

Highlight the circle next to the field description that you wish to modify. When the correct description is highlighted, select the “OK” button on fill in the information. After the information is input, select the “OK” button to return to the menu and select your next field to modify. Remember to input your Social Security number WITHOUT DASHES, and the Crew Number is only the last four digits for your crew.

Exiting the Macro:

After all fields have been set, select the “Done” description and click the “OK” button. The macro will save your modifications and activate the template showing the default fields.

1.5.6.2 Employee Development Report – (continued)

TREPORT fields:

Name:	Your name.
Date:	Current date.
Social Security Number:	Your social security number. This field is used to identify you in the ODOT database. This database does not recognize dashes in the number, so don't use them.
Agency – Org. Unit:	The last four digits of your crew number. (i.e. – 73-7460)
Add/Change/Delete:	Indicates if you wish to add a new course to the database, change a course already on record or delete a previously input course.
Completion Date:	The date that this course was completed.
Class ID Number:	Only those classes given through the Human Resources Development Center have unique numbers. All other classes will require the default "EX9999".
Course Title:	Course Title, limited to 34 characters.
Training Code:	A very limited number of classes listed in the ODOT Training Catalog are "W" Work environment category, all others are "C" competency training.
Class Hours:	The number of hours spent in class.
Travel Hours:	The number of hours spent traveling to and from training.
Mandatory Code:	Only used when employees are required to take training. "N" for no is not an appropriate response. If the training is not mandatory, leave the field blank.
On-The-Job-Training:	Reserved for training obtained during the course of your regular duties.
Method of File Transfer:	See "Sending your file via MS Mail/Network or Diskette" in the instructions above.
FileName:	This field is used to indicate the name of your file for easy location during data collection. Typically, this will only be used when the network or diskette transfer options are employed.
Course Critique:	A location for personal comments about the training completed.

1.5.6.3 Training Reimbursement Requests - Reimbursement requests for training expenses that you have paid are made by completing an ODOT Expense Per Diem Statement. An electronic form "Expense Statement" is available on each personal computer in the Word/Template directory.

You must include with the Statement:

- Receipts for tuition costs.
- Proof of successfully completing the training.
- A copy of the Employee Educational Assistance Application.

Your reimbursement payment may be delayed because the Finances Services Section only issues checks at certain times of the month. For quicker payment, you can have your check electronically deposited to your bank account by filling out the appropriate form. Talk to our Front Office personnel.

1.5.7 EMPLOYEE ROTATIONAL PROGRAMS

1.5.7.1 Graduate Engineer Program - The Graduate Engineer Program is an 18-month program designed to give recent civil engineering, engineering management, construction engineering, or construction management graduates broader ODOT experience and also provide a wider degree of training in necessary skills and abilities. Thus, it is hoped the graduate will be more inclined to pursue a career with the Department. The Human Resource Development Unit coordinates the Program.

The new-hire graduate receives two 9-month rotational assignments. It is intended that one assignment involves field experience in construction and the other be related to design, planning, or programming.

ODOT permanent employees who meet the Program's eligibility requirements are also eligible to compete for slots in the Program.

1.5.7.2 Developmental Assignment Program - The Department has a Developmental Assignment Program whereby employees without a civil engineering degree can rotate into an appropriate ODOT unit for a year to see if they would like to pursue a degree and career in the engineering field.

1.5.8 ODOT MENTOR PROGRAM

Early in 1993, ODOT began a two-year pilot program--the ODOT Mentor Program.* Coordinated by the Human Resource Development Unit, it is a structured program that pairs an employee, or protege, with a mentor who can help him or her increase organizational awareness and strengthen skills. A protege must be willing to dedicate time and energy to attend regular meetings with the mentor as well as commit to self-improvement exercises. In addition to being self-motivated and willing to develop their own careers, proteges need to have the following characteristics:

- Be goal orientated.
- Actively seek challenging assignments and greater responsibility.
- Be receptive to feedback and coaching.

For their part, volunteer mentors are expected to have most of the following characteristics:

- People-oriented personality.
- Successful in the Department.
- Willingness to assume responsibility and accountability as a mentor.
- Knowledgeable about the Department's mission, vision, communication channels, training programs, etc.
- Technical and professional competence.
- Exemplary managerial skills.

If you are interested, contact the Human Resource Development Unit.

*Bridge Section has its own mentor program; see Section 1.2.2, "New Employee Orientation".

1.6 BRIDGE ENGINEERING SECTION EMERGENCY PLAN PROCEDURES

1.6.1 BRIDGE ENGINEERING SECTION'S RESPONSIBILITIES

When structures of the State Highway System are damaged by isolated or widespread incidents, the Bridge Engineering Section will assist the Regions with technical expertise, inspectors, divers, and underwater equipment to provide on-site inspection of damaged structures. Section personnel will:

- Evaluate the safety of damaged structures.
- Provide temporary or permanent repair details.
- Provide plans for temporary or replacement structures.
- Provide construction assistance.

1.6.2 DEFINITIONS OF LEVELS OF EMERGENCIES

1.6.2.1 Isolated Incidents - Single structures damaged by fire, earth slide, structural failure, vehicle impact, etc., or a few structures damaged by wind, flood, earthquake, etc.

1.6.2.2 Widespread Incidents - Numerous structures damaged by wind, flood, earthquake, etc.

1.6.3 WHO TO CALL

For isolated or widespread incidents, make emergency alert calls to the Bridge Engineering Section by calling:

Bridge Operations Engineer
Office phone: (503) 986-3405, FAX (503) 986-3407

or

- Mark Hirota, State Bridge Engineer
Office phone: (503) 986-4200, FAX (503) 986-3407

All calls will be considered actual emergencies unless the caller says otherwise at the beginning of the conversation.

If your call to the Bridge Engineering Section is not answered, use the Emergency Operations Center telephone number in Salem (503-986-3000) to reach Bridge Engineering personnel.

1.6.4 INITIAL RESPONSE BY REGION

Region personnel will make a decision to place a load limit on or partially or completely close the structure or structures based on the severity of the damage. The Region personnel should close a damaged structure to traffic when in doubt, but may not reopen it to traffic without consulting the Bridge Engineering Section.

1.6.5 RESPONSE BY BRIDGE ENGINEERING SECTION

1.6.5.1 Response to Isolated Incidents - The Bridge Engineering Section will request information from Region personnel about:

- Structure type and location.
- Nature and severity of structure damage.
- Sketches and photographs of the damage.
- Ability of the structure to carry traffic safely.

Based on the requested information received, the Bridge Engineering Section will:

- Give immediate response to the Region about the structure's ability to carry traffic and will provide information about potential damage to the structure because of its present damaged condition.
- Send a staff engineer to the structure site, if needed, to further assess the damage.
- Provide underwater inspection equipment and divers if requested.
- Provide technical assistance to the Region for temporary or permanent repair details and field repair assistance as requested.
- Provide plans for temporary or permanent replacement structures and construction assistance as requested.
- Coordinate technical assistance with other ODOT sections or units.

A detailed guide "ODOT Bridge Section, Procedures for Emergency Response" is available from the Bridge Operations Team.

1.6.5.2 Response to Widespread Incidents

(1) General Response - In an emergency of widespread incidents, Bridge Engineering Section personnel are assigned to the ODOT Emergency Operations Center, 800 Airport Road SE, Salem (Telephone 503-986-3000). However, during the emergency, the Bridge Headquarters remains at the Bridge Engineering Section office, Room 301, Transportation Building, Salem (Telephone 503-986-4200). Although the Emergency Operations Center will be initially alerted, Bridge Engineering Section personnel should not report for duty until specifically instructed to do so.

1.6.5.2 Response to Widespread Incidents – (continued)

(2) Response to Floods - For a flood incident, the Bridge Engineering Section will provide:

- Immediate response to deal with traffic safety and to prevent further damage to the structure because of its condition.
- Personnel for on-site inspection damage.
- Divers and equipment for underwater inspection. See Section 1.6.6, "Available Bridge Engineering Section Resources".
- Temporary or permanent repair details, plans for temporary or replacement structures, and construction assistance as requested.

(3) Response to Earthquakes - For an earthquake incident, the Bridge Engineering Section will provide:

- Personnel to assist the Regions with inspection of structures for damages. These trained personnel will form several groups to walk the sites with plans in hand and assume responsibility for surveying the damage in the field.
- Expertise and advice for emergency repairs to those structures that can be put back into service with minor repairs.
- Information and plans for structures needing replacement because of extensive damage. See Section 1.6.6, "Available Bridge Engineering Section Resources".
- Construction assistance as requested.

1.6.6 AVAILABLE BRIDGE ENGINEERING SECTION RESOURCES

1.6.6.1 File Documents - To assist the ODOT staff and the Regions during emergencies, the Bridge Engineering Section maintains the following documents concerning structures on file:

- "As Constructed" plans.
- Shop drawings for structural steel, prestressed concrete beams, and strand layout and end anchorage details for post-tensioning.
- Maintenance history.
- Foundation and geological information.
- Half-size prints of selected critical structures vulnerable to scour and earthquakes.

The Bridge Engineering Section has a data-base that can provide information about structure vulnerability to predicted scour-related failure. Listings of scour-critical structures on State Primary and Secondary Highways located by mile-point and sorted by Region, ODOT District, or county can be produced. (A similar data-base for county and city structures will be available by Spring 1999.) Prioritization of all scour-critical State, county, and city highway structures in Oregon will be available by Fall 1999.

1.6.6.1 File Documents – (continued)

Concerning earthquake vulnerability, the Bridge Engineering Section's Bridge Seismic Prioritization Program (BSPP) contains data for State Primary and Secondary Highways. Listings of bridges for any combination of Region, ODOT District, county, or highway can be sorted based on milepost, bridge number, seismic group, seismic priority index, or seismic rank. The same computer data capabilities are available for county and city bridges. For individual bridges, the BSPP can provide all the information used to calculate the seismic priority index.

1.6.6.2 Technical Specialists - The Bridge Engineering Section trains and maintains a list of staff personnel who specialize in:

- Specific bridge types (steel, concrete, post-tensioned, movable, etc.)
- Specific types of loading (seismic, wind, debris, etc.)
- Mechanical elements (bearings, lifting machinery, electrical, etc.)
- Structure inspection including welding and underwater.
- Substructure and on-site foundation reviews.
- Hydraulics (scour, riprap design, etc.)

Current Specialists are listed on the Bridge Website.

1.6.6.3 List of Emergency Teams - The Bridge Engineering Section will keep a current list of:

- Technical experts in areas of major disasters, such as wind, flood, and earthquake, and trained divers who will survey damages in the field.
- Personnel who will be on call around the clock to assist the Regions during emergencies.

1.6.6.4 Underwater Inspection Service - The Bridge Engineering Section will provide and assist the Regions with underwater inspection service when requested.

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SECTION 1: APPENDIX

A1.2.4.1 Leave Request

EMPLOYEE NAME		DATE	REGULAR WORKING HOURS
DATE(S) OF ABSENCE TOTAL HOURS OF ABSENCE (ENTER HOURS ON MONTHLY TIMESHEET)		TIME OF ABSENCE <input type="checkbox"/> ALL DAY <input type="checkbox"/> PART DAY	
CHARGE MY ABSENCE TO: (CHECK ALL THAT APPLY)			
<input type="checkbox"/> SICK LEAVE (ILLNESS, INJURY MEDICAL/DENTAL CARE)			
<input type="checkbox"/> VACATION LEAVE			
<input type="checkbox"/> PERSONAL LEAVE (ELIGIBLE EMPLOYEES ONLY)			
REASON FOR ABSENCE			
<input type="checkbox"/> * EMPLOYEE ILLNESS, INJURY			
<input type="checkbox"/> EMPLOYEE MEDICAL/DENTAL APPT. (APPT. TIME _____)			
<input type="checkbox"/> * CARE FOR A FAMILY MEMBER			
<input type="checkbox"/> * FAMILY MEDICAL/DENTAL APPT. (APPT. TIME _____)			
<input type="checkbox"/> NONE OF THESE			
* TO BE COMPLETED BY SUPERVISOR: Does leave qualify under Federal Family/Medical Leave Act? <input type="checkbox"/> YES <input type="checkbox"/> NO If yes, have employee complete FMLA form and submit to your personnel analyst. (See Supervisor's Handbook)			
COMMENTS		SUPERVISOR USE ONLY - NOTIFIED OF ABSENCE BY: <input type="checkbox"/> TELEPHONE CALLER _____ <input type="checkbox"/> OTHER _____ DATE AND TIME _____	
EMPLOYEE SIGNATURE	DATE	SUPERVISOR SIGNATURE	DATE

734-3124(1-97)

Figure A1.2.4.1A

A1.2.5.2 Copy Center Work Order



COPY CENTER WORK ORDER

JOB NUMBER: 001349

Agency Number: _____ **Account No.:** _____ **Date Ordered:** _____
(Must use six digit agency number)

Agency Name: _____ **Date Wanted:** _____
(Please include street address, building name, floor or room number if applicable)

Delivery Address: _____

Copyright Release Signature

Ordered By: _____ **Phone:** _____ Call for Pickup Print-to-Post

Title of Job: _____

Copy Type: Hard Copy Electronic **Page size setup on electronic file:** 5.5 X 8.5 8.5 X 11 8.5 X 14 11 X 17

No. of ORIGINALS _____ **QUANTITY** _____ **Proof requested** (Please sign and date where applicable)
Released, no revisions: _____
Released, with revisions: _____
Revisions, submit another proof: _____

Online Finishing: (Please check all that apply)

Collated Uncollated Stapled-upper-left Stapled-two-left Thermal* Saddle Personalized Labels
 *If thermal bound, indicate tape color: Black Blue Gray White Red Brown

Copy Prints:

1-Sided
 2-Sided

Cover Sheets:

Front Front & Back

Drilling: 3-hole

11" White Stock

20# White
 24# White**
 28# White**
 32# Gloss Bond**

** Extra Charge

11" Colored Stock

20# Blue
 20# Buff
 20# Canary
 20# Gray
 20# Goldenrod
 20# Green
 20# Ivory
 20# Pink
 20# Salmon
 28# Sandstone**
 28# Glacier Mist**

11" Cover Stock

65# Blue
 65# Lilac
 65# Gray
 65# Apple Green
 65# Moss
 65# Sand
 65# Red
 65# White
 65# Yellow
 65# Turquoise
 65# Rose

17" Stock**

20# White
 24# White
 28# Sandstone
 28# Glacier Mist
 32# Gloss Bond

14" Stock

20# White

Supplied Stock

Customer Stock

Tab 1/8 Cut: _____ Banks

Ordered Stock:

Special Instructions:

Offline Finishing: (Please check all that apply)

Drilling: 3-hole, 11" side 5-hole, 11" side 2-hole, top

Folding: Half Letter Accordion Double-parallel

Padding: 25's 50's 100's Top Left Right Bottom

Cutting: Finished Cut Size: _____

Additional: GBC Staple-upper-left Staple-two-left Other: _____

Special Packaging

Shrink Wrap Quantity: _____
 25# Box: _____
 Other: _____

OFFICE USE ONLY

CC Rec'd At	Batch No. _____	Pages _____
Date Rec'd	Copy Ctr. No. _____	Quantity _____
CC Transferred To	Date Ordered _____	Sheets _____
Date Completed	Order No. _____	Paper <input type="checkbox"/> 11/14 <input type="checkbox"/> 17
Total Impressions	Programmer No. _____	Cover <input type="checkbox"/> 1 <input type="checkbox"/> 2 Other _____
	Operator No. _____	Special Charges: _____
	Agency No. _____	Special Services:
	Account No. _____	<input type="checkbox"/> Saddle <input type="checkbox"/> Cutting <input type="checkbox"/> Tabs <input type="checkbox"/> Handwork
		<input type="checkbox"/> Stock <input type="checkbox"/> Pad <input type="checkbox"/> Shipping <input type="checkbox"/> Special Handling
		<input type="checkbox"/> Fold <input type="checkbox"/> GBC <input type="checkbox"/> Thermal Bind <input type="checkbox"/> Plant Bindery
		<input type="checkbox"/> Staple <input type="checkbox"/> Drill <input type="checkbox"/> Shrink Wrap <input type="checkbox"/> Set Label
		<input type="checkbox"/> Proof <input type="checkbox"/> Vendor <input type="checkbox"/> Color Copy <input type="checkbox"/> Tab Close

Bindery: _____
(Date Out)

Rev.03/97
 CCWorkOrder

COPY CENTER

Figure A1.2.5.2A

Office Practice Appendix 2003
 Bridge Engineering Section, Oregon D.O.T.

A1.2.5.3 Reprographics Work Order

		REPROGRAPHIC- PHOTO-VIDEO & DESIGN WORK ORDER		NO. 25937	
DATE RECEIVED		INITIALS	DATE COMPLETED		355 CAPITOL ST NE ROOM 17 SALEM OR 97310 (503)986-3710 FAX (503) 986-3131
DATE REQUIRED - DRAFT		AGENCY/SECTION		CONTACT PERSON	TELEPHONE
DATE REQUIRED - FINAL		ADDRESS			FAX NUMBER
AGENCY / CREW NO.	EXPENDITURE ACCOUNT	SUB JOB	ACTIVITY	ESTIMATED COST \$	
PROJECT NAME				COPY TYPE <input type="checkbox"/> HARD COPY <input type="checkbox"/> ELECTRONIC	
PRINTS TO (NAME)		<input type="checkbox"/> MAIL <input type="checkbox"/> DUMBWAITER <input type="checkbox"/> SHUTTLE <input type="checkbox"/> COUNTER		ORIGINALS TO (NAME) <input type="checkbox"/> MAIL <input type="checkbox"/> DUMBWAITER <input type="checkbox"/> SHUTTLE <input type="checkbox"/> COUNTER	
CODE	QUANTITY	CODE	QUANTITY	CODE	QUANTITY
NUMBER OF ORIGINALS	COPIES OF EACH	TYPE OF PRINT	ADDITIONAL REMARKS		
SCANNING SERVICES <input type="checkbox"/> Scan Text (Non-OCR) <input type="checkbox"/> OCR - Retain Format --- <input type="checkbox"/> YES <input type="checkbox"/> NO Final Size _____ <input type="checkbox"/> Scan Photo <input type="checkbox"/> Image Layout <input type="checkbox"/> Image Editing Final Resolution _____ <input type="checkbox"/> Photo Manipulation <input type="checkbox"/> Scan Image <input type="checkbox"/> Other _____					
OUTPUT SERVICES <input type="checkbox"/> Color Transp. (62) <input type="checkbox"/> FULL SIZE <input type="checkbox"/> HALF SIZE <input type="checkbox"/> B/W Print (16) <input type="checkbox"/> Poster Maker Print (54) <input type="checkbox"/> 8.5 X 11 (52) <input type="checkbox"/> One - Sided <input type="checkbox"/> Color Copy (52/53) <input type="checkbox"/> PDF (80) <input type="checkbox"/> 11 X 17 (53) <input type="checkbox"/> Two - Sided <input type="checkbox"/> Color Plot (3) <input type="checkbox"/> XEROX <input type="checkbox"/> 8.5 X 14 (53) <input type="checkbox"/> Other _____ <input type="checkbox"/> OZALID (16) <input type="checkbox"/> Size _____					
FINISHING SERVICES <input type="checkbox"/> Lamination (2) <input type="checkbox"/> Mount Foam Core (32) <input type="checkbox"/> Frame (32) <input type="checkbox"/> Matte Board (32) <input type="checkbox"/> Drilling/Cutting (40) <input type="checkbox"/> Collate/Stapling (40) <input type="checkbox"/> Other _____			File data received as <input type="checkbox"/> MAC <input type="checkbox"/> DOS/NT <input type="checkbox"/> SAVE TO SHARE DIR. Software/File Type		
			FILE SAVED AS: MAC <input type="checkbox"/> ___ Pagemaker <input type="checkbox"/> TIFF <input type="checkbox"/> ___ Freehand <input type="checkbox"/> JPEG <input type="checkbox"/> ___ MS Word <input type="checkbox"/> GIF <input type="checkbox"/> ___ Quark Xpress <input type="checkbox"/> EPS <input type="checkbox"/> ___ MS Powerpoint <input type="checkbox"/> _____ <input type="checkbox"/> ___ Photoshop <input type="checkbox"/> _____		FILE SAVED AS: DOS/NT <input type="checkbox"/> ___ Pagemaker <input type="checkbox"/> TIFF <input type="checkbox"/> ___ Freehand <input type="checkbox"/> JPEG <input type="checkbox"/> ___ MS Word <input type="checkbox"/> GIF <input type="checkbox"/> ___ Quark Xpress <input type="checkbox"/> EPS <input type="checkbox"/> ___ MS Powerpoint <input type="checkbox"/> _____ <input type="checkbox"/> ___ Photoshop <input type="checkbox"/> _____
PROJECT NOTES					
<input type="checkbox"/> PROOF REQUESTED RELEASED NO REVISIONS (SIGN & DATE)		RELEASED WITH REVISIONS (SIGN & DATE)		REVISE SUBMIT NEW PROOF (SIGN & DATE)	
X		X		X	

731-0125(5-98) **DISTRIBUTION: PARTS 1& 2 TO REPROGRAPHICS, PART 3 ORIGINATOR RETAIN, AND FORWARD TO PAYMENT PROCESSING SPECIALIST**

Figure A1.2.5.3A

A1.3.1.7 State Archives and Records Center

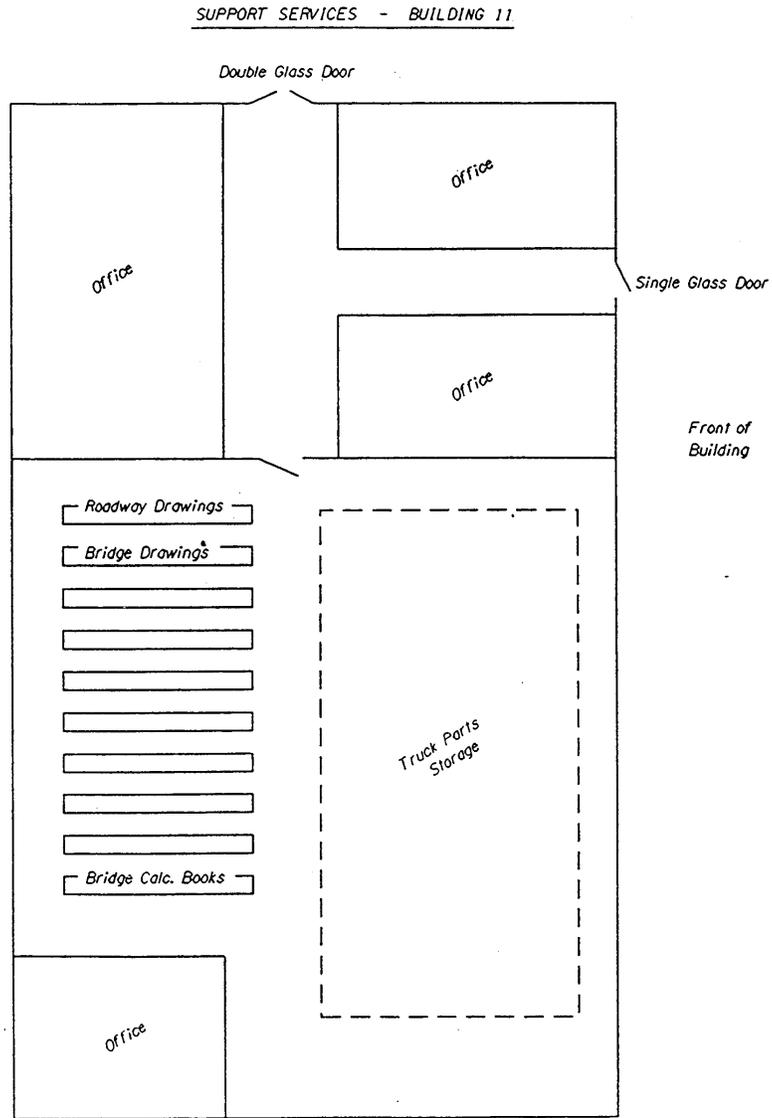


Figure A1.3.1.7A

A1.4.1.2 Letters

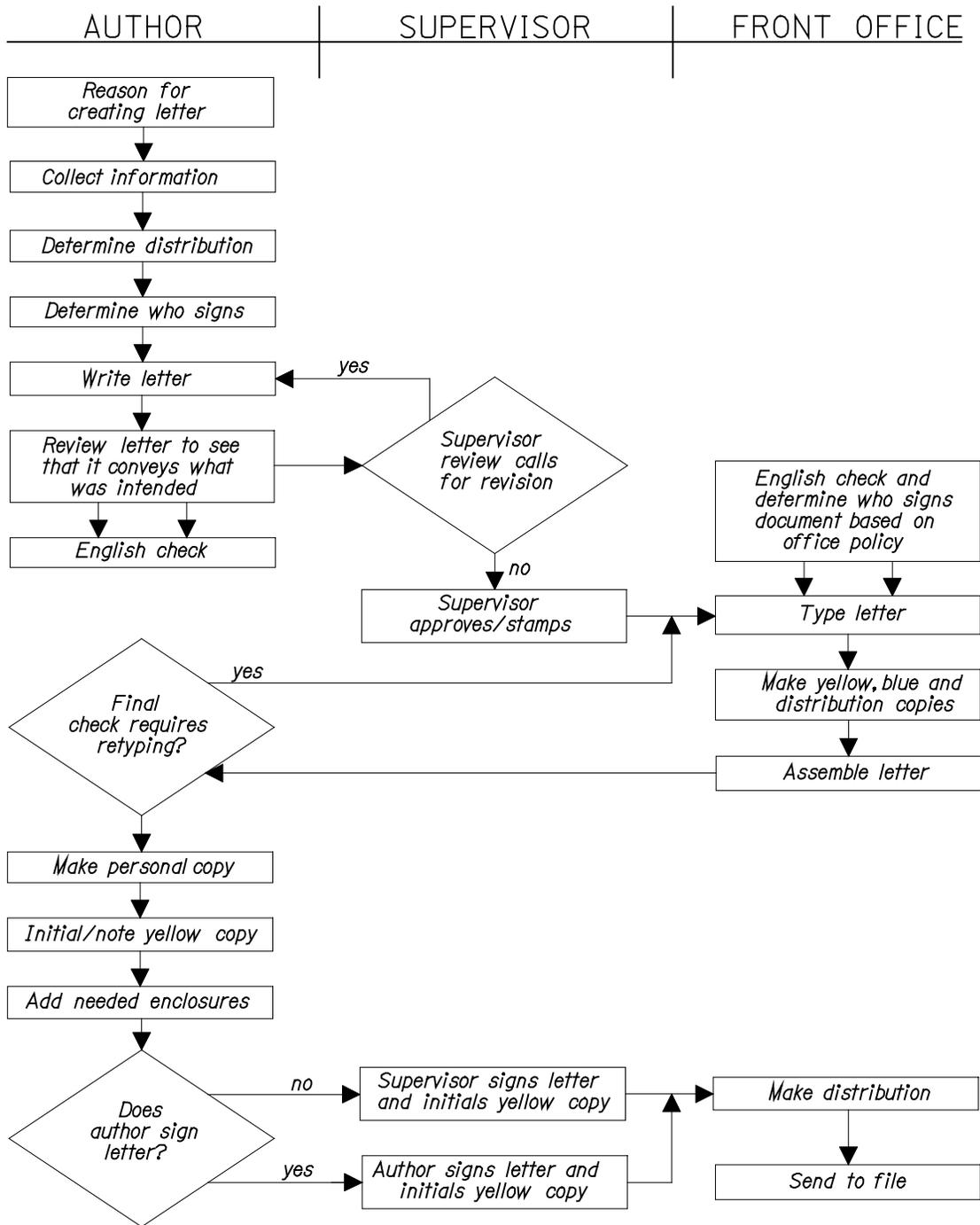


Figure A1.4.1.2A

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GLOSSARY

DEFINITIONS

A

Abutment - Supports at the end of the bridge used to retain the approach embankment and carry the vertical and horizontal loads from the superstructure. Current terminology is bent or end bent.

Access Control - The condition where the legal right of owners or occupants of abutting land to access a highway is fully or partially controlled by the Department of Transportation.

Advance Plans – 95-100% complete plans including special provisions, normally sent at 15 weeks.

Advertisement - The period of time between the written public announcement inviting proposals for projects and the opening of the proposals (bid or letting date).

Aggregate - Inert material such as sand, gravel, broken stone, or combinations thereof.

Aggregate, Coarse - Aggregates predominantly retained on the No. 4 sieve for portland cement concrete and those predominantly retained on the 1/4" for asphalt concrete.

Aggregate, Fine - Those aggregates which entirely pass the 3/8" sieve.

Aggregate, Dense Graded - A well-graded aggregate so proportioned as to contain a relatively small percentage of voids.

Aggregate, Open Graded - A well-graded aggregate containing little or no fines, with a relatively large percentage of voids.

Aggregate, Well-Graded - An aggregate possessing proportionate distribution of successive particle sizes.

Air-Entraining Agent - A substance used in concrete to increase the amount of entrained air in the mixture. Entrained air is present in the form of minute bubbles and improves the workability and frost resistance.

Allowable Headwater - The maximum elevation to which water may be ponded upstream of a culvert or structure as specified by law or design.

Anchor Bolts - Bolts that are embedded in concrete which are used to attach an object to the concrete such as rail posts, bearings, steel girder-to-cross beam connections, etc.

Anode - The positively charged pole of a corrosion cell at which oxidations occur.

Apron - The paved area between wingwalls at the end of a culvert.

Arch - A curved structure element primarily in compression, producing at its support reactions having both vertical and horizontal components.

Arch Pipe - A conduit in the form of a broad arch without a bottom.

Average Daily Traffic (ADT) - The average 24-hour volume of traffic, being the total during a stated period divided by the number of days in that period. Unless otherwise stated, the period is a year.

Axle Load - The load borne by one axle of a traffic vehicle.

Award - Written notification to the bidder that the bidder has been awarded a contract.

B

Backfill - Material used to replace or the act of replacing material removed during construction; also may denote material placed or the act of placing material adjacent to structures.

Backwater - The water upstream from an obstruction in which the free surface is elevation above the normal water surface profile.

Bar Chair - A device used to support horizontal reinforcing bars above the base of the form before the concrete is poured.

Bar Cutting Diagram - A diagram used in the detailing of bar steel reinforcement where the bar lengths vary as a straight line.

Base Course - The layer of specified material of designed thickness placed on a subbase or a subgrade to support a surface course.

Bascule Bridge - A bridge over a waterway with one or two leaves which rotate from a horizontal to a near-vertical position, providing unlimited clear headway.

Base Flood - Flood having 1% chance of being exceeded in any given year.

Battered Pile - A pile driven in an inclined position to resist horizontal forces as well as vertical forces.

Beam - Main longitudinal load carrying member in a structure, designed to span from one support to another (girder).

Bearings - Device to transfer girder reactions without overstressing the supports.

Bearing Capacity - The load per unit area which a structural material, rock, or soil can safely carry.

Bearing Failure - A crushing of material under extreme compressive load.

Bearing Seat - A prepared horizontal surface at or near the top of a substructure unit upon which the bearings are placed.

Bearing Stiffener - A stiffener used at points of support on a steel beam to transmit the load from the top of the beam to the support point.

Bedrock - The solid rock underlying soils or other superficial formation.

Bench Mark - A relatively permanent material object bearing a marked point whose elevation above or below an adopted datum is known.

Bent - Supports at the ends or intermediate points of a bridge used to retain approach embankments and/or vertical and horizontal loads from the superstructure.

Bicycle Lane - A lane in the traveled way designated for use by bicyclists.

Bicycle Path - A public way, physically separated from the roadway, that is designated for use by bicyclists.

Bid Schedule - The list of bid items, their units of measurement, and estimated quantities, bound in the proposal booklet. (When a contract is awarded, the Bid Schedule becomes the Schedule of Contract Prices.)

Bidder - Any qualified individual or legal entity submitting a proposal in response to an advertisement.

Biennium - For the State of Oregon, a two-year period, always odd numbered years, starting July 1 and ending two years later on June 30.

Bleeding (Concrete) - The movement of mixing water to the surface of freshly placed concrete.

Blind Copy (bc) - Copy of correspondence that goes internally to office personnel or file. Is not typed on the original, but is typed on yellow copy.

Bowstring Truss - A general term applied to a truss of any type having a polygonal arrangement of its top chord members conforming to or nearly conforming to the arrangement required for a parabolic truss.

Box Beam - A hollow structural beam with a square, rectangular, or trapezoidal cross-section.

Box Culvert - A culvert of rectangular or square cross-section.

Breakaway - A design feature that allows a device such as a sign, luminaire, or traffic signal support to yield or separate upon impact. The release mechanism may be a slip plane, plastic hinges, fracture elements, or a combination of these.

Bridge - A structure spanning and providing passage over a river, chasm, road, or the like, having a length of 20 feet or more from face to face of abutments or end bents, measured along the roadway centerline.

Bridge Approach - Includes the embankment materials and surface pavements that provide the transition between bridges and roadways.

Bridge End Panel - A reinforced concrete slab placed on the approach embankment adjacent to and usually resting upon the abutment back wall; the function of the approach slab is to carry wheel loads on the approaches directly to the abutment, thereby eliminating any approach roadway misalignment due to approach embankment settlement.

Bridging - A carpentry term applied to the cross-bracing fastened between timber beams to increase the rigidity of the floor construction, distribute more uniformly the live load and minimize the effects of impact and vibration.

Bridge Railing - A longitudinal barrier whose primary function is to prevent an errant vehicle from going over the side of the bridge structure.

Brush Curb - A curb 10" or less in width, which prevents a vehicle from brushing against the railing or parapet.

Buckle - To fail by an inelastic change in alignment as a result of compression.

Built-Up Member - A column or beam composed of plates and angles or other structural shapes united by bolting, riveting or welding.

Buoyancy - Upward force exerted by the fluid in which an object is immersed.

Bushings - A lining used to reduce friction and/or insulate mating surfaces usually on steel hanger plate bearings.

Butt Splice - A splice where the ends of two adjoining pieces of metal in the same plane are fastened together by welding.

Butt Weld - A weld joining two abutting surfaces by combining weld metal and base metal within an intervening space.

C

Cable-Stayed Bridge - A bridge in which the superstructure is directly supported by cables, or stays, passing over or attached to towers located at the main piers.

CADD - Computer-Aided Design and Drafting.

Caisson - A watertight box of wood or steel sheeting; or a cylinder of steel and concrete, used for the purpose of making an excavation. Caissons may be either open (open to free air) or pneumatic (under compressed air).

Camber - A slight vertical curvature built into a structural member, to allow for deflection and/or vertical grade.

Cast-in-Place - The act of placing and curing concrete within formwork to construct a concrete element in its final position.

Catch Basin - A receptacle, commonly box shaped and fitted with a grilled inlet and a pipe outlet drain, designed to collect the rain water and floating debris from the roadway surface and retain the solid material so that it may be periodically removed.

Catenary - The curve obtained by suspending a uniform rope or cable between two points.

Cathode - The negatively charged pole of a corrosion cell that accepts electrons and does not corrode.

Cathodic Protection - A means of preventing metal from corroding; this is done by making the metal a cathode through the use of impressed direct current and by attaching a sacrificial anode.

Catwalk - A narrow walkway to provide access to some part of a structure.

Chain Drag - A series of short medium weight chains attached to a T-shaped handle; used as a preliminary technique for inspecting a large deck area for delamination.

Change Order - A written order issued by the Engineer to the Contractor modifying work required by the contract and establishing the basis of payment for the modified work.

Chord - A generally horizontal member of a truss.

Clay - Soil passing a No. 200 sieve that can be made to exhibit plasticity (putty-like properties) within a range of water contents.

Clear Zone - Roadside border area, starting at the edge of the traveled way, that is available for safe use by errant vehicles. Establishing a minimum width clear zone implies that rigid objects and certain other hazards with clearances less than the minimum width should be removed and relocated outside the minimum clear zone, or remodeled to make breakaway, shielded, or safely traversable.

Closed Spandrel Arch - A stone or reinforced concrete arch span having spandrel walls to retain the spandrel fill or to support either entirely or in part the floor system of the structure when the spandrel is not filled.

Cobbles - Particles of rock, rounded or not, that will pass a 12" square opening and be retained on a 3" sieve.

Cofferdam - A barrier built in the water so as to form an enclosure from which the water is pumped to permit free access to the area within.

Cohesionless Soil - A soil that when unconfined has little or no strength when air-dried and that has little or no cohesion when submerged.

Cohesive Soil - A soil that when unconfined has considerable strength when air-dried and that has significant cohesion when submerged. Clay is a cohesive soil.

Commission - The Oregon Transportation Commission.

Composite Section - Two sections made of the same or different materials together to act as one integral section; such as a concrete slab on a steel or prestressed girder.

Compression Seals - A preformed, compartmented, elastomeric (neoprene) device, which is capable of constantly maintaining a compressive force against the joint interfaces in which it is inserted.

Concept Plans – plans to determine the basic features of a project including alignments, typical sections, slopes, preliminary drainage and TS&L bridge plans.

Concrete Overlay – 1.5" to 2" of concrete placed on top of the deck, used to extend the life of the deck and provide a good riding surface.

Contract - The written agreement between the Division and the Contractor describing the work to be done and defining the obligations of the Division and the Contractor.

Contract Plans - Detailed drawings and diagrams usually made to scale showing the structure or arrangement, worked out beforehand, to accomplish the construction of a project and/or object(s).

Contract Time - The number of calendar days shown in the proposal which is allowed for completion of the work.

Contraction Joint - A joint in concrete that does not provide for expansion but allows for contraction or shrinkage by the opening up of a crack or joint.

Contractor - The individual or legal entity that has entered into a contract with the Division.

Coordinates - Linear or angular dimensions designating the position of a point in relation to a given reference frame. It normally refers to the State Plane Coordinate System.

Core - A cylindrical sample of concrete removed from a bridge component for the purpose of destructive testing.

Counterfort Wall - A reinforced concrete retaining wall whose vertical stem has triangular-shaped ribs projecting into the soil and spaced at regular intervals to provide strength and stability.

Crash Cushion - An impact attenuator device that prevents an errant vehicle from impacting fixed object hazards by gradually decelerating the vehicle to a safe stop or by redirecting the vehicle away from the hazard.

Crash Tests - Vehicular impact tests by which the structural and safety performance of roadside barriers and other highway appurtenances may be determined. Three evaluation criteria are considered, namely (1) structural adequacy, (2) impact severity, and (3) vehicular post-impact trajectory.

Creep - Time dependent inelastic deformation under elastic loading of concrete or steel resulting solely from the presence of stress.

Cross Bracing - Bracing used between stringers and girders to hold them in place and stiffen the structure.

Cross Section - The exact image formed by a plane cutting through an object usually at right angles to a central axis.

Crown Section - Roadway section with the height of the center of the roadway surface above its gutters.

Culvert - Federal Highway Administration definition: "A structure not classified as a bridge having a span of 20 feet or less spanning a watercourse or other opening on a public highway"; a conduit to convey water through an embankment.

Curb - A vertical or sloping member along the edge of a pavement or shoulder forming part of a gutter, strengthening or protecting the edge, and clearly defining the edge of vehicle operators. A curb is a horizontal offset varying from 10" to less than 18". The surface of the curb facing the general direction of the pavement is called the "face".

Curing - The preparation of a material by chemical or physical processing for keeping or use; treating concrete by covering its surface with some material to prevent the rapid evaporation of water.

Cut-Off-Wall - A wall built at the end of a culvert apron to prevent the undermining of the apron.

D

Dead End - End of post-tensioned bridge where tendons are anchored but no jacking takes place (opposite of jacking end).

Dead Load - Structure weight including future wearing surface on deck and attachments.

Deadman - A concrete mass, buried in the earth behind a structure, that is used as an anchor for a rod or cable to resist horizontal forces that act on the structure.

Deformed Bars - Concrete reinforcement consisting of steel bars with projections or indentations to increase the mechanical bond between the steel and concrete.

Delamination - Subsurface separation of concrete into layers.

Department - The Department of Transportation of the State of Oregon.

Design Volume or Design Hourly Volume - A volume determined for use in design representing traffic expected to use the highway. Unless otherwise stated, it is an hourly volume.

Diaphragm - Structural: A structural member used to tie adjoining girders together and stiffen them in a lateral direction as well as to distribute loads.

Diamond Grinding - Process to abrade or remove a surface, such as concrete, by the cutting action of rotating circular blade with diamond-tipped teeth.

Direct Tension Indicator - Load-indicating washer for bolts.

Doby - A precast block of concrete of various sizes used to support or provide clearances between reinforcing bars and formwork.

Dolphins - A group of piles or sheet piling driven adjacent to a pier. Their purpose is to prevent extensive damage or possible collapse of a pier from a collision with a ship or barge.

Draped Strands - Strand pattern for prestressing strands, where strands are draped to decrease the prestressing stress at the ends of the girder where the applied moments are small.

Drift Pin - A metal pin, tapered at both ends, used to draw members of a steel structure together by being driven through the corresponding bolt holes.

Drip Groove - A groove formed into the underside of a projecting concrete sill or coping to prevent water from following around the projection.

E

E - modulus of elasticity of a material; the stiffness of a material.

E&C - Engineering costs are ODOT's costs to administer the construction contract. Contingencies are unforeseen costs due to construction extra work price agreements or types of problems caused by weather, accidents, etc. by the contract pay item.

Elastomeric Bearing Pads - Pads ½" and less in thickness made of all rubber-like material that supports girders and concrete slabs; pads over ½" in thickness consist of alternate laminations of elastomer and metal.

End-Bearing Pile - A pile which provides support primarily due to reaction at its tip.

Environmental Classes - Class I Environmental Impact Statement: Projects that normally involve significant changes in traffic capacities and patterns. These projects generally involve major right-of-way acquisitions. Both draft and final Environmental Impact Statements are required.

Class II Categorical Exclusions: Projects that normally involve the improvement of pavement conditions on traffic safety, but little, if any, change in traffic capacities or patterns. Right-of-way requirements must be minor. These projects are categorically excluded from further environmental documentation, unless permit requirements indicate otherwise.

Class III Environmental Assessment: Projects that do not clearly fall within Class I or Class II. These projects require assessments to determine their environmental significance.

Epoxy - A synthetic resin which cures or hardens by chemical reaction between components which are mixed together shortly before use.

Epoxy Coated Rebar - Steel reinforcement coated with a powdered epoxy resin, to prevent corrosion of the bar steel.

Expansion Bearings - Bearings that allow longitudinal movement of the superstructure relative to the substructure and rotation of the superstructure relative to the substructure.

Expansion Device - A device placed at expansion points in bridge superstructures to carry the vertical bridge loads without preventing longitudinal movement.

Expansion Joint - A joint in concrete that allows expansion due to temperature changes, thereby preventing damage to the structure.

Extra Work - Work not included in any of the contract items as awarded but determined by the Engineer necessary to complete the project according to the intent of the contract. This may be paid on a negotiated price, force account, or established price basis.

Extrados - The curved edge of an arch rib or barrel formed by the intersection of the top and side arch surfaces.

E

Falsework - In general, a temporary construction work on which a main or permanent work is wholly or partially supported until it becomes self-supporting. For cast-in-place concrete or steel construction, it is a structural system to support the vertical and horizontal loads from forms, reinforcing steel, plastic concrete, structural steel, and placement operations.

Fatigue - The tendency of a member to fail at a lower stress when subjected to cyclical loading that when subjected to static loading.

Fatigue Crack - Any crack caused by repeated cyclic loading.

Federal-Aid System of Highways - The national system of interstate highways, Federal-aid highway system, system of secondary and feeder roads, Federal-aid grade crossing projects, federal forest highway systems and projects and other highway and related projects, all within the meaning of the Federal-Aid Road Act (1916), and all acts amendatory thereof and supplementary thereto, and the federal regulations issued under such acts.

Fender - A structure that acts as a buffer to protect the portions of a bridge exposed to floating debris and water-borne traffic from collision damage.

Fiscal Year - For the State of Oregon, July 1 through June 30 of the next year; for the Federal government, October 1 through September 30 of the next year. The Federal fiscal year (FY) is broken into quarters:

- F1Q (October, November, December)
- F2Q (January, February, March)
- F3Q (April, May, June)
- F4Q (July, August, September)

Felloe Guard - Timber curb, usually 10" x 12", bolted to timber deck and timber rail post. Sometimes called wheel guard.

Filler Plate - A steel plate or shim used for filling in space between compression members.

Fixed Bearings - Bearings that do not provide for any longitudinal movement of the superstructure relative to the substructure, but allows for rotation of the superstructure relative to the substructure.

Flat Slab - A reinforced concrete superstructure that has a uniform depth throughout.

Flood Plain - An area that would be inundated by a flood.

Floodway - A stream channel plus any adjacent flood plain areas that must be kept free of encroachment so that the 100-year flood can be conveyed without substantial increases in flood heights.

Floor Beam - A transverse structural member that extends from truss to truss or from girder to girder across the bridge.

Flux - A material that protects the weld from oxidation during the fusion process.

Force Account Work - Items of extra work ordered by the Engineer that are to be paid for by material, equipment, and labor.

Forms - A structural system constructed of wood or metal used to contain the horizontal pressures exerted by plastic concrete and retain it in its desired shape until it has hardened.

Fracture Critical Members - Members of a bridge where a single fracture in a member can lead to collapse.

Fracture Mechanics - Study of crack growth in materials.

Friction Pile - A pile that provides support through friction resistance along the surface area of the pile.

Front Office - Room 301, Bridge Section Administrative Office.

Functionally Obsolete Bridges - Those bridges which have deck geometry, load carrying capacity (comparison of the original design load to the current state legal load), clearance, or approach roadway alignment which no longer meet the usual criteria for the system of which they are a part as defined by the Federal Highway Administration.

G

Gabions - Rock-filled wire baskets used to retain earth and provide erosion control.

Galvanic Action - Electrical current between two unlike metals.

Galvanize - To coat with zinc.

Geotextiles - Sheets of woven or non-woven synthetic polymers or nylon used for drainage and soil stabilization.

Girder - Main longitudinal load carrying member in a structure (beam).

Glare Screen - A device used to shield a driver's eye from the headlights of an oncoming vehicle.

Grade Separation - A crossing of two highways or a highway and a railroad at different levels.

Gravity Wall - A retaining wall that is prevented from overturning by its weight alone.

Green Concrete - Concrete that has set but not appreciably hardened.

Grid Flooring - A steel floor system comprising a lattice pattern which may or may not be filled with concrete.

Grout - A mixture of cementitious material and water having a sufficient water content to render it a free-flowing mass, used for filling (grouting) the joints in masonry, for fixing anchor bolts and for filling post-tensioning ducts.

H

Hammerhead Pier - A pier that has only one column with a cantilever cap and is somewhat similar to the shape of a hammer.

Hanger Plate - A steel plate that connects the pins at hinge points thus transmitting the load through the hinge.

Haunch - An increase in depth of a structural member usually at points of intermediate support.

Haunched Slab - A reinforced concrete superstructure that is haunched (has an increased depth) at the intermediate supports.

Headwall - A concrete structure at the ends of a culvert to retain and protect the embankment slopes, anchor the culvert, and prevent undercutting.

Hinge - A device used to hold the ends of two adjoining girders together, but does not allow for longitudinal movement of the superstructure. A point in a structure where a member is free to rotate.

Holddown Device - A device used on bridge abutments to prevent girders from lifting off their bearings as a result of the passage of live load over the bridge.

Honeycomb - A surface or interior defect in a concrete mass characterized by the lack of mortar between the coarse aggregate particles.

Howe truss - A truss of the parallel chord type with a web system composed of vertical (tension) rods at the panel points with an X pattern of diagonals.

Hydration - The process by which cement combines with water to form a hard binding substance.

Hybrid Girder - A steel plate girder with the web steel having a lower yield strength than the steel in one or both flanges.

Hydrodemolition - Process to abrade or remove a surface, such as concrete, by streams of water ejected from a nozzle at high velocity.

I

Incidental Work - Work necessary for fulfillment of the contract but which is not listed as a pay item in the contract and for which no separate or additional payment will be made.

Initial Set (Concrete) - Initial stiffening of concrete, with time based upon penetration of a weighted test needle. In the field, it is commonly assumed to be the time when the dead weight of vibrator does not penetrate into the concrete.

Inlet Control - The case where the discharge capacity of a culvert is controlled at the culvert entrance by the depth of headwater and the entrance geometry, including barrel shape, cross sectional area, and inlet edge.

Intermediate Stiffener - A vertical transverse steel member used to stiffen the webs of plate girders between points of support.

Internal File Number - Number assigned by the Bridge Front Office as part of office automation (computerized files) and used to track all files.

Invert - The bottom or lowest point of the internal surface of the transverse cross section of a pipe.

Inventory Rating (Design Load) - Load level that produces normal design stresses in the structures. The inventory rated load is the load that can safely utilize an existing structure for an indefinite period of time.

International System of Units (SI) - The modernized metric system.

Intrados - The curved edge of an arch rib or barrel formed by the intersection of the bottom and side arch surfaces.

Isotropic - Have the same material properties in all directions, e.g., steel.

J

Jacking End - End of post-tensioned bridge where jacking takes place (opposite of dead end).

Jetting - Forcing water into holes in an embankment to settle or to compact the earth. Forcing water through holes in piles to install the piles to a specified depth before driving.

K

Key Number - Number assigned to a project by Program Section to identify it in the Project Control System (PCS). All structures in a project have the same key number.

Kilogram (kg) - The base unit for mass in the International System of Units (metric).

King Post Truss - Two triangular panels with a common center vertical; the simplest of triangular trusses.

L

Lacing - Small flat plates used to connect individual sections of built up members.

Laitance - A weak mortar that collects at the surface of freshly placed concrete, usually caused by an excess of mixing water or by excessive finishing.

Lamellar Tear - Incipient cracking between the layers of the base material (steel).

Lateral Bracing - Bracing placed in a horizontal plane between steel girders near the bottom and/or top flanges.

Latex Modified Concrete (LMC) - Emulsion of synthetic rubber or plastic obtained by polymerization used as a concrete additive to decrease permeability.

Leaf - The movable portion of a bascule bridge which forms the span of the structure.

Lenticular Truss - A truss having parabolic top and bottom chords curved in opposite directions with their ends meeting at a common joint; also known as a fish belly truss.

Level of Performance - The degree to which a longitudinal barrier, including bridge railing, is designed for containment and redirection of different types of vehicles.

Liquid Penetrant Inspection - Nondestructive inspection process for testing for continuities that are open to the surface, by using a liquid dye.

Live Load - Force of the applied moving load of vehicles and/or pedestrians.

Load Rating - Evaluation of the safe live load capacity of the weakest member of a bridge.

LRFD - Load Resistance Factor Design.

Longitudinal Stiffener - A longitudinal steel plate (parallel to girder flanges) used to stiffen the webs of welded plate girders. Normally thicker webs are used to eliminate longitudinal stiffeners.

Low Relaxation Strands - Prestressing tendons that are manufactured by subjecting the strands to heat treatment and tensioning causing a permanent elongation. This increases the strand yield strength and reduces strand relaxation under constant tensile stress.

M

Magnetic Particle Inspection (MT) - Nondestructive inspection process for testing for the location of surface cracks or surface discontinuities, by applying dry magnetic particles to a weld area or surface area that has been suitably magnetized.

Microsilica (Silica Fume) (MC) - Very fine non-crystalline silica used as an admixture in concrete to improve the strength, permeability and abrasion resistance.

Minor Structure Concrete (MSC) - Nonstructural concrete furnished according to contractor proportioning, placed in minor structures and finished as specified. Previously called commercial concrete.

Modular Expansion Joints - Multiple, watertight joint assemblies for bridges requiring expansion movements greater than 4 inches.

Mud Sill - A timber platform laid on earth as a support for vertical members or bridge falsework.

Mylars - Full-size drawings on mylar. The final "legal" drawing used for signatures and printing contract plans.

N

NDT - Nondestructive testing, a method of checking the structural quality of materials that does not damage them.

Negative Moment - The moment causing tension in the top fibers and compression in the bottom fibers of a structural member.

Negative Reinforcement - Reinforcement placed in concrete to resist negative bending moments.

Newton (N) - The derived unit for force (mass times acceleration or kg times m/s^2) in the International System of Units (metric).

Nominal - Used to designate a theoretical dimension, size, or slope that may vary from the actual by a very small or negligible amount. Example: a 1" nominal diameter steel pipe has an actual 0.957" inside diameter.

Non-Redundant Structure - Type of structure with single load path, where a single fracture in a member can lead to the collapse of the structure.

Nosing - A bulkhead at the ends of bridges or at expansion joints made of a durable material to protect and reinforce the slab edge. It also provides a smooth edge or surface at expansion joints to facilitate installation and provide a better seal.

O

Operating Rating (Permit Loads) - The absolute maximum permissible stress level to which a structure may be subjected. It is that stress level that may not be exceeded by the heaviest loads allowed on the structure. Special permits for heavier than normal vehicles shall be issued only if such loads are distributed so as not to produce stress in excess of the operating stress.

Outlet Control - The case where the discharge capacity of a culvert is controlled by the elevation of the tail water in the outlet channel and the slope, roughness, and length of the culvert barrel, in addition to the cross-sectional area and inlet geometry.

Orthotropic - A description of the physical properties of a material that has pronounced differences in two or more directions at right angles to each other.

P

Parapet - A low concrete rail designed and placed to prevent traffic from passing over the edge of a bridge deck or end of box culvert.

Pascal (Pa) - The derived unit for pressure or stress ($\text{Pa}=\text{N}/\text{m}^2$) in the International System of Units (metric).

Paving Dam – (see Nosing) - A bulkhead at the ends of bridges or at expansion joints made of a durable material to protect and reinforce the slab edge and provide a stopping place for the wearing surface.

Paving Ledge – A ledge or corbel attached to the end beam of a bridge, to provide support for a current or future end panel.

Performance Level - See Level of Performance.

Pier - Intermediate substructure unit of a bridge. Current terminology is bent.

Pile - A long, slender piece of wood, concrete, or metal to be driven, jettied, or cast-in-place into the earth or river bed to serve as a support or protection.

Pile Bent - A pier where the piles are extended to the pier cap to support the structure.

Pile Cap - A member, usually of reinforced concrete, covering the tops of a group of piles for the purpose of tying them together and transmitting to them as a group the load of the structure that they support.

Pipe Arch - A conduit in the form of a broad arch with a slightly curved integral bottom.

Plastic Deformation - Deformation of material beyond the elastic range.

Positive Moment - In a girder the moment causing compression in the top flange and tension in the bottom flange.

Post-Tensioning - Method of prestressing in which the tendon is tensioned after the concrete has cured.

Pot Bearing - A bearing type that allows for multi-directional rotation by using a neoprene or spherical bearing element.

Prestress Camber - The deflection in prestressed girders (usually upward) due to the application of the prestressing force.

Pratt Truss - A truss with parallel chords and a web system composed of vertical posts with diagonal ties inclined outward and upward from the bottom chord panel points toward the ends of the truss; also known as N-truss.

Preliminary Plans – 85-90% complete plans, normally sent at 20 weeks.

Prestressed Concrete - Concrete in which there have been introduced internal stresses (normally pretensioned steel) of such magnitude and distribution that the stresses resulting from given external loadings are counteracted to a desired degree

Pretensioned - Any method of prestressing in which the strands are tensioned before the concrete is placed.

Project Manager - The Engineer's representative who directly supervises the engineering and administration of a contract.

Proposal - A written offer by a bidder on forms furnished by the Division to do stated work at the prices quoted.

PS&E - Literally, plans, specifications, and estimates. Usually it refers to the time when the plans, specifications, and estimates on a project have been completed and referred to FHWA for approval. When the PS&E has been approved, the project goes from the preliminary engineering phase to the construction phase.

Project Prospectus - See Section 2.2.2.1.

Pumping - The ejection of mixtures of water, clay and/or silt along or through transverse or longitudinal joints, crack or payment edges, due to vertical movements of the roadway slab under traffic.

Q

Queen-post Truss - A parallel chord type of truss having three panels with the top chord occupying only the length of the center panel; unless center panel diagonals are provided, it is a trussed beam.

R

Radiographic Inspection - Nondestructive inspection process where gamma rays or X rays pass through the object and cast an image of the internal structure onto a sheet of film as the result of density changes.

RATS Team - ODOT Region and Technical Services Team.

Redundant Structure - Type of structure with multiple-load paths where a fracture in a single member cannot lead to the collapse of the structure.

Reflection Crack - A crack appearing in a resurfacing or overlay caused by movement at joints or cracks in the underlying base or surface.

Reinforced Pile Tip - Metal reinforcement fastened to the pile tip to protect it during driving.

Residual Camber - Camber due to the prestressing force minus the dead load deflection of the girder.

Right of Way - Land, property, or property interest, usually in a strip, acquired for or devoted to transportation purposes.

Riprap - A facing of stone used to prevent erosion. It is usually dumped into place, but is occasionally placed by hand.

Roadside Barrier - A longitudinal barrier used to shield roadside obstacles or non-traversable terrain features. It may occasionally be used to protect pedestrians from vehicle traffic.

Roadway - The portion of a highway, including shoulders, for vehicular use.

Rubble - Irregularly shaped pieces of varying size stone in the undressed condition obtained from a quarry.

S

Sacrificial Anode - The anode in a cathodic protection system.

Sand - Particles of rock that will pass a No. 4 sieve and be retained on a No. 200 sieve.

Scaffolding - Temporary elevated walkway or platform to support workmen, materials and tools.

Scarify - To loosen, break up, tear up, and partially pulverize the surface of soil, or of a road.

Scour - Erosion of a river bed area caused by water flow.

Scour Protection - Protection of submerged material by steel sheet piling, riprap, mattress, or combination of such methods.

Screeding - The process of striking off excess material to bring the top surface to proper contour and elevation.

Seal - A concrete mass (usually not reinforced) poured under water in a cofferdam that is designed to resist hydrostatic uplift. The seal facilitates construction of the footing in dry conditions.

Shear Connector - A connector used to joint cast-in-place concrete to a steel section and to resist the shear at the connection.

Shear Lag - Nonuniform stress pattern due to ineffective transmission of shear.

Shed Roof - Roadway section with the height of one gutter greater than the centerline and other gutter.

Sheet Pile - A pile made of flat or arch cross section to be driven into the ground or stream bed and meshed or interlocked with like members to form a wall, or bulkhead.

Sheet Pile Cofferdam - A wall-like barrier composed of driven piling constructed to surround the area to be occupied by a structure and permit dewatering of the enclosure so that the excavation may be produced in the open air.

Shoofly - Detour alignment of temporary railroad track and bridge around the site of a permanent railroad bridge replacement.

Shotcrete - Mortar or concrete pneumatically projected at high velocity onto a surface.

Shoulders - The portions of the roadway between the traveled way and the inside edges of slopes of ditches or fills, exclusive of auxiliary lanes, curbs, and gutters.

Shy Distance (E-Distance) - The distance from the edge of the traveled way beyond which a roadside object will not be perceived as an immediate hazard by the typical driver, to the extent that the vehicle's placement or speed will be changed.

Shrinkage - Contraction of concrete due to drying and chemical changes, dependent on time.

Silt - Soil passing a No. 200 sieve that is non-plastic or exhibits very low plasticity.

Simple Spans - Spans with the main stress carrying members non-continuous, or broken, at the intermediate supports.

Skew or Skew Angle - The acute angle formed by the intersection of a line normal to the centerline of the roadway with a line parallel to the face of the abutments or piers, or in the case of culverts with the centerline of the culverts. Left hand forward skew indicates that, look up station, the left side of the structure is further up station than the right hand side. Right hand skew indicates that the right side of structure is further up station than the left side.

Slip Base - A structural element at or near the bottom of a post or pole that will allow release of the post from its base upon impact while resisting wind loads.

Slope - The degree of inclination to the horizontal. Usually expressed as a:

- ratio, such as 25:1 or 25 to 1, indicating 1 unit rise in 25 units of horizontal distance.
- decimal fraction (0.04).
- degree (2°).
- percent (4%).

It is sometimes described by such adjectives as steep, moderate, gentle, mild or flat.

Slope Paving - Pavement placed on the slope in front of abutment to prevent soil erosion.

Soffit - The bottom surface of a beam or an arch rib or barrel.

Spandrel - The area between the roadway and the arch in the side view of an arch bridge.

Special Provisions - The special directions, provisions, and requirements peculiar to the project that augment the standard specifications. They are commonly referred to as "specials".

Specifications - The body of directions, provisions, and requirements, together with written agreements and all documents of any description, made or to be made, pertaining to the method or manner of performing the work, the quantities, and the quality of materials to be furnished under the contract.

Spread Footing - A footing that is supported directly by soil or rock.

Spur Dike - A wall or mound built or extended out from the upstream side of an abutment used for training the stream flow to prevent erosion of stream bank. May also be used where there is no bridge, but the stream flows along the side of highway embankment.

Stainless Steel Teflon Bearings - Incorporated stainless steel and teflon with steel to provide the necessary expansion movement.

St. Venant Torsion - Uniform torsion resulting in no deformation of the cross section.

State Plane Coordinates - The plane-rectangular coordinate system established by the United States Coast and Geodetic Survey. Plane coordinates are used to locate geographic position.

Station - A distance of 100 feet measured horizontally.

Stirrup - Vertical U-shaped or rectangular shaped bars placed in concrete beams to resist the shearing stresses in the beam.

Stress Relieved Strands - Any prestressing tendons that are manufactured by relieving the high residual stresses that were introduced into the steel during the wire drawing and stranding operations. Stress relieving is not a heat treatment and does not change the strand yield strength.

Strip Seal Joint - Molded neoprene glands inserted and mechanically locked between armored interfaces of extruded steel sections.

Structurally Deficient Bridges - Those bridges which have been (1) restricted to light vehicles only, (2) closed, or (3) require immediate rehabilitation to remain open, as defined by the Federal Highway Administration.

Subgrade - The top surface of completed earthwork on which subbase, base, surfacing, pavement, or a course of other material is to be placed.

Substructure - Those parts of a structure which support the superstructure, including bents, piers, abutments, and integrally built wingwalls, up to the surfaces on which bearing devices rest. Substructure also includes portions above bearing surfaces when those portions are built integrally with a substructure unit (e.g. backwalls of abutments). When substructure and superstructure elements are built integrally, the division between substructure and superstructure is considered to be at the bottom soffit of the longitudinal or transverse beam, whichever is lower. Culverts and rigid frames are considered to be entirely substructure.

Sufficiency Rating - A method of evaluating data by calculating four separate factors to obtain a numeric value which is indicative of bridge sufficiency to remain in service. The result of this method is a percentage in which 100 percent would represent an entirely sufficient bridge and zero percent would represent an entirely insufficient or deficient bridge.

Superelevation - The difference in elevation between the inside and outside edges of a roadway in a horizontal curve; required to counteract the effects of centrifugal force.

Superplasticizer - A high range water-reducing admixture that increases the slump of freshly mixed concrete without increasing the water content.

Superstructure - Those parts of a structure above the substructure, including bearing devices.

Surcharge - Any load that causes thrust on a retaining wall, other than backfill to the level of the top of the wall. Also preloading of an embankment to minimize the time for initial consolidation of the subsurface soils.

Suspension Bridge - A bridge in which the floor system is supported by catenary cables which are supported upon towers and are anchored at their extreme ends.

Suspender - A wire cable, metal rod or bar connected to a catenary cable of a suspension bridge at one end and the bridge floor system at the other, thus transferring loads from the roadway to the main suspension members.

I

Tack Welds - Small welds used for temporary connections.

Telltale (Tattletale) - Any device designed to indicate movement of formwork or falsework.

Tendon - A name for prestressed reinforcing element whether wires, bars, or strands.

Tenon - A constant diameter extension welded to the tip of the tapered metal arm of a luminaire support pole to receive the luminaire.

Thixotropy - Property of a material that enables it to stiffen in a short period on standing, but to acquire a lower viscosity again on mechanical agitation. A property desirable for post-tensioning duct grout.

Three-Dimensional Finite Element Analysis - Analysis in which a three-dimensional continuum is modeled as an assemblage of discrete elements in three-dimensional space.

Three-Hinged Arch - An arch which is hinged at each support and at the crown.

Through Structure - A structure that has its floor connected to the lower portion of the main stress-carrying members, so that the bracing goes over the traffic. A structure whose main supporting members project above the deck or surface.

Tining - Is used on finished concrete deck or slab surfaces to provide friction and reduce hydroplaning. Grooves are placed in the plastic concrete or cut into the hardened concrete.

Torsional Stress - Shear stress on a transverse cross section resulting from a twisting action.

Transformed Section - A hypothetical section of one material so as to have the same elastic properties as a section of two materials.

Transition - A section of barrier between two different barriers or, more commonly, where a roadside barrier is connected to a bridge railing or to a rigid object such as a bridge pier. The transition should produce a gradual stiffening of the approach rail so vehicular pocketing, snagging, or penetration at the connection can be avoided.

Traveled Way - The portion of the roadway for the movement of vehicles, exclusive of shoulders and auxiliary lanes.

Tremie - A pipe or tube through which concrete is deposited underwater.

Trial Batch - A batch of concrete prepared to establish or check proportions of the constituents.

Turnbuckle - A long, cylindrical, internally threaded nut used to connect the elements of adjustable rod and bar members.

Turn-of-the-Nut - A bolt-tightening method.

Two-hinged Arch - A rigid frame which may be arch-shaped or rectangular but is hinged at both supports.

U

Ultrasonic Inspection - A non-destructive inspection process where by an ultra-high frequency sound wave induced into a material is picked up in reflection from any interface or boundary.

Unbonded Strands - Strands so coated as to prevent their forming a bond with surrounding concrete. Used to reduce stress at the ends of a member.

Underpinning - The addition of new permanent support to existing foundations to provide additional capacity.

Uplift - A force tending to raise a structure or part of a structure and usually caused by wind and/or eccentric loads, or the passage of live-load over the structure.

Utility - A line, facility, or system for producing, transmitting, or distributing communications, power, electricity, heat, gas, oil, water, steam, waste, storm water not connected with highway drainage, or any other similar commodity which directly or indirectly serves the public. The term utility shall also mean the utility company, district, or cooperative, including any wholly owned or controlled subsidiary.

V

Vierendeel Truss - A Pratt truss without diagonal members and with rigid joints between top and bottom chords and the verticals.

Vibrator - An oscillating device inserted at selected locations to consolidate fresh concrete.

W

Wales - Horizontal support members in close contact with a row of sheet piles in a cofferdam or shoring wall. Sometimes called whalers.

Warrants - The criteria by which the need for a safety treatment or improvement can be determined.

Warren Truss - A triangular truss consisting of sloping members between the top and bottom chords and no verticals; members form the letter W.

Water/Cement Ratio - The weight of water divided by the weight of cement in a concrete; ratio controls the strength of the concrete.

Waterproofing Membranes - Impervious material overlaid with bituminous concrete to protect decks from the infiltration of chlorides and resulting deterioration.

Wearing Surface - The top layer of a pavement designed to provide structural values and a surface resistant to traffic abrasion.

Weep Hole - A drain hole through a wall to prevent the building up of hydraulic pressure behind the wall.

Weld Inspection - Covers the process, written procedure, and welding in process. Post weld heat maintenance if required, post weld visual inspection and non-destructive testing as specified in contract and Standard Specifications.

Welded-Wire Fabric - A two-way reinforcing mat, fabricated from cold-drawn steel wire, having parallel longitudinal wires welded at regular intervals to parallel transverse wires.

Well-Graded - An aggregate possessing a proportionate distribution of successive particle sizes.

Wetlands - Areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

Wheel Load – Half of an axle load.

Wingwall - A wall attached to the abutments of bridges or box culverts retaining the roadway fill. The sloping retaining walls on each side of the center part of a bridge abutment.

X

Y

Yield - Permanent deformation (permanent set) which a metal piece takes when it is stressed beyond the elastic limit.

Young's Modulus - modulus of elasticity of a material (E); or the stiffness of a material.

Z

ABBREVIATIONS (INITIALISMS AND ACRONYMS)

A

AASHO	=	American Association of State Highway Officials (1921-1973)
AASHTO	=	American Association of State Highway and Transportation Officials (since 1973)
AB	=	Anchor bolt
ACI	=	American Concrete Institute
AC	=	Asphalt Concrete
ACP	=	Asphalt Concrete Pavement
ACWS	=	Asphalt concrete wearing surface
ADA	=	Americans with Disabilities Act
ADT	=	Average daily traffic (see Definitions)
ADTT	=	Average Daily Truck Traffic
AEE	=	Association of Engineering Employees
AGC	=	Associated of General Contractors of America
AISC	=	American Institute of Steel Construction
AISI	=	American Iron and Steel Institute
AITC	=	American Institute of Timber Construction
a.k.a.	=	Also known as
AML	=	Automated Milepoint Log
AOH	=	Access Oregon Highways
A.P.	=	Angle Point
APA	=	American Plywood Association
AREA	=	American Railway Engineering Association
ARS	=	Accident Records System (Accident Data Unit, Transportation Research Section)
ARTBA	=	American Road and Transportation Builders Association
ASAP	=	As soon as possible
ASCE	=	American Society of Civil Engineers
ASCII	=	American Standard Code for Information Interchange (refers to files that are pure text)
ASTM	=	American Society for Testing and Materials
ATC	=	Applied Technology Council
ATE	=	Associate Transportation Engineer
ATE-D	=	Associate Transportation Engineer - Drafting
ATPM	=	Asphalt-treated permeable material
AWPA	=	American Wood Products Association
AWS	=	American Welding Society

B

b.c.	=	Blind copy (see definitions)
BBS	=	Bulletin Board System (computers)
BDS	=	Bridge Design System (AASHTO software)
BIOS	=	Basic Input/Output System (computers)
BLM	=	Bureau of Land Management (U.S. Dept. of Interior)
BMP	=	Best Management Practice
BMS	=	Bridge Management System

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BNRR	=	Burlington Northern Railroad
Bot.	=	Bottom
BPR	=	Bureau of Public Roads (now FHWA)
B Team	=	Team of Bridge Engineer and Bridge Section Supervisors
BRASS	=	Bridge Rating and Analysis of Structural Systems (software)
Bt.	=	Bent
BUBB	=	Bargaining Unit Benefit Board
BVC	=	Begin vertical curve

C

C	=	Degrees Celsius
CAC	=	Citizens Advisory Committee
CAD	=	Computer-aided drafting/computer-aided design
CADD	=	Computer-aided drafting and design
CAE	=	Computer-aided engineering
CalTrans	=	California Department of Transportation
cc	=	Carbon copy
CCT	=	Concrete Control Technician
CD-ROM	=	Compact Disk - Read-Only Memory
CF	=	Cubic feet
CFS	=	Cubic Feet per Second
CICS	=	Customer Information and Control System (Transportation inventory and Mapping Unit software on the mainframe)
CIM	=	Corporate Information Management
CIP	=	Cast-in-place
CIS	=	Career Information System (Training & Employee Development Sect.)
CMP	=	Construction Mitigation Plan
	=	Construction Management Plan
	=	Corrugated metal pipe
COGO	=	Coordinate Geometry language
COM	=	Communications port (serial port on a computer)
CP	=	Cathodic protection
CPM	=	Critical Path Method (method of scheduling)
CPU	=	Central Processing Unit (computers)
CQC	=	Complete Quadratic Combination (method of combining seismic forces or displacements)
CRF	=	Code of Federal Regulations
CRSI	=	Concrete Reinforcing Steel Institute
CRT	=	Cathode Ray Tube display (monitor)
CY	=	Cubic yard
cy	=	Copy
CZM	=	Coastal Zone Management

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D

DBA	=	Doing Business As
DBE	=	Disadvantaged Business Enterprises
DEC	=	Digital Equipment Corporation
DEIS	=	Draft Environmental Impact Statement
DEQ	=	Department of Environmental Quality (Oregon)
DHV	=	Design hourly volume
Dia.	=	Diameter
DL	=	Dead load
DOGAMI	=	Department of Geology and Mineral Industries (Oregon)
DM	=	District Manager
DMS	=	District Maintenance Supervisor (old)
DMV	=	Division of Motor Vehicles
DOS	=	Disk Operating System for personal computers
DS	=	Top of deck to streambed distance
DSL	=	Division of State Lands (Oregon)
DTI	=	Direct Tension Indicator (load indicating washer for bolts)

E

E	=	East
EA	=	Expenditure Account
EA	=	Environmental Assessment
EAC	=	Emulsified Asphalt Concrete
EAP	=	Employee Assistance Program
E&C	=	Engineering and Contingencies (used in cost estimates)
EB	=	Eastbound
ECL	=	East city limits
EEO	=	Equal Employment Opportunity program
EEO/AA	=	Equal Employment Opportunity/Affirmative Action
EF	=	Each face
EIS	=	Environmental Impact Statement
EI.	=	Elevation
Elev.	=	Elevation
Emb.	=	Embankment
EP	=	Edge of pavement
EPA	=	Environmental Protection Agency (U.S.)
ES	=	Edge of shoulder
EVC	=	End vertical curve
EW	=	Each way
Exp.	=	Expansion

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F

F	=	Degrees Fahrenheit
FAPG	=	Federal Aid Policy Guide (replaced FHPM 12/9/91)
FAS	=	Federal Aid Secondary (class of highways)
FAT	=	File Allocation Table (on a computer disk)
FBN	=	Film base negative
FBPM	=	Film base positive matte
FEIS	=	Final Environmental Impact Statement
FEMA	=	Federal Emergency Management Agency
FF	=	Far face (don't use for "fill face")
FHPm	=	Federal Highway Program Manual (replaced by FAPG)
FHWA	=	Federal Highway Administration (formerly BPR)
FIPS	=	Federal Information Processing Standards system (IBM software)
FIS	=	Flood Insurance Studies (conducted by FHWA)
FONSI	=	Finding Of No Significant Impact
FORT	=	Field Operations Results Team
FS	=	Far side
ft-k	=	foot-kips
ft-lbs	=	foot-pounds

G

Ga.	=	Gauge
GAO	=	General Accounting Office
GIS	=	Geographic Information System
GLO	=	Government Land Office
GR	=	Guard Rail
GSA	=	General Services Administration
GSP	=	Galvanized Steel Pipe
GUI	=	Graphical User Interface for computers (such as Windows)

H

HBR	=	Highway Bridge Replacement (type of funding)
HBRR	=	Highway Bridge Replacement and Rehabilitation (type of funding)
HDD	=	Hard Disk Drive
HE	=	Highway Engineer (now replaced by TE)
HIP	=	Highway Improvement Plan (6-year plan of ODOT)
HP&R	=	Highway Planning & Research program
HS	=	High Strength
HSIS	=	Highway Safety Information System (FHWA database)
Ht.	=	Height
HW	=	High Water
HWM	=	High Water Mark

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I

I4R	=	Interstate Resurfacing, Restoration, Rehabilitation and Reconstruction (funding category)
IBM	=	International Business Machines
ID	=	Inside diameter
IDE	=	Internal Drive Electronics (type of computer hard disk)
IDT	=	Idaho Department of Transportation
IF	=	Inside face (don't use!)
IGA	=	Inter-Governmental Agreement
I/O	=	Input/Output
ISB	=	Information Systems Branch
ISPF	=	Integrated System Productivity Facility (IBM mainframe software)
ISTEA	=	Intermodal Surface Transportation Efficiency Act of 1991
ITIS	=	Integrated Transportation Information System
IWRC	=	Independent Wire Rope Core (cables)

J

J	=	Joule, metric energy unit
JCL	=	Job Control Language (mainframe)

K

K	=	Kip (kilopound, 1000 pounds)
k	=	Kilo, one thousand
kg	=	Kilogram, metric mass unit
km	=	Kilometer (1000 meters)
kN	=	KiloNewton, metric force unit
KSF	=	Kips per Square Foot
KSI	=	Kips per Square Inch

L

LAN	=	Local Area Network (computers)
Lbs	=	Pounds
LC	=	Length of curve
LCD	=	Liquid Crystal Display (computers)
LCDC	=	Land Conservation and Development Commission (Oregon)
LF	=	Linear feet
LL	=	Live load
LMC	=	Latex Modified Concrete
LPT	=	Line Printer (parallel computer port)
LRFD	=	Load Resistance Factor Design
L.S.	=	Lump Sum
LSDC	=	Low slump dense concrete
LT	=	Leadership Team

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M

m	=	Meter, metric length unit
	=	Milli, one thousandth
MBM,MFBM	=	Thousand feet board measure
MC	=	Microsilica modified concrete
M	=	Mega, one million
MH	=	Manhole
MHz	=	MegaHertz (millions of cycles per second)
MOU	=	Memorandum Of Understanding
MP	=	Microfilm print
	=	Milepoint, milepost (even milepoint)
MPO	=	Metropolitan Planning Organization
MSC	=	Minor structure concrete
MSCS	=	Management Scheduling Control System (to replace PCS)
MS-DOS	=	Microsoft Disk Operating System
MSE	=	Mechanically Stabilized Earth (retaining walls)
MSL	=	Mean Sea Level

N

N	=	North
	=	Newton, metric force unit
NB	=	Northbound
NBI	=	National Bridge Inventory
NBIS	=	National Bridge Inspection Standards
NCEER	=	National Center for Earthquake Engineering Research (Buffalo, NY)
NCHRP	=	National Cooperative Highway Research Program (from the Transportation Research Board)
NCL	=	North city limits
NF	=	Near face
NGVD	=	National Geodetic Vertical Datum (MSL = 0.0)
NHI	=	National Highway Institute
NHS	=	National Highway System
NHTSA	=	National Highway Traffic Safety Administration
NICET	=	National Institute for Certification in Engineering Technologies
NMFS	=	National Marine Fisheries Service
NSPE	=	National Society of Professional Engineers
NT	=	New Technology (new version of Microsoft Windows)
NTS	=	Not to Scale

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O

OBIS	=	Oregon Bridge Inventory System
OCAPA	=	Oregon Concrete & Aggregate Producers Association, Inc.
OC	=	On Center (center-to-center)
OD	=	Outside Diameter
ODF&W	=	Oregon Department of Fish and Wildlife
ODOT	=	Oregon Department of Transportation
OG	=	Original Ground
OMUTCD	=	Oregon Manual on Uniform Traffic Control Devices
OO, O-O	=	Out-to-out
OP	=	Office Practice
OPEU	=	Oregon Public Employees Union
ORS	=	Oregon Revised Statutes
OS	=	Office Specialist
	=	Operating System
OSHA	=	Occupational Safety and Health Administration (U.S.)
OSHD	=	Oregon State Highway Division
OSU	=	Oregon State University
OTC	=	Oregon Transportation Commission
Oxing	=	Overcrossing
OZ	=	Ozolid print

P

Pa	=	Pascal, metric stress or pressure unit
PAS	=	Project Assignment Scheduling Team
PC	=	Personal computer
PC	=	Point of curvature
	=	Personal computer
P/C	=	Precast Concrete
PCA	=	Portland Cement Association
PCC	=	Portland Cement Concrete
	=	Point on compound curve
PCF	=	Pounds per Cubic Foot
PCI	=	Prestressed Concrete Institute
PCP	=	Prestressed concrete pipe
PCS	=	Project Control System (to be replaced by MSCS)
	=	Point of change from circular curve to spiral
PE	=	Professional Engineer (registered)
	=	Preliminary engineering
PERS	=	Public Employees Retirement System
PI	=	Point of intersection
PL	=	Performance Level of bridge rail
PM	=	Project Manager

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PMC	=	Polymer-modified concrete
PMS	=	Pavement Management System
PMT	=	Photo transfer paper
POC	=	Point on circular curve
POS	=	Point on spiral
POT	=	Point on tangent
PR	=	Project Request (Federal-Aid Program)
Prest.	=	Prestressed
PRN	=	Printer port (parallel port on computer, =LPT)
PRC	=	Point of reverse curve
PS	=	Point from tangent to spiral
PSC	=	Point of change from spiral to circular curve
PS&E	=	Plans, Specifications & Estimate
PSBS	=	Project Specifications Bid System
PSF	=	Pounds per Square Foot
PSI	=	Pounds per Square Inch
PSU	=	Portland State University
PT	=	Point of tangency
PS	=	Point of change from tangent to spiral
PSC	=	Point of change from spiral to circular curve
P/S	=	Prestressed Concrete
PT	=	Point of tangency
P/T	=	Post-tensioned concrete
PTI	=	Post-Tensioning Institute
PVC	=	Point on vertical curve
	=	Polyvinyl chloride
PVI	=	Point of vertical intersection
PUC	=	Public Utility Commission

Q

QA	=	Quality Assurance
QCT	=	Quality Control Technician
QPL	=	Qualified Products Listing

R

R	=	Radius
R.	=	Range (surveying)
RAM	=	Random Access Memory

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RATS Team=	Region and Technical Services Team
RBI	= Region Bridge Inspector
RC	= Reinforced Concrete
RCB	= Reinforced Concrete Box
RCBC	= Reinforced Concrete Box Culvert
RCBG	= Reinforced Concrete Box Girder
RCDG	= Reinforced Concrete Deck Girder
RCP	= Reinforced Concrete Pipe
R&D	= Research and Development
R/D	= Rough Draft
Rdwy.	= Roadway
REA	= Revised Environmental Assessment
Rev.	= Revised; revision date
RFP	= Request for Proposals
RFQ	= Request for Qualifications
RMS	= Root Mean Square (statistical average)
ROD	= Record of Decision
ROM	= Read-Only Memory
RR	= Railroad
RRR, 3R	= Resurfacing, Restoration and Rehabilitation
RRRR, 4R	= Resurfacing, Restoration, Rehabilitation and Reconstruction
RSA	= Response Spectrum Analysis
R/W	= Right of Way

S

S	= South
S.	= Section (surveying)
SB	= Southbound
SCL	= South city limits
SCSI	= Small Computer Systems Interface (type of computer hard disk)
SEAO	= Structural Engineers Association of Oregon
SEAOC	= Structural Engineers Association of California
SEBB	= State Employee Benefit Board
Sec.	= Section (map location)
Sect.	= Section (on a drawing)
SF	= Square feet
SFLMC	= Silica Fume Latex-Modified Concrete
SH, Shld	= Shoulder
SHPO	= State Historic Preservation Office
SHRP	= Strategic Highway Research Program
SI	= "Système Internationale" (International System of units)
SI&A	= Structure Inventory and Appraisal
SIMM	= Single In-line Memory Module (type of memory chips)
SPC	= Seismic Performance Category
SPFPC	= System Productivity Facility for Personal Computers (data file editing software)
SPRR	= Southern Pacific Railroad
SPT	= Standard Penetration Test for soils

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SR	=	Sufficiency Rating
SRCM	=	Soils and Rock Classification Manual (ODOT)
SRSS	=	Square Root of the Sum of the Squares (method of combining seismic forces or displacements)
SSPC	=	Structural Steel Painting Council
STE	=	Supervising Transportation Engineer
S.T.R.	=	Section, Township and Range (surveying)
STP	=	Surface Transportation Program
STIP	=	State Transportation Improvement Program
STRUDL	=	Structural Design Language
SW	=	Sidewalk
SY	=	Square Yard

I

T&E	=	Threatened and Endangered
T.	=	Township (surveying)
	=	Tangent
Tan.	=	Tangent
TAC	=	Technical Advisory Committee
TAG	=	Technical Advisory Group
TB	=	Test boring
TCP	=	Traffic Control Plan
TE	=	Transportation Engineer
TEAMS	=	Transportation Environment Accounting System
TF	=	Top Face
TFE	=	Polytetrafluoroethylene (sliding surface for bearings)
TH	=	Test hole
Thk	=	Thick, thickness
TIP	=	Transportation Improvement Plan
TMP	=	Traffic Management Plan
TP & DT	=	Temporary Protection and Direction of Traffic
TRB	=	Transportation Research Board
TS	=	Tube, Structural
TSF	=	Tons per Square Foot (don't use!)
TSO	=	Time Sharing Option (on mainframe computer)
TS&L	=	Type, Size and Location (formerly called preliminary)
TTS	=	Tracings To Specifications
Typ.	=	Typical

U

UBC	=	Uniform Building Code
UFAS	=	Uniform Federal Accessibility Standards
U of O	=	University of Oregon
UP	=	University of Portland

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UPRR	=	Union Pacific Railroad
USC&GC	=	United States Coast and Geodetic Survey
USCG	=	United States Coast Guard
USFS	=	U.S. Forest Service (Dept. of Agriculture)
USGS	=	United States Geological Survey
USRS	=	U.S. Reclamation Service
Uxing	=	Undercrossing

V

V.	=	Version (software)
Var.	=	Varies
VC	=	Vertical curve
VE	=	Value Engineering
VGA	=	Video Graphical Array (computers)
VM	=	Vicinity Map
VMT	=	Vehicle miles of travel

W

W	=	West
W/	=	With
WAN	=	Wide Area Network (computers)
WATS	=	Wide Area Telephone Service
WB	=	Westbound
WCL	=	West city limits
WCLIB	=	West Coast Lumber Inspection Bureau
W.M.	=	Willamette Meridian
W/O	=	Without
WS	=	Wearing surface
WSDOT	=	Washington State Department of Transportation
WSC	=	Wire Strand Core (cables)
Wt.	=	Weight
WWF	=	Welded Wire Fabric
WWM	=	Welded Wire Mesh
WWPA	=	Western Wood Products Association
WYSIWYG	=	What-you-see-is-what-you-get (computer interface)

X

XF	=	Xerox film
Xing	=	Crossing
X'Sect	=	Cross-section
XV	=	Xerox vellum

Y

Z

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